

GERAK SAGA SDN BHD

L-70-7, KK Times Square, Off Jalan Coastal, 88100,

Kota Kinabalu, Sabah

TEL: 088 – 438 021 FAX: 088 – 486241

ENVIRONMENTAL MONITORING AND COMPLIANCE AUDIT REPORT

For

FOREST MANAGEMENT OF BENGKOKA AND TAMBALUGU
FOREST RESERVES (6,467 HA), PITAS, SABAH

3rd REPORT OF YEAR 2021

APRIL	AUGUST	DECEMBER
		✓

AEC Ref. No. : JPAS/PP/15/600-1/01/3/60(36)

Report Reference : CK/MO411/1197-3/21

Date of Report : 31st December 2021

Report No. : 9



**CHEMSAIN
KONSULTANT
SDN BHD** (130904-U)

ENVIRONMENTAL CONSULTANCY
ENVIRONMENTAL ENGINEERING
WATER INFRASTRUCTURE
INFORMATION MANAGEMENT

ON SITE TESTING & SAMPLING
OCCUPATIONAL SAFETY & HEALTH
LABORATORY
TRAINING & DEVELOPMENT

SUBANG JAYA

No. 41, 1st Floor, Jalan USJ 10/1D,
UEP Subang Jaya, 47620
Subang Jaya, Selangor,
Malaysia.

Phone +603 5637 0163 **Fax** +603 5637 0385
Email sj@chemsain.com

KUCHING

172, Rock Road,
93200 Kuching,
Sarawak.

Phone +6082 548 366
Fax +6082 548 388, 548 399
Email enquiries@chemsain.com

SHAH ALAM

No. 29, Jalan Astaka U8/84A,
Taman Perindustrian Bukit Jelutong
Seksyen 8, 40150 Shah Alam,
Selangor, Malaysia.

Phone +603 7734 3473 **Fax** +603 7831 8817
Email shahalam@chemsain.com

BINTULU

Sublot No. 153, Lot 8226,
Bintulu Sentral, Jalan Kidurong,
97000 Bintulu, Sarawak,
Malaysia.

Phone +6086 337 668 **Fax** +6086 337 730
Email bintulu@chemsain.com

KEMAMAN

Lot PT21702, Jalan Kubang Kurus,
Kawasan Perindustrian Jakar 2,
24000 Kemaman, Terengganu.

Phone +609 858 1396 **Fax** +609 858 1167
Email kemaman@chemsain.com

MIRI

Lots 1942 & 1943, Block 5, Jalan Maigold,
Desa Senadin Industrial Area, Kuala Baram,
98000, Miri, Sarawak, Malaysia.

Phone +6085 652 102 **Fax** +6085 657 102
Email miri@chemsain.com

JOHOR

No. 1387, Jalan Lagenda 48,
Taman Lagenda Putra,
81000 Kulai, Johor,
Malaysia.

Phone +607 662 6342 **Fax** +607 662 6402
Email jb@chemsain.com

KOTA KINABALU

Lots 2 & 7, Lorong Suria, Off Lorong Buah Duku 1,
Taman Perindustrian Suria, Jalan Kolombong,
88450, Kota Kinabalu, Sabah, Malaysia.

Phone +6088 381 277, 381 278
Fax +6088 381 280
Email kk@chemsain.com

BRUNEI

No. 3, Blk A, 1st Floor, Taman Alam Complex,
Jalan Telanai, BE1118, Bandar Seri Bagawan,
Brunei Darussalam.

Phone +6732 656 896, 656 897 **Fax** +6732 656 897
Email brunei@chemsain.com

LABUAN

Lot No. 31, Blok D, Lazenda Warehouse Phase 3,
Jalan Ranche - Ranche, 87000, WP Labuan,
Malaysia.

Phone +6087 424 277 **Fax** +6087 425 277
Email labuan@chemsain.com

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GERAK SAGA SDN BHD

ENVIRONMENTAL MONITORING AND COMPLIANCE AUDIT REPORT

1.0 INTRODUCTION

The Project site covers an area of approximately 6,467 Ha comprising the 6,270 Ha Bengkoka Forest Reserve and the 197 Ha Tambalugu Forest Reserve. For operational purposes, the two forest reserves are managed as a single Forest Management Unit (FMU) and divided into 4 coupes. Coupes 1-3 (Bengkoka) and Coupe 4 (Tambalugu). The Project Proponent holds the license for management operation in both forests for Industrial Tree Plantation (TPP).

1.1 Monitoring Information

Project Title : Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah

EIA Letter Approval Ref. : JPAS/PP/15/600-1/01/3/60(36) dated 1st November 2017

Monitoring Period : September – December 2021

Date of Monitoring : Compliance Audit : 12th November 2021
Water Sampling : 12th November 2021

EIA Consultant : Chemsain Konsultant Sdn. Bhd.

1.2 Monitoring Information

Project Proponent : Gerak Saga Sdn. Bhd.

Contact Person : Mr. Guy Thornton

Tel. No. : 088 – 663 492

Fax No. : 088 – 662 494

Environmental Officer : Ms. Wilvia Olivia William

Contact No. : 019 – 822 6958 (Mobile)

E-mail : w.william@forestsolutions.com.my

1.3 Post-EIA Consultant Information

Post-EIA Consultant : Chemsain Konsultant Sdn. Bhd.

Tel. No. : Office : 088 – 381 277 / 278

Fax No. : 088 – 381 280

Contact Person : Jessica Malagkas / Valentine Abbie

Email : jessica.malagkas@chemsain.com/valentine.abbie@chemsain.com

1.4 Other Approvals

Development Plan Ref. : NIL
Earthwork Plan Ref. : NIL
Drainage Plan Ref. : NIL
ESCP Ref. : NIL

1.5 Project Status

Project Completion : Total planted area : 1,652.20 Ha
Harvested : 2,015.50 Ha

**Project progress status as of 29/11/2021.*

Chronology of Events :

Table 1.0: Chronology of events

No.	Event	Date
1.0	Signing of AEC Ref. No.: JPAS/PP/15/600-1/01/3/18	23 rd October 2007

2.0 LEGAL REQUIREMENT

The Project is classified as a prescribed activity under the **Second Schedule** of the **Environment Protection Enactment (Prescribed Activities) (Environmental Impact Assessment) Order 2005** under **Item 2 (i) & 2 (ii)**.

Environmental Monitoring and Compliance Audit (EMCA) is a requirement by the Environment Protection Department (EPD) and to be carried out every four (4) months, and reported in accordance to the Approval Conditions as specified in the **Syarat-Syarat Alam Sekitar [Seksyen 12(1) dan 20, Enakmen Perlindungan Alam Sekitar 2002]** of the EPD ref: JPAS/PP/15/600-1/01/3/60 (36) dated **1st November 2017**.

3.0 CHANGES TO PROJECT CONCEPT / ENVIRONMENT

3.1 Project Concept

No.	Item	Changes
1.	Project Component	Nil
2.	Changes to Land Lot	Nil
3.	Land Area	Nil

3.2 Surrounding Environment

No.	Item	Changes
1.	Land Use	Nil
2.	River / Coastal Morphology	Nil

4.0 MONITORING LOCATIONS

Designated monitoring and sampling location are shown in **Figure 1.0** with details tabulated in **Table 2.0**.

Table 2.0: Environmental monitoring and sampling particulars

Monitoring Component	Key	GPS Coordinates (Datum: Timbalai)	Location Description
Water Quality	W1	N 06° 51' 18.9" E 117° 06' 41.1"	Unnamed stream downstream of Bengkoka Forest Reserve at Kg. Kandang
	W2	N 06° 50' 40.6" E 117° 09' 18.6"	Unnamed stream downstream of Bengkoka Forest Reserve at Kg. Gumpa.
	W3	N 06° 50' 40.1" E 117° 10' 38.2"	Sg. Bongkol of Safoda Dam within Bengkoka Forest Reserve.
	W4	N 06° 51' 10.4" E 117° 08' 52.6"	Sg. Kakarangan downstream of Bengkoka Forest Reserve.
	W5	N 06° 52' 39.3" E 117° 09' 49.8"	Unnamed stream downstream of Bengkoka Forest Reserve.

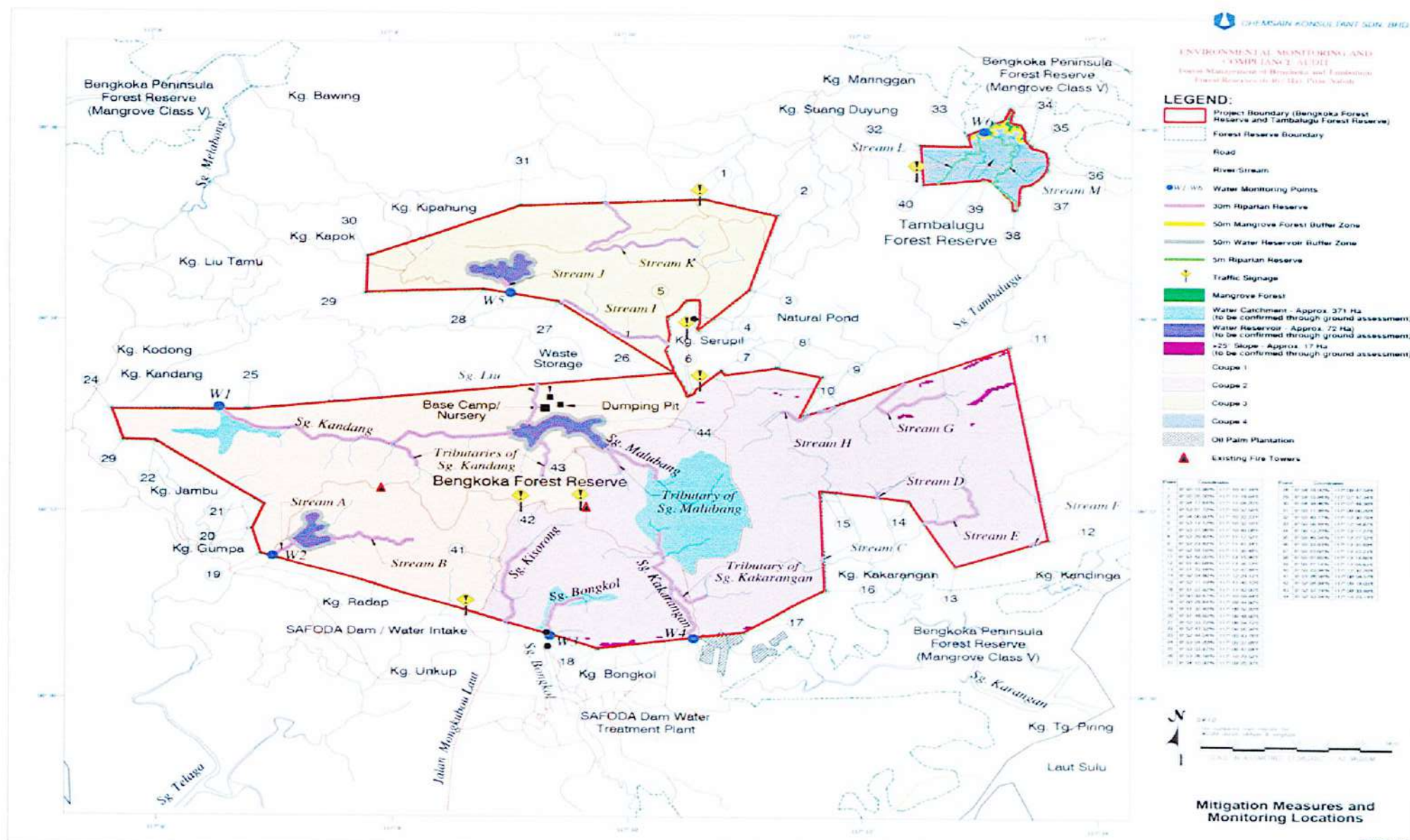


Figure 1.0

Figure 1.0: Mitigation Measures and Monitoring Locations

5.0 COMPLIANCE STATUS, COMMENTS & RECOMMENDATIONS

Nama Projek	: Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah
Nama Pemaju	: Gerak Saga Sdn Bhd
Rujukan fail jabatan ini	: JPAS/PP/15/600-1/01/3/60 (36)
Tarikh Akujanji	: 1 st November 2017
Penyedia laporan pematuhan ini	: Chemsain Konsultant Sdn. Bhd.
Tempoh diliputi oleh laporan ini	: September – December 2021

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
5.1	<u>Kawalan Tapak Pembangunan</u>				
5.1.1	<u>Kawalan Kawasan Perladangan Hutan</u>				
i.	Satu (1) salinan pelan penyukatan sempadan kawasan projek seluas 6,467 hektar dalam kawasan Hutan Simpan Bengkoka dan Tambalugu, Daerah Pitas sebagaimana ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini hendaklah dikemukakan ke JPAS sebelum aktiviti perladangan hutan dimulakan.	Comply	Project Demarcation Plan submitted to EPD via the 1st EMCAR of 2019 as Appendix D.	-	-
ii.	Sempadan kawasan projek yang telah diukur hendaklah ditanda di lapangan serta dipasang dengan papan tanda di lokasi-lokasi yang mudah dilihat sebelum aktiviti perladangan hutan dimulakan.	Comply	- Signboard, entrance (barrier) gate, and coloured pegs in place sighted demarcating Project boundary. - Signboard sighted in place demarcating boundary of coupes/blocks.	Plates 3 to 6	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
iii	Semua tanda sempadan tapak projek hendaklah tidak ditimbus, dihalang, dirosakkan atau diganggu daripada kedudukan asal.	Comply	Signboard and pegs are in good condition as sighted during the site visit.	Plates 3 to 6	-
iv	Aktiviti perladangan hutan adalah tidak dibenarkan di dalam kawasan tadahan air, takungan air dan "water intake point" sebagaimana dinyatakan dan masing-masing ditandakan sebagai "Water Catchment", "Water Reservoir" dan "Water Intake" dalam maklumat tambahan rujukan CK/EV403-4278/0199/17 bertarikh 13 April 2017 dan ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.	Comply	- Development within the water catchments, water reservoir, and water intake was not sighted. - In addition, the Project Proponent has conducted enrichment planting using local species trees along the Riparian Reserve of the water reservoir area.	Plates 7 & 8	-
v	Zon penampian dengan kelebaran tidak kurang 50 meter hendaklah disediakan di sempadan kawasan projek yang bersempadan dengan Hutan Simpan Bengkoka dan ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.	Comply	50m width buffer zone adjacent to the Bengkoka Forest Reserves was provided for, prior to Project development.	-	-
vi	Sebarang aktiviti perladangan hutan tidak dibenarkan dalam kawasan zon penampian.	Comply	The Project Proponent has given assurance that the 50m width buffer zone shall be excluded from Project development.	-	-
vii	Sebarang aktiviti perladangan hutan tidak dibenarkan dalam kawasan berkecurunan 25 darjah atau lebih	Comply	Development within the steep (protected) area ($\geq 25^\circ$ slopes) was not sighted.	-	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
	sebagaimana ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.				
viii	Sempadan kawasan tadahan air, takungan air dan "water intake point", zon penampungan dan kawasan berkecurunan 25 darjah atau lebih yang dilindungi hendaklah ditanda di lapangan dan dipasang dengan papan tanda di lokasi-lokasi yang mudah dilihat sebelum aktiviti perladangan hutan dimulakan.	Comply	Signboard in place demarcating onsite buffer zone.	-	-
5.1.2	<u>Kawalan Pembinaan Jalan</u>				
i	Jalan sedia ada hendaklah digunakan bagi mengurangkan gangguan terhadap tanah.	Comply	Existing access road was fully utilized as sighted during the site visit.	Plate 10	-
ii	Sistem perparitan hendaklah disediakan bagi mengalirkan air keluar dari struktur jalan dan dilencongkan ke kawasan yang mempunyai tumbuhan.	Comply	Existing access road sighted equipped with earth drainage, channelling surface runoff towards the nearest vegetated area.	Plate 10	-
iii	Aktiviti pelupusan atau pembuangan bahan tanah berlebihan <u>tidak dibenarkan</u> dalam parit, sungai atau alur air.	Comply	Disposal of overburden into the nearest natural waterways was not sighted.	-	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
5.1.3	<u>Pembinaan Rumah Pekerja, Kem Pekerja Atau Bengkel</u>				
i	Sebarang aktiviti kerja tanah dan pembersihan kawasan bagi pembinaan rumah pekerja, kem pekerja atau bengkel hendaklah diminimakan.	Comply	- Staff quarters, workers' quarters, and nursery at the base camp are fully utilized. - No workshop sighted constructed within the Project site. - According to the Project Proponent, maintenance of Project vehicles will be carried out using an external workshop.	Plates 11 to 13	-
ii	Sistem perparitan yang berkesan hendaklah disediakan bagi mengawal larian air permukaan dan air buangan dari kawasan rumah pekerja, kem pekerja atau bengkel dan hendaklah dilencongkan ke kawasan yang mempunyai tumbuhan dan <u>tidak dibenarkan</u> dialir terus ke dalam sungai atau alur air.	Comply	Staff quarters, workers' quarters, and nursery sighted equipped with perimeter concrete drainage, diverting surface runoff towards the nearest vegetated area.	Plates 11 to 13	-
iii	Kedudukan rumah pekerja atau kem pekerja hendaklah terletak pada jarak mendatar tidak kurang 30 meter dari tebing sungai atau alur air.	Comply	Staff quarters and workers' quarters are located more than 30m away from the nearest natural waterways.	Plates 11 & 13	-
iv	Kedudukan bengkel hendaklah terletak pada jarak mendatar tidak kurang 50 meter dari tebing sungai atau alur air.	Not Applicable	Refer to the comments in AEC 5.1.3 (i).	-	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
v	Semua rumah pekerja, kem pekerja atau bengkel sedia ada yang tidak mematuhi peraturan-peraturan yang dinyatakan dalam Perjanjian Syarat-syarat Alam Sekitar ini hendaklah dipindahkan dan dikawal sebagaimana ditetapkan.	Comply	These buildings located within the Project site is in compliance with the AEC.	-	-
5.1.4	<u>Rehabilitasi Tanah Yang Terdedah</u>				
i	Semua kawasan tanah dan cerun yang terdedah hendaklah distabilkan dan direhabilitasi dengan menanam spesis tumbuhan yang diluluskan oleh Jabatan Perhutanan Negeri Sabah.	Comply	- Cover crops planted at exposed Project areas to reduce the risk of soil erosion. - Existing vegetation on inactive and idle Project areas were retained and remain undisturbed.	Plate 14	-
5.2	<u>Perlindungan Sungai</u>				
i	Sebarang aktiviti pembersihan dan perladangan hutan adalah <u>tidak dibenarkan</u> dalam simpanan sungai sebagaimana ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.	Comply	Development within the riparian reserves was not sighted.	Plate 15	-
ii	Sempadan simpanan sungai hendaklah ditanda di lapangan dengan cat merah serta dipasang dengan papan tanda di lokasi-lokasi yang mudah dilihat sebelum aktiviti pembersihan dan perladangan hutan dimulakan.	Comply	- Tree trunks along the belt of the riparian reserves were painted in blue for demarcation purposes. - Signboard sighted in place demarcating Project's riparian reserve.	Plate 15	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
iii	Sebarang pembinaan rumah pekerja, kem pekerja, bengkel, tandas atau struktur bangunan lain <u>tidak dibenarkan</u> dalam simpanan sungai.	Comply	• Construction of structures within the riparian reserve was not sighted.	-	-
iv	Sebarang penyimpanan bahan minyak atau bahan toksik <u>tidak dibenarkan</u> dalam simpanan sungai.	Comply	• Storage of oils and toxic material within the riparian reserve was not sighted.	-	-
v	Sebarang bahan tanah lebihan, sisa pepejal, sisa biomas, kumbahan, bahan minyak, kimia atau bahan-bahan toksik <u>tidak dibenarkan</u> dilupuskan dalam simpanan sungai.	Comply	• Disposal of overburden, biomass or any types of wastes (i.e. sewage, oil and chemical, etc.) along the riparian reserve was not sighted.	-	-
5.3	<u>Bahan Minyak Dan Sisa Toksik</u>				
i	Bahan minyak dan sisa toksik adalah <u>tidak dibenarkan</u> dilupuskan atau dibiarkan mengalir ke dalam parit, sungai atau alur air.	Comply	• Disposal of oils and toxic material into natural waterways was not sighted.	-	-
ii	Bahan minyak dan sisa toksik hendaklah dikumpul dan disimpan dalam bekas yang kukuh dan tidak mudah bocor. Bekas-bekas penyimpanan tersebut hendaklah dilabel.	Comply	• Skid tank containing diesel sighted in place.	Plate 16	-
iii	Kawasan penyimpanan bahan minyak dan sisa toksik tersebut hendaklah terlindung dari hujan dan terletak pada jarak mendatar tidak kurang 50 meter dari tebing sungai atau alur air.	Comply	• The skid tank's shed is equipped with concrete flooring, bunded, sheltered from weather exposure, and situated more than 50 m away from the nearest natural waterways.	Plate 16	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
iv	Kawasan penyimpanan bahan minyak dan sisa toksik hendaklah disediakan dengan sistem saliran serta perangkap minyak.	Comply	- The skid tank shed is equipped with an oil trap. - The fuel dispensing nozzle is affixed just above the containment chamber, filled with sand to prevent oil from seeping directly into the ground.	Plates 18 to 20	-
v	Bahan minyak dan sisa toksik tersebut hendaklah dilupuskan mengikut keperluan Peraturan-peraturan Kualiti Alam Sekeliling (Buangan Terjadual) 2005 .	Comply	According to the Project Proponent, scheduled waste generated onsite will be handled by DOE licensed contractor, Petrojadi Sdn. Bhd.	-	-
5.4	<u>Kawalan Sisa Pepejal Dan Biomas</u>				
i	Sebarang aktiviti pelupusan sisa pepejal dan biomas <u>tidak dibenarkan</u> dalam parit, sungai atau alur air.	Comply	Disposal of solid waste and biomass into natural waterways was not sighted.	-	-
ii	Kemudahan mengumpul dan mengutip sisa pepejal dan biomas hendaklah disediakan. Lokasi kawasan pengumpulan hendaklah terletak pada jarak mendatar tidak kurang 30 meter dari tebing sungai atau alur air.	Comply	- Garbage bins sighted provided at the staff and workers' quarter's area at the contractor base camp. - Dumping pit was provided onsite and located more than 30m away from the nearest natural waterways.	Plates 26 to 27	-
iii	Semua sisa pepejal seperti botol, tin, plastik dan besi hendaklah dikumpul secara berasingan dan dikitar semula.	Comply	Recycling bins provided to facilitate onsite solid waste segregation.	Plate 28	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
iv	Sekiranya tiada kawasan pelupusan yang sesuai dalam kawasan projek, sisa pepejal dan biomas hendaklah dilupuskan di kawasan yang diluluskan oleh pihak berkuasa tempatan yang berkaitan.	Comply	Refer to the comments in AEC 5. (ii).	-	-
5.5	<u>Kawalan Sisa Kumbahan / Sisa Cecair</u>				
i	Kemudahan sistem sanitasi dan sistem perawatan kumbahan / sisa cecair hendaklah disediakan di kawasan projek.	Comply	Toilets are equipped with septic tank.	Plates 29 to 31	-
ii	Sebarang pelepasan atau pelupusan terus sisa kumbahan / sisa cecair <u>tidak dibenarkan</u> dalam sungai atau alur air.	Comply	Direct discharge of sewage into the natural waterways was not sighted.	-	-
iii	Sebarang effluen kumbahan yang dihasilkan hendaklah mematuhi sekurang-kurangnya Piawai B, Peraturan –Peraturan Kualiti Alam Sekeliling (Kumbahan) 2009.	Comply	Refer to the comments in AEC 5.5 (i).	-	-
5.6	<u>Kawalan Kualiti Udara Dan Kebakaran</u>				
i	Pembakaran terbuka adalah <u>tidak dibenarkan</u> .	Comply	- The Project Proponent had given assurance to adhere to zero open burning policy during Project development activities. - Signboard pertaining to prohibition of open burning in place, for notification purposes. - Firefighting equipment provided onsite	Plate 32	-

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action and Completion Date
ii	<i>Pelan pengurusan dan pencegahan kebakaran kawasan projek hendaklah disediakan dan dilaksanakan serta satu (1) salinan pelan tersebut hendaklah dikemukakan ke JPAS.</i>	Comply	Fire Management and Prevention Plan was attached in the previous report (3rd EMCAR of 2019) as Appendix C.	-	-
5.7	<u>Penghentian Atau Penamatan Projek</u>				
i	<i>Semua struktur binaan yang tidak digunakan hendaklah dibuka secara teratur apabila berlaku penghentian atau penamatan projek tersebut.</i>	Not Applicable	Not applicable at the current stage of development as the Project is still on-going.	-	-
ii	<i>Semua struktur binaan yang didapati tidak selamat atau yang tidak dapat dipastikan selamat hendaklah dibuka.</i>	Not Applicable	Not applicable at the current stage of development as the Project is still on-going.	-	-
iii	<i>Satu Laporan Pemuatan Alam Sekitar dengan format dan kandungan laporan sebagaimana dinyatakan dalam Lampiran 1 hendaklah dikemukakan apabila berlaku penghentian atau penamatan projek tersebut.</i>	Not Applicable	Not applicable at the current stage of development as the project is still ongoing.	-	-

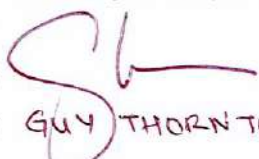
6.0 CONCLUSION

6.1 Overall Compliance

For the Environmental Compliance period of September - December 2021 for the *Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah*, generally complied with the EIA approval conditions, no **non-compliance** was recorded.

PERAKUAN PAS

Dengan ini saya mengaku telah turut serta dalam odit yang dijalankan oleh perunding alam sekitar dan telah meneliti dan bersetuju dengan isi kandungan Laporan Pematuhan Alam Sekitar bagi projek ini.

Tandatangan : 
Nama : GUY THORNTON
Jawatan : FORESTRY DIRECTOR
Tarikh : 26th JANUARY 2022

Cop Rasmi :
Syarikat :



PERAKUAN PERUNDING ALAM SEKITAR

Dengan ini saya mengaku dan mengesahkan semua kenyataan dan butir-butir dalam Laporan Pematuhan Alam Sekitar yang dikemukakan adalah benar.

Tandatangan : 
Nama : Jessica Malagkas
Tarikh : 31st December 2021
Cop Rasmi :
Syarikat :





5.1.1 Kawalan Kawasan Perladangan Hutan



Plate 1

Overview of the harvesting area.

Field development confined within Project boundary.

**Photo was provided by the Project Proponent.*

**Photo was provided by the Project Proponent*



Plate 2

Overview of the planting area.

Field development confined within Project boundary.

**Photo was provided by the Project Proponent.*

**Photo was provided by the Project Proponent*

5.1.1 Kawalan Kawasan Perladangan Hutan



Plate 3

Signage in place demarcating Project boundary.

GPS coordinates of the picture taken: N 06° 50' 54.0" E 117° 08' 39.4"



Plate 4

Signage in place demarcating Project coupes.

GPS coordinates of the picture taken: N 06° 50' 53.9" E 117° 08' 39.4"

5.1.1 Kawalan Kawasan Perladangan Hutan



Plate 5

Signage in place demarcating boundary between the Project site and Kg. Sorupil.

GPS coordinates of the picture taken: N 06° 53' 13.0" E 117° 10' 33.9"



Plate 6

Overview of the project site.

Entrance (barrier) gate in place demarcating Project boundary.

Safety signage sighted in place for notification purposes.

GPS coordinates of the picture taken: N 06° 53' 01.6" E 117° 10' 28.7"

5.1.1 Kawalan Kawasan Perladangan Hutan



Plate 7

View of the water reservoir dam located within the Project site.

GPS coordinates of the picture taken: N 06° 52' 53.6" E 117° 09' 07.5"



Plate 8

View showing enrichment planting conducted along the Riparian Reserve area near the water reservoir dam located within the Project site.

GPS coordinates of the picture taken: N 06° 52' 52.7" E 117° 09' 06.1"

5.1.1 Kawalan Kawasan Perladangan Hutan



Plate 9

View showing logging activity onsite.

GPS coordinates of the picture taken: N 06° 56' 55.7" E 117° 06' 43.3"

5.1.2 Kawalan Pembinaan Jalan



Plate 10

View showing the internal existing access road.

It is equipped with earth drainage, diverting surface runoff towards the nearest vegetated area.

GPS coordinates of the picture taken: N 06° 52' 38.6" E 117° 09' 49.2"

5.1.3 Pembinaan Rumah Pekerja, Kem Pekerja atau Bengkel

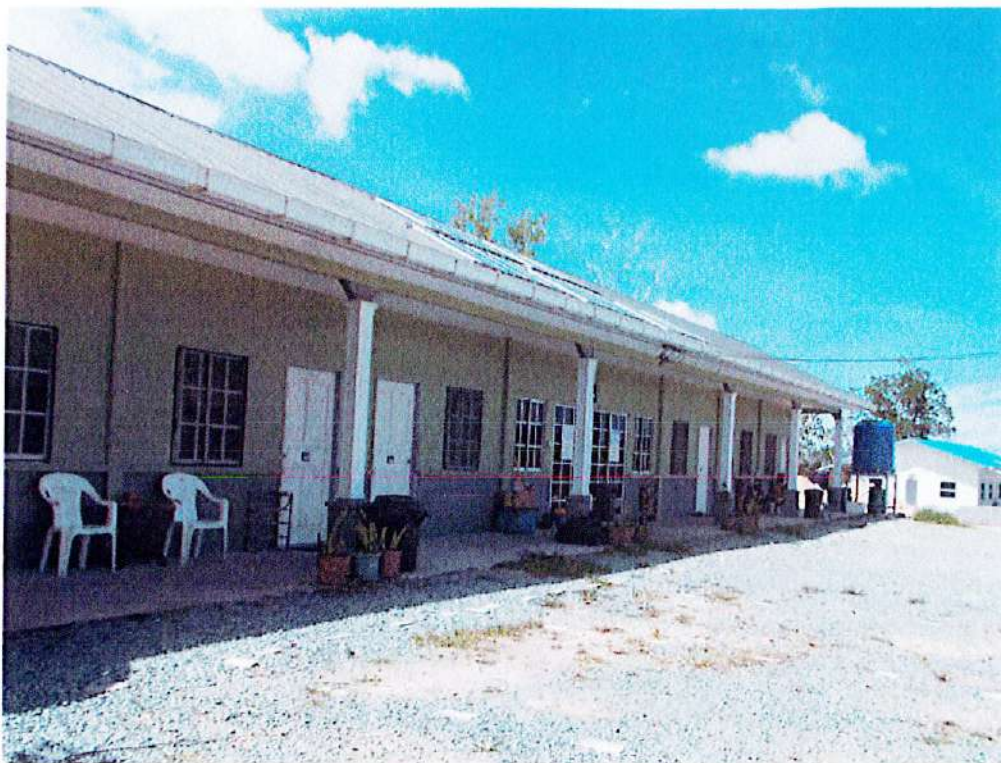


Plate 11

View of the staff quarters at the base camp.

The facility is located more than 30m away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 53' 00.5" E 117° 09' 19.4"



Plate 12

View showing the workers' quarters sited near base camp.

The facility is located more than 30 meters away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 53' 00.1" E 117° 09' 17.7"

5.1.3 Pembinaan Rumah Pekerja, Kem Pekerja atau Bengkel



Plate 13

View showing field nursery.

This facility is located more than 50 m away from any nearest natural waterways and provided with a proper drainage system.

GPS coordinates of the picture taken: N 06° 52' 54.9" E 117° 09' 14.3"

5.1.4 Rehabilitasi Tanah Yang Terdedah



Plate 14

The steep area within Coupe 2 (Block 39) demarcated using a sign board.

GPS coordinates of the picture taken: N 06° 53' 05.4" E 117° 10' 32.0"

5.2 Perlindungan Sungai



Plate 15

A signboard in place demarcating Project riparian reserves.

GPS coordinates of the picture taken: N 06° 51' 07.4" E 117° 08' 51.3"

5.3 Bahan Minyak dan Sisa Toksik



Plate 16

View showing the skid tank shed situated near the staff quarters.

This facility is equipped with a concretized floor, bunded and sheltered from weather exposure.

This facility is located 50 meters away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 52' 57.8" E 117° 09' 18.7"

5.3 Bahan Minyak dan Sisa Toksik

Plate 17

View showing the lubricant and oil storage, and genset building situated near the staff quarters.

This facility is equipped with concretized floor, bunded and sheltered from weather exposure.

The facility is located 50 meters away from nearest natural waterways.



GPS coordinates of the picture taken: N 06° 52' 57.5" E 117° 09' 18.7"

Plate 18

The diesel skid tank shed is equipped with an oil trap.



GPS coordinates of the picture taken: N 06° 52' 57.5" E 117° 09' 18.5"

5.3 Bahan Minyak dan Sisa Toksik



Plate 19

The lubricant and oil storage building sighted equipped with an oil trap.

GPS coordinates of the picture taken: N 06° 52' 57.5" E 117° 09' 18.7"



Plate 20

The fuel dispensing nozzle is affixed just above the containment chamber, filled with sand to prevent oil from seeping directly into the ground.

GPS coordinates of the picture taken: N 06° 52' 58.1" E 117° 09' 19.1"

5.3 Bahan Minyak dan Sisa Toksik



Plate 21

View showing the agrochemical storage store.

This facility is located more than 50m away from nearest natural waterways.

GPS coordinates of the picture taken: N 06° 52' 59.0" E 117° 09' 20.5"



Plate 22

View showing the fertilizer store.

This facility is located more than 50m away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 52' 59.4" E 117° 09' 19.7"

5.3 Bahan Minyak dan Sisa Toksik



Plate 23

Close-up view of the lubricant and oil storage area situated at the site office.

Oil is stored inside HDPE containers.

This facility is equipped with concretized floor, bunded and sheltered from weather exposure and located more than 50 m away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 52' 57.5" E 117° 09' 18.7"



Plate 24

Agrochemical containers labelled and stacked properly.

GPS coordinates of the picture taken: N 06° 52' 59.2" E 117° 09' 20.2"

5.3 Bahan Minyak dan Sisa Toksik



Plate 25

Fertilizer bags were labelled and stacked properly.

GPS coordinates of the picture taken: N 06° 52' 59.4" E 117° 09' 19.7"

5.4 Bahan Sisa Pepejal dan Sisa Biomas



Plate 26

A garbage bin sighted to facilitate solid wastes collection.

GPS coordinates of the picture taken: N 06° 55' 41.7" E 117° 06' 45.5"

5.4 Bahan Sisa Pepejal dan Sisa Biomas



Plate 27

Recycling bins in place to facilitate solid waste segregation.

GPS coordinates of the picture taken: N 06° 52' 59.5" E 117° 09' 16.9"



Plate 28

Dumping pit sighted onsite.

GPS coordinates of the picture taken: N 06° 53' 00.7" E 117° 09' 27.1"

5.5 Kawalan Sisa Kumbahan / Sisa Cecair



Plate 29

Toilet with septic tank in place at the Project site.

GPS coordinates of the picture taken: N 06° 53' 00.3" E 117° 09' 17.0"



Plate 30

Toilet at the workers' quarters equipped with septic tank.

GPS coordinates of the picture taken: N 06° 53' 00.3" E 117° 09' 17.0"

5.5 Kawalan Sisa Kumbahan / Sisa Cecair



Plate 31

Staff toilet sited within the base camp equipped with septic tank.

GPS coordinates of the picture taken: N 06° 53' 00.9" E 117° 09' 16.9"

5.6 Kawalan Kualiti Udara Dan Kebakaran



Plate 32

Portable fire prevention equipment provided to mitigate fire outbreaks (if any).

GPS coordinates of the picture taken: N 06° 52' 59.3" E 117° 09' 19.4"



1.0 WATER QUALITY ANALYSIS

1.1 MONITORING LOCATION

Water sampling was scheduled to be carried out on the 12th November 2021 at five (5) monitoring locations, **W1**, **W2**, **W3**, **W4**, and **W5** as shown in **Figure 1.0**. However, no sampling was carried out at locations **W1**, **W2** and **W5** (inaccessible during the site visit), and **W4** (Project has not progressed into these locations yet).

The weather was cloudy and drizzling throughout the sampling exercise.

1.2 ANALYTICAL RESULTS

Laboratory reports of the sample analyses are presented in **Appendix C**. Results of water quality analysis for monitoring stations **W3** and **W6** are summarized in **Tables 3.0** and compared to the respective limit of **Class IIB of National Water Quality Standards for Malaysia (NWQSM)**.

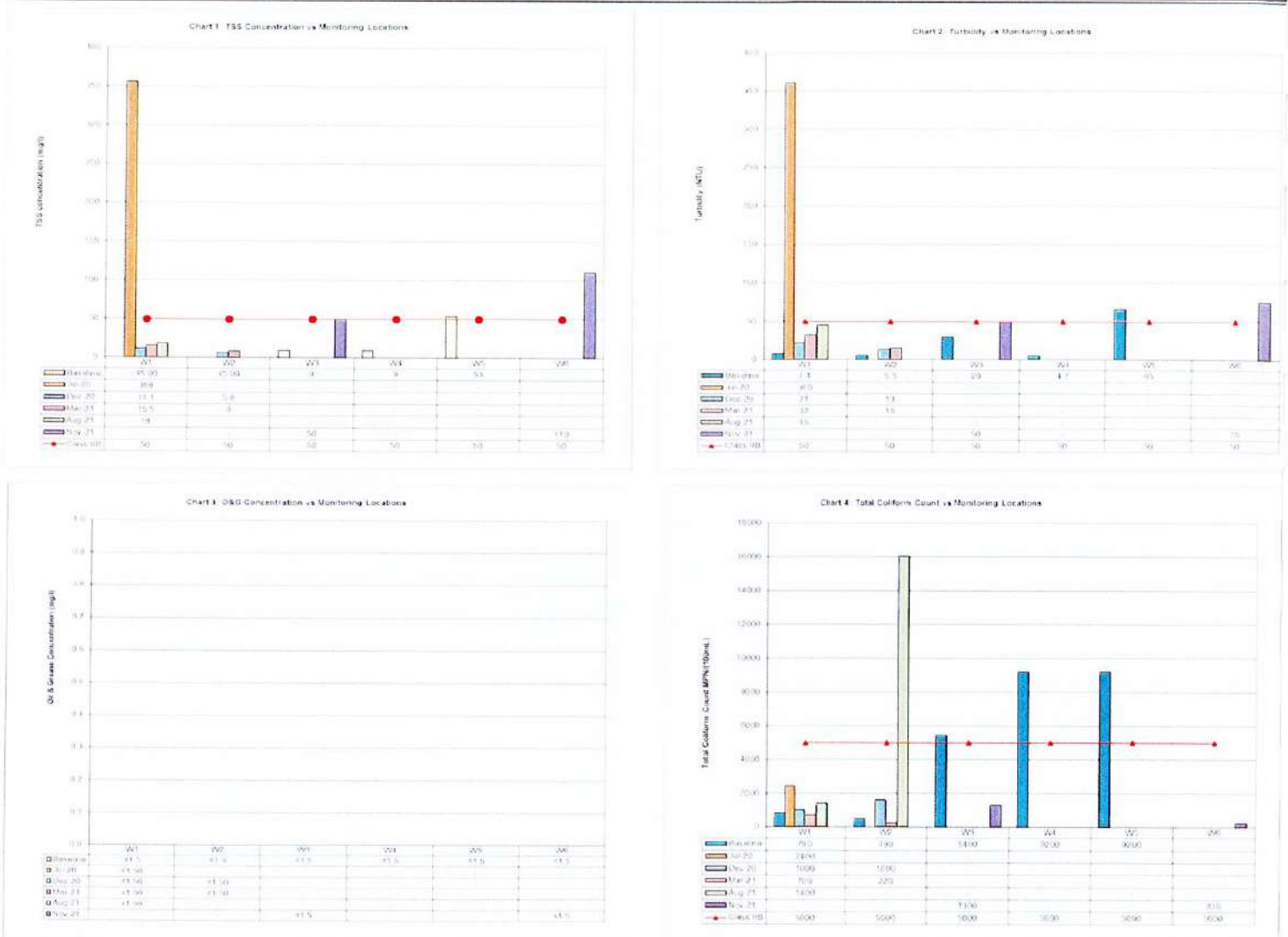
Table 3.0: Surface Water Quality Monitoring Results

Monitoring Location	W3	W6	'LIMITS (Class III)
Monitoring Date Time	12/11/2021 12:55 Hrs	12/11/2021 11:00 Hrs	
<u>Physical / Chemical Analysis</u>			
Total Suspended Solids (TSS), mg/L	50	<u>110</u>	50.0
Turbidity	50.0	75.0	-
Oil & Grease, mg/L	<1.50	<1.5	50.0
<u>Microbiological Analysis</u>			
Total Coliform Count (TCC), MPN/100mL	1300	230	5000

Notes: < > Below / above detection limit; NA-Sampling point Not Accessible

¹ National Water Quality Standards for Malaysia, Malaysia Environmental Quarry Report (DOE, 2006)

HISTORICAL SURFACE WATER QUALITY GRAPHICAL REPRESENTATION



Note: * Baseline data extracted from EIA for Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah.

1.3 DISCUSSION

Surface water quality analysis shows that all the parameters measured are **below** the recommended limit of **Class IIB** except for Total Suspended Solid (TSS). The elevated level of TSS may be due to rain event prior to sampling activity.

1.4 RECOMMENDED MITIGATION MEASURES

- Construction of sedimentation pond or drainage system within existing waterway or river reserve is strictly prohibited.
- Vegetation clearing shall be carried out in stages and confined to areas that are essential for Project development. Existing vegetation shall be retained to reduce runoff velocity and act as a natural barrier to minimize soil erosion.
- Re-vegetation or planting of cover crops shall be carried out in tandem with the field establishment works. This is to avoid prolonged and unnecessary exposure of bare ground elements such as rainfall, wind, and surface runoffs.
- Usage of agro-chemical is minimized and strictly adhered to the rules and regulations as stipulated under the Pesticides Act 1974. Disposal of agrochemicals such as pesticides and herbicides into existing streams or any waterway is strictly prohibited.

APPENDIX C

Surface Water Test Reports
National Water Quality Standards for Malaysia (NWQSM)





CHEMSAIN KONSULTANT SDN BHD

Chemical and Environmental Laboratory
No. 70-7, KK Times Square,
Off Jalan Coastal,
88450 Kota Kinabalu, Sabah
Tel: 088-3330011 Fax: 088-3330020
Email: lab@chemsain.com.my
www.chemsain.com

ISO 9001:2015
REGISTERED



TEST REPORT

NOT FOR ADVERTISEMENT PURPOSES

Customer : Gerak Saga Sdn Bhd
L-70-7, KK Times Square,
Off Jalan Coastal,
88450 Kota Kinabalu, Sabah

Lab No. : CK/CL405/4677-21
Type (No.) of Sample : River Water (2)
Date Received : 15th November 2021
Date of Report : 01st December 2021
Project Code : CK/MO411/1197/21

Lab No.	4677-1	4677-2	Test Method	* Standard Limit
Parameter(s)	W3 Date: 12/11/21 Time: 12.55 pm	W6 Date: 12/11/21 Time: 11.00 am		
Turbidity, NTU	50	75	APHA 2130 B, 2017	50
Total Suspended Solids, mg/L	50.0	110	APHA 2540 D, 2017	50
Oil & Grease, mg/L	<1.5	<1.5	APHA 5520 B, 2017	-

* Class IIB National Water Quality Standards Malaysia.

----- End -----

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ChM. SHIERLA BINTI KUSUMABALU
B. Sc. (Hons)
MMIC (4697/6031/1347)*
SENIOR CHEMIST





CHEMSAIN KONSULTANT SDN BHD

100-100A, JALAN KUALA KEMAMAN, KUALA KEMAMAN, TERENGGANU, MALAYSIA
TEL : 09-6677 1127, FAX : 09-6677 1128
Email: info@chemsain.com
www.chemsain.com



TEST REPORT

NOT FOR ADVERTISEMENT PURPOSES

Customer : Gerak Saga Sdn Bhd
L-70-7, KK Times Square,
Off Jalan Coastal,
88450 Kota Kinabalu, Sabah

Lab No. : CKML405 4678 21
Type (No.) of Sample : River Water (2)
Date Received : 15th November 2021
Date of Report : 24th November 2021
Project Code : CK/MO4/U/1197/21

Lab No.	4678-1	4678-2	<u>Test Method</u>	<u>* Standard Limit</u>
Parameter(s)	W3 Date: 12/11/21 Time: 12.55 pm	W6 Date: 12/11/21 Time: 11.00 am		
Total Coliform Count MPN/100ml, 35±0.5°C/48 h	1.3 x 10 ³	2.3 x 10 ²	APIA 9221 B, 2017	5,000

* Class IIB National Water Quality Standards Malaysia.

----- End -----

STEPHANIE EVERSOLE
M. Sc.
MUMM0369
MICROBIOLOGIST



NATIONAL WATER QUALITY STANDARDS FOR MALAYSIA

Parameters	Unit	Classes					
		I	IIA	IIB	III	IV	V
Ammoniacal-N.	mg/l	0.1	0.3	0.3	0.9	2.7	>2.7
BOD	mg/l	1	3	3	6	12	>12
COD	mg/l	10	25	25	50	100	>100
DO	mg/l	7.0	5.0 – 7.0	5.0 – 7.0	3.0 – 5.0	<3.0	<1.0
pH		6.5 – 8.5	6.0 – 9.0	6.0 – 9.0	5.0 – 9.0	5.0 – 9.0	-
Colour	TCU	15	150	150	-	-	-
Elec. Cond*	µS/cm	1000	1000	-	-	6000	-
Floatables		N	N	N	-	-	-
Odour		N	N	N	-	-	-
Salinity*	%	0.5	1	-	-	2	-
Taste		N	N	N	-	-	-
Tot. Diss. Sol.*	mg/l	500	1000	-	-	4000	-
Tot. Susp. Sol.	mg/l	25	50	50	150	300	>300
Temperature	°C	-	Normal±2	-	Normal±2	-	-
Turbidity	NTU	5	50	50	-	-	-
F. Coliform**	counts/100ml	10	100	400	5000 (20000) ^a	5000 (20000) ^a	-
Total Coliform	counts/100ml	100	5000	5000	50000	50000	>50000

N = No visible floatable material / debris; or no objectionable odour; or no objectionable taste.

***** = Related parameters, only one recommended for use

****** = Geometric mean

± = Maximum not to be exceeded

CLASS USES

- I** represent water body of excellent quality. Standards are set for the conservation of natural environment in its undisturbed state. Water bodies such as those in the national park areas, fountainheads, and in high land and undisturbed areas come under this category where strictly no discharge of any kind is permitted. Water bodies in this category meet the most stringent requirements for human health and aquatic life protection.
- IIA / IIB** represents water bodies of good quality. Most existing raw water supply sources come under this category. In practice, no body contact activity is allowed in this water for prevention of probable human pathogens. There is a need to introduce another class for water bodies not used for water supply but of similar quality which may be referred to as **Class IIB**. The determination of **Class IIB** standard is based on criteria for recreational use and protection of sensitive aquatic species.
- III** is defined with the primary objective of protecting common and moderately tolerant aquatic species of economic value. Water under this classification may be used for water supply with extensive / advance treatment. This class of water is also defined to suit livestock drinking needs.
- IV** defines water quality required for major agricultural irrigation activities which may not cover minor applications to sensitive crops.
- V** represents other waters which do not meet any of the above uses.