

KI PASOH

Na ka bynta ban khlong mawshun ha
“Daba Saitthad Limestone Deposit”

**Villages-Daba Saitthad (Wahlareng), Village- Lumshnong
District: East Jaintia Hills, Meghalaya**

**ToR letter no: IA-J-11015/39/2023-IA-II(NCM
Date 13.06.2024**

Mining Lease Area- 25
Cost of Project - Rs 37.30 Crore
Item & Category - 1(a), B
Baseline Season: March, 2023 to May 2023
Laboratory Assigned: M/s Perfact Researchers Pvt. Ltd.

Project Proponent

STAR CEMENT LIMITED
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Environmental Consultant

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KI PASOH (EXECUTIVE SUMMARY)

1.0 Jinglamphrang

Ka Star Cement Limited (SCL) (ka nongaplai) ka tyrwa ban shna ia ka green field projek kaba ai kirteng kum ka "Daba Saitthad Limestone Deposit (25ha)" kaba don ha Daba Saitthad (Wahlareng), shnong Lumshnong, East Jaintia Hills District Meghalaya. Ka jingpynmih mawshun kaba heh duh ka long 2.51 MTPA kaba kynthup ia ka jingkhlong maw ba heh haduh 2.832 MTPA (kynthup ia ka 2.51 MTPA u mawshun bad 0.322 MTPA ka jaboh khyndew shyiap na ka jaka kaba heh 25 ha. Ka jingkhlong ia u mawshun na katei ka par ba la tyrwa yn pyndonkam da ki kor ki bor bad ki mashin kiba heh (heavy earth moving machinery (HEMM) kiba pynduna ia ka jingpynlehnohei ia u mawshun.

2.0 Ka jinglong jingman jong katei ka par mawshun (Project Description):

Ka par mawshun (Project) ba tyrwa ka don hapoh u pud u sam jong ka shnong Lumshnong, Tehsil Khliehriat, District East Jaintia Hills, Meghalaya- 792300. Katei ka par mawshun ka dang hap hapoh ka Survey of India Topo Sheet No. 83C/8 (Restricted), kat kum u Latitude: 25°09'24.78" N to 25°09'39.43" 'N bad u Longitude: 92°21' 29.53" E to 92°21'56.03" E. Ka jingkieu bad ka jinghiar jong ka jaka kaba don ka par mawshun ka long haduh 406 mRL bad kaba duna eh ka don hapdeng 336 mRL.

Ka Star Cement Limited (SCL) ka la ioh pdiang ia ka shithi (Letter of Indent/Authorisation) ka ophis jong ka Meghalaya Mining bad Geology Department kaba shah ia ka ban khlong mawshun na katei ka par mawshun kat kum ka shithi No. MG.6/2023/277 dated 22nd September 2023. Ka jingiateh kular jong ka jingaiwai ia katei ka par mawshun la ia soi pynskhem ha ka 12.02.2024 na ka bynta 50 snem haduh ka 11.02.2024.

Ka Land Holding Certificate ba la ai da ka Jaintia Hills Autonomous District Council, Jowai kat kum ka holding no. LHC No. 6 jong u snem 2021 tarik 14.12.2021.

Ia ka jingmynjur na ka bynta ka jingpynkhreh (Mining Plan) ban tih mawshun ryngkat bad ka PMCP kat kum ka Rule 16 (1) jong ka MCR 2016 la ioh na ka Indian Bureau of Mines, Guwahati kat kum ka shithi No. MCDR-MPCP0CaFI/10/2023-GUH-IBM_RO_GUH jong ka tarik 11.12. 2024.

La ioh pdiang ruh ia ka syrnod na ka Ophis jong ka PCCF (HoFF), kat kum ka shithi No. MFG.39/NFLC/MINING/MMMCR/2016/JH/15,529/ dated 01.02.2023 kaba pynshisha ba katei ka jaka ba la tyrwa kam dei ka jaka khlaw.

Ka jingpynshisha ia ka jingjingai (Distance Certificate) jong ka par mawshun ba la tyrwa na ka Narpuh Wildlife Sanctuary (ESZ & Boundary) la ai da ka Ophis Divisional Forest Officer (Jaintia Hills Wildlife Division, Jowai) kat kum ka shithi No. MWL/JH/299/Mining/2022-23/1, 184 dated 13th Feb 2023

Ka rukom tih mawshun (Mining Method):

Ka jingkhlong ia u mawshun na katei ka par ba la tyrwa yn pyndonkam da ki kor ki bor bad ki mashin kiba heh (Heavy Earth Moving Machinery) kiba pynduna ia ka jingpynlehnohei ia u mawshun ryngkat bad ka jingsam thliw kaba jylliew bad ka jingpynbthei ban pynpra ia u mawshun la pynbit pynbiang da ki tiar ki tar jong kane ka juk kumjuh ka jingpynkhreh ia ka rukom ban kit ia u marpoh khyndew. Kiwei pat ki jingthew ba iadei kat kum ka jinglong jong ka khyndew, ka jingbuh ia u mawshun la pynkhreh lypa. Na ka bynta ban pynsuk ia ki nongbylla la ieh ia ki kyndon (Benches) kiba don ka jingheh ym duna 18 m na ka bynta ban iada ia ki nongbylla na ki mashin bad kiwei kiwei ki tiar khlong mawshun bad ka jingjrung jong ki kyndon (Benches) kan long 9 meter. Shuh shuh ki bynta ba kongsan jong ka rukom khlong ia u mawshun ka long kumne:-

- Ia ka jingtih mawshun bad ksam ia ki thliw ban pynbthei yn pyndonkam da ki kor ki bor bad ki mashin kiba heh (Heavy Earth Moving Machinery).
- Ka jingheh kaba duna eh jong ka jaka trei lane ki kyndon (Benches) kim dei ban duna ia ka 18 m na ka bynta ka jingshngain jong ki nongbylla bad 9 m ka jingjrung jong kawei kawei ka kyndon (Benches).
- Namar ba u mawshun u dei u maw uba eh, ki kyndon (benches) jong kawei pa kawei ka kyndon kidei ban long sharing kumba 85⁰ na ka jaka ba long madam.
- Haba shim kyllum baroh ka jinglong sharing ka jaka trei kadei ban don palat ia ka 45⁰ na ka jaka ba long madan.
- Ka rukom trei (Shift) la bynta ha ki ar bynta kata kaba nongkong kan long 8 kynta bad ka sien trei kaba ar (Second shift) ruh kan long 8 kynta. Ha ka 8 kynta ki nongbylla kin trei 7 kynta na ka bynta ban pynmih mar.

- Ka mashin ksam thliw (Hydraulic drill) kaba don ka jingheh 115 mm (in diameter) yn pyndonkam ha ka por ba ksam thliw ban pynbthei.
- Ki thliw ba la ksam na ka bynta ban pynbthei ki don ka jingjingai kaba 4.5 m na kawei ka thliw bad ka jingtap ban iada na ka jingsaphriang ki maw ka long 3.5 m.
- Yn pyndonkam ia ki tiar pynbthei (kiba heh ka diameter) kum ka umphniang kaba khlehleng bad u Ammonium Nitrate.
- Yn pyndonkam da ki tiar pynbthei ki bym don bording (Non-electric detonators).
- Ka jingtih kaba khatduh kan long 269 mRL ha ka bynta jong ka jaka tih mawshun.
- Ia ki mawshun kiba pynmih hadien ba la dep pynbthei yn sa pynkit bad thep ha ki kali kit maw (Dumper/Tipper) da ki kor ki bor kiba pynmih duna ia u pum pum kiba don ka jingheh kumba 2.6 m³ bad bad kiba lah ban kit mar haduh 25 ton bad leit buh sha ka jaka tyllait maw lane sha ka jaka bret jaboh kaba la buh kyrpang.
- Ia u surok yn shna ha ka jingkhien kaba 1:16

3.0 Ka jingbatai shaphang ka mariang (Description of the Environment)

Ia ki jingtip shaphang ka sawdong sawkun jong kane ka jaka ba la tyrwa ban khleng mawshun la sdang ban lum jingtip naduh u bnai March 2023 haduh u bnai May 2023. Ia ki jingshem bad ki jingtip la batai bniah kumne ha harum:

Ki jingtip shaphang ka jinglong ka suinbneng (Micro-meteorological data):

- Ka jingshit jingkhriat (Temperature):** Ka jingshit jingkhriat jong ka jaka ka iapher naduh 14.13⁰C haduh 35.37⁰ C.
- Ka jingdon um ha suinbneng (Relative Humidity):** Ka jingdon um ha suinbneng ka iapher naduh 21.0 haduh 99.44 %.
- Ka jingstet jong ka Iyer (Wind Speed):** Ka jingstet jong ka Iyer ka long hapdeng 0.10 m/s haduh 6.43 m/s.

Ka jingneh slem jong ka jingbeh jong ka Iyer ka long sha ka phang shathie lam sepngi (South West). Bunsien, ka Iyer ka beh ha ka jingstet kaba don hapdeng 0.50 - 5.70 m/s.

Ka jingmih na ka jinglong ka lyer ha ki sawdong sawkun jong ka par mawshun (Ambient Air Quality Results):

La shim nuksa na ki 6 tylli ki jaka (Sampling location) kiba don sha ka phang Shathie lamsepngi bad kiba don shaphang Shatei lammihngi, kumjuh na ka shnong Umlaper, Tongseng, Lumshnong bad Umlong.

Ka jaka ba kongsan (Core zone):

Ka jingthew ha ka jaka ba kongsan ka don hapdeng (Mean value) jong PM₁₀ ka don naduh (64.55 – 66.49 µg/m³) bad ka PM_{2.5} ka long naduh (29.20-30.08 µg/m³). Ka SO₂ ka long naduh (6.15-6.33 µg/m³). Ka NO₂ ka long naduh (16.45-16.94 µg/m³) bad ka CO₂ ka long naduh (0.29-0.30µg/m³) ki don hapoh hapoh u pud jong ka ka lyer bakhuid bad ka bym don jingma kat kum ka jingbatai jong ka National Ambient Air Quality Standards(NAAQS). Kat kum ka jingkhein, ka jinglong jong ka suinbneng (As per the Air Quality Index) ha ka jaka ba kongsan (ka jaka ba don ka par mawshun) haba ia nujor ka jingkhein ka CPCB, ka jaka ba kongsan ka long kaba khuid ha ka aiom lyiur.

Ka jaka pynsah (Buffer zone):

Ka jingthew ba long pdeng jong ka PM₁₀ ka long naduh (69.07 - 75.53 µg/m³), ka PM_{2.5} ka long naduh (31.25 - 34.17 µg/m³), ka SO₂ ka long naduh (6.57 - 7.19 µg/m³), ka NO₂ ka long naduh (17.60 - 19.24). /m³) bad ka CO ka long naduh (0.31 - 0.34 mg/m³) kiba don hapoh u pud jong ka National Ambient Air Quality Standards (NAAQS). Kat kum ka jingshem jong ka jingpule bniah bad ia nujor bad ka jingshem jong ka CPCB, ka jinglong jong ka suinbneng ha ka jaka ba la pynsah (Buffer zone) ka long kaba biang ha ka por ba lum jingtip. Kumta, lah ban pynkut na ki jingmih haneng ba baroh ki jingthew (parameter) ki don hapoh u pud jong ka jingbha jong ka lyer kat kum ka National Ambient Air Quality Standards (NAAQS) bad haba ia nujor ia ka jingkhein (Air Quality Index) jong ka jinglong jingman jong ka lyer ba la lum jingtip da ka CPCB katei ka jaka ba la pynsah (Buffer zone) ka hap hapoh ka jingthew kaba pynhun ia kiba jingthaw ba im.

Ka jingmih na ka jingbha ki bor jingsawa (Noise Quality results):

La shim nuksa na ki 8 tylli ki jaka (Sampling location) kiba don sha ka phang Shathie lamsepngi, bad ki jaka kiba don shaphang Shatei lammihngi, kumjuh na ki jaka jong ka surok shnong (Approach road), Surok bah (NH-6), Umlaper, Tongseng, Lumshnong bad Umlong.

Ka jaka ba kongsan (Core zone of the industrial area): N1, bad N2:

Ka bor jingsawa ba la pynmih (Ambient noise level) ha ka por mynsngi na ka jaka ba la tyrwa ban khlong mawshun ka iapher naduh 57.4 dB (A) haduh 57.6 dB (A). Kitei ki bor jingsawa ki don hapoh u pud ba la buh n aka bynta ki karkhana ~ 75 dB (I). Ha ka por mynmiet ka bor jingsawa ha ka jaka ba don ka par mawshun ka long naduh 44.7 dB (A) haduh 44.8 dB (A) kiba don hapoh u pud ba la buh jong ki jaka ba don ki karkhana 70 dB (A).

Ka jaka ba pynsah (Buffer Zone):**Ka jaka iew (Commercial Area): N3:**

Ka bor jingsawa kaba don ha ka jaka iew kata ha surok shnong (Approach Road) bad NH-6 ka long 57.4 dB (A) haduh 62.8 dB (A). Ka bor jingsawa kaba pynmih ha ka por mynsngi ha ka jaka long iew (Commercial area) ka don hapoh u pud ba pynbeit kata ~ 65.0 dB (A) bad 46.7 dB (A) haduh 57.9 dB(A). Ka jingpynmih ia ka bor jingsawa ha ka por mynmiet ha ki jaka long iew ka don hapoh pud jong ka jingsawa kata ka long ~ 55 dB (A).

Ka jingsawa ha ki jaka sah (Residential Area) N4 haduh N8:

Ka bor jingsawa ha ki sawdong sawkun jong ki jaka sah (Residential area) ka don naduh 53.1 dB (A) - 56.6 dB (A) ha ka por mynsngi bad naduh 43.9 dB (A) to 47.2 dB (A) ha ka por mynmiet. Ka jingpynmih ia ka bor jingsawa ka kham kiew khyndiat na ka jingsawa ba la buh ha ka por mynmiet kaba long ~ 45 dB (A). Ka jingkieu jong ka bor jingsawa ka dei namar ka jingtreikam jong ki nongshong shnong (Residential Activity) hapoh kitei ka shnong.

Ki jingmih na ka jinglong jong ka um (Water Quality Results): Ia ki nuksa jong ka um la lum na ki 12 tylli ki jaka (Stations), kiba kynthup ia 8 tylli ki jaka um hapoh khyndew (Ground water) bad 4 tylli ki jaka um ba don ha sla khyndew (Surface water).

Ka jinglong jong ka um hapoh khyndew (Ground water quality):

La lum ia ki nuksa um na ki 8 tylli ki jaka na ki jaka sam um dih ba kynthup ia ka shnong Umlaper, Tongseeng, Lumshnong, Umlong, Sialkan, Umbadoh bad Brishyrnot.

Ka jinglong jong ka um hapoh khyndew- ha ka jaka ba kongsan bad ka jaka ba pynsah (Ground water quality- Core zone & Buffer Zone) ki long kumne:-

- Ka ka bor jong ka um ban pynkylla bad pynjem ia ki jaboh (Total Dissolved Solids) jong ki um kiba shim nuksa W1, W2, W3, W4, W5, W6, W7, W8 ka long naduh 68 mg/l haduh 182 mg/l kiba don hapoh ka jingthew jong ka um dih (IS:10500) . kata. 500 mg/l.

- Ka jingkhlain (Hardness) jong ka um ha baroh ki jaka ba jurip ka long naduh 18 mg/l haduh 70 mg/l. Haba khein kyllum ka jingkhlain bor jong ki um na ki jaka shim nuksa la shem ba ki don hapoh u pud u sam jong ka jingthew jong ka um dih (IS:10500) kata 200 mg/l.
- Ka jinglong jong ka um (Alkaline) na ki jaka ba shim nuksa ka long hapoh u pud jong ka um dih kat kum ka (IS:10500) kata. 200 mg/l.
- Ka jingdon jong ka Fluoride ha baroh ki jaka um ba la shim nuksa ka long duna naduh <0.1 mg/l haduh 0.64 mg/l , ka don hapoh u pud jong ka um dih (IS:10500) kata 1.0 mg/l.
- Ka jingdon ka Calcium ha ki um kiba don ha ki jaka ba la shim nuksa ka long naduh 5.4 mg/l haduh 26 mg/l. Ka don hapoh pud jong ka um dih kata kat kum (IS:10500) kata. 75 mg/l.
- Ka jingdon jong ka Magnesium ha ki jaka um ba la shim nuksa ka long naduh 0.48 mg/l haduh 7.20 mg/l. Ia ka jingdon jong ka Magnesium la shem ba ka don hapoh ki kyndon bad u pud jong ka um dih kiba lah ban pyndonkam kat kum (IS:10500) kata. 30 mg/l.
- Ka jingdon jong ka Chloride ha baroh ki jaka um ba la shim nuksa ka long duna naduh 6.80 mg/l haduh 31 mg/l. Ka Chloride ka don hapoh u pud jong ka um dih (IS:10500) kata 250 mg/l.

Ka jinglong ka um ha sla khyndew (Surface Water Quality):

La shim nuksa na ki 4 tylli ki jaka um kata na ka Umso Nala bad na ki bynta ba kham shaneng jong ka Wah Lukha bad ki bynta ba sharum jong ka Umso Nala.

Ka jinglong jong ka um ha sla khyndew- ka jaka ba la pynsah (Surface water quality- Buffer Zone) –

- Ia ki nuksa um na sla khyndew la shim na ki 4 tylli ki jaka kiba don hapoh u pud jong ka jaka ba la pynlong ia ka jingpule bniah, ki jingmih na ka jingshem jong ka jingpule bniah ki pynpaw ba ki bor jong ka um (pH value) ki don ka jingiapher naduh 7.70 – 7.78. Ka jinglongkhlain (Hardness) jong ki um ka iapher naduh 118 mg/l haduh 172 mg/l bad ka jingkhlain kaba ha khliehduh (Maximum hardness) jong ki um na baroh ki jaka ha ba la shim nuksa bad ka bor jong ka um ban pynkylla bad pynjem ia ki jaboh (Total Dissolved Solids) ka iapher ha ka jingthew kaba 201 haduh 252 mg/l katba baroh

ki um ki don hapoh u pud uba lah ban pyndonkam. La lap ba ka electrical conductivity ka long hapdeng 352 haduh 432 $\mu\text{mho/cm}$.

- Ki nuksa um ba don ha sla khyndew la niew ba ki don hapoh ka kyrdan 'D' (Ka um kaba bit na ka bynta ki mrad khlaw bad ki doh um kum ki dohkha bad E (kata kaba bit ban pyndonkam ha kaba rep lyngkha bad thung jingthung abd na ka bynta ban pyndonkam ha kaba pynkhriat ia ki mashin bad ban pynkhuid ia ki jaboh) katkum u pud ba la mynjur da ka CPCB.

Ka jingtip n aka jinglong jong ka khyndew (Soil Quality Results):-

Ki nongmuna ba la lum na ki 8 tylli ki jaka kata na ka shnong Umlaper, Tongseng, Lumshnong, Umlong, Sialkan, Umbadoh bad Brishyrnot.

Ka jaka ba kongsan bad ka jaka ba pynsah (Core zone and Buffer zone):

Ki nuksa ba la lum na ki jaka S1 – S8 ka pyni ba ka jinglong jong ka khyndew ka long dewbyrtha bad khyndew shyiap (Clay & Clay Loam) kaba long 5/3 kaba don ka rong lam byrsaw saw, ka don ruh ka khyndew kaba don 3/4 ka rong lambyrsaw dum kaba don ka bor jong ka pH (pH value) naduh (6.90 - 7.70)

Ka jingdon ka khyndew sbob (Organic matter) ka long naduh (0.35 haduh 2.31 %), ka Nitrogen ka long naduh (62.40 - 106.40) mg/kg ka long kaba duna. Ka jingdon ka Potassium ka long naduh (12.20-43.70) mg/kg ka long kaba duna katba ka jingdon ka Phosphorus ka long naduh 7.20 – 14.10 mg/kg ka long pdeng bad malu mala ka tam na ka jinglong pdeng. Kumta ka khyndew ka long kaba seisoh.

Ki jingmih na ka mariang bad ki jingthaw ba im (Ecology and Biodiversity Results):

Ka jingtih mawshun ka lah ban ktah ia ki jingthung jingtep ha ka jaka ba kongsan (Core zone) namar ka jingpynmih ia u pum pum kaba lah ban ktah ia ka jait jingthung jingtep kiba don hajan ka par mawshun.

Ki jingthung jingtep ha ka jaka ba tyrwa (Flora of Core zone):

Ha ka jaka ka par mawshun ba la tyrwa ban khlong mawshun, la pynlong ia ka jingwad bniah bad la shem ba ka jingdon jong ki jingthung jingtep bad ki mrad ki mreng ka long kaba duna bha namar ba ha katei ka jaka bad ki sawdong jong ka ki la don lypa ki karkhana pynmih dewbilat. Kumta, ka jingdon ki dieng ka long kaba duna bha, la lap ruh ba ki don katto katne tylli ki dieng kum ki Duabanga grandiflora, ki Gmelina arborea, ki Tetrameles nudiflora, ki

Albizzia spp, ki Betula alnoides, ki Terminalia spp, ki Ficus spp, ki Artocarpus spp, ki dieng synsar (Broomstick lessea), ki diengkiat, ki skhen bad kiwei kiwei de.

Ki jingthung jingtep ha ka jaka ba pynsah (Flora of Buffer Zone):

Halor ka nongrim jong ka jingwad bniah bad ki jingtip ba la lum na ka ophis sorkar kiba ia dei bad ka khlaw ka btab (Forest Department) la shem ba bun jait ki dieng bad ki jingthung kiba itynnad bad ka khyndew kaba sboh bad kiba iadei bha bad ka jinglong jong ka suinbneng sha kane ka thain.

Ki mrad kiba don ha ka jaka ba la iitbniah (Fauna of the Study area):

Ki don 15 jait ki mrad kiba hap hapoh ka Schedule I ba la buh kyrteng hapoh ka ain ban iada ia ki mrad khlaw bad ban pynneh pynsah ia ka jinglong jingman jong ki. Kine ki jait mrad ki long ka Hog Badger (*Arctonyx collaris*), ka Golden Jackal (*Canis aureus*), ka Himalayan Serow (*Capricornis sumatrenis*), ka khla miaw (Leopard Cat) (*Felis bengalensis*), ka Domestic Cat (*Felis Catus*), ka Indian Grey Mongoose (*Herpestes edwardsii*), ka Hoolock Gibbon (Hoolock Gibbon). hoolock), Indian Crested Porcupine (*Hystrix indica*), Pangolin (*Manis pentadactyla*), Slow Loris (*Nycticebus bengalensis*), Indian Python (*Python molurus*), Indian Cobra (*Naja naja*), Indian Peafowl (*Pavo cristatus*), Great Pied Hornros (*Buce). bicornis*), U Khnai uba don ka ryndang kaba lieh (*Gyps bengalensis*).

Ki jingmih na ka jingpule bniah ia ka imlang sahlang (Socio Economic Study Results):

Ka rukom synshar jong ka jaka pule (Administrative structure of the study area):

La jied 37 tylli ki shnong na ka bynta ka jingpule bniah. Ka jingbun briew baroh ha ka jaka ba la pynlong ia ka jingpule bniah ka long 15558 ngut kaba pynlong 2896 tylli ki longiing. Ka jingkhein kyllum baroh kynthei bad shynrang ka long 942 ngut ki kynthei na ka1000 ki shynrang.

Ka Jinglong jong ka Imlang Sahlang (Social structure):

Ka jingdon jong ki Scheduled Caste (SC) hapoh ka jaka ba la pynlong ia ka jingpule bniah ka long 0.11 % bad ki Scheduled Tribe (ST) ki long 97.45 % bad kiwei pat ki long 2.44 %.

Ka jingnang jingstad (Literacy):

Kiba nang ban thoh bad pule ha ki jaka ba pynlong ia ka jingpule bniah ki long 61.67 % bad ki bym nang ban thoh bad pule ki long 38.33%. Na baroh kiba nang ban thoh ki shynrang ki long 61.21% bad ki kynthei ki long 62.17 %.

Ka Kam ka jam bad ka lad kamai (Occupation and Livelihoods):

Na ka jingbun briew baroh, ka ki nongbylla baroh ki don 37.57% ha kaba ka jingbun briew bad na ki nongbylla kiba kham kongsan (Main working population) ka long 81.85 % katba ka jingbun briew kiba bylla ha ki kam kiba kham rit (Marginalise population) ka long 18.15 %.

Ka jingpule bad twad jingtip na ki nongshong shnong (Primary Study):

Na ki 37 tylli ki shnong kiba don hapoh ka jaka ba pynlong ia ka jingpule bniah (Study area) baroh 5 tylli ki shnong la jied na ka bynta ka jinglum jingtip. Kat kum ka jinglum jingtip na ki nongshong shnong (Primary survey), ka jingbun briew jong ki shnong ka long 15558 (Shynrang 50.66%, Kynthei 49.34%) haba ia nujor bad ka Primary Census Abstract (PCA) jong ka snem 2011 ka long 1743. Baroh ki longiing ha ki shnong ba la iitbniah ki long 442 tylli haba ia nujor bad ka PCA Census 2011 ka jingdon briew ka long 310 ngut. Ha kawei pa kawei ka longiing haba ia nujor bad ka jingkhein briew jong ka PCA ha u snem 2011 ka long 5.62 ngut. Ka jingkhein kynthei bad shynrang (Ka jingdon jong ki kynthei na ka 1000 ngut ki shynrang) ha ka jaka ba iitbniah ka long 983 haba ia nujor bad ka jingkhein briew jong ka PCA 2011 ka long 987. Ka jingbun briew baroh jong ki Schedule Cate (SC) ha ka jaka ba la jurip ka long 0.60% haba ia nujor bad ka jingkhein briew jong ka PCA 2011 ka long 0.51%. Ka jingdon jong ki Schedule Tribe (ST) baroh ha ka jaka ba la jurip ka long 99.4% haba ia nujor bad ka jingkhein briew jong ka PCA 2011 ka long 99.40%. Haba khein kyllum ka jingdon kiba la nang la stad ha ki shnong ba la jurip ka long 71% haba ia nujor bad ka PCA Census 2011 ha kaba ka long 62%.

Ki jingmih na ka jingpule bniah ia ka leit ka wan (Traffic Study Results):

La pynlong ia ka jingiitbniah ia ka jingdon ki kali kiba iaid ha u surok bah NH-6 kiba leit bad kiba wan (Up & down) hapoh ka 24 kynta bad la shem kumne harum:-

I. NH-6 (2 Lane): Kat kum ka jingiitbniah ia u surok bah NH-6, ka jingdon ki kali ba iaid ha u surok bah ki don 451 tylli (PCU/hr) bad ki kali kit mar ki don 2550 tylli ha ka 24 kynta (PCU/hr).

Ka jinglah bor jong u surok bah NH-6 ban shah ia ka jingkhiah ka long palat ia ka jingdon ki kali kiba iaid ha une u surok bah. Ka jingiaid ki kali kiba leit bad wan (To & fro) ban kit marpoh khyndew na ka jaka ba la tyrwa ban khlong mawshun kaba la tip da ka kyrteng ka “Daba Saitthad Limestone Deposit” kam nym don kano kano ka jingpynthud ia ka jingiaid ki kali halor u surokbah NH-6.

Ka jinglong bad ka jinglah bor u surok ka don hapdeng 0.18 to 0.20 bad ka jingai jingshakri (LOS) ka long “A” to “A” khlem kano kano ka jingkylla.

4.0 Ka jingtah ia ka mariang bad ki lad ban iada (Anticipated environmental impact and mitigation measures)

Ka lyer bad ki sawdong sawkun (Air environment):

Ban pynduna ia ka jingtah jong ka jingtih mawshun yn pyntreikam ia ki lad ki lynti kiba donkam n aka bynta ban iada na ki jingduh ka mariang bad kiba don ha ka. Ka jingsynreit um ban pynduna ia u pum pum, ka jingsumar ia ki mashin ban pynduna ia ka jingpynmih jingsawa, ban don ki tiar iada ialade, ka jingpeit bniah ia ka koit ka khiah jong ki nongtrei, ka thung dieng (Green belt), ka jingksam thliew bad tih mawshun da kaba pynsgem da ka um bad kiwei kiwei ki la don lypa ki jingpynkhreh. Da kaba pyrkhath ia ki kam ha baroh ki liang kham kaba iadei bad ka jingtih mawshun, la pynkhreh lypa ban iada ia ka jinglong jingman jong ka lyer ha ka par mawshun. Ka jingpynshna ia ka jaka thung dieng (green belt) yn leh ha ka jaka kaba heh 1.46 ha ka jaka ba don hapoh ka jingiada (safety zone) kaba heh 7.5 ha hapoh kine ki san snem ba nyngkong jong ka jingtih mawshun. Nalor kata, ha kaba kut jong ka por ba la iakut baroh ka jaka kaba heh 23.14 ha, ka jaka ba la ai wai ban tih mawshun yn thung dieng bad pynkylla khlaw biang ia ka.

Ka jingsawa ba pynthud ia ka mariang (Noise Environment): Ia ka jingkhlong mawshun bad ka jingksam ia ki thliew pynbthei ban pynbait ia u mawshun yn pyntreikam da ki kor ki bor bad ki mashin khlong maw kat kum kane ka juk n aka bynta ban pynduna ia ka jingsawa. Yn sumar bad pynneh pynsah ia ki mashin ha ka jinglong kaba bha, yn ai ia ki nongtrei par mawshun ia ki tiar iada kum ki jingiada khmat, jingiada khlieh, jingiada kti, jingtap skhor, ki jingtap khmut ban iada na u pum pum. Ki kyndon ba donkam baroh yn bud ryntih bad yn pynbha shuh khnang ban ioh ia ka jingpynbthei kaba duna eh ka jingpynmih jingsawa bad jingkhiah ka khyndew.

Ka um bad ka sawdong sawkun (Water environment):

Ka jingdonkam um na ka bynta ka par mawshun kan long kumba. 40 KLD kaba yn pyndonkam kham bun na ka bynta ban dih bad ban pyndonkam ban synreit um ia ki jingthung jingtep, ia ka surok kit mar ban pynduna ia ka jingpynmih ia u pum pum. Ia ka jingdonkam um yn shim lyngba ki kor tan um na ka jaka pynmih dewbilat jong ka kompeni kaba la don lypa ka jing pynkhreh.

Ka khyndew bad ka sawdong sawkun (Land environment):

Ka jingheh jong ka jaka ba la aiwai na ka bynta ban khlong mawshun ka long 25 ha. Ka jingtih mawshun kan long da kaba plied ia ka khyndew da ki mashin ryngkat bad ka jingksam thliw bad jingpynbthei ia u mawshun. Ka jingpynmih mawshun kaba heh tam ka long 2.51 MTPA. Ka jingpynmih mar kan long 2.832 MTPA (kaba kynthup 2.51 MTPA u mawshun bad 0.322 MTPA u mawshun ba khleh khyndew shyiap bad ka jaboh khyndew). Ha kaba kut jong ka por jong ka jingpynkhreh (Land development), kan pynnkha ia ka jaka kaba don ka jingheh 23.54 ha. Na ka jaka ba la mang ban khlong mawshun ka jaka kaba heh 13.14 ha yn sa thung dieng bad kaba heh 0.40 ha ka long ka bynta jong ka surok. Nalor kata ka jaka kaba heh 1.46 ha yn sa thung dieng bad kane ka jaka kan hap hapoh ka 7.5 m na u pud u sam ba la buh da ka ain.

Ka mariang bad ki jingthaw b aim (Biological Environment):

Ka jingtih mawshun ka lah ban ktah ia ki jingthung jingtep ha ka jaka ba kongsan (core zone) namar ka jingtih mawshun kan pynmih ia u pum pum kaba lah ban ktah ia ki jaka kiba don hajan kane ka jaka ba la tyrwa. Katei ka jaka kaba la tyrwa ban khlong mawshun ka long kaba syllen bad ka bym don khlaw. U Warden jong ka Chief Wildlife u la pynlong ka jingialang bad ki trai par mawshun (Industries) bad ki tnad sorkar jong ka jylla Meghalaya na ka bynta ban pynkhreh ia ka Regional Conservation plan na ka bynta ka East Jaintia Hills District hapoh ka jingpeit bad jingpyniaid jong ka CWLW, Meghalaya bad ka jinglut na ka bynta ban pynkhreh bad pyntreikam ia ka Regional Conservation Plan lah ban iasam da ki nongkyrshan jong ka projek bapher bapher. Ka jingthmu jong katei ka jingpynkhreh ka long ban ia ka mariang bad ki jingthaw b aim naduh ki dieng ki siej bad ki mrad ki mreng kynthup ia ka jaka sah jong mrad. Ki nongbei pisa jong ka par mawshun ki la pynthikna ruh ba ki long shi bynta jong ka plan pynneh pynsah ia ka mariang bad kin siew ruh ia ka dor katkum ba la buh na ka bynta ka projek jong ki.

Ha kaba kut jong ka por jong ka jingpynkhreh (Land development), kan pynnkha ia ka jaka kaba don ka jingheh 23.54 ha. Na ka jaka ba la mang ban khlong mawshun ka jaka kaba heh 13.14 ha yn sa thung dieng bad kaba heh 0.40 ha ka long ka bynta jong ka surok. Nalor kata ka jaka kaba heh 1.46 ha yn sa thung dieng bad kane ka jaka kan hap hapoh ka 7.5 m na u pud u sam ba la buh da ka ain.

Ka imlang sahlang bad ka ioh ka kot (Socio-Economic environment):

Ka jingdon jong ka par mawshun kan kyntiew ia ka ioh kam jong ki nongshong shnong jong ka thain. Namarkata ka jingkieu ha ka ioh ka kot baroh kawei jong ka thain kan urlong hadien ba la sdang ia ka jingkhlong maw na kane ka par mashun na katei ka par ba la tyrwa.

Ki jingktah namar ka jingkit jingbah (Impacts due to transportation):

Ka jingktah jong ka jingkit jingbah ia u marpoh khyndew kan long kaba duna bha namar yn kit ia ka ROM da ka dumper/tipper sha ka jaka tyllait maw kaba la don lypa ha ka karkhana pynmih dewbilat jong ka kompani lyngba ka surok shimet kaba don shabar jong ka jaka ai wai tih mawshun.

5.0 Ka prokram ban peit bniah ia ka mariang (Environmental Monitoring Programme):

Ka jingpeit pyrman ia ka jinglong jingman jong ka mariang ha ki jaka bapher bapher, hapoh ka jaka ba la ai wai ban khlong mawshun bad ha ka jaka ba la iitbniah kaba don 10 km sawdong (Radius) yn pynlong man ka por. La pynkhreh ia ka rukom kaba bniah na ka bynta ban buddien ia ki jinglong jingman jong ka mariang. La iitbniah ia ki jaka ba la shim nuksa da kaba pyrkhath ia ka tynrai jong ka jingmih ki jaboh namar ka jingtih ia u mawshun, ka rukom pyntuid um, ka jinglong ka jaka jong ka par mawshun bad ka mariang kaba don ki jingthaw ba im ruh ban pynkhreh ia kino kino ki jingma kiba lah ban mih n aka jingkhlong mawshun.

6.0 Ki jingpule bniah ban nang pynbha shuh shuh ia kaba la don lypa (Additional Studies)

Risk Assessment & Disaster Management Plan:

Ka Jingpeit bad pule bniah ia ki jingma kiba lah ban mih n aka jingtih ia u mawshun bad ka jingpynkhreh ban pynlait ia ki nongshong shnong bad ki jingthaw baroh na ki jingjia ba sngewsih. Ia ka jingtih mawshun yn pynlong da kaba tih bad khlong ia u maw da ki mashin, da kaba ksam thliw bad pynbthei. Yn pyndonkam da ki tiar tih mawshun kiba khlain bor bad ki kor ki bor kat kum kane ka juk, ki kali kit mar kum ki dampers/tipper bad kiwei kiwei de. Ia

ka jingtih mawshun yn leh hapoh ka jingpeit bniah kaba pyrkhing bha da ki briew kiba shemphang kumta ka jingma ha ka jingtreikam ka long kaba duna bha.

Ka jingpynbha pat bad jingwan shong shnong biang ki briew (Rehabilitation and Resettlement):

Kane ka jaka par mawshun kaba don ka jingheh 25 ha ka dei ka jaka jong ka Star Cement Limited. Ha kane ka jaka par mawshun kam don ki shnong shong briew, namar kata ka jingpynbha pat bad ka jingwanbiang ki briew sha kane ka jaka kam don. Kumta ka **Rehabilitation and Resettlement** kam long kaba donkam ha kane ka par mawshun kaba la tyrwa.

Ka koit ka khiah bad ka jingshngain ha ka kam (Occupational Health & Safety):

Ka kompeni kan shim khia bad ka jingkitkhlieh na ka bynta ban iada ia ki nongtrei bad kan ai ia ka jingsumar halor ka koit ka khiah kaba mih na ka jingtrei ia ka kam (Occupational Health) da kaba pynbha ia ka jaka trei ki nongbylla khnang ba kan long ka jaka trei kaba shngain. Ia kine ki lad jingpynbeit harum yn pyntreikam rynti n aka bynta ban pynneh ia ka koit ka khiah bad ka jingshngain ha ka kam:

- Ka jingpyndonkam ia ki tiar iada/iada kum ki glove, ki juti iada, ki jingtap khlieh (Helmet), ki jingda ia ka pum pum bad kiwei kiwei kan long kaba donkam. Ia ki jingpeit bniah yn pynlong man ka por ban pynbha ia ki jinglong jingman jong ka jaka trei da ka Environmental Cell.
- Yn ai jinghikai man ka por bad ki jingbuddien ba pynthymmai halor kane ka bynta ban pynbha ia ki jingtip jong ki nongbylla.
- Ka jingpeit bniah ia ka jinglong ka um, ka lyer, ka jingsawa, bad ka jinglong jingman jong ka koit ka khiah ha ka kam jong ki nongtrei jong ka par mawshun bad ki jaka sah ba marjan.
- Ka prokram peit bniah ia ka jingtreikam jong ki bynta bapher bapher jong ka par mawshun bad ki lad jingiada kat kumne ka juk.
- Yn don ka prokram ban peit bniah ia ki jingthung ban pynthikna ia ka jingim bad jingroi jingsan jong ki.
- Yn dro bad aiti ia ka plan ban peit ia ka koit ka khiah jong ki nongtrei bad ki paidbah kiba don hajan ryngkat bad ka jingmang pisa.

7.0 Ki jingmyntoi kiba mih na ka jingkhlong mawshun (Project Benefits):

Ka par tih mawshun ba la tyrwa ka wanrah ka jingmyntoi kaba khraw ia ka imlang sahlang bad kan iarap ban kyntiew ia ka ioh ka kot bad ka roi ka par jong ka thain. Katei ka par tih mawshun ba la tyrwa kan iarap ruh ban pynioh kam sha ki 99 ngut ki bried bad shibun kiwei ki jaitkam kum kaba die dukan, pynbiang bam ia ki nongbylla. Shuh shuh da kaba pynlong ia ki health check-up camp kaba man ka por, ki prokram ban pynsngewthuh shaphang ka roi ka par nongkyndong kiba ia dei ha ka liang ka pule puthi, ka jingsumar ia ka koit ka khiah shimet bad ki jingpynroi ia ki sap ban kyntiew ia ka jinglong jingman ha ka thain.

Kumba T. 20 Klur ka royalty, T. 2 klur ka DMF, T. 40 Lak ka NMET bad T. 15 klur ka Cess yn siew sha ka sorkar jylla ha ka shisnem na ka bynta ka roi ka par jong ka thain.

8.0 Ki jingpynkhreh ban iada ia ka Mariang (Environment Management Plan)

Ki jingpynkhreh na ka bynta ban iada ia ka mariang ha ka par mawshun da kaba bud ryntih ia ki kyndon ba la buh da ka IBM/MoEF&CC.

Ka rukom pyn treikam ka kynthup ia ka jingpeit ia ka rukom pyntreikam ia ki kyndon ban iada ia ka mariang bad ki jingim kiba donha ka. Da kaba pynshong nongrim ha ki jingbatai shaphang ka par mawshun (Project) bad ki kam kiba iadei bad ka, la pynkhreh ia ka plan ban iada ia ka mariang bad na ka bynta baroh, ka kompani ka la Mang Tyngka Rs. 376.54 lak kum ka baiseng (capital cost) bad Rs.23.28 lak kum ka jingpynlut (recurring cost) man ka snem. Ia ka jingpeit bniah ia ka mariang yn leh bad bud ryntih kat kum ki kyndon jong ka EC/CTE/CTO.

9.0 Jingpynkut (Conclusion)

Kumta, lah ban pynkut ha ka jingmut kaba bha ba hadien ba la pyntreikam ia ki lad jingiada mariang, ka jingtreikam kaba man ka sngi jong ka par mawshun ba la tyrwa kan don tang khyndiat eh ka jingtah ia ka mariang.