



Application for Works Approval Amendment

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

Works Approval Number	W6504/2021/1
Works Approval Holder	Norton Gold Fields Pty Limited
ACN	112 287 797
File Number	DER2021/000023~1
Premises	Binduli North Minesite Legal description - Mining tenements M26/115, M26/243, M26/387, M26/420, M26/430, M26/445, M26/446, M26/447, M26/468, M26/474, M26/629, M26/833 As defined by the Premise maps attached to the revised works approval
Date of Report	11 February 2022
Decision	Revised works approval granted

A/Manager, Resource Industries

REGULATORY SERVICES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Works Approval W6504/2021/1 is held by Norton Gold Fields Pty Limited (Works Approval Holder) for the Binduli North Minesite (the Premises), located on mining tenements M26/115, M26/243, M26/387, M26/420, M26/430, M26/445, M26/446, M26/447, M26/468, M26/474, M26/629 and M26/833.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction and operation of the Premises. As a result of this assessment, Revised Works Approval W6504/2021/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department 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 Amendment summary

On 20 September 2021, the Works Approval Holder submitted an application to the department to amend works approval W6504/2021/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Changing the approved design for two surface water catchment ponds (SWCP) with a storage capacity of 180,000 m³ each, to a sediment pond and a SWCP with a reduced storage capacity of 7,733 m³ and 49,640 m³, respectively;
- Construction and operation of additional dewatering pipeline infrastructure connecting Fort William Pit and Fort Scott Pit; and
- Addition of Fort Scott Pit as an authorised discharge location for mine dewater.

This amendment is limited only to infrastructural changes to Category 5 and 6 activities from the existing works approval, with no changes to the approved design/throughput capacities. No changes to the aspects of the existing works approval relating to Category 7, 12, 52 and 64 have been requested by the Works Approval Holder.

Table 1 below outlines the proposed changes to the existing works approval.

Table 1: Proposed design capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
5 – Processing or beneficiation of metallic or non-metallic ore	5,000,000 tonnes per annual period	No change in capacity.	<ul style="list-style-type: none">• Decrease in storage capacity design for two surface water catchment ponds.
6 – Mine dewatering	1,500,000 tonnes per annual period	No change in capacity.	<ul style="list-style-type: none">• Additional authorised discharge location (Fort Scott Pit) and associated dewatering pipeline infrastructure.

2.3 Delegated Officer-initiated Amendment

In conjunction with the amendment application submitted by the Works Approval Holder, the department also initiated an administrative amendment to works approval W6504/2021/1 to incorporate the following changes:

- Changes to the wording of condition 15, to provide more clarity on the timing requirements of noise monitoring required once construction of the ore processing facility is complete.

Both the Works Approval Holder-initiated and department-initiated amendments are assessed and detailed in this Amendment Report.

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 2020b).

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 construction and time-limited operation, which have been considered in this Amendment Report, are detailed in Table 2 below. Table 2 also details the proposed control measures the Works Approval Holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Works Approval Holder controls

Emission	Sources	Potential pathways	Proposed controls
Sediment laden and hydrocarbon-impacted stormwater	Operation of SWCP and sediment pond.	Overtopping, resulting in direct discharge to land.	Existing controls for SWCP assessed under works approval W6504/2021/1 include: <ul style="list-style-type: none"> • Ponds must be lined with compacted clay. Additional controls proposed include: <ul style="list-style-type: none"> • Extraction of excess water for dust suppression or process water; • Pump and discharge of excess water to an authorised discharge pit; • Raising northern road by 300 mm to act as additional barrier during uncontrolled overflow event; • Maintaining a minimum design freeboard of 500 mm; and • Hydrocarbon testing if rainfall is greater than 30 mm within a 24 hour period or if standing water level breaches freeboard limit.
Hypersaline mine dewater	Deposition of mine dewater to Fort Scott Pit.	Overtopping, resulting in direct discharge to land.	Proposed controls for Fort Scott Pit were the same as with the other authorised discharge locations assessed under works approval W6504/2021/1: <ul style="list-style-type: none"> • Monitoring at discharge point for volumetric flow rate, standing water level, pH and total dissolved solids.
		Pipeline leak or rupture, resulting in direct discharge to land.	Existing controls for dewatering pipelines assessed under works approval W6504/2021/1 include: <ul style="list-style-type: none"> • Telemetry shutoff and leak detection; • Catch pits installed at low points; • Pipelines banded or buried; and • Twice-daily inspections when operational. No additional controls were proposed as part of the amendment.

3.1.2 Receptors

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

Table 3 below 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 2020a)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
N/A	N/A
Environmental receptors	Distance from prescribed activity
Native vegetation	Directly abutting the premises and surrounds. The dominant vegetation group consists of mixed Eucalypt woodlands, comprising predominantly of <i>Eucalyptus griffithsii</i> , <i>E. horistes</i> and <i>E. lesouefii</i> over sparse shrubland.
Threatened fauna	The endangered Carnabys Cockatoo (<i>Calyptorhynchus latirostris</i>) vulnerable Malleefowl (<i>Leipoa ocellata</i>) has a medium chance of appearing in woodlands within and surround the premises.

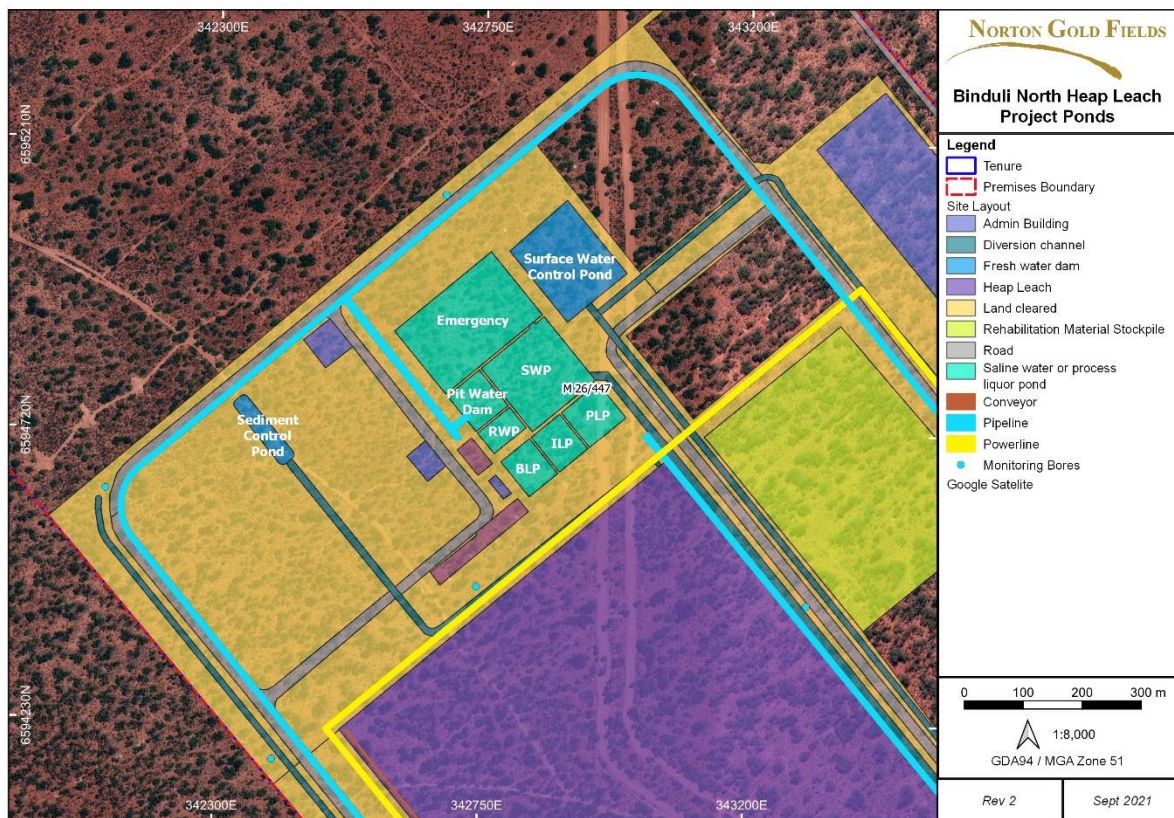


Figure 1: Distance to native vegetation receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020b) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete they have not been considered further in the risk assessment.

Where the Works Approval Holder 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 Works Approval Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the Works Approval Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The Revised Works Approval W6504/2021/1 that accompanies this Amendment Report authorises construction and time-limited operations. The conditions in the Revised Works Approval have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the operation of the Premises i.e. screening of metallic ore, discharge of mine dewater to pits, heap leaching etc. A risk assessment for the operational phase has been included in this Amendment Report, however licence conditions will not be finalised until the department assesses the licence application.

Table 4. Risk assessment of potential emissions and discharges from the Premises during time-limited operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Works Approval Holder's controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Works Approval Holder's controls				
Operation (including time-limited-operations operations)								
Operation of SWCP and sediment pond	Sediment laden and/or hydrocarbon-impacted stormwater - Overtopping	Direct discharge to land	Localised native vegetation	Refer to Section 3.1	C = Minor L = Possible Medium Risk Refer to detailed risk assessment in Section 3.3 below.	Yes	Condition 1, Table 1 Condition 14, Table 6	N/A
Deposition of mine dewater to Fort Scott Pit	Hypersaline mine dewater - Overtopping			Refer to Section 3.1	C = Moderate L = Rare Medium Risk	Yes	Condition 13, Table 5 Condition 14, Table 6	N/A
	Hypersaline mine dewater – Pipeline leak or rupture			Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Yes	Condition 1, Table 1 Condition 8, Table 3 Condition 12, Table 4	N/A

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

Note 2: Proposed Works Approval Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

3.3 Detailed risk assessment for operation of SWCP and sediment pond

3.3.1 General characterisation of emission and potential adverse impacts

Works approval W6504/2021/1 authorised the construction of two surface water catchment ponds (SWCP) at the northern end of the heap leach area, abutting the northwestern boundary of the premises. The purpose of the SWCPs were to capture stormwater runoff within the mining and processing area, which may contain sediment or hydrocarbons, acting as containment ponds for rainfall events (Table 5).

The approved storage capacity for each SWCP was 180,000 m³, resulting in a total of 360,000 m³. However, the revised site plans indicated that the two SWCPs were replaced with a SWCP and sediment pond, with a storage capacity of 49,640 m³ and 7,733 m³, respectively. Cumulatively, this represented an 84 % reduction in total storage capacity. The location for both ponds remain unchanged.

Table 5: Pond infrastructure design and catchment siting

Infrastructure	Volume (m ³)	Effective catchment area (m ²)	Catchment land use and associated contaminants of concern
Surface Water Catchment Pond (SWCP)	49,640	1,459,200	Undisturbed area – Sediment Topsoil – Sediment Mining – Sediment Workshop/Plant Area - Hydrocarbon
Sediment Pond	7,733	1,804,300 *	Undisturbed area – Sediment

* Catchment size is estimated to decrease over the life of project as the size of the heap leach increases. The heap leach falls under a different catchment and has appropriate diversion channels.

Due to the proposed reduction in storage capacity, the primary risk of emission at the SWCP and sediment pond is overtopping, resulting in a discharge of land. As detailed in Table 5, the potential emissions are sediment-laden and hydrocarbon-impacted stormwater.

3.3.2 Emission

The Works Approval Holder noted that the impact of emissions would be minor as both ponds act as a sediment trap, allowing sediment load in stormwater to reduce.

The presence of hydrocarbon-impacted stormwater would likely be derived from the fuel farm, power plant, workshop area and washdown bay. These areas will be constructed and managed appropriately to reduce the risk of hydrocarbon release to the environment. The fuel storage tanks are double-lined and self-bunded, with refueling conducted within concrete aprons. Potential hydrocarbon runoff from the washdown bay will be directed into a concrete-lined silt trap and oily water separator. These controls have been conditioned in the current works approval and will reduce the risk of contaminated water entering the drainage channel, and subsequently, the SWCP.

3.3.3 Pathway

Additionally, the Works Approval Holder has attempted to quantify the risk of overtopping occurring at SWCP. The amended design exceeds the capacity requirements of a 1-in-2 year average recurrence interval (ARI), with sufficient capacity to contain a rainfall event of 71.61

mm (when factoring in the loss of water from ground infiltration over the catchment area). In the last 10-year period, a rainfall event exceeding 71.61 mm was estimated to occur on one day for every two years, where containment of SWCP is likely to be insufficient.

3.3.4 Receptor

The Works Approval Holder acknowledges that uncontrolled overflow due to overtopping of SWCP is possible, during extreme weather events.

The area adjacent to the SWCP and sediment pond consists of mixed Eucalypt woodlands, comprising predominantly of *E. griffithsii*, *E. horistes* and *E. lesouefii* over sparse shrubland. There is also medium likelihood that the endangered Carnabys Cockatoo (*C. latirostris*) vulnerable Melleefowl (*L. ocellata*) occur in woodlands within and surround the premises. Disturbance was observed in the area, due to historical exploration, pastoral and recreational (e.g. 4WD) activities.

The closest aquatic receptor is the salt lake system located approximately 2.5 km northwest of the SWCP. It is unlikely to be impacted by overtopping of the SWCP, as natural topography slopes to the north.

3.3.5 Proposed controls

To address the likelihood of overtopping during a heavy rainfall event, the Works Approval Holder has proposed the following controls:

- Extracting excess water from SWCP for dust suppression or processing purposes;
- Discharge of excess water from SWCP to unused pits within the premises;
- Raising the northern road by 300 mm above the natural ground level to act as an additional barrier during uncontrolled overflow events;
- Maintaining a minimum design freeboard of 0.5 m; and
- Undertaking water sampling for hydrocarbons if greater than 30 mm of rainfall has been recorded over a 24-hour period OR if water level breaches the freeboard limit.

3.3.6 Risk Assessment – Overtopping of SWCP and sediment pond

The Delegated Officer considers that despite the reduction in storage capacity, the amended design of the SWCP and sediment pond in addition to the Works Approval Holder's management controls and commitments, is adequate and does not pose an unacceptable risk to human health, environment and visual amenity.

The consequence rating is classed as **minor** due to the potentially low sediment load and hydrocarbon concentrations entering SWCP and the lack of sensitive environmental receptors in the area.

The likelihood rating is classified as **possible** as the capacity of the SWCP is insufficient during heavy rainfall events, estimated to occur once every two years.

These result in a **moderate** risk rating.

Conditions in the works approval have been updated as part of this amendment, to incorporate the controls proposed by the Works Approval Holder. The Works Approval Holder may request that this risk be reassessed in the future. Water quality monitoring results and historical rainfall data would be required to support such a request.

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Works Approval Holder was provided with draft amendment on 10 February 2022	No changes. Works Approval Holder provided updated Figure 1 and Figure 2 for amended works approval.	Figure 1 and 2 of the amended works approval updated.

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Works Approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Works Approval as part of the amendment process.

Table 7: Summary of works approval amendments

Condition no.	Proposed amendments
Condition 1	In Item 7 of Table 1, changes to the SWCP and sediment pond storage capacity.
Condition 13	In Table 5, added Fort Scott Pit as a Discharge Point.
Condition 14	In Table 6, added Fort Scott Pit and Surface Water Catchment Pond as additional Discharge Points.
Condition 15	Changes to specify that the condition only applies upon commencement of time-limited operation for the ore crushing/screening plant as specified in Table 1.

References

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

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)				
Application type				
Works approval	<input type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input checked="" type="checkbox"/>	Current works approval number:	W6504/2021/1	
Amendment to licence	<input type="checkbox"/>	Current licence number:		
		Relevant works approval number:	N/A	<input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:	None	<input type="checkbox"/>
Date application received	20 September 2021			
Applicant and Premises details				
Applicant name/s (full legal name/s)	Norton Gold Fields Pty Limited			
Premises name	Binduli Mine			
Premises location	M 26/446, M 26/447, M 26/629, M 26/883			
Local Government Authority	City of Kalgoorlie/Boulder			
Application documents				
HPCM file reference number:	DER2021/000023~1			
Key application documents (additional to application form):	Supporting document – Attachment 8 Attachments 1a, 1b, 2b, 2c and 9			
Scope of application/assessment				
Summary of proposed activities or changes to existing operations.	<p>Works approval amendment</p> <p>Construction and operation of: Sediment control pond (7,733 m³) and surface water catchment pond (24,000 m³).</p> <p>Being constructed instead of 2x surface water catchment ponds (180,000 m³ each)</p>			

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 5: Processing or beneficiation of metallic or non-metallic ore	5,000,000 tonnes per annual period	<i>No change.</i>
Category 6: Mine dewatering	1,500,000 tonnes per annual period	<i>No change.</i>
Category 7: Vat or in situ leaching of material	5,000,000 tonnes per annual period	<i>No change.</i>
Category 12: Screening, etc. of material	925,000 tonnes per annual period	<i>No change.</i>
Category 52: Electric power generation	13 MW capacity	<i>No change.</i>
Category 64: Class II or III putrescible landfill site	350 tonnes per annual period	<i>No change.</i>

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: N/A Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: N/A EPA Report No: N/A
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No: N/A
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input checked="" type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: N/A Expiry date: N/A If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A No clearing is proposed.

Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Type: N/A Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Regional office: N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Classification: N/A Date of classification: N/A