

# Mining Management Plan Exploration Activities

## Northern Territory of Australia – Mining Management Act

It is recommended that the Mining Management Plan is completed in conjunction with the user guide, available on the [Northern Territory Government website](#).

### Section 1 – Project Details

<b>Project Name</b> Provide new or existing project name	Glencoe Gold Project
<b>Authorisation Number</b> Insert existing authorisation number, where applicable	1084-01
<b>Operator Name</b> Use ASIC-ABR registered name (if a company), or name of the applicant	PNX Metals Ltd
<b>Location and Access Details</b> Include brief description of the location, access details, and distance to nearest town or community	Glencoe (ML 29679) is located approximately 120 km south-southeast of Darwin, on the Ban Ban Springs pastoral lease. Access is made via the sealed Fountain Head West road which runs through the Glencoe lease. The main Glencoe area is slightly elevated above the surrounding flood plain,
<b>Target Commodity Details</b> Include target commodities (i.e. gold, copper etc)	Gold
<b>Mining Activities</b> Summarise the mining activities (exploration) to be the subject of the proposed Authorisation or Variation	162 RC drill holes 6 Trenches
<b>Proposed Schedule</b> Include start and finish dates of ground disturbing work	Start early October 2022 – finish December 2022 Possibly continue in 2023 depending on wet season

## Mining Interest and Land Ownership

List the mining interests (titles), the title holder name/s, the title expiry date and the Property name/Land holder (e.g. pastoralist or Aboriginal land trust) for each title.

Title Number	Title Holder	Expiry Date	Property Name or Land Holder
ML29679	PNX Metals Ltd	26/09/2027	Ban Ban Springs Station (PPL 1111; Ty Blokland)

Delete or add rows as required

## Organisational Structure

Position Title	Name
Managing Director	James Fox
Exploration Manager	Michael Green
Geologist	Arvid Buskas
Tenement Manager	Elke Hodge

Delete or add rows for various position titles as required

## Section 2 – Operator Self-Assessment of the Environmental Risk

The purpose of this self-assessment is to ensure Operators complete a project risk assessment of potential environmental impacts and are aware of other legislative obligations from various Agencies. As a result of this self-assessment, further information may be required in the form of a management plan to enable full assessment of the MMP. If you have any queries please contact a Mining Officer prior to submitting the MMP. Useful resources to assist with this self-assessment are provided in the User Guide.

### Environmental considerations

ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION (Evidence of consultation with DENR and/or management plan)
<b>Step 1:</b> Are there any threatened flora and fauna species or habitats of significance that may occur in the proposed work area?	Yes	It is likely a threatened species will show up in most reports. Therefore, the Operator must undertake a likelihood analysis, which looks at the likelihood of the species or its habitat occurring at or near the site. If the analysis results in a high likelihood, then a “Significant Impact Assessment” should be undertaken, which may require consultation with the DENR – Flora and Fauna Division. The DENR may recommend a Biodiversity Management Plan – this must be developed and attached to the MMP.	Appendix 6 and 9
<b>Step 2:</b> Are there any known declared weeds within the proposed work area?	Yes	Under the <i>Weeds Management Act</i> declared weeds are required to be eliminated or controlled by the owner and occupier of land. Seek advice from DENR – Weeds Management to ensure management measures are appropriate for the level of activity proposed and attach a Weed Management Plan (if required).	Appendix 9
<b>Step 3:</b> Will you be using water from bores or other sources for the operation?	No	<i>Note the Government is proposing to amend the exemption of water licencing under the Water Act for mining activities, including exploration. This section will be updated in light of any changes in the future.</i>	

## Environmental assessment and cultural considerations

ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
<b>Step 4:</b> Is your project likely to have a significant impact on the environment?	No	Refer to the NTEPA Environmental Factors and Objectives Guideline.
<b>Step 5:</b> Are there Aboriginal sacred sites in the Project area?	No	<p>Sacred Sites are protected under the NT <i>Aboriginal Sacred Sites Act</i> and administered by the Aboriginal Areas Protection Authority (AAPA). It is recommended that advice be sought from AAPA in relation to sacred site protection.</p> <p>Noted in authorisation letter from DITT (reference M2021/0024; dated 05/07/2021) that current Heritage reports provided by PNX are dated 2012 and should be updated. PNX has planned for new surveys in the near-future.</p> <p><i>PNX response: Heritage and Archaeological Surveys, including AAPA certification of the Glencoe project, are proposed for when a positive project investment decision for PNX's greater Hayes Creek/Fountain Head Projects has been approved and the level of detail and extent of such surveys is better constrained. This is expected in 2023. The RC holes proposed herein are within the area of existing Authorisation 1084-01. The areas are already heavily disturbed by historic mining and current pastoral activities. The previous Heritage/Archaeological clearance completed at Glencoe, plus collations of nearby AAPA and company-supported heritage surveys, indicate that Glencoe is a low-risk area.</i></p>
<b>Step 6:</b> Are there archaeological and heritage sites in the Project area?	Yes	<p>Heritage and archaeology sites are protected in the NT. NT Heritage Branch of the Department of Natural Resources and Environment (DENR) administers the <i>Heritage Act</i>. Seek advice in relation to protection of heritage and archaeological sites.</p> <p>Noted in authorisation letter from DITT (reference M2021/0024; dated 05/07/2021) that current Heritage reports provided by PNX are dated 2012 and should be updated. PNX has planned for new surveys in the near-future.</p> <p><i>PNX response: see Step 5 above</i></p>

## Section 3 – Amendments

As per Section 41(3) of the *Mining Management Act*, an MMP reviewed and amended under Section 41(1)(a) is to clearly identify amendments made.

Section	Amendment
Section 1	Mining activities updated
Section 1	Schedule moved with work to start in early October 2022 and possibly to recommence in 2023
Section 1	Title holder changed
Section 1	Geologist updated
Section 2; Step 5	<i>PNX response: Heritage and Archaeological Surveys, including AAPA certification of the Glencoe project, are proposed for when a positive project investment decision for PNX's greater Hayes Creek/Fountain Head Projects has been approved and the level of detail and extent of such surveys is better constrained. This is expected in 2023. The RC holes proposed herein are within the area of existing Authorisation 1084-01. The areas are already heavily disturbed by historic mining and current pastoral activities. The previous Heritage/Archaeological clearance completed at Glencoe, plus collations of nearby AAPA and company-supported heritage surveys, indicate that Glencoe is a low-risk area.</i>
Section 2; Step 6	PNX response: see Step 5 above
Section 4	162 RC
Section 4	6 trenches added
Section 5	Table updated
Section 6.7	A significant amount of drilling has already been completed at Glencoe (443 RC + DD holes), plus 698 RAB holes within 1,500 m of Glencoe. None of these, including the deepest hole (330m at 60°), have intersected contained or multiple aquifers and it is highly unlikely that the shallow drilling proposed (maximum 90 m) herein will encounter anything different. The rocks, even in the deepest holes, are strongly cleaved, fractured and faulted, precluding the development of confined or multiple aquifer systems. In the very unlikely event that a confined or multiple aquifer system is encountered, drilling would be stopped and the hole grouted. However, given that this is not expected, such contingency has not been added to the security calculation. No drilling additives, other than biodegradable organic-based hammer oil, will be needed for RC drilling at Glencoe and thus lined sumps will not be required.
Section 5	Complete update of table
Section 8	New map and GIS files generated

Delete or add rows as required



## Section 4 – Activities Proposed

Mining Interests (i.e. titles)	ML29679	EL	EL	EL
Number and type of proposed drill holes	162 RC holes			
Maximum depth of proposed holes (m)	90m			
Number and size of drill pads to be cleared (Length: 20 m x Width: 15 m)	Maximum of 30 pads required to be cleared Other drill sites already clear			
Total area of drill pads to be cleared (ha)	0.90 ha			
Is drilling likely to encounter groundwater? (Y, N, unsure)	Y			
Number of costeans (Length: m x Width: m x Depth: m)	6 x 100m x 2m x 2m			
Number of bulk sample pits	0			
Total bulk sample (tonnes) (Length: m x Width: m x Depth: m)	0			
Bulk sample pits approved under <i>Mineral Titles Act</i> ? (Y or N)	0			
Length of line/track clearing (km: x Width: 5 m)	No new tracks required			
Camp area to be cleared (ha)	0			
Camp Infrastructure (i.e. demountable, tents)	0			

Mining Interests (i.e. titles)	ML29679	EL	EL	EL
Previous disturbance yet to be remediated on title (ha) if known	2.58			
Other				
Total area disturbed proposed (ha)	3.60 ha			

### Section 5 – Previous Disturbance (for existing Authorisations only)

Mining Interests (i.e. titles)	ML29679	EL	EL	EL
Number/type of holes drilled	54 RC + 3 DD			
Maximum depth of holes drilled (m)	132 m			
Number of holes remediated (i.e. plugged/capped)				
Number and size of drill pads cleared (Length: 20 m x Width: 15 m)	56			
Total area of drill pads cleared (ha)	1.68 ha			
Total area of drill pads remediated (ha)				
Was groundwater encountered? (Y or N)	Y			
Length of line/track cleared (Length: km x Width: 5 m)	1.8 km = 0.90 ha			
Length of line/track remediated (Length: km x Width: m)				
Number of costeans excavated (L: m x W: m x D: m)				



Mining Interests (i.e. titles)	ML29679	EL	EL	EL
Number of costeans remediated				
Total bulk sample pits excavated (Length: x Width: x Depth: m)				
Total bulk sample pits remediated				
Camp area/s cleared (ha)				
Camp area/s remediated (ha)				
Total area disturbed (ha)	2.58 ha			
Total area remediated (ha)				

## Section 6 – Environmental Management

By checking these boxes, you are agreeing to implement the following minimum environmental management standards on the project area. Where boxes have been left unchecked, justification is required.

6.1	<b>Y</b>	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
6.2	<b>Y</b>	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	<b>Y</b>	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	<b>Y</b>	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	<b>Y</b>	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for remediation purposes
6.6	<b>Y</b>	All employees and contractors will be trained and inducted in relation to the management of environmental risks in the work area, including weeds, waterways, threatened species, soil erosion, sacred sites and heritage areas
6.7	<b>Y</b>	Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used
6.8	<b>Y</b>	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	<b>Y</b>	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	<b>Y</b>	Drill holes will be securely capped immediately after drilling

6.11	Y	Vehicle hygiene measures will be employed to prevent the introduction and spread of invasive species and pathogens when mobilising vehicles and equipment from one location to another
6.12	Y	Hydrocarbon spills will be minimised using liners and drip trays under machinery, and appropriately sized spill-kits available in the event of a spill
6.13	Y	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	Y	Hydrocarbons will be stored in lined and bunded areas
6.15	Y	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals
6.16	Y	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	Y	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .

Justification and alternative management measures:

<p>6.7 Sumps for RC drilling will not be lined as the water encountered during drilling will be from the fractured rock aquifer. It is not expected that the drilling will intersect multiple aquifers. Sumps for Diamond drilling will be lined.</p> <p>A significant amount of drilling has already been completed at Glencoe (443 RC + DD holes), plus 698 RAB holes within 1,500 m of Glencoe. None of these, including the deepest hole (330m at 60°), have intersected contained or multiple aquifers and it is highly unlikely that the shallow drilling proposed (maximum 90 m) herein will encounter anything different. The rocks, even in the deepest holes, are strongly cleaved, fractured and faulted, precluding the development of confined or multiple aquifer systems. In the very unlikely event that a confined or multiple aquifer system is encountered, drilling would be stopped and the hole grouted. However, given that this is not expected, such contingency has not been added to the security calculation. No drilling additives, other than biodegradable organic-based hammer oil, will be needed for RC drilling at Glencoe and thus lined sumps will not be required.</p>
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## Section 7 – Remediation and Closure

By checking these boxes, you are agreeing to implement the following minimum remediation standards on the project area. Where boxes have been left unchecked, justification is required.

7.1	Y	Drill holes plugged below ground level at a minimum depth of 0.4 metres and soil mounded to prevent subsidence, within 6 months of completion of drilling
7.2	Y	Drill samples/spoil returned down drill holes, buried in sumps, or removed from site
7.3	Y	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site
7.4	Y	Re-contouring of cut and fill drill pads will be consistent with the surrounding terrain
7.5	Y	Ripping/scarifying of drill pads, and compacted areas along the contour (on sloping ground) and cross-ripping (zig-zag) along tracks
7.6	Y	Tracks will be remediated, including pushing in all windrows

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7.7	Y	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur
7.8	Y	All tracks will be remediated unless otherwise agreed in writing by the land holder or appropriate third party
7.9	Y	Access through watercourses will be removed and banks restored
7.10	Y	No erosion is occurring in disturbed areas, on tracks and in remediated areas
7.11	Y	All excavations backfilled within 6 months of completion of drilling
7.12	Y	All water bores decommissioned unless otherwise agreed in writing by the land holder or appropriate third party. The bore must comply with the Minimum Construction Requirements for Water Bores in Australia and may require permits or licenses under the <i>Water Act</i>
7.13	Y	All rubbish and infrastructure will be removed from site
7.14	Y	Replacement of topsoil and vegetation
7.15	Y	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be remediated or removed from site
7.16	Y	Monitoring will be undertaken following the wet season or a significant rainfall event

Justification and alternative management measures:

## Section 8 – Required Attachments


8.1		Security Calculation Spreadsheet
8.2		Nomination of Operator Form
8.3		Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.4		Google Earth KML/shape files/track logs of proposed tracks and camp sites
8.5		<p>A map of the work area(s) showing:</p> <ol style="list-style-type: none"> <li>1. title boundaries and title numbers</li> <li>2. current and proposed drill holes, or polygons of target areas</li> <li>3. current and proposed tracks</li> <li>4. remediated areas</li> <li>5. camp sites</li> <li>6. sacred/heritage sites</li> </ol>

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		7. environmental constraints
8.6		Remediation Register (for existing Authorisations)
8.7		Photographs of remediation work
8.8		Radiation Management Plan (if applicable)

## Section 9 – Declaration

The Mining Management Plan must be endorsed by a senior representative of the company who has the appropriate level of authority to do so.

	Author	Reviewed by	Approved by
Date	07/09/2022	07/09/2022	07/09/2022
Name	Elke Hodge	Michael Green	James Fox
Signature			

**I Michael Green (*name of approving person*) Exploration Manager (*position title*) declare that I have the authority to make the commitments contained in this mining management plan on behalf of the company. To the best of my knowledge the information contained in this plan is true and correct and commit to undertake the works in accordance with the agreed minimum standards and all relevant Northern Territory and Commonwealth Government legislation.**



**SIGNATURE:** ..... ..

**DATE:** .....7 September 2022