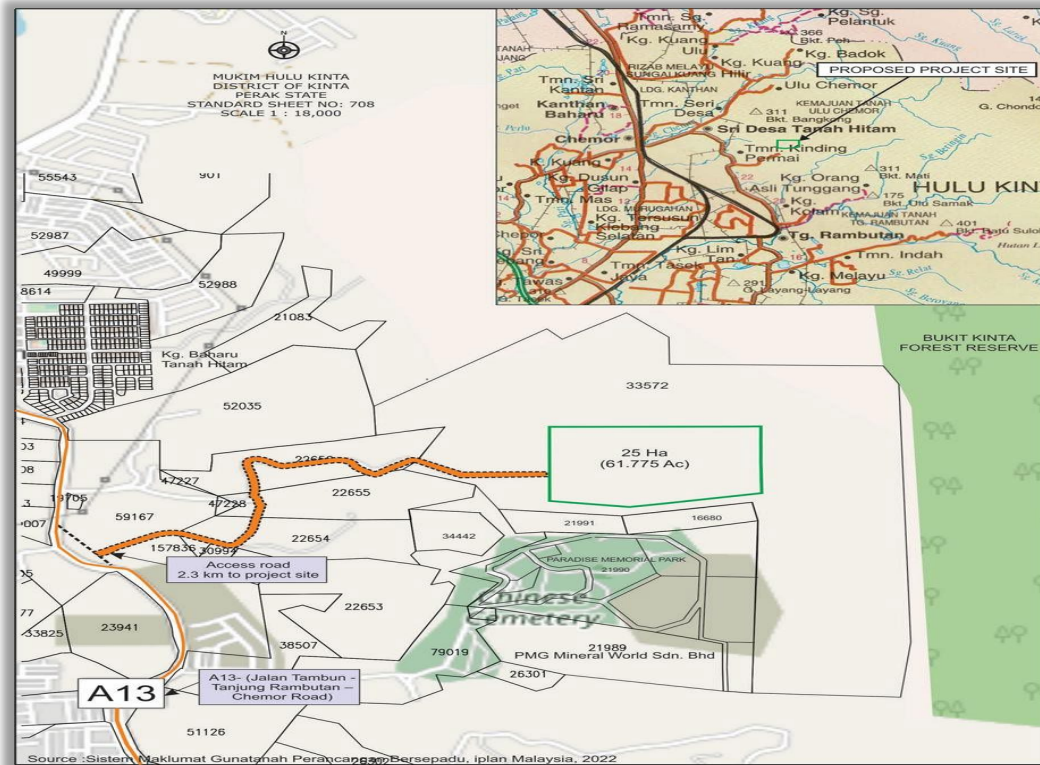


PROPOSED KAOLIN MINING AND PROCESSING ON PART OF LOT 33572 (PML 12/2019) ON AN AREA 25 HA (61.75 ACRES) AT BUKIT KINDI, MUKIM HULU KINTA, DISTRICT OF KINTA, PERAK DARUL RIDZUAN

EXECUTIVE SUMMARY

The proposed project site is surrounded by the oil palm plantation. The project aims to extract kaolin ore and process it into various sizes of ores ready for sales to cater demand of downstream industry. The project site can be accessed via the main trunk Road A13: Jalan Tambun - Tanjung Rambutan – Chemor. The current site is zoned under “Agriculture Landuse”, as as mentioned in Rancangan Tempatan Bandaraya Ipoh 2020.



PROJECT PROPONENT

Kaolin World Sdn Bhd (1256414 -W)

No 14A, Medan Istana 1

Bandar Ipoh Raya

30000 Ipoh, Perak Darul Ridzuan

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PROJECT DESCRIPTION



Type of mineral: Kaolin



Mining method : Dry Opencast



Life span : 12 years



Location :

4°43'17.88"N and 101° 9'30.67"E



Project activities :

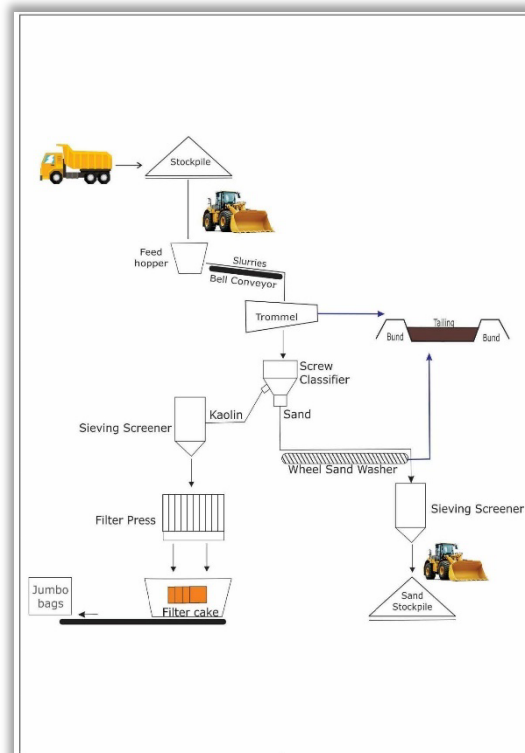
Operation Stage

- Kaolin extraction
- Washing facilities
- Haulage operation
- Stockpiling
- Dry dumping/tailing management
- Storage of topsoil and overburden
- Sales
- Road maintenance
- Sedimentation pond maintenance
- Waste management

Abandonment Stage

- Progressive rehabilitation
- Final rehabilitation and reclamation

- The project site is surrounded by the oil palm plantation.
- Located approximately 4.3km south of Tanjung Rambutan Town and 3.5km north of Chemor Town.



Process Flow Chart

NEED FOR PROJECT



- Substantial export potential
- Promotes technological advancement and innovation

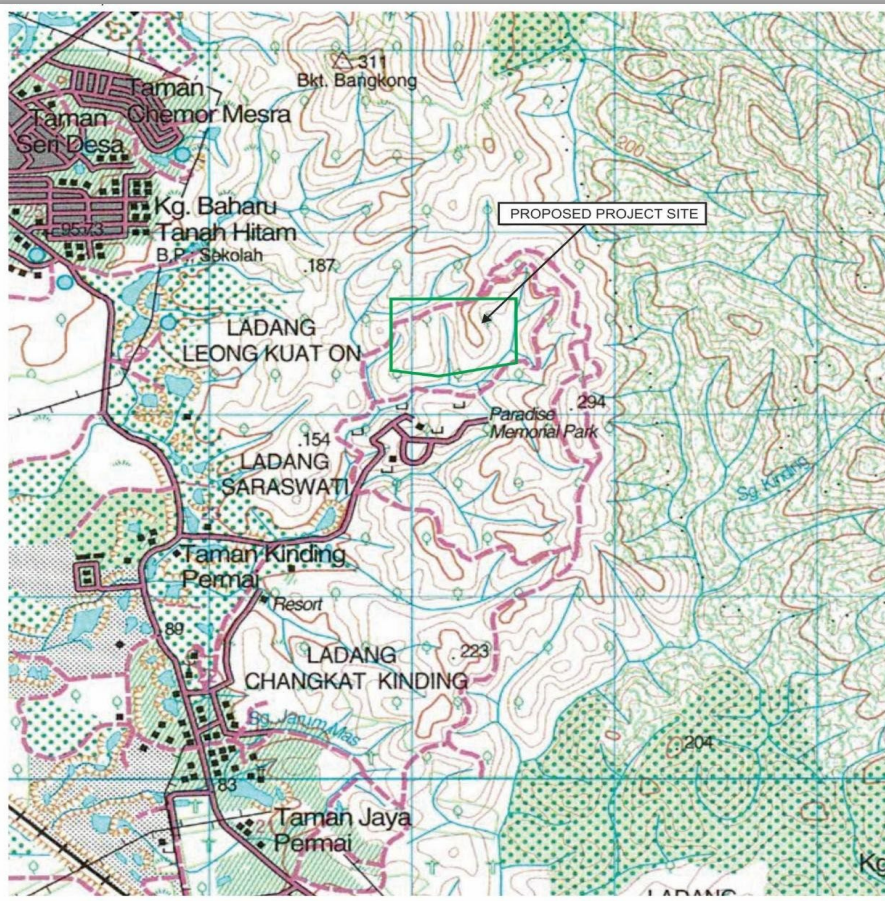
PROJECT TIMELINE

Project Implementation Schedule

No.	Mining Activities	Year 2023	Year 2024	Year 2025	Year 2026	Year 2027	Year 2028	Year 2029	Year 2030	Year 2031	Year 2032	Year 2033	Year 2034
Development Works													
	Preliminaries												
1	Construction of Tailing Pond and Silt Traps												
2	Construction of Drainage System												
3	Prepare the Infrastructure (Site Office, SW Store)												
4	Haulage Road Construction												
Operation Works													
PHASE 1													
1	Land Clearing												
2	Overburden Removal and Dumping												
	Backfilled and Compacted Right Up to Building Platform Level												
4	Prepare the Infrastructure :												
	a. Processing Plant & Warehouse												
	b. Installation of BMPs												
5	Extraction Kaolin												
6	Maintenance Haulage												
PHASE 2													
1	Land Clearing												
2	Overburden Removal and Dumping												
3	Extraction Kaolin												
4	Maintenance Haulage and Access Road												
5	Stockpiling												
6	Maintenance of Tailing Pond												
7	Managing Wastes												
Abandonment Works													
1	Rehabilitation												
2	Reclamation												

Note: Each box represent a month

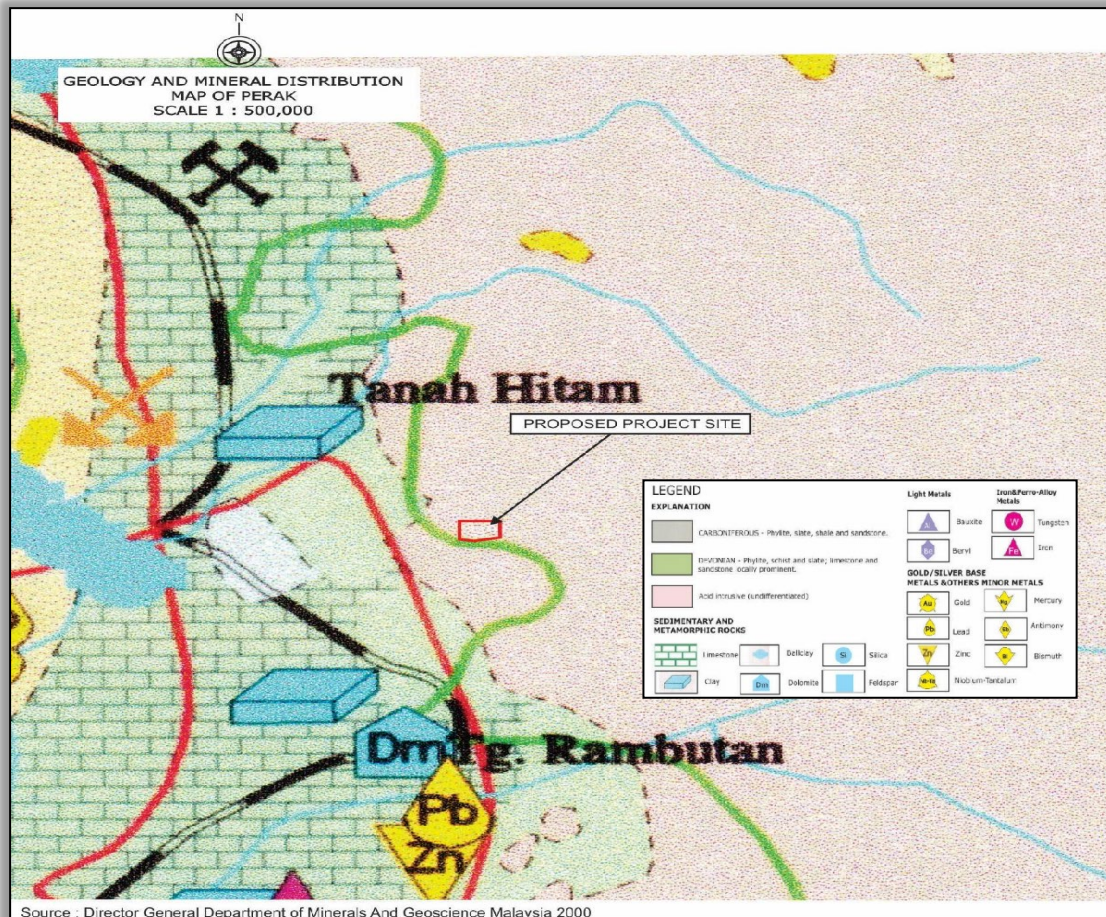
PHYSICAL ENVIRONMENT



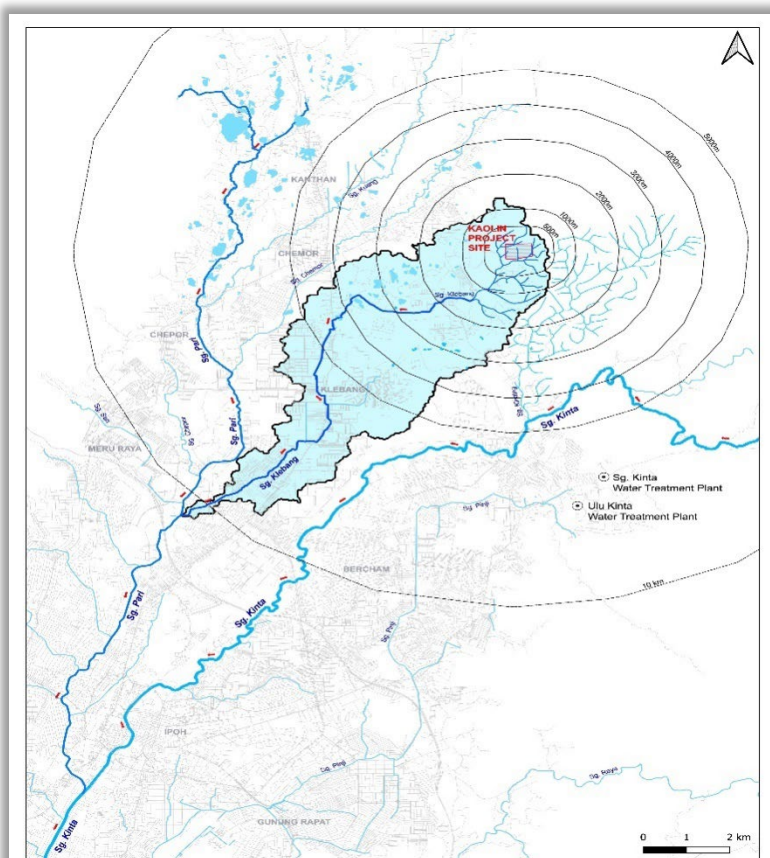
Topography

- Undulating with highest level approximately at 298m above mean sea level.

Geology

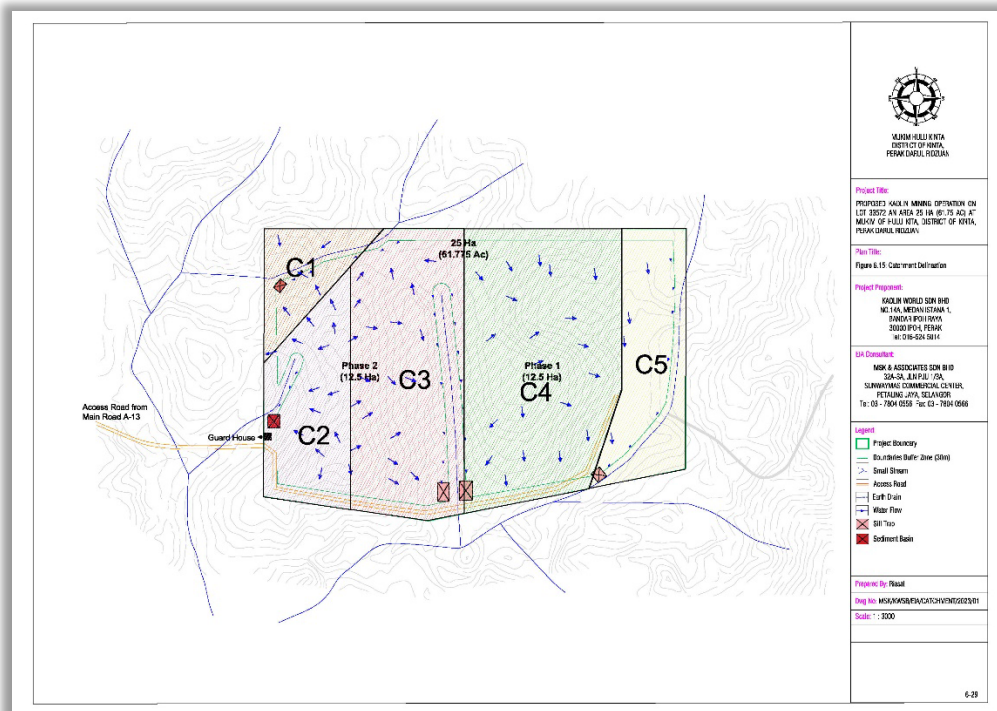


Hydrology



- **Sungai Kinta** is approximately 5.0 km from the south of the project site
- The project is drained by a few tributaries of Sungai Kinding which flow from the south of the project site and eventually flow towards the main stream of Sungai Kinta
- Sungai Kinding Water Catchment is in Bukit Kinta Forest Reserve & sited approximately 1.8km west of the Project Site.

Catchment Delineation



- There are five (5) catchment areas (C1, C2, C3, C4 and C5).

Catchment ID	Area (ha)
C1	1.75
C2	3.57
C3	6.96
C4	8.93
C5	3.76

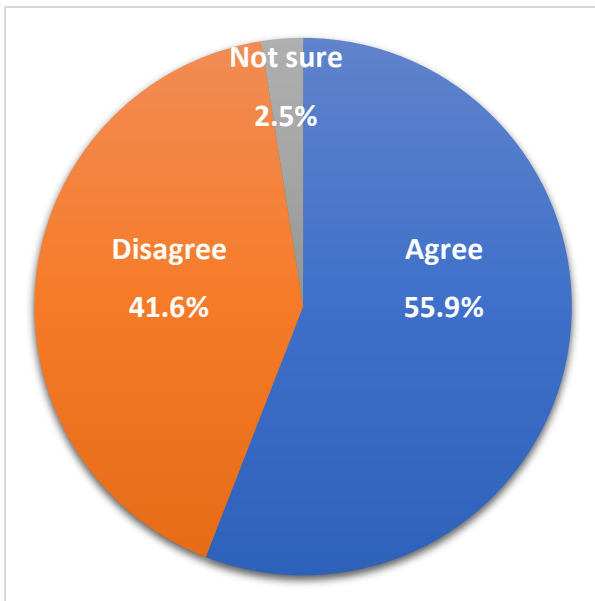
SOCIO-ECONOMICS

Distribution of Respondents

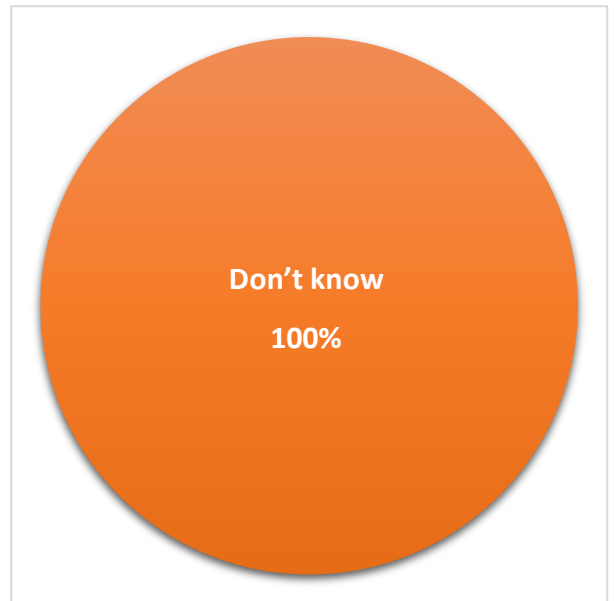
Sampling Zone 1 (0-2 km)	Number	Sampling Zone 2 (3-5 km)	Number
Tanah Hitam New Village	50	Kolam Village	19
Organized Village of Tanah Hitam	36	Mandailing village	10
Changkat Kinding village	43	Gilap Hamlet Village	10
Paradise Memorial Park	1	Tonggang Village	10
Sri Desa Tanah Hitam	38	Banana Village	13
Friendly Chemor Park	16	Mr. Zainal's Additional Village	4
Taman Jaya Permai	14	Ulu Chemor village	10
Kinding Permai Park	18	Miss Zainal's village	8
Kinding Raya Park	18	College of Allied Health	5
Taman Seri Desa	16	Happy Garden	10
		Taman Chemor Indah	6
		Tanjung Murni Village Park	7
		Service Park	7
		Taman Mas	6
Amount	250		125

Sources: Field Data, April 2023

Public Acceptance



Project Awareness



Perception of Project Benefits

- Job opportunities.
- Good for local economy and state development
- Enhance resident's socio economic

Perception of Socioeconomic Issues

- Decreased quality of life, disturbance of tranquility, noise, water and air pollution.
- Affecting access road & public safety

ENVIRONMENT BASELINE QUALITY

Water Quality



6 Monitoring Locations

- The parameter limits is compared with Standard A in the Environmental Quality (Industrial Effluent) 2009.
- Fe are exceeded the Standard A limit for W1,2W, W5 and W6.
- The WQI is within 96.50 to 97.92 and the river status is “Excellent”.

Noise Level



4 Monitoring Locations

- Daytime : 60 dBA
- Night Time : 55 dBA
- Only N3 complied with the limit. Vehicular movement and natural sound at N1, N2 and N4 causes it exceeded the limit.

Air Quality



4 Monitoring Locations

- Results are compared to Malaysian Ambient Air Quality Standard.
- All comply with allowable limit.

Parameters	Result	Limit
PM10, $\mu\text{g}/\text{m}^3$	14 - 38	100 $\mu\text{g}/\text{m}^3$
PM2.5, $\mu\text{g}/\text{m}^3$	5 – 19	35 $\mu\text{g}/\text{m}^3$
SO ₂ , $\mu\text{g}/\text{m}^3$	< 5	80 $\mu\text{g}/\text{m}^3$
NO ₂ , $\mu\text{g}/\text{m}^3$	< 0.5	70 $\mu\text{g}/\text{m}^3$
CO, mg/m^3	1.4 – 2.9	10 $\mu\text{g}/\text{m}^3$
O ₃ , $\mu\text{g}/\text{m}^3$	< 5	100 $\mu\text{g}/\text{m}^3$

Terrestrial Fauna



- 22 Bird spp, 6 Mammal spp.
- IUCN Near Threatened - Red-throated Barbet and Great Argus
- IUCN Critically Endangered – Malayan Tiger

Terrestrial Flora



- The site is currently under oil palm trees and no vegetation forest cover. However, as earlier mentioned, there is no forest species on site and mining phase involves only clearance of oil palm tree species.

POTENTIAL IMPACT : AIR QUALITY

ACTIVITIES : Site Clearing, Loosen Overburden Stockpile, Construction Of Access Road, Vehicular Movement, Removal of Site Facilities, Levelling , Grading and Adding Topsoil

IMPACTS

- Dust generation and dispersion.
- Sensitive receptors more prone to negative health impact.

MITIGATION MEASURES

- Cover the crushers and screen house.
- Reservation of existing vegetation and tree.
- Cleared vegetation and trees parts (biomass) shall be stored.
- No open burning.
- Cover the exposed slopes.
- Set speed limit of trucks.
- Water browsing truck shall be available.
- 'Drop Height' of ore shall be as minimum as possible.
- Provision of wash trough.
- Visual inspection shall be conducted.

POTENTIAL IMPACT : NOISE POLLUTION

ACTIVITIES : Vehicular Movement, Processing Plant, Dismantle Site Facilities and Traffic Noise

SENSITIVE RECEPTOR : Kampung Baharu Tanah Hitam and Taman Kinding Perdana (under construction)

IMPACT

- Impact hearing & can cause mental nuisance.
- Disturb the tranquillity of the local area and nearby residents.

MITIGATION MEASURES

- Maintain vegetation belt as noise barrier.
- Regular inspection and maintenance of machineries and vehicles.
- Continual monitoring of noise level.
- Comply with OSHA (exposure 90 dBA over 8 hours).
- Set speed limit of trucks to 15 km/hr.
- PPE to be provided for workers.

POTENTIAL IMPACT : WATER QUALITY

ACTIVITIES : Site Clearing, Overburden Stockpile, Cover Top Soil Erosion, Formation of AMD, Land Stability, Washing Plant, Removal of Schedule Waste and Site Levelling.

IMPACTS

- Visibility of water will drop.
- Potential formation of AMD

- Affect human health & aesthetic appearance.

- Contaminated runoff may intrude into the surrounding drainage system.

MITIGATION MEASURES

- Cease operation during period of high rainfall
- Handle Scheduled waste properly
- Minimise exposed area
- Continual water quality monitoring

- Minimise exposed area

- Set up relevant BMPs such as earth drain, sediment basin.
- Regular maintenance on BMPs
- Minimise exposed area.
- Stabilize loss soil structure.
- Buffer zone to be set up surrounding the project site.

POTENTIAL IMPACT : GROUNDWATER QUALITY

ACTIVITIES : Site Clearing, Overburden Stockpile, Ore Extraction and Tailing Ponds

IMPACTS

- Potential change in groundwater levels and flow.
- Potential groundwater contamination and contaminat movement

MITIGATION MEASURES

- Groundwater monitoring wells to be set up
- Mining operation in phases
- Backfilling of the excavated area once operation is completed
- Continual groundwater quality monitoring

POTENTIAL IMPACT : SOIL EROSION & SEDIMENTATION

ACTIVITIES : Ore Extraction, Side Bank of Earth Drain & Sediment Basin, Dry Dumping, Tailing Waste Storage and Exposed Earth Area.

IMPACTS

- Water quality & aesthetic value degradation.

- Soil erosion & sedimentation

MITIGATION MEASURES

- Regular maintenance on BMPs and tailing ponds
- Cross drains, sumps and side ditches are recommended.
- Sediment basin outlet protection is proposed .
- Installation of check dam.

- Use cut biomass (branches, leaves and roots) as protection barrier.
- Use existing roads. reconstruct only to the extent necessary to provide adequate drainage.

POTENTIAL IMPACT : SLOPE STABILITY

ACTIVITIES : Ore Extraction

IMPACTS

- Risk of slope stability.
- Impact safety of human and animals.

MITIGATION MEASURES

- Bench shall have suitable height
- Slope shall be adequately drained to allow water flow.
- Any hanging wall shall be removed as soon as possible.
- Regular inspection on slope.
- Slope maintenance shall regularly be done and slope failure shall be repaired to avoid further failure.

POTENTIAL IMPACT : SOLID & SCHEDULED WASTE MANAGEMENT

ACTIVITIES : Illegal Management of Solid and Hazardous Waste

IMPACTS

- Water degradation and pollution

MITIGATION MEASURES

- Project proponent shall bear the full responsibility if there is leakage of scheduled waste to nearby stream.
- Fuel storage in dumps is set back 30 meter from any water body and located on relatively flat land.

- Soil contamination

- General solid waste shall be stored in the designated bin.
- Recycling and reuse of used material are recommended.
- Scheduled waste must be labelled and stored according to **ENVIRONMENTAL QUALITY (SCHEDULED WASTES) REGULATIONS 2005.**
- All containers, full or empty is handled with care.

- Fuel oil spillage.

- The storage area shall have bund to provide containment capacity of 110% of the largest volume of drum.
- Warning sign board shall be placed.
- Transportation and storage of fuel and lubricants is in properly constructed containers of an approved design.
- Refueling activities is not be conducted nearby watercourses or on-site drainage channels.

POTENTIAL IMPACT : TRAFFIC & TRANSPORTATION

ACTIVITIES : Transportation of Ore, Hauling/Excavated Material to the Processing Plant

IMPACTS

- Traffic congestion
- Wildlife roadkill

MITIGATION MEASURES

- Avoid transportation at peak hours
- Install clear speed limit and warning signboard
- Provide paved access road
- Transporting vehicles must not overload

- Spread of dirt on public road

- Wash trough is to be provided
- Road spraying especially during draught

POTENTIAL IMPACT : OCCUPATIONAL, SAFETY & HEALTH

ACTIVITIES : Resource Excavation, Operating of Machineries, Processing Plant and Truck

IMPACTS

- Risk towards health.

MITIGATION MEASURES

- Ensure no clogged drain or stagnant pond or pool.
- No raw sewage routing into nearby watercourses.
- Increase awareness of the dangers of communicable and vector borne diseases.
- General health insurance for all workforce.
- Conduct Chemical health Risk Assessment (CHRA)

- Accident during operations stage.

- Use of latest equipment, tools and machinery in the mining operation.

- Dispersed of Dust and mineral dust.

- Ensure the cleanliness of the basecamp and workers.
- Wearing PPE.
- Periodical medical check up of on site workers on the accumulation of toxicants.

POTENTIAL IMPACT : TERRESTRIAL FLORA & FAUNA

ACTIVITIES : Land Clearing

IMPACTS

- Loss of habitat for flora
- Wildlife Conflic
- Potential loss of food source

MITIGATION MEASURES

- Fill mining pit and tailing ponds with overburden.
- Replant bare and exposed slope shall be immediately.
- Operator will engage consultant for the rehabilitation works for brownfield remediation.
- No hunting of wildlife.
- Cage Trapping of endangered and vulnerable species.
- Provide migratory corridor.
- Report to the nearest Jabatan PERHILITAN if there is conflict.
- Project proponent must aware of the "Total Protection" species.

POTENTIAL IMPACT : SOCIO ECONOMY

ACTIVITIES : Transport Ore and Clearance Vegetation

IMPACTS

- Job Opportunities
- Public safety & healthy
- Affect cultural and aesthetic value
- Dust and noise disturbance

MITIGATION MEASURES

- Employing local workers as part of the workforce
- Local contractors and subcontractors will be recommended
- Keep and maintain records of any transportation accident for further planning of prevention measures
- Operator should be sensitive to nearby stakeholders.
- Install clear speed limit and warning signs beside nearby the public road.
- Beautify the visuals with appropriate landscaping and replanting of trees.
- Water browser and wash trough should be provided

PROPOSED ENVIRONMENTAL MONITORING PROGRAMME

Rehabilitation Program

- Filling all the mining pits and Tailing Pond (TL)
- Dismantling all machinery onsite, mobile and immobile structures, closing all inlet and outlet of sediment basins, remove all source of toxic and hazardous substances, testing contaminants, if any on the surface soil in areas where diesel, oil, lubricants and hydraulic fuel stored.
- Ensure top soil preservation and provision of organic manure for future planting, landscaping and afforestation exercise.
- Make the terrain as green as possible with trees, plants, grass with natural drainage as free flowing as previous existing condition.
- Involve nearby Orang Asli in rehab work and provide them with jobs as important stakeholder. It is to understand they are the owner and custodian of the heritage for centuries.

Rehabilitation Works

- Initial reclamation which includes removal of all equipment and heavy machineries, washing plant, crushers, conveyor belts, excavators, shower, electric installations, lorries, skid tank and other fixed structures. This will be undertaken by licensed removal specialists.
- The site will be free from any traces of schedule wastes, oils, diesels and lubricants. The land forms will be graded into acceptable standard in relation to environmental criteria.
- Progressive rehabilitation while the mining in progress, such as, landscaping works at main access and other important location within site along with planting, sowing will be in progress without waiting of cessation of operation.
- Starting filling the mining pit for use by draining the storm water runoff. It might be anticipated to take years to fill the mine. However, it depends on rainfall totals.

Post Operation Stage

- A detailed 'Ecological and Soil Mapping' of the existing degraded site.
- Existing plants and trees at the edge and buffer zone will be listed out as inventory as part of ecological restoration planning.
- Identification and preparation of inventory of plants, medium trees and creepers suitable for site restoration. Identification of types of overburden/top soil suitable for green and buffer of the all existing slopes and gradients. The volume of top soil/overburden will be estimated to cover all the exposed benches. Its location and distance need to be calculated. Currently, however, there are unused top soil/overburden along the site that will be transported to exposed benches to cover the earth crust made of solid granitic rock. Besides, the tailing wastes will be used to backfill the mining pit.
- Existing drainage will be studied to ensure all runoffs are detained and channeled properly.
- The water quality of the final discharge in terms of any contaminating capability therein to adjoining water courses.
- Study of soiled sites, e.g., skid tank area, scheduled wastes sites and out plan for physical/chemical treatment.
- Perimeter drain, earth drain, final drain and proper 'Sediment Pond' will be functioning till the closure of mining operation.

PROJECT PROPONENT

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Bandar Ipoh Raya

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