
Environmental Guidelines 2008 Edition

Ramu Nickel Project Environmental Guidelines Construction Phase

This Guideline is produced by Ramu NiCo Management (RNML) Ltd (RNML) as a part of its commitment to responsible Environmental Management for Ramu Nickel Project. The Guidelines set out the environmental standards that RNML expects its work force to adhere to as they carry out their day to day activities whilst working for RNML, for the construction phase and into pre-operational phase.

RNML will provide its staff with basic training and awareness in acceptable environmental techniques and this guideline is a continuation of that process.

All RNML employees (including its Contractors) are expected to follow this attached Code of Practice as they carry out their daily tasks.

1. Water Courses

Never put any waste into watercourses. Rubbish (trees, soil, building and road making wastes) can block or damage watercourses, pollute the water and affect communities downstream.

2. Neighbors

Think about your work neighbors. They are trying to live normal lives and sometimes our activities can upset them if we are not careful enough. Dust can get into their food, laundry and water supplies, machines can hurt their children and pets, noise can disturb people. Usually neighbors will realize that our work will help them and the local community and make room for us; but we have to think of their needs as well.

3. Other Road Users

As we work on roads, remember that other people need to use the road as well. Do not leave equipment in places where accidents could occur. Control dust and allow motorists to pass through the road works at regular times. These practices reduce social tension with the local people.

4. Fires

Do not light fires; unless told to do so by a supervisor. Fires can get out of control and destroy or damage other people's property.

5. Dust

Dust is a worry for everybody. It gets in our eyes, nose, mouth and clothes. It makes laundry and houses dirty. On the road it makes truck movements hard to see and can lead to accidents. Dust needs to be covered with water to minimize these problems.

6. Noise

Noise can give people headaches and wake them up when sleeping. It can frighten wildlife away. Noise has to be kept at minimal. Make sure that all equipments have good mufflers at all times. Do not make much noise during night time when people are resting.

7. Rubbish

Always put all rubbish (soft drink cans, wrappers, paper plastic etc) in drums provided. Do not litter.

8. Tidy

Always be tidy, tidy all tools away neatly, clear your rubbish, do not leave open drums, put the lids on them.

9. Wildlife

Sometimes our work can disturb wildlife, their nests and their homes. We can also damage trees. Always try not to harm wildlife.

10. Report to Supervisor

Report to your supervisor immediately if you notice any tangible danger to the environment caused by the operations of RNML or its Contractors .

Ramu Nickel Project Environmental Issues and Mitigation Measures Construction Phase

1. Dust

At the construction sites, dust is often a problem caused by wind or by traffic. Dust is a nuisance and can affect your eyes, nose, throat, and can have a bad impact on local gardens, laundry, traffic movement, etc.

If dust becomes a problem then report this immediately to your supervisor so that water can be applied onto the site to minimize dust. Vehicle movements may need to be limited in order to reduce dust as well. All vehicles at the project sites must move at 40km/ h or below to reduce dust.



Dust control by watering provides immediate protection, but water must be applied periodically throughout dry periods.

2. Noise

Noise can be expected from trucks, machinery, construction equipment and tools. Noise can be a problem to workers, observers, the surrounding communities and wildlife. All machinery, vehicles and plants must be operated with mufflers or silencers where appropriate and maintained as needed. Noise generation must be avoided at night times when people are relaxing or sleep.

3. Litter

Litter such as bottles, food drink cans, plastic wrappers, plastic bags, and food waste can cause safety, health, visual, and pest hazard.

All litter must be placed in specially recommended containers provided for the different waste types. Site clean ups must be carried out as required by the Site Environmental Personnel. Environmental awareness and training have now been given to workers. If not too sure about litter manners, seek assistance from the Site Environmental Personnel

4. Building Wastes

Timber off-cuts, paper, cardboard, sawdust, waste concrete, wire & metal straps, containers, drums and paint cans are all building wastes. These wastes are a problem to public health and make the work site untidy, and pose danger

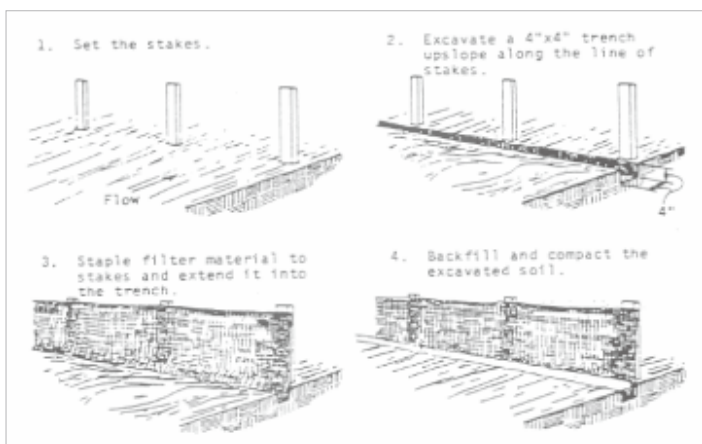
All building wastes have to be collected and put in separate piles for each type. Some can be recycled, some will be buried and the rest can be sent to the central dump.

5. Soil Erosion

Heavy rain can easily erode the top loose soils found around the mine site, pipeline and refinery site..

These soils can then occupy drainages that would cause overflow resulting in damages to gardens, roads and sometimes houses as well.

To stop soil erosion, land clearing must be limited wherever possible



Construction of a silt fence for soil erosion of top soil

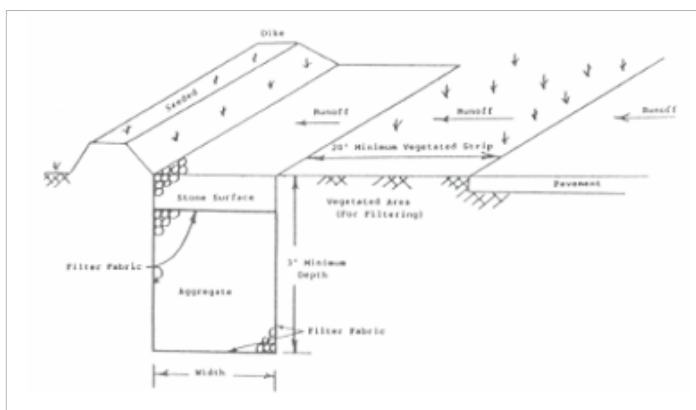
and all water running on surface soil, in drains or our land must be carefully controlled to stop erosion. RNML Environmental Personnel on site is to control erosion. If you see erosion problems then report to him/ her immediately.



Construction road stabilization improves work efficiency and prevents erosion.

6. Stormwater

Stormwater causes erosion on soil. All stormwater on earth has to be carefully managed to see that it does not cause erosion. Sometimes concrete and timber culverts have to be built to control stormwater going down slopes.



Pretreatment of runoff prior to exfiltration trench.

7. Topsoil

Topsoil is used for site rehabilitation and grass growth because it is full of plant food. Topsoil comes from site clearing activities and it must be saved on site. If topsoil is not saved it will be hard to allow the grass grow back properly.

Topsoil must always be saved carefully so it can be used for amenity planting or rehabilitation at the end of the development program.

8. Workshop Wastes

Workshop Wastes include waste oil, fuel, tires, batteries, fuel filters, used parts and packaging material. The oil and fuel can enter watercourses and is toxic to aquatic life. The waste oil can also contaminate groundwater.

To minimize the workshop wastes and reduce environmental impacts, all vehicles and machinery are to be refueled and maintained at the designated workshop area as much as possible. All waste fuel, oil, grease batteries, tires, fuel filters, discarded parts, etc must be saved and stored away from drainage, and care taken in disposal.

9. Sewage Disposal

Sewage is a pollutant with serious health risks. Toilets are installed for all workers to use. Any damage done to septic tanks or other related problems must be reported to the Site Environmental Engineer immediately. These toilets must be used where possible.

All sewage and waste to be diverted to the treatment plant installed on site.

10. Dead Trees & Grasses

Waste vegetation can be expected during the initial site clearing, which can lead to risk of erosion, damage to watercourses and disturbance to wildlife if care is not taken to limit clearing and disposal of vegetation.

Any problems related to disposal of vegetation must be reported to the Site Environmental Engineer. Vegetation must be disposed off carefully and never to a watercourse.

11. Site Rehabilitation

The worksite has to be cleaned up at the end of each step. Ensure that clean up is on time and done thoroughly. Rehabilitation to be undertaken at mine site, pipeline site, quarry sites, access roads, building construction sites, stockpiles, etc. The saved topsoil will be used for rehabilitation. The planting schedule, site preparation and planting, and management are all under RNML responsibilities. RNML has an Environmental Engineer who can provide any expertise needed.

During construction phase, it is important that all RNML employees reduce environmental impacts as much as possible. The Site Environmental Engineer is responsible for monitoring and reporting to MCC Senior Management that all Environmental procedures are properly followed. If in doubt seek advice from your supervisor.