ENVIRONMENT MANAGEMENT PLAN

For Amendments to Category B Sensitive Area

Directors Notes Environmental Plan

- Mining Lease
- Machinery
- Process Plant
- Open Cut Mine
- Site Facility
- Site Water Ponds
- Parking, Haul and Access Roads
- Stock Piles
- Regeneration

Environmental Management
Directors Notes

I Ross Pearl the director of Pearl Mining would like to lodge this Assessment for your approvals process for an Amendment to ML70397 to operate within the buffer area but not in a Category B Sensitive Area.

Also for the Matters of State Environmental Significant Area for ML70397 My Operating Plan will show for this operation I will not be operating Close to this area for a significant amount of years and only may require an access road at a later stage though the MSES Area for my operation. If this is suitable my operation would significantly reduce the Environmental impact on these Areas.

Environmental Risks on this site include Air Pollution from operating Machinery, Dust Pollution from Process Plant and Machinery, Machinery Failures, Spills, Noise and Waste all to be addressed in this Assessment.

Area of Disturbance total per annum 10’000sqm (1 Hectare) Includes Open Pit, Holding Ponds, Process Plant, Stockpiles, Haul and Access Roads, Parking Areas and Facilities.

I thank you for your time to assess this Plan and hope that it will meet with your requirements, if you require additional information please don’t hesitate to Contact me Thank you.

Kind Regards

Ross Andrew Pearl
Mining Lease

Mining Lease: ML70397

Area: 30.5ha (75acres)
Mining Lease

Mining Lease: ML70397

Startup Site

Site Facilities, Process Plant, Holding and Settling Pond.
Mining Lease

Mining Lease: ML70397

Open Cut Plan

Estimate Running: 20+ Years

Access Road through MSES Area Towards later Stages of the Operation if required
Mining Lease

Mining Lease: ML70397

Permanent Site

Site Facilities, Process Plant, Dewatering Screens, Centrifugal Separators and Reusable micron Filters, Holding Pond only used to top up Process Tank.
Machinery

Machinery: Caterpillar 330L
Asset Number: PM-01
Bucket: 1.7m³ (2.5ton)
Fuel Tank: 618lt
Engine Transmission and Hydraulic Oil Tanks: 655lt
Water Coolant: 38lt
Diesel Fuel Burn per Hour Estimate: 16.2lts
Fire Safety: 2 x 9kg Co² Extinguisher
Spill Kit: Portable Spill Management Kit
Noise Level: 74Db
Machinery

Machinery: Caterpillar 950G

Asset Number: PM-01

Bucket: 4.0m³ (6.0ton)

Fuel Tank: 330lt

Engine Transmission and Hydraulic Oil Tanks: 246lt

Water Coolant: 42lt

Diesel Fuel Burn per Hour Estimate: 11.1lts

Fire Safety: 9kg Co2 Extinguisher

Spill Kit: Portable Spill Management Kit

Noise Level: 74Db
Machinery

Machinery: GWM V240 4X2 Service Ute

Service Ute: 600lt Diesel Tank, 600lt Firefighting, Water Suppression tank and Air/Gen/Weld

Fire Safety: 9kg Co2 Extinguisher

Spill Kit: Portable Spill Management Kit

Fuel: 55lt Unleaded Petrol

Fuel Burn per Hour Estimate: 9.5lt
Process Plant

Process Plant: RGA 2.4 x 4.2mt Grizzly Vibrating Screen, Quad Drum Trommell, Wet Sluice, Dry Conveyor

Water Recycling: Dewatering Screens, Filter system, Water Process Tanks and Pumps

Noise Level: 84Db

Generator: 62.5kva

Fuel: 150lt

Fuel Burn per Hour Estimate: 6.5lt

Oil: 13lt

Noise Level: 65db

Disturbance Area: 1’100sqm of 10’000sqm
**Process Plant**

1. Fixed Grizzly Screen -50mm
2. Vibrating Screen -7mm
3. Underpans and Rubber Matting for Dust Reduction
4. Quad Drum Trommels Light and Heavy Material Separation Wet or Dry
5. Dry Material Conveyed to Holding Stockpile for Wet Sluicing when available
6. Wet Sluice Box Secondary Heavy Catchment to Settling Pond
7. +7 to -50 Conveyed for Detection then Stockpiled for Backfill

**Notes:**

1. No Chemicals to be used in Process
2. Blower fans for Dry Operation now removed (Significant Dust Reduction)
3. Rubber Vibrating Springs Used to Reduce Noise Pollution
4. Top Soil to be Processed Separate and Sent to Top Soil Stockpile
5. Alluvial Soil to be Processed and sent to backfill Stockpile
6. Settle Pond Material to be Excavated and Sent to Backfill Stockpile
7. +7 to -50mm to be used on Haul and Site Access Roads to Reduce Dust, watered when available.

**Future:**

1. Dewatering Screen introduced
2. Water Recycling Tanks to be Installed
3. Centrifugal Separators
4. Non Chemical Water filter system Reusable

**Notes:**

1. Significant Reduction in water loss during processing
2. Water Pumped from Holding Pond to top up Process Tanks Only
3. No Requirement for Settling Pond
Open Cut Mine

Open Cut Pit 1a
25.0mt x 100.0mt x 12.0mt
Alluvial Material: 45’000 tons

Open Cut Pit 1b
25.0mt x 100.0mt x 12.0mt
Alluvial Material: 45’000 tons

Disturbance Area: 5’000sqm of 10’000sqm
Site Facility

Site Facility: 4 x 20ft Containers, 2 Room Accommodations, Kitchen, Bath, Site Office and Workshop

2 x 9.0 x 6.0mt Steel Covers, 2 x 35kl Water Tanks, 3kl Septic System and Trench.

Generator: 37.5kva

Fuel: 100lt

Fuel Burn per Hour Estimate: 5.0lt

Oil: 13lt

Noise: 64db

Disturbance Area: 800sqm of 10’000sqm
Site Water Ponds

**Holding Pond:**

Length: 35.0mt  
Width: 25.0mt  
Depth: 4.0mt  
Pumps: 2 x Davey Submersible DT75KZN – Electrical 7.5kw each run From Main Generator

**Settling Pond:**

Length: 35.0mt  
Width: 5.0mt  
Depth: 2.0mt

Disturbance Area: 1’100sqm of 10’000sqm
Parking, Haul and Access Roads

Visitor Parking:
- Length: 6.0mt
- Width: 10.0mt

Haul Road
- Width: 6.0mt
- Length: 90mt

Access Road
- Width: 4.0mt
- Length: 90mt

Disturbance Area: 1’000sqm of 10’000sqm
Stock Piles

Top Cover: 100.0x3.0mt

Top Soil: 100.0x3.0mt

Alluvial Soils: 100.0x4.0mt

Disturbance Area: 1’000sqm of 10’000sqm
Regeneration

Progressive Regeneration Plan: Steps to be taken during Operations

Site Facilities

1. Site Facilities, Process Plant, Ponds and Roads, Pre Site Photos and Layout Plan
2. Clear Top Cover and Stock pile for Germination
3. Level Ground and Stock Pile Top Soil
4. Water and Settling Ponds Construction, Alluvial Soils for Processing and Stockpiling

Open Cut 1

1. Open Pit 1a Startup Pre Site Photo’s
2. Prepare Open Cut 1a 25.0x100.0mt Peg out and Log
3. Tree and Shrub Excavation and Replant for Regeneration
4. Top Cover Stockpiled for Germination
5. Alluvial Top Soil Removal and Process then Stockpiled
6. Alluvial Soil Processed and Stockpiled for Open Cut Back Fill
7. Completion of Open Cut Back Fill Alluvial Soil and Compact using CAT 330L Excavator
8. Back fill Top Soil and water down, Pneumatic Seeding and Fertilizing to Requirements
9. Soaker Hose Irrigation if water available, Replant Shrubs and Trees as Pre photo’s
10. Fence Regenerated Area for Protection until Area sustainable
11. Monitor Regrowth and possible Subsidence seek assistance if required.

Open Cut 1b

1. Open Pit 1b 25.0x100.0mt, Steps Taken as Open Cut 1a

Open Cut 2

1. Open Pit 2a 25.0x100.0mt, Seek Approval for Progressive Mining
2. Steps taken as Open Cut 1

Open Cut 2b

3. Open Pit 1b 25.0x100.0mt, Steps Taken as Open Cut 1a
Environmental Management

Based on Production Output:

Tonnage per Annum Estimate: 90’000 Tons

Diesel Fuel Burn per annum: 60’000lt

Unleaded Petrol Fuel Burn per annum: 1’500lt

Environmental Risk Management:

Category B Area: Operating up to, but not within Category B Area’s Located on ML70397,

MSES Area: Operating up to, but not within MSES Area’s Located on ML70397,

At all Times Environmental Risk Assessment to be undertaken as part and throughout daily Briefs

As any Environmental Risk Occurs, Risk to be logged From Start to Finish of Occurrence and procedures

Put in place to reduce further Environmental Risks

Total Diesel and ULP Fuel on site include Machines and Stored: 1’750lt

Total Engine and Hydraulic Oils on site Includes Machines and Stored: 1’750lt

Total Water Coolant on site Includes Machines and Stored: 150lt

Environmental Waste Management:

All Waste to be removed from site and sent to refuge center for recycling or disposal

All Contaminated Oil from Equipment Failures and Spills to be sent to refuge center for recycling

Any Unnecessary Equipment on site to be sold or recycled.
Environmental Management

Environmental Noise Management:

**Mine Operating**: Noise Impact Times are from 6:00am to 6:00pm

- Caterpillar 330L Excavator Operating in Open Pit @ 7mt 74db
- Caterpillar 950G Loader Operating around Pit and Process Plant @ 7mt 74db
- Agrison 62.5kva Genset Operating at Process Plant @ 7mt 65db
- RGA Process Plant with Rubber Springs @ 7mt 84db

**Site Facility**: Noise Impact Times are from 5:00pm to 6:00am

- Agrison 37.5kva Genset Operating Site Facility @ 7mt 64db

Environmental Spill Management

Environment Portable Spill Kits to be installed in Excavator, Loader and Service Ute

- Large Spill Kit with Portable Bund place in Site Workshop

- Contaminated Oils will be sent to Oil Refuge Centre for recycling

Environmental Air Pollution Management

Every Step to Reduce Air Pollution which includes regular Machinery Maintenance to ensure operating at factory requirements, should keep air Pollution from Diesel and ULP Fuel Burn to a minimum.

Environmental Dust Pollution Management

The removal of Dry Blower Fans from the original Process plant will significantly reduce dust pollution from the process plant and the Use of +7 to -50mm Material on Haul and Access Road will reduce dust and when available the use of Water Suppression will significantly Reduce Dust Pollution on this Site.
Environmental Management

Environmental Noise Management:

**Mine Operating:** Noise Impact Times are from 6:00am to 6:00pm
- Caterpillar 330L Excavator Operating in Open Pit @ 7mt 74db
- Caterpillar 950G Loader Operating around Pit and Process Plant @ 7mt 74db
- Agrison 62.5kva Genset Operating at Process Plant @ 7mt 65db
- RGA Process Plant with Rubber Springs @ 7mt 84db

**Site Facility:** Noise Impact Times are from 5:00pm to 6:00am
- Agrison 37.5kva Genset Operating Site Facility @ 7mt 64db

Environmental Spill Management

Environment Portable Spill Kits to be installed in Excavator, Loader and Service Ute

Large Spill Kit with Portable Bund placed in Site Workshop

Contaminated Soils will be sent to Oil Refuge Centre for Recycling

Future:

Enclosed Silent Power Generators to be installed in 40ft Container with sound proofing and Double Bunded Fuel Cell will significantly reduce Noise Pollution outside operating hours.

A water Truck to be purchased for Dust Suppression.

When Viable New improved and Economical Machinery to be purchased to further reduce Air Pollution and Fuel Burn

Introduction of Process Tanks, Dewatering Screens, Centrifugal Separators and Micron Filters will improve Water Recycling on Site