EOP01 Aboriginal Heritage

POLARIS METALS PTY LTD

Objectives

- Prevent disturbance to Aboriginal Heritage sites unless approval has been given under Section 18 of the *Aboriginal Heritage Act (1972*).
- Ensure protection of known heritage sites outside of approved development footprint during the life of the Project.
- Ensure that all personnel are aware of the significance of Aboriginal Heritage and the associated responsibilities/liabilities under the Act.

Associated Documentation

1. EOP06 Clearing
2. EOP09 Site Disturbance Permit
3. EOP15 Vehicles and Driving

Management

- ENVF03 Site Disturbance Permit form shall be utilised prior to clearing any vegetation to ascertain whether Aboriginal Heritage surveys are required.
- Aboriginal Heritage surveys shall be undertaken in consultation with the appropriate communities, and the DIA Aboriginal Heritage Inquiry System (AHIS) will be searched prior to the disturbance of any land.
- Any sites identified during Aboriginal Heritage surveys or using the AHIS shall not be disturbed. These sites shall be marked, included on site plans and Traditional Owners and the Department of Indigenous Affairs notified.
- Wherever practical, Aboriginal sites shall be avoided; however should any disturbance be necessary, approval shall be sought under Section 18 of the *Aboriginal Heritage Act 1972*.
- Environmental inductions shall provide information on Aboriginal Heritage sites in the Project area, the importance of avoiding these sites and how to recognise Aboriginal Heritage sites in the field.
- Where practicable, Aboriginal Heritage sites shall be clearly demarcated in the field.
- If personnel unearth or discover something they deem to be of heritage significance, including human remains, they must stop work, clearly demarcate the site, report immediately to the Environmental Department (ED) and cease works until authorised to proceed.

Monitoring

- During clearing activities, personnel supervising the works and the ED shall ensure that the clearing remains within the design area.
- Routine monitoring of known Aboriginal Heritage sites shall be undertaken by the ED to ensure disturbance to known heritage sites has not occurred.

Reporting

- Any new suspected heritage sites shall be reported immediately to the site ED. They in turn shall report to the relevant Traditional Owners and the DIA.
- Unauthorised interference to identified Aboriginal sites of significance shall be reported using an Incident Report Form and the ED advised immediately. Relevant Traditional Owners and the Department of Indigenous Affairs shall be advised as appropriate.

EOP02 Fauna

POLARIS METALS PTY LTD

Objectives

Minimise impact on native fauna, particularly species of conservation significance, and associated habitat.

Associated Documentation

1. ENVR01 Fauna Interaction Register
2. EOP04 Waste Management
3. EOP06 Clearing
4. EOP07 Malleefowl Conservation
5. EOP09 Site Disturbance Permit
6. EOP15 Vehicles and Driving

Management

- All employees and contractors are required to participate in the site induction.
- Vehicles are prohibited to leave the designated project area footprint without the approval from an Environmental Department Polaris representative.
- All personnel to drive to conditions and will adhere to the speed restrictions applied to mine roads and tracks.
- Other than formal monitoring and fauna relocation undertaken by specialist consultants, native fauna will not be captured or intentionally handled.
- Appropriate training and licensing for fauna handling.
- Native fauna have right of way.
- Firearms and pets are prohibited on the leasehold.
- Do not feed native or feral animals and ensure foodstuffs are stored and disposed of appropriately to avoid scavenging.
- Vegetation clearing will be kept to a minimum and infrastructure located to preserve fauna habitat, particularly that of rare fauna.
- Road kills will be removed from the road to a minimum of 10m into the vegetation to avoid further impacts on fauna feeding on carcasses.
- Install fauna egress ramps on all excavations i.e. sumps and trenches.
- Ensure barriers to native fauna movement are to be kept to a minimum.
- All lined dams will be fenced and have appropriate fauna egress matting installed.
- Drill holes to be capped immediately with a concrete conical plug once drilling has ceased, to avoid falling and trapping of native fauna down holes.

Monitoring

- Fauna monitoring and survey programmes will be undertaken in accordance with guidance statements. These programmes will be implemented by licensed personnel.
- An environmental map will be located on notice boards and will be regularly updated to illustrate environmentally sensitive areas and associated buffers.

Reporting

- Observations of feral and significant species will be reported by all personnel to the Environmental Department (ED) and/or recorded on the Fauna Interaction Register located in office buildings.
- Any native animal injury or death is to be reported immediately to the ED or in their absence a Polaris representative within 24 hours of incident.
- If practicable, deceased listed fauna found in a good condition (fresh, intact and not bloodied) will be preserved (frozen). The ED will determine whether the DEC and or Western Australian Museum (WAM) requires the specimen.

EOP03 Hydrocarbon and Chemical Management

POLARIS METALS PTY LTD

Objectives

- Ensure hydrocarbons and chemicals are transported, stored, handled and disposed of according to regulations and site procedures.
- Prevent contamination of the surrounding environment, particularly soil and water resources.

Associated Documentation

1. MSDS
2. ENVR02 Hazard Materials Register
3. ENVR03 Spill Register
4. EOP04 Waste Management
5. ENVF08 Contractor Facilities Checklist
6. Polaris Incident Report

Management

Storage

- Storage of fuels and oils to comply with AS 1940 – 2004: The Storage and Handling of Flammable and Combustible Liquids.
- Hydrocarbons will be stored within a low permeability bund(s) designed to contain not less than 110% of the volume of the largest storage vessel, or at least 25% of the total volume of substances stored in the compound whichever is greater.
- The bund will be designed such that jetting from any storage vessel is contained within the compound.
- The capacity of the bund must be maintained at all times i.e. pump out trapped rain water.
- All hydrocarbons will be stored in their original containers. Storage vessels must be water proof and display clear labelling specific to their contents.
- Appropriate fire fighting equipment will be supplied and easily accessible at storage locations.
- Above ground pipe work for chemicals and hydrocarbons will be utilised whenever possible.

Spills

- Spill kits will be provided and personnel are to be familiar with their use. Absorbent and other spill response materials to be available in the field for quick response.
- Identify spilt substance and appropriate PPE requirement (Consult MSDS).
- If safe to do so, spills will be controlled at the source (e.g. if a valve is open, close it).
- Contain spill from spreading beyond the immediate area particularly to waterways and vegetation and cleaned up using absorbent materials.
- Contaminated soil to be excavated and disposed of into designated bins and/or bioremediation facility.
- Servicing and maintenance of vehicles, plant and equipment is to occur within designated service and wash down bays. Where this is not possible in the field drip trays will be used to collect spills.
- Runoff from workshop areas and other areas likely to contain minor quantities of hydrocarbons will be directed to sumps and oil traps to remove contaminants from the water.
- Drip trays or alternative spill capture devices will be installed at refuelling points.

Disposal

- Waste oil filters, rags, contaminated absorbent, containers and soil will be disposed in designated bins.
- Waste hydrocarbons will be stored in bunded storage containers and or holding tanks until collection and disposal offsite by licensed contractors.
- Oil water separators will be utilised at all wash down facilities.

Monitoring

- Routine inspections of hydrocarbon storage areas, go-lines, service bays and workshops will be undertaken by the Contractor and the Environmental Department (ED).
- Maintain Spill Kit Register to ensure spill kits remain fully stocked and checked regularly.
- Storage vessels and pipelines will be regularly checked for leaks or damage.

Reporting

- Hydrocarbon spills outside of bunded areas greater than 250L that have had a discernible environmental impact will be reported to the DEC within 24 hours of becoming aware of the incident.
- All spills to soil outside of bunded areas greater than 20 Litres or $2m^2$ in area are to be reported to the ED within 24 hours of the incident occurring with a completed Incident Report Form.
- All spills to soil outside of bunded areas less than 20 litres or $2m^2$ in area are to be reported using the Spill Register.

EOP04 Waste Management

POLARIS METALS PTY LTD

Objectives

- To operate a landfill site without impact to the environment.
- To maximise the recycling and reuse of wastes where practicable.
- Ensure waste management practices comply with current legislation, industry standards and waste disposal guidelines.

Associated Documentation

1. EOP03 Hydrocarbon and Chemical Management
2. ENVF09 Camp, Landfill and WWTF Checklist
3. Polaris Incident Report

Management

- Waste disposal sites will be operated in accordance with DEC licence and the Environmental Protection (Rural Landfill) Regulations 2002.
- Landfill requirements:
  - landfill must be clearly signposted to indicate the types of waste materials that can be disposed.
  - where practicable, landfill sites will be located within the footprints of waste dumps.
  - tipping area to be less than 20m in length.
  - stormwater is diverted away from the trench.
  - contaminated stormwater is retained on the landfill site.
  - waste is covered weekly with soil as a minimum.
  - no waste is to be burnt.
  - Environmental Department (ED) must be informed of any intention to relocate a landfill area.
  - routine maintenance of the landfill shall be the Contractors responsibility.
- Obey signage. Wastes that can be disposed to landfill include inert (building and construction material), domestic and putrescible (food, paper products, glass, aluminium, plastics) waste. Chemical containers must be triple rinsed prior to disposal. No hydrocarbon or chemical wastes can be disposed at the landfill.
- Tyre disposal is to be conducted in accordance with EP regulations.
- Sewage wastes will be managed in an approved Waste Water Treatment Facility (WWTF) in accordance with statutory legislation.
- All employees and contractors will comply with the following waste procedures:
  - littering will not be tolerated. Personnel caught littering intentionally will receive disciplinary action.
  - rubbish containers will be carried in all vehicles and provided at all work sites.
  - where foodstuffs are being discarded, covered receptacles will be used to keep animals out.
  - ensure waste materials are secure in the back of vehicles.
  - litter and debris collections around camp and offices will be undertaken at least monthly.
  - at the cessation of specific projects (e.g. exploration, construction) all waste materials will be removed from the project area.
- Unauthorised discharge/disposal of waste to the environment will be reported as an environmental incident.

Monitoring

Housekeeping inspections to be undertaken as required by site representative.

Reporting

- Incorrect waste disposal will be reported as an environmental incident within 24 hours by completing an Incident Report form. Investigations will be undertaken if required.
- The Contractor is responsible for reporting the findings of routine housekeeping inspections.

EOP05 Bushfire Management

POLARIS METALS PTY LTD

Objectives

- To minimise bushfire risk.
- Educate employees in fire prevention and response procedures.

Associated Documentation

1. EOP04 Waste Management
2. EOP06 Clearing
3. EOP15 Vehicles and Driving

Prevention

- All employees and contractors are required to participate in the site induction, which will provide an awareness of fire hazards and required management measures.
- Select site personnel will undergo training in fire prevention and suppression to form the basis of an emergency response team.
- Appropriate vehicles will carry fire fighting equipment and staff will be trained in its use.
- Hot work permits will be required for work that has the potential to create ignition sources.
- Fire safety and housekeeping inspections of plant and equipment will be undertaken.
- Local Government restricted fire periods and total fire bans will be adhered to.

Control

- Smoking will be restricted to approved locations only and cigarette butts must be disposed of into allocated container.
- Fire breaks will be constructed to protect site infrastructure.
- Camp fires are to be restricted to designated areas at the camp and subject to seasonal conditions (refer to FESA fire danger rating).
- Vehicles, mobile plant/equipment will be parked on cleared area as to prevent possible ignition of vegetation.
- Appropriately trained personnel to take immediate response to bushfire control.
- In the event a bushfire cannot be controlled and threatens mining infrastructure and personnel safety, the Resident Manager or Senior Geologist will initiate the bushfire contingency and emergency response plan.
- All vehicles will contain a fire extinguisher.

Monitoring

Regular housekeeping inspections and routine maintenance of fire fighting equipment and all equipment that may cause bushfires will be undertaken.

Reporting

- All personnel are responsible for reporting potential fire hazards to their supervisor.
- Any fire event is to be immediately reported to a Polaris representative and reported to the DMP and DEC within 24 hours.
- Any fire event needs to be reported as an incident within 24 hours using an incident report form.

EOP06 Clearing

POLARIS METALS PTY LTD

Objectives

- Minimise the area of land cleared in the implementation of the project.
- Prevent adverse impacts to vegetation outside of approved clearing/disturbance boundaries.
- Minimise impacts to Declared Rare and Priority flora.
- Enhance understanding of the status and management of Declared Rare and Priority flora species.

Associated Documentation

1. ENVR04 Site Disturbance Register
2. EOP01 Aboriginal Heritage
3. EOP02 Fauna
4. EOP09 Site Disturbance Permit
5. EOP10 Topsoil Management
6. EOP11 Weed Management
7. EOP12 Dust Management
8. EOP13 Borrow Pits

Management

- All areas to be cleared must be surveyed by qualified biological consultants.
- Any significant flora and/or fauna habitat identified during surveys will be clearly demarcated and avoided.
- ENVF03 Site Disturbance Permit will be utilised prior to the commencement of clearing works.
- A Threatened and Priority Flora Guidebook is available for all personnel to familiarise themselves with the Declared Rare and Priority flora species found in the project areas.
- Ensure the total area to be cleared has factored in stockpiling of topsoil and vegetation and access tracks.
- Personnel responsible for undertaking any clearing works must be inducted by the Environmental Department (ED) prior to commencing works.
- A representative from the ED shall be present at all times or where practicable during clearing works to guide operators around the clearing boundaries and ensure over clearing does not occur.
- Declared Rare and Priority Flora shall not be disturbed under any circumstances unless prior written approval has been sought by the relevant government agency. The location of these shall be provided prior to works.
- Mature trees shall be avoided where practicable.
- Vegetation shall be progressively cleared to prevent soil erosion, dust generation and weed introduction.
- Areas to be cleared must be clearly delineated on project drawings.
- Delineation of clearing boundaries shall involve:
    - boundaries of areas approved for clearing shall be identified using survey pegs and/or photo degradable flagging tape.
    - survey pegs/tape shall be placed on the approved boundary and shall remain in place once clearing has occurred so that over clearing can be identified.
    - where practicable, survey pegs/tape shall be located at intervals not exceeding 25 metres.
    - survey pegs/tape shall be positioned so as to be clearly visible from one marker to the next.
- Where practicable, vegetation and topsoil may be stripped and stockpiled together.
- All bags, grid pegs and general refuse are to be removed prior to clearing.
- Sites for stockpiling of vegetation are to be clearly defined prior to clearing.
- Vegetation shall be removed, transported and stockpiled in a way that does not damage vegetation or disturb soil outside of the clearing limits.
- Vegetation that has been cleared from areas with known rare or priority flora species shall be stockpiled separately from other stockpiles for use in rehabilitation. These stockpiles shall be appropriately signed.
- Trees shall be hand trimmed where only a portion of the tree shall be affected by works.

- Cleared vegetation shall be either stockpiled in an approved location or directly placed on areas to be rehabilitated as directed by the ED.
- Cleared vegetation shall be stockpiled to avoid any interference to surface drainage flows.
- All vehicles, plant and equipment are restricted to within the clearing limits.
- Burning of vegetation is prohibited.
- The ED shall maintain a record of Site Disturbance Permits.

Monitoring

- The Superintendent/Contract Manager and ED shall inspect operational areas to ensure:
  - Clearing Plans are followed.
  - Disturbance to surrounding vegetation and soil has been prevented.
  - Clearing limits are pegged/flagged adequately.
  - Only authorised clearing is undertaken.
  - Vegetation is removed and stockpiled in suitable locations or utilised in rehabilitation.

Reporting

- Clearing plans shall be submitted to the ED and then to the Resident Manager Operations (RM) or Exploration Manager (EM) for approval prior to the commencement of works.
- The area disturbed shall be determined by the Survey department and provided to the ED. This shall be recorded in the Internal Clearing Register.
- The area disturbed shall be reported to the DMP in the Annual Environmental Report.
- Clearing beyond approved clearing boundary and or limits shall be reported using an incident report form. Over clearing shall be reported to government authorities where the area has exceeded approved limits.
- Impacts to DRF or Priority Flora will be reported immediately to the ED who will then report to the DEC and relevant authorities.

EOP07 Malleefowl Conservation

POLARIS METALS PTY LTD

Objectives

- Protect existing populations of Malleefowl.
- Minimise impact on Malleefowl habitat within the project area.
- Enhance understanding of the conservation status and management of Malleefowl.

Associated Documentation

1. ENVR01 Fauna Interaction Register
2. EOP02 Fauna
3. EOP05 Bush Fire Management
4. EOP06 Clearing
5. Malleefowl Sighting Form

Management

- ENVF03 Site Disturbance Permit will be utilised prior to clearing any vegetation.
- Surveys for Malleefowl, Malleefowl mounds, and their habitat will be undertaken prior to ground disturbance.
- Impact to Malleefowl habitat will be restricted to those areas that are necessary for development and operation of the project.
- Fire threat to Malleefowl and their habitat will be reduced through appropriate fire prevention and management strategies.
- Personnel must not enter designated Malleefowl Conservation Zones without authority from the Environmental Department. These areas are appropriately sign posted and details of their location can be provided upon request.
- Malleefowl conservation and management information will be included in site Environmental Inductions.
- Road signs shall be erected to alert personnel when they are entering Malleefowl habitat.
- Malleefowl road kills shall be collected and provided to the Department of Environment and Conservation (DEC) or Malleefowl Preservation Group, which will in turn provide the carcass to appropriate authorities for research purposes. Studies on genetic material assist in the conservation of the species.
- All personnel shall adhere to speed restrictions applied to mine roads and tracks.

Monitoring

- Annual surveys will be conducted within the vicinity of mining operations to determine the distribution of Malleefowl populations and their numbers.
- The Environmental Department will monitor known mounds (active and inactive) particularly during the laying season.

Reporting

- Annual Environmental Reporting (AER) to the DEC and Department of Mines and Petroleum (DMP), shall provide information on the years monitoring activities and findings.
- All personnel are to report any sightings of Malleefowl and or their mounds either directly to the Environmental Department or recorded on the Fauna Interaction Register. Environmental Department to inform the DEC and Malleefowl Preservation Group of fauna interaction.

EOP08 Rehabilitation

POLARIS METALS PTY LTD

Objectives

Re-establish self-sustaining ecosystems compatible with surrounding undisturbed areas.

Associated Documentation

- Site specific rehabilitation plans.
- Conservation Management Plan (CMP)
- ENVR05 Rehabilitation Register
- EOP10 Topsoil Management
- EOP11 Weed Management

Management

- The Environmental Department (ED) will be consulted during the rehabilitation planning process to devise specific rehabilitation procedures for each case.
- Progressive rehabilitation will be undertaken so that the rate of rehabilitation is similar to the rate of mining.
- Visual impacts will be minimised by creating landforms which are compatible with the adjacent landscape.
- Overburden movement will be scheduled to create final slopes as soon as practicable.
- Overburden dump design and placement:
- to blend into existing undisturbed landforms, with a rounded footprint and using existing topography.
- create stable slopes, generally 20° or less and contour ripped.
- berms shall be back sloped with water retention cells where appropriate.
- maximise infiltration and provide for controlled surface runoff (back sloped berms, contour ripping).
- highly erodable or sulphidic wastes will be encapsulated within stable waste.
- Cleared vegetation and topsoil from the lower, mid and upper slopes of the original landscape will be replaced on the lower, mid and upper slopes of mine landforms to replicate pre disturbance conditions.
- Drill holes will be capped immediately with a concrete conical plug once drilling has ceased, to avoid falling and trapping of native fauna down holes.
- PVC collars will be cut and hole plugged at a minimum depth of 400mm below ground level, tamped, backfilled and mounded over with soil to encourage water to drain away from the drill hole.
- Tracks, drill pads, grid lines and cleared areas will be rehabilitated once their use is no longer required.
- Rubbish will be removed.
- Hydrocarbon spills prevented and removed.
- All drill samples will be disposed of in open sumps and backfill
- All open excavations with be backfilled
- Compacted surfaces will be ripped to approximately 300mm or greater should ground conditions and hydrology dictate.
- Disturbed areas will be covered with stockpiled topsoil/vegetation and contour ripped to avoid erosion Revegetation will incorporate propagated Rare and Priority Flora taxa where appropriate.
- Direct seeding with local provenance seed will be undertaken on areas displaying inadequate growth.
- Where practicable, natural drainage patterns will be reinstated.

Monitoring

- Vegetation and landform stability characteristics, including photo monitoring, of rehabilitated areas will be undertaken on an annual basis.
- Rehabilitated areas will be monitored for weed colonisation and any infestations rapidly treated.

Reporting

Rehabilitated Areas will be determined by the Survey Department and provided to the ED on a monthly basis or as completed, this will be recorded in the Rehabilitation Register. Status of rehabilitation and monitoring will be reported annually as part of the DMP Annual Environmental Report process.

EOP09 Site Disturbance Permit

POLARIS METALS PTY LTD

What is an Internal Clearing Permit?

An ENVF03 Site Disturbance Permit (SDP) discerns intent to disturb land or construct facilities and sets in motion a series of checks to ensure that appropriate personnel are informed of the intent and that all environmental aspects associated with the works have been thoroughly considered, any potential impacts managed and government approval sought when required. Works are not permitted to proceed without an approved SDP.

When should the SDP form be filled out?

An SDP shall be completed at the initial planning stage of the works, at least 1 month before the scheduled commencement of the works. It is important to be proactive in project planning and submission of the SDP to enable relevant regulatory approvals to be sought and prevent project delay.

Who fills out an SDP?

The SDP must be completed by the person who initiates, oversees or carries out the intent to clear.

Where is the SDP submitted?

Completed SDP forms, and attached documentation/spatial data, must be submitted to the Environmental Department (ED) for approval. They in turn will seek approval from the Resident Manager (RM), Exploration Manager (EM) or Project Manager (PM) where appropriate. Alternatively, forms may be submitted to the RM/EM/PM prior to submission to the ED however both signatures are required.

Process for completing the SDP (Please refer to the form):

1. Note the date and proposed date to commence works.
2. Tick the project area in which the work is to be completed.
3. Write the location and the proposed area of disturbance (ha) if any and on which tenement(s) the clearing will take place. If the area occurs on more than one tenement, ensure the area is divided accurately. This information will be supplied by the Survey Department (SD).
4. Only apply for the area that will be cleared immediately. Do not include future proposed clearing as plans and designs change. Submit an additional SDP as required.
5. Write a detailed explanation of the proposed activity, including a time frame for the commencement of works.
6. Include .DXF, .TAB or equivalent electronic file and detailed, clearly annotated and scaled site plan of the proposed works area with tenement boundaries as prepared by SD.
7. The applicant has the Project Manager sign the permit. The applicant and the Project Manager can be the same person.
8. Submit to the ED to complete their section of the form. ED shall review against environmental constraints e.g. significant fauna and flora, heritage areas.
9. All personnel must await receipt of an SDP approved by the RM/EM/PM before commencing works. Only the RM/EM/PM and a representative from the ED have the authority to sign the form.
10. Original SDP's must be returned to the ED for record keeping.

Additional Notes

- Please ensure that proactive planning in consultation with the ED is undertaken and SDP's are submitted well in advance of the proposed date to commence works, as delays may occur due to biological and heritage clearances and if government approval or further planning is required.
- An incident report must be generated for clearing that has commenced without an SDP.
- Undertaking works without government approval is treated seriously. Fines and even gaol terms may apply to the company or individuals if found guilty.
- Once the work has been completed, SD to confirm area and provide a DXF or equivalent file to ED to track clearing areas including as built infrastructure.

EOP10 Topsoil Management

POLARIS METALS PTY LTD

Objectives

Optimise the retention and viability of topsoil resources for future rehabilitation.

Associated Documentation

1. EOP06 Clearing
2. EOP08 Rehabilitation
3. EOP12 Weed Management

Management

- Sites for stockpiling topsoil are to be clearly defined in consultation with the Environmental Department prior to the commencement of stripping operations.
- Where practicable, topsoil with suitable characteristics (i.e. not skeletal, acidic, sodic, alkaline etc.) will be stripped to a minimum depth of 100mm.
- Where topsoil is not mixed with vegetation, stockpiles will be truck dumped no higher than 2m in height and not compacted.
- Where topsoil is stripped from areas containing Rare or Priority flora species, this will be stockpiled separately and clearly signposted.
- Topsoil will not be stripped when wet as this can lead to compaction and loss of soil structure when stockpiling.
- Topsoil will be removed, transported and stockpiled in a way that does not damage vegetation or disturb soil outside of the clearing limits.
- Where practicable, topsoil will be directly placed on rehabilitation. Where this is not possible it will be utilised within one year of stripping to prevent decline in soil structure, seed and nutrient viability.
- Revegetation of topsoil stockpiles will be encouraged after one year to minimise erosion, discourage weeds and maintain nutrient loadings.
- Stockpiled topsoil will be monitored for weed germination and weed control undertaken as necessary.
- Topsoil will be stockpiled to avoid any interference to the flow of surface water. Channels will be cut in topsoil where ponding is evident.

Note: the same principles apply should vegetation and topsoil be stripped and stockpiled together.

Monitoring

- Topsoil will be monitored for the colonisation of weed species and erosion.
- Ponding of water on the upslope side of stockpiles will be monitored.

Reporting

The area disturbed and volume of topsoil stripped will be recorded by the survey department and reported annually as part of the DMP AER process.

EOP11 Weed Management

POLARIS METALS PTY LTD

Objectives

No increase in the abundance or diversity of weeds in the project area.

Associated Documentation

1. Guide to introduced Flora
2. ENVF04 Weed Hygiene Certificate
3. EOP06 Clearing
4. EOP15 Vehicles and Driving

Management

- All employees and contractors are required to participate in the site induction, which will provide an awareness of weeds including risk species and response to weed infestation.
- Vegetation will be progressively cleared to prevent weed colonisation on disturbed ground.
- Any equipment or vehicle considered to have been working in a weed risk area will be cleaned down before mobilising to site.
- It is a requirement that all earthmoving, drilling and construction equipment or machinery that could potentially have collected weed seeds or matter must be clean of soil and vegetation matter and inspected prior to mobilisation for works. ENVF04 Weed Hygiene Certificate will be completed by the Contractor or works Supervisor and submitted to the Environmental Department upon arrival.
- The Environmental Department (ED) must be informed of the intent to mobilise equipment to site so it can be inspected upon arrival.
- Equipment will be turned away if they present to site dirty or without a Weed Hygiene Certificate.
- All vehicles and equipment are restricted to designated mine areas and roads unless undertaking mineral exploration or approval has been sought from the ED.
- Identification of weeds should be reported to the ED. The Weed Identification Handbook will enable personnel to identify suspected weeds in the field.
- Weed control programmes will be implemented when weed species are found.

Monitoring

The status of recorded weed populations will be monitored periodically during site environmental inspections.

Reporting

- Infestations of weeds or suspected weed species will be reported to the ED.
- Incidents relating to a failure in weed hygiene procedures will be reported as environmental incidents by completing an Incident Report Form.
- Status of weed species and control initiatives will be reported to the DMP in the AER.

EOP12 Dust Management

POLARIS METALS PTY LTD

Objectives

- Minimise dust generation from mining activities.
- Minimise risk of adverse impacts of dust on vegetation communities.

Associated Documentation

1. ENVF10 Water Cart Movement Form
2. EOP06 Clearing

Management

General Mining Activities

- Progressive clearing will be undertaken to minimise dust generation from exposed surfaces.
- Bare surfaces will be progressively rehabilitated as soon as possible.
- Water carts will be utilised for dust suppression. Where excessive dust cannot be effectively controlled, additional resources will be employed. If required, alternative methods of dust suppression could be investigated.
- Regular housekeeping will be undertaken to collect and remove earth material that may contribute to airborne dust.
- Product stockpiles will be monitored to determine whether there is significant dust generated and stabilised if necessary.
- Personnel must inform their supervisor if they deem there to be excessive levels of dust generated from mining activities.
- ENF10 Water Cart Movement Form must be completed by water cart operator every shift and submitted to Polaris Environmental Department (ED).

Designated Mine Roads and Water Storage Dams

- Vehicle speeds on site will be restricted to minimise dust generated.
- Overspray of saline water for mine road dust suppression will be prevented by spray bar and nozzle design and management of spray pressure.
- Water cart operators are to be present and continuously supervise refilling to prevent spillage due to overfilling.
- Prior to parking up, water tankers will be emptied with spray bars shut off.
- Water storage dams will be lined with an impermeable membrane to prevent seepage of saline groundwater.
- Water storage dams and standpipe fill point areas will be constructed to prevent ingress of surface water run-off.
- Spillage from standpipes will be directed back to water storage dams or to contained drainage on roads.
- For personnel and wildlife safety, access to water storage dams will be restricted by fencing.
- Water storage dams will have appropriate fauna egress matting installed.

Monitoring

- Dust emissions from mining activities are monitored via dust deposition gauges situated around the mining operation.
- Passive dust levels are monitored using particulate deposition gauges. Sample bottles are collected and sent to the laboratory for analysis every month.
- Monitoring of control and impact vegetation plots will be undertaken by the ED and qualified botanists on an annual basis.
- Health and vigour of remnant vegetation adjacent to the mining operations will be monitored to assess impacts from dust or saline water.
- General dust levels around site will be monitored by the ED.

Reporting

- Dust generation will be reported via the annual National Pollutant Inventory (NPI).
- Methods undertaken to control dust emissions will be reported in the DMP AER.

EOP13 Borrow Pits

POLARIS METALS PTY LTD

Objectives

- Minimise environmental impacts from the construction and operation of borrow pits.
- Successfully rehabilitate decommissioned borrow pits.

Associated Documentation

1. ENVR04 Site Disturbance Register
2. ENVR05 Rehabilitation Register
3. EOP06 Clearing
4. EOP08 Rehabilitation
5. ENVF07 Borrow Pit Inspection Checklist

Management

Planning, Construction and Operation

- ENVF03 Site Disturbance Permit will be utilised prior to clearing any vegetation.
- Construction plans detailing the location and design of borrow pits and costeans shall be approved by the Resident Manager Operations (RMO), Exploration Manager (EM) and the Environmental Department (ED).
- Costeans dug to determine quality and volume of borrow material shall be kept to no more than 3m wide and 5m in length and backfilled.
- Borrow pits shall be situated behind physical terrain and/or vegetation belts where possible, and a minimum vegetation buffer of 50m from the main haul road maintained.
- Trees and heavy stands of vegetation shall be avoided where practicable.
- Access to borrow pits shall be from a single track only.
- The distance of undisturbed ground between borrow pits shall be no less than 20m.
- Borrow pits shall not exceed 3ha in surface area.
- Where practicable, borrow pits will be located on slopes if possible and designed to allowing for self-drainage.
- The disturbance area of the borrow pit must allow for stockpiles of vegetation and topsoil.
- A minimum 100mm of topsoil shall be recovered and stockpiled on the outer edges of the borrow pit.
- Topsoil and vegetation shall be stockpiled together and shall not disturb fringing vegetation outside of the clearing limits.
- Diversion drains and upslope windrows shall be utilised to divert surface water flow from entering the pit causing ponding and erosion.

Rehabilitation

- Rehabilitation shall be undertaken progressively or as soon as possible after pit closure.
- All rubbish shall be removed from areas of the borrow pits.
- The sides of the pits shall be battered to a maximum slope of 3H:1V.
- Where practicable, topsoil/vegetation shall be spread evenly over the pit floor/edges and access track and then scarified to a minimum depth of 300mm using “S” ripping to slow water flow.
- Local provenance seed shall be broadcast for revegetation if necessary.

Monitoring

- Borrow pits will be inspected every six months by the ED utilising ENVF07 Borrow Pit Checklist.
- Photo monitoring of rehabilitation progress of decommissioned pits shall be undertaken annually.

Reporting

- The status of borrow pits will be reported in the biannual performance review.
- The areas cleared, areas rehabilitated and the success of rehabilitation shall be reported annually within the DMP AER.

EOP14 Groundwater

POLARIS METALS PTY LTD

Objectives

- Comply with DoW water licence conditions
- Ensure effective management of groundwater resources.
- Prevent adverse impacts on groundwater quality and quantity associated with mining activities.

Associated Documentation

1. DoW 26D licence to construct or alter well(s)
2. DoW 5C licence to take water.

Management

Supply and storage

- Extraction from the pit will not exceed approved DoW licence restrictions.
- Flow meters will be fitted to all production bores.
- Automated high level detection shut off devices will be fitted on all saline water pipelines discharging to water storage dams.
- Freeboard of 300mm will be maintained in water storage dams.
- All pipelines will be appropriately bunded or buried.
- Water cart operators are to be present and continuously supervise refilling to prevent spillage due to overfilling.
- Water storage dams will be lined with an impermeable membrane to prevent seepage.
- Water storage dams and standpipe fill point areas will be constructed to prevent ingress of surface water run-off.
- Spillage from standpipes will be directed back to water storage dams.
- For personnel and wildlife safety, access to water storage dams will be restricted by fencing.
- Water storage dams will have appropriate fauna egress matting installed.

Quality

- Equipment servicing will take place in the workshop areas whenever practicable. Field servicing will be undertaken in a manner which meets best practice field servicing guidelines.
- All chemicals stored or transported in the mining area will be in accordance with Dangerous Goods Regulations.
- Groundwater management will be undertaken in accordance with the DoW approved operating and monitoring strategy.

Monitoring

- Groundwater will be monitored in accordance with Licence requirements relevant to the site.

Reporting

Collated ground water monitoring data will be reported in accordance with licence conditions.

EOP15 Vehicles and Driving

POLARIS METALS PTY LTD

Objectives

- Define responsible driving practices.
- Minimise adverse impact to the environment as a result of driving on and off road.

Associated Documentation

1. EOP05 Bush Fire Management
2. EOP11 Weed Management
3. EOP02 Fauna Management
4. Polaris Incident Report

Management

- Prior to exploration activities:
  - all personnel and contractors are required to participate in the site induction
  - undertake a pre-start vehicle check
- During ground disturbance activities and exploration drilling:
  - field parties should compose of a minimum of 2 persons
  - vehicles will not exceed 40km while driving along access tracks and grid-lines
  - vehicles will not exceed 80km on major gravel roads
  - vehicles will not leave the approved project area footprint
  - tracks in Conservation Park will be assessed for use after rainfall events to determine safe passage and reduce adverse damage to tracks. A determination will be made by the Exploration Manager or Environmental Manager when tracks can be used.
  - always drive to conditions.
- All vehicles must contain:
  - medic kit
  - spare wheel(s) – remote work x 2
  - approve vehicle jack (consult manufacturer operating manual)
  - sufficient water for trip and unplanned delays
  - effective communication (2 way radio and / or satellite phone)
  - GPS
  - fire extinguisher
  - rollbar for all off-road driving
- All vehicles must be roadworthy, licenced and regularly maintained to be in good working order and checked for hydrocarbon leaks and vegetative matter build up.

Monitoring

Track and road conditions to be monitored for deterioration.

Reporting

- Any native animal injury/death will be reported immediately as an environmental incident to the Environmental Department (ED).
- Disturbance outside approved footprint to be reported as an environmental incident.
- Track degradation in Conservation Park to be reported to ED.
- The DEC will be consulted prior to any track remediation works within the Conservation Park.