

EXECUTIVE SUMMARY

Ka jinglamkhmat

Ka Nongmihkhmatjongkikam, SmtArbiboraChynekala apply ia ka mining lease na ka bynta u mawshun ha ka jakajong ka kaba don iaka2.0 Ha kaba don haMawlongSohpieng,MawlongSirdarshipEast Khasi Hills District,Meghalaya. Ia ka kam la plan nakabynta ban iohiaka70000TPA.

Haka TORjong ka SEIAA,shithi number ML/SEIAA/MIN/EKH/P-18/1229 tarik24.06.2020 ban peitbniahiaka EIA khnang ban iohia ka environmental clearance haka baiahap bad kikyndonjongkijingpyntipjong ka EIA, 2006.

Khnanng ban khmihshaphang ka jingktahjong ka mariangsawdongsawkunka balah ban mihnakajingpyntreikamjong ka jingtihmawshun haMawlongSohpieng,MawlongSirdarship, East Khasi Hills District Smt. ArbiboraChynekalapynnehia ka Indian Mine Planners & Consultants, Kolkata ban shim ia ka Environmental Impact Assessment studies. Ka report ka bthahia ka jingkheinjong ka jingktahjongkattokanekidkhotjong ka mariang bad kijing shim iakikyndon ban pyndunaia ka shah ktah.

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Jingbataijong ka kam (Description of the Project)

Ka jingpynpawjong ka jingtihmawshun kalong kumneharum:

Project Name	ARBI Limestone MINE
Location of mine	Village- MawlongSohpieng MawlongSirdarship District- East Khasi Hills State- Meghalaya.
Latitude	N 25°11'34.7" TO N 25°11'37.8"
Longitude	E 91°41'23.1." TO 91°41'39.1" E
Topo sheet number	780/12
Land use	2.0 Ha
Minerals of mine	Limestone
Total Mineable reserves	590501 MT
Life of mine	06 years
Proposed production of mine	70000 TPA / 280 TPD
Method of mining	Opencast, semi-mechanized
No of working days	250 days
Water demand	Total water requirement is about 4.24KLD (0.24KLD Domestic Uses) + 1.50 KLD (Dust Suppression) &2.50KLD (Green Belt) from nearby water sources.
Sources of water	Water for drinking purpose will be met from nearby villages. For sprinkling & plantation water will be taken UmiumRiver.
Man power	16 (Approx.)

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Nearest railway station	Guwahati Railway Station at the distance of approx. 110km in North direction.
Nearest airport	Umroi Airport is at the distance of approx. 64 km in North Direction.
Seismic zone	Zone V

Jakajong ka map kaba don ia ka 10 Km radius tawiaria ka jakajong ka projek site la pyni ha ka dur ba 1 bad ba 2.

Ki jingdonkam ban pyntreikamia ka Project (Basic requirement for proposed project):

K jingbthahki long kumneharum:

Sl. No	Jingdonkam / Requirement	Jingthiewhapohshisngi (kattokatne) Approx quantity/day
1.	HLD (Diesel)	100 liters
2.	Jingpynbthei(Ammonium Nitrate)	5.43 tons of rock/kg of explosives(approx)
3.	Booster Cartridge	

K rukomtih par maw (Mining Method):

- ❖ Yntih bad khlong ia u mar nakatei ka par maw da ka Semi mechanized .Ka surok ban leit sha quarry bad ka jingthiia klakhyndewdei ban pyndonkam da ka excavator
- ❖ Ka jingtreikamkum ka jingsamthliewynpyndonkam da u jack hammer machine.
- ❖ Ka jingpynbtheiiki maw dei ban pyndonkam da u explosive cartridges ka size 25mm x 200mm,badiakane ka jingpynbtheiynpyndonkam da u detonator,
- ❖ Ia ka jingsamthliew bad jingpynbtheibaar sein ha ka juh ka jakaynnymlahshuh ban lehhyndeidei ban pyndonkam da ka hydraulic rock breaker .
- ❖ Iaki maw ba la dep pynbthei,yn kit noh da ki truck dumper bad ynleit unload sha kijakabadei ban leitpynhap ,laitnoh tang ia u to u maw balakham heh ba don ka size(>350mm) ynpynpra sha kimawrit da kabapyndonkam da u tyrnem ne rock breaker
- ❖ Ban iadanakijingher maw ha thmerlum, la pyndonkam da ka jingpynbtheikabakiong ka light charged muffle blasting .

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Ka jingbataibniahia ka sawdongsawkunjong ka mariang(Description of the Environment):

kijingdonkamjong ka mariangkatkum ka jingling jingmanjong ka (Base line data) kiba long kum ha ka Lye, ka Jingsawa, ka Um, Ka jaka/ kyndew bad ha ka liang ka ioh ka kotkiba la pynmihnaduh u bnaiDecember 2019 haduh u bnai February 2020 ban bniah shin kijakabakynthuphapoh 10 Km ha hap ha ka bynta ban tihia u mawshun. Kiweikibyntajong ka mariangkynthupiakijingthungjingtep bad kimrad, land –use pattern, ka khlaw bad kiweikiweiba la pynmihlyngbajong ka field survey bad la iohruhnaki department jong ka sorkarjylla.

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Ka jinglongjong ka lyer (Air Environment):

L aaitbniahKa jinglongkhuid ka lyerAmbient Air Qualityla shim nongmunanaki 9tyllikijakakiba don sawdongkatei ka par maw. Ka result ka kynthupia ka jingdonjong PM_{2.5}, PM₁₀, SO₂, NO_x ba la buhbyntakypang.

PM₁₀- 55-89µg/m³
PM_{2.5}- 21-34µg/m³
SO₂- 4.1-7.6µg/m³
NO_x- 6.8-10.7µg/m³

La thaw ia ka station ban thewia ka jinglong ka suinbneng ban treikam ha ka projek side ban buh record ia ka micro-meteorological data. Pre-dominant ha ka lyntiiaid ka lyerbashem ha por tlang ka deiN,NNE&NNW.

Ka jingsawa bad kisawdongsawkun (Noise Environment):

Ki lad jingiada ban pyndunaia ka jingsawaba la buhkatkumkijingbthahdei ban long naduh53.6 dB (A) to 56.7 dB (A)ha ka por mynsngi bad 38.5 dB (A) to 41.6 dB(A)por mynmiet.

Ka um bad kisawdongsawkunjong ka (Water Environment):

La shembabarohki physic-chemical parameters bad heavy metals ba la shim samples naki um - ryngkew bad naki um- pohliewdei ban long katkumkikyndonharum. The pH, TDS, bad ka jingeh(hardness) jong ka um ryngkew ka dei ban long 6.90-7.10, 107.0-111.0 mg/land 81.30-74.30 mg/literter, na ka byntakiumpohliew la pynmihpH 6.90-7.30, TDS 99.0-117 mg/lit.

Ka jakaba don ka par bad kisawdongsawkun (Land Environment):

Ka jingphiahjong ka jingdon ka jaka ban pyndonkam ha ka projek la ai kumneharum:

Breakup of Land Use

S No.	Category	Existing Area (in Acres.)
1	Agricultural	NIL
2	Mined Out Area	NIL

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3	Mineralized area (Barren)	4.94
	Total	4.94

Ka khyndew (Soil):

Ia ka jingling ka khyndew la pynlong ha kihynniewtyllikijaka. Ka jingrben ka khyndew ha kijakaba la pynlongiakajingpule ka long kumba 1.43 to 1.60 gm/cm³, kabakdewiakajingiahap ban thung bad jinglongjingman sha kijingthung. Ka jingiapher haka pH jong ka khyndew ha kijakabala pule la peitbniah bad shim baka long neutral (6.8 to 7.20), namarkatta ka iarap haka jinghehjingsankijingthung. Ia ka Organic Carbon bad nitrogen la shemhaduh 0.66-0.79% bad 0.88-1.21 %. Kane ka pynpaw bad ka khyndew ka long kababianghaka jingdonsboh bad dunaia ka jingdonjong ka nitrogen content. Primary nutrient profile ka pynpawbakakhyndew ka duna haka jinglongsboh bad duna ka jingdonjong ka nitrogen bad potassium.

Ki jingthung bad kimrad (Flora and Fauna):

Ka jingbunkijingthunghakijakahapdengkyllum ka long kabadunanamar ka jingdonkijakaba don maw bad duna ka khyndewkijingthung ha barohkijakabala pule kipynpawkhmatia ka Tropical Montane Forest, Tropical Semi Evergreen, Moist – Broadleaf, Tropical Deciduous /Semi- Deciduous, Broadleaf Forest bad Tropical Sparse trees. Hangnekam don ka jingpynbeitiakikynjajingimradbalashemhakijakapdeng bad kumjuh haka buffer zone. Ki jingthungkyrpangbalathunghakijakabamarjanki long u kew, khaw, phan bad kishana.

Ka ioh ka kot bad ka imlangsaclang (Socio-economic status):

Kane ka jingpule ka deikaba la pynlongdaka primary survey bad secondary data source naka census jong ka ri India 2011

Ka jingpuleia ka primary socio economic la pynlong ha saw tyllikishnong. Iaki result la bataiharum:

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- **Core zone:** Hangnekam don ka jingshongshnong haka core zone
- **Buffer zone:** Ka jingdonkiingbriewhakijakabala pule ha shnongkyndong ka long 9032.katkumkijingtipbala ai harum.

- **Population**

Ka jingkhein haka jingdonkibriew ha kijakabala pule ka long 52787 ha kaba26618 kideikishynrang bad26169 kideikikynthei.

- **Social Structure**

Ka jingkheinjong ka jingdonbriewjong ka Schedule Caste (SC) hapdeng ka jaka pule 4.21% bad ka percentage jong ka Schedule Tribe (ST) ka dei81.83%.

- **Literacy**

Ka jingkheinkyllumjongkibriewkiba la don ha ka kyrdanjong ka jingpuleputhihapdeng ka jaka pule ka long 60.76%jong ka jingdonjongkibriewkyllum lang. Haka percentage kishynrangkiba la iohiakijing pule ki long 31.25%bad kikhyntheikiba la iohiakijingpuleki long 29.51%.

Ka jingangnud ban pynduna bad ban pynbiangia ka jingktahia ka mariang:

1. **Ka jaka bad kisawdongsawkun (Land Environment):** ka jingpyntreikamjong ka jingkhlongmawshunkanwanrahia ka jingbujli ha ka khyndew. Tangbaia ka jakaynsa shim biang da kineki lad haruh:
 - Ban pyndunaiakijingpynjutor ha kijingtihynpynlongkumba 7.5m sawdongjong ka par jaka bad hadienba la dep pyndonkamiakithliewjakaynsapynkyllabiang sha kijakajyrngam

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(green cover). Hadienbala dep tih kin samihkijakasboh bad ynsapyndonkamiahakijingthungjingtep.

- Ka jingtih ne jingkhlongia ka mar kan long thik haka jakabalabuh.
- Ka khyndew ne kijingkhiabalawengna ka jaka par maw ynbuh ha ka kyndonbakiong ka western safety barrier khnang ban iohpyndonkam ban shim biangiakijaka par maw hadienhabud.
- Ki pumpumbamihnakijingtihynpyndunadakabasyntreit da ka um nakijingsyntreit um.
- Ynym don jingpynjutor ha ki building briew ne jingteibarimnamarbaym don building briew ne jingteibarimhajankinekijakatihba ai wai.

2. **Ka um bad kisawdongsawkunjong ka (Water Environment):** Ka jindonkamkyllumjong ka um ha ka jakatih ne khlong kadei 4.24 KLD. Ynpyllangiakipumpumbamihnakithlieh um bapyllangna u slap. Ia ka um dihynt shim nakishnongba don hajan da kikali um. Ka jingtih ne jingkhlongyn shah tang haduh 48 m. ha ka jingjylliew. Ynymlah bantih ne khlong tad haduh ban da iakynduh bad ki met um (water body). Ban lait nakajinglangjong ka um madannaka jingleitjakhliajongkinongtrei, ynpynbiangiakijakapainkhanabatiknana ka byntakinongtrei ha kijakapyntreikamkumjuhruhi septic tank bad ki soak pit.

3. **Ka jinglongjong ka lyer (Air Environment):** Ka puipuijong ka lyerkipynmihia ka jingjakhlia ha ka baiadei bad ka jingtih da ka bapyndonkamiakitiarksamthliew bad pynbthei (drilling and blasting). Kattokanelashembamihna ka jingpyntreikamjong ka jingtih ha ka par jaka. Tangbaynshim biangiakinekijaka da kineki lad harum:

- Ki tiarksamthliew (drilling machine) ba don bad kitier ban pynlangpumpumbad yn da donkamynpyndonkam da kitierksamthliewkibajhie ban lait nakajingsaphriangjong ka pumpum.

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- Ynpynbiangiaki lad jingiadanakabyntakinongtrei (Personal Protective Equipments) kumkijingiadakhmut, khlieh bad kiweikiweikitiariada. Ynpeitia ka koit ka khiah bad ynai jingsumar (healthcheckup)arsienshisnemnakabyntakinongtrei.
- Ynpynlongia ka jingpeittistajongki kali bad kimashin.
- Ynpyntreikam da ki kali ban synreitum hakisurok bad kijakabymtreikam ban pyndunaiakajingmihpumpum.

4. **Ka jingsawa bad kisawdongsawkun (Noise Environment):** Ka jingpyntreikamjong ka jingtihjingkhlongmawshunynpynlong da kibuitthymmaikatsum ka jukbamynatabala tip kum ka open cast semi mechanized mining method. Ynsapyndonkam da u Hydraulic excavator ha kaportih. Kumjuhruhynpynbiangiakitariadakumkijingiadakhmut, khmat, kti, khlieh, shkor sha baroh ki nongtreibylla. Ynthung da kijingthungkhnanng ban pyndunaia ka jingstedjong ka sawa. Ynleh da ki task rotation iakinongtreibylla ban lait na ka jingshah ka jingsawapalat.

5. **Ki jingthawbaim bad kisawdongsawkun (Biological Environment):** Ynymdonkamban pynkhihiakikhlawhakane ka jingpyntreikamjong ka jingtihmawshun. Ynym shah ban don mrad ha kisawdongjakabapynntreikamia ka jingtih lait nohkhyndiatkijaitmrad. Yndunakijingsniew haka slakhyndew(terrestrial eco-system) ka bakynthupiaki sim bad kimradnamar ka ML area ka don tang2.499 Ha. Ha kawekaliang pat, da ka jingroiiongkijingthungjingtep, ka slakhyndew ka lah ban khambha ha ka por ban wan. Ynymshemiaki Schedule-I specieshakijaka pule.

6. **Ka ioh ka kot bad ka imlangsahtang (Socio-economic Environment):** Kane ka project kanwanrahiaka lad kamai ban pyniohkampynioh jam (direct and indirect employment) ha ka jaka. Ka jingkhmihlyntiba ka ioh ka kotjongkaneka thainkankiewhadienba la sdangiakane ka project. Ka project

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kan ai ruhiaki training sha kinongshongshnong bad kumtakanwanrahiaka lad kamai ha shnong.

7. **Jakhliabamihna ka par maw (Mine waste)** Ka khyndew ne kijingkhiabalawengna ka jaka par maw ynbuh ha ka kyndonbakiong ka western safety barrier khnang ban iohpyndonkam ban shim biangiakijaka par maw hadienhabud..Ynpyntreikamia ka jingthungdieng ha ka ban pynroiia ka jingjyrngam ka mariang. Ka jingtih mar kanynympynlong haka por slap bad yntei da kikynroh bad kinala baniadanakijingtuid um. Ki jakhliakibasniewkumkiumphniangynpynlangbha bad ynsa die sha ki registered-processor. Ki um jakhliabamihnakiiingnakijingpyndonkamkiba man ka sngijongkibriewynpynngatbhahaki septic tank. Kiwei de kijakhliakibakham eh kumkijingsong, foil badki bam balakyntait bad kiweikiwei de ynpynlanglakajonghakijakabuhjakhlia. Ki sbohjakhliaynpynlang bad ynpynndonkamiakikumkisboh.

8. **Ka jinktah haka ban kit ban bah iaune u mar (Impacts due to transportation)**:Barohki mar yn kit sha ka cement plant da ki truck. Iakijingkitynpynlong da ki4 no. jong 10 tonner truck. Katkum ka jingpuleba la lehynym don ka jingkhapniah ka bamihnakane ka project ha kisurok.

Ka jingpeitbniahia ka jinglong kamariang (Environmental Monitoring Programme) :Ka jingpeitbniahia ka jinglongkamariang ka long ka badonkamhakabapeitia ka jingtreijong ka tiarba control iakijabohjakhlia (pollution control equiptment) balapyntreikambalehia ka project. Ki nongmunakiba la shim nakabynta ban pynlongia ka jing pule bniahia ka sawdongsawkunynpynlongkatkum ka guideline jong ka Central Pollution Control Board/ State Pollution Control Board

- Ka jingpeitjong ka sawdongsawkunynpynlongjan man kapor da ka Kong ArbiboraChyne ban khein/peitiakijakhliahapoh bad sawdong ka jaka project.
- Kattokatnekijingkheinnakaliangpisayn long shaphang ka jingpyntreikamjong ka Environmental Management Plan.

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Ka jingpynkhrehiakijingma bad ban thaw iaki lad ban iada (Risk Assessment & Disaster Management Plan): Ka jingtihjingkhlongjongki mar ynpynndonkamdakibuitkumki semi mechanized opencast mining, bad kitiarpyndonkam ban tih ban khlong iakimar kinpyndonkam da ki hydraulic excavator, truck (dumpers) bad kiweikiwei de bad kijing don jongkijingtih (drilling) bad kijingpynbthei (blasting)hapoh ka jingpeitbniahjongkibriewkibashemphangkhnang ban pyndunaia ka jingma.

Ka jingpynbha bad jingpynshnabiang (Rehabilitation and Resettlement):Ynym don kano kano kajingpynbha bad jingpynshnabiang ha kabaiadei bad ka jingtih (mining). Ym don bashongbasah ha ka jakaba don kane ka project bad ka jaka ka dei da ka khlaw.

Ka jingiohjingmyntoinakane ka project (Project Benefit): ka jingpyntreikamjong ka mining project ka don ka byntakababha ha ka baiadei bad kaioh ka kot bad ka imlangsahtang (Socio-economic Environment) bad kaniarap ban pynnehia ka kiewjong ka shnong.

Ka jingpyntreikamjong ka project kaniarapia ka ioht ka kot dakaba ai kamkumba⁴² ngut bad shibuniakitraishnong.

Ka PP kanpynbiangiakicamps nakabynta ban ai vocational training khnang ban pynmihiaki lad kamai.

Ka jingpynkhrehlypa ban don ka jingidaia ka mariang (Environmental Management Plan): Ka jingpynkhrehna ka bynta ka Environmental Management Plan ka donkamna ka byntaban iarap haka ban pyntreikam bad peitbniahna ka bynta ban da ia ka mariang ha kapor lane hadienba la ai boriakatei ka jingtyrwa ban don ka mining project. Ka jinglutjingsepjong ka project ka long Rs.85.00

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Lakh bad ka bai EMP ka long Rs. 4.60Lakh (Ka jinglutkaba man ka snem/annual recurring cost).

Budgetary Provision for Environmental Measures:

Sl. No.	Particulars	Annual Recurring Cost(Rs in Lakhs)
1.	Monitoring of Atmospheric Air, Surface Water, Noise Level (By External Agency)	1.20
2.	Maintenance of Green Belt	0.60
3.	Reclamation of Degraded land	1.20
4.	Staff Salary	1.60
	Total	4.60

Corporate Social Responsibility:

Kum u nongbatkam ka company ka don ia ka jingkitkhlieh ban tyrwa sha ka roi ka par jong ka shnongba u bat kam. Ka company kanpynbeitshibunki awareness program na ka byntakinongtrei bad kumjuhruhkipaidbahnongshongshnong ban pynthiknaia ka jingbha bad rukomimnakabyntakibadukbasuk ha ka shnong.

Budgetary Provision for CSR Activity

ACTIVITIES	COST (In Rs)
Jingteijongki skulk um kishukiki ben, kikit, computer, tiarialeh kai sport sha Ichamati RMSA Secondary School	1,00,000.00
Ki soptiskul sha 60 ngutkikhynnahskul jog ka Ichamati RMSA Secondary School	50,000.00
Ban pynbha bad	2,00,000.00

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jingteijongkisurokshnong	
Ban pynlongiaki Medical camp bad ban ai eiiakidawaidashin sha kibaduk	20,000.00
Ban peitia ka jingioh um bad jingkhuidnakabynta ka shnong	60,000.00
Total	4,30,000.00
Total for five years i.e. 5 % of project cost	4,25,000.00

Ka jingkoitjingkhiahkabalab ban mihnakakambatrei bad ki lad jingiada (Occupational Health and safety) :

ka jingpyntreikamkibakhambiang bad khambha bad ki lad nakabynta ban control ia ka jaboh (pollution) ynpyntiknaia ka jingbha bad jingkoitjingkhiahjongkinongtrei.

Green belt development: La sdang da ka nongpyniaidba3.15ha ynthingjingthung haka por ba plan. Hynreikatsum ka jingmutba plan barohkajakabaiwaiynthingjingthung. Ynthingkijingthungbamih ha shnong bad ka jing ai jingmut bad ka Forest Department.

Kumjuhruhiweiki lad iadanakabynta ka sawdonsawkunki don harum:

- Jingsynreitjong ka um nakabynta ban pynshongiakupumpum ha kisurok par maw.
- Ka jingpynskhem bad kyntiewia ka surokshna badkisuroktreikam ban pynkhuidiakijinglangjongkitiarba lait sharud0
- Ban kiarnakijingkitkhiajongki truck (dumpers) bad ka jingliatjaboh ha surok.
- Ban pynbhaiaki kali bad kimashin.
- Yn ai iakitiarsynreit um kibabiangha jansurokjongkijaka par maw naki par maw (mine face) shakitiarjingtylliat (crush hopper) ban iadana ka jingmihkipumpum.

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