Application for Licence

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L9311/2021/1
Applicant	Helbig Industries Pty Ltd
ACN	144 942 076
File number	DER2021/000598
Premises	HCAP Hydraulic Services & Kimberley Hydraulics 37 Distinction Road WANGARA WA 6065 Legal description - Lot 344 on Deposited Plan 72515
Date of report	26 April 2022
Decision	Licence granted

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the premises. As a result of this assessment, licence L9311/2021/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 21 October 2021, Helbig Industries Pty Ltd (the applicant) submitted an application for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act). The applicant is seeking to transition from a works approval W6377/2020/1 (approved 21 July 2020) to a licence for category 48 activities (metal finishing) at the premises. Compliance documents received to date indicate compliance with the conditions of the works approval.

Activities at the premises relate to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in licence L9311/2021/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in licence L9311/2021/1.

This report sets out the delegated officer's assessment of potential risk events arising from emissions and discharges during operation of infrastructure relating to the prescribed activity.

2.2.1 Operational aspects

The applicant proposes to operate a chrome plating premises at 37 Distinction Road Wangara, with a design capacity to use 4,800 kg of chromium trioxide per year producing up to 40 tonnes of plated components. The premises will comprise a shed containing three partially below ground plating tanks and associated temporary storage tanks. All tanks will be contained inside a chemical-resistant lined concrete sump with a capacity of 106 kL.

All components will arrive at the premises pre-cleaned and ready for chrome plating. Prior to plating all components will be masked as necessary. The three chrome plating tanks will hold a solution of chromium trioxide (CrO3), sulfuric acid and water which will be prepared in the tanks. Each plating tank will contain anodes that are connected to a rectifier, with the number of anodes activated dependent on the size of the work item. The work item will act as the cathode and will also be connected to the rectifier.

Plating will be conducted at 65 °C inside the shed. The prepared work item will be placed into a chrome plating tank via an overhead crane and an electric current will pass through the plating solution. The electric current will be negatively charged and the anodes positive, causing chrome from the solution to de deposited onto the work piece.

Once the component has been plated, it will be removed from the chrome plating tank and washed down over the plating tank allowing for wash-water to drain into the plating tank. The component will be hung above the plating tank to dry.

2.2.1 Chemical storage

If the chrome plating liquid needs to be removed from the plating tanks, the liquid will be pumped into intermediate bulk container (IBC) tanks for temporary storage within the bunded area of the existing shed. The shed will house 10 IBC tanks, providing up to 10,000 L of emergency storage. Raw chemicals will not be stored onsite as they will only be delivered for immediate addition into the plating tanks to maintain optimum tank chemistry.

2.2.2 Waste management

Waste liquids or product spilled during the chrome plating process that is captured within the bund will be pumped into a waste chemical IBC and recycled back into the chrome plating process. Where waste cannot be recycled it will be disposed of by a licensed controlled waste contractor.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Operation			
Odour	Operation of plating tanks	Workers on industrial sites 12 m east, 30 m and 40 m west of the premises. Residential dwellings 750 m to 900 m north of the premises.	Plating will occur inside a shed at all times. A vapour suppressant, such as Fumetrol 21, will be added to the tanks to prevent emission of chromic acid vapours Chemical levels in plating tanks to be monitored to ensure the tanks are operating efficiently and the correct levels of fume suppressants are maintained in the tanks
Gaseous chromic acid emissions			
Discharge of chromic acid or caustic soda	Breach of containment infrastructure associated with bulk storage of chemicals (plating tanks and IBC tanks)	Direct discharge to soil and groundwater (27 mbgl)	Plating will only occur inside a bunded area of the shed within appropriately designed corrosive resistant plating tanks. Weekly monitoring of sumps for spillage which will be pumped out of the sump and recycled back into the plating tanks (in most instances) Sump content that cannot be recycled will be disposed off-site via an appropriate controlled waste disposal company

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Industrial premises Lot 343 on Deposited Plan 72520	30 m west, shares the western boundary of the Premises
Industrial premises Lot 369 on Deposited Plan 72520	40 m west, shares the western boundary of the Premises
Industrial premises Lot 345 on Deposited Plan 72515	12 m east, shares the eastern boundary of the Premises
Environmental receptors	**Distance from prescribed activity**
Rights in Water and Irrigation Act 1914 –	Depth to groundwater approximately 27.5 m

Wanneroo Groundwater Area	Water is not used for public drinking water source and is unsuitable for garden bore use.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Licence L9311/2021/1 that accompanies this decision report authorises emissions associated with the operation of the premises i.e. metal finishing activities.

The conditions in the issued licence, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3: Risk assessment of potential emissions and discharges from operation of the premises

Risk events					**Risk rating [1]**	**Applicant controls sufficient?**	**Conditions [2] of licence**	**Justification for additional regulatory controls**
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**	**C = consequence** **L = likelihood**			
Operation of plating tanks	Odour	Air/windborne pathway causing impacts to health and amenity	Workers on industrial sites 12 m east, 30 m and 40 m west of the premises. Residential premises 750 m to 900 m north of the premises.	*Refer to Section 3.1*	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1, Table 1	N/A
	Gaseous chromic acid emissions			*Refer to Section 3.1*	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1, Table 1	N/A
Bulk storage of chemicals (chrome trioxide and/or chromic acid)	Discharge of chrome trioxide or chromic acid caused by breach of containment	Direct discharge to land causing soil contamination and adverse impacts to groundwater quality.	Soil and groundwater	*Refer to Section 3.1*	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1, Table 1 -	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Decision

The risk assessment identified a medium risk of impact to receptors from operation of the chrome plating tanks and storage of chemicals on the premises. However, the delegated officer considers that potential impacts to receptors from odours, gaseous emissions and unplanned discharges of chemicals to ground are unlikely with implementation of the proposed licence holder controls. Therefore, several licence holder controls have been specified in the licence to reduce the risk of impact to an acceptable level. These controls include the use of a vapour suppressant in the plating tanks to reduce odour and gas emissions, and maintenance of storage vessels and sumps to prevent to loss of product to ground.

5. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Licence holder was provided with a draft licence and decision report on 10 March 2022	Applicant provided clarification on infrastructure details e.g., shed is enclosed, ventilated and hardstand.	Licence and decision report were updated to include details provided by applicant

6. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that licence L9311/2021/1 will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.