



EXECUTIVE SUMMARY



PROJECT TITLE

**PROPOSED FOREST PLANTATION DEVELOPMENT
(*EUCALYPTUS* SP., *ALBASIA* SP., AND OTHER SPECIES)
ON SULTANATE LAND PT 3592 (BLOCK 4) (388.448 HA),
AT MUKIM BUNGA TANJONG, DAERAH KUALA BALAH,
JAJAHAN JELI, KELANTAN DARUL NAIM.**

PROJECT PROPONENT AND ENVIRONMENTAL CONSULTANT

PROJECT PROPONENT

ACTUAL TIMBER SDN. BHD. (202401008496 [1554346-X])

No. 35B (2nd Floor), Jalan Bercham,
Medan Bercham, Selatan 1,
31400 Ipoh, Perak.

Contact Person: Mohd Faizal Su Bin Shaari

ENVIRONMENTAL CONSULTANT

NILAIMAS SERVICES (001953513-D)

No. 17-2 & 17-3, Jalan Equine 10D,
Taman Equine,
43300 Seri Kembangan, Selangor.

Contact Person: Dato' Seri Ts. Hj. Mohd Nawahidudin Bin Mahamad Isa



SAMM ACCREDITED LABORATORY

CHEMVI LABORATORY (514202-D)

No. 22A, Jalan Sungai Jeluh 32/192,
Nouvelle Kemuning Industrial Park,
Bukit Rimau, Section 32,
40460 Shah Alam, Selangor Darul Ehsan.



LEGISLATIVE REQUIREMENT

**ENVIRONMENTAL QUALITY ACT 1974,
ENVIRONMENTAL QUALITY (PRESCRIBED ACTIVITIES)
(ENVIRONMENTAL IMPACT ASSESSMENT) ORDER 2015,**

The Proposed Project falls under:

FIRST SCHEDULE

Activity 5: Forestry

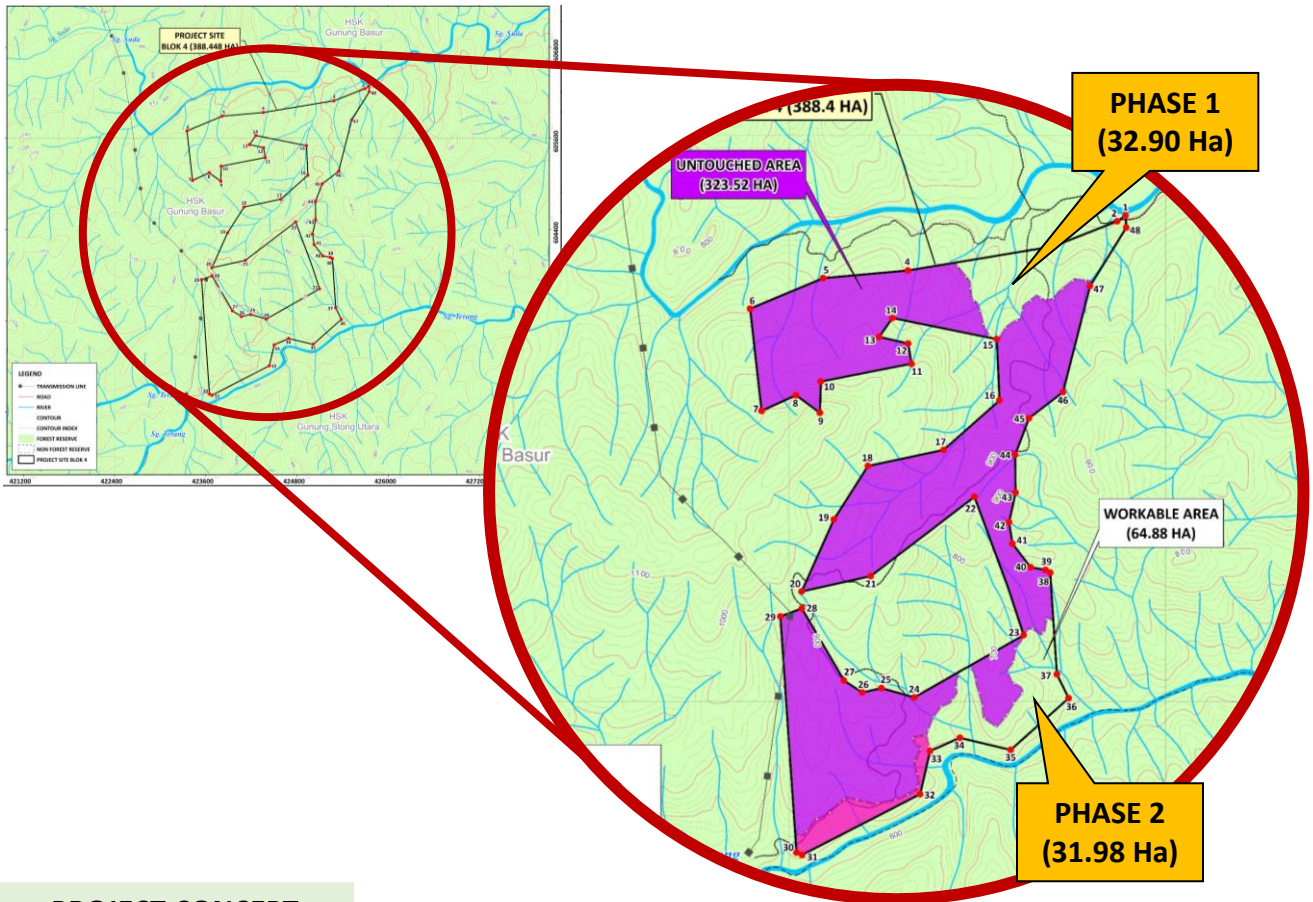
Activity 5 (e): Development of planted forest covering an area of 100 hectares or more but less than 500 hectares



PROJECT DESCRIPTION

PROJECT LOCATION

- The proposed Project site is located on **Sultanate Land PT 3592 (Block 4)** within Gunung Basur Forest Reserve, Mukim Bunga Tanjung, Daerah Kuala Balah, Jajahan Jeli, Kelantan.
- The proposed development covers a **total area of 388.448 hectares**.
- The Project site is located in a hilly area with an **elevation ranging from 494 m – 1,164 m**, with **slopes > 25°**.



PROJECT CONCEPT

- The forest plantation development will involve clear felling of the existing forested area (only within the Project boundary), and replanting with ***Eucalyptus sp.* and other species** as considered suitable by the *Jabatan Perhutanan Negeri Kelantan*.
- The Project site will be **developed into two (2) phases** in order minimize potential negative impact that may arise especially during clear felling, site clearance and earthwork activities.
- After the completion of planting activities in Phase 1, the planting in Phase 2 will begin immediately to ensure optimal land opening.

| Phasing | Area (Ha) | Total Green Area (Ha) |
|---------|-----------|-----------------------|
| P1 | 32.90 | 64.88 |
| P2 | 31.98 | |

PROJECT DESCRIPTION

PROJECT SCOPE

- Site clearing (**clear-felling method**) will be carried out before plantation of *Eucalyptus* sp.
- The Project site will be **left for about three (3) months for cover crops process** to maintain soil fertility before re-planting the *Eucalyptus* saplings.
- Site preparation and planting operations will be carried out by phases – two (2) phases.
- Areas with **slope above 30°** and **elevation exceeding 650m above sea level** will be **left untouched**.



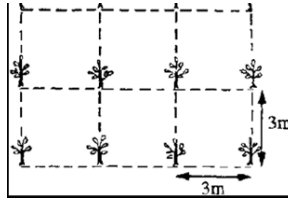
Example of digging planting hole



Hole diameter is 20 cm



Hole depth is 15 cm



Planting distance (Space between Hole): 3m x 3m



A seedling of hybrid *Eucalyptus* spp.



A Planting process of Hybrid *Eucalyptus* sp.



Apply a layer of mulch to the soil



Keep the soil moist



Fertilize the hybrid *Eucalyptus* plant



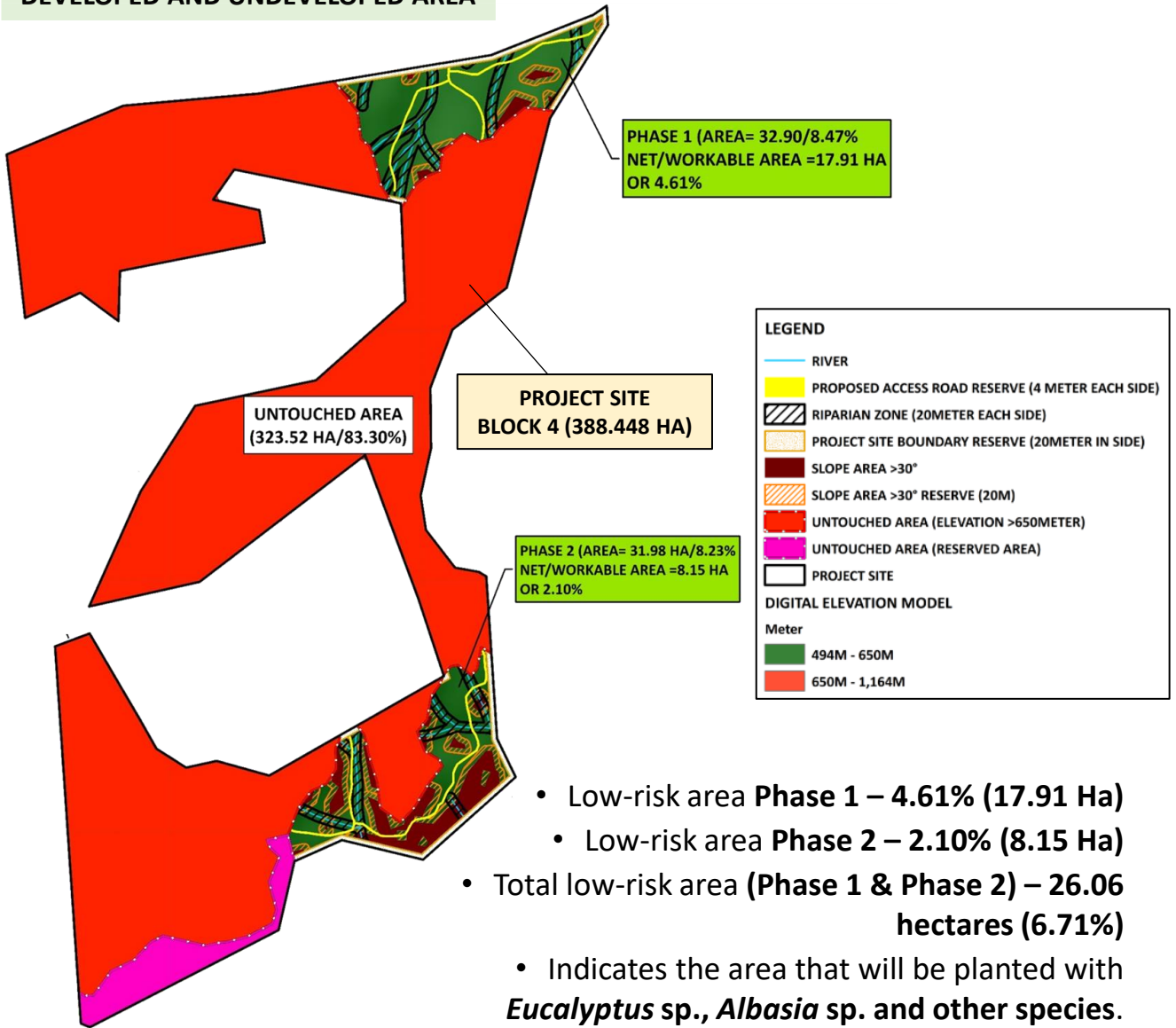
1 year old *Eucalyptus* (Hybrid) Plant

- Construction of plantation road.
- Site clearing/ clear-felling.
- Establishment of site office and storage facilities.
- Water supply and electrical supply.
- Mobilization of work force and heavy machinery.
- Establishment of drainage systems.
- Earthwork activities.
- *Eucalyptus* sp. plantation.
- Establishment of nursery area.
- Establishment of buffer zone.
- Solid and scheduled waste and biomass management.
- Establishment of LD-P2M2 & BMPs.



PROJECT DESCRIPTION

DEVELOPED AND UNDEVELOPED AREA



| AREA AVAILABILITY (WORKABLE AREA) | BLOCK 4 (388.4 HA) | | | | TOTAL AREA (HA) | PERCENTAGE (%) |
|--------------------------------------------------|--------------------|-------------|--------------|-------------|-----------------|----------------|
| | PHASE 1 | | PHASE 2 | | | |
| | AREA | % | AREA | % | | |
| SLOPE AREA >30° RESERVE (20M) | 3.79 | 0.98 | 13.42 | 3.46 | 17.21 | 4.43 |
| PROPOSED ACCESS ROAD RESERVE (4 Meter Each Side) | 1.01 | 0.26 | 1.18 | 0.30 | 2.19 | 0.56 |
| RIPARIAN ZONE (20Meter Each Side) | 6.89 | 1.77 | 5.89 | 1.52 | 12.78 | 3.29 |
| PROJECT SITE BOUNDARY RESERVE (20Meter In Side) | 3.30 | 0.85 | 3.34 | 0.86 | 6.64 | 1.71 |
| UNTOUCHED AREA | - | - | - | - | 323.52 | 83.30 |
| TOTAL UNWORKABLE AREA | 14.99 | 3.86 | 23.83 | 6.14 | 362.34 | 93.29 |
| TOTAL WORKABLE AREA | 17.91 | 4.61 | 8.15 | 2.10 | 26.06 | 6.71 |
| TOTAL PHASE AREA | 32.90 | 8.47 | 31.98 | 8.23 | 388.40 | 100.00 |

EXISTING ENVIRONMENT



Land Usage

- Current land usage: **Forested Area**
- Radius 10 km: Residential Area



Topography

- Undulating terrain with contour lines from 400m to 1100m
- Very steep slopes (**Slope > 25°**)
- Located out of flood prone area



Traffic and Accesibility

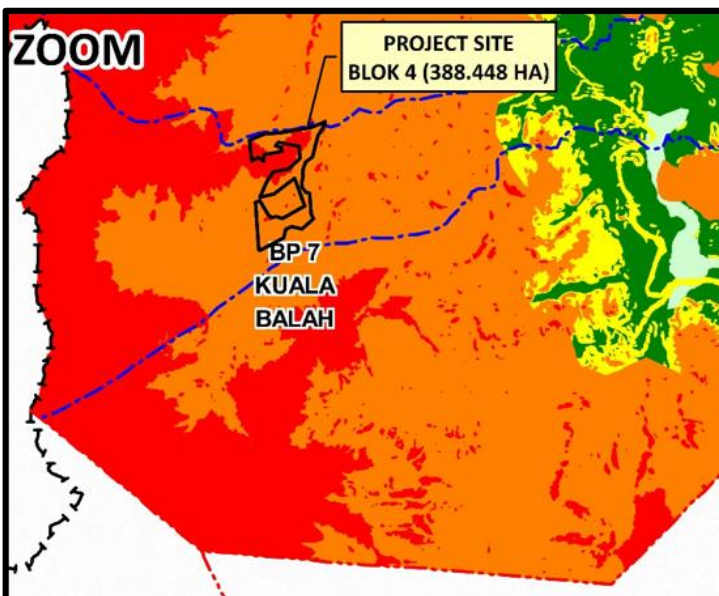
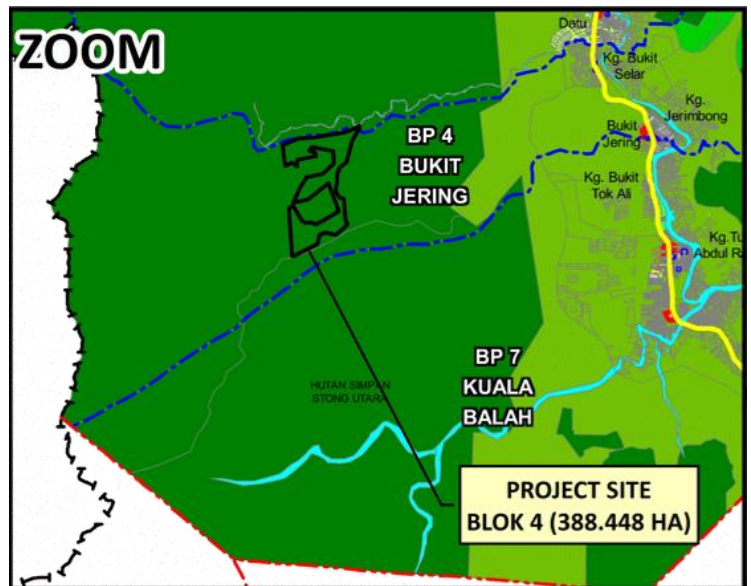
- Main road: 66 (*Jalan Persekutuan*) *Jalan Sungai Sam – Dabong - Jeli*

LAND USE BASED ON LOCAL PLANS

5. PERTANIAN, PERHUTANAN, PENTERNAKAN DAN PERIKANAN

| | |
|--|---------------------------|
| | Getah |
| | Kelapa Sawit |
| | Padi |
| | Lain-lain Jenis Pertanian |
| | Penternakan |
| | Akuakultur |
| | Hutan |
| | Tanah Terbiar |

**RANCANGAN TEMPATAN JAJAHAN JELI
2020 (PELANJUTAN TEMPOH SEHINGGA
TAHUN 2025)**



PETUNJUK:

- Zon Perlindungan Sepenuhnya (KSAS Tahap 1)
- Zon Pembangunan Terhad (KSAS Tahap 2)
- Zon Pembangunan Terkawal (KSAS Tahap 3)
- Zon Pembangunan (Luar KSAS)
- Kawasan 'Central Forest Spine'

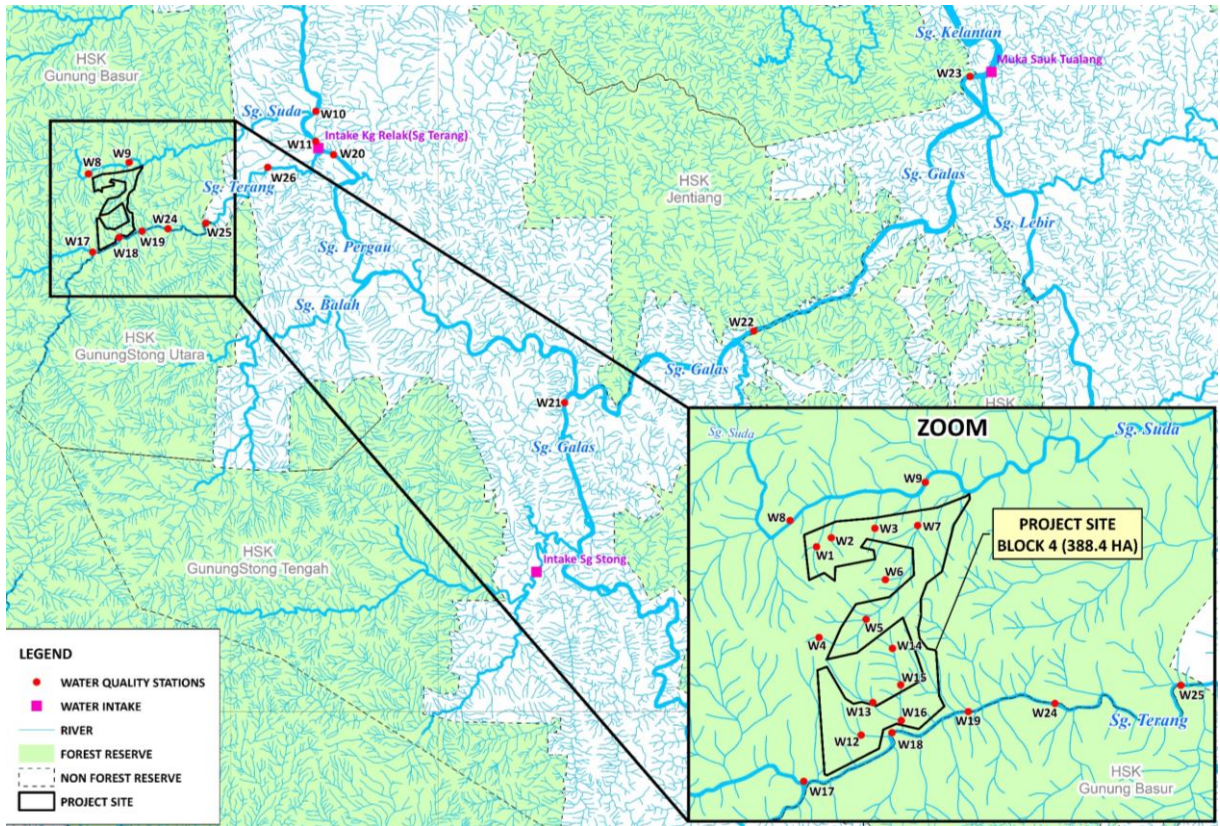
* Berdasarkan sela kontur 20m.

LAIN-LAIN

- Sempadan Antarabangsa
- Sempadan Negeri
- Sempadan Jajahan
- Sempadan Blok Perancangan

EXISTING ENVIRONMENT

WATER QUALITY



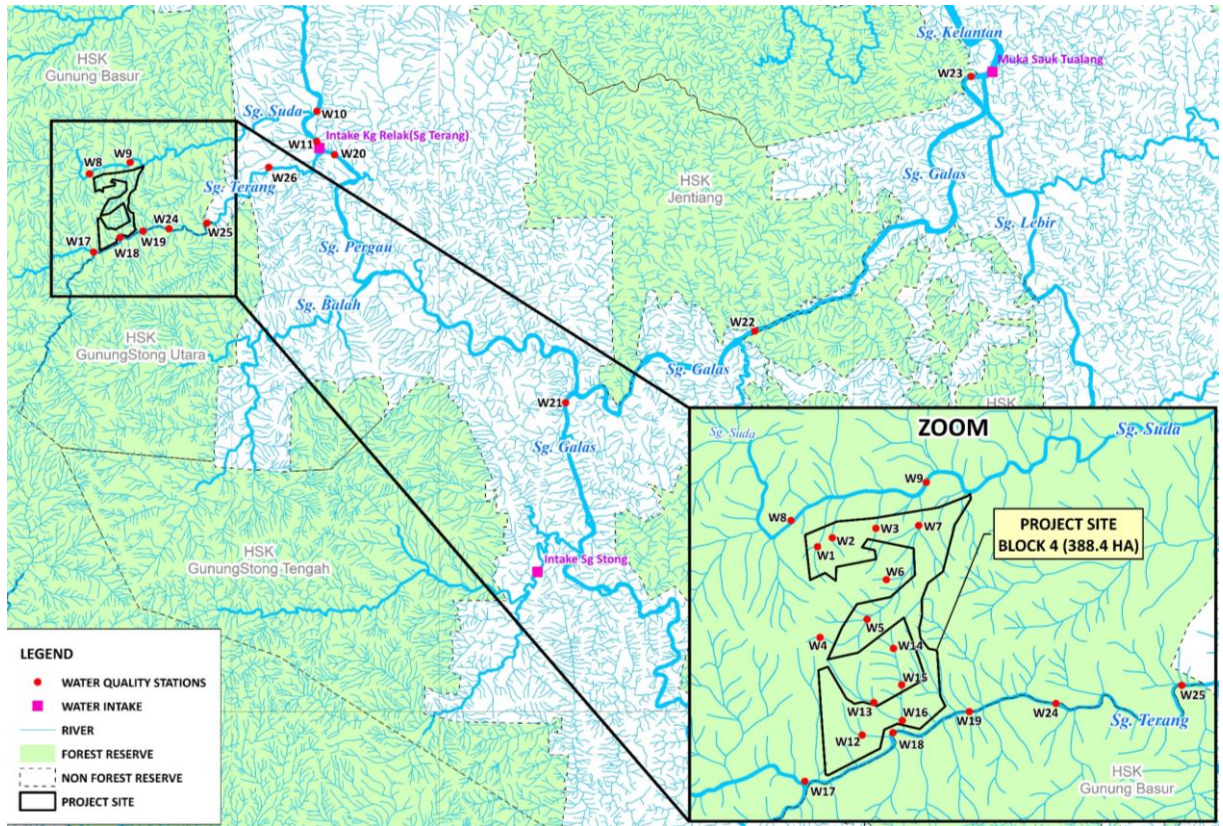
- Number of sampling locations: **26 locations**
- Sampling date conducted: **21st January – 6th February 2025**

- Water quality parameter is in **“good condition”** for most of the sampling station comparable to **Class II as “Clean”** (NWQS).
- Only one (1) sampling locations (**W11**) exhibit WQI **Class II** which classified as **Slightly Polluted**.

| Water Quality Sampling Station | | Remark |
|--------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------|
| W1 | 5° 28' 26.257" N, 101° 48' 9.006" E | Tributaries of Sg. Suda (Within Project Site) |
| W2 | 5° 28' 30.476" N, 101° 48' 15.904" E | Tributaries of Sg. Suda (Within Project Site) |
| W3 | 5° 28' 35.004" N, 101° 48' 36.398" E | Tributaries of Sg. Suda (Within Project Site) |
| W4 | 5° 27' 43.542" N, 101° 48' 10.304" E | Tributaries of Sg. Suda (Upstream of Project Site) |
| W5 | 5° 27' 52.122" N, 101° 48' 32.379" E | Tributaries of Sg. Suda (Within Project Site) |
| W6 | 5° 28' 10.827" N, 101° 48' 41.400" E | Tributaries of Sg. Suda (Upstream of Project Site) |
| W7 | 5° 28' 36.354" N, 101° 48' 56.505" E | Tributaries of Sg. Suda (Within Project Site) |
| W8 | 5° 28' 38.543" N, 101° 47' 56.499" E | Sg. Suda (Upstream of Project Site) (Suda Intake) |
| W9 | 5° 28' 56.716" N, 101° 49' 0.082" E | Sg. Suda (Upstream of Project Site) |
| W10 | 5° 30' 17.554" N, 101° 53' 52.693" E | Sg. Pergau (Upstream of Project Site) |
| W11 | 5° 29' 30.135" N, 101° 53' 52.315" E | Sg. Pergau (Downstream of Project Site) (Upstream of Intake Kg. Relak – Sg. Terang) |
| W12 | 5° 26' 57.608" N, 101° 48' 30.178" E | Tributaries of Sg. Terang (Within Project Site) |
| W13 | 5° 27' 12.958" N, 101° 48' 35.648" E | Tributaries of Sg. Terang (Upstream of Project Site) |

EXISTING ENVIRONMENT

WATER QUALITY (cont')



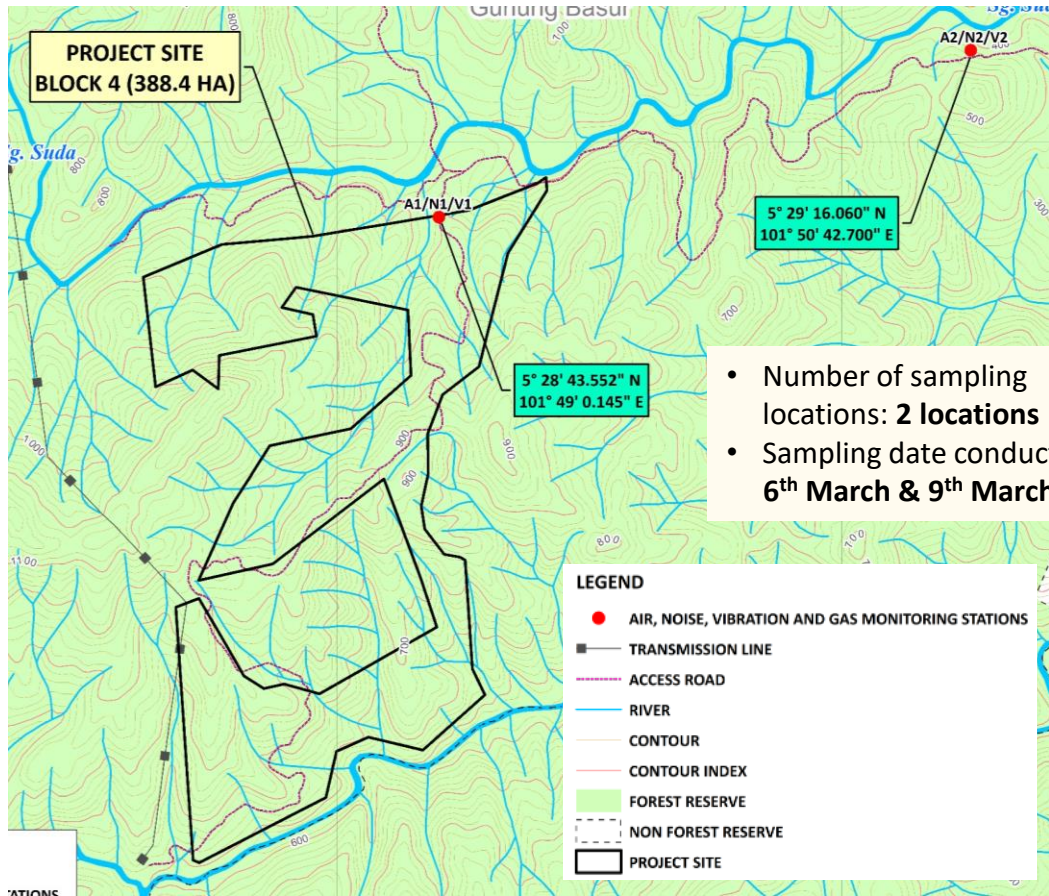
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| Water Quality Sampling Station | | Remark | |
|--------------------------------|--------------------------------------|---------------------------------------------------------------------|---------------------------|
| W14 | 5° 27' 38.428" N, 101° 48' 44.795" E | Tributaries of Sg. Terang (Upstream of Project Site) | |
| W15 | 5° 27' 21.297" N, 101° 48' 48.713" E | Tributaries of Sg. Terang (Upstream of Project Site) | |
| W16 | 5° 27' 4.534" N, 101° 48' 49.080" E | Tributaries of Sg. Terang (Within Project Site) | |
| W17 | 5° 26' 35.803" N, 101° 48' 3.279" E | Sg. Terang (Upstream of Project Site) (Terang Pump House) | |
| W18 | 5° 26' 58.756" N, 101° 48' 44.693" E | Sg. Terang (Downstream of Project Site) | |
| W19 | 5° 27' 8.737" N, 101° 49' 20.558" E | Sg. Terang (Downstream of Project Site) | |
| W20 | 5° 29' 9.359" N, 101° 54' 20.553" E | Sg. Pergau (Downstream of Project Site) | |
| W21 | 5° 22' 40.986" N, 102° 0' 23.062" E | Sg. Stong (Upstream of Project Site) | |
| W22 | 5° 24' 34.270" N, 102° 5' 19.527" E | Sg. Galas (Downstream of Project Site) | |
| W23 | 5° 31' 14.066" N, 102° 10' 57.438" E | Sg. Galas (Downstream of Project Site) | |
| W24 | 5° 27' 12.682" N, 101° 50' 1.265" E | Sg. Terang (Downstream of Project Site) | (Lata Kuala Balah) |
| W25 | 5° 27' 21.421" N, 101° 51' 0.443" E | | (Lata Geotrail 2) |
| W26 | 5° 28' 49.397" N, 101° 52' 37.367" E | | (Lata Chenai) |

EXISTING ENVIRONMENT

AIR, NOISE & VIBRATION QUALITY



- Number of sampling locations: **2 locations**
- Sampling date conducted: **6th March & 9th March 2025**

| Name | Coordinate | Description |
|----------|---------------------------------------|---------------------------------|
| A1/N1/V1 | 5 ° 28' 43.552" N, 101° 49' 0.145" E | Project site entrance |
| A2/N2/V2 | 5 ° 29' 16.060" N, 101° 50' 42.700" E | Access road to Project entrance |

AIR QUALITY

Air quality is within the stipulated limit (Malaysia Ambient Air Quality Standard 2020)

- **PM₁₀ : 100 µg/m³**
- **PM_{2.5} : 35 µg/m³**

VIBRATION QUALITY

No vibration is detected during the day of monitoring.

(Guidelines for Environmental Vibration Limits and Control, Third Edition (2021))

- **Day time: 0.1 mm/s**
- **Night time: 0.1 mm/s**

NOISE LEVEL

(Guidelines for Environmental Noise Limits and Control, Third Edition (2019) – Reprint 2021)

First Schedule – Recommended Permissible Sound Level (L_{aeq}) By Receiving Land Use for New Development (Low Density Residential)

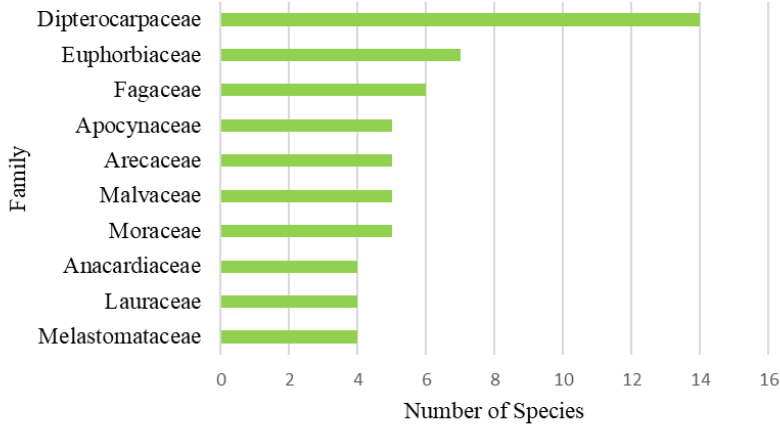
- **Day time: 55 dBA**
- **Night time: 50 dBA**

Noise level (in N1 & N2) is slightly exceeded the recommended noise limit during night time.

ECOLOGY STUDY

FLORA SURVEY

Top 10 Families with Highest Number of Species



Aerial view of the Project site (paved road reaching to Project site entrance)



The forest floor covered with ferns, broad-leaved plants, and low-lying shrubs

- The Project site is a forest which experienced changes of vegetation due to past logging activities.
- 10 families with highest number of species were identified.
- Most of the species found are classified as Least Concern (LC) and Not Evaluated (NE) as listed in IUCN Red List and Malaysia Plant Red List.

FAUNA SURVEY



Macaca nemestrina – Pig-tailed Macaque - Berok



Helarctos malayanus - Malayan Sun Bear – Beruang Matahari



Muntiacus muntjak – Common Barking Deer - Kijang

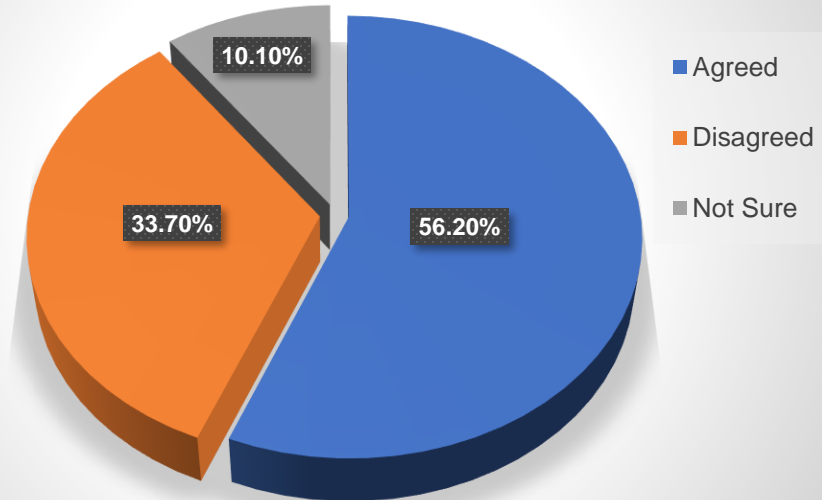


Prionailurus bengalensis – Leopard Cat – Kucing Batu

- Survey conducted has recorded 13 species of mammals from 12 families.
- Most of the species found are classified as Least Concern (LC) as listed in IUCN Red List.
- Whereas, there are 5 Protected species (Schedule 1), 6 Totally Protected species (Schedule 2) and 2 species that are not listed under Wildlife Conservation Act 2010.

SOCIO-ECONOMY SURVEY

Acceptances Toward Project



| Respondent's Acceptance | Respondents | Percentage (%) |
|-------------------------|-------------|----------------|
| Agreed | 28 | 56.2 |
| Disagreed | 17 | 33.7 |
| Not Sure | 5 | 10.1 |
| Total | 50 | 100.0 |






- 33.70% of the respondents disagree with the proposed Project development due to concern on their safety that might be resulted from the wildlife-human conflict as well from the soon-to-be frequent movement of heavy vehicles to and from the Project site.
- The concern also related to the environmental impacts of noise and dust generated from the frequent movement of vehicles to/from the Project site.

• Nevertheless, most of the respondents agrees with proposed Project development as this Project could offer job opportunities to the local residents, in addition to enhance the economy of the state.



POTENTIAL IMPACTS AND MITIGATION MEASURES

| | POTENTIAL IMPACTS | MITIGATION MEASURES |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> Erosion due to site clearing/ plantation activities. Deteriorates water quality. | <ul style="list-style-type: none"> Erosion prone activities should be scheduled for the drier period; All filled areas must be firmly consolidated and compacted; Install suitable size of sedimentation ponds; Construct proper and adequate surface water drains/ channels designed to prevent erosion and slope failure; Prepare LD-P2M2 prior Project commencement; Maintenance of drainage system and all erosion control tools; Vegetation along the rivers must be retained as buffers. |
|  | <ul style="list-style-type: none"> Water pollution due to site clearing/ plantation activities. Accidental oil/ fuel leakage/ spillage from storage tank. | <ul style="list-style-type: none"> Construct temporary earth drain that connect to sediment pond; The earthworks must be carried out during dry weather; Install mitigation instruments: ESCP/ LD-P2M2; Regular water quality monitoring should be done by a competent person and full time EO on monthly basis; Practices a reasonably good level of housekeeping; Proper irrigation system shall be designed for nursery and plantation operation; Apply the fertilizers and chemicals during the local wet season. |
|  | <ul style="list-style-type: none"> The use of heavy machineries can increase vibration level. Transportation of plantation materials will cause dust dispersion. Improper waste management will cause air pollution. | <ul style="list-style-type: none"> Exposed soil areas and stockpiles shall be dampened with water using water browser; Vehicle wheel-wash facilities shall be provided at the exits to the paved road; No burning of wastes shall be permitted; Conduct monitoring and maintenance; Provide PPE to workers. |
|  | <ul style="list-style-type: none"> Impact is significant as the existing environment will be altered. Natural vegetation will be cleared and replaced with new one. Fauna will lose their natural habitat due to site clearing and site preparation. | <ul style="list-style-type: none"> The site clearing should be planned and initiated near the existing roads and moving towards the forest area; Site clearing shall be conducted in proposed phases; Riparian buffer zone is recommended to be allocated particularly along main river; Riparian areas are not worked on; BMP's shall be provided during site clearing/ site preparation stage; Felling and removal of trees, vegetation and natural cover shall be conducted by reputable Sub-contractor; Felled trees and other biomass can be used as mulch at suitable area; Collaboration with Jabatan PERHILITAN is necessary – officially request Jabatan PERHILITAN to catch, trap and remove the conflicting species; A Wildlife Management Plan (WMP) needs to be established to encounter the potential negative impacts of the Project; Installing electric fences, drains and barriers around the Project site properly to prevent the elephant or other animals from entering the Project site. |

POTENTIAL IMPACTS AND MITIGATION MEASURES

| | POTENTIAL IMPACTS | MITIGATION MEASURES |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> Transportation of plantation materials and waste which can disrupt traffic movement. The movement of plantation vehicles and heavy machineries can cause road damage. | <ul style="list-style-type: none"> A detailed TMP shall be prepared. Prior to entering paved road, lorry shall undergo types of cleaning process; Maintenance of paved road to be done to repair the damage cause by Project's heavy machineries; The Project Proponent shall install clear speed limit and warning signs beside the road approaching worksite areas; Crusher run should be used throughout the plantation road (on site) and maintained weekly; Material transportation shall be avoided during peak hours (7.00 am – 9.00 am). |
|  | <ul style="list-style-type: none"> Generation of waste from site clearing activities, workers rest area, and the use of machineries. Generation of waste from plantation activities. | <ul style="list-style-type: none"> Open burning shall be prohibited; General refuse generated shall be stored in enclosed bins separately from hazardous wastes; General wastes shall be kept segregated and reused or recycled whenever possible; Adopting proper housekeeping practices and proper maintenance of the drainage system; Reuse of waste materials, recovery and recycling shall be taken place whenever. |
|  | <ul style="list-style-type: none"> Plantation activities can cause pollution which will deteriorate the health of nearby residents. The spread of disease/ Covid-19 outbreak. | <ul style="list-style-type: none"> The local communities shall also be encouraged and given the opportunity to acquire the necessary technical know-how through training scheme related to the operation; The Project Proponent must provide adequate utilities and facilities to the workers' rest area; Safety on all phases of the work must be addressed fully right from the start; First aid equipment must be readily accessible at all work sites. |





RINGKASAN EKSEKUTIF



TAJUK PROJEK

**PROPOSED FOREST PLANTATION DEVELOPMENT
(EUCALYPTUS SP., ALBASIA SP., AND OTHER SPECIES)
ON SULTANATE LAND PT 3592 (BLOCK 4) (388.448 HA),
AT MUKIM BUNGA TANJONG, DAERAH KUALA BALAH,
JAJAHAN JELI, KELANTAN DARUL NAIM.**

PENGGERAK PROJEK DAN PERUNDING ALAM SEKITAR

PENGGERAK PROJEK

ACTUAL TIMBER SDN. BHD. (202401008496 [1554346-X])

No. 35B (2nd Floor), Jalan Bercham,
Medan Bercham, Selatan 1,
31400 Ipoh, Perak.

Orang Yang Boleh Dihubungi: Mohd Faizal Su Bin Shaari

PERUNDING ALAM SEKITAR

NILAIMAS SERVICES (001953513-D)

No. 17-2 & 17-3, Jalan Equine 10D,
Taman Equine,
43300 Seri Kembangan, Selangor.

Orang Yang Boleh Dihubungi : Dato' Seri Ts. Hj. Mohd Nawahidudin Bin
Mahamad Isa



MAKMAL BERTAULIAH

CHEMVI LABORATORY (514202-D)

No. 22A, Jalan Sungai Jeluh 32/192,
Nouvelle Kemuning Industrial Park,
Bukit Rimau, Section 32,
40460 Shah Alam, Selangor Darul Ehsan.



KEPERLUAN PERUNDANGAN

**AKTA KUALITI ALAM SEKELILING 1974,
KUALITI ALAM SEKELILING (AKTIVITI YANG DITETAPKAN)
(PENILAIAN IMPAK ALAM SEKITAR) ORDER 2015;**

Projek cadangan tertakluk kepada:

JADUAL PERTAMA

AKTIVITI 5: Perhutanan

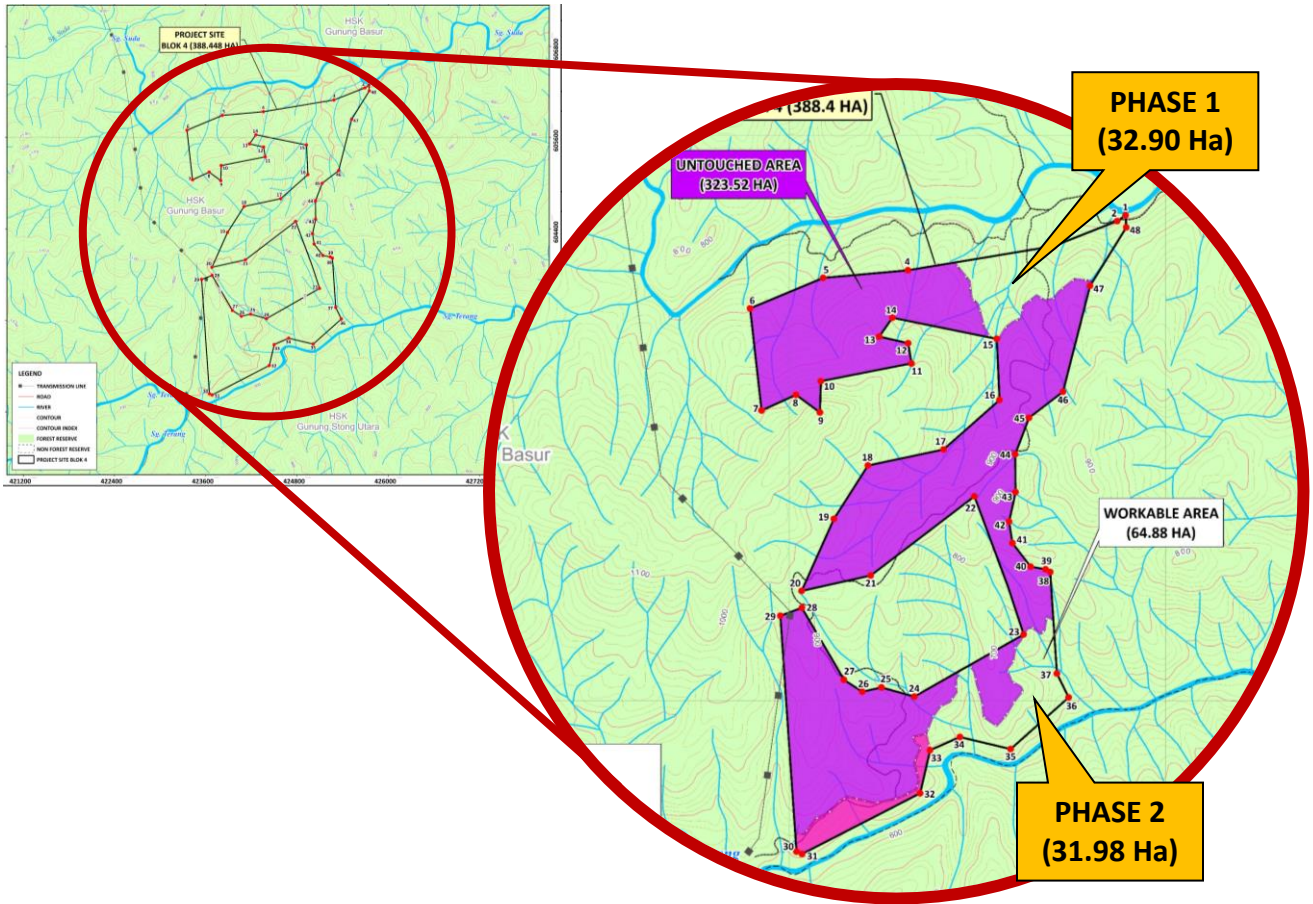
Aktiviti 5 (e): Pembangunan ladang hutan yang meliputi kawasan
seluas 20 hektar atau lebih kurang daripada 50 hektar.



PENERANGAN PROJEK

LOKASI PROJEK

- Tapak Projek Cadangan terletak di **Sultanate Land PT 3592 (Block 4)** di dalam HSK Gunung Basur, Mukim Bunga Tanjung, Daerah Kuala Balah, Jajahan Jeli, Kelantan.
- Pembangunan Projek Cadangan meliputi kawasan seluas **388.448 hektar**.
- Tapak Projek terletak di kawasan berbukit dengan **ketinggian antara 494 m – 1,164 m**, dengan **cerun > 25°**.



KONSEP PROJEK

- Pembangunan ladang hutan akan melibatkan *clear-felling* kawasan hutan sedia ada (hanya dalam sempadan Projek), dan penanaman semula dengan *Eucalyptus sp.* dan spesies lain yang dianggap sesuai oleh Jabatan Perhutanan Negeri Kelantan.
- Tapak Projek akan dibangunkan kepada dua (2) fasa untuk meminimumkan potensi kesan negatif yang mungkin timbul terutamanya semasa aktiviti penebangan jelas, pembersihan tapak dan kerja tanah.
- Selepas selesai aktiviti penanaman di Fasa 1, penanaman di Fasa 2 akan dimulakan serta-merta bagi memastikan pembukaan tanah yang optimum.

| Phasing | Area (Ha) | Total Green Area (Ha) |
|---------|-----------|-----------------------|
| P1 | 32.90 | 64.88 |
| P2 | 31.98 | |

PENERANGAN PROJEK

SKOP PROJEK

- Pembersihan tapak (*clear felling method*) akan dijalankan sebelum penanaman *Eucalyptus sp.* dan spesies lain.
- Tapak Projek akan dibiarkan selama kira-kira tiga (3) bulan untuk proses penanaman tanaman tutup bumi bagi mengekalkan kesuburan tanah sebelum menanam semula anak pokok *Eucalyptus*.
- Penyediaan tapak dan operasi penanaman akan dijalankan secara berfasa – dua (2) fasa.
- Kawasan yang mempunyai **kecerunan melebihi 30°** dan **ketinggian melebihi 650 m** dari paras laut tidak akan disentuh.



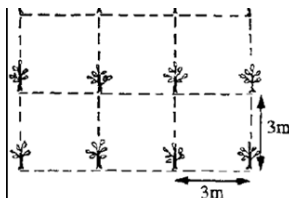
Example of digging planting hole



Hole diameter is 20 cm



Hole depth is 15 cm



Planting distance (Space between Hole): 3m x 3m



A seedling of hybrid *Eucalyptus* spp.



A Planting process of Hybrid *Eucalyptus* sp.



Apply a layer of mulch to the soil



Keep the soil moist



Fertilize the hybrid *Eucalyptus* plant



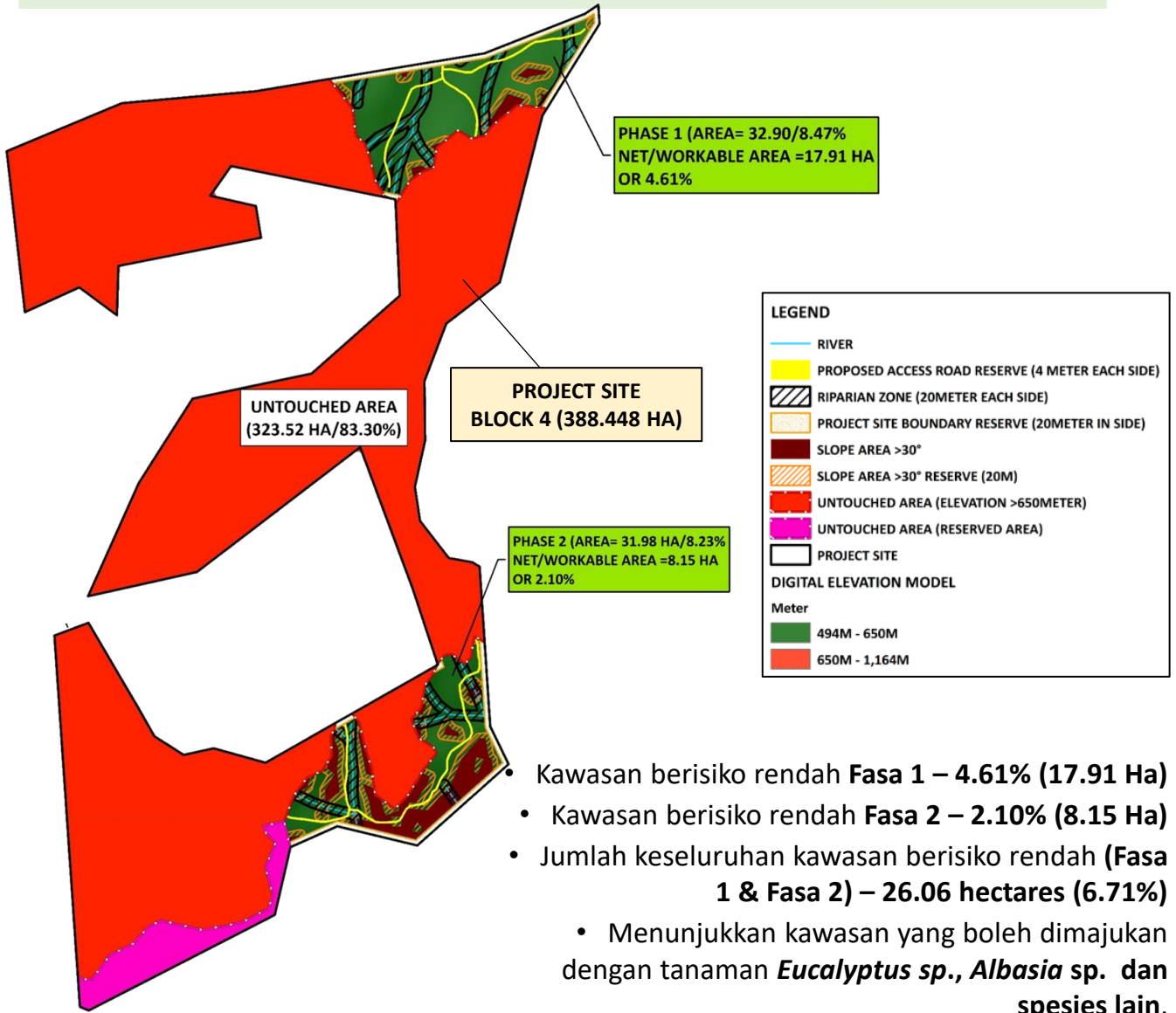
1 year old *Eucalyptus* (Hybrid) Plant

- Pembinaan jalan ladang.
- Pembersihan kawasan tapak Projek (*clear felling*).
- Penubuhan pejabat tapak dan kemudahan tapak Projek.
- Bekalan air bersih dan bekalan elektrik.
- Mobilisasi tenaga kerja dan jentera.
- Pembinaan sistem perparitan.
- Kerja-kerja tanah.
- Penanaman *Eucalyptus* sp..
- Penubuhan kawasan semaian.
- Penubuhan zon penanaman.
- Pengurusan sisa pepejal dan terjadual dan biojisim.
- Pelaksanaan LD-P2M2 & BMPs.



PENERANGAN PROJEK

KAWASAN YANG BOLEH DIBANGUNKAN DAN KAWASAN YANG TIDAK BOLEH DISENTUH



- Kawasan berisiko rendah **Fasa 1 – 4.61% (17.91 Ha)**
- Kawasan berisiko rendah **Fasa 2 – 2.10% (8.15 Ha)**
- Jumlah keseluruhan kawasan berisiko rendah (**Fasa 1 & Fasa 2) – 26.06 hectares (6.71%)**
 - Menunjukkan kawasan yang boleh dimajukan dengan tanaman *Eucalyptus sp.*, *Albasia sp.* dan spesies lain.

| AREA AVAILABILITY (WORKABLE AREA) | BLOCK 4 (388.4 HA) | | | | TOTAL AREA (HA) | PERCENTAGE (%) |
|--------------------------------------------------|--------------------|-------------|--------------|-------------|-----------------|----------------|
| | PHASE 1 | | PHASE 2 | | | |
| | AREA | % | AREA | % | | |
| SLOPE AREA >30° RESERVE (20M) | 3.79 | 0.98 | 13.42 | 3.46 | 17.21 | 4.43 |
| PROPOSED ACCESS ROAD RESERVE (4 Meter Each Side) | 1.01 | 0.26 | 1.18 | 0.30 | 2.19 | 0.56 |
| RIPARIAN ZONE (20Meter Each Side) | 6.89 | 1.77 | 5.89 | 1.52 | 12.78 | 3.29 |
| PROJECT SITE BOUNDARY RESERVE (20Meter In Side) | 3.30 | 0.85 | 3.34 | 0.86 | 6.64 | 1.71 |
| UNTOUCHED AREA | - | - | - | - | 323.52 | 83.30 |
| TOTAL UNWORKABLE AREA | 14.99 | 3.86 | 23.83 | 6.14 | 362.34 | 93.29 |
| TOTAL WORKABLE AREA | 17.91 | 4.61 | 8.15 | 2.10 | 26.06 | 6.71 |
| TOTAL PHASE AREA | 32.90 | 8.47 | 31.98 | 8.23 | 388.40 | 100.00 |

PERSEKITARAN SEDIA ADA



Guna Tanah

- Guna tanah semasa: **Hutan**
- Radius 10 km: Kawasan Perumahan



Topografi

- Bentuk muka bumi beralun dengan garisan kontur dari 400 m hingga 1100 m
- Cerun curam (**Slope > 25°**)
- Terletak di luar kawasan risiko banjir



Trafik dan Akses

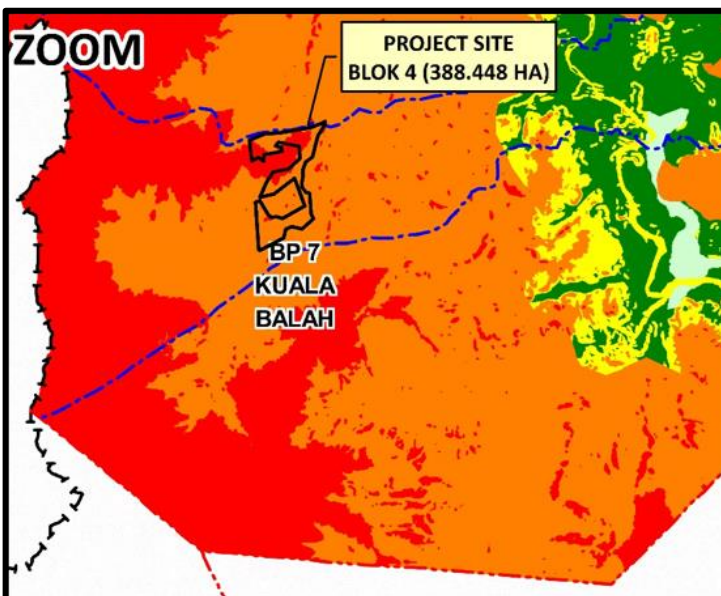
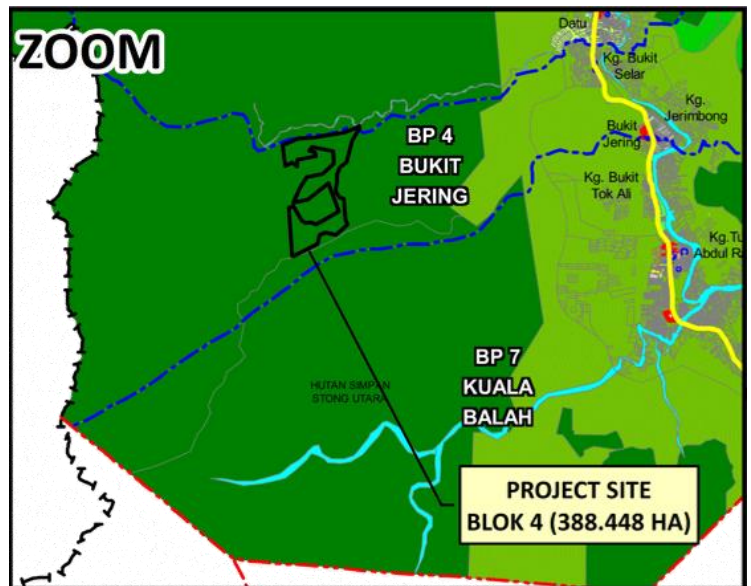
- Jalan utama : 66 (Jalan Persekutuan) Jalan Sungai Sam – Dabong - Jeli

GUNA TANAH BERDASARKAN RANCANGAN TEMPATAN

5. PERTANIAN, PERHUTANAN, PENTERNAKAN DAN PERIKANAN

| | |
|--|---------------------------|
| | Getah |
| | Kelapa Sawit |
| | Padi |
| | Lain-lain Jenis Pertanian |
| | Penternakan |
| | Akuakultur |
| | Hutan |
| | Tanah Terbiar |

RANCANGAN TEMPATAN JAJAHAN JELI 2020 (PELANJUTAN TEMPOH SEHINGGA TAHUN 2025)



PETUNJUK:

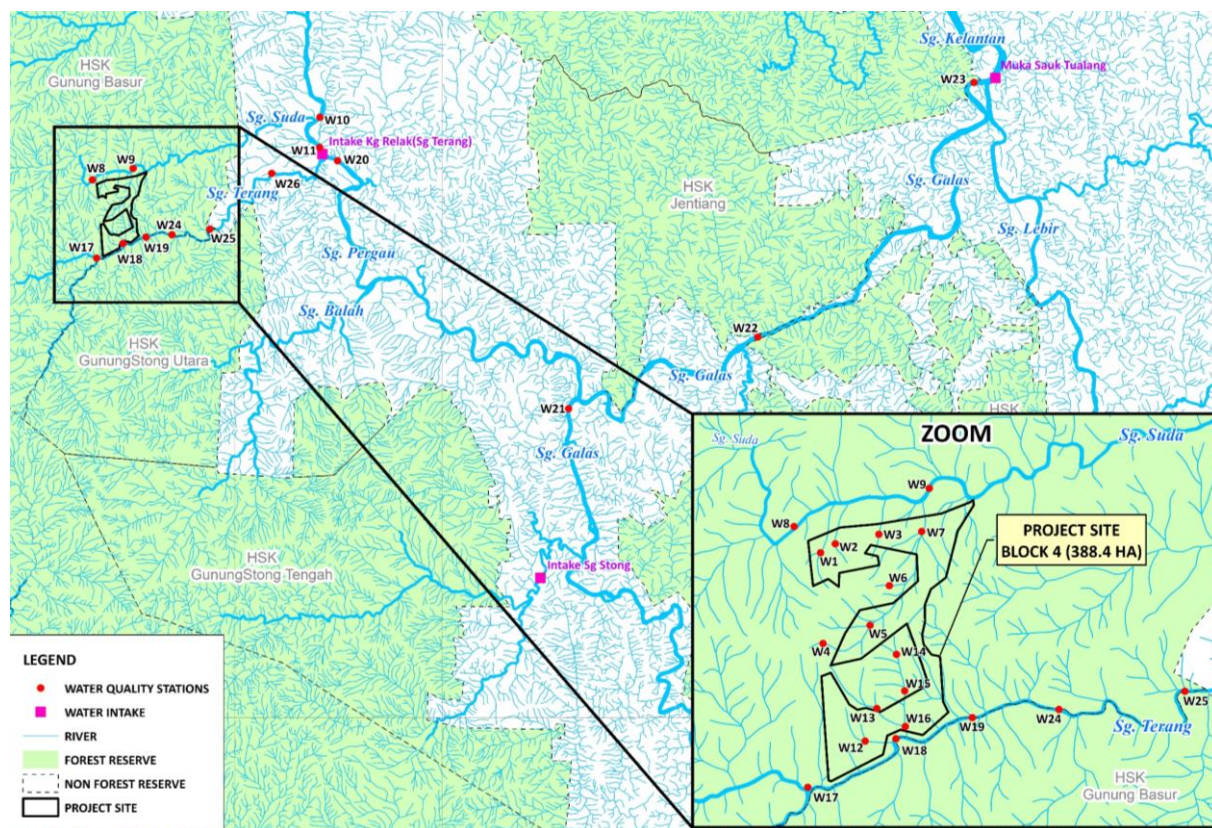
- Zon Perlindungan Sepenuhnya (KSAS Tahap 1)
 - Zon Pembangunan Terhad (KSAS Tahap 2)
 - Zon Pembangunan Terkawal (KSAS Tahap 3)
 - Zon Pembangunan (Luar KSAS)
 - Kawasan 'Central Forest Spine'
- * Berdasarkan sela kontur 20m.

LAIN-LAIN

- Sempadan Antarabangsa
- Sempadan Negeri
- Sempadan Jajahan
- Sempadan Blok Perancangan

PERSEKITARAN SEDIA ADA

KUALITI AIR



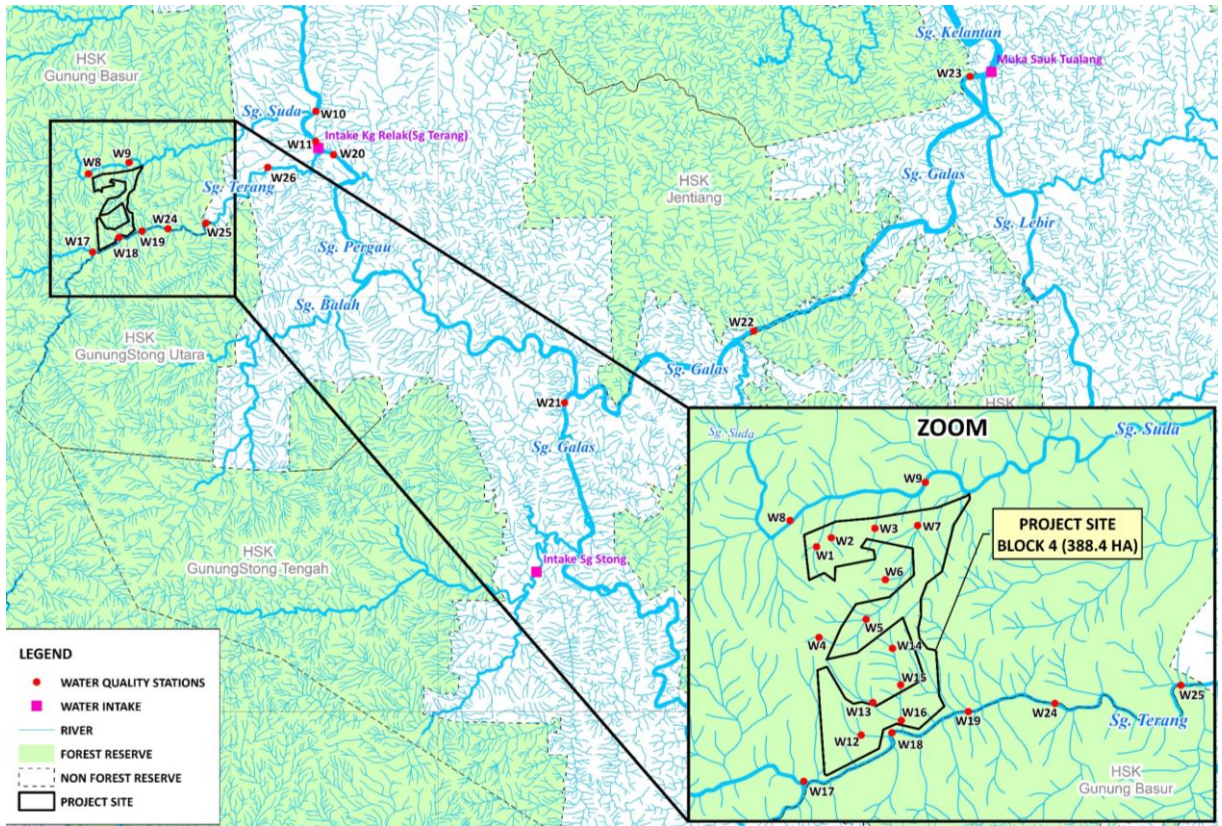
- Jumlah Lokasi persampelan: **26 lokasi**
- Tarikh persampelan dijalankan: **21 Januari – 6 Februari 2025**

- Parameter kualiti air berada dalam "**keadaan baik**" untuk kebanyakan stesen persampelan yang setanding dengan **Kelas II** sebagai "**Bersih**" (NWQS).
- Hanya **satu (1)** lokasi persampelan (**W11**) mempamerkan **WQI Kelas II (Sedikit Tercemar)**.

| Stesen Persampelan Kualiti Air | | Catatan |
|--------------------------------|--------------------------------------|---------------------------------------------------------------------------------|
| W1 | 5° 28' 26.257" N, 101° 48' 9.006" E | Anak Sg. Suda (Dalam Tapak Projek) |
| W2 | 5° 28' 30.476" N, 101° 48' 15.904" E | Anak Sg. Suda (Dalam Tapak Projek) |
| W3 | 5° 28' 35.004" N, 101° 48' 36.398" E | Anak Sg. Suda (Dalam Tapak Projek) |
| W4 | 5° 27' 43.542" N, 101° 48' 10.304" E | Anak Sg. Suda (Hulu Tapak Projek) |
| W5 | 5° 27' 52.122" N, 101° 48' 32.379" E | Anak Sg. Suda (Dalam Tapak Projek) |
| W6 | 5° 28' 10.827" N, 101° 48' 41.400" E | Anak Sg. Suda (Hulu Tapak Projek) |
| W7 | 5° 28' 36.354" N, 101° 48' 56.505" E | Anak Sg. Suda (Dalam Tapak Projek) |
| W8 | 5° 28' 38.543" N, 101° 47' 56.499" E | Sg. Suda (Hulu Tapak Projek) (Suda Intake) |
| W9 | 5° 28' 56.716" N, 101° 49' 0.082" E | Sg. Suda (Hulu Tapak Projek) |
| W10 | 5° 30' 17.554" N, 101° 53' 52.693" E | Sg. Pergau (Hulu Tapak Projek) |
| W11 | 5° 29' 30.135" N, 101° 53' 52.315" E | Sg. Pergau (Hilir Tapak Projek) (Hulu Intake Kg. Relak – Sg. Terang) |
| W12 | 5° 26' 57.608" N, 101° 48' 30.178" E | Anak Sg. Terang (Dalam Tapak Projek) |
| W13 | 5° 27' 12.958" N, 101° 48' 35.648" E | Anak Sg. Terang (Hulu Tapak Projek) |

PERSEKITARAN SEDIA ADA

KUALITI AIR (sambungan)



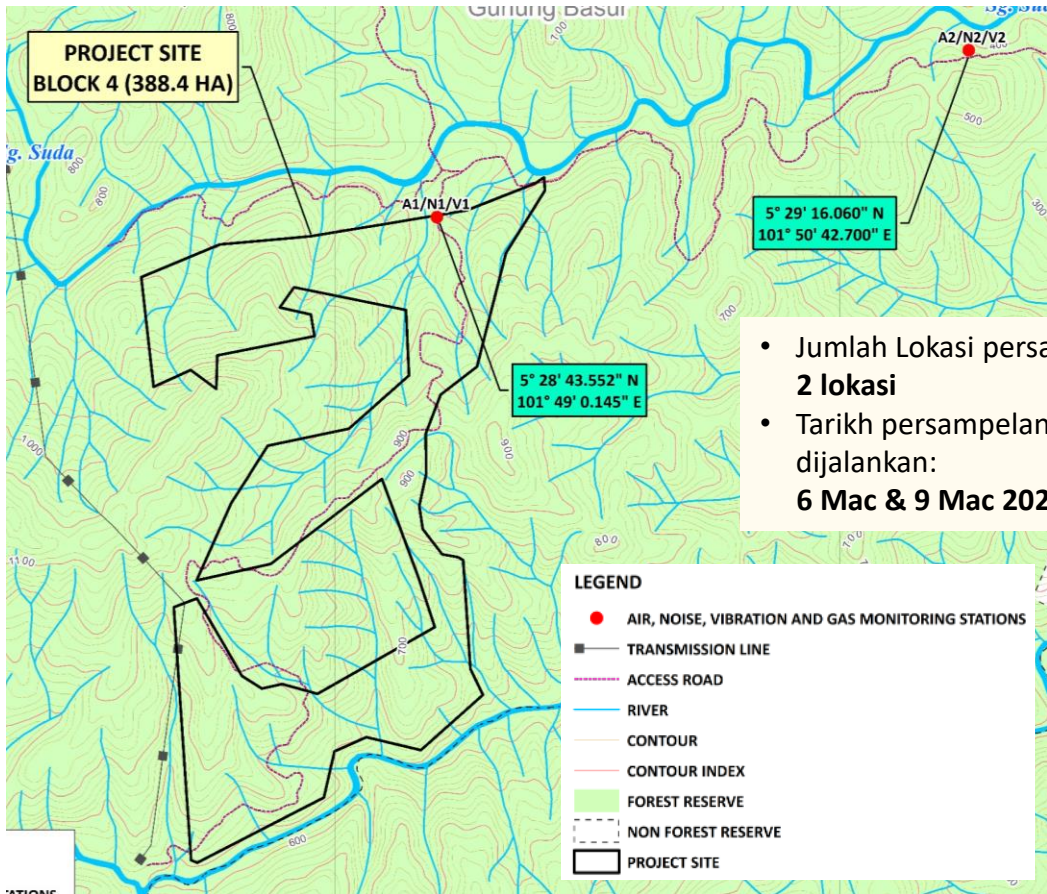
- Jumlah Lokasi persampelan: **26 lokasi**
- Tarikh persampelan dijalankan: **21 Januari – 6 Februari 2025**

- Parameter kualiti air berada dalam "**keadaan baik**" untuk kebanyakan stesen persampelan yang setanding dengan **Kelas II** sebagai "**Bersih**" (NWQS).
- Hanya **satu (1)** lokasi persampelan (**W11**) mempamerkan **WQI Kelas II (Sedikit Tercemar)**.

| Stesen Persampelan Kualiti Air | | Catatan | |
|--------------------------------|--------------------------------------|--------------------------------------------------------------|--------------------|
| W14 | 5° 27' 38.428" N, 101° 48' 44.795" E | Anak Sg. Terang (Hulu Tapak Projek) | |
| W15 | 5° 27' 21.297" N, 101° 48' 48.713" E | Anak Sg. Terang (Hulu Tapak Projek) | |
| W16 | 5° 27' 4.534" N, 101° 48' 49.080" E | Anak Sg. Terang (Dalam Tapak Projek) | |
| W17 | 5° 26' 35.803" N, 101° 48' 3.279" E | Sg. Terang (Hulu Tapak Projek) (Terang Pump House) | |
| W18 | 5° 26' 58.756" N, 101° 48' 44.693" E | Sg. Terang (Hilir Tapak Projek) | |
| W19 | 5° 27' 8.737" N, 101° 49' 20.558" E | Sg. Terang (Hilir Tapak Projek) | |
| W20 | 5° 29' 9.359" N, 101° 54' 20.553" E | Sg. Pergau (Hilir Tapak Projek) | |
| W21 | 5° 22' 40.986" N, 102° 0' 23.062" E | Sg. Stong (Hulu Tapak Projek) | |
| W22 | 5° 24' 34.270" N, 102° 5' 19.527" E | Sg. Galas (Hilir Tapak Projek) | |
| W23 | 5° 31' 14.066" N, 102° 10' 57.438" E | Sg. Galas (Hilir Tapak Projek) | |
| W24 | 5° 27' 12.682" N, 101° 50' 1.265" E | Sg. Terang (Hilir Tapak Projek) | (Lata Kuala Balah) |
| W25 | 5° 27' 21.421" N, 101° 51' 0.443" E | | (Lata Geotrail 2) |
| W26 | 5° 28' 49.397" N, 101° 52' 37.367" E | | (Lata Chenai) |

PERSEKITARAN SEDIA ADA

KUALITI UDARA, BUNYI & GETARAN



- Jumlah Lokasi persampelan: **2 lokasi**
- Tarikh persampelan dijalankan: **6 Mac & 9 Mac 2025**

| Nama | Koordinat | Catatan |
|----------|---------------------------------------|-----------------------------|
| A1/N1/V1 | 5° 28' 43.552" N, 101° 49' 0.145" E | Pintu masuk tapak Projek |
| A2/N2/V2 | 5 ° 29' 16.060" N, 101° 50' 42.700" E | Jalan akses ke tapak Projek |

KUALITI UDARA

Kualiti udara adalah dalam had yang ditetapkan (*Malaysia Ambient Air Quality Standard 2020*)

- **PM₁₀ : 100 µg/m³**
- **PM_{2.5} : 35 µg/m³**

TAHAP GETARAN

Tiada bacaan getaran yang direkodkan. (*Guidelines for Environmental Vibration Limits and Control, Third Edition (2021)*)

- **Day time: 0.1 mm/s**
- **Night time: 0.1 mm/s**

TAHAP BUNYI

(*Guidelines for Environmental Noise Limits and Control, Third Edition (2019)*)

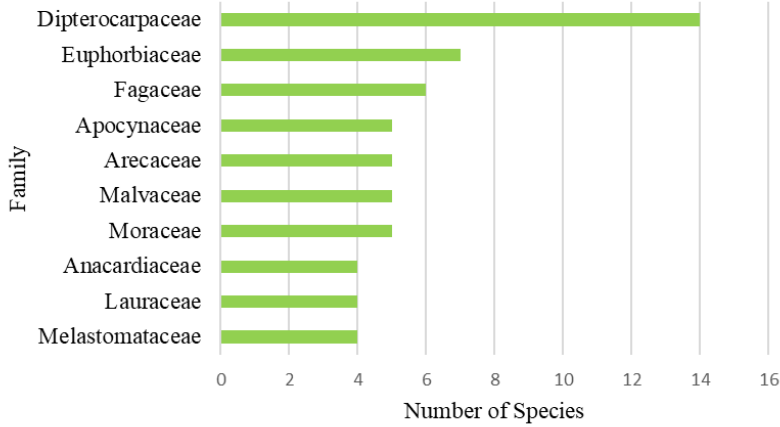
First Schedule – Recommended Permissible Sound Level (L_{aeq}) By Receiving Land Use for New Development (Low Density Residential)

- **Day time: 55 dBa**
- **Night time: 50 dBa**

Tahap bunyi melebihi had yang ditetapkan pada waktu malam di N1 dan N2.

TINJAUAN FLORA

Top 10 Families with Highest Number of Species



Pandangan udara tapak Projek (jalan berturap menuju ke pintu masuk tapak Projek)

- Tapak Projek merupakan kawasan hutan yang telah mengalami perubahan vegetasi akibat aktiviti pembalakan pada masa lalu.
- 10 famili tumbuhan dengan bilangan spesies tertinggi telah dikenal pasti.
- Kebanyakan spesies yang ditemui diklasifikasikan sebagai *Least Concern* (LC) dan *Not Evaluated* (NE) seperti yang disenaraikan dalam *IUCN Red List* dan *Malaysia Plant Red List*.



Lantai hutan dilitupi dengan paku-pakis, tumbuhan berdaun lebar, dan pokok renek yang tumbuh rendah.

TINJAUAN FAUNA



Macaca nemestrina – Pig-tailed Macaque - Berok



Helarctos malayanus - Malayan Sun Bear – Beruang Matahari



Muntiacus muntjak – Common Barking Deer - Kijang

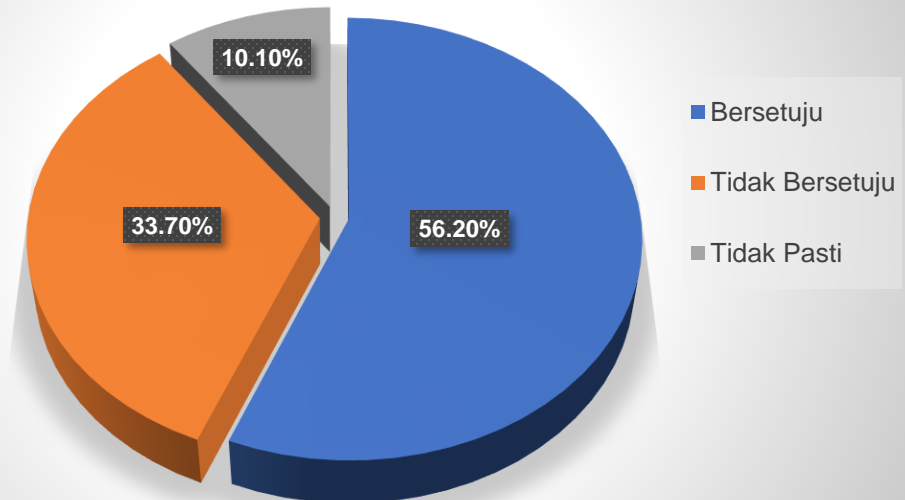


Prionailurus bengalensis – Leopard Cat – Kucing Batu

- Tinjauan yang dijalankan telah merekodkan 13 spesies mamalia daripada 12 keluarga.
- Kebanyakan spesies yang ditemui dikelaskan sebagai *Least Concern* (LC) seperti yang disenaraikan dalam *IUCN Red List*.
- Manakala, terdapat 5 spesies Dilindungi (Jadual 1), 6 spesies Dilindungi Sepenuhnya (Jadual 2) dan 2 spesies tidak disenaraikan dalam Akta Pemuliharaan Hidupan Liar 2010.

SOAL SELIDIK SOSIO-EKONOMI

Tahap Penerimaan Terhadap Projek



| Penerimaan Responden | Responden | Peratusan (%) |
|----------------------|-----------|---------------|
| Bersetuju | 28 | 56.2 |
| Tidak Bersetuju | 17 | 33.7 |
| Tidak Pasti | 5 | 10.1 |
| Jumlah | 50 | 100.0 |



- 33.70% daripada responden tidak bersetuju dengan cadangan pembangunan Projek kerana bimbang terhadap keselamatan mereka yang mungkin terjejas akibat konflik antara manusia dan hidupan liar, serta pergerakan kenderaan berat yang dijangka akan kerap berlaku ke dan dari tapak Projek.
- Kebimbangan ini juga berkait rapat dengan kesan alam sekitar seperti bunyi bising dan habuk yang dihasilkan daripada pergerakan kenderaan yang kerap ke/dari tapak Projek.

- Walau bagaimanapun, majoriti responden bersetuju dengan cadangan pembangunan Projek kerana Projek ini berpotensi menawarkan peluang pekerjaan kepada penduduk tempatan, di samping dapat merangsang pertumbuhan ekonomi negeri.



POTENSI IMPAK DAN LANGKAH MITIGASI

| | POTENSI IMPAK | LANGKAH MITIGASI |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> Hakisan akibat aktiviti pembersihan tapak/perladangan. Kemerosotan kualiti air. | <ul style="list-style-type: none"> Aktiviti yang terdedah kepada hakisan hendaklah dijadualkan untuk tempoh yang lebih kering; Semua kawasan yang diisi mesti disatukan dan dipadatkan dengan kukuh; Pembinaan saiz kolam pemendapan yang sesuai; Membina longkang/saluran air permukaan yang betul dan mencukupi yang direka bentuk untuk mengelakkan hakisan dan kegagalan cerun; Sediakan LD-P2M2 sebelum Projek bermula; Penyelenggaraan sistem perparitan dan semua alat kawalan hakisan; Tumbuhan di sepanjang sungai mesti dikekalkan sebagai penampakan. |
|  | <ul style="list-style-type: none"> Pencemaran air akibat aktiviti pembersihan tapak/perladangan. Kebocoran minyak/bahan api yang tidak disengajakan/tumpahan dari tangki simpanan. | <ul style="list-style-type: none"> Bina longkang tanah sementara yang bersambung dengan kolam sedimen; Kerja tanah mesti dijalankan semasa cuaca kering; Pasang instrumen mitigasi: ESCP/ LD-P2M2; Pemantauan kualiti air secara berkala perlu dilakukan oleh orang yang kompeten dan EO sepenuh masa pada setiap bulan; Mengamalkan tahap pengemasan yang cukup baik; Sistem pengairan yang betul hendaklah direka bentuk untuk operasi tapak samaian dan ladang; Gunakan baja dan bahan kimia semasa musim hujan tempatan. |
|  | <ul style="list-style-type: none"> Penggunaan jentera berat boleh meningkatkan tahap getaran. Pengangkutan bahan perladangan akan menyebabkan penyebaran habuk. Pengurusan sisa yang tidak betul akan menyebabkan pencemaran udara. | <ul style="list-style-type: none"> Kawasan tanah yang terdedah dan stok simpanan hendaklah dilembapkan dengan air menggunakan pelayar air; Kemudahan cuci roda kenderaan hendaklah disediakan di pintu keluar ke jalan berturap; Pembakaran sisa tidak dibenarkan; Menjalankan pemantauan dan penyelenggaraan; Menyediakan PPE kepada pekerja. |



POTENSI IMPAK DAN LANGKAH MITIGASI

| | POTENSI IMPAK | LANGKAH MITIGASI |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> Kesan adalah ketara kerana persekitaran sedia ada akan diubah. Tumbuhan semula jadi akan dibersihkan dan digantikan dengan yang baru. Fauna akan kehilangan habitat semula jadinya kerana pembersihan tapak dan penyediaan tapak. | <ul style="list-style-type: none"> Pembersihan tapak hendaklah dirancang dan dimulakan berhampiran jalan sedia ada dan bergerak ke arah kawasan hutan; Pembersihan tapak hendaklah dijalankan mengikut fasa yang dicadangkan; Zon penampungan sungai disyorkan untuk diperuntukkan terutamanya di sepanjang sungai utama; Kawasan sungai tidak diusahakan; BMP hendaklah disediakan semasa peringkat pembersihan tapak/penyediaan tapak; Penebangan dan pemindahan pokok, tumbuh-tumbuhan dan penutup semula jadi hendaklah dijalankan oleh Sub-kontraktor yang bereputasi; Pokok yang ditebang dan biojisim lain boleh digunakan sebagai sungkupan di kawasan yang sesuai; Kerjasama dengan Jabatan PERHILITAN adalah perlu – secara rasmi meminta Jabatan PERHILITAN untuk menangkap, memerangkap dan mengeluarkan spesies yang bercanggah; Pelan Pengurusan Hidupan Liar (WMP) perlu diwujudkan untuk menghadapi potensi kesan negatif Projek; Memasang pagar elektrik, longkang dan penghadang di sekitar tapak Projek dengan betul untuk mengelakkan gajah atau haiwan lain memasuki tapak Projek. |
|  | <ul style="list-style-type: none"> Pengangkutan bahan perladangan dan sisa yang boleh mengganggu pergerakan lalu lintas. Pergerakan kenderaan ladang dan jentera berat boleh menyebabkan kerosakan jalan raya. | <ul style="list-style-type: none"> TMP terperinci hendaklah disediakan. Sebelum memasuki jalan berturap, lori hendaklah menjalani proses pembersihan; Penyelenggaraan jalan berturap perlu dilakukan untuk membaiki kerosakan yang disebabkan oleh jentera berat; Pihak Penggerak Projek hendaklah memasang papan tanda had laju yang jelas dan tanda amaran di tepi jalan yang menghampiri kawasan tapak kerja; <i>Crusher run</i> hendaklah digunakan di seluruh jalan ladang (di tapak) dan diselenggara setiap minggu; Pengangkutan bahan hendaklah dielakkan semasa waktu puncak (7.00 pagi – 9.00 pagi). |
|  | <ul style="list-style-type: none"> Penjanaan sisa daripada aktiviti pembersihan tapak, kawasan rehat pekerja, dan penggunaan mesin. Penjanaan sisa daripada aktiviti perladangan. | <ul style="list-style-type: none"> Pembakaran terbuka hendaklah dilarang; Sampah am yang dihasilkan hendaklah disimpan dalam tong sampah tertutup secara berasingan daripada sisa berbahaya; Sisa am hendaklah diasingkan dan digunakan semula atau dikitar semula apabila boleh; Mengamalkan amalan pengemasan yang betul dan penyelenggaraan sistem perparitan yang betul; Penggunaan semula bahan buangan, pemuliharaan dan kitar semula hendaklah dilakukan pada bila-bila masa. |
|  | <ul style="list-style-type: none"> Aktiviti perladangan boleh menyebabkan pencemaran yang akan menjejaskan kesihatan penduduk berhampiran. Penyebaran penyakit/ wabak Covid-19. | <ul style="list-style-type: none"> Komuniti tempatan juga hendaklah digalakkan dan diberi peluang untuk memperoleh pengetahuan teknikal yang diperlukan melalui skim latihan yang berkaitan dengan operasi; Penggerak Projek mesti menyediakan utiliti dan kemudahan yang mencukupi ke kawasan rehat pekerja; Keselamatan pada semua fasa kerja mesti ditangani sepenuhnya dari awal; Peralatan pertolongan cemas mesti mudah diakses di semua tapak kerja. |