access
environmental licences & permits

Permit[1]

Environmental Protection Act 1994

Environmental Authority (Mining Lease) Non-Code Compliant Level 2 Mining Project

Permit[1] Number: MIN203579612

*This permit is issued by the administering authority to authorise the activity specified in the permit in accordance with the conditions specified in the permit. This decision was made pursuant to Section **292(b)** of the Environmental Protection Act 1994.*

Takes Effect From: ***28 September 2012***

Details

Permit Holder(s)	Name	Address
Principal Holder	SPINIFEX MINES Pty Ltd	Suite 2, Level 24, 56 Pitt Street Sydney NSW 2000

Activity(s)	Location(s)
Mining activity - Level 2 mining lease projects	ML2709 ML2713 ML2718 ML2719

The anniversary date of the environmental authority is *30 October*.

The environmental authority is subject to the attached conditions of approval.

Ingrid Fomiatti Minnesma
Delegate of the Administering Authority
Environmental Protection Act 1994
28-SEPTEMBER-2012

[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the administering authority of the *Environmental Protection Act 1994*.

Environmental Authority (Mining Lease) Non-Code Compliant Level 2 Mining Project
Permit[1] Number: MIN200925609

This environmental authority consists of the following schedules of conditions relevant to various issues:

General Conditions

(G1) The conditions of this environmental authority are in force until a surrender of the authority is accepted pursuant to the *Environmental Protection Act 1994*. The conditions apply unless an amendment is approved pursuant to the *Environmental Protection Act 1994*.

(G2) The environmental authority holder is to give the administering authority a financial assurance in the amount and form and at a time required by the administering authority.

(G3) The environmental authority holder must comply with each of the Standard Environmental Conditions contained in the *Code of Environmental Compliance for Mining Lease Projects (January 2001)*.

(G4) The holder of the environmental authority to operate in accordance with the operational requirements set out in Appendix (A) to the Cyanide Use on Standard Mining Projects Policy

(G5) The holder of the environmental authority to operate in accordance with the operational requirements set out in Schedule A of the authority – Conditions for Acid Leach (In Vat) Treatment of Copper Ore.

(G6) All exploration activities carried out on the mining leases must comply with each of the Standard Environmental Conditions contained in the most recent version of the Code of Environmental Compliance for Exploration and Mineral Development Projects. To the extent that any Standard Environmental Condition is inconsistent with a provision of this authority, the provision of this authority will prevail.

(G7) The holder of this environmental authority must not undertake any mining or exploration activities within 250m of a Category B Sensitive Area. This condition overrides condition 13 of the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

(G8) The holder of the environmental authority must not release contaminants to air, water or land that has the potential to impact on a Category B Sensitive Area.

MIN203579612 - SCHEDULE A

CONDITIONS FOR ACID LEACH (IN VAT) TREATMENT OF COPPER ORE

Appendix A

OPERATIONAL REQUIREMENTS FOR A STANDARD ENVIRONMENTAL AUTHORITY (MINING LEASE) FOR A SMALL HARD ROCK COPPER MINE USING ACID LEACH (IN VAT) TEATMENT OF COPPER ORE.

1 Design and installation

1.1 Location of Processing Plant

- Locate the acid treatment processing plant on a stable site not subject to flooding.
- The chemical processing plant must be within an impermeable bunded area that can contain a spill volume of the processing tanks plus 25%.
- All pumps and pipelines outside the bunded area must be located within the catchment of the control dam.

1.2 Storage of Chemicals

- Locate the acid storage facility within a bunded area, on stable ground not subject to flooding..
- Ensure the acid storage facility is fully enclosed, water proof and secure.

1.3 Hazardous waste (tailings) dams

- Construct hazardous waste dam(s) in accordance with the Code. (Refer to Appendix B page 47 of the Code; Design, Construction, Operation and Maintenance Criteria for Hazardous Waste Dams).
- Locate hazardous waste dam(s), on stable ground not subject to flooding, and within the catchment of the control dam.
- Install and maintain warning signage around the perimeter of hazardous waste dams.
- Prevent livestock and native animals from accessing hazardous waste dams(s).

1.4 Control dam

- Construct a control dam so that the entire acid process, including treatment plant, handling and storage areas, solid waste disposal areas and hazardous waste dams(s) are contained within its catchment.
- Protect the catchment of the control dam from storm water ingress from areas not involved in the handling, storage, processing or disposal of acid. For example, construct diversion drains around the perimeter of the catchment of the control dam, to prevent uncontaminated storm water from running on to the catchment of the control dam. *Remember, the smaller the catchment, the smaller control dam required to contain the design storm.*
- Locate the spillage control dam(s), on stable ground not subject to flooding.
- Monitoring bores or trench must be installed below the dam wall.
- The Design Storage Allowance (DSA) at 1st November must be calculated for the appropriate risk level using the method described in the *Technical Guideline for Environmental Management in the Mining Industry.*

1.5 Solid waste disposal

- If it is intended to dispose or store solid wastes, being treated material from the leach circuit at the mine site:
    - Line the area with an impermeable liner.
    - Protect the area from stormwater ingress.
    - Detoxify residual acid levels in the material

1.6 Emergency response

- Develop procedures for handling emergencies relating to accidental releases of acid and acid spills. Include procedures for:
  - detoxification, clean up and rehabilitation of spillage sites, and
  - notifying mine personel, emergency services, local communities and government departments.

1.7 Leachate(Pregnant) Ponds

- Construct leachate ponds as *Turkey Nest Dams (ie natural storm water runoff is excluded from the ponded areas)* and locate ponds on stable ground not subject to flooding within the catchment of the control dam.
- The Design Storage Allowance (DSA) at 1st November must be calculated for the appropriate risk level using the method described in the *Technical Guideline for Environmental Management in the Mining Industry.*
- Line leachate ponds with an impermeable liner ($<10^{-9}$ m/s) and protect the liner against damage.
- Install monitoring bores or trenches around the pond to detect acid leakage.
- Install and maintain warning signage around the perimeter of ponds.
- Prevent livestock and native animals from accessing the ponds.

2 Operation

2.1 Storage of Chemicals

- A stockpile of chemicals sufficient to neutralise acid contained in the hazardous waste dams, processing circuit and storage, must be maintained on the mine site at all times.
- Keep the acid storage facility locked, except when accessing the facility.
- Restrict access to the acid storage facility to authorised personel

2.2 Hazardous waste (tailings) dams and Leachate (Pregnant) Ponds

- If the Mandatory Reporting Level (MRL) is exceeded, advise the administering authority as soon as practicable. *Note : the Mandatory Reporting Level (MRL) is when the freeboard level is greater than the level required to store a storm greater than a 72 hour storm with an annual excedence probability (AEP) of 0.01.*
- Conduct weekly inspections of hazardous waste dams and leachate (pregnant) ponds for signs of acid leakage. If leakage is detected:-
  - contain leakage within the catchment of the control dam ,
  - report any leakage to the administering authority within 24 hrs of detection .
- Prevent the access of livestock and wildlife to the hazardous waste dam(s) and leachate (pregnant) ponds.
- Report all deaths of livestock or native animals to the administering authority within 24 hours of occurrence.

2.3 Control dam

- If the Mandatory Reporting Level (MRL) is exceeded, advise the administering authority as soon as practicable. *Note : the Mandatory Reporting Level (MRL) is when the freeboard level is less than the level required to store the stormwater from a storm greater than a 72 hour storm with an AEP of 0.01.*
- Discharge is not permitted, except if the discharge is due to a storm event greater than a 72 hour storm with an AEP of 0.01. Discharge waters must not be below pH 5.0
- Notify the administering authority of all discharges within 24 hours of discharge.

2.4 Spillages and emergency response

- If an acid spill occurs and is contained within the catchment of the control dam:
  - Clean up spill and remediate spillage areas as soon as practicable.
  - Neutralise or recycle the spilt acid as soon as practicable.
  - Notify the administering authority within 24 hours of spill occuring.
  - Analyse groundwater for pH.
- If water with a pH below 5.0 is accidentally released from the catchment of the control dam:
  - Notify downstream residents and administering authority immediately.
  - Analyse downstream waters and groundwater for decrease in pH.

2.5 Monitoring

- Determine the background chemical profile of receiving waters prior to commencing mining activties.
- Monitor all discharges from dams for pH value
- Monitor on monthly basis:
  - Water quality in hazardous waste dam.
  - Seepage from hazardous waste dam
  - Seepage from control dam
  - Seepage from solid waste storage or disposal areas

Include in analysis:
- pH
- conductivity
- Total dissolved solids

Monitor ground water every 3 months. Include in analysis:
- pH
- conductivity
- Nitrates
- Sulfates

If acid concentrations exceed the specified limits in hazardous waste (tailings dam) pond notify the EPA as soon as possible.
If acid concentrations exceed the specified limits in releases notify the EPA immediately.
Keep records of monitoring and analysis in a safe location for viewing by Officers of the EPA upon request.

2.6 Training
- All personel involved in cyanide treatment, storage, handling, disposal, or management of hazardous waste dam or control dam should be given adequate training in acidmanagement. This should include safe handling, first aid and emergency response. Personel should also be made aware of the requirements of this authority.

3 Rehabilitation

3.1 Detoxification
- Detoxify all acid facilities and associated infrastructure.

3.2 Residual cyanide
If residual acid in a dam is:-
- More than 6.0 pH, rehabilitate according to the standard rehabilitation conditions of the Code.
- Less than 6.0 pH, rehabilitate according to the decommissioning requirements for hazardous waste dams in the Code.

3.3 Monitoring (post mining)
- Monitoring may cease at relinquishment of tenure, provided that cyanide concentrations in surface waters and groundwaters are not less than 6.0 pH.