

KA PASOH (KHASI)

BAN IOH JINGBIT IA KA ENVIRONMENTAL CLEARANCE

(Category - B1, under item 1 (a), as per EIA Notification 14 September' 2006 and its subsequent amendments till date)

JONG KA

“TEMSUWAI LIMESTONE MINE”

Jaka: - Ha Temsuwai Wahlong village, Elaka Wahlong Sirdarship,

District– East Khasi Hills (Meghalaya)

Jingpynmih kum ba lah: - 9,750 TPA of ROM (Mawshun: - 8,775 TPA; Jaboh: - 9,75 TPA).

Area: - 0.31 Ha; LOI ba ai ha ka tarik 25.03.2021

Por Lease: -10 Snem (Na ka Tarik ba Register)

| | | |
|------------------------------------|----------|--|
| Jingtipbniah ia ka ToR | : | La ai na ka SEIAA, Meghalaya |
| Baseline data ba pynmih | : | Nohprah' 2021 to Rymphang' 2021 (Por Tlang) |
| Jingmang Pisa ia ka Project | : | Rs. 11.00 Lacs |

PROMOTER

Shri Boris Khyllap

Mawlong Village, Mawlong Syiemship,

District – East Khasi Hills, Meghalaya

ENVIRONMENTAL CONSULTANT

Gaurang Environmental Solutions Pvt. Ltd.

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NABET Accreditation: NABET/EIA/2023/ RA0192

Nailur, 2021

Project:- Temsuwai Limestone Mine

Applicant:- Shri Boris Khylllep

KA PASOH

1.0 KA JINGSDANG

Ka projek ba la mang “Temsuwai Limestone Mine” ka don ha ka shnong Temsuwai Wahlong, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya). Ka jaka baroh ba la shim wai ia ka projek ka long 0.31 Ha. Ka rukom jingtih kan long najrong khyndew ryngkat bad ki kor ba la pyniaid lang da ki briew ban tih.

Ka Letter of Intent la sanctioned ha ka kyrteng i Shri. Boris Khylllep na ka Office jong ka Govt. of Meghalaya, The Department jong ka Forests bad Environment, Office jong ka Divisional Forest Officer: East Khasi Hills & RI – BHOI (T) Division, Shillong lyngba ka shithi no. KH/ 8/ ML/ Limestone/ 68/ 6109 tarik 25.03.2021 bad ka im haduh 25.09.2020. Ka application renewal jong ka Letter of Intent la submit da ka shithi ba don ka tarik 10.09.2021. Ka jaka ban leh mining ka don kat kum ka area ba 0.31 ha. bad ki mineable reserves kumba 60,000 Tonnes ban pynmih 9,750 TPA u Mawshun (ROM - 8,775 TPA) bad 9,75 TPA u jaboh.

1.1 JAKA BAN AI WAI

Ka projek ba la mang “Temsuwai Limestone Mine” ka don ha shnong Temsuwai Wahlong, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya).

1.2 JINGTIPBIAH IA KA JINGSHIMWAI MINING

| S. No. | Particulars | Details |
|---------------|-------------------------------|--|
| 1. | Kyrteng jong ka Projek | Temsuwai Limestone Mine |
| 2. | Jaka | Temsuwai Wahlong village, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya) |
| 3. | Jingheh jong ka jaka shim wai | 0.31Ha. |
| 4. | Jait Jaka | Khatedari Land (Private) |
| 5. | Latitude & Longitude | 25°11’5.74”N to 25°11’4.17” N and 91°42’ 17.16” E to 91°42’ 16.24”E |
| 6. | Jaka khynniuh jumai | Zone – V |



Project:- Tamsuwai Limestone Mine

Applicant:- Shri Boris Khylllep

1.3 JINGBATAI IA KA PROJEK

Ka Letter of Intent la sanctioned ha ka kyrteng i Shri. Boris Khylllep lyngba ka shithi no. KH/ 8/ ML/ limestone/ 68/ 6109 tarik 25.03.2021 bad ka im haduh 25.09.2020. Ka application renewal jong ka Letter of Intent la submit da ka shithi ba don ka tarik 10.09.2021. Ka jaka ban leh mining ka don kat kum ka area ba 0.31 ha. bad ki mineable reserves kumba 60,000 Tonnes ban pynmih 9,750 TPA u Mawshun (ROM - 8,775 TPA) bad 9,75 TPA u jaboh. Ka rukom jingtih kan long najrong khyndew ryngkat bad ki kor ba la pyniaid lang da ki briew ban tih.

1.4 GEOLOGY

1.4.1 LOCAL GEOLOGY

U mawshun u paw ha baroh ka jaka shim wai. Ym don shuh kiwei kiwei ki maw ba paw ha ka jaka shim wai. U mawshun u la dain ha jan ka Shatei – Shathie bad ngam pynieng ha bam don ka jingtreikam. Ym don jingduna, jingkhylliap bad jingthut geological ba la iohi ha kane ka jaka ba shim wai. Ka jingwan jong ki maw ha ka jaka shim wai la ai harum:-

Table 1.1: Local Geology

| Geological Age | Group Name | Formation Name | Rock Type |
|------------------------|-------------------|-----------------------|---------------------|
| Recent | Newer Alluvium | Unclassified | Sand, Silt and Clay |
|UNCONFIRMITY..... | | | |
| Eocene | Jaintia Group | Shella Formation | Lime Stone |

1.4.2 PHYSIOGRAPHY

Ka topography jong ka jaka shim wai ka long shajrong shapoh. Bajrong tam ka long 131 MRL bad bad una tam ka long 80 MRL. Ka nala ba don ha ja jaka shim wai ka don ha Shathie lam Mihngi sha Shatei lam Sepngi.

1.4.3 GEOLOGICAL AND MINEABLE RESERVES

Geological Reserve : 3,89,360 MT
Mineable Reserve : 60,000 MT
Jingmih : 9,750 TPA of ROM
Jingim jong ka Mine : 7.0 Years

1.4.4 MINING



| | |
|--|--|
| Project:- Temsuwai Limestone Mine | |
| Applicant:- Shri Boris Khyllap | |

Ka rukom jingtih kan long najrong khyndew ryngkat bad ki kor ba la pyniaid lang da ki brierw ban tih. Ka jingpyntreikam kat kum ba la ioh jingbit na ka Mining Plan bad PMCP ka dei:-

- Ka rukom jingtih kan long najrong khyndew ryngkat bad ki kor ba la pyniaid lang da ki brierw ban tih
- Ka mied jingjrong yn buh 6m bad jingiar jong ka mied kam dei ban duna ia ka mied jingjrong
- Baroh Hynriew meid yn shna bha kata naduh Mied levels 127mRL (hajrong mied), 121mRL, 115mRL, 109mRL, bad 103mRL bad 97mRL (duna mied).
- Jingpynbthei yn leh da ki thliw barit bad bajrong da ka jingioh jingbit na DGMS
- Ka slope mied kan ai 85°
- Ka jingpynkitmar kan long na ki pits lane na ki stocks

1.4.5 KA JINGTIP JONG KA JINGMIH

Ka jingpynbha pynroi man u snem ia ki mines ha ka por san snem kan long kat kum ka table harum:-

Table 1.2: Production Details

| Year | ROM (T) | Waste / sub-grade (T) | Limestone Dimensional (T) |
|----------------------|---------------|-----------------------|---------------------------|
| 1 st Year | 9,750 | 9,75 | 8,775 |
| 2 nd Year | 9,750 | 9,75 | 8,775 |
| 3 rd Year | 9,750 | 9,75 | 8,775 |
| 4 th Year | 9,750 | 9,75 | 8,775 |
| 5 th Year | 9,750 | 9,75 | 8,775 |
| Total | 48,750 | 4,875 | 43,875 |

1.4.6 KA JINGPYNWANDUR IA KA JAKA

Land Ka plan ban pyndonkam ia ka jaka ha ka jaka ba shim wai kan kynthup ka sdang treikam, ka treikam bad shuwa ban treikam la ai harum:-

Table 1.3: Land Use Pattern

| S. No. | Land Use Category | Pre-Operational (Ha.) | Operational (Ha.) | Post-Operational (Ha.) |
|--------|-------------------------|-----------------------|-------------------|--------------------------------|
| 1 | Top Soil Dump | 00 | 0.01 | 00 |
| 2 | Overburden Dump | 00 | 0.02 | 0.02 (Reclaimed by Plantation) |
| 3 | Excavation (Voids Only) | 00 | 0.21 | 00 |
| 4 | Road | 00 | 0.01 | 00 |
| 5 | Built Up Area | 00 | 0.01 | 0.01 (Public use) |



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| | | | | |
|--------------|--------------------------|-------------|-------------|------------------------------------|
| 6 | Township Area | 00 | 00 | 00 |
| 7 | Afforestation | 00 | 0.03 | 0.06 |
| 8 | Reclamation (Backfilled) | 00 | 00 | 0.21 (Rehabilitated by Plantation) |
| 9 | Mineral Storage | 00 | 0.01 | 00 |
| 10 | Sub – grade stack yard | 00 | 00 | 00 |
| 11 | Undisturbed Area | 0.31 | 0.01 | 0.01 |
| Total | | 0.31 | 0.31 | 0.31 |

1.5 KA JINGBATAI SHAPAHNG KA MARIANG

Ban peit bha ia ka mariang kum ka meterorology, ka lyer, ka um, ka khyndew bad ka jinglong jong ka jingsawa, ki jaka peit bniah la buh ha ki phra jaka ha ka jaka ban pule/peit thuh. Ia ka baseline data la shimm ha ka por tlang (Nohprah' 2019 haduh Rymphang' 2021). Ia ka jingbatai bniah ha kine ki jaka la ai harum:-

Table 1.4: Sampling Location

| Sampling Location | Distance (Km) | Direction | Components |
|---------------------------------|---------------|-----------|-------------------------|
| Shri Boris Khylllep (Mine Site) | -- | -- | Air, Water, Noise, Soil |
| Laityra | 5.8 | NE | Air, Water, Noise, Soil |
| Tharia | 5.0 | ENE | Air, Water, Noise, Soil |
| Bholaganj Bazar | 3.2 | E | Air, Water, Noise, Soil |
| Nayabasti | 4.0 | SE | Air, Water, Noise, Soil |
| Dalia | 8.0 | WSW | Air, Water, Noise, Soil |
| Laitkynsew | 7.0 | NW | Air, Water, Noise, Soil |
| Shri Challenge Rajee | 2.15 | ESE | Air, Water, Noise, Soil |

1.5.1 KA JINGLONG JINGMAN JONG KA JAKA

1.5.1.1 Land UseKa jingpyndonkam ia ka jaka

Ka jinglong jingman jong ka jaka ban pule la ai kum ka LISS – III data ba la pyni harum:-

Table 1.5: LULC

| S. No. | Classification | Area (Ha.) | Area (Sq. Km) | % |
|--------|-------------------------------|------------|---------------|-------|
| 1. | Irrigated Crop Land | 5445.25 | 54.4525 | 17.25 |
| 2. | Barren Rocky/Stony Areas | 10487.57 | 104.8757 | 33.23 |
| 3. | Built-up Land (Urban & Rural) | 2834.18 | 28.3418 | 8.98 |



| | |
|--|--|
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| | | | | |
|--------------|---------------------------|-----------------|-----------------|------------|
| 4. | Dense Forest & Tree Cover | 11901.48 | 119.0148 | 37.71 |
| 5. | River/ Lake/ Reservoir | 894.16 | 8.9416 | 2.83 |
| Total | | 31562.64 | 315.6264 | 100 |

1.5.1.2 Ka Jinglong Khyndew

Ki symboloh khyndew la shim na ki phra jaka. Ka jingiohi ba ka khyndew ka long kumno la pyni harum:-

| | | |
|----------------------|---|-------------------------|
| pH | : | 7.62 – 8.03 |
| Total Organic Matter | : | 1.39 – 1.62 (% by mass) |
| Nitrogen as N | : | 28.5 – 34.7 (mg/100gm) |
| Phosphorus as P | : | 0.80 – 0.84 (meq/100gm) |
| Potassium as K | : | 0.70 – 0.73 (mg/kg) |

1.5.1.3 Jinglong Jingman Jong ka Um

Ki um na ki phra tylli ki jaka ban pule la shim. Ka jingiohi ia ka jingtohkit la pyni harum:-

Table 1.6: Water Quality Status

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| S. No. | Parameter | Requirement (Desirable Limits). | Permissible Limits in the Absence of Alternate Source. | Units | Shree Challenge Rajee | Laittyra | Tharia | Bholaganj Bazar | Nayabasti | Dalia | Laitkynsew | Shri Boris Khyllep |
|---|-------------------------------------|---------------------------------|--|-------|-----------------------|-----------|-----------|-----------------|-----------|-----------|------------|--------------------|
| Organoleptic & Physical Parameters | | | | | | | | | | | | |
| 1. | Colour | 5 | 15 | Hazen | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 2. | Odour | Agreeable | Agreeable | - | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable |
| 3. | Taste | Agreeable | - | - | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable |
| 4. | Turbidity | 1 | 5 | NTU | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5. | pH value | 6.5-8.5 | - | - | 7.60 | 7.81 | 7.61 | 7.82 | 7.86 | 7.71 | 7.68 | 7.80 |
| 6. | Total Dissolve Solid (TDS) | 500 | 2000 | mg/l | 131 | 140 | 138 | 129 | 137 | 132 | 135 | 136 |
| 7. | Aluminum (as Al) | 0.03 | 0.2 | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 8. | Total Ammonia | 0.5 | No Relaxation | mg/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| 9. | Anionic surface Detergents(as MBAS) | 0.2 | 1.0 | mg/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| 10. | Barium (as Ba) | 0.7 | No Relaxation | mg/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| 11. | Boron (as B) | 0.5 | 1.0 | mg/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| 12. | Calcium (as Ca) | 75 | 200 | mg/l | 25.42 | 24.98 | 25.48 | 25.62 | 26.10 | 25.18 | 26.08 | 25.36 |
| 13. | Chloramines (as | 4.0 | No | mg/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |



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| | Cl ₂) | | Relaxation | | | | | | | | | |
|-----|-------------------------------------|------|---------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14. | Chloride (as Cl) | 250 | 1000 | mg/l | 4.85 | 4.91 | 4.77 | 4.95 | 4.99 | 4.85 | 4.92 | 4.79 |
| 15. | Copper (as Cu) | 0.05 | 1.5 | mg/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 16. | Fluoride (as F) | 1.0 | 1.5 | mg/l | 0.32 | 0.34 | 0.30 | 0.30 | 0.29 | 0.33 | 0.30 | 0.34 |
| 17. | Free Residual Chlorine | 0.2 | 1.0 | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 18. | Iron (as Fe) | 1.0 | No Relaxation | mg/l | 0.06 | 0.07 | 0.05 | 0.07 | 0.03 | 0.04 | 0.05 | 0.06 |
| 19. | Magnesium (as Mg) | 30 | 100 | mg/l | 8.42 | 8.62 | 8.73 | 8.40 | 8.51 | 8.56 | 8.56 | 8.58 |
| 20. | Manganese (as Mn) | 0.1 | 0.3 | mg/l | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| 21. | Mineral Oil | 0.5 | No Relaxation | mg/l | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| 22. | Nitrate (as NO ₃) | 45 | No Relaxation | mg/l | 0.38 | 0.41 | 0.41 | 0.31 | 0.39 | 0.41 | 0.38 | 0.40 |
| 23. | Selenium (as Se) | 0.01 | No Relaxation | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 24. | Silver (as Ag) | 0.1 | No Relaxation | mg/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 25. | Sulphate (as SO ₄) | 200 | 400 | mg/l | 7.78 | 7.96 | 7.82 | 7.79 | 7.67 | 7.81 | 7.64 | 7.83 |
| 26. | Sulphide(as H ₂ S) | 0.05 | No Relaxation | mg/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 27. | Alkalinity (as Ca CO ₃) | 200 | 600 | mg/l | 88 | 91 | 86 | 92 | 86 | 91 | 84 | 96 |



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| | | | | | | | | | | | | |
|-----|--|-----|-----|------|------|------|------|------|------|------|------|------|
| 28. | Total Hardness (as CaCO ₃) | 200 | 600 | mg/l | 97 | 105 | 102 | 105 | 97 | 108 | 99 | 112 |
| 29. | Zinc (as Zn) | 5.0 | 15 | mg/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

Parameters Concerning Toxic Substances:

| | | | | | | | | | | | | |
|-----|--------------------------|--------|---------------|------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. | Cadmium (as Cd) | 0.003 | No Relaxation | mg/l | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 2. | Cyanide (as CN) | 0.05 | No Relaxation | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 3. | Lead (as Pb) | 0.01 | No Relaxation | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 4. | Mercury (as Hg) | 0.001 | No Relaxation | mg/l | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 5. | Molybdenum (Mo) | 0.07 | No Relaxation | mg/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 6. | Nickel (as Ni) | 0.02 | No Relaxation | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 7. | Polynuclear Aromatic | 0.0001 | No Relaxation | mg/l | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 8. | Poly chlorinatedbiphenyl | 0.0005 | No Relaxation | mg/l | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 9. | Arsenic (as As) | 0.01 | No Relaxation | mg/l | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 10. | Total Chromium (as Cr) | 0.05 | No Relaxation | mg/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |



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1.5.2 JINGLONG JINGMAN JONG KA LYER

Ban peit bha ia ka jinglong jong ka lyer ha ka jaka pule ka systematic ambient air quality monitoring la pyniaid ia ki jait jingjaboh (PM₁₀, PM_{2.5}, NO_x, SO₂ and CO) ha ki phra jaka ba don ki ambient air quality monitoring stations.

1.5.2.1 Jinglong ka Lyer

Ka Ambient air quality monitoring la pyniaid shakhmat ha ka por ar sien shi taiew ha ki phra jaka ha kawei ka aiom kata naduh Nohprah' 2019 haduh Rymphang' 2021. Ka jingiohi ia ka jinglong jong ha baroh ki jaka ki long kumne harum. Ia kine la pyniahap kat kum ka jingbuh da ka Central Pollution Control Board (CPCB) jong ka rural bad residential zone.

Table 1.7: Ambient Air Quality Status

| S. No. | Sampling Location | | Parameters | | | | |
|--------|-----------------------|------------------------|--|---|---|---|-------------------------|
| | | | PM ₁₀ (µg/m ³) | PM _{2.5} (µg/m ³) | SO ₂ (µg/m ³) | NO _x (µg/m ³) | CO mg/m ³ |
| 1. | Shree Challenge Rajee | Min | 38.5 | 11.5 | 3.93 | 5.25 | 0.47 |
| | | Max | 46.7 | 20.92 | 6.18 | 8.29 | 0.59 |
| | | Avg. | 42.52 | 15.88 | 5.25 | 6.80 | 0.53 |
| | | 98 th % ile | 46.26 | 20.54 | 6.11 | 8.26 | 0.59 |
| 2. | Laittyra | Min | 34.25 | 15.43 | 5.37 | 6.55 | 0.32 |
| | | Max | 49.39 | 22.43 | 7.67 | 8.69 | 0.92 |
| | | Avg. | 42.20 | 17.76 | 6.10 | 7.45 | 0.57 |
| | | 98 th % ile | 48.99 | 22.06 | 7.64 | 8.64 | 0.90 |
| 3. | Tharia | Min | 32.58 | 13.79 | 4.8 | 6.14 | 0.45 |
| | | Max | 49.5 | 22.4 | 6.5 | 8.86 | 0.55 |
| | | Avg. | 40.69 | 17.29 | 5.63 | 7.45 | 0.51 |
| | | 98 th % ile | 48.13 | 22.37 | 6.41 | 8.69 | 0.55 |
| 4. | Bholaganj Bazar- | Min | 36.02 | 14.78 | 4.33 | 7.09 | 0.46 |
| | | Max | 55.3 | 24.2 | 8.44 | 12.64 | 0.79 |
| | | Avg. | 47.25 | 20.29 | 7.22 | 9.58 | 0.62 |
| | | 98 th % ile | 53.83 | 24.05 | 8.43 | 12.64 | 0.78 |
| 5. | Nayabasti | Min | 46.3 | 22.61 | 4.24 | 8.43 | 0.47 |
| | | Max | 58.7 | 27.54 | 8.14 | 10.46 | 0.82 |
| | | Avg. | 50.09 | 24.44 | 6.00 | 9.43 | 0.58 |



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| | | 98th% ile | 56.13 | 27.17 | 7.72 | 10.46 | 0.81 |
|-----------------------|-----------------------|-----------------------------|------------|-----------|-----------|-----------|-----------|
| 6. | Dalia | Min | 35.41 | 14.32 | 5.35 | 8.54 | 0.47 |
| | | Max | 45.02 | 21.38 | 7.89 | 10.98 | 0.85 |
| | | Avg. | 40.98 | 16.62 | 6.89 | 9.95 | 0.62 |
| | | 98th% ile | 44.61 | 21.22 | 7.89 | 10.98 | 0.82 |
| 7. | Laitkynsew | Min | 40.92 | 16.72 | 5.03 | 8.84 | 0.48 |
| | | Max | 53.4 | 23.84 | 7.54 | 10.9 | 0.92 |
| | | Avg. | 44.97 | 18.79 | 6.18 | 9.80 | 0.70 |
| | | 98th% ile | 51.48 | 23.38 | 7.51 | 10.89 | 0.89 |
| 8. | Shri Boris Khyllep | Min | 40.02 | 20.96 | 5.78 | 8.6 | 0.25 |
| | | Max | 52.97 | 32.97 | 8.2 | 13.2 | 0.48 |
| | | Avg. | 48.08 | 27.97 | 6.88 | 10.41 | 0.37 |
| | | 98th% ile | 52.94 | 32.09 | 8.19 | 12.89 | 0.48 |
| NAAQ STANDARDS | | | 100 | 60 | 80 | 80 | 02 |

1.5.3 JINGLONG JINGMAN JONG KA JINGSAWA

Ka jingthew ia ka jingsawa la pyniaiad ban tip bha ia ka jinglong ka jingsawa ha ki phra jaka ban pule. Ka jingthew ia ka jingsawa ha man ki jaka la shim ha ka 24 kynta. Ka jingiohi ba la ioh la pyniahap bad ka national standards bad la shem ba long kat kum ka standard. Ki data ba la ioh la pyni harum:-

Table 1.8: Ambient Noise Level Status

| Location | Date of Sampling | Day Time (6.0 AM to10.0PM) | Night Time (10.0 PM to 6.0AM) |
|---|--|---|--|
| Shree Challenge Rajee | 04/12/2020to 06/12/2020 | 58.2 | 43.6 |
| Laittyra | 20/12/2020to 21/12/2020 | 49.1 | 35.4 |
| Tharia | 04/12/2020to 06/12/2020 | 42.1 | 36.8 |
| Bholaganj Bazar | 20/12/2020to 21/12/2021 | 49.3 | 37.9 |
| NayaBasti | 04/12/2020to 06/12/2020 | 47.2 | 33.4 |
| Dalia | 20/12/2020to 21/12/2020 | 50.8 | 37.1 |
| Laitkynsew | 04/12/2020to 06/12/2020 | 48.3 | 34.9 |
| Shri Boris Khyllep | 20/12/2020to 21/12/2021 | 51.2 | 36.7 |
| Standards | | | |
| Category of Area/ Zone | | Day Time | Night Time |
| Industrial Area | | 75 | 70 |
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| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Silence Zone | 50 | 40 |

1.5.4 JINGIOH JINGKOT JONG KI BRIEW

Ka jaka pule ka kynthup ia 82 ki shnong ha Temsuwai Wahlong Village, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya) hapoh 10 Km ka pud jaka sawdong na ka mine.

Table 1.9: Demography Profile of the Study Area

| S. No. | Particulars | Details |
|--------|-------------------|---------|
| 1. | No. of Villages | 82 |
| 2. | Total Population | 30,024 |
| | a. Male | 15,369 |
| | b. Female | 14,655 |
| 3. | No. of Households | 5,906 |
| 4. | No. of Literates | 16,981 |
| | a. Male | 9,014 |
| | b. Female | 7,967 |
| 5. | Main Workers | 9,004 |
| | a. Male | 6,613 |
| | b. Female | 2,391 |
| 6. | Marginal Workers | 2,290 |
| | a. Male | 1,104 |
| | b. Female | 1,186 |
| 7. | Non-workers | 18,730 |
| | a. Male | 7,652 |
| | b. Female | 11,078 |

(Source: Census, 2011)

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1.5.5 BIOLOGICAL ENVIRONMENT

| Core Zone | Buffer Zone |
|-------------------------|--------------------------|
| Flora | |
| Grass - 3 Species | Grass - 10 Species |
| Climber – 6 Specie | Climber – 19 Specie |
| Herb – 7 Species | Herb – 40 Species |
| Shrubs - 8 Species | Shrubs - 70 Species |
| Tree - 9 Species | Tree - 74Species |
| Fauna | |
| Amphibian - 6 Species | Amphibian – 17 Species |
| Reptiles - 4 Species | Reptiles - 16 Species |
| Avifauna - 31 Species | Avifauna – 93 Species |
| Butterflies – 4 Species | Butterflies – 28 Species |
| Mammals – 2 Species | Mammals – 28 Species |

1.6 KA JINGTREIKAM BAD KA JINGPEIT JINGMA

Ka jingpeit ia ka jingma ka dei ka jingpule ba dap da ka jingbantikna bad mad jingma ha ki katno katne ki jaka. Ban peitngor ia ka jingma ka dei ban ithuh ia ki jingma ba iadei bad ka jingpyntreikam mining, bad ban sngewthuh kumno bad hangno yn shem bad ianujor ia ka jingkynduh (ha ka pisa lane ha kiwei kiwei) ha ka jingmih. Ka pyni bad nujor ia ki jingma ia ki riew shimet, ki kam bad government agencies ba lah ban ioh na ka mariang lane da ki jingjia ki briew.

Tangba kin don hi kato katne ki daw kiba lah ban pynlong kaba ma ha ki por treikam/jingmaham ha ba tih ia u mawshun (major minerals). Ia ki jait jingma la pynithuh por tih mawshun bad la pyni harum:-

1. Ba mynsaw por pynkiew, pyniaid bad bret ia u maw.
2. Ba mynsaw da ka daw bai aid kali
3. Ba rung um

Ban pyniaid bha ia ki kam ki jam, ki jingkdew harum yn bud na ka bynta ban iada na ki mynsaw ha ka mine.

Step 1: Ki jingit ia ki jingma ba ktah na ka jingpynjot

Step 2: Ki jingit ia ki briew ba don ha ka jingma

Step 3: Ki jingwengnoh ia ki jingjulor

Step 4: Ka jingtipbniah na ka bynta ka jingma

Step 5: Ki lad ban iada ba iadei ban shim



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Step 6: Ban buh jingkein

Step 7: Ban peit biang

1.7 KA PLAN BAN PYNIAID IA KA MARIANG

Ka jingiathuh ia ki jingja ban ktah ia ka jinglong jingman na ka jingleh mining bad ki rukom ban duna ki jingjulong la ai harum:-

| Ka Jingiakynduh | Ban Pynduna ia ka Jingmysaw |
|--|---|
| Jinglong ka Mariang Khyndew | |
| Ka khyndew kan sa julong namar ba tih bad bret ia ki jaboh | ➤ Ha por ba sdang tang kumba 0.21 ha. ka jaka yn tih bad sa shim noh por ba kut ka lease |
| Jinglong ka Um | |
| Ban pyllait ia ki um na ka mine f Ka jingiakynduh ka um khyndew por pyntreikam ha ka jingtih.. | Yn nym don jingpyllait um na ka mine. Kat kum ka Mining Plan ba la shah lyngba bad ka PMCP, ka jingheh jong ka ka pit level (85MRL) kan long hajrong ka um khyndew bad kan nym kynduh. |
| Jinglong ka Lyer | |
| ➤ Pum pum kan her por tih, por rah bad pynhiar. ➤ Ki lyer jabaoh kin mih bha na ki kali ba iaaid. | ➤ Ia ki kali bai aid ha ka jaka treikam yn shna bad peit bha ban buh ka jingmih lyer hapoh ki adong. ➤ Ha jaka pynhap bad pynkiew bad ki lynti iaaid, yn pynbuh um ban pashaid ban pynduna ka jingmih kypum. ➤ Ha ban pyrthuh ia ka jingkylla ha ka jinglong jong ka lyer, AERMOD version 8.8.0 model la pyndonkam. Ka baheh tam ba pynkiew ia ka jingkhleh khyndew PM ₁₀ & PM _{2.5} , bad lyer jaboh NO _x & CO na ki bapher ki jaka ba tih ha ka por pule (tlang) la iohi ba ka long 0.80 µg/m ³ , 0.24 µg/m ³ , 4.94 µg/m ³ bad 4.98 mg/m ³ . ➤ Ki jingmih kan iai don hapoh ka National Ambient Air Quality Standards na ki bynta ki kharkhana/ jaka sah briew.. |
| Jinglong ka Jingsawa | |
| ➤ Jingsawa na ka daw ba leh mining ➤ Jingsawa na ka daw ba iaaid kali | ➤ Ka jingsawa na baroh ki jaka ka long man ka por bad hatang por treikam ➤ Ka jingthew ia ka jingsawa ba la shim data ha ka jaka ka long hapoh ka adong jong ka National Ambient Noise Quality Standards ➤ Ka jingdon jong ka jingsawa ka long duna ha kane ka jaka ba la kah ki lum ki |



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wah/ba shna kali

Jingioh Jingkot ki Briew

- | | |
|---|---|
| <ul style="list-style-type: none">➤ Jingaikam➤ Jingktah ha ka jingkot jingkhiah➤ Jaka ai pule | <ul style="list-style-type: none">➤ Ka jingtreikam mining kam ktah than ia ka jingioh jingkot ki briew➤ Kam don jingkyndriah (0) ha ka jaka ba la mang ban leh mine.➤ Kumba 9 ngut ki nongshong shnong kin ioh lad treikam ryngkat bad ka jinghikai man ka por ban pyntbit ki sap bapher.➤ Ki rukom bathymmai ban aikam/ioh pisa yn sa ioh pynmih.➤ Ka jingpeit ia ka jingkoit jingkhiah man ka por da ki health camp.➤ Ka jingiarap skul bad ioh scholarship ia ki khynnah yn ai. |
|---|---|

Jingmih ha ka Mariang

- | | |
|---|--|
| <ul style="list-style-type: none">➤ Jingktah jong ka jingkylla ha jinglong jingman jong ka mariang➤ Ki mrad bad ki jingthung ki ban shah ktah. | <ul style="list-style-type: none">➤ Ka jingpyntreikam ia ka minning kan don ka jingktah bajur bha ia ki mrad bad jingthung jingtep. Ka jinglong jong ka projek ka long ban iarap ia ki jinghung jingthep ha ka jak aba la thmu.➤ Ki jingthung jingtep ba don ha ka jaka mining ki long ki dieng bad sanium. Kin nym shah pynthud na ka daw ka jingpyntreikam mining. Te, ka jingktah ia ki jingthung jingtep kan long kaba duna.➤ Ki jingheh jong ki jingthung hajan bad shajan ki jaka sah. Ka jingsawa bad khiah na ka daw ba pynbthei bad jingtreikam ki machine kin beh ia ki mrad na khlaw bad ki sim na ki skum hajan.➤ Ki jaka ba kyllum bad ki jaka ba pyniakhlad ki long jah na ki jaka mariang ba kloie ban shah ktah. Te ka jingktah ia ka jinglong jingman jong ka mariang bad ki mrad ka long ba duna.➤ Ia ka Green belt yn pynroi bad u pud u sam u riew shimet ba ai wai ban long kum ka kynroh na ki jaboh ia ka jinglong jingman ka mariang.➤ Ka la don ruh ka jingiashimti ia ka jingthung jingtep ha ka lynti ia id kali jong u nongshimwai bad ka surok ba ia snoh lang.➤ Ka jingpynbthei, pynsawthliew bad jingrah yn pyntreikam tang ha ka por mynsngi ban pynduna ia ka jingktah ia ka jingiaid ki mrad na khlaw.➤ Baroh ki jingdonkam ban peit ia ka jing jaboh yn shim da u nongshimwai ban pynduna ia ka jingktah ia ka mariang ba ker sawdong. |
|---|--|



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1.8 KA PROGRAMME NA KA BYNTA BAN PYNNEH IA KA MARIANG

Ka jingiakhlad ia ka jingmang jong ka pisa na ka bynta ka Programme ban pyn neh ia ka Mariang ka long kumne harum:-


Table 1.10: Provision for Environmental Protection Measures

| S. No. | Description | Capital Cost (Rs. In Lacs) | Recurring Cost (Rs. In Lacs) |
|--------------|--|-------------------------------|---------------------------------|
| 1. | Environmental Monitoring (Air, Water, Noise and Soil) | -- | 0.20 |
| 2. | Occupational Health and Safety (Initial & Periodical Medical Check-ups) | 0.50 | 0.50 |
| 3. | Green Belt (phase wise greenbelt development during life of mine i.e. 7 Years) | 1.00 | 0.20 |
| 4. | Construction & Maintenance of Settling Tank, Garland Drains etc. | 0.50 | 0.05 |
| 5. | Provision of fencing around mine pit | 0.50 | -- |
| 6. | Environmental Awareness Program | -- | 0.30 |
| Total | | 2.50 | 1.25 |

1.9 JINGPYNKUT

Ia ka jingpule EIA la leh kat kum ka jingmynjur ka ToR. Ka jinglong jingman bapher jong ka mariang la peit thuh kaba iadei bad ka jingtreikam mining. Ka jingiadei bad ki jingktah la ithuh bad peitshai. Da la peit bha ki lad ki lynti ban ianujor ia ka jinglong jong ka mariang ia ka Environmental Management Plan la pynkhreh bad la buh ka pisa ba donkam. Ka EMP ka la long ba iar, ba jem bad pher man la ka por ba rai biang.

Ka projek kan pynkiew ia ka jingioh nong ia ka State Govt. bad kumjuh kan rah ia ka ioh ka kot jong ki briew shnong. Ka programme pynbha ia ka greenbelt kan iarap ban kham jyrngam shuh shuh ia ki jaka ba marjan. Kumta, ka projek ba la don kan ym ktah ia ka mariang lane ia ka jinglong jingman ki jingthung jingtep ba marjan. Ka Senior Management kan shym khia ia ka jingrai ia ka projek jong ka EMP bad ki jingpyntreikam ban pynatikna ba ka EMP ka long ba treikam bha bad biang. Kumta, ki lad ki lynti badei yn shim ban jop ia baroh ki thong ba la buh ha ka EMP bad ka projek kan sa wanrah ka jingktah babha ha ka jaka pule.

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