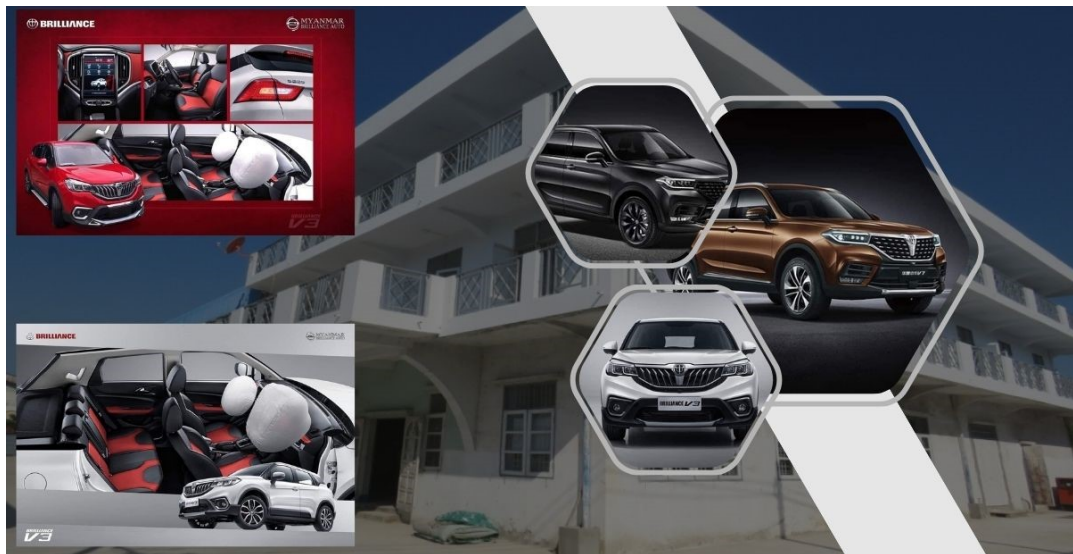




ENVIRONMENTAL IMPACTS ASSESSMENT
of
The Assembling, Manufacturing and Sales of Motor
Vehicles
by
Myanmar Brilliance Auto Co., Ltd



(Myanmar Environment Sustainable Conservation)

February, 2024



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ACRONYMS AND ABBREVIATION

ACGIH	American Conference of Governmental Industrial Hygienist
ADB	Asian Development Bank
ASEAN	Association of South-East Asian Nations
BAT	Best Available Technology
BETP	Biomass Energy Technological Paradigm
BOD	Biochemical Oxygen Demand
CGM	Complaints and Grievances Mechanism
CHS	Community Health and Safety
CIA	Cumulative Impact Assessment
CI	Cumulative Impacts
CIM	Cumulative Impacts Management
COD	Chemical Oxygen Demand
CSR	Corporate Social Responsibility
CPR	Cardiopulmonary Resuscitation
dBA	Decibel A- weighting
ECD	Environmental Conservation Department
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPS	Environmental Performance Standards
EU	European Union
FD	Forest Department
FGD	Focal Group Discussion
GBH	Girth at Breast Height

GDP	Gross Domestic Products
GHGs	Green House Gases (Glass House Gases)
GIS	Geographic Information System
ID	Identity Card
IEE	Initial Environmental Examination
IFC	International Finance Corporation
IREA	International Renewable Energy Agency
ISO	International Standard Organization
IUCN	International Union for Conservation of Nature and Natural Resources
KII	Key Informant Interview
kWh	Kilo Watt Hour
MESC	Myanmar Environment Sustainable Conservation
MMSP	Management and Monitoring Sub-plans
MOECAF	Ministry of Environmental Conservation and Forestry
MONREC	Ministry of Natural Resources and Environmental Conservation
MP	Monitoring Plan
NCEA	National Commissions of Environmental Affairs
NECC	National Environmental Conservation Committee
NECCCC	National Environmental Conservation and Climate Change Central Committee
NEQ	National Environmental Quality
NGO	Non-Government Organization
NO ₂	Nitrogen Dioxide
OHS	Occupational Health and Safety
PFD	Personal Floation Devices
PM	Particulate Matter
PM _{2.5-10}	Particulate Matter between 2.5-10 microns

PPE	Personnel Protection Equipment
RSPM	Respiratory Suspended Particulate Matter
4Rs	Reduce, reuse, recover and recycle
SIA	Social Impact Assessment
SO ₂	Sulphur Dioxide
SPM	Suspended Particulate Matter
SS	Secondary Source
STD	Sexually Transmitted Diseases
TDS	Total Dissolved Solids
TSS	Total Suspended Solid
TSPM	Total Suspended Particulate Matter
UXO	Unexploded Ordnance
WHO	World Health Organization

အကျဉ်းချုပ်အစီရင်ခံစာ

ဤပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစာသည် မြန်မာအဆင့်မြင့် ကားကုမ္ပဏီ လီမိတက်မှ မော်တော်ကား တပ်ဆင်၊ ဖြန့်ဖြူးရောင်းချခြင်းအတွက် ဖြစ်သည်။

အဆိုပါစီမံကိန်းအတွက် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအစီရင်ခံစာကို ဖေဖော်ဝါရီလ၊ ၂၀၂၀ ခုနှစ်တွင် တင်သွင်းခဲ့၍၊ ပတ်ဝန်းကျင်ထိခိုက်သိမ်းဆီးရေးဦးစီးဌာနမှ ၂၀၂၁ ခုနှစ်၊ မေလ၊ ၁၄ ရက်နေ့တွင် အတည်ပြုခဲ့ပါသည်။ (စာအမှတ်၊ အီးအိုင်အေ - ၁/၄-ဆ (၉၂၅/၂၀၂၁))။ ဤပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း အစီရင်ခံစာ (EIA)ကို ဆက်လက်တင်ပြခြင်းဖြစ်ပါသည်။

မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်သည် ဩဂုတ်လ၊ ၂၀၁၈ ခုနှစ်တွင် တရားဝင် မှတ်ပုံတင်ထားသော ကုမ္ပဏီတစ်ခု ဖြစ်သည်။ (ကုမ္ပဏီမှတ်ပုံတင် အမှတ်မှာ- ၁၀၀၆၀၁၁၈၄၊ ရက်စွဲ ၁၆-၈-၂၀၁၈ ဖြစ်သည်။ (ရင်းနှီးမြှုပ်နှံမှုနှင့် ကုမ္ပဏီများညွှန်ကြားမှု ဦးစီးဌာန)

ကုမ္ပဏီသည် မြန်မာ့ရင်းနှီးမြှုပ်နှံမှုကော်မရှင်မှ ခွင့်ပြုမိန့်ရရှိထားပြီး ဖြစ်ပါသည်။ (ခွင့်ပြုမိန့်အမှတ်- မနသ-၁၂၉/၂၀၁၈၊ ရက်စွဲ- ၂၀-၁၂-၂၀၁၈။

မော်တော်ကားများကို SKD စနစ်ဖြင့် တပ်ဆင်ထုတ်လုပ် ရောင်းချသွားမည် ဖြစ်သည်။ ကားအစိတ်အပိုင်းများကို တရုတ်နိုင်ငံမှ တင်သွင်းမည်ဖြစ်သည်။ (Brilliance Automotive Group Holdings ကုမ္ပဏီလီမိတက်၊ Shenyang၊ Liaoning၊ တရုတ်)

အဆိုပြုစီမံကိန်းနေရာသည် မြေကွက်အမှတ် - ၂၄၆/အမ်၊ စက်မှုဇုန် (၂) အတွင်း၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် တည်ရှိပါသည်။ ကိုဩဒိနိတ်များမှာ မြောက်လတ္တီတွဒ် ၁၆ ဒီဂရီ၊ ၅၁ မိနစ်၊ ၁၉.၀၅ စက္ကန့်နှင့် အရှေ့လောင်ဂျီတွဒ် ၉၆ ဒီဂရီ၊ ၀၄ မိနစ်၊ ၄၃.၈၃ စက္ကန့်၊ ပင်လယ်ရေမျက်နှာပြင်အမြင့် ၂၆ ပေတို့ဖြစ်သည်။ စီမံကိန်းဧရိယာမှာ ၂.၄၂၀ ဧက (၉၇၉၃.၄၀၁ စတုရန်းမီတာ) ဖြစ်သည်။

ခန့်မှန်းဘတ်ဂျက်မှာ ကျပ် သန်းပေါင်း ၄၁၇၇.၉၃၉၃ (အမေရိကန်ဒေါ်လာ ၀.၅၄၉၉၅ သန်းအပါအဝင်) ဖြစ်သည်။

မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်သည် ၁၀၀ ရာခိုင်နှုန်း မြန်မာနိုင်ငံသားပိုင် ကုမ္ပဏီ ဖြစ်သည်။ အဆိုပြုစီမံကိန်းသည် Brilliance ယာဉ်များ၏ မော်တော်ယာဉ်အစိတ်အပိုင်းများကို တပ်ဆင်ပြီး မြန်မာနိုင်ငံတွင် ရောင်းချမည် ဖြစ်သည်။

တရုတ်ကုမ္ပဏီဖြစ်သော Brilliance Automotive Group Holdings ကုမ္ပဏီလီမိတက်၊ Liaoning၊ တရုတ် နှင့် မြန်မာကုမ္ပဏီဖြစ်သော မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်တို့ အကြား အမျိုးမျိုးသော သဘောတူညီချက်များဖြင့် စီမံကိန်းကို လုပ်ဆောင်ပါမည်။

စီမံကိန်းအဆိုပြုတင်ပြသူ

- စီမံကိန်းအဆိုပြုတင်ပြသူအမည် : မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်
- ရုံးလိပ်စာ : အမှတ် ၁၈/အေ-၁၊ သာယာဝတီလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်
- ဖုန်း : ၀၉ ၄၄၄၄၅၆၆၆၆၊ ၀၉ ၆၉၅၁၈၆၃၀၀၊ ၀၉ ၇၃၇၃၈၅၈၅၊ ၀၉ ၉၇၄၀၄၀၇၀၀
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- ဖုန်း : ၀၉ ၄၄၃၀၀၅၈၂၁၊ ၀၉ ၉၇၄၀၄၀၇၀၀
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- စီမံကိန်းတည်နေရာ : မြေကွက်အမှတ် ၂၆၄/အမ်၊ စက်မှုဇုန် (၂)၊ စက်မှုဇုန် ရပ်ကွက်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး
- ဖုန်း : ၀၁ ၆၈၅၈၄၇

အုပ်ချုပ်မှုဆိုင်ရာပုဂ္ဂိုလ်များ

အမည်	လူမျိုး၊ မှတ်ပုံတင် အမှတ်	လိပ်စာ	ရာထူး	အခြား စီးပွားရေး
ဦးခင်မောင်စန်း	မြန်မာ ၁၂/လသာန (နိုင်) ၀၀၇၄၉၉	အမှတ် ၁၈ (အေဝမ်း)၊ သာယာဝတီလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး	အုပ်ချုပ်မှုဒါရိုက်တာ	ကုန်သည်
ဦးမျိုးကျော်	မြန်မာ ၈/မကန (နိုင်) ၀၁၉၁၄၉	အမှတ် ၆၄၊ ပဒုမ္မာလမ်း၊ (၃) ရပ်ကွက်၊ တောင်ဥက္ကလာပ မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး	ဒါရိုက်တာ	ကုန်သည်

ဦးမင်းမင်းမောင်	မြန်မာ ၁၄/ပသန (နိုင်) ၀၀၁၅၇၀	အမှတ် (ဒီ ၂/၃၊ သဇင်း (၂) လမ်း၊ (၉) ရပ်ကွက်၊ လှိုင်မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး	ဒါရိုက်တာ	ကုန်သည်
ဦးရန်မျိုးအောင်	မြန်မာ ၅/ငဇန (နိုင်) ၀၅၄၃၇၈	အမှတ် (၄၆၂)၊ သိမ်ဖြူလမ်း၊ မင်္ဂလာတောင်ညွန့်မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး	ဒါရိုက်တာ	ကုန်သည်
ဦးအောင်ဖုန်းမြင့်	မြန်မာ ၁၂/မရက (နိုင်) ၁၀၄၆၇၀	အမှတ် (၄၂)၊ အောင်မင်္ဂလာ လမ်း၊ ၇ မိုင်၊ ကုန်းမြင့်ရိပ်သာ၊ မရမ်းကုန်းမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး	ဒါရိုက်တာ	ကုန်သည်

မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်သည် ၁၀၀ ရာခိုင်နှုန်း မြန်မာနိုင်ငံသားပိုင် ကုမ္ပဏီ ဖြစ်သည်။

ရှယ်ယာပမာဏ : ကျပ် ၁၀၀,၀၀၀,၀၀၀

ရှယ်ယာအရေအတွက် : ၁,၀၀၀

ပေးချေသောပမာဏ : ကျပ် ၁၀၀,၀၀၀

ရှယ်ယာရှင်များနှင့်ရှယ်ယာရာခိုင်နှုန်း

ဦးခင်မောင်စန်း : အုပ်ချုပ်မှုဒါရိုက်တာ ၆၀%

ဦးမျိုးကျော် : ဒါရိုက်တာ ၁၀%

ဦးမင်းမင်းမောင် : ဒါရိုက်တာ ၁၀%

ဦးရန်မျိုးအောင် : ဒါရိုက်တာ ၁၀%

ဦးအောင်ဖုန်းမြင့် : ဒါရိုက်တာ ၁၀%

ပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ ကျွမ်းကျင်သူများ၏ ရှင်းလင်းချက်

မြန်မာ့ပတ်ဝန်းကျင် ရေရှည်တည်တံ့ရန်ထိန်းသိမ်းရေး ကုမ္ပဏီလီမိတက် (MESC)သည် အမျိုးသား စီမံကိန်းနှင့် စီးပွားရေးဖွံ့ဖြိုး တိုးတက်မှုဝန်ကြီးဌာနတွင် (စာအမှတ်။ ရက-ခ(၀)၀၀၁/၂၀၁၄ (၀၀၄၇၂၀)၊ ရက်စွဲ။ ၆-၆-၂၀၁၄၊ မှတ်ပုံတင်လက်မှတ်အမှတ် ၈၃၀/၂၀၁၄-၂၀၁၅ (၂၀-၅-၂၀၁၄)ဖြင့် ၂၀၁၄ ခုနှစ်၌ တရားဝင်မှတ်ပုံတင်ထားသော အတိုင်ပင်ခံအဖွဲ့အစည်းတစ်ခု ဖြစ်သည်။ ကုမ္ပဏီမှတ်ပုံတင်အမှတ်အသစ် မှာ ၁၁၀၆၄၉၁၉၃ ဖြစ်သည်။

အတိုင်ပင်ခံအဖွဲ့အစည်း မြန်မာ့ပတ်ဝန်းကျင် ရေရှည်တည်တံ့ရန် ထိန်းသိမ်းရေးကုမ္ပဏီလီမိတက် (MESC)၏ ကြားကာလ အကြံပေးလိုင်စင်အမှတ်သည် ဝဝဝ၃ ဖြစ်သည်။ (ရက်စွဲ။ ၁-၇-၂၀၁၇၊ ECD)

ဆက်သွယ်ရန်လိပ်စာ : အခန်း(၅-ခ)၊ တိုက်အမှတ်(၆၇/၆၉)၊ ပါရမီလမ်း၊ (၁၆)ရပ် ကွက်၊ လှိုင်မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး

ဆက်သွယ်ရန် ပုဂ္ဂိုလ် : ဦးမြင့်ကျော်သူရ

ဆက်သွယ်ရန်ဖုန်းနံပါတ် : + ၉၅ ၉ ၄၂၀၁၀၅၀၇၁
+ ၉၅ ၉ ၇၃၀၄၄၉၀၃

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Facebook website : www.myanmar environment sustainable conservation.com

ဤ IEE/EIA စီမံကိန်းတွင်ပါဝင်သော MESC ၏ အဖွဲ့ဝင်များ IEE/EIA appraisers, သို့မဟုတ် IEE/EIA practitioner မှာ အောက်ပါအတိုင်း ဖြစ်သည်-

အမည်	နိုင်ငံသားနှင့် နိုင်ငံသား မှတ်ပုံတင် အမှတ်	ECD မှတ်ပုံတင် အမှတ်	ကျွမ်းကျင်ဘာသာရပ်
ဦးမြင့်ကျော်သူရ M.Sc (သတ္တဗေဒ)	မြန်မာ ၁၂/ ဒဂတ(နိုင်) ၀၂၈၃၄၉	၀၀၀၆	အုပ်ချုပ်မှုဒါရိုက်တာ၊ ဖီဝမျိုးစုံမျိုးကွဲပညာရှင်(Fauna), EIA practitioner I EIA Appraiser
ဦးစောဟန်ရှိန် B.Sc (ရုက္ခဗေဒ) M.Sc(အက္ခရာဝါဒီ ဗေဒ)	မြန်မာ ၁၀/ မလမ(နိုင်) ၀၀၈၁၇၃	၀၀၀၇	အငြိမ်းစားပါမောက္ခ EIA Practitioner and Appraiser
ဦးတင်ထွန်းအောင် B.Sc (Engineering)	မြန်မာ ၁၂/ ဥတမ(နိုင်) ၁၇၂၁၁၁	၀၀၀၉	အင်ဂျင်နီယာ၊ EIA practitioner
ဦးသန်းစိုးဦး M.Sc (သစ်တော)	မြန်မာ ၉/ မနမ (နိုင်) ၀၅၀၈၀၈	၀၀၀၁၁	EIA ပညာရှင်
ဦးဥက္ကာကျော်သူ B.Sc (ဘူမိဗေဒ)	မြန်မာ ၇/ ရတရ (နိုင်) ၀၉၀၃၇၁	၀၀၀၁၂	ဘူမိဗေဒပညာရှင်

ဒေါ်သင်းသင်းရီ B.Sc (ဓာတုဗေဒ)	မြန်မာ ၁၂/ သယံဇာတ(နိုင်) ၀၃၉၂၉၂	၀၀၀၁၃	ဓာတုပတ်ဝန်းကျင်ဆိုင်ရာသုတေသနပညာ ရှင်၊ ကွန်ပျူတာ
ဒေါက်တာထင်သော်ကေ ၎င်း M.B.B.S	မြန်မာ ၁၃/ဘေဒန (နိုင်) ၂၂၂၇၂၃	အချိန်ပိုင်း	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး
ဒေါ်သီသီစန်း L.L.B	မြန်မာ ၁၂/သကတ (နိုင်) ၁၅၀၄၂၄	အချိန်ပိုင်း	ဥပဒေရေးရာလေ့လာမှုနှင့် သရုပ်ခွဲဆန်းစစ်ခြင်း
ဦးသူရကို B.A (History)	မြန်မာ ၁၂/ကမန (နိုင်) ၁၂၄၈၂၄	၀၀၂၇၇	လူမှုရေးဆိုင်ရာ သရုပ်ခွဲဆန်းစစ်ခြင်းနှင့် လေ့လာခြင်း၊ ရှေးဟောင်းသုတေသနနှင့် ယဉ်ကျေးမှုအမွေအနှစ်၊ ဆူညံသံနှင့် တုန်ခါမှု
ဒေါ်ခင်သီတာလဝန်း B.Sc (Mathematics)	မြန်မာ ၁၂/စခန (နိုင်) ၀၆၉၈၇၉	အချိန်ပိုင်း	မိုးလေဝသနှင့် လေအရည်အသွေး ဆန်းစစ်ခြင်းနှင့် ကြိုတင် ခန့်မှန်းခြင်း၊ ဇလဗေဒ၊ မြေပေါ်ရေနှင့် မြေအောက်ရေ ထိန်းသိမ်းခြင်း၊ စွန့်ပစ်အစိုင်အခဲနှင့် ဘေးအန္တရာယ် စီမံခန့်ခွဲခြင်း

- ဦးမြင့်ကျော်သူရသည် တိရစ္ဆာန်များ လေ့လာခြင်း နှင့် EIA လေ့လာခြင်း နှင့် အကဲဖြတ်ခြင်း နှင့် အစီရင်ခံစာ ရေးသားခြင်း အပိုင်းတွင် ပါဝင်ပါသည်။
- ဦးစောဟန်ရှိန် သည် EIA လေ့လာခြင်း နှင့် အကဲဖြတ်ခြင်း နှင့် အစီရင်ခံစာ ရေးသားခြင်း (အစီရင်ခံစာ ရေးသားခြင်း ခေါင်းဆောင်) အပိုင်းတွင် ပါဝင်ပါသည်။
- ဦးတင်ထွန်းအောင် သည် EIA လေ့လာခြင်း နှင့် အစီရင်ခံစာ၏ အပိုင်းများ၊ သတင်း အချက်အလက်များ၊ အချက်အလက်များ ပံ့ပိုးပေးခြင်း နှင့် အစီရင်ခံစာ ရေးသားခြင်း အပိုင်းတွင် ပါဝင်ပါသည်။
- ဦးသန်းစိုးဦး သည် EIA လေ့လာခြင်း နှင့် အစီရင်ခံစာ ရေးသားခြင်း အပိုင်းတွင် ပါဝင်ပါသည်။
- ဦးဥက္ကာကျော်သူ သည် ဘူမိဗေဒ နှင့် ပထဝီဝင် ရှုထောင့်များ နှင့် ဒေသ ဘူမိဗေဒ ဆိုင်ရာ တစ်ဆင့်ခံ အချက်အလက်များကို စုဆောင်းခြင်းတို့ပါဝင်ပါသည်။

- ဒေါ်သင်းသင်းရီ သည် ရုပ်ပိုင်းဆိုင်ရာ အထူးသဖြင့် ပတ်ဝန်းကျင် လေထု၊ ရေအရည်အသွေးနှင့် မြေအရည်အသွေး စသည်ဖြင့် နှင့် မိုးလေဝသ တစ်ဆင့်ခံ အချက်အလက်များ အပါအဝင် ရုပ်ပိုင်းဆိုင်ရာ အချက်အလက်များ စုစည်းမှုများ တွင် ပါဝင်ပါသည်။
- ဒေါက်တာထင်သော်ကောင်းသည် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး အပိုင်းတွင် ပါဝင်ရေးသားပါသည်။
- ဒေါ်သီသီစန်းသည် ဥပဒေရေးရာ အပိုင်းတွင် ပါဝင်ရေးသားပါသည်။
- ဦးသူရကိုသည် လူမှုရေးဆိုင်ရာ သရုပ်ခွဲဆန်းစစ်ခြင်းနှင့် လေ့လာခြင်း၊ ရှေးဟောင်းသုတေသနနှင့် ယဉ်ကျေးမှုအမွေအနှစ်၊ ဆူညံသံနှင့် တုန်ခါမှု တိုင်းတာခြင်းတို့တွင် ပါဝင်လုပ်ဆောင် ရေးသားပါသည်။
- ဒေါ်ခင်သီတာလဝန်းသည် မိုးလေဝသနှင့် လေအရည်အသွေး ဆန်းစစ်ခြင်းနှင့် ကြိုတင် ခန့်မှန်းခြင်း၊ ဇလဗေဒ၊ မြေပေါ်ရေနှင့် မြေအောက်ရေ ထိန်းသိမ်းခြင်း၊ စွန့်ပစ်အစိုင်အခဲနှင့် ဘေးအန္တရာယ် စီမံခန့်ခွဲခြင်းတို့တွင် ပါဝင်ရေးသားပါသည်။

MESC တွင် အချိန်ပိုင်း ဝန်ထမ်းများလည်း ရှိသည်။

အဖွဲ့အစည်းသည် အချိန်ပိုင်း အဖွဲ့ဝင်အားလုံးကို အမြဲတမ်း ဝန်ထမ်း အဖြစ် ငှားရမ်းနိုင်သည့် အခြေအနေ မဟုတ်ပါ။

မူဝါဒ၊ တရားရေးရာဖွဲ့စည်းပုံမူဘောင်

ဤအရာများကို အခန်း (၃) တွင် ဖော်ပြမည်ဖြစ်ပြီး မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်၏ ပတ်ဝန်းကျင်နှင့်လူမှုရေးရာမူဝါဒ၊ ပတ်ဝန်းကျင်နှင့်သက်ဆိုင်သော ဥပဒေများ၊ နည်းဥပဒေများ၊ စည်းမျဉ်းများနှင့် လမ်းညွှန်ချက်များကို လိုက်နာပါမည်။

ကုမ္ပဏီသည် အောက်ပါအချက်များကို ကြိုးပမ်းအားထုတ်လိုက်နာပါမည်-

- ဥပဒေများနှင့်စည်းမျဉ်းများကိုလိုက်နာခြင်း၊ ပတ်ဝန်းကျင်နှင့်လူမှုရေးရာများကို တာဝန်ယူမှုဖြင့် ကားတပ်ဆင်ထုတ်လုပ်ခြင်း
- ပတ်ဝန်းကျင်ဧရိယာကို ညစ်ညမ်းမှုတားဆီးခြင်း၊ ပတ်ဝန်းကျင်ကာကွယ်ခြင်းအတွက် စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း
- ရေ၊ မြေ၊ လေ၊ ဆူညံသံ၊ ဖုန်မှုန့်နှင့် စွန့်ပစ်ပစ္စည်းများကြောင့် ညစ်ညမ်းမှုကို ဖြေလျော့ရန် အကျိုးသက်ရောက်သော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) လုပ်ဆောင်ခြင်း

- တင့်တော်သောနေရာလွတ်တွင် အစိမ်းရောင်နေရာ ဖန်တီးခြင်း
- တက်နိုင်သမျှ သဘာဝအရင်းအမြစ်နှင့်စွမ်းအင်များကို ထိန်းသိမ်းခြင်း

အလုပ်သမားများနှင့် ဒေသအဖွဲ့အစည်းများအကြား ပတ်ဝန်းကျင်ဆိုင်ရာ အသိပညာပေးခြင်း၊ သင်တန်းပေးခြင်းနှင့် ဒေသအဖွဲ့အစည်းများအတွက် CSR အစီအစဉ်များ ဆောင်ရွက်ခြင်း

သက်ဆိုင်သော ဥပဒေများ၊ နည်းဥပဒေများနှင့်စည်းမျဉ်း

သက်ဆိုင်သော ဥပဒေများ၊ နည်းဥပဒေများနှင့် စည်းမျဉ်း (၄၅) ခုကို စာရင်းပြုစုထားပြီး အမည်များမှာ-

- ၁။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၁၂
- ၂။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ၊ ၂၀၁၄
- ၃။ ပတ်ဝန်းကျင်ထိခိုက်မှုဆိုင်ရာလုပ်ထုံးလုပ်နည်း၊ ၂၀၁၅
- ၄။ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (စွန့်ထုတ်မှု) လမ်းညွှန်ချက်၊ ၂၀၁၅
- ၅။ မြန်မာ့ရင်းနှီးမြှုပ်နှံမှုဥပဒေ၊ ၂၀၁၆
- ၆။ မြန်မာ့ရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေ၊ ၂၀၁၇
- ၇။ ပုဂ္ဂလိက စက်မှုလုပ်ငန်းဥပဒေ၊ ၁၉၉၀
- ၈။ အလုပ်သမားအဖွဲ့အစည်း ဥပဒေ၊ ၂၀၁၁
- ၉။ အလုပ်ရုံများအက်ဥပဒေ၊ ၁၉၅၁
- ၁၀။ မော်တော်ယာဉ်ဥပဒေ၊ ၂၀၁၅
- ၁၁။ စက်မှုဇုန်ဥပဒေ၊ ၂၀၂၀
- ၁၂။ ယာဉ်အန္တရာယ်ကင်းရှင်းရေးနှင့် မော်တော်ယာဉ်စီမံခန့်ခွဲမှု ဥပဒေ၊ ၂၀၂၀

ဥပဒေ၊ နည်းဥပဒေများ၊ စည်းမျဉ်းများမှ သက်ဆိုင်သော အခန်း၊ အပိုဒ်များကို စာရင်းပြုစု၍အခန်း (၃) တွင် ကောက်နုတ်တင်ပြထားပါသည်။

မြန်မာနှင့် သဘောတူလက်မှတ်ထိုးထားသော အပြည်ပြည်ဆိုင်ရာ ကွန်ဗန်းရှင်း၊ နားလည်မှုစာချွန်လွှာနှင့် သဘောတူညီမှုများကိုလည်း စာရင်းပြုစုတင်ပြထားပါသည်။

အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်တန်ဖိုးများ

- လေအရည်အသွေးလမ်းညွှန်ချက်တန်ဖိုး၊ အမိန့်ကြော်ငြာစာအမှတ် ၆၁၅/၂၀၁၅၊ အမှတ် ၁.၁
- စွန့်ထုတ်မှု လမ်းညွှန်ချက်တန်ဖိုး၊ အမှတ် ၁.၂
- ဆူညံသံ လမ်းညွှန်ချက်တန်ဖိုး၊ အမှတ် ၁.၃
- မြန်မာ သောက်သုံးရေ အရည်အသွေး စံချိန်စံညွှန်း အစရှိသည်တို့ကို အခန်း (၃) တွင် ဖော်ပြထားပါသည်။

ကတိကဝတ်များ

စီမံကိန်းအဆိုပြုတင်ပြသူ (မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်) နှင့် အတိုင်ပင်ခံအဖွဲ့အစည်း (MESC) တို့၏ ကတိကဝတ်များကို ဖော်ပြထားပါသည်။

ဖွဲ့စည်းပုံမူဘောင်

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးကော်မတီကို ၂၀၂၁ ခုနှစ်တွင် ဖွဲ့စည်း၍ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဦးစီးဌာနကို ၂၀၁၂ ခုနှစ်တွင် ဖွဲ့စည်း၍ အခန်း (၃) တွင် အဆိုပါ ဖွဲ့စည်းပုံများကို ဖော်ပြထားပါသည်။

မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်၏ ဖွဲ့စည်းပုံကို ရေးဆွဲဖော်ပြထားပါသည်။

အပြည်ပြည်ဆိုင်ရာ ဘဏ္ဍာရေးကော်ပိုရေးရှင်း (IFC) မှ ချမှတ်ထားသော ပတ်ဝန်းကျင်နှင့်လူမှုရေး ဆိုင်ရာ စံချိန်စံညွှန်းများကိုဖော်ပြထားပါသည်။

အခန်း (၃) ၏ နောက်ဆုံးအပိုင်းသည် စီမံကိန်းနှင့်သက်ဆိုင်သော ကျန်းမာရေး စံချိန်စံညွှန်းများ အကြောင်းကို အကျဉ်းချုပ်တင်ပြထားပါသည်။

ဤပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစာအခန်း (၃) တွင် ပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒ၊ တရားရေးရာဖွဲ့စည်းပုံမူဘောင် များကို အတော်အသင့် ပါဝင်ပါသည်။

စီမံကိန်းအကြောင်းအရာနှင့် အခြားဆောင်ရွက်နိုင်သောနည်းလမ်းများ

ဤအကြောင်းအရာများကို အခန်း (၄) တွင် အသေးစိတ် ဖော်ပြထားပါသည်။

အဆိုပြုတင်ပြသော စီမံကိန်းသည် မော်တော်ကားများကို SKD စနစ်ဖြင့် တပ်ဆင်ထုတ်လုပ် ရောင်းချသွားမည် ဖြစ်သည်။

အဆိုပြုတင်ပြသော စီမံကိန်းနေရာသည် မြေကွက်အမှတ်- ၂၆၄/အမ်၊ စက်မှုဇုန်(၂)၊ လှိုင်သာယာ မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် တည်ရှိပါသည်။

စီမံကိန်းနေရာ၏ ဧရိယာမှာ ၂.၄၂၀ ဧက (၉၇၉၃.၄၀၁ စတုရန်းမီတာ) ဖြစ်သည်။ ကိုဩဒိနိတ်များမှာ မြောက်လတ္တီတွဒ် ၁၆ ဒီဂရီ ၅မိနစ်၊ ၁၉.၅ စက္ကန့်နှင့် အရှေ့လောင်ဂျီတွဒ် ၉၆ ဒီဂရီ ၀၄ မိနစ်၊ ၄၃.၈၃ စက္ကန့်၊ ပင်လယ်ရေမျက်နှာပြင် အမြင့် ၂၆ ပေတွင် တည်ရှိပါသည်။

အခြေခံအဆောက်အအုံ

ကားတပ်ဆင်ထုတ်လုပ်ခြင်းလုပ်ငန်းတွင် အောက်ပါ အဆောက်အအုံများပါဝင်ပါသည်။

- အဓိက သုံးထပ်ကွန်ကရစ်အဆောက်အအုံ (၁၈၀ ပေ x ၁၈၀ ပေ စီ)၊ အဆောက်အအုံတစ်ခုစီသည် သုံးထပ်ဖြစ်သည်။ ပထမထပ် (မြေညီထပ်) တွင် တပ်ဆင်ခြင်းနှင့် ဖြန့်ဖြူးရောင်းချခြင်း၊ ညှိခြင်း၊ အပြီးသတ်ခြင်းနှင့် စမ်းသပ်ခြင်းတို့ကို လုပ်ဆောင်မည်။ ဒုတိယထပ်တွင် ရုံးခန်းနှင့် SKD အစိတ်အပိုင်းများ သိုလှောင်ခြင်း၊ တတိယထပ်တွင် နားနေခန်း၊ သိုလှောင်ဧရိယာနှင့် အခြားသုံးတို့ဖြစ်သည်။

နည်းပညာမှာ Semi-Knock Down (SKD) စနစ်ဖြစ်ပြီး ကားအစိတ်အပိုင်းများကို တရုတ်နိုင်ငံမှ တင်သွင်း၍ စီမံကိန်းနေရာတွင် တပ်ဆင်ထုတ်လုပ်မည်ဖြစ်သည်။

မော်ဒယ် (၃) မျိုး ထုတ်လုပ်မည်ဖြစ်သည် (Brilliance V3၊ V6၊ V7)။ မျှော်မှန်းထုတ်လုပ်မှုမှာ ပထမနှစ်တွင် V3 အစီးရေ ၆၀၀၊ V6 နှင့် V7 ၆၀ စီးစီဖြစ်သည်။ ကားအားလုံးသည် ဘယ်မောင်းအမျိုးအစားဖြစ်သည်။ နောင်နှစ်များတွင် တိုးမြှင့်ထုတ်လုပ်မည်ဖြစ်၍ ၅-၁၀ နှစ်တွင် မျှော်မှန်းထုတ်လုပ်မှုမှာ V3 အစီးရေ ၆၄၉၊ V6 နှင့် V7 ၆၄ စီး စီဖြစ်သည်။

လုပ်ငန်းစဉ်

အောက်ပါ SKD အစိတ်အပိုင်းများကို တင်သွင်းပြီး တပ်ဆင်မည်ဖြစ်သည်။

- ကိုယ်ထည်နှင့် အောက်ခံထည်၊ အင်ဂျင် (ထရန်စမစ်ရှင်းနှင့် ကလပ်စနစ်)၊ အိပ်ဇာစနစ်၊ ဘီးများနှင့်တာယာများ၊ စတီယာရင်နှင့် အစိတ်အပိုင်းများ၊ တံခါးများ၊ ရှေ့နှင့်နောက် တန်းများ၊ ဝင်ရိုးများပေါ်တွင် ယာဉ်ကို ထောက်ကန်ထားသည့် စပရင်များ၊ ထိုင်ခုံများ

အထက်မှာရှင်းပြသကဲ့သို့ ကားမော်ဒယ်တစ်ခုစီအတွက် အစိတ်အပိုင်းများကို တင်သွင်းပြီး စီမံကိန်းနေရာတွင် တပ်ဆင်ထုတ်လုပ်မည်ဖြစ်သည်။

တပ်ဆင်ထုတ်လုပ်ခြင်းလုပ်ငန်းစဉ်များကို ရိုးရှင်းစွာ အကျဉ်းချုပ်ကို အောက်ပါအတိုင်း ဖော်ပြထား ပါသည်။

- (၁) ကိုယ်ထည်စစ်ဆေးခြင်း : ကားကိုယ်ထည်များကို စစ်ဆေးပြီးတပ်ဆင်ခြင်း
- (၂) အောက်ခံထည် တပ်ဆင်ခြင်း : အောက်ပိုင်းများကို တပ်ဆင်ခြင်း ဥပမာ-ပိုင်ယာများ၊ ဆီပိုက်များ၊ ဘရိတ်များ၊ ပါဝါစတီယာရင်၊ အင်ဂျင်ပိုင်ကန်၊ အောက်ခံထည်၊ ရှေ့နောက် စပရင်များ၊ ဘီးများ

- (၃) နောက်ဆုံးတပ်ဆင်ခြင်း : နောက်ဆုံးတပ်ဆင်ခြင်းအဆင့် ဥပမာ- အင်ဂျင်အတွင်းပိုင်းများ တပ်ဆင်ခြင်း၊ ပိုင်ယာများနှင့် ပိုက်များ၊ ထိုင်ခုံများ၊ တံခါးများ၊ အင်ဂျင်ပိုင်၊ ဘရိတ်ဆီ အစရှိသည်တို့ ဖြည့်ခြင်း
- (၄) စမ်းသပ်ခြင်း : စမ်းသပ်သည့်လုပ်ငန်း ဥပမာ- ဖြောင့်တန်းမှုစစ်ဆေးခြင်း၊ မီးသီးများ စစ်ဆေးခြင်း၊ အရှိန်စစ်ဆေးခြင်း၊ ABS ဘရိတ်စနစ်စစ်ဆေးခြင်း၊ CO₂ ထွက်ရှိမှုစစ်ဆေးခြင်း
- (၅) ရေးဖြန်းခြင်း : မိုးလုံမလုံစစ်ဆေးခြင်း
- (၆) ရောင်းဝယ်ခြင်းဧရိယာ : ရောင်းချရန်အတွက် နောက်ဆုံးစစ်ဆေးခြင်း
- (၇) ပြင်ဆင်ခြင်းဧရိယာ : စမ်းသပ်လိုင်းများတွင်စစ်ဆေးခြင်း၊ မိုးလုံမလုံစစ်ဆေးခြင်း၊ ရောင်းချရန်အတွက်စစ်ဆေးခြင်း ပြီးနောက်၊ ကားတစ်စီးကိုစိတ်တိုင်းမကျလျှင် ၎င်းကို ပြင်ဆင်ပါသည်။
- (၈) လမ်းကြမ်းစစ်ဆေးခြင်း : လမ်းကြမ်းဧရိယာတွင် နောက်ဆုံးစမ်းသပ်ခြင်းဖြစ်သည်။ အဆိုပါကားသည် ဤနောက်ဆုံးအဆင့်စမ်းသပ်ခြင်းကို ဖြတ်ကျော်ပြီးလျှင် ၎င်းသည် ရောင်းချရန်အဆင့်သင့်ဖြစ်ပါသည်။

ကုန်ကြမ်းပစ္စည်းများနှင့် အရင်းအမြစ်အသုံးပြုမှု

အမှန်တစ်ကယ်တွင် ကုန်ကြမ်းပစ္စည်းများ မလိုအပ်ပေ။ ကုန်ကြမ်းပစ္စည်းသည် တရုတ်နိုင်ငံမှ တင်သွင်းသော အမျိုးမျိုးကားအစိတ်အပိုင်းများဖြစ်သည်။

လိုအပ်သော အရင်းအမြစ်များမှာ ရေနှင့်လျှပ်စစ်ဖြစ်သည်။ နှစ်စဉ်ရေလိုအပ်ချက်မှာ (စီမံကိန်းလည်ပတ်စဉ်ကာလတွင်) ၁၄,၀၀၀ ဂါလံဖြစ်သည်။ အဓိကအားဖြင့် ရေလုံမလုံစမ်းသပ်ခြင်း အတွက်ဖြစ်သည်။

ရေကို အနက်ပေ (၁၀၀)မှ ရယူသုံးစွဲပါသည်။

နှစ်စဉ်လျှပ်စစ်လိုအပ်ချက်မှာ ၆၁၂,၆၄၀ KW ဖြစ်၍ အစိုးရလျှပ်စစ်မီးမှ ရယူပါမည်။ အရေးပေါ်အသုံးပြုမှုအတွက် အရန် မီးစက် (၁၅၀ KVA) ကို တပ်ဆင်ထားပါသည်။

နှစ်စဉ်လောင်စာဆီလိုအပ်ချက်မှာ ဒီဇယ် (၆,၀၀၀) ဂါလံ၊ ဓါတ်ဆီ (၈၀၀) ဂါလံနှင့် အင်ဂျင်ပိုင် (၅၀) ဂါလံတို့အသီးသီးဖြစ်ပါသည်။

ဓါတုဗေဒပစ္စည်းမသုံးစွဲပေ။

ဝန်ထမ်း

တည်ဆောက်ရေးကာလအတွင်းတွင် ဝန်ထမ်း (၁၀၀)ဦးနှင့် စီမံကိန်းလည်ပတ်စဉ် ကာလအတွင်းတွင် (နိုင်ငံခြားသား ငါးဦး) အပါအဝင် ဝန်ထမ်း (၂၁၉) ဦးခန့်အပ်မည်။

ဝန်ထမ်းများအတွက် အဆောင်မှာ စက်ရုံပြင်ပတွင်ဖြစ်၍ လမ်းလျှောက်သွားရသော အကွားအဝေးတွင်ဖြစ်သည်။

အလုပ်လုပ်ချိန်မှာ တစ်ရက် ၈ နာရီ၊ တစ်ပတ် ၄၀ နာရီ၊ တစ်နှစ် ၂၅၀ ရက် ဖြစ်သည်။

ဒေသဝန်ထမ်းများအတွက် လစာမှာ ကျပ် ၁၆၀,၀၀၀ မှ ၁,၀၀၀,၀၀၀ ဖြစ်သည်။ နိုင်ငံခြားသားပညာရှင်အတွက် အမေရိကန်ဒေါ်လာ ၈၀၀ မှ ၁၀၀၀ ဖြစ်သည်။ လစာများကို နှစ်နှစ်တစ်ခါ တိုးမည်။

စွန့်ပစ်ပစ္စည်းများ၊ မီးခိုးထွက်ရှိမှုများနှင့် နောက်ယုတ်မှုများ ထွက်ရှိမှု

အမှန်တစ်ကယ်တွင် ကားတပ်ဆင်ထုတ်လုပ်ခြင်းစက်ရုံသည် မီးခိုးမဲ့စက်ရုံ၊ စွန့်ပစ်ပစ္စည်း မထွက်သော စက်ရုံဖြစ်သည်။

လိုအပ်သော ကားအစိတ်အပိုင်းများကို တရုတ်နိုင်ငံမှ တင်သွင်းပြီး တပ်ဆင်၍ ကားအဖြစ်သို့ ပြုလုပ်ပါသည်။ (အမှန်တစ်ကယ် စက်ရုံဆိုင်ရာစွန့်ပစ်ပစ္စည်းမထွက်ရှိပါ)

ပန်းများနှင့် မီးစက်အသုံးပြုကြောင့် မီးခိုးထွက်ရှိနိုင်ပါသည်။ သို့ပေမယ့် မပြောပလောက်ပေ။ ရေလုံမလုံစမ်းသပ်ခြင်းကြောင့် ရေအနည်းငယ်သုံးစွဲရမည်။ ကားပစ္စည်းအစိတ်အပိုင်းများ တပ်ဆင်ချိန်တွင် ဆူညံသံအနည်းငယ် ထွက်ရှိမည်။ အနံ့မထွက်ပေ။

အစိုင်အခဲနှင့်စွန့်ပစ်ပစ္စည်းများ

တည်ဆောက်ရေးကာလအတွင်းတွင် တည်ဆောက်ရေး စွန့်ပစ်ပစ္စည်းများ အများအပြား ကျန်ရစ်မည်။ တည်ဆောက်ရေးကာလပြီးဆုံးလျှင် စီမံကိန်းနေရာကို ဤအရာများအား ရှင်းလင်း၍ သန့်ရှင်းစေရန် ထားမည်။

စီမံကိန်းလည်ပတ်ချိန်အတွင်းတွင် ကားတပ်ဆင်ထုတ်လုပ်ခြင်းအတွက် အဓိကအစိုင်အခဲ စွန့်ပစ်ပစ္စည်းများမှာ ထုတ်ပိုးထားသော အဟောင်းပစ္စည်းများ (သစ်သားများ၊ ပလတ်စတစ်များ၊ သုံးထပ်သားပြားများ) ဖြစ်သည်။ ဤအရာမှ အချို့ကို ပြန်လည်အသုံးပြု (သို့မဟုတ်) ရောင်းချပါသည်။ အနည်းငယ်သော အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများဖြစ်သော ဘတ်ထရီအိုးအဟောင်းများ၊ မီးသီးအဟောင်းများ၊ စကာအဟောင်းများ အစရှိသည်တို့ကို ထွက်ရှိမည်။ ဤအရာများကို အမှိုက်ပုံးနှစ်ခုတွင် ပြန်လည်အသုံးပြုနိုင်နှင့် ပြန်လည်အသုံးမပြုနိုင်ဟူ၍ သို့လှောင်ထားပြီး အသုံးမပြုနိုင်သော စွန့်ပစ်ပစ္စည်း များကို စက်ရုံ၏မြောက်ဘက်ရှိ စွန့်ပစ်သည့်နေရာတွင် စွန့်ပစ်ပါမည်။

မီးဖိုချောင်၊ စားဖိုဆောင် မှ ထွက်ရှိသော အစားအသောက် စွန့်ပစ်ပစ္စည်းများကို အမှိုက်ပုံးများတွင် စုဆောင်းပြီး စွန့်ပစ်ပါမည်။ (ထွက်ရှိသော စွန့်ပစ်ပစ္စည်းများမှာ မပြောပလောက်ပေ။ စက်ရုံအတွင်းတွင် ဝန်ထမ်းများမထားပေ။ ဝန်ထမ်းအားလုံးမှာ စက်ရုံပြင်ပတွင် နေထိုင်ကြပါသည်။)

ကားများသည် တရုတ်နိုင်ငံတွင် ဆေးမှုတ်ပြီးသားဖြစ်ပါသည်။ ကားအစိတ်အပိုင်းများကို တပ်ဆင်ပြီးနောက် ဆေးမှုတ်ရန်မလိုအပ်ပေ။

အရည်စွန့်ပစ်ပစ္စည်းများ

တည်ဆောက်ရေးကာလအတွင်းတွင် ဆောက်လုပ်ရေးလုပ်ငန်းအတွက် ရေအဓိကအသုံးပြုရသည်။ ဥပမာ-ဘိလပ်မြေဖျော်ခြင်း၊ ထို့ကြောင့် စက်မှုဆိုင်ရာ အရည်စွန့်ပစ်ပစ္စည်း မထွက်ရှိပေ။

နေ့ဘက်တွင် စီမံကိန်းနေရာ၌ တည်ဆောက်ရေးလုပ်သား ၁၀၀ ဦးအလုပ်လုပ်ပြီး ညနေတွင်သူတို့၏ အိမ်ကိုပြန်ကြပါသည်။ လူသုံးအရည်စွန့်ပစ်ပစ္စည်းမှာ မပြောပလောက်ပေ။

စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင် ကားတပ်ဆင်ထုတ်လုပ်ခြင်းသည် ရေမလိုအပ်ပေ။ (ကားများကို မိုးလုံမလုံ ရေးစမ်းသပ်ခြင်းမှ အပ)။ အသုံးပြုပြီးသော ရေသည် မြောင်းစနစ်သို့ စီးဆင်းပါသည်။

စီမံကိန်းနေရာအတွင်းရှိနေအိမ်တွင် ဝန်ထမ်း (၁၁) ဦးသာနေထိုင်ပါသည်။ (ဝန်ထမ်းအများစုမှာ စက်ရုံကို အသွားအပြန် လုပ်ပါသည်။) ထို့ကြောင့် လူသုံးစွန့်ပစ်ပစ္စည်းမှာ အနည်းငယ်သာဖြစ်ပါသည်။

စီမံကိန်းနေရာတွင် လုံလောက်သော သန့်စင်ခန်းများ ရှိပါသည်။ ထို့ကြောင့် သန့်စင်ခန်းများမှ ထွက်သော မိလ္လာအညစ်အကြေး များသည် မိလ္လာကန်တွင် အဆုံးသတ်သွားမည်။ အခြား လူသုံးစွန့်ပစ်ပစ္စည်း (အနည်းငယ်) မြောင်းထဲသို့ စီးဝင်ပြီး ခြောက်သွေ့သွားမည်။ မိုးရေများသည်လည်း မြောင်းအတွင်းသို့ စီးဝင်ပြီး နောက်ဆုံးစွန့်ပစ်နေရာသို့ ရောက်ရှိမည်။

အထူးသန့်စင်ခြင်း စနစ်မလိုအပ်ပေ။

စီမံကိန်းအခြားဆောင်ရွက်နိုင်သောနည်းလမ်း

နေရာအခြားဆောင်ရွက်နိုင်သောနည်းလမ်း : စီမံကိန်းနေရာသည် စက်မှုဇုန်အတွင်းတွင် တည်ရှိသောကြောင့် ကားဖြင့်သွားလာနိုင်၍ အစိုးရလှုပ်စစ်မီးရရှိပါသည်။ ရေကို အနက်ပေ (၁၀၀) မှ မြေအောက်ရေယူသုံးစွဲပါသည်။ ဤအရာသည် ဤစီမံကိန်းနေရာကို ရွေးချယ်ခြင်းဖြစ်သည်။ အကျိုးအမြတ်ကိုကြည့်ပြီး ဤနေရာကိုရွေးချယ်ခဲ့ပါသည်။

တည်ဆောက်ရေးအခြားဆောင်ရွက်နိုင်သောနည်းလမ်း : သစ်ကိုအသုံးပြုခြင်းအစား သံကိုယ်ထည်၊ သွပ်အမိုးနှင့် နံရံများကို အသုံးပြုခြင်းသည် သစ်တောကိုထိန်းသိမ်းရာ ရောက်ပါသည်။

နည်းပညာအခြားဆောင်ရွက်နိုင်သောနည်းလမ်း : အလုံးစုံသော ကားထုတ်လုပ်ခြင်းကို မြန်မာနိုင်ငံတွင် မလုပ်နိုင်သေးပါ။ ထို့ကြောင့် SKD နည်းပညာကို ရွေးချယ်ရခြင်းဖြစ်ပါသည်။

စွမ်းအင်အခြားဆောင်ရွက်နိုင်သောနည်းလမ်း : မီးပြတ်တောက်ခဲ့လျှင် စွမ်းအင်အခြားဆောင်ရွက်နိုင်သော နည်းလမ်းအဖြစ် ၁၅၀ KVA မီးစက်တစ်လုံးကို တပ်ဆင်ထားပါသည်။

အထောက်အပံ့အခြားဆောင်ရွက်နိုင်သောနည်းလမ်း : ရေ၊ လောင်စာဆီနှင့်စွမ်းအင် သုံးစွဲမှုကို ထိန်းသိမ်းမှုနည်းစဉ်အတွင်း ဘောင်ဝင်စေရန်သုံးစွဲပါမည်။

လုပ်ဆောင်မှုအခြားဆောင်ရွက်နိုင်သောနည်းလမ်း : ဝန်ထမ်းများကို "တအားပင်ပန်းစေရန် လုပ်မည့်အစား မပင်ပန်းပဲအလုပ်ပြီးမြောက်စေရန်" လုပ်ပါဟု ပညာပေးထားပါသည်။

ဘာမှမလုပ်လျှင်ဘာမှမဖြစ် အခြားဆောင်ရွက်နိုင်သောနည်းလမ်း : ဤအရာအား အခြားဆောင်ရွက် နိုင်သောနည်းလမ်းမစဉ်းစားထားပေ။ ဘာမျှမလုပ်လျှင် နိုင်ငံနှင့် အဆိုပါဧရိယာတွင် ဘာမျှဖွံ့ဖြိုးမည် မဟုတ်။ မော်တော်ယာဉ်စက်မှုကဏ္ဍလည်း ဖွံ့ဖြိုးမည်မဟုတ်။ စီမံကိန်းသာမပြုလုပ်လျှင် စီမံကိန်း လည်ပတ်စဉ်ကာလအတွင်းတွင် ၂၁၉ ဦးအလုပ်အကိုင်ရရှိမည့် အခွင့်အလမ်းလည်း မရှိတော့ပေ။ နိုင်ငံတော်အတွက် GDP၊ အခွန်များလည်း တိုးလာမည်မဟုတ်။

ဤအကြောင်းအရာကို အခန်း (၄) တွင် အသေးစိတ်ဖော်ပြထားပါသည်။

ပတ်ဝန်းကျင်အကြောင်းအရာအသေးစိတ်

အဆိုပြုတင်ပြသော စီမံကိန်းသည် လှိုင်သာယာစက်မှုဇုန် (၂)အတွင်း၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် တည်ရှိပါသည်။ ၎င်းသည် ပန်းလှိုင်တံတားအနီးရှိ ပန်းလှိုင်မြစ်၏ မြောက်ဘက်ကမ်းတွင် တည်ရှိပါသည်။

လေ့လာသည့်ဧရိယာသည် မိုင်ဝတ်ပတ်လည် (၀.၈ စတုရန်းမိုင်) ဖြစ်ပါသည်။ ကားအစိတ်အပိုင်းတပ်ဆင်စက်ရုံမှ သက်ရောက်မှုများသည် မပြောပလောက်ပေ။ အကယ်၍ရှိခဲ့လျှင် မိုင်ဝတ်အတွင်းတွင်သာ အကျိုးသက်ရောက်မည်ဖြစ်သည်။

စက်မှုဇုန် (၂)၏ ပတ်ဝန်းကျင်ဧရိယာမှာ အခြားစက်မှုဇုန်များဖြစ်သော အရှေ့ဘက်တွင် ရွှေသံလွင်စက်မှုဇုန်နှင့် စက်မှုဇုန် (၃) ရှိပါသည်။

အနီးဆုံးလူနေဧရိယာမှာ တောင်ဘက်တွင် စက်မှုဇုန်ဈေးတန်းရပ်ကွက်ရှိသည်။ ဤရပ်ကွက်သည် လူမှု-စီးပွားရေးဆိုင်ရာ အချက်အလက်များအား လေ့လာရမည့် ဧရိယာအတွင်းတွင် ပါဝင်ပါသည်။

အနီးပတ်ဝန်းကျင်၏ ရုပ်ပိုင်းဆိုင်ရာ၊ ဇီဝပိုင်းဆိုင်ရာ၊ လူမှုစီးပွားရေးဆိုင်ရာ၊ ယဉ်ကျေးမှုဆိုင်ရာ၊ မျက်စိပဒေသာဖြစ်သော ရှုခင်းရှုကွက်ဆိုင်ရာ များကိုလေ့လာမှတ်တမ်းတင်ပြီး ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစာထဲတွင် ထည့်သွင်းဖော်ပြထားပါသည်။

ရုပ်ပိုင်းဆိုင်ရာ

မိုးလေဝသအချက်အလက်များကို ကမ္ဘာအေး မိုးလေဝသဌာနမှ ရယူခဲ့ပါသည်။ လအလိုက် အပူချိန်အမြင့်ဆုံးမှာ ဧပြီလ၊ ၂၀၁၉ တွင် (၄၀.၄ ဒီဂရီ စင်တီဂရိတ်)၊ အမြင့်ဆုံး မိုးရေချိန် ၂၀၁၈ တွင် (၃၁၄၄ မီလီမီတာ) ဖြစ်သည်။

အခြားရုပ်ပိုင်းဆိုင်ရာ လက္ခဏာရပ်များမှာ ဥပမာ-မြေမျက်နှာသွင်ပြင်အနေအထား၊ ဘူမိဗေဒ၊ မြေဆီလွှာ၊ ရေ၊ လေ၊ ဆူညံသံတို့ကိုလည်း လေ့လာမှတ်တမ်းတင်ခဲ့ပါသည်။ ဘူမိဗေဒအချက်အလက်များမှာ တစ်ဆင့်ခံအချက်အလက်များဖြစ်ပြီး ဧရိယာသည် Quaternary ကာလ၊ ကျောက်များသည် နန်းမြေအနည်ပို့ချခြင်း ဖြစ်သည်။

ဧရိယာတစ်ခုလုံးကို ကွန်ကရစ်ခင်းထားသောကြောင့် မြေဆီလွှာစမ်းသပ်မှုကို မလုပ်ဆောင်ခဲ့ပေ။

အဝီစိတွင်းရေအရည်အသွေးကို မြန်မာအမျိုးသားသောက်သုံးရေအရည်အသွေး စံချိန်စံညွှန်းဖြင့် နှိုင်းယှဉ်၍ အောက်ပါအတိုင်းဖော်ပြထားပါသည်။

ပါရာမီတာများ	ယူနစ်	အဝီစိတွင်းရေ	စံချိန်စံညွှန်းတန်ဖိုး	WHO လမ်းညွှန်ချက်တန်းဖိုး
Total Coliforms	Acceptable/No objectionable	၆	၃	None specified (recommended median value – 0 per 100 ml)
Fecal Coliforms	Acceptable/No objectionable	Not detected	၀	Must not be detectable in any 100 ml sample (recommended median value - 0 per 100 ml)
Color	True Color Unit (TCU)	၅	၁၅	Non set (recommended median value - 15)
Turbidity	Nephelometric Turbidity Unit (NTU)	၈	၅	Non set (recommended median value - 5)
Arsenic	mg/L	Nil	၀.၀၅	0.01 mg/l
Lead	mg/L	Not detected	၀.၀၁	0.01 mg/l

Nitrate	mg/L	Nil	၅၀	50 mg/l
Manganese	mg/L	Nil	၀.၄	0.4 mg/l
Chloride	mg/L	၄	၂၅၀	Non set (recommended median value - 250)
Hardness	mg/L as CaCO ₃	၃၄	၅၀၀	Non set (recommended median value - 500)
Iron	mg/L	၀.၂၆	၁	Non set (recommended median value - 0.3)
pH	-	၇.၂	၆.၅ မှ ၈.၅	Non set (recommended median value - 6.5-8.5)
Sulphate	mg/L	၁၀	၂၅၀	Non set (recommended median value - 250)
Total Dissolved Solid (TDS)	mg/L	၅၆	၁၀၀၀	Non set (recommended median value - 1000)

လေအရည်အသွေးရလဒ်ကို NEQEG လမ်းညွှန်ချက်တန်းဖိုးများဖြင့် နှိုင်းယှဉ်၍ အောက်ပါအတိုင်းဖော်ပြထားပါသည်။

စဉ်	ပါရာမီတာ	အချိန်	စီမံကိန်းရှိတန်းဖိုး	NEQEG လမ်းညွှန်ချက်တန်းဖိုး
၁။	Nitrogen dioxide (NO ₂)	၁ နာရီ	၅.၄ µg/m ³	200 µg/m ³
၂။	Ozone (O ₃)	၈ နာရီ	၉.၈၈ µg/m ³	100 µg/m ³
၃။	Particulate matter (PM ₁₀)	၂၄ နာရီ	၃၅.၃၁ µg/m ³	50 µg/m ³
၄။	Particulate matter (PM _{2.5})	၂၄ နာရီ	၂၃.၅၁ µg/m ³	25 µg/m ³
၅။	Sulphur dioxide (SO ₂)	၂၄ နာရီ	၀.၀၉ µg/m ³	20 µg/m ³
၆။	Carbon dioxide (CO ₂)	၂၄ နာရီ	၃၇၈.၃၂ ppm	NEQEG - (NA)
၇။	Volatile organic compound (VOC)	၂၄ နာရီ	၀.၄၈ ppm	NEQEG - (NA)
၈။	Ammonia	၂၄ နာရီ	၀.၇၈ ppm	NEQEG - (NA)

စီမံကိန်းနေရာမှ အသံရလားကို NEQEG လမ်းညွှန်ချက်တန်းဖိုးများဖြင့် နှိုင်းယှဉ်၍ အောက်ပါအတိုင်းဖော်ပြထားပါသည်။

	စီမံကိန်းတည်နေရာ		NEQEG လမ်းညွှန်ချက်	
	Day	Night	Day	Night
(လူနေဧရိယာ၊ အဖွဲ့အစည်း၊ ပညာရေး)	-	-	၅၅	၄၅
စက်မှုဆိုင်ရာလုပ်ငန်းခွင်ရော	၅၆-၅၈	၅၅-၃၉	၇၀	၇၀

ဇီဝပိုင်းဆိုင်ရာ

ဇီဝမျိုးစုံမျိုးကွဲလေ့လာမှုကို ၂ မိုင်းအတွင်းသာမက လိုအပ်လျှင် ၂ မိုင်းအပြင်ပါ လေ့လာခဲ့ပါသည်။

အောက်ပါတွေ့ရှိမှတ်တမ်းထားသော အကောင်များကို ဤပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစာထဲတွင် ဖော်ပြထားပါသည်။

အပင်

အပင် (သဘာဝနှင့်စိုက်ပင်) ၃၄ မျိုးစိတ်၊ မျိုးရင်း ၂၄ မျိုး။

သားရဲတိရစ္ဆာန်

ငှက် မျိုးစိတ် ၁၄ မျိုး၊ မျိုးရင်း ၁၁ မျိုး

ကုန်းနေရေနေတွားသွားသတ္တဝါ မျိုးစိတ် ၈ မျိုး၊ မျိုးရင်း ၆ မျိုး

နို့တိုက်သတ္တဝါ အသေး ၂ မျိုးစိတ် (ကြွက်)

စီမံကိန်း ဧရိယာသည် စက်မှုဇုန်အတွင်းတွင် ဖြစ်သောကြောင့် ငါး မျိုးစိတ် လေ့လာရန် မရှိပေ။

လူမှုစီးပွားရေးဆိုင်ရာ

အနီးဆုံးလူနေ ဧရိယာသည် စက်မှုဇုန်ဈေးတန်း ရပ်ကွက်ဖြစ်သည်။

ရပ်ကွက်သည် အစိုးရလျှပ်စစ်မီး ရရှိပါသည်။

ဒေသခံများသည် ရေကို အဝီစိတွင်းများမှ ရရှိပါသည်။ အိမ်တိုင်းတွင် သန့်စင်ခန်းများရှိပါသည်။

ရပ်ကွက်တွင် လူဦးရေ ၆၀၅ ဦး (ကျား ၂၇၃၊ မ ၃၃၂) ရှိပါသည်။ ၉၀ ရာခိုင်နှုန်း ဗမာများဖြစ်ကြ၍ ၉၈ ရာခိုင်နှုန်းမှာ ဗုဒ္ဓဘာသာ၊ ၂ ရာခိုင်နှုန်းမှာ ခရစ်ယာန်များဖြစ်ကြပါသည်။

အဓိကအလုပ်အကိုင်များမှာ ဈေးသည်များ၊ ရာသီပေါ်လုပ်သားများဖြစ်ကြသည်။ ၅၀ ရာခိုင်နှုန်းမှာ ဤစက်မှုဇုန်တွင် အလုပ်လုပ်ပါသည်။ ဆရာဝန် တစ်ဦးနှင့် ရဲသား (၂) ဦးရှိပါသည်။

နေ့စဉ်ဝင်ငွေမှာ ကျပ် ၅၀၀၀-၁၀,၀၀၀ ဖြစ်သည်။

ရပ်ကွက်သည် လူဦးရေ ၆၀၀ ဦးသာရှိ၍ သေးငယ်သောကြောင့် စာသင်ကျောင်းမရှိပေ။ အစိုးရဆေးပေးခန်းမရှိသော်လည်း ကိုယ်ပိုင်ဆေးခန်း (၂) ခန်းရှိပါသည်။ လူနာများသည် အရှေ့မြောက်ဘက် (၁) မိုင်အကွာ လှိုင်သာယာဆေးရုံ နှင့် အနောက်တောင်ဘက် (၇)မိုင် ဝေးသော ရန်ကုန်အထွေထွေဆေးရုံကြီးသို့ သွားကြပါသည်။

ဘုန်းကြီး (၃၅) ပါးရှိသော ဘုန်းကြီးကျောင်း (၁) ကျောင်းရှိပါသည်။

၉၈ ရာခိုင်နှုန်းမှာ ဗုဒ္ဓဘာသာများဖြစ်ကြသော်လည်း အများစုမှာ နတ်ကိုးကွယ်ကြပါသည်။ ရပ်ကွက်တွင် နတ်စင်မရှိပေ။

ဧရိယာတစ်ခုလုံးသည် ယခင်တုန်းက လယ်ကွင်းများ သို့မဟုတ် ရွှံ့မြေများဖြစ်၍ စက်မှုဇုန်အဖြစ်သို့ ပြောင်းလဲလိုက်ပါသည်။ သမိုင်းဝင်အဆောက်အဦ၊ ရှေးဟောင်းသုတေသနနေရာ သို့မဟုတ် အရေးကြီးသတ်မှတ်ထားသော နေရာတို့ မရှိပေ။ စက်ရုံများ သို့မဟုတ် ဝပ်ရှော့များ သို့မဟုတ် အရောင်းစင်တာများသာရှိပါသည်။

ဤ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစာ အခန်း (၅) တွင် ပတ်ဝန်းကျင် အကြောင်းအရာများကို အသေးစိတ်ဖော်ပြထားပါသည်။

သက်ရောက်မှုများ၊ ဆန်းစစ်အကဲဖြတ်ခြင်းနှင့် ဖြေလျော့နိုင်မည့်နည်းလမ်းများ

နည်းလမ်း

ခန့်မှန်းခြင်းနှင့် လက်တွေ့အတွေ့အကြုံများကို အခြေခံ၍ ရေးသားထားပါသည်။

Experts Consensus Method (Ad hoc method) နှင့် IFC ၏ ဆန်းစစ်အကဲဖြတ်ခြင်း ဇယားနှင့် ဆန်းစစ်အမှတ်ပေးခြင်းမတ်ထရစ် နည်းလမ်း (ဖြစ်နိုင်ခြေ X အကျိုးဆက် = ရလဒ်) တို့ပေါင်းစပ် တွက်ချက်ထားပါသည်။

သက်ရောက်မှုများနှင့် ဖြေလျော့နိုင်မည့်နည်းလမ်းများ

စီမံကိန်းကာလအခြေအနေ(၄)ခုလုံးအတွက် အမျိုးအစားခွဲ ဆန်းစစ်ထားသော သက်ရောက်မှု များနှင့် သက်ရောက်မှုတစ်ခုစီတိုင်း အတွက် ဖြေလျော့နိုင်မည့် နည်းလမ်းအမျိုးမျိုးကို အနှစ်ချုပ်၍ အောက်တွင် ဇယားဖြင့် ဖော်ပြထားပါသည်။

၁။ အကြိုတည်ဆောက်ရေးကာလအတွင်းတွင်

ဤကာလအတွင်းတွင် အမှန်တကယ် သက်ရောက်မှုများမဖြစ်ပေ။ ထို့ကြောင့် ဖြေလျော့နိုင်မည့်နည်းလမ်းများ မလိုအပ်ပေ။

၂။ တည်ဆောက်ရေးကာလအတွင်းတွင်

ဖြစ်နိုင်ခြေရှိသော သက်ရောက်မှုများနှင့် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ထည့်သွင်းဖော်ပြထားပါသည်။

စဉ်	သက်ရောက်မှု	ဖြေလျော့နိုင်မည့်နည်းလမ်းများ
၁	တည်ဆောက်ရေးလုပ်ငန်းများအတွက် လမ်းဖောက်ခြင်းကြောင့် သက်ရောက်မှု	<ul style="list-style-type: none"> - ပြင်ဆင်ခြင်းလုပ်ငန်းများကို သေချာစွာ စီမံခြင်း - ဆောက်လုပ်ရေးသုံးပစ္စည်းများ တင်ဆောင်လာသော ယာဉ်ကြီးများအတွက် သယ်ယူပို့ဆောင်ရေး အစီအမံ ထားရှိခြင်း - လုပ်ငန်းခွင်အတွင်းတွင် ဆောက်လုပ်ရေးသုံးပစ္စည်းများ အားလုံးစနစ်တကျ သိုလှောင်ထားရှိခြင်း - သူခိုးများ ရန်မှကာကွယ်နိုင်ရန် သင့်တော်သော နံရံ သို့မဟုတ် ခြံစည်းရိုးထားရှိခြင်း - စက်ရုံဝန်းအပြင်ဘက် သို့မဟုတ် အနီးနားရှိ လမ်းမကြီးပေါ်တွင် ဆောက်လုပ်ရေးသုံးပစ္စည်းများ လျှံကျမှုမရှိစေရန် တားဆီးခြင်း
၂	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ပြဿနာ (လုပ်ငန်းခွင်တွင် ဖြစ်နိုင်ခြေရှိသော မတော်တဆမှု)	<ul style="list-style-type: none"> - မတော်တဆမှုလုံးဝမဖြစ်စေရေး စီမံဆောင်ရွက်ခြင်း - အလုပ်သမားများ အလွယ်တကူမြင်နိုင်သည့် နေရာများ တွင် "အန္တရာယ်ကင်းရှင်းရေး ဦးစားပေး" ဆိုသည့် ကြော်ငြာ ဆိုင်းဘုတ်များ တပ်ဆင်ခြင်း - အလုပ်သမားများအားလုံးအတွက် ဘေးအန္တရာယ် ကင်းရှင်းသည့် အခြေအနေဖြစ်စေရန် ဖန်တီးပေးခြင်း၊ မတော်တဆမှု ကင်းရှင်းသည့်ပတ်ဝန်းကျင်ဖြစ်စေရန် ဖန်တီးခြင်း - တည်ဆောက်ရေးလုပ်သားများကို ကောင်းမွန်သော လုပ်ငန်းခွင်သန့်ရှင်းရေး အလေ့အထ၊ ကောင်းမွန်သော အင်ဂျင်နီယာအလေ့အထ၊ ကောင်းမွန်သော ဘေးအန္တရာယ်ကင်းရှင်းရေး အလေ့အထများကို အလုပ်သမားများ၏ စိတ်ထဲတွင်စွဲထင်စေရန် ပညာပေး၊ သင်တန်းပေးခြင်း

		<ul style="list-style-type: none"> - လိုအပ်လျှင် လုံလောက်သော PPE ထောက်ပံ့ပေးခြင်း - ဆေးနှင့်ဆေးဝါးများပါသော ရှေးဦးသူနာပြုပုံး ထားရှိခြင်း - အကျိုးသက်ရောက်သော အရေးပေါ်တုန့်ပြန်မှုအတွက် စီမံထားရှိခြင်း - မီးသတ်ပစ္စည်း ကိရိယာများ ထားရှိခြင်း - လုံလောက်သော သန့်စင်ခြင်းများ ထားရှိခြင်း ဥပမာ- အိမ်သာများ၊ သန့်စင်သောရေ - လောင်စာဆီနှင့် ဓါတုပစ္စည်းများ သိုလှောင်ခြင်းအတွက် ဘေးအန္တရာယ်ကင်းရှင်းစေရန် ထားရှိခြင်း၊ သတိပေးဆိုင်းဘုတ်ထားရှိခြင်း
၃	လေအရည်အသွေးအပေါ် သက်ရောက်မှု	<ul style="list-style-type: none"> - အကြိုတည်ဆောက်ရေးကာလတွင် မီးခိုးထွက်ရှိမှု နည်းသော ယာဉ်များကို ဝယ်ယူရန် စီမံခြင်း - စက်ကိရိယာနှင့် ယာဉ်များကို ပုံမှန်ထိန်းသိမ်း၊ ပုံမှန်ပြုပြင်နှင့် ပုံမှန်ဆီထိုးခြင်းများ ပြုလုပ်ခြင်း - အမှိုက်သရိုက်များကို ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းအား ရှောင်ရှားခြင်း - ဖုန်မှုန့်များကို ရေဖြန်းခြင်း - ယာဉ်ရွေ့လျားမှုများကို ကန့်သတ်ခြင်း၊ ရွံ့နှင့် ဖုန်များ ကင်းသော လမ်းဖြစ်စေရန် ပြုလုပ်ခြင်း - မီးခိုး သို့မဟုတ် ဖုန်မှုန့်နေရာတွင် အလုပ်ကြာရှည် လုပ်သည့် ဝန်ထမ်းများကို PPE ထောက်ပံ့ပေးခြင်း
၄	ဆူညံသံနှင့်တုန်ခါမှု အရည်အသွေး	<ul style="list-style-type: none"> - အကြိုတည်ဆောက်ရေးကာလတွင် ဆူညံမှုနည်းသော စက်ကိရိယာ၊ ယာဉ်ယန္တရားများကို ရွေးချယ်ဝယ်ယူရန် စီမံထားရှိခြင်း (ပတ်ဝန်းကျင်နှင့်လိုက်လျောညီထွေ ရှိသော စက်ကိရိယာများ) - ဆူညံသံနှင့် တုန်ခါမှုအတွက် အမျိုးသားပတ်ဝန်းကျင် အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်အညီ ရှိစေရန် စီမံခြင်း - ညအချိန်တွင် တည်ဆောက်ရေးလုပ်ငန်းများ လုပ်ကိုင်ခြင်းအား ရှောင်ရှားခြင်း - နေ့အချိန်တွင်သာ ဆူညံသံ မြင့်မားသော လုပ်ဆောင်ချက်များကို လုပ်ဆောင်ရန် အစီအစဉ်ဆွဲခြင်း

		<ul style="list-style-type: none"> - ပတ်ဝန်းကျင်နှင့်မသင့်တော်သော အချိန်တွင် ဆူညံသံ လျော့ချရန် သယ်ယူပို့ဆောင်ခြင်းကို သတ်မှတ်ခြင်း - အသုံးမပြုသော အချိန်များတွင် စက်ကိရိယာများကို ပိတ်ထားခြင်း - ဆူညံသံနှင့် တုန်ခါမှုလျော့ချရန် ယာဉ်အရှိန်ကို သတ်မှတ်ခြင်း - ဖြစ်နိုင်လျှင် အသံစုပ်ယူကိရိယာများ၊ ဆူညံသံလျော့ချပေးသော ပန်ကာများ တပ်ဆင်ခြင်း - ဆူညံသံလျော့ချရန် ယာဉ်ယန္တရားနှင့် စက်ကိရိယာများကို ပုံမှန်ထိန်းသိမ်း၊ ပုံမှန်ပြုပြင်၊ ပုံမှန်ဆီထိုးပြုလုပ်ပေးခြင်း - ဆူညံသံမြင့်သည့် နေရာတွင် အလုပ်လုပ်ရသော ဝန်ထမ်းများကို PPE၊ နားကြပ်၊ နားအကာများ ထောက်ပံ့ပေးခြင်း - ဆူညံသံ၊ တုန်ခါမှုနှင့်ပတ်သက်၍ ဒေသအဖွဲ့အစည်းမှ ပြဿနာများကို မှတ်သားထားခြင်း
၅	<p>ဖြစ်နိုင်ခြေရှိသော မြေဆီလွှာအပေါ် သက်ရောက်မှု</p>	<ul style="list-style-type: none"> - မြေဆီလွှာပျက်စီးခြင်းကို ရှောင်ရှားခြင်း - တည်ဆောက်ရေးလုပ်ငန်းမှ ထွက်လာသော အပေါ်ယံ မြေဆီလွှာကို သီးခြားထားခြင်း (အပင်စိုက်ပျိုးခြင်း အတွက်) - မြေဆီလွှာညစ်ညမ်းမှုကို ကာကွယ်တားဆီးရန် အစီအမံ ရေးဆွဲခြင်း - လောင်စာဆီနှင့် ဓါတုပစ္စည်းများ လျှို့ဝှက်မှုကို တားဆီးခြင်း၊ စုပ်ယူသည့်ပစ္စည်းဖြင့်သာ သန့်စင်စေခြင်း (ရေဖြင့်မဆေးချရ) - လောင်စာဆီနှင့် ဓါတုပစ္စည်းများ ကိုင်တွယ်ခြင်းနှင့် လျှို့ဝှက်မှုကို ဆေးကြောရာတွင် သေသေချာချာ လုပ်ကိုင်ရန် ဝန်ထမ်းများကို ညွှန်ကြားခြင်း - (မိုးရာသီ) မြေဆီလွှာ တိုက်စားခြင်းကို ကာကွယ်ရန် မြေဆီလွှာ ထိန်းသိမ်းခြင်းကို ဆောင်ရွက်ခြင်း - ဆေးချသောရေများဖြင့် မြေကြီးများနှင့် ပစ္စည်းများ မြောင်းအတွင်းသို့ ပါလာခြင်းကို တားဆီးခြင်း - မိုးရာသီတွင် မြေပြင်ကို ဟင်းလင်းပြင်အဖြစ် အချိန်ကြာ မြင့်စွာ ထားရှိမှုကို ရှောင်ရှားခြင်း

		<ul style="list-style-type: none"> - စွန့်ပစ်ပစ္စည်းအားလုံး (တည်ဆောက်ရေးလုပ်ငန်းနှင့် လူသုံးပစ္စည်း) ကို သတ်မှတ်ထားသော အမှိုက်ပုံတွင် စွန့်ပစ်ခြင်း - တွေ့သည့်နေရာတွင် အမှိုက်မစွန့်ပစ်ရန် ဝန်ထမ်းများကို သင်ကြားထားခြင်း
၆	<p>ဖြစ်နိုင်ခြေရှိသောရေအပေါ် သက်ရောက်မှု</p>	<ul style="list-style-type: none"> - ရေချွေတာသုံးစွဲခြင်း အစီအမံများ ပြုလုပ်ခြင်း - မည်သည့်အကြောင်းနှင့်မျှ စီမံကိန်းလုပ်ဆောင်မှုကြောင့် ပန်းလှိုင်မြစ်ထဲသို့ ရေညစ်ညမ်းမှုကို တားဆီးခြင်း - တည်ဆောက်ရေးလုပ်ငန်းခွင်အတွင်းတွင် ရေကို လိုသည်ထက် ပိုမိုမသုံးစွဲခြင်း - ရေကိုချွေတာသုံးစွဲရန် ဝန်ထမ်းများကို စည်းကမ်း သတ်မှတ်ထားခြင်း - တည်ဆောက်ရေးလုပ်ငန်းခွင်တွင် ရေသုံးစွဲမှုကို နေ့စဉ် စစ်ဆေးခြင်း - လောင်စာဆီလျှံကျမှုကြောင့် မြေဆီလွှာညစ်ညမ်းခြင်းနှင့် မြေအောက်ညစ်ညမ်းမှုကို ရှောင်ရှားခြင်း - အကယ်၍ လျှံကျမှုခံလျှင်၊ စုပ်ယူသည့်ပစ္စည်းဖြင့်သာ သန့်စင်စေခြင်း (ရေဖြင့်မဆေးချရ) - လောင်စာဆီထားရှိသည့် ဧရိယာကို တားဆီးထားခြင်း - စွန့်ပစ်ပစ္စည်း (အစိုင်အခဲနှင့်အရည်)များကို မည်သည့် ရေ (ရှိလျှင်) ထဲသို့ စွန့်ပစ်ခြင်းကို ရှောင်ရှားခြင်း
၇	<p>စွန့်ပစ်ပစ္စည်းများကြောင့် သက်ရောက်မှု (တည်ဆောက်ရေး စွန့်ပစ်ပစ္စည်း)</p>	<ul style="list-style-type: none"> - အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုကို အစီအစဉ် ရေးဆွဲခြင်း - အမှိုက်များအား ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းကို ရှောင်ရှားခြင်း - မြေပြင်ကိုပုံမှန် သန့်ရှင်းရေးလုပ်ခြင်း၊ သတ်မှတ်ထားသော အမှိုက်ပုံတွင် အမှိုက်စွန့်ပစ်ခြင်း - ဝန်ထမ်းများကို ကောင်းမွန်သော သန့်ရှင်းရေးကို ပညာပေးခြင်း၊ အမှိုက်မစွန့်ပစ်ခြင်း - ကျန်ရစ်သော တည်ဆောက်ရေးလုပ်ငန်းသုံးပစ္စည်းများကို ပြန်လည်အသုံးပြုခြင်းနှင့် စွန့်ပစ်ခြင်းအတွက် အစီအမံ ရေးဆွဲခြင်း - တည်ဆောက်ရေးကာလပြီးဆုံးချိန်တွင် ကျန်ရစ်သော ပစ္စည်းများကို ရောင်းချခြင်း

		<ul style="list-style-type: none"> - တည်ဆောက်ရေးကာလပြီးနောက်တွင် ကန်ထရိုက်တာငှားရမ်းပြီး စီမံကိန်းနေရာကို သန့်ရှင်းစေခြင်း
၈	<p>ဖြစ်နိုင်ခြေရှိသော လူမှုရေးပြဿနာ</p>	<ul style="list-style-type: none"> - လူမှုရေးပြဿနာများကို စီမံခန့်ခွဲနိုင်ရန် အစီအစဉ်ရေးဆွဲထားခြင်း - ဝန်ထမ်းများကို စည်းကမ်းလိုက်နာစေရန် ပညာပေးထားခြင်း - ဒေသခံများနှင့် ကောင်းမွန်သော ဆက်ဆံရေး တည်ဆောက်ရန် ကြိုးစားခြင်း - ဒေသခံများနှင့်လူထုတွေ့ဆုံပွဲပြုလုပ်ခြင်း၊ ထိုသို့ပြုလုပ်ခြင်းမှာ ဒေသခံများသည် စီမံကိန်းအပေါ် ကောင်းမွန်သော အမြင်ရရှိလာမည်။ - ဒေသခံများနှင့် ဆက်ဆံလျှင် သူတို့၏ ယဉ်ကျေးမှုနှင့် ရိုးရာများကို လေးစားလိုက်နာရန် ဝန်ထမ်းများကို ပညာပေးခြင်း - ဝန်ထမ်းများ၏ မကောင်းသော အကျင့်များကို စီမံခန့်ခွဲခြင်း - ဝန်ထမ်းများနှင့်ကောင်းမွန်သော ဆက်ဆံရေး လုပ်ဆောင်ခြင်း - ကုမ္ပဏီနှင့်ဒေသခံများအကြား ကောင်းမွန်သော ဆက်ဆံရေးကို ထိန်းသိမ်းထားခြင်း - ဝန်ထမ်းများအတွက် လုံလောက်သော ဝန်ထမ်းသက်သာချောင်ချိရေး အစီအစဉ်များ ထောက်ပံ့ခြင်း
၉	<p>ဖြစ်နိုင်ခြေရှိသော လုံခြုံရေးပြဿနာ</p>	<ul style="list-style-type: none"> - လုံခြုံရေးစီမံခန့်ခွဲမှု အစီအစဉ်ရေးဆွဲခြင်း - စီမံကိန်းနေရာကို အကျိုးသက်ရောက်သော နံရံများ ခြံခတ်ထားရှိခြင်း - လုံခြုံရေးဂိတ်များထားရှိခြင်း၊ လုံခြုံရေးဝန်ထမ်းများ ထားရှိခြင်း - စတိုနှင့် အဆောက်အဦများကို တက်နိုင်သလောက် သော့များခတ်ထားခြင်း - လိုအပ်လျှင် ဝန်ထမ်းများကို အလုပ်မှထုတ်ပယ်ခြင်း သို့မဟုတ် အပြစ်ပေးခြင်း များလုပ်ဆောင်ခြင်း - အလွယ်တကူ ခွဲခြားနိုင်စေရန် ဝန်ထမ်းများအားလုံး ID ကဒ်များ ထောက်ပံ့ပေးခြင်း

၃။ စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင်

ဖြစ်နိုင်ခြေရှိသော သက်ရောက်မှုများနှင့် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ထည့်သွင်းဖော်ပြထားပါသည်။

စဉ်	သက်ရောက်မှု	ဖြေလျော့နိုင်မည့်နည်းလမ်းများ
၁	ဖြစ်နိုင်ခြေရှိသော ယာဉ်ကြောပိတ်ဆို့မှု ပြဿနာ	<ul style="list-style-type: none"> - ယာဉ်ကြောပိတ်ဆို့မှုကို သေချာစွာ အစီအမံများ ရေးဆွဲခြင်း အထူးသဖြင့် ရန်ကုန်-ပုသိမ် အမှတ် (၅)လမ်းမကြီး - ယာဉ်သွားလာခြင်းကို စီစဉ်ခြင်း၊ အမြန်လိုခြင်းကို ရှောင်ရှားခြင်း၊ ဖြစ်နိုင်လျှင် ယာဉ်ကြောပိတ်ဆို့သည့် လမ်းများကို ရှောင်ရှားခြင်း - ယာဉ်မောင်းများကို ပညာပေးခြင်း၊ ဝန်ထမ်းများထဲမှ မော်တော်ဆိုင်ကယ်မောင်းသူများကို အမြန်မောင်းခြင်းအား ရှောင်ရှားစေခြင်း၊ လမ်းစည်းကမ်းများကို လိုက်နာစေခြင်း - စီမံကိန်း၏အဝင်ဝနှင့်သင့်တော်သော နေရာများတွင် သတိပေး ဆိုင်းဘုတ်များထားရှိခြင်း - မည်သည့်ယာဉ်မဆို ပိုလျှံအောင် တင်ခြင်းကို ရှောင်ရှားခြင်း - ကားများနှင့် ဆိုင်ကယ်များကို ပုံမှန်စစ်ဆေးခြင်း - ယာဉ်တစ်စီးစီအတွက် မှတ်တမ်းစာအုပ်ထားရှိခြင်း - မတော်တဆမှုမရှိစေရေး ရည်မှန်းချက်ထားရှိခြင်း
၂	လေအရည်အသွေးအပေါ် သက်ရောက်မှု	<ul style="list-style-type: none"> - ရေရှည် စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင် လေအရည်အသွေးစီမံခန့်ခွဲမှုကို အစီအစဉ်ရေးဆွဲခြင်း - ဖုန်များကို ရေဖြန်းခြင်း - ဖုန်မှုန့်များကို သန့်ရှင်းစေရန် လုပ်ဆောင်ခြင်း - အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများကို ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းအား ရှောင်ရှားခြင်း - စက်ကိရိယာနှင့် ယာဉ်ယန္တရားများကို ပုံမှန် ထိန်းသိမ်းခြင်းနှင့် ပုံမှန်ပြုပြင်ခြင်း - မီးခိုးထွက်နည်းသော၊ လောင်စာဆီသုံးစွဲမှုနည်းသော ယာဉ်များနှင့် စက်များကို အသုံးပြုခြင်း (ပတ်ဝန်းကျင်နှင့်လိုက်လျောညီထွေဖြစ်သော ယာဉ်များ၊ စက်ကိရိယာများကို ဝယ်ယူခြင်း)

		<ul style="list-style-type: none"> - လောင်စာဆီထိန်းသိမ်းစွာ သုံးစွဲခြင်းသည် မလိုအပ်သော မီးခိုးထွက်ရှိမှု ကိုတားဆီးခြင်း - အပင်များစိုက်ပျိုးခြင်း၊ အစိမ်းရောင်နေရာ ဖန်တီးပေးခြင်း၊ အပင်များသည် CO₂ ကို စုပ်ယူခြင်း - ဝန်ထမ်းများကို PPE ထောက်ပံ့ပေးခြင်း မျက်နှာအကာ၊ နှာခေါင်းနှင့် ပါးစပ်အကာများ
၃	ဆူညံသံနှင့်တုန်ခါမှု အရည်အသွေး	<ul style="list-style-type: none"> - ဆူညံသံနှင့် တုန်ခါမှုအတွက် အကျိုးသက်ရောက်သော စီမံခန့်ခွဲမှု အစီအစဉ်ရေးဆွဲခြင်း - ယာဉ်ရွေ့လျားမှုများကို ကန့်သတ်ခြင်း - သင့်တော်သော (ဆူညံမှုနည်းသော) စက်နှင့်ယာဉ်များကို ရွေးချယ်ခြင်း - ဖြစ်နိုင်လျှင် silencers၊ အသံစုပ်ယူကိရိယာများ၊ ဆူညံသံလျော့ချပေးသော ပန်ကာများ တပ်ဆင်ခြင်း - ယာဉ်နှင့်စက်ကိရိယာများကို ဆူညံသံနည်းစေရန် ပုံမှန် ထိန်းသိမ်း၊ ပုံမှန် ပြုပြင်ခြင်း - စက်ရုံပတ်လည်တွင် အစိမ်းရောင်နေရာများ (အပင်များ) ဖန်တီးပေးခြင်း၊ အပင်များသည် အသံစုပ်ယူသည် - ယာဉ်များရွေ့လျားသည့်အခါတွင် ဆူညံမှုနှင့်တုန်ခါမှု သက်သာစေရန် လမ်းမျက်နှာပြင်ကို ချောမွေ့အောင် ပြုလုပ်ခြင်း - တုန်ခါမှုကို လျော့နည်းစေရန် စက်ကိရိယာနှင့် ယာဉ်ယန္တရားများအတွက် သင့်တော်သော အောက်ခံ ဒီဇိုင်းများ ဖန်တီးပေးခြင်း - လိုအပ်လျှင် တုန်ခါမှုကို လျော့ကျစေသည့်စက် တပ်ဆင်ခြင်း - ဆူညံသည့်နေရာနားတွင် ကြာရှည်စွာ အလုပ်လုပ်ရသော ဝန်ထမ်းများအတွက် လုံလောက်သော PPE ထောက်ပံ့ ပေးခြင်း၊ မီးစက်နှင့်ပန်းများတွင် ပုံမှန်အသံအဆင့်ကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း (၈၅-၉၀ dBA ထက် မကျော်လွန်ရ)
၄	စီမံကိန်းကြောင့် အစိုးရလျှပ်စစ်မီးအပေါ် သက်ရောက်မှု	<ul style="list-style-type: none"> - ပတ်ဝန်းကျင်နှင့်လိုက်လျောညီထွေရှိသော နည်းပညာဖြင့် လျှပ်စစ်မီးကိုရယူရန် ထည့်သွင်းစဉ်းစားခြင်း - စက်ရုံဒီဇိုင်းအဆင့်မှာတွင် စွမ်းအင်ထိန်းသိမ်းခြင်း အသိပညာ လိုအပ်ခြင်း

		<ul style="list-style-type: none"> - လျှပ်စစ်စွမ်းအင်ထိန်းသိမ်းခြင်းကို အစီအမံများ ရေးဆွဲခြင်း - နေရောင်ခြည်နှင့်လေတိုက်နှုန်းမှ အကျိုးသက်ရောက်မှု ရရှိသော အဆောက်အဦဒီဇိုင်း ဆောက်လုပ်ခြင်း - ယခင်ကဖော်ပြခဲ့သော လျှပ်စစ်မီးသုံးစွဲမှု ဘောင်ထဲဝင် စေခြင်း - လျှပ်စစ်မီးသုံးစွဲမှုကို အပတ်စဉ် စောင့်ကြပ်စစ်ဆေးခြင်း - စွမ်းအင်လုံလောက်သော လျှပ်စစ်ပစ္စည်းများ အသုံးပြုခြင်း - တက်နိုင်သလောက် နေ့အလင်းကို အသုံးပြုခြင်း - မီးပြတ်တောက်ခဲ့လျှင် အော်တိုစနစ်ဖြင့် မီးစက်ချက်ချင်း ရသည့် စနစ်ကိုအသုံးပြုခြင်း - အချိန်နှင့်အမျှ လျှပ်စစ်မီးတာဝန်ရှိသူနှင့် တွေ့ဆုံ ဆက်ဆံခြင်း
၅	<p>စွန့်ပစ်ပစ္စည်းများကြောင့် သက်ရောက်မှု (အစိုင်အခဲနှင့်အရည်)</p>	<ul style="list-style-type: none"> - ပစ္စည်းများ စီမံခန့်ခွဲမှုကို အစီအစဉ်ရေးဆွဲခြင်း <p>အရည်စွန့်ပစ်ပစ္စည်းများအတွက်</p> <ul style="list-style-type: none"> - အချိန်နှင့်အမျှ စွန့်ပစ်ရေမြောင်းကို စစ်ဆေးခြင်း၊ အထူးသဖြင့် လူသုံးရေနှင့်မိုးရေ - လူသုံးရေ သည် မြောင်းအတွင်းသို့ စီးဝင်၍ ခြောက်သွေ့ခြင်း (အထူးသန့်စင်သည့်နည်းစနစ် မလိုပေ) - အိမ်သာများမှ ထွက်ရှိသော မိလ္လာရေသည် မိလ္လာကန်အတွင်းတွင် အဆုံးသတ်ခြင်း - စွန့်ပစ်ရေကို မည်သည့်ရေလမ်းကြောင်း အတွင်းသို့ မစွန့်ပစ်ခြင်း <p>အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများအတွက် (ယေဘုယျ)</p> <ul style="list-style-type: none"> - အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများကို သတ်မှတ်ထားသော စက်ရုံဝန်းအတွင်းရှိ သတ်မှတ်ထားသောအမှိုက်ပုံတွင် အမှိုက်စွန့်ပစ်ခြင်း - ဝန်ထမ်းများကို ကောင်းမွန်သော သန့်ရှင်းရေးကို ပညာပေးခြင်း၊ အမှိုက်မစွန့်ပစ်ခြင်း - အမှိုက်သရိုက်များကို ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းအား ရှောင်ရှားခြင်း

		<p>စက်ရုံအတွင်း၊ ရုံးခန်းနှင့် စားသောက်ခန်းများရှိ အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ</p> <ul style="list-style-type: none"> - မီးဖိုချောင်မှ ထွက်ရှိသော အော်ဩနစ်စွန့်ပစ်ပစ္စည်းများကို စိုက်ပျိုးခြင်းတွင် မြေဩဇာအဖြစ် ပြန်လည်သုံးစွဲခြင်း - စွန့်ပစ်ပစ္စည်းများကို ၅ R နိယာမဖြစ်သော လျော့ချ၊ ပြန်သုံး၊ ပြန်လည်သုံးစွဲ၊ ပြန်လည်ပြုပြင်သုံးစွဲခြင်းနှင့် ပြန်လည်ဒီဇိုင်းပြုလုပ်ခြင်း - စွန့်ပစ်ပစ္စည်းများအားလုံးကို သတ်မှတ်ထားသော အမှိုက်ပုံတွင် စွန့်ပစ်ခြင်း (စက်မှုဇုန်အမှိုက်ပုံ) - ထုတ်ပိုးသော ပစ္စည်းများဖြစ်သော ပလတ်စတစ်၊ စက္ကူတို့ကို ပြန်လည်ရောင်းချခြင်း - ဦးစားပေးအနေဖြင့် အစိုင်အခဲ စွန့်ပစ်ပစ္စည်းများကို ပြန်လည်အသုံးပြုခြင်း
၆	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ပြဿနာ (လုပ်ငန်းခွင်မတော်တဆမှု)	<ul style="list-style-type: none"> - အလုပ်သမားများအားလုံးအတွက် ဘေးအန္တရာယ် ကင်းရှင်းသည့် အခြေအနေဖြစ်စေရန်အတွက် အစီအမံ များ ရေးဆွဲခြင်း - ဝန်ထမ်းများကို ကောင်းမွန်သော လုပ်ငန်းခွင်သန့်ရှင်းရေး အလေ့အထ၊ ကောင်းမွန်သော အင်ဂျင်နီယာအလေ့အထ၊ ကောင်းမွန်သော ဘေးအန္တရာယ်ကင်းရှင်းရေး အလေ့အထများကို အလုပ်သမားများ၏ စိတ်ထဲတွင်စွဲထင်စေရန် ပညာပေး၊ သင်တန်းပေးခြင်း၊ အထူးသဖြင့် စက်များ၊ ယာဉ်များကို ကိုင်တွယ် တပ်ဆင် သည့်နေရာတွင် မှန်ကန်သောနည်းလမ်းများဖြစ်စေရန် ကြီးကြပ်ခြင်း - စက်ကိရိယာကိုင်တွယ်ခြင်းနှင့် ဓါတုပေးပစ္စည်းများ ကိုင်တွယ်ခြင်း အထူးသဖြင့် အန္တရာယ်ရှိစေသော အရာကို ကိုင်တွယ်ခြင်းအတွက် ပညာပေးခြင်း - ကောင်းမွန်သော ကျန်းမာရေးအလေ့အထ၊ သန့်ရှင်းသော အလေ့အထ၊ ပတ်ဝန်းကျင်ဆိုင်ရာအသိပညာ၊ လုပ်ငန်းခွင် ဘေးအန္တရာယ် အစရှိသည်တို့ကို သင်ကြားပေးခြင်း - အလုပ်သမားများအားလုံး အလုပ်လာလုပ်လျှင် ဆေးစစ် ဆေးခြင်းကို ပြုလုပ်ခြင်း

		<ul style="list-style-type: none"> - အလုပ်သမားများကို တစ်နှစ်တစ်ခါ ဆေးစစ်ဆေးပေးခြင်း - အလုပ်သမားများ၏ ကျန်းမာရေးကို စောင့်ကြပ်ကြည့်ရှု ဆောင်ရွက်ရန်အတွက် အစီအမံများ ထားရှိခြင်း - အလုပ်သမားများအတွက် ဆေးဝါးများ အခမဲ့ ထောက်ပံ့ပေးခြင်း - အလုပ်သမားများအား လုပ်ငန်းခွင်ထိခိုက်ခြင်း၊ လုပ်ငန်းခွင်နှင့် သက်ဆိုင်သော ရောဂါများ ခံစားရလျှင် လျော်ကြေးပေးခြင်း၊ ပြန်လည်ရှင်သန်စေရန် ပြုလုပ်ပေးခြင်း - အဆိပ်အတောက်နှင့် ဘေးအန္တရာယ်ဖြစ်စေသော ဓါတုဗေဒပစ္စည်းများ ရှိခဲ့လျှင် လုံခြုံသည့်နေရာတွင် သိုလှောင်ခြင်း၊ ဆိုင်းဘုတ်ထောင်ခြင်း - သိုလှောင်ထားသော နေရာကို ပုံမှန်စစ်ဆေးခြင်း - စက်ကိရိယာနှင့်ယာဉ်ယန္တရားအားလုံးကို ပုံမှန်ထိန်းသိမ်း၊ ပုံမှန်ပြုပြင်ခြင်း၊ ပုံမှန်ဆီထိုးခြင်းများ ပြုလုပ်ခြင်း - မတော်တဆမှုများကို တားဆီးနိုင်ရန် စက်များပေါ်ရှိ အော်တို safe guard များကို စစ်ဆေးခြင်း - အပေါ်မှာ ရှင်းပြထားသော ဖြစ်လေ့ဖြစ်ထရှိသည့် မတော်တဆမှုများကို သတိထားခြင်း၊ တစ်ခုစီအတွက် တားဆီးခြင်း၊ ကာကွယ်ခြင်းနှင့် ဖြေလျော့ခြင်း - ဝန်ထမ်းများကို လုံလောက်သော PPE ထောက်ပံ့ပေးခြင်း - ဆေးနှင့်ဆေးဝါးများပါသော ရှေးဦးသူနာပြုပုံး ထားရှိခြင်း - လုံလောက်သော သန့်စင်ခြင်းများ ထားရှိခြင်း ဥပမာ- အိမ်သာများ၊ သန့်စင်သောရေ၊ ရေချိုးခန်းများ - လူဖြင့်လုပ်ရသော အလုပ်ကိုလျော့ချ၍ စက်ဖြင့်လုပ်ရသောအလုပ်ကို တိုးမြှင့်ခြင်း
၇	ဖြစ်နိုင်ခြေရှိသော လူမှုရေးပြဿနာ	<ul style="list-style-type: none"> - ကုမ္ပဏီနှင့်ဒေသခံများအကြား ကောင်းမွန်သောဆက်ဆံရေးကို ထိန်းသိမ်းထားခြင်း - ဒေသခံများနှင့်လူထုတွေ့ဆုံပွဲပြုလုပ်ခြင်း၊ ထိုသို့ပြုလုပ်ခြင်းမှာ ဒေသခံများသည် စီမံကိန်းအပေါ် ကောင်းမွန်သော အမြင်ရရှိလာမည်။ - ဒေသခံများနှင့် ဆက်ဆံလျှင် သူတို့၏ ယဉ်ကျေးမှုနှင့် ရိုးရာများကို လေးစားလိုက်နာရန် ဝန်ထမ်းများကို ပညာပေးခြင်း

		<ul style="list-style-type: none"> - ဝန်ထမ်းများကို စည်းကမ်းလိုက်နာစေရန် ပညာပေးထားခြင်း - အမှားလုပ်ထားလျှင် ဝန်ထမ်းများကို အလုပ်မှ ထုတ်ပယ်ခြင်း သို့မဟုတ် အပြစ်ပေးခြင်းများ လုပ်ဆောင်ခြင်း - အလုပ်သမားများနှင့် ဒေသခံများအကြား ငြင်းခန်ခြင်း၊ ရန်ဖြစ်ခြင်းများကို တားဆီးခြင်း - အလုပ်ချိန်အတွင်းတွင် အရက်သေစာသောက်စားခြင်းကို တင်းကြပ်စွာ တားမြစ်ခြင်း၊ ဆေးသုံးစွဲခြင်းကို လုံးဝ တားမြစ်ခြင်း - ဝန်ထမ်းများနှင့်ကောင်းမွန်သော ဆက်ဆံရေး လုပ်ဆောင်ခြင်း
၈	ဖြစ်နိုင်ခြေရှိသော လုံခြုံရေးပြဿနာ	<ul style="list-style-type: none"> - စီမံကိန်းလုံခြုံရေးအတွက် စီမံခန့်ခွဲမှု အစီအစဉ်ရေးဆွဲခြင်း - စီမံကိန်းနေရာကို နံရံများ/ခြံစည်းရိုးခတ်ထားခြင်း - စက်ရုံသည် အကြမ်းဖက်သမားများအတွက် ပစ်မှတ် မဖြစ်စေခြင်း - တက်နိုင်သလောက် လုံခြုံရေးများကို စည်းကမ်း တင်းကြပ်စွာ ဆောင်ရွက်စေခြင်း - လုံလောက်သော လုံခြုံရေးဝန်ထမ်းများထားရှိခြင်း - စက်ရုံအဝင်အထွက်များတွင် လူတိုင်းကို စစ်ဆေးခြင်း - အလွယ်တကူ ခွဲခြားနိုင်စေရန် ဝန်ထမ်းများအားလုံး ID ကဒ်များ ထောက်ပံ့ပေးခြင်း

၄။ စီမံကိန်းပိတ်သိမ်းစဉ်ကာလအတွင်းတွင်

ဖြစ်နိုင်ခြေရှိသော သက်ရောက်မှုများနှင့် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ထည့်သွင်းဖော်ပြထားပါသည်။

စဉ်	သက်ရောက်မှု	ဖြေလျော့နိုင်မည့်နည်းလမ်းများ
၁	ဖြစ်နိုင်ခြေရှိသော လုပ်ငန်းခွင်မတော်တဆမှု (လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ပြဿနာ)	<ul style="list-style-type: none"> - စီမံကိန်းပိတ်သိမ်းခြင်း လုပ်ငန်းအတွက် ဘေးအန္တရာယ် ကင်းရှင်းသည့် အခြေအနေဖြစ်စေရန် အတွက် အစီအမံများ ရေးဆွဲခြင်း - ဖျက်သိမ်းခြင်းလုပ်ငန်းများအတွက် ကန်ထရိုက်တာ ငှားရမ်းပြီး စီမံကိန်းဖျက်သိမ်းခြင်းနှင့် စီမံကိန်းနေရာကို သန့်ရှင်းသပ်ရပ်စွာ ဆောင်ရွက်ခြင်း

		<ul style="list-style-type: none"> - သတ်မှတ်ထားသော နေရာတွင် အသုံးမပြုနိုင်သော ပစ္စည်းများ စွန့်ပစ်ခြင်း - အသုံးမဝင်တော့သော စက်ကိရိယာနှင့် စက်ယန္တရားများကို အရည်ကျိုစက်ရုံသို့ ပို့ဆောင်ခြင်း - အသုံးပြု၍ရသော ပစ္စည်းများကို ပြန်လည်ရောင်းချခြင်း - လောင်စာဆီနှင့်ခါတုပေဒပစ္စည်းများ လျှို့ဝှက်ခြင်းရှိခဲ့လျှင် အဆိုပါညစ်ညမ်းမြေကို ယူ၍သတ်မှတ်နေရာတွင် စွန့်ပစ်ခြင်း
၂	<p>ဖြစ်နိုင်ခြေရှိသော ကြွင်းကျန်သက်ရောက်မှုဩဇာ</p>	<ul style="list-style-type: none"> - ကြွင်းကျန်ရစ်သော ပစ္စည်းများကို သန့်စင်ရှင်းလင်းခြင်း ဥပမာ-ခါတုပေဒပစ္စည်းများ ရှိလျှင် - လောင်စာဆီဖိတ်စင်ကျခြင်းကြောင့် မြေဆီလွှာ ညစ်ညမ်းလျှင်ဖယ်ရှားခြင်း - မြေဆီလွှာညစ်ညမ်းမှုရှိမရှိ သိစေရန် နောက်ဆုံးအနေဖြင့် မြေဆီလွှာစမ်းသပ်ခြင်း - လေနှင့်ရေကိုလည်း နောက်ဆုံးအနေဖြင့် စမ်းသပ်ခြင်း - မြေနေရာကို ယခင်ပုံစံအခြေအနေအတိုင်းဖြစ်စေရန် ပြုလုပ်ခြင်း - မြေနေရာကို ပြန်လည်ရှင်သန်ခြင်း သို့မဟုတ် ပြန်လည်စိုက်ပျိုးခြင်း

တည်ဆောက်ရေးကာလအတွင်းတွင် ကောင်းကျိုးသက်ရောက်မှု

စီမံကိန်းသည် ဒေသစီးပွားရေးနှင့် ဒေသခံများ၏ အဆောက်အအုံ ပစ္စည်းများ ဥပမာ-သဲ၊ ကျောက်၊ အုတ်၊ သစ် ရောင်းဝယ်ခြင်းဖြင့် စီးပွားရေး အကျိုးအမြတ် ယူဆောင်ပေးပါသည်။

အလုပ်အကိုင်အခွင့်အလမ်းများအနေဖြင့် တည်ဆောက်ရေးလုပ်သား (၁၀၀) ဦးအလုပ်အကိုင်ရရှိပြီး နိုင်ငံခြားသားများဆီမှ ဗဟုသုတနှင့် ကျွမ်းကျင်မှုများလည်း ရရှိပါသည်။ နိုင်ငံအနေဖြင့် အမေရိကန်ဒေါ်လာ ၀.၅၄၉၉၅ သန်း အပါအဝင် ကျပ်သန်းပေါင်း ၄၁၇၇.၉၃၉၃ တိုက်ရိုက်ရင်းနှီးမြှုပ်နှံခြင်းကြောင့် တိုင်းပြည်၏ GDP တိုးတက်လာပါသည်။

စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင် ကောင်းကျိုးသက်ရောက်မှု

စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင် ဝန်ထမ်း (၂၁၉) ဦး ရေရှည်အလုပ်အကိုင်ရရှိပြီး လစာအားဖြင့် ကျပ် ၁၆၀,၀၀၀ မှ ၁,၀၀၀,၀၀၀ ရရှိပါသည်။ (လစာများကို ၂ နှစ်တစ်ခါတိုးသွားမည်)။ နိုင်ငံခြားသားပညာရှင်များ၏ လစာများသည် အမေရိကန်ဒေါ်လာဖြစ်သည်။ စီမံကိန်းမှ အကျိုးအမြတ်များရလာလျှင် ကုမ္ပဏီသည် ဝင်ငွေခွန် များထမ်းဆောင်ပါမည်။

အဆိုပါစီမံကိန်းသည် တိုင်းပြည်၏စက်မှုကဏ္ဍဖွံ့ဖြိုးတိုးတက်လာမည်ဖြစ်သည်။

သဘာဝနှင့်စက်မှုဆိုင်ရာဘေးအန္တရာယ်များ၏ဖြစ်နိုင်ခြေနှင့်ဖြစ်ပွားမှု

စက်မှုဇုန်ဧရိယာသည် နိမ့်သောမြေပြန့်နေရာဖြစ်ပြီး ပင်လယ်ကမ်းခြေမှ မိုင် (၁၀၀) ခန့်ဝေးပါသည်။ တောင်တန်းမရှိပေ။ ရခိုင်နှင့်ဧရာဝတီ ဧရိယာများ၏ ကမ်းခြေဒေသများသည် ဆိုင်ကလုန်းများ ဖြစ်ပွားပါသည်။ သို့ပေမယ့် ဤဧရိယာသည် အတော်အသင့် ဘေးအန္တရာယ်ကင်းပါသည်။ ဧရိယာသည် စတုဂံပြတ်ရွေ့ကြော၏ တောင်ဘက်အစွန်းမှ သိပ်မဝေးပေ (၂၀ မိုင်ခန့်)။ သို့ပေမယ့် ငလျင်မဖြစ်ပွားပေ။ အသေးစားတုန်ခါခြင်း တစ်ခါတစ်ရံဖြစ်တက်ပါသည်။

စက်မှုဆိုင်ရာဘေးအန္တရာယ်အနေဖြင့် ကားတပ်ဆင်စက်ရုံသည် မည်သည့်စက်မှုဆိုင်ရာ ဘေးအန္တရာယ်မှ မထွက်ရှိပေ။ မီးခိုး၊ စွန့်ထုတ်ရေ၊ ဓါတုပေဒပစ္စည်းများ သို့မဟုတ် ဘေးအန္တရာယ်များသော ပစ္စည်းများ မထွက်ရှိပေ။

ဤအကြောင်းအရာအားလုံးကို အခန်း (၆) တွင် အသေးစိတ်ဖော်ပြထားပါသည်။

ဆက်စပ်သက်ရောက်မှုဆန်းစစ်ခြင်း

တစ်စတစ်တိုးလာသက်ရောက်မှုများသည် (သက်ရောက်မှုသည် အခြားအရင်းအမြစ်မှ တစ်ချိန်တည်းတွင်ဖြစ်ပျက်ခြင်း) ဧရိယာတွင် အခြားစီမံကိန်းများစွာရှိသောကြောင့် ဖြစ်ပေါ်နိုင်ပါသည်။ သို့ပေမယ့် အနီးနားတွင် ကြီးမားသော မီးခိုးထွက်သည့်စက်ရုံမရှိပေ။ အများစုမှာ အရောင်းစင်တာ သို့မဟုတ် သိုလှောင်ရုံများ သို့မဟုတ် ရုံးခန်းများသာရှိပါသည်။

အဆိုပါကားတပ်ဆင်ထုတ်လုပ်ခြင်းစက်ရုံသည် "မီးခိုးမဲ့စက်ရုံ" နှင့် "မစွန့်ထုတ်သောစက်ရုံ" တစ်ခုဖြစ်ပါသည်။ သက်ရောက်မှုများမှာ အများအားဖြင့် မပြောပလောက်ပေ။ သက်ရောက်မှုများ အားလုံးကို ဖြေလျော့မည်ဖြစ်သဖြင့် ဆက်စပ်သက်ရောက်မှုသည် နှစ်ပေါင်းကြာလာသည်နှင့်အမျှ မထင်ရှားပေ။ သက်ရောက်မှုများအားလုံးအတွက် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ထည့်သွင်း ဖော်ပြထားပါသည်။

သက်ရောက်မှုတစ်ခုစီတိုင်းအတွက် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို အချိန်မီလုပ်ဆောင်လျှင် နှစ်ပေါင်းများစွာကြာလာသည်နှင့်အမျှ ဆက်စပ်သက်ရောက်မှု မဖြစ်နိုင်ပေ။

သို့ပေမယ့် စက်ရုံသည် တစ်နှစ်ကို ကား ၈၀၀ စီးထုတ်လုပ်ဖြစ်ပါသည်။ (၅) နှစ်ကြာပြီး နောက်တွင် အဆိုပါ ကားအစီးရေ ၈၀၀ မှ မီးခိုးထွက်နိုင်ပါသည်။ (အခြားတနည်းအားဖြင့်) ကားတပ်ဆင်ထုတ်လုပ်သည့်စက်ရုံသည် နှစ်ပေါင်းများစွာတွင် လေပတ်ဝန်းကျင်အပေါ် သွယ်ဝိုက်နည်းဖြင့် ဆက်စပ်သက်ရောက်လိမ့်မည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP)

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) သည် စီမံကိန်းဆောင်ရွက်ခြင်းကြောင့် ဧရိယာ၏ ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေးကို ဆုတ်ယုတ်မသွားစေရန် အဓိကအချက်ဖြစ်သည်။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) သည် ရုပ်ပိုင်းဆိုင်ရာ၊ ဇီဝပိုင်းဆိုင်ရာ၊ လူမှုစီးပွားရေးဆိုင်ရာ၊ ယဉ်ကျေးမှုဆိုင်ရာနှင့် မျက်စိပဒေသာဖြစ်သော ရှုခင်းရှုကွက်ဆိုင်ရာ ပြဿနာများပါဝင်သော ပတ်ဝန်းကျင်ဆိုင်ရာ ပြဿနာများကို စီမံခန့်ခွဲခြင်းဖြစ်သည်။

EMP သည် ကားတပ်ဆင်ထုတ်လုပ်ခြင်း စက်ရုံလည်ပတ်ခြင်းအား ပတ်ဝန်းကျင်နှင့် လိုက်လျောညီထွေ ဖြစ်စေရန် ဖြစ်သည်။ EMP သည် စီမံကိန်းသက်တမ်းတစ်လျှောက် အကျိုးသက်ရောက်သော မရှိမဖြစ်အရေးပါပါသည်။ ထို့အပြင် ပတ်ဝန်းကျင်ဆိုင်ရာ ပါရာမီတာများ၏ စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်းသည် အကျိုးသက်ရောက်သော လုပ်ဆောင်ချက်ဖြစ်သည်။ စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်းအစီအစဉ် (MP) သည်အလွန်အရေးပါပါသည်။

ဤရှည်လျားသော EMP အခန်းတွင် ကျန်းမာရေးဆိုင်ရာမူဝါဒနှင့် ကတိကဝတ်များကို ရှင်းပြထားပါသည်။ (စီမံကိန်းနှင့်သက်ဆိုင်သည့် ပတ်ဝန်းကျင်ဆိုင်ရာ၊ လူမှုစီးပွားရေးဆိုင်ရာနှင့် တရားရေးရာလိုအပ်ချက်နှင့် ဖွဲ့စည်းပုံမူဘောင်ကိုလည်း အခန်း (၃) တွင် ဖော်ပြထားပါသည်။)

သက်ရောက်မှုများနှင့် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို အနှစ်ချုပ်၍ ဇယားဖြင့် ထပ်မံရှင်းပြထားပါသည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) ဆောင်ရွက်ရန်အတွက် လွှမ်းခြုံဘတ်ဂျက်

EMP ရန်ပုံငွေအဖြစ် ဘတ်ဂျက်၏ ၂ ရာခိုင်နှုန်း (၈၃,၅၅၈,၇၆၆ ကျပ်) ကို သတ်မှတ် ထားပါသည်။

EMP နှင့် MP အောက်ရှိ အစီအစဉ် တစ်ခုစီအတွက် အသေးစိတ် ကုန်ကျစရိတ်မှာ အောက်ပါ အတိုင်းဖြစ်ပါသည်-

- EMP အဖွဲ့ ဖွဲ့စည်းရန်အတွက် ကုန်ကျစရိတ် ၂ ရာခိုင်နှုန်း (ကျပ် ၁,၆၇၁,၁၇၅)
- EMP အတွက် အမှန်တကယ် ကုန်ကျမည့် ကုန်ကျစရိတ်
- (က) ဖြေလျော့နိုင်မည့် နည်းလမ်း များအတွက် ၂၅ ရာခိုင်နှုန်း (ကျပ် ၂၀,၈၉၆,၆၉၆)
- (ခ) စောင့်ကြပ်ကြည့်ရှု လေ့လာခြင်း အတွက် ၂၅ ရာခိုင်နှုန်း (ကျပ် ၂၀,၈၉၆,၆၉၆)

- ပစ္စည်းကိရိယာဝယ်ယူမှုအတွက် ကုန်ကျစရိတ် ၂၀ ရာခိုင်နှုန်း (ကျပ် ၁၆,၇၁၁,၁၅၇)
- စွမ်းဆောင်ရည်မြှင့် သင်တန်း များအတွက် ကုန်ကျစရိတ် ၇ ရာခိုင်နှုန်း (ကျပ် ၅,၈၄၉,၁၁၅)
- အရေးပေါ် အစီအစဉ်အတွက် ကုန်ကျစရိတ် ၁၀ ရာခိုင်နှုန်း (ကျပ် ၈,၃၅၅,၈၇၈)
- အစီရင်ခံတင်ပြခြင်း လုပ်ငန်းအတွက် ကုန်ကျစရိတ် ၈ ရာခိုင်နှုန်း (ကျပ် ၆,၆၈၄,၇၀၂)
- အထွေထွေ ကုန်ကျစရိတ် (EMPအဖွဲ့ဝင်ဖြစ်သော ရွာသား နှစ်ယောက်အတွက် အပါအဝင်) ၃ ရာခိုင်နှုန်း (ကျပ် ၂,၅၀၆,၇၆၃)

EMP ရန်ပုံငွေသည် စီမံကိန်း၏ သက်တမ်းတစ်ခုလုံးဖြစ်သော နှစ် (၃၀) ကို မလွှမ်းမိုးနိုင်ပေ။ ရန်ပုံငွေသည် အချိန်နှင့်အမျှ လိုအပ်လျှင် ထပ်ထည့်မည်ဖြစ်သည်။ အလုပ်သမားကုန်ကျစရိတ် အနည်းဆုံးဖြစ်စေရန် လုပ်ဆောင်ပါမည်။ ဝန်ထမ်းများသာလျှင် EMP နှင့် MP လုပ်ဆောင်ခြင်းအတွက် ပါဝင်စေမည်။ ဝန်ထမ်းများကို အဆိုပါရည်ရွယ်ချက်အတွက် ကနဦးအစကတည်းက သင်တန်းပေးမည်။ (EMP ကန်ထရိုက်တာသည် မြန်မာနိုင်ငံတွင် မရှိသေးပေ။)

စီမံခန့်ခွဲခြင်းနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်ခွဲ (MMSP)၏ ရှည်လျားသောအပိုင်း ကို စီမံကိန်းကာလ အလိုက် ဖော်ပြထားပါသည်။ အောက်ပါသက်ဆိုင်သော ပတ်ဝန်းကျင်ဆိုင်ရာနှင့် လူမှုရေးရာ စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်းပြဿနာများကို ပါဝင်စေပါသည်။

ဆူညံသံနှင့်တုန်ခါမှု၊ စွန့်ပစ်ပစ္စည်း၊ ဘေးအန္တရာယ်ဆိုင်ရာ စွန့်ပစ်ပစ္စည်း၊ စွန့်ပစ်ရေနှင့် မိုးရေ၊ လေအရည်အသွေး၊ အနံ့၊ ဓါတုဗေဒပစ္စည်းများ၊ ရေအရည်အသွေး၊ တိုက်စားခြင်းနှင့် အနည်ထိုင်ခြင်း၊ ဇီဝမျိုးစုံမျိုးကွဲ၊ လုပ်ငန်းခွင်ဆိုင်ရာနှင့် ဒေသဆိုင်ရာကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး၊ ယာဉ်ကျေးမှုဆိုင်ရာအမွေအနှစ်၊ အလုပ်အကိုင်ရရှိရေးနှင့် သင်တန်းပေးခြင်း၊ အရေးပေါ်တုန့်ပြန်မှု၊ ယာဉ်ကြောပိတ်ဆို့မှုနှင့် လူမှုရေးပြဿနာများ

အစီအစဉ်ခွဲတစ်ခုစီ၏ပါဝင်သော အကြောင်းအရာ များတွင် ရည်ရွယ်ချက်များ၊ တရားရေးရာလိုအပ်ချက်၊ လွှမ်းမိုးခြင်းနှင့် အဆောက်အဦအပြင်အဆင်ပုံ၊ လုပ်ဆောင်ချက်အချိန်ဇယား၊ စီမံခန့်ခွဲမှုလုပ်ဆောင် ချက်များ၊ စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း အစီအစဉ်၊ စီမံကိန်းဘတ်ဂျက်နှင့် တာဝန်ဝတ္တရားများတို့ ဖြစ်သည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ၊ စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း အစီအစဉ် တို့ကို စူးစိုက်၍ အဆိုပါအကြောင်းအရာ အားလုံးကို အကျဉ်းချုပ် ဖော်ပြထားပါသည်။ EMP အဖွဲ့ဝင်ကိုဖွဲ့စည်း၍ EMP ဆောင်ရွက်ခြင်းအတွက် EMP အဖွဲ့ခေါင်းဆောင်နှင့် EMP အဖွဲ့ဝင်များ၏ တာဝန်ဖြစ်ပါသည်။

အစီအစဉ်ခွဲတစ်ခုစီအတွက် စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက်များ

ပတ်ဝန်းကျင်ဆိုင်ရာနှင့် လူမှုရေးဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်များနှင့် စီမံကိန်းလုပ်ဆောင်ခြင်း၏ အစီအစဉ်များကို အခန်း (၈) တွင် ဇယားဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန မှ ချမှတ်ထားသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း၊ ၂၀၁၅ အရ ဖော်ပြထားပါသည်။

လက်တွေ့စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက်အစီအစဉ်များအတွက်-

- လေအရည်အသွေးနှင့်ထုတ်လွှတ်မှု
- ဆူညံသံနှင့် တုန်ခါမှု
- ရေအရည်အသွေးနှင့် စွန့်ပစ်ရေ
- အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ
- မြေဆီလွှာ (ထုတ်လွှတ်မှုနှင့် အနည်ကျခြင်း) နှင့်
- လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးတို့ဖြစ်သည်။

တည်ဆောက်ရေးကာလနှင့် စီမံကိန်းလည်ပတ်ခြင်းကာလအတွက် အောက်ပါအတိုင်းဖြစ်ပါသည်။

တည်ဆောက်ရေးကာလအတွင်းတွင်

၁။ လေအရည်အသွေးနှင့် ထုတ်လွှတ်မှု စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရှည်ရွယ်ချက် : အဓိကရှည်ရွယ်ချက်သည် ထုတ်လွှတ်မှု (မီးခိုး သို့မဟုတ် ဂတ်စ်ထုတ်လွှတ်မှု) ကိုလျော့ချရန်နှင့် တက်နိုင်သလောက် လေအရည်အသွေးကို ထိန်းချုပ်ရန်ဖြစ်သည်။

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : တည်ဆောက်ရေးကာလအတွင်းတွင် ထုတ်လွှတ်မှု အားလုံးအတွက် (မီးခိုးနှင့်ဖုန်မှုန့်) အောက်ပါများကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅ ကိုလိုက်နာခြင်း
- လိုအပ်သည်ထက် အပင်များကို ပိုမရှင်းလင်းခြင်း

- မီးခိုးထွက်နည်းပြီး ပတ်ဝန်းကျင်နှင့်လိုက်လျောညီထွေဖြစ်သော ကိရိယာများကို ဝယ်ယူခြင်း
- မီးခိုးထွက်ရှိမှု လျော့နည်းစေရန် ယာဉ်နှင့် စက်ကိရိယာများကို ပုံမှန် ပြုပြင်၊ ပုံမှန်ထိန်းသိမ်း၊ ပုံမှန်ဆီထိုးပြုလုပ်ခြင်း
- ဖြစ်နိုင်လျှင် ဆာလဖာနည်းသောလောင်စာဆီကို အသုံးပြုခြင်း
- အမှိုက်များကို ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းကို ရှောင်ရှားခြင်း
- ဖုန်များကို ရေဖြန်းခြင်း
- ယာဉ်သွားလာမှုကို ကန့်သတ်ခြင်း
- မြေကြီးနှင့်သဲများကို ဟင်းလင်းပွင့်တွင် စုပုံခြင်းကို သတ်မှတ်ခြင်း
- လိုအပ်လျှင် ဝန်ထမ်းများကို PPE ထောက်ပံ့ပေးခြင်း
- လေအရည်အသွေးအတွက် ပညာရှင်များဌာနရမ်းပြီး ပုံမှန် (တစ်နှစ်နှစ်ကြိမ်) လေ့လာစောင့်ကြပ်ကြည့်ရှုခြင်း များလုပ်ဆောင်ခြင်း

၂။ ဆူညံသံနှင့် တုန်ခါမှုစီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရှည်ရွယ်ချက် : တည်ဆောက်ရေးကာလ လုပ်ဆောင်ချက်များမှ ထွက်ရှိလာသော ဆူညံနှင့် တုန်ခါမှုများကို လျော့ချရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၃ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : တည်ဆောက်ရေးကာလအတွင်းတွင် လုပ်ဆောင်ချက်များမှ ထွက်ရှိသော ဆူညံသံနှင့်တုန်ခါမှုများကို လျော့ချရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။

ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၃ ကိုလိုက်နာခြင်း
- ဆူညံမှုနည်းသော ယာဉ်ယန္တရားများကို ဝယ်ယူခြင်း
- ဖြစ်နိုင်လျှင် ဆူညံသံထွက်သောစက်များတွင် muffler သို့မဟုတ် silencer များတပ်ဆင်ခြင်း
- တုန်ခါမှုကို လျော့ချနိုင်ရန် စက်ကိရိယာများအတွက် အောက်ခံနေရာများကို တည်ငြိမ်စေခြင်း
- ထရပ်ကားများ ရွေ့လျားခြင်းကို ကန့်သတ်ခြင်း

- လမ်းမျက်နှာပြင်ကို ညီညာပြီး ချောမွေ့စေရန် ပြုလုပ်ခြင်း
- နေ့ဘက်တွင်သာ တည်ဆောက်ရေးလုပ်ဆောင်ချက်များ လုပ်ဆောင်ခြင်း (ညအချိန် တွင် တည်ဆောက်ရေးလုပ်ငန်းမပြုလုပ်ပါ)
- ဆူညံသံကို စုပ်ယူနိုင်ရန် ကြီးမားသော သစ်ပင်များကို ထိန်းသိမ်းခြင်း
- လိုအပ်လျှင် ဝန်ထမ်းများကို PPE ထောက်ပံ့ပေးခြင်း
- ပညာရှင်များဌာနရမ်းပြီး ပုံမှန် (တစ်နှစ်နှစ်ကြိမ်) လေ့လာစောင့်ကြပ်ကြည့်ရှုခြင်း များလုပ်ဆောင်ခြင်း

၃။ ရေအရည်အသွေးနှင့် စွန့်ပစ်ရေစီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရည်ရွယ်ချက် : မည်သည့် အပေါ်ယံရေ သို့မဟုတ် မြေအောက်ရေ အရည်အသွေးကို သက်ရောက်မှု မရှိစေရန် နှင့် စွန့်ပစ်ရေ (စွန့်ထုတ်ရေ) ကို စီမံခန့်ခွဲရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၂ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : ရေအရည်အသွေးနှင့် စွန့်ထုတ်ရေကို ထိန်းချုပ်ရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။

ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ ကိုလိုက်နာခြင်း
- ရေပတ်ဝန်းကျင်ကို ကာကွယ်ခြင်း၊ တည်ဆောက်ရေးလုပ်ငန်းများကြောင့် အပေါ်ယံရေ သို့မဟုတ် မြေအောက်ရေ အရည်အသွေးကို သက်ရောက်မှု မဖြစ်စေခြင်း
- တည်ဆောက်ရေးလုပ်ငန်းခွင်တွင် အသုံးပြုပြီးသော ရေများကို ထိန်းချုပ်နိုင်ရန် ရေမြောင်းများ စနစ်တကျ ပြုလုပ်ခြင်းနှင့် မိုးရေအတွက်လည်း ရေမြောင်းစနစ် ပြုလုပ်ဖန်တီးခြင်း
- လမ်းဖောက်ခြင်းကြောင့် ဧရိယာရှိ သဘာဝ ရေမြောင်းများကို မထိခိုက်ခြင်း၊ စက်ရုံစီမံကိန်းနေရာသည် သဘာဝမြောင်းများကို မထိခိုက်ခြင်း
- လောင်စာဆီနှင့် အသုံးပြုပြီးသော ဆီများကို သိုလှောင်စဉ်တွင် သေချာစွာထားရှိခြင်း
- အပေါ်ယံရေ သို့မဟုတ် မြေအောက်ရေ ညစ်ညမ်းခြင်းကို ရှောင်ရှားခြင်း
- မတော်တဆ လျှံကျခြင်းကို ရှောင်ရှားခြင်း၊ လျှံကျခဲ့လျှင်တောင်မှ ရေဖြင့်မဆေးကြောရ သို့ပေမယ့် စုပ်ယူနိုင်သည့် သို့မဟုတ် လွှစာမှုန့်ဖြင့် ချက်ချင်း စုပ်ယူဖယ်ရှားခြင်း

- စွန့်ပစ်ပစ္စည်းများကို မည်သည့်ရေရှိသည့် နေရာတွင်မှ စွန့်ပစ်ခြင်းကို ရှောင်ရှားခြင်း
- ရေထိန်းသိမ်းခြင်းကို ဝန်ထမ်းများအား ပညာပေးခြင်း
- တည်ဆောက်ရေးကာလအတွင်းတွင် မည်သည့် စွန့်ပစ်ရေ သန့်စင်သည့်နည်းလမ်းမျှ မလိုအပ်ပေ။
- ပညာရှင်များဌာနရမ်းပြီး ခြောက်လတစ်ကြိမ် ရေအရည်အသွေး စစ်ဆေးခြင်း

၄။ စွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရည်ရွယ်ချက် : တည်ဆောက်ရေးစွန့်ပစ်ပစ္စည်းနှင့် လူသုံးစွန့်ပစ်ပစ္စည်းများ ကို လျော့ချရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၂ နှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး နည်းဥပဒေ ၂၀၁၄ တို့ကိုလိုက်နာပါမည်။ (စွန့်ပစ်ပစ္စည်းများအား ပတ်ဝန်းကျင် မညစ်ညမ်းစေရန် ပတ်ဝန်းကျင်နှင့် လိုက်လျောညီထွေရှိစေသော နည်းလမ်းနှင့်အတူ စွန့်ပစ်ရန်)

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။

ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၂၊ ပုဒ်မ ၁၄၊ ၁၅၊ ၃၂ နှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး နည်းဥပဒေ၊ ၂၀၁၄၊ ပုဒ်မ ၆၉ တို့ကို လိုက်နာခြင်း
- စွန့်ပစ်ပစ္စည်းများ ကိုယ်တွယ်ခြင်းအတွက် သင့်တော်သော သင်တန်းများပေးခြင်း
- ပြန်လည်အသုံးပြုနိုင်သည့် စွန့်ပစ်ပစ္စည်းနှင့် အသုံးမပြုနိုင်သည့် စွန့်ပစ်ပစ္စည်း ဟူ၍ ခွဲခြားခြင်း၊ အမှိုက်ပုံးများကို သီးသန့်ခွဲထားခြင်း
- တည်ဆောက်ရေးစွန့်ပစ်ပစ္စည်းများ အနေဖြင့် တည်ဆောက်ရေးလုပ်ငန်းခွင်တွင် ယာယီပုံသည့် အခါ စနစ်တကျ ထားခြင်း
- နောက်ပိုင်းတွင် ပိုလျှံသော ပစ္စည်းများကို ပြန်လည်ရောင်းချခြင်း
- တည်ဆောက်ရေးလုပ်ငန်းပြီးနောက် ကန်ထရိုက်တာဌာန၍ စီမံကိန်းနေရာကို သပ်ရပ်စွာထားရှိခြင်း
- ပစ္စည်းများကို သတ်မှတ်ထားသော နေရာတွင် စွန့်ပစ်ခြင်း
- မည်သည့်အကြောင်းပြချက်နှင့်မဆို အမှိုက်များကို ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းအား ရှောင်ရှားခြင်း

၅။ မြေဆီလွှာ စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ် (တိုက်စားခြင်းနှင့် အနည်ကျခြင်း)

ရည်ရွယ်ချက် : မြေဆီလွှာတိုက်စားခြင်းကို တားဆီးခြင်း၊ တည်ဆောက်ရေးလုပ်ငန်းများကြောင့် မြေဆီလွှာ တည်ဆောက်မှုပျက်စီးခြင်းအား ကာကွယ်ခြင်း။

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၂ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : မြေဆီလွှာ စီမံခန့်ခွဲရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။

ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- တည်ဆောက်ရေးလုပ်ငန်းများ လုပ်သောအခါတွင် မြေဆီလွှာဖွဲ့စည်းပုံကို လိုသည်ထက်ပို၍ မဖျက်စီးခြင်း
- အပေါ်ယံမြေဆီလွှာကို သီးသန့်ခွဲခြားထားခြင်း (အပင်ပြန်စိုက်ပျိုးရန်အတွက် အပေါ်ယံမြေဆီလွှာကို ပြန်လည်အသုံးပြုခြင်း)
- တက်နိုင်သလောက် မြေဆီလွှာ ညစ်ညမ်းမှုကို ရှောင်ရှားခြင်း၊ လောင်စာဆီ မလျှံကျစေခြင်း သို့မဟုတ် မယိုစိမ့်စေခြင်း၊ အကယ်၍ လျှံကျခဲ့လျှင် ရေဖြင့်မဆေးချခြင်း (မြေဆီလွှာညစ်ညမ်းမှုကို ကာကွယ်ရန်)၊ စုပ်ယူနိုင်သော ပစ္စည်းများ (လွှစာမှုန့်) ဖြင့် ချက်ချင်းဖယ်ရှားခြင်း၊ လျှံကျခြင်းကို တားဆီးခြင်း
- မုတ်သုန်ရာသီအတွင်းတွင် ကျန်ပြန်သော မြေနေရာကို အလွတ်အတိုင်းမထား၍ တည်ဆောက်ရေးလုပ်ငန်းကို အစီအစဉ်ရေးဆွဲခြင်း
- မြေကြီးလုပ်ငန်းပြီးဆုံးပြီးနောက် မြေပြင်ကို ပြန်လည်ညှိခြင်း
- ထရပ်ကား/စက်ယန္တရားဖြင့် မြေဆီလွှာကို ပြန်လည်ထိန်းသိမ်းခြင်း
- အထူးသဖြင့် မုတ်သုန်ရာသီအတွင်းတွင် မြေဆီလွှာတိုက်စားခြင်းနှင့်အနည်ထိုင်ခြင်းကို တားဆီးခြင်း
- စီမံကိန်းနေရာအနီးနား ဧရိယာမှ ရေများကို စီးဆင်းစေခြင်း

၆။ လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေး စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရည်ရွယ်ချက် : တက်နိုင်သလောက် လုပ်ငန်းခွင်တွင် မတော်တဆမှု မရှိစေရေး လုပ်ဆောင်ရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ဥပဒေ၊ ၂၀၁၉ ကိုလိုက်နာပါမည်။ (အခန်း ၃ တွင် ဖော်ပြထားပါသည်)

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : အောက်ပါအချက်များကို လုပ်ဆောင်ပါမည်။

ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- မတော်တဆမှု မရှိစေရေး အစီအစဉ်ဆွဲခြင်း
- ဘေးအန္တရာယ်ကင်းရှင်းသော အလုပ်လုပ်သော နေရာနှင့် အခြေအနေ ဖန်တီးပေးခြင်း
- ဝန်ထမ်းများကို ကောင်းမွန်သော အလုပ်လုပ်ခြင်း အလေ့အထ၊ ကောင်းမွန်သော ဘေးအန္တရာယ်ကင်းရှင်းသော အလေ့အထ၊ ကောင်းမွန်သော သန့်ရှင်းစေသော အလေ့အထ၊ ဤအလေ့အထကောင်းများကို အလုပ်သမားတစ်ဦး တစ်ယောက်စီတိုင်း၏ စိတ်ထဲတွင်စွဲမြဲစေရန် သင်ကြားပေးခြင်း
- လုံလောက်သော အိမ်သာ၊ ရေချိုးခန်း၊ အဝတ်လျှော်ဧရိယာနှင့် သောက်ရေ ထောက်ပံ့ပေးခြင်း
- လိုအပ်လျှင် လုံလောက်သော PPE ထောက်ပံ့ပေးခြင်း
- ဝန်ထမ်းအချို့အတွက် ရှေးဦးသူနာပြုသင်တန်းပေးခြင်း၊ ဆေးဝါးများနှင့် ရှေးဦးသူနာပြုဆေးပုံးများ ထောက်ပံ့ထားပေးခြင်း
- ဝန်ထမ်းအချို့ကို မီးသတ်သင်တန်းထောက်ပံ့ပေးခြင်း
- မည်သည့် မမျှော်လင့်သော မတော်တဆမှုများနှင့် ထိခိုက်ဒဏ်ရာရမှုများအတွက် အရေးပေါ်တုန့်ပြန်မှု အစီအစဉ် ရေးဆွဲထားခြင်း (ဥပမာ-မီးသတ်ဆေးဗူးများ)
- အရေးပေါ်ဝန်ဆောင်မှု၊ ကြတ်ခြေနီအဖွဲ့၊ ဆေးရုံ၊ မီးသတ် အစရှိသော ဖုန်းနံပါတ်များကို ပြသထားခြင်း
- လူဖြင့်လုပ်ရသောအလုပ်ထက် စက်ဖြင့်လုပ်ရသော အလုပ်ကို မြှင့်တင်ခြင်း၊ တက်နိုင်သလောက် လိုအပ်သည်ထက်ပိုပင်ပန်းမှု၊ ထပ်ကာထပ်ကာ လှုပ်ရှားမှုများနှင့် မောပန်းနွမ်းနယ်ခြင်းနှင့် ထိခိုက်ဒဏ်ရာရမှုများကို လျော့ချခြင်း
- တည်ဆောက်ရေးကာလအတွင်းတွင် အရာဝတ္ထုများ မတော်တဆပြုတ်ကျခြင်းမှ ကာကွယ်နိုင်ရန် တည်ဆောက်နေသည့်နေရာများကို ပိုက်ကွယ်များဖြင့် ကာရန်ထားခြင်း

စီမံကိန်းလည်ပတ်ခြင်းကာလအတွင်းတွင်

၁။ လေအရည်အသွေးနှင့် ထုတ်လွှတ်မှု စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရည်ရွယ်ချက် : အဓိကရည်ရွယ်ချက်သည် ထုတ်လွှတ်မှု ကိုလျော့ချရန်နှင့် တက်နိုင်သလောက် လေအရည်အသွေးကို ထိန်းချုပ်ရန်ဖြစ်သည်။

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၁ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : စီမံကိန်းကာလအတွင်းတွင် ထုတ်လွှတ်မှု အားလုံးအတွက် (မီးခိုးနှင့်ဖုန်မှုန့်) အောက်ပါများကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- အထက်မှာရှင်းပြထားသော အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅ ကိုလိုက်နာခြင်း
- မီးခိုးထွက်နည်းပြီး ပတ်ဝန်းကျင်နှင့်လိုက်လျောညီထွေဖြစ်သော ကိရိယာများကို ဝယ်ယူခြင်း
- ခြောက်သွေ့သောကာလများတွင် ဖုန်မှုန့်ထွက်ခြင်းအတွက် လိုအပ်လျှင် နေ့တိုင်းရေဖြန်းခြင်း
- ယာဉ်သွားလာမှုကို ကန့်သတ်ခြင်း (သတ်မှတ်နှုန်း တစ်နာရီ မိုင် ၂၀)
- အမှိုက်များကို ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းကို ရှောင်ရှားခြင်း
- ဖုန်မှုန့်များကို စုပ်ယူနိုင်ရန် အတွက် အစိမ်းရောင် (ကြီးမြန်သစ်ပင်များ) ဖန်တီးခြင်း
- မီးခိုးထွက်ရှိမှု လျော့နည်းစေရန် ယာဉ်နှင့် စက်ကိရိယာများကို ပုံမှန် ပြုပြင်၊ ပုံမှန်ထိန်းသိမ်း၊ ပုံမှန်ဆီထိုးပြုလုပ်ခြင်း
- လိုအပ်လျှင် ဝန်ထမ်းများကို PPE ထောက်ပံ့ပေးခြင်း
- ဒေသခံများမှ ဖုန်မှုန့်များ၊ မီးခိုးများနှင့်ပတ်သပ်၍ တိုင်ကြားလျှင် GRM ဆောင်ရွက်ခြင်း
- လေအရည်အသွေးအတွက် ပညာရှင်များဌာရမ်းပြီး ပုံမှန် (တစ်နှစ်နှစ်ကြိမ်) လေ့လာစောင့်ကြပ်ကြည့်ရှုခြင်း များလုပ်ဆောင်ခြင်း
- မီးခိုးနှင့် ဖုန်မှုန့်အခြေအနေကို မျက်မြင်ဖြင့် နေ့တိုင်းစစ်ဆေးခြင်း
- အပတ်စဉ် သို့မဟုတ် လအလိုက် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို လေ့လာစောင့်ကြပ်ကြည့်ရှု စစ်ဆေးခြင်း

၂။ ဆူညံသံနှင့် တုန်ခါမှုစီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရှည်ရွယ်ချက် : အဓိကရှည်ရွယ်ချက်သည် စက်ရုံ စီမံကိန်းလည်ပတ်ခြင်းမှ ထွက်ရှိလာသော ဆူညံနှင့် တုန်ခါမှုအဆင့်များကို လျော့ချရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၃ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : စက်ရုံ စီမံကိန်းလည်ပတ်ခြင်းမှ ထွက်ရှိလာသော ဆူညံနှင့် တုန်ခါမှုအဆင့်များကို လျော့ချရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၃ ကိုလိုက်နာခြင်း
- ဆူညံမှုနည်းသော ယာဉ်ယန္တရားများကို ဝယ်ယူခြင်း
- ဖြစ်နိုင်လျှင် ဆူညံသံထွက်သောစက်များတွင် muffler သို့မဟုတ် silencer များတပ်ဆင်ခြင်း
- တုန်ခါမှုကို လျော့ချနိုင်ရန် စက်ကိရိယာများအတွက် အောက်ခံနေရာများကို တည်ငြိမ်စေခြင်း
- ဆူညံသံနှင့်တုန်ခါမှု လျော့နည်းစေရန် ယာဉ်နှင့် စက်ကိရိယာများကို ပုံမှန် ပြုပြင်၊ ပုံမှန်ထိန်းသိမ်း၊ ပုံမှန်ဆီထိုးပြုလုပ်ခြင်း
- ကားတပ်ဆင်ခြင်းလုပ်ငန်းကို ညအချိန်တွင် မပြုလုပ်ခြင်း (အလုပ်လုပ်ချိန်သည် နေ့ဘက်တွင်သာဖြစ်ပါသည်)
- တုန်ခါမှုကို လျော့ချရန် ယာဉ်များ ရွေ့လျားခြင်းကို ကန့်သတ်ခြင်း
- တုန်ခါမှုလျော့ချရန် လမ်းမျက်နှာပြင်ကို ညီညာပြီး ချောမွေ့စေရန် ပြုလုပ်ခြင်း
- ဆူညံသံကို စုပ်ယူနိုင်ရန် စက်ရုံပတ်ပတ်လည်လည်တွင် အစိမ်းရောင် (ကြီးမြန်သစ်ပင်များ) ကို ဖန်တီးခြင်း
- လိုအပ်လျှင် ဝန်ထမ်းများကို PPE ထောက်ပံ့ပေးခြင်း
- GRM ဆောင်ရွက်ထားရှိခြင်း (ဒေသခံများမှ ဆူညံသံနှင့်ပတ်သက်၍ တိုင်ကြားနိုင်ရန်)
- အပတ်စဉ် သို့မဟုတ် လအလိုက် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ပုံမှန် လေ့လာစောင့်ကြပ် ကြည့်ရှုစစ်ဆေးခြင်း

၃။ ရေအရည်အသွေးနှင့် စွန့်ပစ်ရေစီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရည်ရွယ်ချက် : အဓိကရည်ရွယ်ချက်သည် မည်သည့် အပေါ်ယံရေ သို့မဟုတ် မြေအောက်ရေ အရည်အသွေးကို သက်ရောက်မှု မရှိစေရန် နှင့် စွန့်ပစ်ရေ (စွန့်ထုတ်ရေ) ကို စီမံခန့်ခွဲရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၂ (အထွေထွေ ဆောင်ရွက်ချက်) ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : စွန့်ပစ်ရေကြောင့် သက်ရောက်မှုကို ရှောင်ရှားရန်နှင့် စွန့်ပစ်ရေကို ထိန်းချုပ်ရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (NEQEG) ၂၀၁၅၊ အမှတ်စဉ် ၁.၂ ကိုလိုက်နာခြင်း
- ဝန်ထမ်းများကို သောက်ရေထောက်ပံ့ပေးခြင်း
- မည်သည့်လုပ်ဆောင်ချက်များကြောင့်မျှ ရေလမ်းကြောင်းကို မထိခိုက်ခြင်း (ပန်းလှိုင်မြစ်)
- မြေဆီလွှာတိုက်စားခြင်းကို ကာကွယ်ခြင်း (မိုးရာသီအတွင်းတွင် မြောင်းကမ်းဘေး)
- စွန့်ပစ်ပစ္စည်းများ (အစိုင်အခဲနှင့်အရည်) ကို မည်သည့်ရေရှိသည့် နေရာတွင်မှ စွန့်ပစ်ခြင်းကို ရှောင်ရှားခြင်း
- ရေထိန်းသိမ်းခြင်းကို ဝန်ထမ်းများအား ပညာပေးခြင်း
- ကားတပ်ဆင်ထုတ်လုပ်ခြင်းတွင် စက်မှုဆိုင်ရာစွန့်ပစ်ရေမရှိပေ။ လူသုံးရေသာရှိခြင်း၊ အထူးသန့်စင်သည့်နည်းစနစ်မလိုအပ်ပေ။
- လူသုံးစွန့်ပစ်ရေနှင့် မိုးရေများအတွက် ရေမြောင်းများ စနစ်တကျ ပြုလုပ်ခြင်း
- ရုံးခန်း၊ အဆောင်၊ မီးဖိုချောင်၊ ရေးချိုးခန်း အစရှိသော လူသုံးစွန့်ပစ်ရေများမှာ မြောင်းအတွင်းတွင် ခြောက်သွေ့ခြင်း (အထူးသန့်စင်ခြင်းစနစ်မလိုအပ်ပေ)
- အိမ်သာများမှ ရေသည် မိလ္လာကန်ထဲတွင် အဆုံးသတ်ခြင်း
- ပုံမှန် ရေအရည်အသွေးကို စောင့်ကြပ်ကြည့်ရှု စစ်ဆေးခြင်း (ပညာရှင်များ ငှားရမ်း၍ ခြောက်လတစ်ကြိမ်)
- ရေအခြေအနေကို အပတ်စဉ် မျက်မြင်ဖြင့် စစ်ဆေးခြင်း
- အပတ်စဉ် သို့မဟုတ် လအလိုက် ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ပုံမှန် လေ့လာစောင့်ကြပ်ကြည့်ရှု စစ်ဆေးခြင်း

၄။ စွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရည်ရွယ်ချက် : အဓိကရည်ရွယ်ချက်မှာ စက်မှုဆိုင်ရာစွန့်ပစ်ပစ္စည်းနှင့် လူသုံးစွန့်ပစ်ပစ္စည်းများ ကို လျော့ချရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၂ နှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး နည်းဥပဒေ ၂၀၁၄ တို့ကိုလိုက်နာပါမည်။ စွန့်ပစ်ပစ္စည်းများအား ပတ်ဝန်းကျင် မညစ်ညမ်းစေရန် ပတ်ဝန်းကျင်နှင့် လိုက်လျောညီထွေရှိစေသော နည်းလမ်းနှင့်အတူ စွန့်ပစ်ရန်ဖြစ်သည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၂၊ ပုဒ်မ ၁၄၊ ၁၅၊ ၃၂ နှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး နည်းဥပဒေ၊ ၂၀၁၄၊ ပုဒ်မ ၆၉ တို့ကို လိုက်နာခြင်း
- စွန့်ပစ်ပစ္စည်းများ ကိုယ်တွယ်ခြင်းအတွက် သင့်တော်သော သင်တန်းများပေးခြင်း၊ ကောင်းမွန်သော သန့်ရှင်းရေးနှင့် စွန့်ပစ်ပစ္စည်းများ လျော့ချခြင်းကိုလည်း ပညာပေးခြင်း
- ကားတပ်ဆင်ထုတ်လုပ်ခြင်းလုပ်ငန်းတွင် အဓိကစက်မှုဆိုင်ရာ စွန့်ပစ်ပစ္စည်းသည် အိုဟောင်းသော ပါကင်ပုံးပစ္စည်းများ ဥပမာ-သစ်သား၊ ပလတ်စတစ်၊ သုံးထပ်သားပြားများ
- လူသုံးစွန့်ပစ်ပစ္စည်းများကို နေ့စဉ်စုဆောင်းပြီး အမှိုက်ပုံးအသေး သို့မဟုတ် အမှိုက်ပုံးအကြီးများ (ရုံးခန်းနှင့် အဆောင်ထဲမှ အမှိုက်ပုံးများ၊ မီးဖိုချောင်မှ အမှိုက်ပုံးများနှင့် စက်ရုံဝန်အတွင်းရှိ အခြား အမှိုက်ပုံးများ) ထဲသို့ စွန့်ပစ်ခြင်း၊ လူသုံးစွန့်ပစ်ပစ္စည်းများမှာ မပြောပလောက်ပေ။ စက်ရုံဝန်အတွင်းတွင် ဝန်ထမ်းများ မနေထိုင်ပေ။
- ပြန်လည်အသုံးပြုနိုင်သည့် စွန့်ပစ်ပစ္စည်းနှင့် အသုံးမပြုနိုင်သည့် စွန့်ပစ်ပစ္စည်း ဟူ၍ ခွဲခြားခြင်း၊ အမှိုက်ပုံးများကို သီးသန့်ခွဲထားခြင်း
- အမှိုက်များကို ဟင်းလင်းပွင့်တွင် မီးရှို့ခြင်းအား ရှောင်ရှားခြင်း
- လစဉ် စွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲမှုကို စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်း
- အကျိုးသက်ရောက်သော ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်း
- GRM ဆောင်ရွက်ထားရှိခြင်း (ဒေသခံများမှ စွန့်ပစ်ပစ္စည်းနှင့်ပတ်သပ်၍ တိုင်ကြားနိုင်ရန်)

၅။ မြေဆီလွှာ စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ် (တိုက်စားခြင်းနှင့် အနည်ကျခြင်း)

ရည်ရွယ်ချက် : အဓိကရည်ရွယ်ချက်သည် မြေဆီလွှာတိုက်စားခြင်းကို တားဆီးခြင်း၊ စီမံကိန်းလုပ်ငန်းများကြောင့် မြေဆီလွှာ တည်ဆောက်မှုပျက်စီးခြင်းအား ကာကွယ်ခြင်း၊

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၂ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : မြေဆီလွှာတိုက်စားခြင်းနှင့် ပျက်စီးခြင်းမှကာကွယ်နိုင် ရန်အတွက် အောက်ပါများကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- မြေဆီလွှာ ညစ်ညမ်းမှုကို ရှောင်ရှားခြင်း၊ လောင်စာဆီများ မြေဆီလွှာပေါ်သို့ လှုံ့ကျခြင်းမှ ရှောင်ရှားခြင်း၊ လှုံ့ကျခဲ့လျှင် ချက်ချင်း ဖယ်ရှားခြင်း
- (မိုးရာသီအတွင်းတွင်) စီမံကိန်းလုပ်ဆောင်ခြင်းကြောင့် မြေဆီလွှာတည်ဆောက်မှု အပေါ် သက်ရောက်မှု မဖြစ်စေခြင်း
- မြေဆီလွှာတည်ငြိမ်ခြင်းနှင့် အလွယ်တကူ တိုက်စားမှုမဖြစ်စေရန် တက်နိုင်သလောက် မြေဆီလွှာကို ကျစ်လစ်သိပ်သည်းစေရန် ပြုလုပ်ထားခြင်း
- ဧရိယာကို မြေပြင်အတိုင်းထားခြင်းကို လျော့ချခြင်း (တက်နိုင်သလောက် မြေတိုက်စားခြင်းကို ကာကွယ်ရန် အပင်၊ မြက်များကို စိုက်ပျိုးခြင်း)
- စီးဆင်းရေးနှင့် မိုးရေကို ထိန်းချုပ်ခြင်း (သင့်တော်သော မြောင်းစနစ် ဖန်တီးခြင်း၊ မိုးရေများကို ဆားတလင်းချောင်းထဲသို့ လွှပ်လပ်စွာစီးဆင်းစေခြင်း)
- စက်ရုံဝန်းဧရိယာနှင့် အနီးနားတွင် မြေတိုက်စားခြင်းနှင့် အနည်ထိုင်ခြင်း မဖြစ်စေရန်ပြုလုပ်ခြင်း
- အနည်ထိုင်ခြင်းမဖြစ်ပေါ်စေရန် အမှိုက်များကို မြောင်းအတွင်းသို့ ဝင်ရောက်ခြင်းကို တားဆီးခြင်း
- အပတ်စဉ် သို့မဟုတ် လအလိုက် မြေဆီလွှာအခြေအနေကို စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်း
- (မိုးရာသီအတွင်းတွင် အပတ်စဉ် သို့မဟုတ် လအလိုက်) အကျိုးသက်ရောက်သော ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်း

၆။ လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေး စီမံခန့်ခွဲမှု လုပ်ဆောင်ချက် အစီအစဉ်

ရည်ရွယ်ချက် : ဝန်ထမ်းများအပေါ် ကျန်းမာရေးသက်ရောက်မှုကို တားဆီးရန်နှင့် တက်နိုင်သလောက် လုပ်ငန်းခွင်တွင် မတော်တဆမှု မရှိစေရေး လုပ်ဆောင်ရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ဥပဒေ၊ ၂၀၁၉ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : အောက်ပါအချက်များကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည့်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- ဘေးအန္တရာယ်ကင်းရှင်းသော အလုပ်လုပ်သော နေရာနှင့် အခြေအနေ ဖန်တီးပေးခြင်း
- ဝန်ထမ်းများကို ကောင်းမွန်သော အလုပ်လုပ်ခြင်း အလေ့အထ၊ ကောင်းမွန်သော ဘေးအန္တရာယ်ကင်းရှင်းသော အလေ့အထ၊ ကောင်းမွန်သော သန့်ရှင်းစေသော အလေ့အထ၊ ဤအလေ့အထကောင်းများကို အလုပ်သမားတစ်ဦး တစ်ယောက်စီတိုင်း၏ စိတ်ထဲတွင်စွဲမြဲစေရန် သင်ကြားပေးခြင်း
- လူဖြင့်လုပ်ရသောအလုပ်ထက် စက်ဖြင့်လုပ်ရသော အလုပ်ကို တက်နိုင်သလောက် လုပ်ဆောင်ခြင်း
- ဘေးအန္တရာယ်ကင်းရှင်းရေးအတွက် ပစ္စည်းများ၊ စက်ကိရိယာနှင့် ယာဉ်ယန္တရားများအားလုံးကိုယ်တွယ်ခြင်းအတွက် သင်တန်းပေးခြင်း
- အကျိုးသက်ရောက်သောသင်တန်းပေးခြင်း၊ ဘေးအန္တရာယ်ကင်းရှင်းစွာ လုပ်ဆောင်နိုင်ရန် ထောက်ပံ့ပေးခြင်း
- ဝန်ထမ်းများအား OHS သင်တန်းပေးထားခြင်း
- မည်သည့်အကြောင်းနှင့်မျှ မီးလောင်ခြင်းနှင့် ပေါက်ကွဲခြင်းကို ရှောင်ရှားခြင်း
- အချက်ပြစနစ်များ တပ်ဆင်ခြင်း
- ဝန်ထမ်းအချို့အတွက် ရှေးဦးသူနာပြုသင်တန်းနှင့် မီးသတ်သင်တန်းပေးခြင်း၊ လုံလောက်သော ကိရိယာ ထောက်ပံ့ပေးခြင်း (ဥပမာ-ရှေးဦးသူနာပြုပုံးများနှင့် မီးသတ်ဆေးပုံးများ)
- အရေးပေါ်တုန့်ပြန်မှုအတွက် အစီအစဉ်ရေးဆွဲထားခြင်း
- စက်ရုံအတွက်အာမခံထားရှိခြင်းနှင့် ဝန်ထမ်းများအတွက် အသက်အာမခံထားရှိခြင်း

စီမံကိန်းပိတ်သိမ်းစဉ်ကာလအတွင်းတွင်

ရှည်ရွယ်ချက် : စနစ်တကျပိတ်သိမ်းခြင်းလုပ်ဆောင်ရန်နှင့် စီမံကိန်းနေရာကို ပြန်လည်ရှင်သန်စေရန်

တရားရေးရာလိုအပ်ချက် : တရားရေးရာလိုအပ်ချက်အနေဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၁၂ နှင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ဥပဒေ၊ ၂၀၁၉ ကိုလိုက်နာပါမည်။

စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များ : အောက်ပါအချက်များကို လုပ်ဆောင်ပါမည်။ ဤအရာများကို အခန်း (၆၊ ၆.၂) နှင့် (၈၊ ၈.၅) ဇယားများမှ ဖြေလျော့နိုင်မည်နည်းလမ်းများကို ကောက်နုတ်ထားပြီး အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

- အကျိုးသက်ရောက်ပြီး ဘေးအန္တရာယ်ကင်းရှင်းသော ပိတ်သိမ်းခြင်းလုပ်ငန်းဖြစ်စေရန် စီမံခြင်း
- ပိတ်သိမ်းခြင်းကန်ထရိုက်ငှားရမ်းခြင်း၊ အဆောက်အဦဖျက်သိမ်းခြင်းအတွက် ငှားရမ်းခြင်းနှင့် ကိရိယာတန်ဆာပလာများကို ဖျက်သိမ်းခြင်း၊ စီမံကိန်းနေရာကို သန့်ရှင်းသပ်ရပ်စွာထားခြင်း
- အသုံးပြုနိုင်သောနှင့် ပြန်လည်ရောင်းချနိုင်သော ပစ္စည်းများကို ပြန်လည်ရောင်းချခြင်း၊ အသုံးမပြုနိုင်သော ပစ္စည်းများကို စွန့်ပစ်ခြင်း
- မြေဆီလွှာညစ်ညမ်းခဲ့လျှင် ဖယ်ရှား၍ စွန့်ပစ်ခြင်း
- လေ၊ ရေနှင့် မြေအရည်အသွေးများကို နောက်ဆုံးအကြိမ် စမ်းသပ်ခြင်း၊ အဆိုပါရလဒ်များသည် လမ်းညွှန်ချက်တန်ဖိုးများအတွင်း ရှိနေခြင်း (လေ၊ ရေနှင့်မြေဆီလွှာသည် မညစ်ညမ်းပေ၊ မြေဆီလွှာ မတိုက်စားပေ)
- ပြန်လည်ရှင်သန်ခြင်းလုပ်ငန်းအတွက် အပင်များကို စိုက်ပျိုးခြင်း၊ စီမံကိန်းနေရာကို ဂေဟဗေဒဆိုင်ရာ ပြန်လည်ရှင်သန်စေရန်ဆောင်ရွက်ခြင်း
- အကျိုးသက်ရောက်သော ပြန်လည်ရှင်သန်ခြင်းဖြစ်စေရန် ဆောင်ရွက်ခြင်း၊ ပြန်လည်စိုက်ပျိုးသောအပင်အားလုံး ကောင်းမွန်စွာရှင်သန်စေခြင်း
- အကျိုးသက်ရောက်သော ပိတ်သိမ်းခြင်းနှင့် ပြန်လည်ရှင်သန်ခြင်းလုပ်ငန်းများကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း
- ပိတ်သိမ်းခြင်းနှင့် ပြန်လည်ရှင်သန်ခြင်းပြီးနောက် စီမံကိန်းနေရာသည် ဒေသအဖွဲ့အစည်းအတွက် ဘေးအန္တရာယ်ကင်းရှင်းသော နေရာဖြစ်စေခြင်း

စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း အစီအစဉ်

စီမံကိန်းကာလတစ်ခုစီအတွက် ပြီးပြည့်စုံသော စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း အစီအစဉ်ကို အသေးစိတ် ဇယားဖြင့် အခန်း (၆၊ ၆.၂.၅) တွင်ဖော်ပြထားပါသည်။

ရုပ်ပိုင်းဆိုင်ရာ အတွက် စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်းအစီအစဉ်ကို ဇယားဖြင့် ထပ်မံဖော်ပြထားပါသည်။

တည်ဆောက်ရေးကာလအတွက် စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်းအစီအစဉ် ဇယားဖြင့် အကျဉ်းချုပ် (လက်တွေ့လုပ်ဆောင်နိုင်သော)

စဉ်	သက်ရောက်မှု	စောင့်ကြပ်ကြည့်ရှုရမည့်ပါရာမီတာများ	စောင့်ကြပ်ကြည့်ရှုရမည့်နေရာ	အကြိမ်အရေအတွက်	တာဝန်ရှိသူ	ကုန်ကျစရိတ် (တစ်ခါ)
၁။	လေပတ်ဝန်းကျင်/ လေထုတ်လွှတ်မှု	- NO ₂ , Ozone, PM ₁₀ , PM _{2.5} , SO ₂	16° 51' 19.71"N 96° 04' 48.04"E	တည်ဆောက်ရေးကာလအတွင်းတွင် တစ်ကြိမ်	ပညာရှင် ဌားရမ်း	ကျပ် ၁,၇၀၀,၀၀၀
၂။	ဆူညံသံနှင့် တုန်ခါမှု	- နေ့အချိန် dBA နှင့် ညအချိန် dBA	16° 51' 19.71"N 96° 04' 48.04"E	တည်ဆောက်ရေးကာလအတွင်းတွင် တစ်ကြိမ်	ပညာရှင် ဌားရမ်း	ကျပ် ၇၀,၀၀၀
၃။	ရေပတ်ဝန်းကျင်/ စွန့်ထုတ်မှု	- 5 day BOD, Ammonia, Arsenic, Cadmium, COD, Chlorine, Chromium, Copper, Cyanide, Fluoride, Iron, Lead, Mercury, Nickel, Oil and grease, P ^H , Sulphide, Temperature increase, Total coliform bacteria, Total phosphorus, Total suspended solids, Zinc	16° 51'20.80"N 96°04'48.13"E	တည်ဆောက်ရေးကာလအတွင်းတွင် တစ်ကြိမ်	ပညာရှင် ဌားရမ်း	ကျပ် ၈၀,၀၀၀

၄။	မြေဆီလွှာနှင့် မြေအောက်ရေ ညစ်ညမ်းမှု	- လောင်စာဆီ၊ အမဲဆီ၊ ဓါတုပေဒပစ္စည်း (ရှိခဲ့လျှင်) လျှို့ဝှက်ခြင်းကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း	16° 51' 20"N 96° 04' 51"E	အပတ်စဉ်	EMP အဖွဲ့ဝင်များ	အခမဲ့
၅။	တိုက်စားခြင်း	- မြေကြီးလုပ်ငန်းနှင့် မြောင်းစနစ်များကို စောင့်ကြပ်ကြည့်ရှု စစ်ဆေးခြင်း	16° 51' 18.79"N 96° 04' 47.40"E	အပတ်စဉ် (အထူးသဖြင့် မိုးရာသီ)	EMP အဖွဲ့ဝင်များ	အခမဲ့
၆။	အစိုင်အခဲစွန့်ပစ် ပစ္စည်း (တည်ဆောက်ရေး ပစ္စည်း၊အမှိုက်သရိုက်)	- ထွက်ရှိလာသော အမှိုက်များကိုအမျိုးအစားခွဲခြားခြင်း၊ ပြန်လည်အသုံးပြုခြင်းနှင့် စွန့်ပစ်ခြင်း	16° 51' 19.73"N 96° 04' 48.05"E	အပတ်စဉ်	EMP အဖွဲ့ဝင်များ	အခမဲ့
၇။	ဖိတ်မျိုးစုံမျိုးကွဲ	- မြက်နှင့် အပင်ငယ်များကို ရှင်းလင်းခြင်းအား စောင့်ကြပ်ကြည့်ရှု စစ်ဆေးခြင်း	16° 51' 18.81"N 96° 04' 47.52"E	အပတ်စဉ်	EMP အဖွဲ့ဝင်များ	အခမဲ့
၈။	မီးဘေးအန္တရာယ် ကာကွယ်ခြင်းအတွက် အစီအစဉ်	- မီးဘေးအန္တရာယ်ကို ကာကွယ်ခြင်းအတွက် အစီအစဉ်များ ရေးဆွဲခြင်း - ဆောက်လုပ်ရေးပစ္စည်းများကို စုပုံခြင်းသည် မီးအလွယ်တကူ လောင်စေခြင်းကြောင့် စောင့်ကြပ်ကြည့်ရှု လေ့လာခြင်း	16° 51' 19.44"N 96° 04' 49.07"E	အပတ်စဉ်	EMP အဖွဲ့ဝင်များ	အခမဲ့

စီမံကိန်းလည်ပတ်ခြင်းအတွက် ဇယားဖြင့် စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်းအစီအစဉ် အနှစ်ချုပ်

(က) လက်တွေ့လုပ်ဆောင်ချက်

စဉ်	သက်ရောက်မှု	စောင့်ကြပ်ကြည့်ရှုရမည့်ပါရာမီတာများ	စောင့်ကြပ်ကြည့်ရှုရမည့်နေရာ	အကြိမ်အရေအတွက်	တာဝန်ရှိသူ	ကုန်ကျစရိတ် (တစ်ခါ)
၁။	ထုတ်လွှတ်မှု	- NO ₂ , Ozone, PM ₁₀ , PM _{2.5} , SO ₂	16° 51' 19.71"N 96° 04' 48.04"E	ခြောက်လတစ်ကြိမ်	ပညာရှင်ဌားရမ်း	ကျပ် ၁,၇၀၀,၀၀၀
၂။	စွန့်ထုတ်မှု	- 5 day BOD, Ammonia, Arsenic, Cadmium, COD, Chlorine, Chromium, Copper, Cyanide, Fluoride, Iron, Lead, Mercury, Nickel, Oil and grease, pH, Sulphide, Temperature increase, Total coliform bacteria, Total phosphorus, Total suspended solids, Zinc	16° 51'20.80"N 96°04'48.13"E	ခြောက်လတစ်ကြိမ်	ပညာရှင်ဌားရမ်း	ကျပ် ၈၀,၀၀၀
၃။	ဆူညံသံနှင့် တုန်ခါမှု	- နေ့အချိန် dBA နှင့် ညအချိန် dBA	16° 51' 19.71"N 96° 04' 48.04"E	ခြောက်လတစ်ကြိမ်	ပညာရှင်ဌားရမ်း	ကျပ် ၇၀,၀၀၀
		- Suspension ဧရိယာတွင် စောင့်ကြပ်ကြည့်ရှုခြင်း	16° 51' 20.10"N 96° 04' 49.65"E	ခြောက်လတစ်ကြိမ်	ပညာရှင်ဌားရမ်း	ကျပ် ၁၀၀,၀၀၀

၄။	မြေဆီလွှာ	<ul style="list-style-type: none"> - မြေဆီလွှာညစ်ညမ်းခြင်းကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း(ရှိခဲ့လျှင်) - မြေဆီလွှာတိုက်စားခြင်းကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း (ရှိခဲ့လျှင်) 	<p>16° 51' 20.44"N 96° 04' 47.99"E</p> <p>စက်ရုံဝန်းအတွင်း</p>	<p>အချိန်နှင့်အမျှ</p> <p>မိုးရာသီ</p>	<p>ပညာရှင် ဌားရမ်း</p> <p>EMP အဖွဲ့ဝင်များ</p>	<p>ကျပ်၁၄၀,၀၀၀</p> <p>အခမဲ့</p>
၅။	အစိုင်အခဲစွန့်ပစ်ပစ္စည်း	<ul style="list-style-type: none"> - ပါကင်ပစ္စည်းများကို စုဆောင်းခြင်းနှင့် စွန့်ပစ်ခြင်း ကို စောင့်ကြပ်ကြည့်ရှု လေ့လာခြင်း - ထွက်ရှိလာသော အမှိုက်များကို စုဆောင်းခြင်းနှင့် စွန့်ပစ်ခြင်းကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း 	<p>16° 51' 19.73"N 96° 04' 48.05"E</p> <p>စက်ရုံဝန်းအတွင်း</p>	<p>နေ့စဉ်</p> <p>အပတ်စဉ်</p>	<p>EMP အဖွဲ့ဝင်များ</p> <p>EMP အဖွဲ့ဝင်များ</p>	<p>အခမဲ့</p> <p>အခမဲ့</p>
၆။	မြေအောက်ရေ	<ul style="list-style-type: none"> - Total coliforms, Fecal coliforms, Color, Turbidity, Arsenic, Lead, Nitrate, Manganese, Chloride, Hardness, Iron, P^H, Sulphate, Total Dissolved Solids 	<p>16° 51' 20"N 96° 04' 51"E</p>	<p>နေ့စဉ်</p>	<p>EMP အဖွဲ့ဝင်များ</p>	<p>ကျပ် ၃၀၀,၀၀၀</p>

စဉ်	သက်ရောက်မှု	စောင့်ကြပ်ကြည့်ရှုရမည့်ပါရာမီတာများ	စောင့်ကြပ်ကြည့်ရှုရမည့်နေရာ	အကြိမ်အရေအတွက်	တာဝန်ရှိသူ	မှတ်ချက်
၁။	စီမံကိန်းပိတ်သိမ်းခြင်းနှင့် ပြန်လည်ရှင်သန်ခြင်း	<ul style="list-style-type: none"> - ကြွင်းကျန်သက်ရောက်မှုများကို ဖယ်ရှားခြင်းအပါအဝင် စီမံကိန်းပိတ်သိမ်းခြင်းလုပ်ငန်းစဉ်ကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း - ပြန်လည်ရှင်သန်ခြင်းလုပ်ငန်းစဉ်ကို စောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်း 	<ul style="list-style-type: none"> - စက်ရုံဝန်းအတွင်း - စက်ရုံဝန်းအတွင်း 	<ul style="list-style-type: none"> - အပတ်စဉ် - လအလိုက် 	<ul style="list-style-type: none"> - EMP အဖွဲ့ဝင်များ - EMP အဖွဲ့ဝင်များ 	<ul style="list-style-type: none"> - အခမဲ့ - အခမဲ့

ဤစောင့်ကြပ်ကြည့်ရှုလေ့လာခြင်းကို ခြောက်လတစ်ကြိမ် လုပ်ဆောင်ပြီး ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန (ECD) သို့ အစီရင်ခံတင်ပြပါမည်။

လူထုတွေ့ဆုံဆွေးနွေးခြင်း

လူထုတွေ့ဆုံဆွေးနွေးခြင်းသည် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) ၏ မဖြစ်မရှိအရေးပါသော အစိတ်အပိုင်းဖြစ်သည်။ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) လုပ်ငန်းတွင် လူထုပူးပေါင်းပါဝင်ခြင်းသည် စီမံကိန်းကို လက်ခံနိုင်မှုနှင့် နားလည်နိုင်မှု မြင့်တက်စေပါသည်။

လူထုတွေ့ဆုံဆွေးနွေးခြင်းသည် ဒေသခံများ၊ ပါဝင်ပတ်သက်သူများနှင့် စီမံကိန်းထိခိုက်ခံစားရသူများ သူတို့၏ အမြင်သဘောထားများ၊ သဘောထားမှတ်ချက်များနှင့် သူတို့၏ အမြင်များ ရှိခဲ့လျှင် ဖော်ပြနိုင်ပါသည်။

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း လေ့လာချိန်အတွင်းတွင် ပြုလုပ်သော လူထုတွေ့ဆုံပွဲ

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း လေ့လာချိန်အတွင်းတွင် လူထုတွေ့ဆုံပွဲကို ၂၉-၅-၂၀၁၉ တွင် စက်ရုံ၌ ကျင်းပ၍ တက်ရောက်သူ ၃၀ ဦးရှိခဲ့ပါသည်။

အဆိုပါ ၃၀ ဦးတွင် လှိုင်သာယာမြို့နယ်မီးသတ်တပ်ဖွဲ့မှ အရာရှိများ၊ စက်မှုဇုန်ဈေးတန်းရပ်ကွက် အုပ်ချုပ်ရေးမှူး၊ ပါဝင်ပတ်သက်သူများနှင့် စိတ်ပါဝင်စားသူများ တက်ရောက်ခဲ့ပါသည်။

ဦးချမ်းဝင်း (မြန်မာအဆင့်မြင့်ကားကုမ္ပဏီလီမိတက်မှတာဝန်ရှိသူ) နှင့်ဦးမြင့်ကျော်သူရ (MESC မှအဖွဲ့ခေါင်းဆောင်) တို့မှ တက်ရောက်လာသူများအား စီမံကိန်းအကြောင်းအရာများကို ရှင်းပြခဲ့ပါသည်။

ဒေသခံတစ်ဦး (ဒေါ်သက်သက်လွင်)မှ အနီးနားရှိ ပလတ်စတစ်စက်ရုံမှ အနံ့ဆိုးထွက်ရှိမှုကို ပြောကြားခဲ့ပါသည်။

ဦးခင်မောင်စန်း (မြန်မာအဆင့်မြင့်ကားကုမ္ပဏီလီမိတက်မှ အုပ်ချုပ်မှုဒါရိုက်တာ)မှ အဆိုပါကိစ္စအား စက်မှုဇုန်စီမံခန့်ခွဲရေးကော်မတီသို့ တင်ပြသင့်ပါသည်။ ထိုမှသာလျှင် ကော်မတီမှ အကျိုးသက်ရောက်စွာ လုပ်ဆောင်နိုင်မည်ဖြစ်ပါသည်။

ဒေသခံတစ်ဦး (ဦးအောင်ကျော်ထူး) မှ စီမံကိန်းသည် မီးခိုး၊ စွန့်ပစ်ပစ္စည်းနှင့် အနောက်ယှက်များ မရှိသောကြောင့် စီမံကိန်းကို ထောက်ခံပါသည်ဟု ပြောကြားခဲ့ပါသည်။

ဒေသခံတစ်ဦး (ဦးစိုးလွင်) မှလည်းပဲ စီမံကိန်းကို ထောက်ခံပါသည်ဟု ပြောကြားခဲ့ပါသည်။

စီမံကိန်းကိုမည်သူမျှ မဆန့်ကျင်ပေ။ ဤစက်မှုဇုန်သည် လွန်ခဲ့သော အနှစ် (၂၀) ကတည်းက တည်ရှိပြီးဖြစ်၍ ဒေသခံများသည် စက်မှုဇုန်နှင့် ရင်းနှီးပြီးသားဖြစ်ပါသည်။ အများစုမှာ ဤစက်မှုဇုန်တွင် အလုပ်လုပ်ကိုင်ကြပါသည်။ ကားတပ်ဆင်စက်ရုံသည် ပတ်ဝန်းကျင်ညစ်ညမ်းသည့်အရာမဟုတ်ပေ။ ထို့ကြောင့် ဤစီမံကိန်းကို ကန့်ကွက်သူမရှိပေ။

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) လေ့လာချိန်အတွင်းတွင် ပြုလုပ်သော လူထုတွေ့ဆုံ ဆွေးနွေးခြင်း

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) လေ့လာချိန်အတွင်းတွင် လူထုတွေ့ဆုံဆွေးနွေးခြင်းကို လုံခြုံရေးကြောင့် မကျင်းပနိုင်ပေ။ (စစ်တပ်အမှုထမ်းများသည် စီမံကိန်းနေရာ ကပ်လျက်ရှိသော ကျန်းမာရေးနှင့် အားကစားဝန်ကြီးဌာနပိုင် လေ့ကျင့်ခန်းမဝန်းအတွင်းတွင် နေရာယူထားပါသည်။ ထို့ကြောင့် ဤဧရိယာတွင် လူစုလူဝေး လုပ်ခွင့်ပေးပေ။)

သတင်းအချက်အလက်ထုတ်ဖော်ကြေငြာခြင်း

ပထမနှင့်ဒုတိယ အစည်းအဝေး၏မှတ်တမ်းများအားလုံးကို ဒေသခံများအား ဖြန့်ဝေထားပြီး စိတ်ပါဝင်စားသူများ ဖတ်ရှုနိုင်ရန် မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်၏ ရုံးခန်းနှင့် အတိုင်ပင်ခံအဖွဲ့အစည်း MESC၏ ရုံးခန်းတို့ တွင် ထားရှိပါသည်။

ဤအစည်းအဝေးမှတ်တမ်းများကိုလည်း မှတ်တမ်းတင်ထား၍ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာထဲတွင် ထည့်သွင်းဖော်ပြထားပါသည်။ ဤ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာ ခွင့်ပြုချက်ရလျှင် (အကျဉ်းချုပ်အစီရင်ခံစာ) ကို အတိုင်ပင်ခံအဖွဲ့အစည်း၏ ဝဘ်ဆိုဒ်ဖြစ်သော www.myanmar.environment.sustainable.conservation.com တွင် လွှင့်တင်ပါမည်။ ခွင့်ပြုချက် ရရှိသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာကို စိတ်ပါဝင်စားသူများ ဖတ်ရှုနိုင်ရန် ကုမ္ပဏီ ရုံးခန်းတွင် ထားရှိပါမည်။

နောက်ထပ်ပြုလုပ်မည့် လူထုတွေ့ဆုံဆွေးနွေးခြင်း

လူထုတွေ့ဆုံဆွေးနွေးခြင်းသည် ပုံမှန်အဆက်မပြတ်ပြုလုပ်ရမည့် လုပ်ငန်းစဉ်ဖြစ်ပြီး စီမံကိန်းလည်ပတ်နေစဉ်အတွင်းတွင် နှစ်စဉ် သို့မဟုတ် ခြောက်လတစ်ကြိမ် ပြုလုပ်ပါမည်။ စီမံကိန်းအဆိုပြုသူသည် အဆိုပါနောက်ထပ်ပြုလုပ်မည့် လူထုတွေ့ဆုံဆွေးနွေးခြင်းများအတွက် အစီအစဉ်ရှိပါသည်။

1. EXECUTIVE SUMMARY

This is the Environmental Impact Assessment (EIA) report for the assembling, manufacturing and sales of motor vehicles by Myanmar Brilliance Auto Co., Ltd.

A scoping report for the project was submitted in February, 2020 (Amended) and was approved by the environmental authority, the Environmental Conservation Department (ECD), under the Ministry of Natural Resources and Environmental Conservation (MONREC) on 14-5-2021. (Document – EIA, 1/4- Sa (925/2021)). This EIA report is the follow up report.

Myanmar Brilliance Auto Co., Ltd was registered as a limited company by shares in August, 2018 (Document: Company Registration No.100601184; Dated: 16-8-2018; Certificate of Incorporation under the Myanmar Company Law).

The company has already obtained a permit from Myanmar Investment Commission (MIC); Permit No. Ma Na Tha 129/2018, dated 20-12-2018.

Motor vehicles (sedans) will be assembled and manufactured according to semi-knock down (SKD) system and marketed. The auto parts will be imported from China (from Brilliance Automotive Group Holdings Co., Ltd, Shenyang, Liaoning, China).

The proposed project site is at Plot No.246/M, inside the Industrial Zone (2) Hlaing Thar Yar Township, Yangon Region. The coordinates are: N. Lat. 16° 51' 19.05" and E. Log. 96° 04' 43.83" and the elevation is 26 ft. asl. The area is 2.420 acres (9793.401 sq. m).

The estimated budget is Ks 4177.9393 million (including US\$ 0.54995 million).

The type of business organization is 100% nationals owned. The proposed project involves the establishment of motor parts assembling plant and manufacturing of Brilliance vehicle models and also the marketing and servicing of the products in Myanmar.

The project was conceived after various agreements were signed between the Chinese manufacturer company, Brilliance Automotive Group Holdings Co., Ltd, Liaoning, China, and Myanmar Company, the Myanmar Brilliance Auto Co., Ltd.

The Project Proponent

Name of Project Proponent : Myanmar Brilliance Auto Co., Ltd

Address (Head office) : No. 18/A-1, Tharyarwaddy Street, Bahan Township, Yangon.

Telephone : 09 444456666, 09 695186300, 09 73738585, 09 974040700

Email : myanmarbrillianceauto2018@gmail.com

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Viber : +959 444456666

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Contact persons : Daw Pyae Win Thidar and U Khin Maung San

Telephone : 09 443005821, 09 974040700

Email : nipponauto2016@gmail.com;
chnislin13@gmail.com

Location of project site : Plot No. 264/M, Industrial Zone (2), Industrial Ward, Hlaing Thar Yar Township, Yangon Region

Telephone : 01 685847

Particulars of executive and administrative body

Name	Nationality & National Registration Card No.	Usual Residential Address	Designation	Other Business Occupation
U Khin Maung San	Myanmar 12/La Tha Na (N) 007499	No.18 (A1), Thar Yar Waddy Street, Bahan Township, Yangon Region.	Managing Director	Merchant
U Myo Kyaw	Myanmar 8/Ma Ka Na (N) 019149	No.64, Padonemar Street, (3) Ward, South Okkalapa Township, Yangon Region	Director	Merchant
U Min Min Maung	Myanmar 14/Pa Tha Na (N) 001570	No. (D 2/3), Thazin (2) Street, (9)Ward, Hlaing Township, Yangon Region	Director	Merchant
U Yan Myo Aung	Myanmar 5/Nga Za Na (N) 054378	No.(462), Thein Phyu Road, Mingalar Taung Nyunt Township, Yangon Region	Director	Merchant
U Aung Phone Myint	Myanmar 12/Ma Ya Ka (N) 104670	No.(42), Aung Mingalar Street, 7 Mile, Kone Myhint Yeik Thar, Mayangone Township, Yangon Region	Director	Merchant

Myanmar Brilliance Auto Co., Ltd is 100% owned by Myanmar nationals.

The authorized capital : Ks 100,000,000

The type of share : Ordinary share

The number of share : 1000

List of shareholders and percentage of share hold

U Khin Maung San	- Managing Director	60%
U Myo Kyaw	- Director	10%
U Min Min Maung	- Director	10%
U Yan Myo Aung	- Director	10%
U Aung Phone Myint	- Director	10%

About the consultant firm, Myanmar Environment Sustainable Conservation Co., Ltd (MESC)

MESC is a consultant firm officially registered in 2014 as a limited company (a consultant/service company) at the Ministry of National Planning and Economic Development. Document: YaKa-8(Ga) 001/2014(004720), dated: 6th June, 2014. Registration No. 830/2014-2015, (20-5-2014).

The Transitional Registration/License No. of the consultant firm, MESC is No. 0003, ECD, Dated 1st July 2017.

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Members of MESC who are IEE/EIA appraisers, or IEE/EIA practitioners or who are involved in this IEE/EIA project are as follows:-

Name	Nationality & National Registration Card No.	Registration/ license No. by ECD	Designation
U Myint Kyaw Thura M.Sc (Zoology)	Myanmar 12/Da Ga Ta (N)028349	0006	Managing Director, Biodiversity Specialist (Fauna), EIA practitioner and EIA Appraiser
Prof: Saw Han Shein B.Sc (Botany) M.Sc (Marine Biology)	Myanmar 10/Ma La Ma (N)008173	0007	Retired Professor, EIA Practitioner and Appraiser

U Tin Tun Aung B.Sc (Engineering)	Myanmar 12/U Ka Ma (N)172111	0009	Engineer and EIA practitioner
U Than Soe Oo M.Sc (Forestry)	Myanmar 9/Ma Na Ma (N) 050808	00011	EIA practitioner
U Oakka Kyaw Thu B.Sc (Geology)	Myanmar 7/Ya Ta Ya (N) 090371	00012	Geologist
Daw Thin Thin Yee B.Sc (Chemistry)	Myanmar 12/Tha Ga Ka (N)039292	00013	Chemical Environment Researcher, Computer Programmer
Dr. Htin Thaw Kaung M.B.B.S	Myanmar 13/ Pa Ha Na (N) 222723	Part time	Occupational Health and Safety
Daw Thi Thi San L.L.B	Myanmar 12/Tha Ka Ta (N) 150424	Part time	Legal studies and analysis
U Thura Ko B.A (History)	Myanmar 12/Ka Ma Na (N) 124824	00277	Prevention and control of air pollution, Social studies and analysis, and also involved archeology and cultural heritage, noise and vibration
Daw Khin Thidar La Wun B.Sc (Maths)	Myanmar 12/Sa Kha Na (N) 069879	Part time	Weather and air quality analysis and forecasting, Hydrology ground water and underground water management, Solid waste and hazardous waste management

- U Myint Kyaw Thura is involved in fauna study, writing of report, in part.
- U Saw Han Shein is involved in report writing (chief report writer).
- U Tin Tun Aung is involved in the EIA practicing and writing part of the report. He is also involved in water and air pollution prevention, monitoring, control and management and impact prediction.
- U Than Soe Oo is involved in EIA practicing and part of the report writing. He is also involved in land use, environmental and natural resources management aspects,
- U Oakka Kyaw Thu is involved in the geological and geographical aspects by conducting desktop survey and gathering of secondary information on local geology.

- Daw Thin Thin Yee is involved in the physical aspects, especially ambient air, water quality, noise and vibration and soil etc. and compilation of data on the physical components; including secondary information on weather.
- Dr. Htin Thaw Kaung is a medical doctor and part time member of MESC and is involved in occupational health and safety aspects of the project.
- Daw Thi Thi San is involved in legal aspect of the project. She is also involved in EIA/IEE/EMP practicing appraising and report writing.
- U Thura Ko is involved in Prevention and control of air pollution, Socio-economic expert, and also involved cultural heritage, noise and vibration especially involved in interview and questionnaires during public meeting.
- Daw Khin Thidar La Wun is involved in Weather and air quality analysis and forecasting aspects of study, Hydrology ground water and underground water management and solid waste and hazardous wastes management and collection of data.

Actually members of MESC always work together wholly as a tight-knit group in writing of each and every EMP/IEE/EIA report.

MESC has also part time members working as free lances.

The firm is not in a position to employ all its part time members on a permanent basis.

Policy, legal and administrative framework

These are all described in Chapter 3, the corporate environmental and social policy of Myanmar Brilliance Auto Co., Ltd is, first of all, to comply with all the laws, rules, regulation and guideline concerning environment.

The company will endeavor to:

- operate the auto parts assembling with an environmentally and socially responsible manner and to comply with laws and regulation
- prevent pollution of surrounding area; monitoring and adopting suitable measures for environment protection
- implement EMP effectively to mitigate pollution of water, land, air, noise and dust and proper disposal of waste
- develop green belt in available space
- conserve natural resources and energy as far as possible
- create environmental awareness among employees and local community through education and training and to implement CSR programme for local communities.

Applicable Laws, Rules and regulation

45 applicable laws, rules and regulation etc. are listed later in Chapter 3, some of these are listed in this executive summary below:

1. The Environmental Conservation Law, 2012
2. The Environmental Conservation Rules, 2014
3. Environmental Impact Assessment Procedure, 2015
4. National Environmental Quality (Emissions) Guidelines, 2015
5. Myanmar Investment Law, 2016
6. Myanmar Investment Rules, 2017
7. Private Industrial Enterprise Law, 1990
8. The Labour Organization Law, 2011
9. The Factories Act, 1951
10. Myanmar Motor Vehicle Law, 2015
11. Industrial Zone Law, 2020
12. Vehicle Safety and Motor Vehicle Management Law, 2020, among others.

The relevant articles/sections for each and every law, rules, regulation listed are reproduced later in Chapter 3.

The international convention, treaties and agreements signed or ratified by Myanmar are listed.

NEQEG guideline values

- Air quality guideline values by ECD, Notification No.615/2015, Code No. 1.1;
- Effluent guideline values, Code No.1.2
- Noise level guideline values, Code No.1.3
- Myanmar National drinking water standards are all shown in Chapter 3.

Commitments

Commitment made by the project proponent (Myanmar Brilliance Auto Co., Ltd) as well as that made by the consultant firm (MESC) are described.

Institutional frame work

The Environmental Conservation Committee-ECC was formed in 2021 and the institutional organization of the Environmental Conservation Department (ECD) was formed in 2012 and are shown in Chapter-3.

The Institutional Arrangement of the Myanmar Brilliance Auto Co., Ltd is shown in diagram.

The project environmental and social standards as prescribed by International Finance Corporation (IFC) are reproduced.

In this final part of Chapter 3 health standards for project with health are summarized.

All aspects regarding Environmental Policy, Legal and Institutional frame work are described in relative details in Chapter 3.

Project description and alternative selection

These are described in details in Chapter 4.

The proposed project is for the auto parts assembling, manufacturing and sales of motor vehicles; and the technology applied is the SKD technology.

The auto parts assembling plant and facilities are established at the project site Plot No.24M, inside the Industrial Zone (2) Hlaing Thar Yar Township, Yangon Region.

The area of the project site is 2.420 acres (9793.401 sq. m) the coordinates: N. Lat. 16° 51' 19.05" and E. Log. 96° 04' 43.83"

Infrastructure

The auto part assembling plants and facilities comprises:

- Three main concrete buildings (dimension for each is 180' x 80'). Each building is a three-storeyed building (with three floors). Installation, assembling and manufacturing will be under taken at floor 1 (Ground floor) and Trim line, Finish line and Test line are to be conducted. The second floor is allotted for office and storage of SKD parts while the Third floor will be for resting rooms, for general storage area and for other purposes.

Technology: is the semi-knock down (SKD) system; partially assembled motor parts are imported from China and then assembled/installed and manufactured at the project site.

Three models produced are (Brilliance Vehicle V3, V6 and V7); the production target for Year 1 is 600 for V3 and 60 each for V6 and V7. All are left hand drive types. The production target will be raised year after year and by year 5-10 the targets are 649, 64 and 64 for V3, V6 and V7, respectively.

Processes:

The following groups of SKD parts (auto components and auto parts) are imported and assembled:

- body and chassis group; trimming parts, engine assembly (transmission and clutch); exhaust system; wheel and tyres; steering wheel and parts; door groups; front and rear axles; suspension component; seat assembly (the code for all are HS code: 8708).

The said components/parts are imported for each model and assembled and produced at the plant.

The assembly process can be summarized and simplified as follows:

- (1) Body Inspection: inspection of car body and assembling of car body.
- (2) Chassis Assembly Line: assembly of lower parts. e.g. wirings, oil pipes, brakes, power steering, engine, fuel tank, lower chassis, front and suspension, wheels.
- (3) Final Assembling: trial state of assembly, eg- installation inside engine, wirings and pipes, seats, doors, engine oil, brake oil, etc filling.
- (4) Test Line: testing work, eg- alignment, inspection of lamps, testing the speed, inspection of ABS brake system, testing emission of CO₂.
- (5) Shower Test: testing water tightness.
- (6) Commercial area: final inspection for sale.
- (7) Repair area: after undergoing test line, shower test, and commercial inspection if a car is still not in satisfactory condition it is repaired.
- (8) Road Test: the ultimate test is done at road test area. If the car passes this final test, it is ready for sale.

Uses of raw materials and resources

Actually no raw materials are needed; the raw materials are only a variety of auto components/auto parts to be imported from China.

The resources required are only water and electricity. Annual water requirement (Operation Phase) is 14,000 gallons, mainly for shower test (testing water tightness).

Water is sourced from ground water at a depth of 100 ft.

The annual electricity requirement is 612,640 KW and is sourced from Gridline electricity. Backup generator (150 KVA) is installed for emergency use.

Annual requirements for diesel, petroleum, and engine oil are 6,000 gallons, 800 gallons and 50 gallons respectively.

No chemicals are required.

Staffing

About 100 construction workers were deployed during Construction Phase. 219 staffs (and 5 foreigners) will be employed during Operation Phase.

There are dormitories for staff outside the compound (within walking distance).

Working hours: 8 hours/day; 40 hours/week; operational days: 250 days/year.

Monthly salaries for local staff range from Ks 160,000 to Ks 1,000,000 and from USD 800 to USD 1000 for foreign experts/technicians. Salaries will be increased every two years.

Generation of wastes, emissions and disturbances

Auto parts assembling plant is actually a smoke less factory, and a non-waste generating factory.

All the required auto parts/components imported from China are simply assembled, installed and made into cars (sedan cars). (No actual industrial solid wastes are generated).

The uses of pumps and generator will generate smoke but will be minor and insignificant. Small quantities of water have to be used for shower test (water tightness test). Certain low level noise can be generated during the assembling and installation of auto parts. Generation of odour not envisaged.

Solid wastes

During the Construction Phase large quantity of construction waste, especially left over waste, were generated. These were cleared and the site tidied up after Construction Phase.

During the Operation Phase the main solid waste are old packing materials (woods, plastic, foams) for auto parts. Some of these are reused or put up for sale. Solid wastes of small quantity are: old batteries, old lamps, old filters and certain discarded materials etc. These are collected in waste bins of two types; recyclable and non-recyclable, and those that cannot be recycled are disposed at the landfill in the north.

In the same way organic wastes from kitchen, messing room are collected in bins and disposed. (There are only minor quantities of organic waste as no staff are camped inside the plants compound. All staffs are housed outside the assembly plant premise.

The auto parts/components are already painted in China and after assembling and installation there is no need for painting.

Liquid wastes

During the Construction Phase all the water required is used up for construction works, for instance, cement batching, and therefore no industrial liquid waste is envisaged.

About 100 construction workers were working at the site during day time and return to their homes in the evening. The domestic liquid waste was insignificant.

During the Operation Phase the auto parts assembling plant does not required water (except small quantity of water for shower test/water tightness test for each produced car). The used water simply flows into the drainage system.

The site has adequate toilets and therefore sewage (black water) from the toilets end up at septic tanks and soaks pits. Other domestic waste water (in small quantity) simply flows into the network of drainage system and dry up. In the same way rain water influx/storm water flows down the drain and end up in discharged point.

There is no need for special waste water treatment system.

Project alternative

Location alternative: The site being inside the Industrial Zone is readily accessible by motor road and has access to gridline electricity; water is sourced from ground water at a depth of 100 feet. This leads to the decision to choose this site. The cost-benefits analysis also favours the site selection.

Construction alternative: Iron frame, corrugated iron roofing and walling are used instead of timber as a means of minimization of fiber and hence conservation of forest.

Technology alternative: The holistic manufacturing of vehicle cannot be undertaken yet Myanmar. This lead to the decision to choose Semi-knock Down (SKD) technology.

Energy alternative: a 150 KVA generator is installed as back up as a means of energy alternative in time of power outage.

Supply alternative: The consumption of water, fuel and energy will adhere to the principle of conservation rather than traditional principle.

Activities alternative: staffs are educated and trained to "work smarter" rather than "work harder".

No go (no project) alternative: This alternative is not considered. The "no go" alternative will not contribute anything to the development of the local area and the nations; it cannot contribute to development of motor industry. The 219 people to be permanently employed during the long Operation Phase will lose their employment opportunities if the project is not implemented. The no go alternative can contribute to no increase in GDP, tax, duties and revenue for the nation.

In this EIA report Chapter 4 all these are described the project in technical details.

Description of the surrounding environment

The proposed project site is inside the Industrial Zone No.2 of the main Hlaing Thar Yar Industrial Zone, Hlaing Thar Yar Township, Yangon Region. It is situated on the northern bank of the Pann Hlaing River near the Pann Hlaing Bridge. It is also in the adjacent south of Yangon-Pathein High way.

A half mile radius area (0.8 sq. mile) is selected for study area. The impacts from the auto parts assembling plant will be mostly minor and impacts, if any, can be seen and felt within the half mile radius.

The surrounding area of Industrial Zone 2 comprises mainly other industrial zones such as Shwe Than Lwin Industrial Zone in the east and Industrial Zone No.3.

The nearest residential area is Satmu Zone Zay Lann Ward in the south. This ward is corporate in the study area for socio-economic aspects of study.

The studies on the physical, biological, socio-economic, cultural and visual components of the surrounding environment are conducted, recorded, documented and incorporated into the EIA report.

Physical component

Meteorological data are obtained from Kabar Aye, Meteorological department. The monthly maximum temperature (40.4°C) was recorded in April, 2019; while the maximum rainfall (3144 mm) was recorded in 2018.

Other physical characteristics e.g. topography, geology, soil, water, ambient air, noise are also studied and recorded. Geological data are secondary data: the area can be classified as that of Quaternary Period; the rock is formed out of deposit of alluvial and deltaic sediment.

Soil test was not conducted due to the fact that the whole area is pave with concrete plinth.

The quality of tube well water is as follows and compared with Myanmar National Drinking Water Quality Standards.

Parameters	Unit	Tube well water	Standard values*	WHO Guideline Values ⁴
Total Coliforms	Acceptable/ No objectionable	6	3	None specified (recommended median value – 0 per 100 ml)
Fecal Coliforms	Acceptable/ No objectionable	Not detected	0	Must not be detectable in any 100 ml sample (recommended median value - 0 per 100 ml)
Color	True Color Unit (TCU)	5	15	Non set (recommended median value - 15)

Turbidity	Nephelometric Turbidity Unit (NTU)	8	5	Non set (recommended median value - 5)
Arsenic	mg/L	Nil	0.05	0.01 mg/l
Lead	mg/L	Not detected	0.01	0.01 mg/l
Nitrate	mg/L	Nil	50	50 mg/l
Manganese	mg/L	Nil	0.4	0.4 mg/l
Chloride	mg/L	4	250	Non set (recommended median value - 250)
Hardness	mg/L as CaCO ₃	34	500	Non set (recommended median value - 500)
Iron	mg/L	0.26	1	Non set (recommended median value - 0.3)
pH	-	7.2	6.5 to 8.5	Non set (recommended median value - 6.5-8.5)
Sulphate	mg/L	10	250	Non set (recommended median value - 250)
Total Dissolved Solid (TDS)	mg/L	56	1000	Non set (recommended median value - 1000)

The result of ambient air quality is compared with NEQEG guideline values as follows:

Sr. No	Parameters	Averaging period	Existing values at the site	NEQEG guideline values
1.	Nitrogen dioxide (NO ₂)	1 - hour	5.4 µg/m ³	200 µg/m ³
2.	Ozone (O ₃)	8 - hours	9.88 µg/m ³	100 µg/m ³
3.	Particulate matter (PM ₁₀)	24 - hours	35.31 µg/m ³	50 µg/m ³
4.	Particulate matter (PM _{2.5})	24 - hours	23.51 µg/m ³	25 µg/m ³
5.	Sulphur dioxide (SO ₂)	24 - hours	0.09 µg/m ³	20 µg/m ³
6.	Carbon dioxide (CO ₂)	24 - hour	378.32 ppm	NEQEG - (NA)
7.	Volatile organic compound (VOC)	24 - hour	0.48 ppm	NEQEG - (NA)
8.	Ammonia	24 - hour	0.78 ppm	NEQEG - (NA)

The result of noise level is compared with NEQEG guideline values as follows:

	At the factory site		NEQEG guideline	
	Day	Night	Day	Night
(Residential, institutional, educational)	-	-	55	45
Industrial commercial	56.58	55.39	70	70

Biological component

Study on biodiversity is conducted not only within the half mile radius area but also outside, where necessary. Actually there is no forest or bush in the surrounding area only Industrial Zone land.

The following taxa are found, identified and recorded and documented in the EIA report.

Flora

- 34 species of plants (both natural and cultivated plants) belonging to 24 families.

Fauna

- 14 species of avian fauna (birds), belonging to 11 families.
- 8 species of herpetofauna (amphibians and reptiles) belonging to 6 families.
- 2 species of small mammals (rat and mouse).

being inside the Industrial Zone there are no aquatic fauna to study.

Socio-economic components

The nearest residential is Satmu-zone-zay-lann ward.

The village has access to (gridline electricity).

The locals source water either from tube well. Every house has a toilet.

The ward has a population of 605 (male – 273, female – 332). 90% are Bamar and about 98% are Buddhists; 2% are Christians.

The main occupation is predominantly vendors, seasonal jobs/odd jobs. Almost 50% are working in this Industrial Zone. There is one doctor and two policemen.

Daily wages range from Ks 5,000 to 10,000.

The ward being a small one will only 600 people has no school. There is no public clinic but two private clinics, Hlaing Thar Yar Township Hospital is about 1 mile north-east. The Yangon General Hospital is about 7 miles in the south west.

There is one Buddhist monastery with 35 monks.

98% of the locals are Buddhist; however many also worship or propitiate the spirits or Nats. The ward does not have a Nat Shrine.

The whole area was once either paddy fields or marsh land which is transformed into a large Industrial Zone. There are no historical monuments, no archaeological site or important land mark. There are only factories or workshops or sale centers.

The surrounding environment described in details in Chapter 5.

Impacts and risks assessment and mitigation measures

Methodology

Based mainly from prediction and from personal practical experience.

The Experts Consensus Method (Ad hoc method) is applied in combination with simple IFC's risk table and risk rating matrix method (probability multiply by Consequences equal outcome).

Impacts and mitigation measures

The impact envisaged and assessed during the four phases of the projects together with different options of mitigation measures to be put in place for each and every impact are summarized below:

1. During the Preconstruction Phase

No mitigation measures necessary as no actual impacts are anticipated and encountered during this phase.

2. During the Construction Phase

Potential impacts and mitigation measures to be put in place.

Sr. No	Impact	Mitigation
1	Impact of mobilization and preparation activities for construction work	<ul style="list-style-type: none">- carefully plan for mobilization, storage and preparation works- have logistic plan for heavy trucks loaded with building materials- systematically store or pile up all the building materials within the premise- ensure that the wall or fence is reliable and can effectively prevent theft- prevent the spilling over of the building materials outside the premise or on nearby roads.

2	Occupational Health and Safety issue (potential accidents at workplace)	<ul style="list-style-type: none"> - plan and manage for zero accident - set up "Safety First" sign boards at places where workers can see easily - create safety condition for all workers; create accidents free environment - educate, train and supervise construction workers for good working practice, good engineering practice, good safety practice and good house-keeping practice so that these good practices will be ingrained in each and every worker's mind - provide adequate Personnel Protection Equipment (PPE) where necessary - keep first aid kits well-stocked with medicine and drugs - plan and manage for effective emergency response - provision of firefighting equipment and tools, - provision of adequate sanitation – eg. toilets, clean water, - apply safe and effective procedures for storages of fuel and chemicals; display warning sign/pictogram
3	Impact on air quality	<ul style="list-style-type: none"> - plan in the Pre-construction Phase for the procurement of equipment, vehicles that emit less smoke (to be certified for emission compliance) - keep equipment and vehicles well-maintained, well-operated and well-lubricated - avoid open burning of debris - spray water for suppression of dust - restrict vehicular movement; maintain road clear of mud and dirt - provide PPE to workers who are exposed to smoke or dust for long period
4	Noise and vibration quality	<ul style="list-style-type: none"> - plan in the Preconstruction Phase for procurement of equipment, machinery and vehicle that emit lower noise level (eco-friendly equipment vehicles). - plan for noise management to meet NEQEG guideline values for noise and vibration. - avoid construction works at night; - schedule high noise activities only during certain day time hours. - limit transportation during unsocial hours to reduce noise. - switch off or throttle down equipment during idle hours. - limit the speed of vehicle to mitigate noise as well as vibration.

		<ul style="list-style-type: none"> - if possible install silencers, noise abators on inlet and outlet of fans to reduce noise level. - keep machinery and equipment well-maintained, well-operated and well lubricated to reduce noise level. - design stable foundation to mitigate vibration; if possible install vibration absorbers. - provide PPEs, ear plugs, ear muffs to workers exposed to high noise level. - the local community should be able to file complaints regarding noise and vibration.
5	Potential impact on soil	<ul style="list-style-type: none"> - try to avoid potential destruction of soil profile - separate top soil (for later creation of green belt) from sub-soil (for construction work-earth filling etc.) - draw up a plan for prevention and mitigation of contamination of soil - prevent spill of fuel oil and chemicals; clean up spill with absorbent promptly (do not wash down with water) - properly instruct workers with respect to handling of fuel and chemical and cleanup of spills - implement soil conservation techniques to prevent soil erosion (during rainy season) - Prevent wash water from carrying earth and materials into drainage system - the ground should not be laid bare for long period during the rainy season - dispose all waste materials (from construction work and from domestic use) at approved land fill - train workers for good housekeeping; do not litter
6	Potential impact on water	<ul style="list-style-type: none"> - plan and manage for the conservation of water - ensure that the project activities do not pollute Pann Hlaing river by any mean (no surface water to be impacted) - do not use water more than necessary during the Construction Phase - discipline workers for the conservation of water; - monitor the daily use of water for construction - avoid the spillage of fuel oil which will contaminate the soil and eventually ground water; - if there is spillage clean up spill with absorbent promptly (do not wash down with water) - bund fuel area to prevent spreading of fuel oil - avoid disposing of waste (solids and liquids) into any water body, if any.

7	Impact of waste (Construction waste)	<ul style="list-style-type: none"> - draw up a plan for management of solid waste - avoid open burning of debris - clear the ground regularly; ensure dumping at approved landfill - educate workers for good housekeeping; do not litter - plan for reuse and disposal of construction tailings and left overs - at the end of Construction Phase put up construction spoils, left over materials for sale - hire a contractor and party for tidying up the site after Construction Phase
8	Potential social impact/issue	<ul style="list-style-type: none"> - draw up a plan for management of social illness and anti-social behaviour - educate and train workers on discipline and code of conduct - try to build good relation with the locals - conduct public consultation so that the locals will have a positive perception on the project - educate the workers for appropriate behavior when dealing with locals; to respect their culture and tradition - manage misbehavior and social illness of workers - deal with workers on a fair and square basis - maintain the good relation between the company and the locals - provide adequate welfare programme for workers
9	Potential security issue	<ul style="list-style-type: none"> - draw up a security management plan - campaign against social evil to ensure security and order - undertake effective walling of the compound for security - set up security gates; deploy adequate guards or watchmen - store building materials under lock and key as far as possible - apply punitive measures, such as suspension or termination of employment if necessary - provide ID cards for all workers for easy identification

3. During the Operation Phase

Impacts and mitigation measures to be implemented.

Sr. No	Impact	Mitigation
1	Potential traffic issue	<ul style="list-style-type: none"> - draw up a traffic management plan, especially at Yangon-Pathein High way. No.5 - schedule the logistics; avoid rush hours; avoid road with heavy traffic road; if possible - educate drivers, staffs (motorists and motorcyclists) for defensive driving; drive at reduced speed; follow road regulations - set up signage or traffic sign at the entrance of the site and suitable places - avoid overloading of truck, or any vehicles - regular maintenance of cars and motor bikes - keep a log book for each vehicle - aim to achieve zero road accident
2	Impact on air quality	<ul style="list-style-type: none"> - draw up a plan and implement for air quality management for the long term Operation Phase - spray water adequately to suppress dust - also deploy sweepers to clean dirt - reduce the speed of vehicle to reduce dust generation - avoid open burning of solid waste - use well-maintained and well-operated equipment and vehicles - use vehicles and machines that emit less smoke and use less fuel (procure ecofriendly vehicles and machinery in the first place) - conserve fuel and prevent unnecessarily emission of gas (smokes) - plant trees and create green zone; trees will sequester CO₂ in the smoke - provide adequate PPE such as face masks, nose and mouth covers to workers
3	Noise and vibration	<ul style="list-style-type: none"> - plan for effective management of noise and vibration - restrict or limit vehicular movements - plan for appropriate choice of machinery and vehicles (that emit low noise level); method of working, efficient material handling

		<ul style="list-style-type: none"> - installation of noise abating devices eg- silencers, mufflers at air inlet and outlet of fan and compressor; place noisier sources far away in overall design - well-operated and well-maintained vehicles and machinery generate lower noise level and prevent undesirable noise level - develop green belt (plant trees) around the factory in available space; trees abate noise and serve as noise sink (pollution sink) - create smooth road surface as far as possible to mitigate vibration due to vehicular movement - create suitable foundation design for machinery and equipment (eg. grinder, compressor and pumps etc.) to mitigate vibration - if necessary install vibration absorbers or vibration abatons - provide adequate PPE eg- ear muffs, ear protectors to workers exposed to long hours of high noise level; conduct regular noise monitoring to ensure that the levels are within noise exposure standard (not higher than 85-90 dBA)especially for generators and pumps
4	Impact of project on gridline electricity and vice versa	<ul style="list-style-type: none"> - consider for application of environmentally sound idea and technology when sourcing for electricity - acquire conservation of energy knowledge in the planning and design phase of the factory - plan and manage for the conservation of electricity energy - design the building to take advantage of sunlight and air flow - ensure that the consumption of electricity be in the work frame as stated earlier - monitor electricity consumption weekly - use electrical equipment, devices that are energy efficient, particularly use energy efficient equipment associated with heating, ventilation, air conditioning and cooling (HVAC) - use day light as much as possible - ensure that the backup generator is operational immediately after power outage or use automatic backup system - liaise with electricity authority from time to time

5	Impact of wastes (solid & liquid)	<ul style="list-style-type: none"> - plan and implement the management of wastes For liquid wastes - monitor waste water drainage from time to time, especially for domestic waste water and storm water - The domestic waste water will also simply flows down the drain and dry up (no need for special treatment) - The domestic black water (from toilet) will end up in septic tank and soak pit (no need for vacuum truck to remove the sewage) - ensure that waste water is not discharge into any watercourse, or water body. For solid waste in general: - dispose the solid wastes inside the factory at an approved landfill or dumping site - avoid open burning of debris or trash in the compound For solid waste inside the plant and at the office and messing room etc. (domestic waste) - implement organic-waste composting of some wastes for fertilizer to apply in lawn, and green - dispose waste only after all waste prevention and possible recycling strategies have been explored (adhere to the principles of 5 Rs, reduce, reuse, recover, redesign and recycle as far as possible) - dispose wastes only at approved landfill (common landfill of the Zone) - return packaging materials such as plastic, paper and drums etc. to supplier for reuse; recycle packaging materials whenever possible - give priority to reduction of solid waste, recovery and reuse
6	Occupational Health and Safety issue (Accidents at workplace)	<ul style="list-style-type: none"> - draw up a comprehensive plan and manage for the safety working conditions for workers - educate, train and supervise workers for good working practice, good engineering practice, good safety practice and good housekeeping practice so that all these good practices are ingrained in their minds and become good habits; especially train them for corrects use of machinery and safety devices; correct lifting technique; where possible install mechanical lifting aids. eg. forklift, - educate, train and supervise them for skills; for handling and operation of equipment; handling and application of chemicals; especially harmful one

		<ul style="list-style-type: none"> - educate them for good health practice, hygiene, environmental awareness and occupational health hazards - all workers must pass a medical examination prior to employment - conduct yearly medical checkup for workers - draw a programme for workers' health monitoring and implement it - provide free Medicare for workers - compensation, rehabilitation and curative services will be made available to workers who suffer occupational injuries, accidents and work related diseases - toxic and hazardous chemical, if any, will be stored in a safe place (enclosed and secured room with roofing and concrete floor) and labeled with pictograms - maintain and inspect storage unit regularly - keep all machinery, equipment and vehicles well-maintained, well-operated and well-lubricated; - check on automatic safeguards on machines to prevent accidental injuries - beware of all the common accidents and common injuries mentioned earlier that used to happen (as well as potential accidents and injuries) and implement a prevention, protection and mitigation measures for each - provide adequate PPEs – outfits, boots, helmet, gloves, face mask, goggles, ear muff, ear plug, etc. also tools such as sit – stand tools for workers who have to stand for long hours - also provide adequate First Aid Kits well-stocked with medicines & drugs - provide adequate sanitation facility eg. toilets, clean water, baths room etc. for workers - minimize manual labour; maximize mechanical labour
7	Potential social impact	<ul style="list-style-type: none"> - try to build and maintain good relation with the locals; avoid friction between the locals and the company as far as possible. - conduct public consultation from time to time so that the locals will have a positive perception of the project - educate workers for appropriate behaviours when dealing with locals; to respect their culture and tradition - discipline workers for work place regulation and code of conducts including social conduct

		<ul style="list-style-type: none"> - take disciplinary action/punitive action for wrong doer eg. suspension, discharge - prevent and manage disputes, quarrels, brawls among workers and also between workers and locals. - strictly prohibit the drinking of alcohol during working hours; totally ban the use of narcotics - deal with workers on a fair and square basis – (not overworked, underpaid)
8	Potential security issue	<ul style="list-style-type: none"> - plan and manage for site security - ensure that the fence/wall is secure - do not let the assembly plant become a soft target for terrorists - implement strict security as far as possible - deploy adequate security staffs; security guards at gate; inside factory and at office - perform security check on each and every one entering and leaving the factory - in addition to worker suits issue Identity Cards for all employees for easy identification - campaign against social evil to ensure security and order

4. During the Decommissioning Phase

Impacts and mitigation measures to be implemented.

Sr. No	Impact	Mitigation
1	Potential accidents at workplace (OHS issue)	<ul style="list-style-type: none"> - plan and manage for safe and effective decommissioning work - hire a decommissioning contractor and party for the demolition of buildings/structures and dismantling of equipment; and also for tidying up the site - dispose those that are no longer usable at the approved landfill - obsolete machinery and equipment shall be made into scrap and sent to smelting mill - put up for sale materials and machinery that are still usable and saleable - remove soil contaminated by fuel and/or chemical spills, if any, and dispose at the landfill

2	Potential residual issue	<ul style="list-style-type: none"> - clear and remove all residual eg- chemicals, if any - remove all soil contaminated by the fuel oil, if any - test the soil for the last time to ensure that no contaminants remain - test the water and air for the last time for contamination - restore the plot and soil to its original condition - vegetate or rehabilitate the plot
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Positive impact during the Construction Phase

The project has boosted the local economy and brought economic benefit to locals who were involved in extraction and sale of building materials e.g. sand, gravel, bricks, timber.

Jobs were provided for 100 construction workers, who have also gained knowledge and skill from foreigners. At the national level there is direct investment of Ks 4177.9393 million (including USD 0.54995 millions) raising the GDP of the nation.

Positive impacts during the Operation Phase

219 people will have long term employment with salaries ranging from Ks 160,000 – 1,000,000 (salaries will be increased every two years). 5 foreigner technicians will be also permanently employed. (Their salaries are USD). The follow up benefit after investment by the company will be in the form of income tax, duties and revenues from the project.

Above all, the project will contribute to the development of the Industrial Sector of the Nation, especially the automobile industry.

Likelihood and severity of natural and industrial hazards

The Industrial Zone area is a flat low land and about 100 miles away from the coast. There is no mountain range between and the area is directly under the influence of the south west monsoon during the west season. The coastal areas of Rakhine and Ayeyarwaddy are prone to Cyclone but this area is relatively safe. The area is not so far from (about 20 miles) the southern tip of Sagaing Fault line but it is not prone to earthquake but only small tremors infrequently.

As regards industrial hazards the auto-parts assembling plant does not pose any industrial hazards. There will be no smoke and substantial affluent; no chemicals or hazardous substances are used.

All these are described in technical details in Chapter 6.

Cumulative impact assessment

Certain simultaneous cumulative impacts (impact happening at the same time from other sources) can be envisaged as there are many other projects in the area. However, there are no large factories that spewing out smoke in the vicinity. Many are either sale centers or warehouses or offices.

As the auto-part assembling plant is rather a "smoke less factory" and "non-effluent generating factory" the impacts are mostly minors. The incremental or successive cumulative impact over the years by this project can be also, on the whole, insignificant as mitigation will be put in place for all impacts.

If mitigation measures to be taken are taken for each and every minor impacts in a timely manner there can be no cumulative impact over the years.

However, as the plant has a target for producing up to 800 assembled sedan cars per year after 5 years in operation the emission from the 800 cars can be substantial. (In other words) the assembling plant by producing 800 cars will indirectly contributed to incremental cumulative impact on air environment over the years.

Environmental Management Plan (EMP)

Environmental management plan is the key to ensure that the environmental quality of the area does not deteriorate due to the implementation of a project. EMP involved the management of the overall environmental issue encompassing the physical, biological, socio-economic, cultural and visual components issue.

The overall EMP addresses the operation of an auto-parts assembling plant in an environmentally sound manner. EMP is essential effectively throughout the life of the project. In addition monitoring of the environmental parameter is conducted in an effective manner. Monitoring Plan (MP) is imperative.

In this long chapter on EMP health policy and commitment are mentioned.

Summary of impacts and mitigation measures are briefly mentioned again in tabulated form.

Overall budget for implementation of EMP

2% of the budget, equivalent to Ks 83,558,786 is set aside as EMP fund.

The sub-budget allotted for each programme under EMP and MP is as follow:

- Cost of organizing EMP 2% of EMP fund (Ks 1,671,175)
- Cost for actual execution and dissemination of EMP in the forms of:
 - (a) Taking mitigation measure 25% of EMP fund (Ks 20,889,696)
 - (b) Monitoring actions 25% of EMP fund (Ks 20,889,696)

- Cost for partial procurement of equipment and materials 20% of EMP fund (Ks 16,711,757)
- Cost for capacity building and training 7% of EMP fund (Ks 5,849,115)
- Cost for emergency/contingency (for probable emergency cases) 10% of EMP fund (Ks 8,355,878)
- Cost for reporting, documentation work 8% of EMP fund (Ks 6,684,702)
- Miscellaneous (including casual fees for two locals, who are EMP cell members) 3% of EMP fund (Ks 2,506,763)

The EMP fund cannot cover the whole life of the project of 30 plus years. The fund is simply seed money; as time goes on more money will have to be added to the fund. Labour cost will be kept at a minimum. Only staff will be involved in the implementation of EMP and MP. Staff will be first trained for the purpose.(there are no EMP contractors in Myanmar yet to be hired for implementing EMP).

The long section on management and monitoring sub-plan (MMSP) by project phases addresses and satisfy all the following relevant environmental and social management and monitoring issues:

- noise and vibration; waste; hazardous waste; waste water and storm water; air quality; odour; chemicals; water quality, erosion and sedimentation; biodiversity; occupational and community health and safety; cultural heritage, employment and training; emergency response; traffic and social issues.

The content of each sub-plan: covers objectives, legal requirement, overview map and satellite layout; implementation schedule, management actions, monitoring plan and projected budget and responsibilities.

All are briefly mentioned; emphasizes are given on management actions and monitoring plan. A nucleus organization, EMP cell will be formed and EMP cell leader and members will be responsible for the effective implementation of EMP.

Management actions for each sub-plan

Overall environmental and social management sub-plans and implementation of sub-plans are described in 8.5 (in tabulated form), in accordance with EIA Procedures, 2015, prescribed by ECD.

For practical purpose management actions plans for:

- air quality and emission
- noise and vibration

- water quality and waste water
- solid wastes
- soil (emission and sedimentation) and
- Occupational health and safety

During the Construction Phase and Operation Phase are described below:

During the Construction Phase

1. Air quality and emission management action plan

Objective : The main objective is to mitigation/reduce emission (smoke or gaseous emission) and control air quality as practical as possible.

Legal requirement : will comply with NEQEG emission guideline (2015), Code No.1.1 prescribed by ECD in EIA procedure (2015)

Management actions : The following will be implemented for all emission (fugitive emission of smoke and dust), during the Construction Phase. These have been extracted from mitigation measures described later in Chapter 6, 6.2 and Chapter 8, 8.5 (tabulated form) and are summarized as below:

- Comply with NEQEG emission guideline.
- Do not clear vegetation more than necessary.
- Procure equipment that are environmentally friendly, that emit less smoke.
- Keep equipment and vehicle well-operated, well-maintained, and well-lubricated to reduce emission, if possible.
- Use fuel oil low in sulphur, if possible.
- Avoid open burning of debris.
- Spray water for suppression of dust.
- Restrict vehicular movements.
- Limit open stockpile of earth, sand, etc.
- Provide PPE, face mask, nose and mouth covers to workers where necessary.
- Conduct regular monitoring (semiannually); hire technicians for this.

2. Noise and vibration management action plan

Objective : To mitigate/reduce noise and vibration level, generated from the construction activities.

Legal requirement : Will comply with NEQEG emission guideline, 2015, prescribed by ECD, Code No.1.3.

Management actions : The following will be implemented for the control/mitigation of noise level and vibration generated from the construction activities.

These have been extracted from mitigation measures described later in Chapter 6, 6.2 and overall Chapter 8, 8.5 in tabulated form, and summarized as below:

- Will comply with NEQEG emission guideline (2015) prescribed by ECD, Code No.1.3
- Procure eco-friendly machinery that emits lower noise level in the first place.
- Noisy machine to be fitted with noise muffler or silencer, if possible.
- Keep machinery and vehicle well-operate, well-maintained and well-lubricated to reduce noise level.
- Ensure that foundations for equipment are stable to mitigate vibration.
- Restrict/limit truck movement.
- Keep the road surface smooth and flat (to mitigate vibration)
- Construction activities must be during day time (no construction at night).
- Keep big trees, if any, intact to absorb noise.
- Provide PPE, ear muffs, to workers necessary.
- Conduct regular monitoring (semi-annually); hire technicians.

3. Water quality and waste water management action plan

Objective : Not to impact any surface water surface or underground quality and to manage the waste water (effluent).

Legal requirement : Will comply with NEQEG emission guideline values (2015) prescribed by ECD, Code No.1.2.

Management action : The followings will be implemented to control water quality and manage effluent.

These have be excerpted from mitigation measures described later in Chapter 6, 6.2 and Chapter 8, 8.5 (tabulated form) and summarized as below:

- Comply with NEQEG emission/effluent guideline
- Plan and manage for prevention on the water environment; manage so that construction activities do not impact surface or ground water.

- Create systematic drainage system at construction site to manage waste/used water; also drainage system to manage storm water.
- Keep natural drainage of the area intact; ensure that construction of access road, and factory site do not damage natural drainage.
- Store fuel oil as well as used oils a designated banded side.
- Avoid contamination of surface or underground water:
- Avoid accidental spillage; should spillage occur of not waste down with water (to prevent percolation), but immediately remove with absorbents or saw dust.
- Avoid disposing of waste to any water body.
- Educate workers for conservation of water.
- No specific waste water treatment necessary during Construction Phase.
- Test water quality and effluent every six months; hire technicians.

4. Waste management action plan

Objectives : To mitigate/reduce construction waste and domestic waste.

Legal requirement : Will comply with Environmental Conservation Law, 2012 and Environmental Conservation Rules, 2014, (to discharge the wastes in accord with environmentally sound methods and not to pollute the environment).

Management actions : The following will be implemented for the management of wastes. These have been excerpted from mitigation measures described later in Chapter 6, 6.2 and from EMP sub-plan, Chapter 8, 8.5 (in tabulated form) and summarized below:

- Will comply with Environmental Conservation Law, 2012. Section 14, 15, 32; Environmental Conservation Rules, 2014; Rule 69.
- Educate and train workers for the proper handling of wastes, and minimize waste.
- Separate waste into recyclable and non-recyclable ones; use separate waste bins.
- As regard construction waste – ensure large quantity of construction waste and left over are temporarily dumped inside the construction site in a systematic way.
- Surplus or left over material to be put up for sale later.
- After completion of construction works hire a contractor and party for tidying up the site.
- Materials that should be disposed off will be disposed at the approved landfill.
- Avoid open burning of debris by all means.

5. Soil management action plan (erosion and sedimentation)

Objectives : To avoid and prevent soil erosion and prevent the destruction of soil structure and profile due to construction activities.

Legal requirement : To comply with Environmental Conservation Law, 2012.

Management action : The following will be implemented for the management of soil. These have been extracted from mitigation measure described in Chapter 6, 6.2 and EMP sub-plan, Chapter 8, 8.5 and summarized below:

- Ensure that when doing construction works soil structure and profile are not destructed more than necessary
- Keep top soil and subsoil separately (when backfilling backfill subsoil first and then top soil on top to facilitate revegetation.
- Avoid contamination of soil as much as possible; no fuel spill or leak; should there is a spill do not wash down with water (to prevent percolation into soil); remove spill immediately with absorbents (rags, saw dust); prevent spreading of spill.
- Schedule the construction work so that large area of soil is not laid bare during monsoon month.
- Resurface and stabilize exposed ground surface after earth work.
- Soil compacted by heavy trucks/machinery to be raked and restored.
- Prevent soil erosion and sedimentation, especially during monsoon season.
- Run off from area adjacent the site will be diverted.

6. Occupational Health and Safety management action

Objectives : Try to achieve zero accident at work place as practical as possible.

Legal requirement : To comply with Occupational Health and Safety Law, 2019 (depicted in Chapter 3)

Management actions : The following will be implemented. These have been excerpted from mitigation measures described later in Chapter 6, 6.2 and in EMP sub plan, Chapter 8, 8.5 and summarized below:

- Plan and manage for zero accident.
- Create a safe working place and working condition.
- Educate train and supervize workers for good working practice, good safety practice and good housekeeping practice so that these good practices will be in grained in each and every worker's mind.
- Provide adequate lavatory facility, bath and washing area; potable water.

- Provide adequate PPE, where necessary.
- Provide First Aid training for some staff; keep First Aid Kit well-stocked with medicines and drugs.
- Also provide firefighting training for some staffs.
- Develop emergency response plan for any unexpected accidents and injuries. (e.g. fire extinguishers).
- Display phone numbers of Ambulance service, Red Cross Society, Hospital, Fire brigade etc.
- Maximize mechanical labour and minimize manual labour as far as possible to prevent workers from over exertion, excessive repetitive motions, and to reduce fatigue, strain and injury on workers.
- Cover the whole structure during Construction Phase with lace or netting to prevent accidental falling of objects (a common civil engineering practice).

During the Operation Phase

1. Air quality and emission management action plan

Objective : The main objective is to mitigate/reduce emission and control air quality as practical as possible.

Legal requirement : will comply with NEQEG emission standards guideline (2015), Code No.1.1 prescribed by ECD in EIA procedure (2015)

Management actions : The following will be implemented for all emissions (point source emission or stationary emission and fugitive emission of smoke and dust), generated from the operation of the project. These have been extracted from mitigation measures described later in Chapter 6, 6.2 and environmental management sub-plans in Chapter 8, 8.5 (tabulated form) and are summarized as below:

- All air emission will comply with NEQEG emission standards values guideline mentioned above.
- Procure eco-friendly machinery that emits less smoke in the first place.
- Spray water for fugitive emission of dust; daily or as required (during dry months).
- Restrict/reduce vehicular movement (speed limit 20 mph).
- Always avoid open burning of debris and trash.
- Develop green belt (plant fast growing trees) for trapping dust.
- Keep equipment and vehicles well-operated, well-maintained and well-lubricated to reduce smoke.

- Provide PPE (e.g. face mask, mouth and noise cover where necessary).
- Implement GRM, so that locals can file complaint regarding smoke and dust.
- Conduct regular monitoring (Preferable every 6 months; hire technicians for this).
- Conduct daily overall visual inspection of smoke and dust condition.
- Monitor effectiveness of mitigation measures taken, weekly or monthly.

2. Noise and vibration management action plan

Objective : The main objective is to mitigate/reduce noise and vibration level, generated from the operation of the factory.

Legal requirement : Will comply with NEQEG emission guideline, 2015, prescribed by ECD, Code No.1.3.

Management actions : The following will be implemented for the control/mitigation of noise level and vibration generated from the operation of the factory.

These have been extracted from mitigation measures described later in Chapter 6, 6.2 and overall environmental management sub-plans described later in Chapter 8, 8.5 in tabulated form, and summarized as below:

- Will comply with NEQEG emission guideline (2015) prescribed by ECD, Code No.1.3
- Procure eco-friendly machinery that emits lower noise level in the first place.
- Install noise abating device e.g. silencer, muffler, where possible.
- Ensure that foundations for machinery/equipment are stable to mitigate vibration.
- Keep machinery and vehicle well-operated, well-maintained and well-lubricated to mitigate noise and vibration.
- No auto-parts assembling work at night (working hours only during day time).
- Restrict/limit vehicular movement to mitigate vibration.
- Create smooth road surface to mitigate vibration.
- Develop green belt (plant fast growing greens) around the compound to abate noise.
- Provide PPE e.g. ear muffs, ear protectors where necessary.
- Conduct regular monitoring, preferably every 6 months; hire technicians for this.
- Conduct regular daily inspection of noise condition.
- Implement GRM (the locals can file complaints regarding noise).
- Regularly monitor the effectiveness of mitigation measures taken weekly or monthly.

3. Water quality and waste water management action plan

Objective : The main objective is not to impact any surface or underground water quality and to manage the waste water (effluent).

Legal requirement : Will comply with NEQEG emission guideline values (2015) prescribed by ECD, Code No.1.2 (generally application).

Management action : The followings will be implemented to avoid the impact of waste water and to control/mitigate and manage waste water.

These have been excerpted from mitigation measures described later in Chapter 6, 6.2 and overall environmental management sub-plans described later in 8.5 (tabulated form) and summarized as below:

- Comply with NEQEG emission guideline values (2015) prescribed by ECD, Code No.1.2
- Provide potable drinking water for staff.
- Ensure that all activities do not impact any water course – e.g. Pann Hlaing River.
- Prevent erosion (bank during rainy seasons).
- Avoid disposing of all waste, (solid and liquid) into any water body by all means.
- Prevent oil spills or oil spread into any water body.
- Adhere to the principle of water conservation; educate staffs for this.
- In auto-parts assembling no industrial waste water is produced; only used water; no special waste water treatment necessary.
- Set up network of drainage system for domestic waste water and storm water.
- Domestic waste water (brown water) from office, dormitory, kitchen, baths etc. will dry up in the drain (no special treatment required).
- Black water for toilets will end up in septic tanks and soak pits.
- Monitor water quality regularly (preferably every 6 months, hire technicians for this).
- Conduct weekly visual inspection of water condition.
- Monitor effectiveness of mitigation measures taken, weekly or monthly.

4. Waste (solid waste) management action plan

Objectives : The main objective is to mitigate/reduce industrial waste and domestic waste.

Legal requirement : Will comply with Environmental Conservation Law, 2012 and Environmental Conservation Rules, 2014. That is to discharge the wastes in accord with environmentally sound methods and not to pollute the environment.

Management actions : The following will be implemented for the management of wastes generated. These have been excerpted from mitigation measures described later in Chapter 6, 6.2 and EMP sub-plans Chapter8, 8.5 (tabulated form) and summarized as below:

- Will comply with Environmental Conservation Law, 2012. Articles 14, 15, 32; Environmental Conservation Rules, 2014; Rule 69.
- Educate and train staffs for the proper handling of wastes, educate them for good housekeeping, and minimization waste as practical as possible.
- In auto-parts assembling the only main industrial waste is old packing materials e.g. wood, plastic, foam.
- As for domestic wastes collect them daily in small waste baskets or big garbage bins (waste baskets in office and dormitory; big bins placed in kitchen and elsewhere inside the compound) daily and disposed them. Domestic waste will be negligible; no staffs are camped inside the assembly plant compound.
- Separate waste into recyclable and non-recyclable ones; dispose only those that are non-recyclable.
- Avoid open burning of solid wastes.
- Monitor waste management fortnightly or monthly.
- Monitor the effectiveness of mitigation measures taken.
- Implement GRM (locals can file complaint regarding waste).

5. Soil management action plan (erosion and sedimentation)

Objectives : The main objective is to avoid and prevent soil erosion and prevent the destruction of soil structure and profile due to activities of the project.

Legal requirement : To comply with Environmental Conservation Law, 2012.

Management action : The following will be implemented for the prevention of soil erosion and destruction of soil structure. These have be excerpted from Chapter 8, 8.5 EMP sub-plan (tabulated form) and summarized as below:

- Ensure that there is no contamination of soil; avoid spillage of fuel on soil, remove the spill immediately.
- Ensure that project activities do not impact soil structure (during the rainy season).
- Ensure that soil is stable and not easily eroded; compact soil where possible.
- Minimize the area of bare soil exposed (plant, grass and trees where possible to prevent erosion).

- Control run off and storm water (create reliable drainage system; divert storm water so that it can flow freely into the drainage system)
- Ensure that no erosion and sedimentation taking place in the compound area and vicinity.
- Prevent dirt and debris getting into the drainage causing siltation.
- Monitor the soil condition weekly or monthly.
- Monitor the effectiveness of mitigation measures taken (weekly or monthly during rainy season).

6. Occupational Health and Safety management action

Objectives : to avoid/prevent health impact on workers and try to achieve zero accident at work places as far as possible.

Legal requirement : To comply with Occupational Health and Safety Law, 2019

Management actions : The following will be implemented. These have been excerpted from mitigation measures described later in Chapter 6, 6.2 and in EMP sub plan, Chapter 8, 8.5 and summarized below:

- Create safe working place and working condition.
- Educate, train and supervise workers for good working practice, good engineering practice, good safety practice, and good health and hygiene practice so that these good practices will be ingrained in their mind sets.
- Apply mechanical rather than manual works and also apply automation system as far as possible.
- Train them for safety handling of materials for safety and efficient operation of all machinery and equipment.
- Organize induction effective induction training; provide work manuals and safety manual.
- Organize OHS training for all workers.
- Avoid accidental fire and explosion by all means.
- Set up alarm systems.
- Provide basic First Aid training and Firefighting training for some workers; provide adequate equipment facility: - e.g. First Aid kits and fire extinguishers.
- Develop plan for emergency response.
- Take out insurance for the plant and consider for life insurance for workers.

During the Decommissioning Phase

Objectives : To undertake systematic decommissioning and rehabilitation of the site.

Legal requirement : To comply with Environmental Conservation Law, 2012 and Occupational Health and Safety Law, 2019.

Management actions : The following will be implemented. These have been excerpted from mitigation measures described later in Chapter 6, 6.2 and EMP sub plan, Chapter 8, 8.5 and summarized below:

- Plan and manage for safe and effective decommissioning work;
- Hire a decommissioning contractor and party for demolition of buildings and structures and dismantling of equipment and tidying up the site.
- Put up for sale those that are still useable and saleable; dispose those that are not.
- Soil, if contaminated will be removed and disposed.
- Test air, water and soil quality for the last time to ensure that they are within guideline values (that air, water and soil are not polluted, no erosion of soil).
- Plant trees and commence rehabilitation work and ensure that the site is ecologically restored.
- Ensure for effective restoration/reforestation; all replanted trees are well-established.
- Monitor the effectiveness of decommissioning and rehabilitation works.
- Ensure that the site is safe for local communities after decommissioning and rehabilitation.

Monitoring Plan

Comprehensive monitoring plan for each project phase are described in details (in tabulated) in Chapter 6, 6.2.5.

Specific monitoring plan for physical component are again shown in tabulated form.

Summary of monitoring programme for Construction Phase in tabulated form (the pragmatic approach)

Sr. No	Components	Parameters to be monitored	Monitoring place/spot	Frequency	Responsible persons	Cost (once off cost)
1.	Air environment/ air emission	- NO ₂ , Ozone, PM ₁₀ , PM _{2.5} , SO ₂	16° 51' 19.71"N 96° 04' 48.04"E	Once during construction phase	Hired technicians	Ks 1,700,000
2.	Noise and vibration	- Day time dBA and Night time dBA	16° 51' 19.71"N 96° 04' 48.04"E	Once during construction phase	Hired technicians	Ks 70,000
3.	Effluent	- 5 day BOD, Ammonia, Arsenic, Cadmium, COD, Chlorine, Chromium, Copper, Cyanide, Fluoride, Iron, Lead, Mercury, Nickel, Oil and grease, P ^H , Sulphide, Temperature increase, Total coliform bacteria, Total phosphorus, Total suspended solids, Zinc	16° 51'20.80"N 96°04'48.13"E	Once during construction phase	Hired technicians	Ks 80,000
4.	Contamination of soil and ground water	- monitor spillage of fuel oil, grease, chemical, etc, if any	16° 51' 20"N 96°04' 51"E	Weekly	EMP cell members	Free of charges

5.	Erosion and siltation	- monitor earth work and drainage system	16°51'18.79"N 96° 04'47.40"E	Weekly (especially during rainy season)	EMP cell members	Free of charges
6.	Solid waste (construction tailing, debris)	- monitor type, amount generated reused, recycled, and disposed of	16°51'19.73"N 96° 04'48.05"E	Weekly	EMP cell members	Free of charges
7.	Biodiversity component	- monitor clearing of grass and small vegetation	16°51'18.81"N 96° 04'47.52"E	Weekly	EMP cell members	Free of charges
8.	Plan for prevention of fire outbreak	- monitor the plan and the readiness for prevention of fire - monitor the stock piling of building materials that can easily catch fire	16°51'19.44"N 96° 04'49.07"E	Weekly	EMP cell members	Free of charges

Summary of monitoring programme for Operation Phase (tabulated form)

(a) The pragmatic approach

Sr. No.	Components	Parameters to be monitored	Monitoring place/spot	Frequency	Responsible persons	Costs (once off cost)
1.	Emission	- NO ₂ , Ozone, PM ₁₀ , PM _{2.5} , SO ₂	16° 51' 19.71"N 96° 04' 48.04"E	- Every six months	- Hired technicians	- Ks 1,700,000
2.	Effluent	- 5 day BOD, Ammonia, Arsenic, Cadmium, COD, Chlorine, Chromium, Copper, Cyanide, Fluoride, Iron, Lead, Mercury, Nickel, Oil and grease, P ^H , Sulphide, Temperature increase, Total coliform bacteria, Total phosphorus, Total suspended solids, Zinc	16° 51'20.80"N 96°04'48.13"E	- Every six months	- Hired technicians	- Ks 80,000

3.	Noise and vibration	<ul style="list-style-type: none"> - Day time dBA and Night time dBA - monitor the wearing of PPE - monitor at suspension area 	16° 51' 19.71"N	<ul style="list-style-type: none"> - Every six months - Every six months 	<ul style="list-style-type: none"> - Hired technicians - Hired technicians 	- Ks 70,000
			96° 04' 48.04"E			- Ks 100,000
4.	Soil	<ul style="list-style-type: none"> - monitor contamination of soil (if any) 	16°51'20.44"N	<ul style="list-style-type: none"> - From time to time 	<ul style="list-style-type: none"> - Hired technicians members 	- Ks 140,000
5.	Solid waste	<ul style="list-style-type: none"> - monitor the packing materials collection and disposal - monitor trash/garbage generated, collection and disposal 	16°51'19.73"N	<ul style="list-style-type: none"> - Daily 	<ul style="list-style-type: none"> - EMP cell members 	- Free of charge
				96° 04'48.05"E	<ul style="list-style-type: none"> - Weekly 	<ul style="list-style-type: none"> - EMP cell members
6.	Ground water (Tube well)	<ul style="list-style-type: none"> - Total coliforms, Fecal coliforms, Color, Turbidity, Arsenic, Lead, Nitrate, Manganese, Chloride, Hardness, Iron, P^H, Sulphate, Total Dissolved Solids 	16° 51' 20"N	<ul style="list-style-type: none"> - Daily 	<ul style="list-style-type: none"> - EMP cell members 	- Ks 300,000
			96°04' 51"E			

Summary of monitoring programme for Decommissioning/Rehabilitation Phase (tabulated form)

Sr. No.	Components	Parameters to be monitored	Monitoring place/spot	Frequency	Responsible persons	Remarks
1.	Decommissioning and Rehabilitation	<ul style="list-style-type: none"> - monitor the Decommissioning process including the removal of all residuals, if any - monitor rehabilitation process 	<ul style="list-style-type: none"> - Inside the compound 	<ul style="list-style-type: none"> - Weekly 	<ul style="list-style-type: none"> - EMP cell members 	- Free of charge
			<ul style="list-style-type: none"> - Inside the compound 	<ul style="list-style-type: none"> - Monthly 	<ul style="list-style-type: none"> - EMP cell members 	- Free of charge

These monitoring will be conducted semi-annually and report to the Environmental Conservation Department (ECD).

Public Consultation

Public consultation is an integral part of EIA, IEE, and EMP. Involving public participation in the EIA work is imperative for increasing the understanding and acceptance of the project by the local communities.

Public consultation meetings will give the locals/stakeholders and Project Affected People (PAP) the opportunity to express their views, opinions, their concerns, if any, etc.

Public Consultation Meeting during scoping study

A preliminary public consultation meeting was held during the scoping study on 29-5-2019 at motor assembling plant and attended by 30 persons.

The 30 person including officers from Fire Brigade of Hlaing Thar Yar Township, members of Setmu-zone-lay-lann ward Administration stakeholders and interested person.

U Chan Win, responsible officer of the Brilliance Auto Co., Ltd and U Myint Kyaw Thura, (head of the consultant firm, MESC) explained to the participants about the project.

One local, Daw Thet Thet Lwin filed a complaint about the burning of plastic materials at a nearby factory and the repugnant odour emitted.

U Khin Maung San, Managing Director of Brilliance Auto Co., Ltd replied that the burning of plastic by a nearby company should be reported by local to the Industrial Zone Management Committee so that effective action could be taken by the committee.

One local, U Aung Kyaw Htoo spoke in support of the project as it has no emission, waste and disturbance.

U Soe Lwin, one local also spoke in support of the project.

No one has expressed his views or opinion against the implementation of this project. This Industrial Zone is in existence since 20 years ago and the locals are familiar with this industrial zone and many are employed in this big zone. The auto parts assembly plant is not a polluter of the environment and so they see no reason to be against this project.

Public consultation meeting during EIA study

A public consultation meeting during the EIA study period cannot be held due to security reason, (Army security personals are stationed closed to the site inside the Gymnasium compound. Gathering of people in this area is not allowed).

Information disclosure

The detailed minutes of the meeting are distributed to all the participants and are also kept at the office of Myanmar Brilliance Auto Co., Ltd and office of the consultant firm, MESC, for perusal by any interested person.

These minutes of meeting and records are also incorporated into the EIA report.

When this EIA report is approved by the authority part of this report (e.g. the Executive Summary) will be launched at the website of the consultant firm. www.myanmarenviroinmentsustainableconservation.com. Copies of the approved EIA report will be kept at the company office for and interested person for perusal.

Further ongoing public consultation

Public consultation meeting is a continuous process and will be held annually or bi-annually on situation during the long Operation Phase. The project proponent has a plan for such further ongoing public consultation meeting.

2. INTRODUCTION

2.1 Presentation of the project proponent

Myanmar Brilliance Auto Co., Ltd is incorporated as a limited company in August, 2018. This Myanmar Company acts as the sole assembler and distributor of Brilliance Vehicles in Myanmar for the main Manufacturer; Brilliance Automotive Group Holdings Co., Ltd, Shenyang, Liaoning , China.

Name of Project Proponent : Myanmar Brilliance Auto Co., Ltd

Address (office) : No. 18/A-1, Thar Yar Waddy Street, Bahan Township, Yangon

Telephone : 09 444456666, 09 695186300, 09 73738585, 09 974040700

Email : myanmarbrillianceauto2018@gmail.com;
chnislin13@gmail.com

Viber : +959 444456666

Wechat : LIN (ID: wxid.qnapgipdzykc22)

Contact persons : Daw Pyae Win Thidar and U Khin Maung San

Telephone : 09 443005821, 09 974040700

Email : nipponauto2016@gmail.com; chnislin13@gmail.com

Location of project site : Plot No. 264/M, Industrial Zone (2), Industrial Ward, Hlaing Thar Yar Township, Yangon Region

Particulars of executive and administrative body

Name	Nationality & National Registration Card No.	Usual Residential Address	Designation	Other Business Occupation
U Khin Maung San	Myanmar 12/La Tha Na (N) 007499	No.18 (A1), Thar Yar Waddy Street, Bahan Township, Yangon Region.	Managing Director	Merchant
U Myo Kyaw	Myanmar 8/Ma Ka Na (N) 019149	No.64, Padonemar Street, (3) Ward, South Okkalapa Township, Yangon Region	Director	Merchant
U Min Min Maung	Myanmar 14/Pa Tha Na (N) 001570	No. (D 2/3), Thazin (2) Street, (9)Ward, Hlaing Township, Yangon Region	Director	Merchant

U Yan Myo Aung	Myanmar 5/Nga Za Na (N) 054378	No.(462), Thein Phyu Road, Mingalar Taung Nyunt Township, Yangon Region	Director	Merchant
U Aung Phone Myint	Myanmar 12/Ma Ya Ka (N) 104670	No.(42), Aung Mingalar Street, 7 Mile, Kone Myhint Yeik Thar, Mayangone Township, Yangon Region	Director	Merchant

Myanmar Brilliance Auto Co., Ltd is 100% owned by Myanmar nationals.

The authorized capital : Ks 100,000,000

The type of share : Ordinary share

The number of share : 1000

List of shareholders and percentage of share hold

U Khin Maung San	- Managing Director	60%
U Myo Kyaw	- Director	10%
U Min Min Maung	- Director	10%
U Yan Myo Aung	- Director	10%
U Aung Phone Myint	- Director	10%



ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်
Certificate of Incorporation

မြန်မာအဆင့်မြင့်ကားကုမ္ပဏီလီမိတက်
MYANMAR BRILLIANCE AUTO COMPANY LIMITED
Company Registration No. 100601184

မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေ ၂၀၁၇ အရ
မြန်မာအဆင့်မြင့်ကားကုမ္ပဏီလီမိတက်
အား ၂၀၁၈ ခုနှစ် ဩဂုတ်လ ၁၆ ရက်နေ့တွင်
အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့်ပြုလိုက်သည်။

This is to certify that
MYANMAR BRILLIANCE AUTO COMPANY LIMITED
was incorporated under the Myanmar Companies Law 2017 on 16 August
2018 as a Private Company Limited by Shares.

ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ
Registrar of Companies

ရင်းနှီးမြုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
Directorate of Investment and Company Administration



Figure – 1: Certificate of Incorporation



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်

ခွင့်ပြုမိန့်

ခွင့်ပြုမိန့်အမှတ် ၁၂၉/၂၀၁၈

၂၀၁၈ ခုနှစ်၊ ဒီဇင်ဘာလ ၂၀ ရက်

မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်သည် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ ဥပဒေပုဒ်မ ၂၅ ပုဒ်မခွဲ

(ဂ) အရ ဤခွင့်ပြုမိန့်ကို ထုတ်ပေးလိုက်သည် -

(၁) ရင်းနှီးမြှုပ်နှံသူ/ ကမကထပြုသူအမည် ဦးခင်မောင်စန်း

(၂) နိုင်ငံသား မြန်မာ

(၃) နေရပ်လိပ်စာ အမှတ်-၁၈ (A-၁)၊ သာယာဝတီလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်မြို့

(၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်၊ အမှတ်-၁၈ (A-၁)၊ သာယာဝတီလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်မြို့

(၅) ဖွဲ့စည်းရာအရပ် မြန်မာ

(၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား မော်တော်ယာဉ် တပ်ဆင်ထုတ်လုပ် ရောင်းချခြင်း လုပ်ငန်း

(၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ) မြေကွက်အမှတ်-၂၄၆-M၊ မြေတိုင်းရပ်ကွက်အမှတ်- ၉၆၂၊ စက်မှု၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး

(၈) နိုင်ငံခြားမတည်ငွေရင်းပမာဏ -

(၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ -

(၁၀) စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်) ကျပ် ၄,၁၇၇,၉၃၉ သန်း (အမေရိကန်ဒေါ်လာ ၀.၅၄၉ သန်း အပါအဝင် စုစုပေါင်း ကျပ် လေးထောင်တစ်ရာ ခုနှစ်ဆယ့်ခုနှစ်သန်းနှင့် ကိုးသိန်း သုံးသောင်း ကိုးထောင်ခန့်)

(၁၁) တည်ဆောက်မှုကာလ ၁ နှစ်

(၁၂) ရင်းနှီးမြှုပ်နှံမှုခွင့်ပြုသည့်သက်တမ်း -

(၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ရာခိုင်နှုန်းပြည့် မြန်မာနိုင်ငံသားရင်းနှီးမြှုပ်နှံမှု

(၁၄) မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည် မြန်မာအဆင့်မြင့်ကား ကုမ္ပဏီလီမိတက်

Thawng Tun
(သောင်းထွန်း)
ဥက္ကဋ္ဌ

Figure – 2: MIC permit



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
 ပြည်ထောင်စုဝန်ကြီးဌာနနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
 ညွှန်ကြားရေးမှူးချုပ်ရုံး

စာအမှတ်၊အီးအိုင်အေ-၁/၄-ဆ(၉၂၅၂၀၂၁)
 ရက်စွဲ၊ ၂၀၂၁ ခုနှစ် မေလ ၁၆ ရက်

အုပ်ချုပ်မှုဒါရိုက်တာ
 Myanmar Brilliance Auto Co., Ltd.

အမှတ် ၁၈(အေ-၁)၊ သာယာဝတီလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်မြို့၊
 အကြောင်းအရာ။ Myanmar Brilliance Auto Co., Ltd. မှ SKD စနစ်ဖြင့် မော်တော်ယာဉ်
 အမျိုးမျိုးတပ်ဆင်၊ ထုတ်လုပ်၊ ဖြန့်ဖြူးရောင်းချခြင်းလုပ်ငန်းနှင့်
 ပတ်သက်၍ တင်ပြလာသော နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း
 အစီရင်ခံစာနှင့် လုပ်ငန်းတာဝန်များအပေါ် အတည်ပြုပြန်ကြားခြင်း

- ရည်ညွှန်းချက်။
- (၁) ရင်းနှီးမြှုပ်နှံမှုဌာနဆိုင်ရာပူးပေါင်းလုပ်ငန်းအဖွဲ့၏ ၁၀-၆-၂၀၁၉ ရက်စွဲပါစာအမှတ်၊ ၀၀၁/MIC (OSS)/06(74/19)
 - (၂) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ ၂-၁၀-၂၀၁၉ ရက်စွဲပါစာအမှတ်၊ အီးအိုင်အေ-၁/၄-ဆ(၂၁၁၇/၂၀၁၉)
 - (၃) Myanmar Brilliance Auto Co., Ltd. ၏ ၇-၄-၂၀၂၀ ရက်စွဲပါစာ
 - (၄) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ ၁၉-၃-၂၀၂၁ ရက်စွဲပါစာအမှတ်၊ အီးအိုင်အေ-၁/၄(ဆ)(၄၂၀(က)/၂၀၂၁)
 - (၅) ပြည်ထောင်စုဝန်ကြီးရုံး၏ ၂-၄-၂၀၂၁ ရက်စွဲပါစာအမှတ်၊ (သစ်တော)၃(၂)/၁၆(ဃ)(၉၅၆/၂၀၂၁)

၁။ အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ Myanmar Brilliance Auto Co., Ltd. မှ ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်၊ မြေကွက်အမှတ်- (၂၄၆-အမ်)၊ မြေတိုင်း ရပ်ကွက်အမှတ်၊ အပိုင်း-၂ စက်မှုမြို့တွင် အကောင်အထည်ဖော်ဆောင်ရွက်လျက်ရှိသည့် SKD စနစ်ဖြင့် မော်တော်ယာဉ်အမျိုးမျိုးတပ်ဆင်ခြင်း၊ထုတ်လုပ်ခြင်းနှင့်ဖြန့်ဖြူးရောင်းချခြင်းအတွက်နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းနှင့်လုပ်ငန်းတာဝန်များ (Scoping Report and Terms of Reference (ToR)) ကို စိစစ်သုံးသပ်နိုင်ပါရန် ရင်းနှီးမြှုပ်နှံမှုဌာနဆိုင်ရာ ပူးပေါင်းလုပ်ငန်းအဖွဲ့ (ရန်ကုန်မြို့) မှ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနသို့ ရည် ညွှန်း (၁) ပါစာဖြင့် တင်ပြခဲ့ခြင်းအား စိစစ်သုံးသပ်ချက်များအရ ပြင်ဆင်ဖြည့်စွက်၍ ပြန်လည်တင်ပြရန် ရည်ညွှန်း (၂) ပါစာဖြင့် အကြောင်းပြန်ကြားခဲ့ရာ ကုမ္ပဏီမှ ရည်ညွှန်း (၃) ပါစာဖြင့် ပြန်လည် တင်ပြလာခြင်းအပေါ် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ စိစစ်ပြီး ရည်ညွှန်း(၄) ပါစာဖြင့် ပြည်ထောင်စုဝန်ကြီးရုံးသို့ တင်ပြခဲ့ရာ ရည်ညွှန်း(၅) ပါစာဖြင့် ပြန်ကြားခွင့်ပြုလာပါသည်။

Figure – 3: Scoping approval

2.2 Presentation of the environmental and social experts

About the consultant firm, Myanmar Environment Sustainable Conservation Co., Ltd (MESC)

MESC is a consultant firm officially registered in 2014 as a limited company (a consultant/service company) at the Ministry of National Planning and Economic Development. Document: YaKa-8(Ga) 001/2014(004720), dated: 6th June, 2014. Registration No. 830/2014-2015, (20-5-2014).

The Transitional Registration/License No. of the consultant firm, MESC is No. 0003, ECD, Dated 1st July 2017.

Contact Address : Room no. (B -5), Building no.67/69, Parami Road, 16 Ward, Hlaing Township, Yangon Region

Contact person : Myint Kyaw Thura
95 9 420105071

Contact number : 95 9 73044903

E-mail : myanmar.esc@gmail.com

Members of MESC who are IEE/EIA appraisers, or IEE/EIA practitioners or who are involved in this IEE/EIA project are as follows:-

Name	Nationality & National Registration Card No.	Registration/ license No. by ECD	Designation
U Myint Kyaw Thura M.Sc (Zoology)	Myanmar 12/Da Ga Ta (N)028349	0006	Managing Director, Biodiversity Specialist (Fauna), EIA practitioner and EIA Appraiser
Prof: Saw Han Shein B.Sc (Botany) M.Sc (Marine Biology)	Myanmar 10/Ma La Ma (N)008173	0007	Retired Professor, EIA Practitioner and Appraiser
U Tin Tun Aung B.Sc (Engineering)	Myanmar 12/U Ka Ma (N)172111	0009	Engineer and EIA practitioner
U Than Soe Oo M.Sc (Forestry)	Myanmar 9/Ma Na Ma (N) 050808	00011	EIA practitioner

U Oakka Kyaw Thu B.Sc (Geology)	Myanmar 7/Ya Ta Ya (N) 090371	00012	Geologist
Daw Thin Thin Yee B.Sc (Chemistry)	Myanmar 12/Tha Ga Ka (N)039292	00013	Chemical Environment Researcher, Computer Programmer
Dr. Htin Thaw Kaung M.B.B.S	Myanmar 13/ Pa Ha Na (N) 222723	Part time	Occupational Health and Safety
Daw Thi Thi San L.L.B	Myanmar 12/Tha Ka Ta (N) 150424	Part time	Legal studies and analysis
U Thura Ko B.A (History)	Myanmar 12/Ka Ma Na (N) 124824	00277	Social studies and analysis, and also involved archeology and cultural heritage, noise and vibration
Daw Khin Thidar La Wun B.Sc (Maths)	Myanmar 12/Sa Kha Na (N) 069879	Part time	Weather and air quality analysis and forecasting, Hydrology ground water and underground water management, Solid waste and hazardous waste management

- U Myint Kyaw Thura is involved in fauna study, writing of report, in part.
- U Saw Han Shein is involved in report writing (chief report writer).
- U Tin Tun Aung is involved in the EIA practicing and writing part of the report. He is also involved in water and air pollution prevention, monitoring, control and management and impact prediction.
- U Than Soe Oo is involved in EIA practicing and part of the report writing. He is also involved in land use, environmental and natural resources management aspects,
- U Oakka Kyaw Thu is involved in the geological and geographical aspects by conduction desktop survey and gathering of secondary information on local geology.
- Daw Thin Thin Yee is involved in the physical aspects, especially ambient air, water quality, noise and vibration and soil etc. and compilation of data on the physical components; including secondary information on weather.
- Dr. Htin Thaw Kaung is a medical doctor and part time member of MESC and is involved in occupational health and safety aspects of the project.

- Daw Thi Thi San is involved in legal aspect of the project. She is also involved in EIA/IEE/EMP practicing appraising and report writing.
- U Thura Ko is involved in Socio-economic expert, and also involved cultural heritage, noise and vibration especially involved in interview and questionnaires during public meeting.
- Daw Khin Thidar La Wun is involved in meteorological aspects of study, Hydrology ground water and underground water management and solid waste and hazardous wastes management and collection of data.

Actually members of MESC always work together wholly as a tight-knit group in writing of each and every EMP/IEE/EIA report.

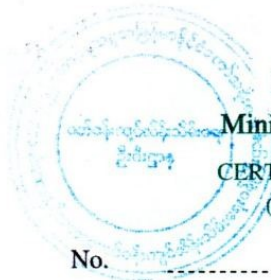
MESC has also part time members working as free lances.

The firm is not in a position to employ all its part time members on a permanent basis.

These are botanists, zoologists, ornithologists, ecologists, aquatic ecologists, social scientists, medical doctors, engineers and geologists working with this firm.

For the physical and chemical environmental studies MESC has to hire experts, say for example, from the Health Department and from registered laboratory in Yangon. Since portable test kits are sometime not reliable, experts from the Health Department have to be hired for the analysis of air quality. Experts from a registered laboratory were hired for the analysis of water (or samples have to be sent to the laboratory).

Members of MESC have quite a lot of experiences with IEE, EIA and SIA works.



REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)



No. 0003 Date 01.03.2018

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the organization under Environmental Impact Assessment Procedure, Notification No. 616/2015.

(ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယ်ဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို အဖွဲ့အစည်းအား ထုတ်ပေးလိုက်သည်။)

- (a) Name of Organization (အဖွဲ့အစည်းအမည်) Myanmar Environment Sustainable Conservation-MESC
- (b) Name of the representative in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ အမည်) U Myint Kyaw Thura
- (c) Citizenship of the representative in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ နိုင်ငံသား) Myanmar
- (d) Identity Card /Passport Number of the representative person in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ မှတ်ပုံတင်/ နိုင်ငံကူးလက်မှတ် အမှတ်) 12/ Da Ga Ta (N) 028349
- (e) Address of organization (ဆက်သွယ်ရန်လိပ်စာ) Room No. B-5, Building No.72, Marlar Myaing 6th street, 16 Ward, Hlaing Township, Yangon. myanmar.esc@gmail.com , 09 73044903
- (f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) Organization
- (g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်) 31 March 2018



EXTENSION
 သက်တမ်းတိုးပွင့်ခြင်း
 The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
 ဤလက်မှတ်အား (၁-၄-၂၀၁၈) မှတ်ပုံတင် (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ ထပ်မံသက်တမ်း တိုးပွင့်သည်။
 See Naing
 13.4.2018
 For Director General
 (Soe Naing, Director)
 Environmental Conservation Department

Handwritten signature of the Director General.

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control
2. Ecology and Biodiversity
3. Facilitation of Meeting
4. Geology and Soil
5. Land use
6. Modeling for Water Quality
7. Socio-Economy
8. Water Pollution Control

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for two months from (1.7.2023) to (31.8.2023)
ဤလက်မှတ်အား(၁-၇-၂၀၂၃)ရက်နေ့မှ(၃၁-၈-၂၀၂၃)ရက်နေ့အထိ (၂)လသက်တမ်းတိုးမြှင့်သည်။
Sa Aung Thu
For Director General
(Sa Aung Thu, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀)ရက်နေ့မှ(၃၁-၁၂-၂၀၂၀)ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
5.1.2020
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉)ရက်နေ့မှ(၃၁.၁၂.၂၀၁၉)ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
Soe Naing
17.6.19
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ(၃၀-၆-၂၀၂၁)ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁)ရက်နေ့မှ(၃၁-၁၂-၂၀၂၁)ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂)ရက်နေ့မှ(၃၁-၁၂-၂၀၂၂)ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for six months from (1.1.2023) to (30.6.2023)
ဤလက်မှတ်အား(၁-၁-၂၀၂၃)ရက်နေ့မှ(၃၀-၆-၂၀၂၃)ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
Sa Aung Thu
For Director General
(Sa Aung Thu, Director)
Environmental Conservation Department

Figure – 4: Certificate of consultant firm

3. ENVIRONMENTAL POLICY LEGAL AND INSTITUTIONAL FRAME WORK

3.1 Corporate environmental and social policy of Myanmar Brilliance Auto Co., Ltd

Myanmar Brilliance Auto Co., Ltd is a new company going to make investment in Myanmar. The first and foremost policy is to comply with all the environmental Laws, Rules and Regulation concerning the assembling and sale of motor vehicles. The company also pledges to do a car assembling/manufacturing business that will be environmentally sound as far as possible.

The company will endeavour to:

- operate the auto parts assembling with an environmentally and socially responsible manner and to comply with laws and regulation
- prevent pollution of surrounding area; monitoring and adopting suitable measures for environment protection
- implement EMP effectively to mitigate pollution of water, land, air, noise and dust and proper disposal of waste
- develop green belt in available space
- conserve natural resources and energy as far as possible
- recycle of waste water through the principles of 5 Rs (reduce, reuse, recycle, recover and redesign), and
- create environmental awareness among employees and local community through education and training
- implement effective CSR programme
- implement CSR programme in an effective way

Corporate Social Responsibility (CSR) and community development

The company very well realizes that the ethic code of 21th century big business is not to make profit at the expense of the environment and the local community. And that the big business should not focus only on economically viable venture but also on environmentally and functionally sound, ecologically viable as well as socially sustainable venture.

CSR has become mandatory in many countries and it is also now an official policy of big companies. Myanmar Brilliance Auto Co., Ltd will, as far as possible, carry out community assistance and community development. Generous compensation would be provided if there is any loss or damage due to the implementation of this project. Moreover charity and donation works will be carried out.

3.2 Policy and legal frame work

There were/are several laws since the colonial days which were/are one way or another pertaining to the environment of the country.

The Protection and Conservation of the Environment was the priority of successive governments.

The National Commissions of Environmental Affairs (NCEA) was formed in 1990. Myanmar Agenda-21 was outlined which contains social, economic, institutional and infrastructural improvement programmes and, most of all, environmental conservation programmes.

Respective ministries devised 56 environmental policies and regulations directly related with environmental conservation and protection.

The National Environmental Conservation Committee (NECC) was formed in 2011 with the aim to achieve sound environmental management in the country.

With a view to effectively implementing the protection and conservation of the environment the new government in 2016 has created the new ministry, Ministry of Natural Resources and Environmental Conservation (MONREC). It is believed that effective and meaningful management of the environmental affairs will be achieved. The Environmental Conservation Department (ECD) is the focal and coordinating agency for the overall and detail environmental management throughout the country.

3.2.1 Applicable Laws and Rules

Excerpts of Laws, Rules, Act, regulations, guideline etc of relevance

The project proponent will strictly comply with the following Laws, Rules, Acts, regulations etc particularly the Sections/Articles reproduced below (See also commitment **Section-3.3**).

Myanmar Brilliance Auto Co., Ltd will comply with the following laws:

1. The Environmental Conservation Law, 2012
2. The Environmental Conservation Rules, 2014
3. Environmental Impact Assessment Procedure, 2015
4. National Environmental Quality (Emissions) Guidelines, 2015
5. Myanmar Investment Law, 2016
6. Myanmar Investment Rules, 2017
7. Private Industrial Enterprise Law, 1990
8. The Conservation of Water Resources and Rivers Law, 2006
9. The Conservation of Water Resources and Rivers Rule, 2013

10. Prevention of Hazard from Chemical Substances Law, 2013
11. The Petroleum and Petroleum Products Law, 2017
12. Labour Organization Law, 2011
13. The Settlement of Labour Dispute Law, 2012
14. Employment and Skill Development Law, 2013
15. Leaves and Holiday Act, 1951
16. Workmen's Compensation Act, 1923
17. Social Security Law, 2012
18. The Factories Act, 1951
19. Minimum Wages Law, 2013
20. The Payment of Wages Law, 2016
21. Myanmar Public Health Law, 1972
22. Prevention and Control of Communicable Diseases Law, 1995
23. The Control of Smoking and Consumption of Tobacco Product Law, 2016
24. Protection and Preservation of Antique Objects Law, 2015
25. Protection and Preservation of Cultural Heritage Regions Law, 2019
26. Protection and Preservation of Ancient Monuments Law, 2015
27. Myanmar Insurance Law, 1993
28. The Myanmar Fire Brigade Law, 2015
29. Myanmar Engineering Council Law, 2013
30. Yangon Region City Development Committees Law, 2018
31. The Export Import Law, 2012
32. The Conservation of Biodiversity and Protected Areas Law, 2018
33. Land Acquisition Act, 1894
34. Farmland Law, 2012
35. Electricity Law, 2014
36. Occupational Health and Safety Law, 2019

37. Vehicle Safety and Motor Vehicle Management Law, 2020
38. Law on Standardization, 2014
39. The Ethnic Rights Protection Law, 2015
40. The Ethnic Rights Protection Rules, 2019
41. The Petroleum Rules, 1937
42. Industrial Zone Law, 2020
43. The Public Health Law, 1972
44. National Waste Management Strategy and Action Plan, 2019
45. The related Law enacted by Yangon Region Hluttaw and Rules issued by Yangon Region Government

These above-mentioned Laws, Rules and guideline are directly or indirectly related to motor vehicle industry business. The company shall comply with all these laws. Since these laws cover a very wide spectrum and various aspects, the company is not in a position to read and study all these laws. The company, therefore, has hired a legal expert to deal with the details of these laws.

When implementing the project and doing the business the company authority will apply the common sense and simple logics not to pollute the air, water, land and the community. When it comes to details the legal expert hired by the company will assist the company to comply with these laws, accordingly.

Staffs shall be educated and trained for environmental awareness and for maintenance of environmental performance during the entire life of the project.

However, certain points or Articles of the law which are of great environmental relevant to the project are excerpted and reproduced as follow:

Sr.No.	Laws and Regulations	Relevant Articles	Commitments
1	The Environmental Conservation Law, 2012	Section-7	<p>Project Proponent has to compensate:</p> <ul style="list-style-type: none"> (d) The ministry prescribes environmental quality standards including standards on emission, effluents, solid wastes, production procedures, processes and products for conservation and enhancement of environmental quality; (o) Managing to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the business which explore, trade and use the natural resources in environmental conservation works;
		Section-14	<p>Project Proponent has to comply with the followings:</p> <p>A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards.</p>
		Section-15	<p>Project Proponent has to comply with the followings:</p> <p>The owner or occupier of any business, material or place which causes a point source of pollution shall install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduce or eliminate environmental pollution. If it is impracticable, it shall be arranged to dispose the wastes in accord with environmentally sound methods.</p>

		Section-24	Project Proponent has to comply with the term set up by the ministry: The Ministry may, in issuing the prior permission, stipulate terms and conditions relating to environmental conservation. It may conduct inspection whether or not it is performed in conformity with such terms and conditions or inform the relevant Government departments, Government organization to carry out inspections.
		Section-29:	Project Proponent has to comply with the followings directive: No one shall violate any prohibition contained in the rules, notification, orders, directives and procedures issued under this Law.
		Section-32	Project Proponent commits to: Whoever violates any prohibition contained in the rules, notifications, orders, directives and procedures issued under this Law shall, on conviction, be punished with imprisonment for a term not exceeding one year, or with fine, or with both.
2	The Environmental Conservation Rules, 2014	Section-69	Project Proponent commits to comply with this rules: (a) Any person shall not emit, cause to emit, dispose, cause to dispose, pile and cause to pile, by any means, the pollutants to environment and hazardous waste or hazardous material stipulated by notification under the Law and any these rules at any place which may affect the public directly or indirectly. (b) Any person shall not carry out the action which can be damaged to natural environment which is changing due to ecosystem and such system, except the permission of the relevant Ministry in order to the interest of the public. The rules also set out further details on the requirement to conduct EIA and prepare EMP on the basic of EIA.

3	Environmental Impact Assessment Procedure, 2015	Section-102	<p>Project Proponent has to comply with:</p> <p>The project Proponent shall bear full legal and financial responsibility for:</p> <ul style="list-style-type: none"> (a) All of the Project Proponent’s actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the Project acting (b) PAPs until they have achieved socio-economic stability at a level not lower than that in effect prior to the commencement of the Project, and shall support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts.
		Section-103	<p>Project Proponent has to comply with:</p> <p>The project proponent shall fully implement the EMP, all project commitments, and conditions and is liable to ensure that all contractors and subcontractors of the project comply fully with all applicable laws, the rules, this procedure, the EMP, project commitments and condition when providing services to the project.</p>
		Section-104	<p>Project Proponent has to comply with:</p> <p>The project proponent shall be responsible for and shall fully and effectively implement, all requirements set forth in ECC, applicable laws, the rules, this procedure and standards.</p>

		Section-105	<p>Project Proponent has to comply with:</p> <p>The project proponent shall timely notify and identify in writing to the ministry, providing detailed information as the proposed project's potential adverse impacts.</p>
		Section-106	<p>Project Proponent has to comply with:</p> <p>The project proponent shall, during all phase of the project (Preconstruction, Construction, Operation, Decommissioning, Closure and Post-closure) engage in continuous, proactive and comprehensive self-monitoring of the project and activities related thereto, all adverse impacts, and compliance with applicable laws, the rules, this procedure, standards, the ECC and the EMP.</p>
		Section-107	<p>Project Proponent has to comply with:</p> <p>The project proponent shall notify and identify in writing to the ministry any breaches of its obligations or other performance failures or violations of the ECC and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention or the ministry is or may be required, within not later than twenty-four (24) hours, and in all cases within seven (7) days the project proponent becoming aware of such accidents.</p>
		Section-108	<p>Project Proponent has to comply with:</p> <p>The project proponent shall submit monitoring reports to the ministry not less frequently than every six (6) months, as provided in a schedule in the EMP, or periodically as prescribed by the ministry.</p>

		Section-109	<p>Project Proponent has to comply with:</p> <p>The monitoring reports shall include:</p> <ul style="list-style-type: none"> a) Documentation of compliance with all conditions b) Progress made to date on implementation of the EMP against the submitted implementation schedule c) Difficulties encountered in implementing EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties d) Number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation e) Accidents or incidents relating to the occupational and community health and safety, and the environment, and f) Monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required. <p>Note: The project proponent will comply with the above mentioned section and sub-sections.</p>
		Section-110	<p>Project Proponent has to comply with:</p> <p>Within ten(10) days of completing a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, the Project Proponent shall make such report (except as relate to National Security concerns) publicly available on the Project’s website, at public meeting places (e.g. libraries, community halls) and at the Project offices. Any organization or person may request a digital copy of a monitoring report and the Project shall, with ten (10) days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor.</p>

		Section-113	<p>Project Proponent has to comply with:</p> <p>For purpose of monitoring and inspection, the Project Proponent:</p> <p>(a) Shall grant to the Ministry and/or its representatives, at any time during normal working hours, access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed; and</p> <p>(b) From time to time as and when the Ministry may reasonably require, shall grant the Ministry access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed.</p>
		Section-115	<p>Project Proponent has to comply with:</p> <p>In the event of an emergency, or where, in the opinion of the Ministry, there is or may exist a violation or risk of violation of the compliance by the Project with all applicable environmental and social requirements, the Project shall grant full and immediate access to the Ministry at any time as may be required by the Ministry.</p>
		Section-117	<p>Project Proponent has to comply with:</p> <p>The Project Proponent shall further ensure that the Ministry's rights of access hereunder shall extend to access by the Ministry to the Project's contractors and information storage, and persons.</p>
4	National Environmental Quality (Emissions) Guidelines, 2015		<p>Project Proponent has to comply with:</p> <p>The guidelines apply to any project subject to EIA procedure- if those that requires EIA or IEE. They require a project to take necessary measures to avoid, minimize and control adverse impacts to human health and safety, and the environment by reducing air, water and noise emissions and minimizing the load of pollutants and contaminants prior</p>

			<p>The Myanmar Investment Law and Rules cover all investment in Myanmar and clearly states that the country is to attract "responsible investment business which do not cause harm to the natural environment and the society for the benefit of the Union and its citizens.to release or discharge. The guidelines are divided into two groups general and industry-specific guidelines.</p> <p>Relevance for this project:-</p> <ul style="list-style-type: none"> - The project proponent must meet a general set of requirement on air emissions, waste water, noise and odour that apply to any project where an IEE or EIA is required. - The project proponent must meet specific effluent levels if the project activities generate any effluent (Chapter-2.7).
5	The Myanmar Investment Law, 2016		<p>Project Proponent has to comply with:</p> <p>The Myanmar Investment Law and Rules cover all investment in Myanmar and clearly states that the country is to attract "responsible investment business which do not cause harm to the natural environment and the society for the benefit of the Union and its citizens.</p>
		Section-50	<p>Project Proponent has to comply with:</p> <p>(a) An investor who obtains permit or endorsement under this Law has the right to obtain a long-term lease of land or building from the owner if it is private land or building, or from the relevant government departments or government organizations if it is land managed by the Government, or land or building owned by the Union in accordance with the stipulations in order to do investment. Citizen investors may invest in their own land or building in accordance with the relevant laws.</p>

			<p>(b) Foreign investor may lease land or building either from the government or government organizations or from owners of private land or building from commencing on the date of receipt of the permit or endorsement of the Commission up to an initial period of (50) year in accordance with the stipulation.</p> <p>(c) After the expiry of the term of the right to use land or building or the period of right to lease of land or building permitted under subsection (b), a consecutive period of (10) year and a further consecutive period of (10) year extension to such period of lease of land or building may be obtained with the approval of the Commission.</p> <p>(d) The investor shall register the land lease contract at the Office of Registry of Deeds in accordance with the Registration Act.</p> <p>(e) The Government may grant more favorable terms and conditions for the lease of land and the use of land by Myanmar citizen investors.</p> <p>(f) The Commission shall obtain the approval of the Pyidaungsu Hluttaw through the Government, when granting an extension to investors for the rights to lease land or building and the rights to use the land or building in this Law, in less-developed and remote region for the purpose of the development around the Union.</p>
		Section-51	<p>Project Proponent has to comply with:</p> <p>The investor:</p> <p>(a) May appoint any citizen who is a qualified person as senior manager, technical and operational expert, and advisor in his investment within the union in accordance with the law.</p>

			<p>(b) The investor shall appoint them to replace, after providing for capacity building programs in order to be able to appoint citizens to different level positions of management, technical and operational experts and advisors,</p> <p>(c) shall appoint only citizens for works which does not require skill</p> <p>(d) shall appoint skilled citizen and foreign workers, technicians, and staff by signing an employment contract between employer and employee in accordance with the labor laws and rules;</p> <p>(e) shall ensure to obtain the entitlements and rights in the labor laws and rules, including minimum wages and salary, leave, holiday, overtime fee, damages, compensation of the workman, social welfare, and other insurance relating to workers in stipulating the rights and duties of employers and employees and occupational terms and conditions in the employment contract;</p> <p>(f) shall settle disputes arising among employers, among workers, between employers and workers, and technicians or staff in the investment in accordance with the applicable laws.</p>
		Section-65	<p>Project Proponent has to comply with: The investor:</p> <p>(a) shall respect and comply with the customs, traditions and traditional culture of the ethnic groups in the Union;</p> <p>(b) shall establish and register a company or sole proprietorship or legal entities or branches of such entities under the laws in order to invest;</p>

			<ul style="list-style-type: none"> (c) shall abide by the terms and conditions, stipulations of special licenses, permits, and business operation certificates issued to them, including the rules, notifications, orders, and directives and procedures issued by this Law and the applicable laws, terms and conditions of contract and tax obligations; (d) shall carry out in accordance with the stipulations of the relevant department if it is, by the nature of business or by other need, required to obtain any license or permit from the relevant Union Ministries, government departments and government organizations, or to carry out registration; (e) shall immediately inform to the Commission if it is found that natural mineral resources or antique objects and treasure trove are not related to the investment permitted above and under the land on which the investor is entitled to lease or use and not included in the original contracts. If the Commission allows, the investor shall continue to carry out the investment in such land, and if not allowed, the investor shall transfer and carry out, by obtaining the permission, at the substituted place which is selected and submitted by him; (f) Shall not make any significant alternation of topography or elevation of the land on which he is entitled to lease or to use, without the approval of the commission. (g) Shall abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage;
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			<ul style="list-style-type: none"> (i) Shall close and discontinue the investment only after payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce; (j) Shall pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directives and so forth during the period of suspension of investment for a credible reason; (k) Shall pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease and death due to the work; (l) Shall supervise foreign experts, supervisors and their families, who employ in their investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar; (m) Shall respect and comply with the labor laws; (o) Shall pay effective compensation for loss incurred to the victim, if there are damage to the natural environment and socioeconomic losses caused by logging or extraction of natural resources which are not related to the scope of the permissible investment, except from carrying out the activities required to conduct investment in a permit or an endorsement. (p) Shall allow the Commission to inspect in any places, when the Commission informs the prior notice to inspect the investment;
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			(q) Shall take in advance permit or endorsement of the Commission for the investments which need to obtain prior approval under the Environmental Conservation Law and the procedures of environmental impact assessment, before undertaking the assessment, and shall submit the situation of environmental and social impact assessment to the Commission along the period of activities of the investments which obtained permit or endorsement of the Commission.
		Section-73	Project Proponent has to comply with: The investor shall insure the types of insurance stipulated in the provision of the rules at any insurance enterprise which is entitled to carry out insurance businesses within the Union.
6	Myanmar Investment Rules, 2017	Section-202	Project Proponent has to comply with: The Investor must comply with the conditions of the Permit and other applicable laws when making an Investment.
		Rules-203:	Project Proponent has to comply with: The investor shall fully assist the negotiating processes with the relevant government departments and government organizations for the affected persons due to investment plans.
		Section-206	Project Proponent has to comply with: If the Investor is desirous to appoint a foreigner as senior management, technician expert or consultant according to section 51(a) of the law, it shall submit such foreigner's passport, expertise evidence or degree and profile to the Commission Office for approval.

		Section-212	<p>Project Proponent has to carry out:</p> <p>Every Investor that holds the Permit or Tax Incentives must have taken out the relevant insurance out of the following types of insurance at any insurance business that holds the license in the Union based on the nature of the business:</p> <ul style="list-style-type: none"> (a) Property and Business Interruption Insurance; (b) Engineering Insurance; (c) Professional Liability Insurance; (d) Professional Accident Insurance; (e) Marine Insurance; and (f) Workmen Compensation Insurance.
7	Private Industrial Enterprise Law, 1990	Section-4	<p>Project Proponent has to comply with:</p> <ul style="list-style-type: none"> (a) Any person desirous of conducting any private industrial enterprise; (b) Any person conducting any private industrial enterprise on the day this Law is enacted; by using any type of power which is three horsepower and above or manpower of ten wage-earning workers and above shall register under this Law.
		Section-13	<p>Project Proponent has to comply with:</p> <p>The duties of the entrepreneur are as follows:-</p> <ul style="list-style-type: none"> (a) Shall pay the registration fees, fees for the renewal of registration and other payable duties and taxes prescribed by the Directorate; (b) Shall abide by the terms and conditions of the registration certificate; (c) Shall conduct the enterprise by opening an account with the relevant bank in the name of its registered enterprise;

			<p>(f) Shall shift the place of enterprise, change the nature of enterprise, amalgamate enterprises and split up enterprises only with the approval of the Directorate;</p> <p>(g) Shall abide by the orders and directives issued from time to time by the Ministry and the Directorate;</p> <p>(h) Shall also abide by the existing laws.</p>
		Section-26	<p>Project Proponent has to comply with:</p> <p>No one shall conduct a private industrial enterprise contained in section ~ without obtaining registration under this Law.</p>
		Section-27	<p>Project Proponent has to comply with:</p> <p>An entrepreneur:</p> <p>(a) In distributing and selling the goods he has produced shall not sell without a trade mark;</p> <p>(b) Shall not violate any provision of section 13;</p> <p>(c) Shall not fail to comply with any order or decision passed by the Minister and the Director General.</p>
8	The Conservation of Water Resources and Rivers Law, 2006	Section-8	<p>Project Proponent has to comply with this law:</p> <p>No person shall:</p> <p>(a) Carry out any act or channel shifting with the aim to ruin the water resources and river and creeks.</p>
		Section-9	<p>Project Proponent has to comply with:</p> <p>No person shall destroy, cause damage or cause collision of vessel with the river training structure either wholly or partially.</p>

		Section-10	Project Proponent has to comply with: No person shall anchor the vessel where vessels are prohibited from anchoring in the rivers and creeks.
		Section-11	Project Proponent has to comply with: No person shall: (a) Dispose of engine, oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk.
		Section-19	Project Proponent has to comply with: No one shall dispose of any substance into the river, creek that may cause damage to water way or change of water course from the bank or vessel which is plying, vessel which has berthed, anchored, stranded or sunk.
		Section-21:	Project Proponent has to apply for permission: (b) drill well or pond or dig earth without the permission of the Directorate.
		Section-22	Project Proponent has to comply with: No one shall, without the permission of the Directorate, pile sand, shingle and other heavy materials for business purpose on the bank area and water front area.
		Section-24:	Project Proponent has to comply with: No one shall: (b) violate the conditions prescribed by the Directorate so as not to cause water pollution and change of watercourse in rivers and creeks.

		Section-29	Project Proponent has to comply with: Whoever attempts or conspires or abets in the commission of an offence under this law shall be punished with the punishment provided for such offence in this law.
		Section-30	Project Proponent has to comply with this approval: Any government department and organization or any person desirous of constructing drainage, utilizing river water intake, constructing bridged spanning rivers, connecting underground pipe, connecting underground electric cables, connecting underground telecom cable or digging in river or creeks, bank boundary and water front boundary, under the requirement of work, shall in order not to adversely affect the water resources and river and creeks, carry out only after obtaining the approval of the Ministry of Transport.
9	The Conservation of Water Resources and Rivers Rule, 2013	Section-8:	Project Proponent commits to: <u>Chapter-3, Protection of water pollution and conservation of environment</u> No one: (a) must not pollute the river water by dumping hazardous substance into the water (b) must not dump plastic bags, any plastic materials or nylon ropes into the water (c) must not construct latrine by the river side to prevent water pollution by human wastes (d) must not dump any human wastes, fuel oils, chemical toxic wastes into the water (e) all activities should be executed according to international standards

		Section-9:	Project Proponent commits to: Any one who has committed such an offence must pay for this to the Directorate
		Section-53:	Project Proponent commits to: <u>Chapter-11, Construction of buildings/structures on the river bank premise</u> Any one who want to construct any buildings or structures near the river must obtain permit from the relevant Ministry and Directorate.
10	Prevention of Hazard from Chemical Substances Law, 2013	Section-15	Project Proponent has to comply with: A person who has obtained a licence, before starting the respective chemical and related substances business:- (a) Shall be inspected for the safety and the power of resistance of the machinery and equipments by the respective Supervisory Board and Board of Inspection; (b) Shall be attended the person who serve in the work to the respective foreign trainings or the training and the expert trainings on prevention of hazard from the chemical and related substances opened by the government department and the government organizations.
		Section-16	Project Proponent has to comply with: A person who has obtained a license:- (a) Shall abide by the license regulation; (b) Shall perform to abide strictly the instructions for being safety in using the chemical and related substances by himself and also the persons who serve the work;

			<ul style="list-style-type: none"> (c) Shall keep the required safety equipment enough in the chemical and related substances businesses, furthermore shall grant the personal protection equipment and dresses free of charge to the working persons; (d) Shall make the course of training and study and instruction if necessary to the working persons for using the occupational safety equipment, the personal protection equipment and the dresses systematically in the chemical and related substances business; (e) Shall be inspected by the respective Supervisory Board and Board of Inspection in respect of whether or not the hazard may impact on the Human Being and Animals' health and the environment; (f) Shall make medical checkup the working persons who will work in the chemical and related substances business and shall permit to serve in that work after obtaining the recommendation that his health is suitable for that work. This medical checkup records shall be kept systematically; (g) Shall send the copy of informative letter of the permission to the respective Department of Township Administration, if the hazardous chemical or related substances are permitted to store; (h) Shall acquire in advance the guidance and agreement of the respective Department of Fire Brigade, if the business that is worried to fire hazard is operated by using the fire hazard substances or the explosive substances; (i) Shall transport only the permitted amount of the chemical and related substances in accordance with the prescriptive stipulations, if they are transported in local;
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			(j) Shall take the permission from the Central Supervisory Board if the chemical and related substance is altered and transferred from one place to any other place which contained in the license;
		Section-17	Project Proponent has to comply with: A person who has obtained a license, shall put the insurance in accordance with prescriptive stipulations to be able to pay the compensation, if the impact and damage is occurred on the Human Being and Animals or the environment in respect of the chemical and related substances businesses.
		Section-22	Project Proponent has to comply with: A person who has obtained the registration certificated shall abide the regulations consisted in the registration certificate furthermore shall also abide the order and instructions issued occasionally by the Central Supervisory Board.
		Section-27	Project Proponent has to comply with: A person who has obtained the license to be complied the following matters to control and decrease the hazard of the chemical and related substances:- (a) Classifying the hazard level to protect in advance the hazard according to the properties of the chemical and related substances; (b) Expressing the Material Safety Data Sheet and Pictogram; (c) Providing the safety equipment, the personal protection equipment to protect and decrease the accident and attending to the training to be used systematically;

			<p>(d) Performing in accordance with the stipulations in respect of transporting, possessing, storing, using, discharging the chemical and related substances;</p> <p>(e) Not being imported or exported the chemical and related substances banned by the Central Supervisory Board and the machinery and equipment which are used them.</p>
11	The Petroleum and Petroleum Products Law, 2017	Section -8:	<p>Project Proponent has to comply with:</p> <p>The Ministry shall perform the following tasks with regard to petroleum and any types of petroleum products:</p> <p>(a) Issuance of licenses for the refinery, transportation, transportation with pipelines, distribution, testing, and analysing; issuance of separate or combined licenses for the operation of more than one business;</p> <p>(d) specifying the procedures and terms for the safe operation of petroleum and petroleum products businesses by exporters, recipients, transporters, and keepers;</p>
		Section -9:	<p>Project Proponent has to comply with:</p> <p>The Ministry of Transport and communications shall carry out the following functions relating to any petroleum and petroleum products.</p> <p>(a) Issuing license to vehicles, vessels and barges that carry any petroleum and petroleum product.</p> <p>(e) specifying the procedures and terms for transportation, except for transportation by pipelines.</p>

		Section-10	<p>Project Proponent has to comply with:</p> <p>The ministry shall:</p> <ul style="list-style-type: none"> (a) Issue licence for the right to store for the storage tanks and warehouses (b) Issue transport permit for the vehicles, vessels and barges that shall carry any petroleum and petroleum product (d) If it occurs environmental impact, in carrying out petroleum and petroleum product business activities, taking action, as necessary in accordance with the existing laws of on-site inspection. (e) Determine in coordination with ministries concerned, procedures and conditions relating to standard and quality of storage tanks and warehouse and tanks of vehicles, vessels and barges that carry any petroleum and petroleum product.
		Section-11	<p>Project Proponent has to comply with:</p> <p>On all receptacles containing any dangerous petroleum and petroleum product the warning sign of danger by stamping, embossing, painting, printing or any other means shall be expressed. If it is impossible to express as such, similar warning signs of the nature of danger of gasoline, spirit or petroleum shall be expressed in writing at the ostensible place in salient words or signs near the receptacle.</p>
		Section-31	<p>Project Proponent has to comply with:</p> <p>Any license:</p> <ul style="list-style-type: none"> (a) Shall not violet any prohibition contained in the rules, regulations, bye-laws, notifications, orders, directives, procedure and conditions or fail the duty to implement

			<p>(c) Shall not import, transport, store, sell and distribute the dangerous petroleum and petroleum products or non-dangerous petroleum and petroleum product except by the means stipulated in the law</p> <p>(d) Shall not have the right to carry out without under taking the environmental impacts, in operating petroleum and petroleum product business activities.</p>
12	The Labour Organization Law, 2011	Section-17	<p>Project Proponent has to comply with:</p> <p>The labour organization shall have the right to carry out freely in drawing up their constitution and rules, in electing their representatives, in organizing their administration and activities or in formulating their programmes the labour organization has the right to negotiate and settle with the employer if the workers are unable to obtain and enjoy the right of the workers contained in the labour laws and to submit demands to the employer claim in accord with the relevant law if the agreement cannot be reached.</p>
		Section-18	<p>Project Proponent has to comply with:</p> <p>The labour organizations have the right to demand the relevant employer to re-appoint a worker if such worker is dismissed by the employer and if there is cause to believe that the reason of such dismissal were based on labour organization membership or activities, or were not in conformity with the labour law.</p>
		Section-19	<p>Project Proponent has to comply with:</p> <p>The labour organizations have the right to send representation to the Conciliation Body in settling the dispute between the employer and the worker. Similarly, they have the right send representatives to the Conciliation Tribunal formed with the representatives from the various levels of labour organization.</p>

		Section-20	Project Proponent has to comply with: In discussing with the Government the employer and the complaining workers in respect of workers' right or interests contained in the labour laws, the representative of the labour organization also have the right to participate and discuss.
		Section-21	Project Proponent has to comply with: The labour organizations have the right to participate in solving the collective bargains of the workers in accord with the labour laws.
		Section-22	Project Proponent has to comply with: The labour organizations shall carry out peacefully in carrying out holding meetings, going on strike and carrying out other collective activities in accord with the procedure, regulations, by-law and any directives prescribed by the relevant labour Federation ship.
13	The Settlement of Labour Dispute Law, 2012	Section-38	Project Proponent has to comply with: No employer shall fail to negotiate and coordinate in respect of the complaint with the prescribed period without sufficient cause.
		Section-39	Project Proponent has to comply with: No employer shall alter the condition of service relating to workers concerned in such dispute at the consecutive period before commencing the dispute within the period under the investigation of the dispute before the Arbitration Body or Tribunal, to affect the interest of such workers immediately.
		Section-40	Project Proponent has to comply with: No party shall proceed to lock-out or strike without accepting negotiation, conciliation and arbitration by Arbitration Body in accord with this law in respect of a dispute.

		Section-51	<p>Project Proponent has to comply with:</p> <p>It an employer in the course of settlement of dispute commits any action omission without sufficient case, which by causing reduction in production resulting so as to reduce the workers' benefits shall be liable to pay full compensation in the amount determined by the Arbitration Body or Tribunal. Such money shall be recovered as the arrear of land revenue.</p>
14	Employment and Skill Development Law, 2013	Section-5	<p>Project Proponent commits to:</p> <p>(a) (1) If the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days. But it shall not be related with government department and organization for a permanent employment.</p> <p>(2) If pre training period and probation period are stipulated before the appointment the said trainee shall not be related with the stipulation of sub-section (1).</p> <p>(b) The following particulars shall be included in the employment agreement:</p> <p>(1) The type of employment;</p> <p>(2) The probation period;</p> <p>(3) Wage, salary;</p> <p>(4) Location of the employment;</p> <p>(5) The term of the agreement;</p> <p>(6) Working hour;</p> <p>(7) Day off, holiday and leave;</p> <p>(8) Overtime;</p> <p>(9) Meal arrangement during the work hour;</p>

			<ul style="list-style-type: none"> (10) Accommodation; (11) Medical treatment; (12) Ferry arrangement to worksite and travelling; (13) Regulations to be followed by the employees; (14) If the employee is sent to attend the training, the limited time agreed by the employee to continue to work after attending the training; (15) Resigning and termination of service; (16) Termination of agreement; (17) The obligations in accord with the stipulation of the agreement; (18) The cancellation of employment agreement mutually made between employer and employee; (19) Other matters; (20) Specifying the regulation of the agreement, amending and supplementing; (21) Miscellaneous. <p>(c) The worksite regulations contained in the employment agreement shall be in compliance with any existing law and the benefits of the employee shall not be less than those of the any existing law.</p> <p>(d) According to the employment agreement, the Ministry shall issue the notification for paying the stipulated compensation to the employee by the employer, if the work is completed earlier than the stipulated period or the whole work or any part of it have to be terminated due to unexpected condition or the work has to be terminated due to various conditions.</p>
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			<p>(e) The employment agreement made under sub-section (a) shall be related with daily wage workers, piece rate workers who are appointed temporarily in the government department and organization.</p> <p>(f) The worksite regulations and benefits contained in the employment agreement mutually made between the employer and employee or among the employees shall be amended as necessary, in accord with the existing law.</p> <p>(g) The employer shall send a copy of the employment agreement made between the employer and employee, to the relevant employment and labour exchange office within the stipulated period and shall get the approval of it.</p> <p>(h) The employment agreement made before the enforcement of this law shall be confirmed up to the end of the term of the original agreement.</p>
		Section-14	<p>Project Proponent has to comply with:</p> <p>The employer shall carryout the training programme in accord with the work requirement in line with the policy of the skill development team to develop the skill relating to the employment for the workers who are proposed to appoint and working at present.</p>
		Section-30	<p>Project Proponent has to comply with:</p> <p>(a) The employer of the industry and service business shall put into the fund monthly as put in fees without fail for the total wages of the subordinates and the supervisors' salary for not less than 0.5%.</p> <p>(b) Put in money paid under sub-section (a) shall not be deducted from the wage and salary of the employees.</p>

15	Leaves and Holiday Act, 1951		<p>Project Proponent has to comply with:</p> <p>The law contains 18 sections and the purpose is for regulating the taking of leaves and holidays, covering the hours of work, weekly rest and paid leave. Three types of leaves, namely Earned leave, casual leave and leave on Medical Certificate are stipulated. The holidays during that period (the 1950s) include: Independence Day, Fullmoon of Tabaung, Thingyan, Burmese New Year, May Day, Full Moon of Kason, Resistance Day, beginning of Buddhist Lent, Martyrs' Day, End of Buddhist Lent, Full Moon of Tansaungmone, and National Day. One Islam Holiday and Hindu Holiday are official but are not written in the Act, but are notified in short advance.</p>
16	Workmen's Compensation Act, 1923		<p>Project Proponent has to comply with:</p> <p>It was/is an Act to provide for the payment by certain classes of employers to their workmen of compensation for injury by accidents. This law was amended in 2005 by chairman of the State Peace and Development Council. Since the rate in kyats for compensation during the 1920s are no longer applicable (workable) the rate for compensation are increased. The rate shall be according to the Notification by the existing Ministry of Labour. e.g. fine which may extend to "Ks 100" is substituted by "Ks 10,000".</p>
		Section-13	<p>Project Proponent has to comply with:</p> <p>Compensation shall be paid in line with the provision of the said law.</p>
17	Social Security Law, 2012		<p>Project Proponent has to comply with:</p> <p>Objectives: To provide for:</p> <ul style="list-style-type: none"> - A health and social care insurance system; a family assistance insurance system; invalidity benefit; superannuation benefit and survivor's benefit insurance system and unemployment benefit system.

			<ul style="list-style-type: none"> - Both employers and workers must pay into a social security fund. (Act. 2, (c) and (e)) - Companies with five or more employees in the extractive industries (among others) are required to pay social security. (Art. 11)
		Section-11:	<p>Project Proponent has to comply with:</p> <p>(a) The following establishments shall be applied with the provisions for compulsory registration for social security system and benefits contained in this Law if they employ minimum number of workers and above determined by the Ministry of Labour in co-ordination with the Social Security Board:</p> <ul style="list-style-type: none"> (i) production industries doing business whether or not they utilize mechanical power or a certain kind of power, works of production, repairing or services, or engineering works, mills, warehouses, establishments; (ii) Government departments, Government organizations and regional administrative organizations doing business; (iii) development organizations; (iv) financial organizations, (v) companies, associations, organizations and their subordinate departments and branch offices doing business; (vi) shops, commercial establishments, public entertaining establishments;

			<ul style="list-style-type: none"> (vii) Government departments and Government organizations doing business or transport businesses owned by regional administrative body, and transport businesses carried out with the permission of such department, body or in joint venture with such department or body; (viii) construction works carried out for a period of one year and above under employment agreement; (ix) works carried out with foreign investment or citizen investment or joint ventured businesses; (x) works relating to mining and gemstone contained in any existing law; (xi) works relating to petroleum and natural gas contained in any existing law; (xii) ports and out-ports contained in any existing law; (xiii) works and organizations carried out with freight handling workers; (xiv) Ministry of Labour and its subordinate departments and organizations; (xv) establishments determined by the Ministry of Labour from time to time, in co-ordination with the Social Security Board and with the approval of the Union Government; that they shall be applied with the provisions of compulsory registration for Social Security System and benefits contained in this Law
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		Section-15:	<p>Project Proponent has to set up the fund:</p> <p>a) The following funds are included in the Social Security Fund:</p> <ul style="list-style-type: none"> (i) health and social care fund; (ii) family assistance fund; (iii) invalidity benefit, superannuation pension benefit, and survivors' benefit fund; (iv) unemployment benefit fund; (v) other social security fund for social security system of compulsory registration and contribution specified by the Ministry of Labour, in co-ordination with the Social Security Board, according to clause (2) of subsection (e) of section 13; (vi) other social security fund specified as to which contribution may be paid after voluntary according to clause (2) of sub-section (e) of section 13; (vii) fund for Social Security Housing Plan; <p>b) The employers and workers of establishments shall pay contributions to the funds contained in clauses (1), (3),(4) and (5) of sub-section (a) after effecting compulsory registration.</p>
		Section-18	<p>Project Proponent has to pay:</p> <p>(b) The employer shall deduct contributions to be paid by worker from his remuneration and pay to the social security fund together with contribution to be paid by him. The employer shall also bear the expenses for such contribution.</p>

		Section-48	<p>Project Proponent has to pay:</p> <p>(b) The employers may effect insurance by registering voluntarily for insurance of the workers who are not applied to provisions of compulsory registration for employment injury benefit insurance system, by paying stipulated contribution to employment injury benefit insurance fund;</p>
		Section-49	<p>Project Proponent has to pay:</p> <p>(a) The employers and insured of establishments where the employer had registered compulsorily under sub-section (a) of section 48 or where the employer had registered voluntarily under sub-section (b) of section 48 who have paid contribution to employment injury benefit fund shall not apply to the provisions contained in the Workmen's Compensation Act in respect of the employment injury benefit.</p> <p>(b) The insured who has effected insurance for employment injury benefit under sub-sections (a) and (b) of section 48 shall only be entitled to employment injury benefits contained in this Law.</p>
		Section-75	<p>Project Proponent has to comply with:</p> <p>The employer of establishments applied by this Law:</p> <p>(a) shall prepare and keep the following records and lists correctly and submit to the relevant township social security office in accord with the stipulations:</p> <ul style="list-style-type: none"> i) records and lists of workers' daily attendance; ii) records of appointing new worker, employing worker by changing of work, suspension from work, dismissal from work and resignation from work;

			<ul style="list-style-type: none"> iii) records of promotion and paying remuneration ; iv) records and lists of employers, managers, and administrators; and records of changes of them; <p>(b) shall inform the relevant township social security office if the following matters arise:</p> <ul style="list-style-type: none"> i) change in number of workers and address of establishment; ii) change of employer, change of business, suspension from work, and termination of work; iii) employment injury, employment death, and occupational diseases; <p>(c) shall produce work records and lists on requirement of inspection team or official assigned duty under this Law by the Social Security Head Office and various Regional Social Security Offices.</p>
18	The Factories Act, 1951		<p>Project Proponent has to comply with:</p> <p>The law contains 10 Chapters and 109 articles.</p> <p>Purpose: to ensure the health, safety, welfare, fair working time the clean environment for the employees working inside a factory. This law focuses on all stipulation for the employer (project owner).</p> <p>The project owner should abide by nearly all sections in this Act. The project owner has to abide by all provisions for healthy, safety, welfare, working-hours and other needs. The project owner shall ask its legal expert to study this Act in details for his advice.</p> <p>This Act also contains the provision for chemicals management and storage. The chemicals use in the manufacturing of motorcycle, paints, thinners, varnishes etc, may not require permits. Since iron smelting</p>

			<p>will not be involved permit for "hot work" may not be also necessary.</p> <p>This factory Acts requires all factories to have proper pollution control measures such as air pollution, sewage and waste water treatment system and solid waste management system.</p>
19	Minimum Wages Law, 2013		<p>Project Proponent has to pay:</p> <p>The law sets a minimum wage to meet the essential needs of workers and their families and for the purpose of increasing the capacity of the workers.</p> <p>Employers must:</p> <ul style="list-style-type: none"> - Pay a national minimum wage, currently set at Ks 4800/day, to employees (Art. 2, a), including for part time and hourly work (Art. 14, e). - Provide salaried workers one day's paid leave per week. (Art. 14, f) - Provide both men and women minimum wage without discrimination. (Art. 14, b) <p>In addition to the very briefly above-mentioned laws and rules the company will comply with all laws, rules and regulation related to cement business. The company will comply with, in particular, the NEQ guideline prescribed by ECD. The company shall also comply with all the statutory requirement set up by the concerning ministries.</p> <p>The legal experts hired by the company will study all the above-mentioned law and rules and advice the company whenever and wherever deems necessary.</p>

		Section-12	<p>Project Proponent has to comply with:</p> <p>The employer:</p> <ul style="list-style-type: none"> (a) Shall not pay wage to the worker less than the minimum wage stipulated under this Law; (b) May pay more than the minimum wage stipulated under this Law; (c) Shall not have the right to deduct any other wage except the wage for which it has theright to deduct as stipulated in the notification issued under this Law; (d) Shall pay the minimum wage to the workers working in the commercial, production and service business in cash. Moreover, if the specific benefits, interests or opportunities are to be paid, it may be paid in cash or partly in cash and partly in property, with prevailing regional price, jointly according to the desire of the worker; (e) In paying minimum wage to the workers working in the agricultural and livestock business, some cash and some property at prevailing regional price may be paid jointly according to local custom or desire of the majority of workers or collective agreement. Such payment shall be for any personal use and benefit of the worker and his family and the value shall also be considerable and fair.
		Section-13	<p>Project Proponent has to comply with:</p> <p>The employer:</p> <ul style="list-style-type: none"> (a) Shall inform the workers the rates of minimum wage relating to the business among the rates of minimum wage stipulated under this Law and advertise it at the workplace to enable to be seen by the relevant workers;

			<ul style="list-style-type: none"> (b) Shall prepare and maintain the lists, schedules, documents and wages of the workers correctly; (c) Shall report the lists, schedules and documents prepared and maintained under sub-Section (b) to the relevant department in accord with the stipulations; (d) Shall accept the inspection when summoned by the inspection officer. Moreover, he shall produce the said lists and documents upon asking to submit; (e) Shall allow the entry and inspection of the inspection officer to the commercial, production and service businesses, agricultural and livestock breeding workplaces and give necessary assistances; (f) If the workers cannot work due to sickness, shall give them holiday for medical treatment in accord with the stipulations; (g) If the funeral matter of the member of the family of worker or his parent occurs, shall give holiday without deducting from the minimum wage, in accord with the stipulations.
		Section-18	<p>Project Proponent has to comply with:</p> <p>The inspection officer:</p> <ul style="list-style-type: none"> (a) Has the right to enter and inspect the relevant commercial, production and service workplaces, agricultural and livestock breeding workplaces and inspect whether or not they comply with and carry out in accord with the rules, notifications, orders, directives and procedures under this Law, whether or not the lists, schedules and documents, wages relating to the workers are prepared correctly, and whether or not such lists, schedules and documents are reported to the Department in accord with the stipulations;

			<p>(b) May summon, inspect the relevant persons under the assignment of duty by the Department, asking and copying for the relevant lists, schedules and documents.</p> <p>(c) If there are outside workers at employer, has the right to inspect information relating to such outside workers, their names and addresses and the right to ask for and copy their lists and documents and lists relating to minimum wage;</p> <p>(d) In carrying out under sub-section (a), (b) and (c) relating to inspection, if required by the employer to produce the document, shall show the civil service identify card issued by the relevant department;</p> <p>(e) Report to the Department in accord with the stipulations relating to the finding under sub-sections (a), (b) and (c), and documents and papers called for.</p>
20	The Payment of Wages Law, 2016	Section-3	<p>Project Proponent has to comply with:</p> <p>The employer must...</p> <p>(a) Pay in local currency or foreign currency recognized by the Central Bank of Myanmar. This may be in cash, check or deposit into the bank account of Employee.</p> <p>(b) Moreover, pay can be in the means of...</p> <p>(1) Totally in cash OR half the cash and half in things set according to the local price to those employees working in trade, manufacturing and service sectors.</p> <p>(2) Totally in cash OR half the cash and half in things set as local price according to local traditions or common agreement to those working in agriculture and livestock sectors.</p>

			<p>But, this must be for the sake of the employees and their families. And, it also must be reasonable/fair.</p> <p>(3) An employee shall receive the payment for 60 days when he/she is in Alternative Civil Service.</p>
		Section-4	<p>Project Proponent has to comply with:</p> <p>An employer must pay for...</p> <p>(a) Part-time, daily, weekly or other part-time job, temporary or piecework when the work is done OR at the agreed time.</p> <p>(b) According to the Article (a), the time frame shall not exceed one month.</p> <p>(c) Wages for the permanent work must pay per monthly basis. If so...</p> <p>(1) Must pay at the end of the payment period when there are not more than 100 workers.</p> <p>(2) If there are 100 workers and above, pay must not be administered later than 5 days after the end of the payment period.</p> <p>(d) Upon termination, wages must be paid within 2 days from the date of termination.</p> <p>(e) If a resignation letter is submitted, wages must be paid at the ending day of the payment period.</p> <p>(f) If an employee dies, wages must be paid to the legally recognized heir within 2 working days after the day he/she has died.</p> <p>(g) All wages must be paid during the working day.</p>

		Section-5	<p>Project Proponent has to comply with:</p> <p>If the owner encounters difficulty to pay the wages according to Section 4 sub-section (c) because of significant happenings, including natural disaster, the employer must report to the Department with solid evidence that wages will be paid at the mentioned day upon the workers' agreement.</p> <p><u>Chapter-III:</u> The employer may deduct:</p> <ul style="list-style-type: none"> - From wages, except leaves - Expenses which are allowances of any kinds - Advance payment or reimburse or saving for the worker etc - From the wages of the worker under a decision of a court of Arbitration Council etc <p>The employer shall not deduct from the wages of the worker except in accordance with provision of Section 7 and 11.</p> <p>The deduction shall not exceed 50% of the wages of a worker.</p> <ul style="list-style-type: none"> - The employer shall obtain approval of the Department regarding deduction. - The employer may designate as time to compensate for loss of property and cast and violation of any terms or condition, stipulated as time in the employees agreement. <p><u>The worker:</u> May request the employer to be settled by himself or legally registered labour organization etc or may submit to the inspector to solve the problem.</p> <ul style="list-style-type: none"> - The chief inspect will make decision and his order in final.
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		Section-14	Project Proponent has to comply with: The worker has the right to enjoy overtime wages stipulated by the law if he works overtime.
		Section-22	Project Proponent has to comply with: No employer shall not violate sections 4, 5, 8, 9 and 11 regarding payment and term and rate of payment.
		Section-23	Project Proponent has to comply with: No employer shall violate the rules, decrees and prohibition regarding payment to its employees. <u>Chapter-8</u> deals with penalties for violation of the law. The penalties range from: <ul style="list-style-type: none"> - Imprisonment of no more than 3 months and fine not more than Ks 500,000 - Imprisonment of no more than 3 months and fine at least Ks 2,000,000 - Imprisonment of up to 6 months and fine at least Ks 5,000,000
		Chapter III	Project Proponent has to comply with: (7) The Employer... <ul style="list-style-type: none"> (a) Can deduct from wages for absences except when such absence is during a public holiday or entitled leave, according to the law. (b) Accommodation charges and transportation charges, meal allowances, charges for water and electricity, taxes and errors in payment shall be allowed for deduction.

			<p>(c) Can deduct from pre-issued, expensed and saved (or) contributed amount according to the law upon the employee contract.</p> <p>(d) The Employer can deduct with the judgment of the Court of Arbitrator Jury Council.</p> <p>8. The Employer cannot deduct except the deduction in accordance with Section 7 and Section II.</p> <p>9. The total amount of other deductions, except when the employee fails to perform their duties, shall not be more than 50% of the employee's wages.</p> <p>10. The Employer must...</p> <p>(a) According to Section 11 of this Act, get permission from the Department concerning "why" and "how" prior to making deductions from wages.</p> <p>(b) Permissions stated in sub-section (a) shall be publicly posted.</p> <p>(c) Fines must not exceed the value of damage caused by the action or cost of performance failure of the employee.</p> <p>(d) According to Section 4 of this Act, when making a specific deduction.</p> <p>(1) Do not deduct without allowing an appeal from the Employee.</p> <p>(2) Do not deduct more than 5% of the monthly wages.</p> <p>(e) No deduction is allowed from a worker under 16 years old.</p> <p>(f) The timeframe for deductions shall be set upon an agreement from both sides.</p>
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			<p>(g) Deductions shall be carried out within the limited timeframe upon the agreement of the Township Arbitration Council set in accordance with Law.</p> <p>(h) Every deduction must be well documented.</p> <p>(i) You must submit a monthly report to the Department concerning deductions.</p> <p>(j) Fines deducted according to Section 11 sub-section (b) must be used for the social welfare of the employees upon discussion with a registered labor organization.</p> <p>11. Employers shall fine for the following actions or performance failure by the employees...</p> <p>(a) Direct damage which is either intentional or due to negligence or due to the failure of the employee concerned with company property to take proper care.</p> <p>(b) A breach of the employment contract or breach of any rules for which a fine had been previously set.</p> <p>12. If a worker...</p> <p>(a) Encounters any one of the following situations, he/she shall ask directly or via a registered Labor Organization or by the in-house Workplace Coordination Committee to the Employer:</p> <p>(1) Any unreasonable deduction from wages.</p> <p>(2) Payment which is not made by the due date.</p> <p>(c) If the Employer takes no action, although asked in accordance with Section 12 Sub-Section (a), the Employee can present this to the Inspector within 6 month from the date of the deduction or from the date of the failure to render payment.</p>
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			<p>13. (a) The Inspector shall issue a decree after reviewing the case presented in accordance with Section 12 Sub-Section (b).</p> <p>(b) Not only the Employee, but also the Employer, has 30 days to appeal to the Chief of Inspector if they are not satisfied with the order.</p> <p>(c) The Chief of Inspector shall decree after reviewing the appeal applied in accordance with Sub-Section (b).</p> <p>(d) The Chief of Inspector's decision will be the final decision</p>
21	Prevention and Control of Communicable Diseases Law, 1995	Section-3	<p>Project Proponent has to comply with:</p> <p>In order to prevent the outbreak of Communicable Diseases the Department of Health shall implement the following project activities.</p> <p>(a) Immunization of children by injection or orally.</p>
		Section-4	<p>Project Proponent has to comply with:</p> <p>When a principal epidemic disease of a notifiable disease occurs:-</p> <p>(a) Immunization and other necessary measures shall be undertaken by the Department of Health, in order to control the spread thereof</p> <p>(b) The public shall abide by the measures undertaken by the Department of Health under sub-section (a)</p>
		Section-9	<p>Project Proponent has to comply with:</p> <p>The head of the household or any member of the household shall report immediately to the nearest health department or hospital when any of the following events occur:-</p> <p>(a) Rat fall</p> <p>(b) Outbreak of a principal epidemic disease</p> <p>(c) Outbreak of a noticeable disease</p>

		Section-11	<p>Project Proponent has to comply with:</p> <p>In order to prevent and control the spread of a principal disease the health officer may undertake the following measures:-</p> <ul style="list-style-type: none"> (a) Investigation of a patient or any other person required (b) Medical examination (c) Causing laboratory examination of stool, urine, sputum and blood sample to be carried out (d) Causing investigation by injection to be carried out (e) Carrying out any other investigation.
22	The Control of Smoking and Consumption of Tobacco Product Law, 2016	Section-9	<p>Project Proponent has to comply with:</p> <p>The person in charge at the factory shall:-</p> <ul style="list-style-type: none"> (a) Keep the caption and mark referring that it is a non-smoking area the place mentioned.
		Section-6	<p>Project Proponent has to comply with:</p> <p>In accordance with stipulation.</p> <ul style="list-style-type: none"> (b) Arrange the specific place where smoking is allowed as mentioned in section-7 and keep the caption and mark also referring that it is a specific place where smoking is allowed, in accordance with the stipulation (c) Supervise and carry out measures so that no one shall smoke at the non-smoking area. (d) Accept the inspection when the supervisory body comes to the place for which he is responsible.
23	Protection and Preservation of Antique Objects Law, 2015	Section-12	<p>Project Proponent has to pay:</p> <p>A person who finds any object which has no owner or custodian shall promptly inform the relevant Ward or Village-Tract Administration if he known or it seems reasonable to assume that the said object is an antique object.</p>

24	Protection and Preservation of Cultural Heritage Regions Law, 2019	Section-13	<p>Project Proponent has to pay:</p> <p>A person desirous of carrying out one of the following shall abide by the provisions of other existing laws and also apply to the Department in accordance with stipulation to obtain prior permission under this law:-</p> <ul style="list-style-type: none"> (a) Within the ancient monumental zone or the ancient site zone <ul style="list-style-type: none"> (1) Construction or extending a building (2) Renovating the ancient monument or extending the boundary of its enclosure; (b) Within the preserved or protected zone, constructing extending, renovating a hotel, motel, guest house, lodging house or industrial building or extending the boundary of its enclosure (c) Within the culture heritage region: <ul style="list-style-type: none"> (1) Carrying out the renovation and maintenance work of the ancient monument without altering the original ancient form and structure or original workmanship; (2) Carrying out archeological excavations; (3) Building road, constructing bridge, irrigation canal and embankment or extending the same
		Section-21:	<p>Project Proponent has to pay:</p> <p>No person shall, without prior permission granted under this Law, carry out and-of the following in the cultural heritage region.</p> <ul style="list-style-type: none"> (a) carrying out archeological excavation.

		Section-22:	Project Proponent has to pay: No person shall construct a building which is not in conformity with the conditions prescribed region wise by The Ministry of Culture in the cultural heritage region.
25	Protection and Preservation of Ancient Monuments Law, 2015	Section-12:	Project Proponent has to pay: Anyone who has found an ancient building of 100 years or more of age without owner on the ground, underground above the water or under the water has to inform, if the building is recognized as or believed to be an ancient monument , the nearest village or township administration department.
		Section-15:	Project Proponent has to pay: Every person desirous to engage in the following within the area of certain ancient monuments has to apply for the permission of the administration department: (b) Constructing industrial building (e) Digging a well, pond (h) Constructing buildings near an ancient monument if this violets the structural rules approved by the ministry. The administration development can approve or reject an application submitted under section 14 or 15 after having analyzed it.
		Section-20:	Project Proponent has to pay: No one is allowed to do any of the following acts likely to cause damage to an ancient monument within the boundary without prior written permission of the administration department

			<p>(b) Using and driving heavy machines and vehicles which may cause vibration within the area of an ancient monument</p> <p>(f) Releasing of chemical waste which can cause pollution of ancient monument and the natural environment</p>
26	The Myanmar Insurance Law, 1993	Section-15:	<p>Project Proponent has to comply with:</p> <p>Owner of motor vehicles shall effect life insurance for a minor</p>
		Section-16:	<p>Project Proponent has to comply with:</p> <p>An entrepreneur or organization operating an enterprise which may cause loss to state-owned property or which may cause damage to the life and property of the public or which may cause pollution to the environment shall effect compulsory General Liability Insurance with the Myanmar Insurance.</p>
27	The Fire Brigade Law, 2015	Section-25:	<p>Project Proponent has to comply with:</p> <p>No person shall fail to abide by the directives in respect of fire precaution and prevention issued under section -17 by the Township Fire Service Department.</p>
		Section-26:	<p>Project Proponent has to comply with:</p> <p>The owner or manager of the factory, workshop, work site or business exposed to fire hazard shall:</p> <p>(a) Not fail to form the reserve fire bridge</p> <p>(b) Not fail to provide materials and apparatus for fire precaution and prevention, in conformity with the directive of the Fire Service Department.</p>

28	Myanmar Engineering Council Law, 2013	Section-34:	<p>Project Proponent has to comply with:</p> <p>If, whoever has received a registration certificate, is found to have breached any rules contained in the registration certificate or violated any prohibition contained in a rule, order or directive enacted under this law or in any stipulation of the law, the executive committee may take the following administrative actions:-</p> <ul style="list-style-type: none"> (a) Giving a warning; (b) Assessing a suitable fine; (c) Suspending the registration certificate, (d) Cancelling the registration certificate.
		Section-37	<p>Project Proponent has to comply with:</p> <p>No one shall perform any engineering work and technological work which are specified as being dangerous to the public by a rule enacted under this law without having received a registration certificate issued by the Council, except engineers appointed in a government department or an organization in the performance of their duties.</p>
29	Yangon Region City Development Committees Law, 2018	Section-300	<p>Project Proponent has to comply with:</p> <p>No one shall carry out the construction of building and structure and undertake the industrial business without the certificate of land lease, license, permit, and approval issued by the Committee.</p>
		Section-302	<p>Project Proponent has to comply with:</p> <p>No one shall do the construction business without the permit or approval issued by the committee.</p>
30	The Export Import Law, 2012	Section-6	<p>Project Proponent has to comply with:</p> <p>Without obtaining license, no person shall export or import the specific goods which is to obtain permission</p>

		Section-7	Project Proponent has to comply with: A person who obtain any license shall not violet the conditions contained in the license.
31	The Conservation of Biodiversity and Protected Areas Law, 2018	Section-21:	Project Proponent has to comply with: The Director General may, with the approval of the Minister: (b) allow person who has been permitted to conduct research to collect, transport and possess protected wild plants from the Protected Areas by an individual for the purpose of scientific research including experiment and reproduction.
		Section-29:	Project Proponent has to comply with: With the approval of the Ministry, the Director General: (a) shall check whether the licence application for a zoological garden or botanical garden conforms with the specified terms and conditions, and issue a licence if the conditions are met; (b) may withdraw a licence within the prescribed period or cancel it if a person who receives a licence violates the prescribed terms and conditions.
		Section-35:	Project Proponent has to pay: A park warden may pass an administrative order against any person to pay a fine from a minimum kyats 30,000 to a maximum kyats 100,000 if he commits any of the following acts within a protected area or a zoological garden or botanical garden which is administered by the Government or in which the Government has subscribed share capital: (a) entering a prohibited area without permission; (c) digging on the land, cultivating or carrying out any activity; (d) extracting, collecting or destroying in any manner, any kind of wild flora or cultivated plant.

		Section-39:	<p>Project Proponent has to pay:</p> <p>Whoever commits any of the following acts shall, on conviction, be punished with imprisonment for a term not exceeding 3 years or with a fine from a minimum of kyats 200,000 to a maximum of kyats 500,000, or with both:</p> <ul style="list-style-type: none"> (c) commercially breeding protected endangered wild fauna without permission; (d) intentionally polluting soil, water or air, damaging a water-course or poisoning water or electrifying water, or using chemical or explosive materials in the water within the protected area;
32	Land Acquisition Act, 1894		<p>Project Proponent has to pay:</p> <p>A company may carry out land acquisition when it is "likely to prove useful to the public".</p> <ul style="list-style-type: none"> - The company acquiring the land has to provide the compensation. Compensation is based on the market value of the land and also possible damage incurred by the private land owner, such as loss of crops and firewood or the cost of changing residence and place of business. (Art. 6)
		Section-38	<p>Project Proponent has to pay:</p> <p>The land acquisition committee, instead of giving compensation, can give a land to the owner as an exchange for the land acquisition, with the approval of the Union Government.</p>
33	Farmland Law, 2012	Chapter III Section-9:	<p>Project Proponent has to comply with:</p> <p>The person who has the right to use the farmland shall have the following rights:</p> <ul style="list-style-type: none"> (a) right to have the farmland in possession, right to use the farmland, right to enjoy the benefit arises from this right;

			(b) right to sell, mortgage, lease, exchange and gift on the whole or part of the right to use the farmland in accord with the stipulated terms and conditions;
		Chapter IV Section-12:	Project Proponent has to comply with: The person who has the right to use the farmland: (a) shall carry out the farmland as prescribed in this Law; (b) shall pay land revenue and other taxes levied by the Ministry relating to the farmland;
		Chapter X Section-30:	Project Proponent has to comply with: In respect of the application to utilize farmland for other purposes in the interest of the public: (a) The respective Region or state Government shall give permission to utilize the farmland for other purposes except paddy land, with the recommendation of the Region or State Farmland Management Body. (b) The relevant Region or State Government Organization may permit to use the farm land by other means except low land (paddy land) with the recommendation of the Region or State Administrative Body of the farmland.
		Chapter XII Section-35:	Project Proponent has to comply with: Any person who has the right to use the farmland fails to comply with the order passed under Section 19 or the order or decision passed in the dispute of the right to use the farmland under this Law shall, on conviction, be punished with imprisonment for a minimum of six months to a maximum of two years and shall also be liable to fine for a minimum of three hundred thousand kyats to a maximum of five hundred thousand kyats.

34	The Electricity Law, 2014	Section-10:	<p>Project Proponent has to comply with:</p> <p>When engaging in electricity activities, the ministry, the relevant region or state government and the head ("oozi") of the relevant self-administered division or self-administered zone –</p> <p>(b) shall carry out an environmental impact assessment (EIA) in order to minimize the impact on the environment in accordance with the provisions stipulated in the Environmental Conservation Law. They shall pay compensation for the impact and contribute to the environmental conservation fund. Private entrepreneurs holding a license must also comply with these points</p>
		Section-18:	<p>Project Proponent has to comply with:</p> <p>The license holder has the right to engage in electric power generation and distribution only after having received the electrical hazards safety certificate from the chief inspector.</p>
		Section-21:	<p>Project Proponent has to comply with:</p> <p>(a) The license holder shall, if he fails to comply with the law, rules, regulations, procedures, orders and directions or the specified quality, standards and norms, be responsible in accordance with the law if any person or organization is affected or suffers a loss as a result.</p>
		Section-22:	<p>Project Proponent has to comply with:</p> <p>(a) The license holder shall be responsible in accordance with the law if any person or organization is affected or suffers a loss due to his negligence in performance;</p>

		Section-26:	<p>Project Proponent has to comply with:</p> <p>The license holder must comply with the following-</p> <ul style="list-style-type: none"> (a) Electricity exploration must be done in accordance with the law; (b) In electric power generation, transmission and distribution- <ul style="list-style-type: none"> (1) Electrical power must be generated as specified in the license; (2) Instruments for measuring electric power and protective equipment must be systematically used and maintained in accordance with the stipulations.
		Section-27:	<p>Project Proponent has to comply with:</p> <p>The license holder and the authorized person must inform the chief inspector and the relevant department in charge immediately if an electrical hazard has accidentally occurred when generating, transmitting, distributing or consuming electric power.</p>
		Section-40:	<p>Project Proponent has to comply with:</p> <p>The license holders comply with the rules, norms and procedures issued by the ministry and must accept necessary inspections by the relevant government departments and organizations.</p>
		Section-68:	<p>Project Proponent has to comply with:</p> <p>If the negligence or irresponsibility of the license holder or of persons assigned by him has caused injury, disability or death by electrocution or fire, the aggrieved person has the right to request compensation from the license holder as follows-</p> <ul style="list-style-type: none"> (a) If the aggrieved person is entitled to compensation according to the existing labour compensation law, the compensation specified in this law; (b) If the aggrieved person is not entitled to compensation according to the existing labour compensation law, the compensation specified in the rules, issued under this law.

35	Occupational Health and Safety Law, 2019	Section-12:	<p>Project Proponent has to comply with:</p> <p>The Employer shall, in accordance with the stipulations of the Ministry:</p> <ul style="list-style-type: none"> (a) appoint the Person In-charge for Occupational Safety and Health to closely supervise safety and health of Workers in line with the type of Industry/Business; and (b) form the respective Occupational Safety and Health Committee in line with the type of Industry/Business comprising equal number of Employer and Worker representatives to become safe and healthy Workplace on condition that the number of Workers in his/her Industry/Business exceeds the number determined by the Ministry for that purpose. The Occupational Safety and Health of female Workers shall be considered according to the nature of Industry/Business when forming such Occupational Safety and Health Committee.
		Section-14:	<p>Project Proponent has to comply with:</p> <p>Persons In-charge for Occupational Safety and Health shall comply with this Law and rules, orders, directives and procedures made under this Law to make the Workplace to be a safe Workplace that is good for health.</p>
		Section-16:	<p>Project Proponent has to comply with:</p> <p>Inspection Officers shall enter the Workplaces to which this Law applies and inspect Occupational Safety and Health conditions and direct Employers for their compliance and report the findings to the Chief Inspection Officer.</p>

		Section-17:	<p>Project Proponent has to comply with:</p> <p>Inspection Officers have the powers to perform the following for Occupational Safety and Health in accordance with their codes of conduct:-</p> <ul style="list-style-type: none"> (a) the power to enter, inspect and inquire at any Workplaces related to this Law at any time by showing the Inspection Officer's identity without warrant; (b) the power to look at, make copies of and seize as evidence as required documents and records in connection with Workplaces and Processes; (c) the power to take photos and record videos in connection with Workplaces and Processes that may be harmful to Occupational Safety and Health; (d) the power to assess and measure and take records of the extent of impairment and duration caused to the environment of the Workplace due to loudness, light, heat, coldness, particles, gas and Hazardous Materials, and obtain the assistance of the expert in the relevant field of study if required; (e) the power to inquire of any person in the Workplace during working hours with the assistance of the Recognized Doctor to check any conditions that put or are likely to put Workers in contact with Occupational Disease; and (f) the power to require responsible persons at clinics or hospitals to deliver, with the stipulated security grade, medical treatment records of the Worker who is under treatment or information relating to death due to Occupational Accident or Occupational Disease, or autopsy results asked by the Department in the stipulated form.
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		Section-18:	<p>Project Proponent has to comply with:</p> <p>Inspection Officers shall, with the approval of the Chief Inspection Officer, order the Employer to temporarily close a whole or part of the Workplace, and notify the relevant Departments if required, if they believe that an Occupational Accident, Occupational Disease, Hazardous Eventer Major and Serious Occupational Accident occurs or is likely to occur because:</p> <ul style="list-style-type: none"> (a) it is not appropriate to continue doing the Industry/Business due to dangerous Workplace condition, or unsafe operation carried by Workers, or existence of Hazardous Materials and Hazardous Machines, or layout and function of Workplace, part of the machine or equipment; (b) it is not appropriate to continue doing the Industry/Business due to breach or incompliance with any of the provisions of this Law; (c) it deems that Workers in the Workplace are in danger due to acts, omissions, negligence or carelessness; or (d) it needs to evacuate Workers from hazards because an Occupational Accident or accident is about to occur.
		Section-26:	<p>Project Proponent has to comply with:</p> <p>The Employer shall be responsible to: -</p> <ul style="list-style-type: none"> (a) arrange as required to assess the risks of Workplace, Process and machines and materials used thereat; (b) arrange as required to assess the likelihood of occurrence of hazards at the Workplace and to the environment; (c) arrange to have Workers medical checked-up by the Recognized Doctor in accordance with stipulations whether they suffer from any Occupational Disease;

			<ul style="list-style-type: none"> (d) arrange to improve the Workplace until it is safe and good for health based on the findings as per sub-sections (a), (b) and (c) (e) provide Workers with sufficient number of personal protective clothing, materials and facilities prescribed and approved by the Department on free of charge basis and cause Workers to wear them while working; (f) prescribe precautionary plans and plans for emergency; (g) provide a clinic, appoint the Registered Doctors and nurses and provide medicines and supporting equipment for any Industry/Business where the number of Workers is not less than the number determined by the Ministry; (h) make necessary arrangements for managers, Workers and members of the Occupational Safety and Health Committee including (Employer) himself/herself to attend Occupational Safety and Health training courses stipulated by the Ministry in accordance with their departments or types of work; (i) make necessary arrangements to enable immediate reporting to the Person In-charge for Occupational Safety and Health or manager in case where a Worker suffers an Occupational Accident or his/her life or health is likely to be in danger; (j) arrange to prevent any persons in the Workplace from Occupational Safety and Health risks occurred due to materials, machines or wastes used in the Workplace or Process; (k) immediately stop the Process, evacuate Workers and conduct necessary rescue plans if any Occupational Accident is about to occur. If possible, Workers will be relocated to another appropriate safe Workplaces;
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			<ul style="list-style-type: none"> (l) display Occupational Safety and Health instructions, danger signs, notices, posters and signage for directions in accordance with stipulations; (m) arrange to be complied with precautions when entering restricted hazardous Workplaces; (n) arrange to disseminate Occupational Safety and Health manuals and guidelines issued by the relevant Ministries for knowledge, technology, information and skills not only to Workers but also to related persons or raise their awareness or knowledge thereof; (o) lay down the fire safety plan, perform fire drilling and train Workers to use fire extinguishers systematically; (p) allow the Chief Inspection Officer and Inspection Officers to enter Workplaces, inquire, request documents and information or seize exhibits; (q) cause Workers to work only for the specified working hours if they have to work in Hazardous Industry/Business and Workplace; and (r) Incur the expenses for Occupational Safety and Health matters.
		Section-27:	<p>Project Proponent has to comply with:</p> <p>No Employer shall dismiss or demote a Worker: -</p> <ul style="list-style-type: none"> (a) during any period before a medical certificate is issued by the Registered Doctor for occupational injury or by the Recognized Doctor for contact with Occupational Disease; (b) because the said Worker has addressed a complaint for hazardous or health detrimental condition; (c) because the said Worker has conducted the responsibilities of Occupational Safety and Health Committee; or

			(d) because the said Worker has refused to work in any condition where an Occupational Accident or Occupational Disease is about to occur.
		Section-34:	Project Proponent has to comply with: The Employer is responsible to undertake the following in accordance with the stipulations: - (a) informing the Department in case of an Occupational Accident, Hazardous Event or Major and Serious Occupational Accident; (b) if a Worker is in contact with a stipulated Occupational Disease or contaminated or likely to be contaminated due to materials or Process used, sending a report to the Department together with a medical report prepared by the Recognized Doctor.
		Section-36:	Project Proponent has to comply with: (a) Inspection Officers must perform inspection as required if any Occupational Accident, Hazardous Event, Occupational Disease or Occupational Contamination breaks out. (b) No one shall, without consent of the Chief Inspection Officer, remove, conceal, add or change a whole or part of the materials, machines, equipment, layout, documents or signs relating to the occurrence of an Occupational Accident, Hazardous Event, Occupational Disease or Occupational Contamination.
36	The Highway Law, 2000	Section-7:	Project Proponent has to comply with: Whoever without the permission of the Public Works commits any of the following acts shall, on conviction, be punished with imprisonment for a term which may extend to 3 years or with fine or with both:- (b) constructing the building within the boundary of the highway

		Section-8:	Project Proponent commits: Whoever commits any of the following acts shall, on conviction, be punished with imprisonment for a term which may extend to months or with fine or with both:- (b) planting, cutting or destroying tree or crops within the boundary of the highway without permission of Public Works
		Section-9:	Project Proponent has to comply with: Whoever commits any of the following acts shall, on conviction, be punished with imprisonment for a term which may extend to 3 months or with fine or with both: - setting up the signboard of advertisement within the boundary of high ways without permission of Public Works
37	Vehicle Safety and Motor Vehicle Management Law, 2020	Section-9:	Project Proponent has to comply with: The ministry must implement the following will the approval of the Union Government. (a) designate and restrict the areas for the movement of vehicles used inside the nation.
		Section-12:	Project Proponent has to comply with: The ministry shall: (c) as regards initial motor vehicle registration, must issue the safety and environmental regulation, and standards.
		Section-14:	Project Proponent has to comply with: The power and responsibilities of the Directorate are as follows: (r) must designate motor vehicle speed on the roads used by public.

		Section-18:	Project Proponent has to comply with: The motor vehicle owner: (a) must maintain the motor vehicle in accordance with the standards fixe by the Directorate for safety driving.
		Section-81:	Project Proponent has to comply with: No one must not carry or transport dangerous goods without regulation or public areas.
38	Law on Standardization, 2014	Chapter (VI): Section-17:	Project Proponent has to comply with: A person desirous of obtaining certificate of certification shall apply to the department and organization which has obtained the accreditation.
		Chapter (VII): Taking Action by Committee Section-19:	Project Proponent has to comply with: The Committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative orders: (a) warning; (b) suspending the certificate of certification for limited period; (c) cancelling the certificate of certification
		Section-26:	Project Proponent has to comply with: If any person who obtained certificate of certification uses standardization mark on the product which is not in conformity with the relevant standard or relating to service shall be punished with imprisonment for a term not exceeding one year or with fine not more than one million Kyats or with both.
39	The Ethnic Rights Protection Law, 2015	Section-5:	Project Proponent has to comply with: Indigenous people (ta-ne tain-yin-tha) should receive complete and precise information about extractive industry project and other business a activities in their area before project implementation so that negotiation between groups and the Government/companies can take place.

40	The Ethnic Rights Protection Rules, 2019	Section-20:	<p>Project Proponent has to comply with:</p> <p>The project proponent who will implement the project in the ethnic group area shall:</p> <ul style="list-style-type: none"> (a) explain in details in local's language/dialect, in advance about the positive and negative effect of the project to the ethnic people in the local area. (b) comply with policy, strategy and action plan as prescribed in Myanmar Sustainable Development Plan (MSDP) (c) in order to know any impact on the physical and social environment, conduct Environmental and Social Impact Assessment (ESIA) in accordance with regulation. (d) all stages and activities of ESIA must be explained to and consulted with the ethnic group in a transparent manner
		Section-21:	<p>Project Proponent has to comply with:</p> <p>The proponent shall:</p> <ul style="list-style-type: none"> (a) report in details about the project preparation works as mentioned in R-20 to the Ministry before implementation of the project and wait for approval from the Ministry. (b) after completion of project advance plan and project completion report must be submitted to the Ministry
41	The Petroleum Rules, 1937	Chapter III, Part I: Section-24:	<p>Project Proponent has to comply with:</p> <p>Prevention of accidents. — All due precautions shall be taken at all times to prevent accident by fire or explosion.</p>
		Section-25:	<p>Project Proponent has to comply with:</p> <p>Prevention of escape of Petroleum. — All due precautions shall be taken at all times to prevent any escape of petroleum during transport especially into any drain, sewer, harbour, river or water course.</p>

		Section-26:	<p>Project Proponent has to comply with:</p> <p>Empty receptacles. — All empty tanks or other receptacles which have contained class I petroleum or which have contained class II petroleum in bulk shall, except when they are opened for the purpose of cleaning them and rendering them free from petroleum vapour, be kept securely closed unless they have been thoroughly cleaned and freed from petroleum vapour.</p>
		Part IV:Section-63:	<p>Project Proponent has to comply with:</p> <p>Prohibition of fires and smoking. —</p> <p>(1) No fire or other artificial light capable of igniting inflammable vapour shall be allowed on any vehicle containing petroleum in bulk.</p> <p>(2) No person shall smoke while on or attending such a vehicle.</p> <p>(3) No article or substance capable of causing fire or explosion shall be carried on such a vehicle.</p> <p>Explanation. — For the purposes of this rule any tank or other receptacle which has contained petroleum and which has not been thoroughly cleaned and freed from inflammable vapour shall be deemed to contain petroleum.</p>
		Section-64:	<p>Project Proponent has to comply with:</p> <p>Filling and discharge of tanks. —</p> <p>(1) Tank-wagons, lorries or carts transporting petroleum shall only be filled or discharged by means of metal pipes or armoured hose in which the armouring is electrically continuous throughout.</p> <p>(2) Tanks, other than fuel tanks on vehicles, containing Class - I petroleum shall not be filled or discharged—</p>

			<p>(i) within 30 meters of any fire, furnace or artificial light capable of igniting inflammable vapour ; or</p> <p>(ii) at any place where the lorry, wagon or cart is exposed to sparks:</p> <p>Provided that the distance specified in clause (i) may be reduced to 9 meters when the petroleum is filled or discharged under seal and closed vapour return pipe lines are provided:</p> <p>Provided further that the distance specified in clause (i) may be reduced to the figure 4 meters prescribed in the licence in Form K where the petroleum is filled, stored and discharged into a tank in any premises licensed in that Form.</p> <p>Explanation. — A pipe supplying liquid to a tank is “under seal” to the tank if it is screwed to the tank or otherwise attached so that no liquid or vapour can escape into the air except through an approved vent.</p>
		Section-65:	<p>Project Proponent has to comply with:</p> <p>Means of extinguishing fire to be carried. — An adequate supply of dry sand or other efficient means of extinguishing fire shall be carried in an easily accessible position on every vehicle transporting petroleum in bulk by road.</p>
		Section-66:	<p>Project Proponent has to comply with:</p> <p>Prohibition as to public service vehicles. — Petroleum shall not be transported on any public vehicles which is carrying passengers.</p>

		Section-67:	<p>Project Proponent has to comply with:</p> <p>Vehicles to be constantly attended. —</p> <p>(1) Every vehicle while engaged in the transport of petroleum by road shall be constantly attended by at least one person: Provided that such vehicles may be left unattended in places previously approved by the Chief Inspector.</p> <p>(2) Every vehicle on which more than 4,500 litres of petroleum is being transported by road, or which while transporting any petroleum by road is being trailed by another vehicle, shall so long as it is in motion, be attended by at least two persons.</p>
		Section-77:	<p>Project Proponent has to comply with:</p> <p>Approval of vehicles for transport in bulk necessary. —</p> <p>(1) Petroleum in bulk shall not be transported by land except under a licence granted under these rule in a vehicle of a type approved in writing by the Chief Inspector.</p> <p>(2) All such vehicles other than those exclusively used for the transport of class III petroleum shall have a stamped, embossed, painted or printed warning exhibiting in conspicuous characters the words “Petrol”, “Motor Spirit”, “Kerosene” or an equivalent warning of the nature of the contents.</p> <p>(3) Every such vehicle and its fittings shall be maintained in good condition.</p>
		Chapter IV	<p>Project Proponent has to comply with:</p> <p>91. Precautions against fire. –</p> <p>(1) No person shall smoke in any installation or storage shed.</p> <p>(2) No person shall carry matches, fuses or other appliance for producing ignition or explosion in any installation or storage shed which is used for the storage of dangerous petroleum.</p>

		<p>(3) No fire, furnace or other source of heat or light capable of igniting inflammable vapour shall be allowed in any licensed installation or storage shed save in places specially authorized by the licensing authority for the purpose.</p> <p>(4) An adequate supply of dry sand or earth together with the necessary implements for its convenient application, or other efficient means of extinguishing petroleum fires, shall always be kept in every installation and in or adjacent to every storage shed.</p> <p>95. Exclusion of unauthorized persons. –</p> <p>(1) Every installation shall be surrounded by a wall or fence of at least six feet in height:</p> <p>Provided that nothing in this sub-rule shall apply to an installation licensed under the rules in force immediately before these rules come into operation unless its fencing is considered by the licensing authority to be unsatisfactory:</p> <p>Provided further that the Chief Inspector may waive this sub-rule in the case of an installation connected with a pump outfit and floating storage barges, under such conditions as he deems necessary.</p> <p>(2) Precaution shall be taken to prevent unauthorized persons from having access to any storage shed or installation.</p> <p>100. Construction of tank. – Every tank or other receptacle used for the storage of petroleum in bulk other than well-head tank shall be constructed of iron or steel properly erected and designed according to sound engineering practice and, together with all pipes and fittings shall be so constructed and maintained as to prevent any leakage of petroleum.</p>
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			<p>102. Earthing of tanks. – All tanks or other receptacles for the storage of petroleum in bulk other than well-head tank or tanks for receptacles of less than 10,000 gallons capacity containing heavy petroleum shall be electrically connected with the earth in an efficient manner by means of not less than two separate and distinct connections placed at opposite extremities of such tank or receptacles. The roof and all metal connections of such tank or receptacle shall be in efficient electrical contact with the body of such tank or receptacle.</p>
42	Industrial Zone Law, 2020	Section-27:	<p>Project Proponent has to apply for approval:</p> <p>The investor –</p> <ul style="list-style-type: none"> (a) Shall register with the relevant departments according to the laws in force. (b) Shall implement the business as specified by the relevant departments and organizations. (c) Shall report the implementation status to the Management Committee as prescribed. (d) Shall comply with the laws, rules, orders and directives with regard to hazardous raw materials and inferior goods. (e) Shall comply with the provisions of the laws, rules in force with regard the rights and benefits of workers such as appointment, salary and overtime pay, occupational safety and healthcare matters.
		Section-28:	<p>Project Proponent has to comply with:</p> <p>The investor shall comply with the provisions of Environmental Conservation Law and, furthermore, with the laws in force with regard to occupational safety and healthcare matters.</p>

		Section-34:	Project Proponent has to comply with: The investor or developer (a) Shall use the permitted land as specified. (c) The topography of the approved land shall not be significantly altered without the approval of the respective Management Committee.
		Section-35:	Project Proponent has to comply with: The Management Committee shall be immediately notified if underground natural resources, antiques or treasures which are not included in the commercial agreement and are unrelated to the investment are found above or in the ground of the permitted land. The investment may still be made on this land provided that approval from the Nay Pyi Taw Council or the respective Region or State government is obtained through the Management Committee. The investment shall be relocated to a replacement location provided by the Regional Committee if approval cannot be obtained.
43	The Public Health Law, 1972	Section-3:	Project Proponent has to comply with: The company shall cooperate with the authorized person or organization in line with the law and shall abide by any instruction or stipulation for public health.
		Section-5:	Project Proponent has to comply with: The company shall accept any inspection anytime and anywhere if it is needed.
44	National Waste Management Strategy and Action Plan, 2019		Project Proponent has to comply with: In addition the company will follow the National Waste Management Strategy and Action Plan.
45	The related Law enacted by Yangon Region Hluttaw and Rules issued by Yangon Region Government		Project Proponent will comply with this law (not available at hand yet)

Commitment

Myanmar Brilliance Auto Co., Ltd will comply with the above mentioned laws, rules, regulation, particularly, the relevant section/subsection excerpted and reproduced above.

U Khin Maung San
Managing Director
Myanmar Brilliance Auto Co., Ltd

3.2.2 International conventions treaties and agreement (concerning environmental affairs)

Myanmar has either signed or ratified no less than thirty treaties, conventions and protocols concerning environment, it is learnt.

Some of the regional conventions or protocols signed or ratified by Myanmar are:

- (i) ASEAN Agreement on Conservation of Nature and Natural Resources. Kuala Lumpur, 1985
- (ii) ASEAN Agreement on Tran-boundary Haze Pollution, 2002
- (iii) Establishment of ASEAN Regional Centre for Biodiversity, 2005

Some of the international conventions and protocol which are of importance are:

- (i) Convention for the protection of World Culture and National Heritages. Paris, 1972.
- (ii) Vienna convention for the protection of Ozone Layer. Vienna, 1985.
- (iii) Convention on Biological Diversity. Rio-de-Janero, 1992
- (iv) U N Frame work Convention on Climate Change, 1992.
- (v) Kyoto Protocol on the frame work convention on climate change. Kyoto, 1998
- (vi) Protocol on Bio safety. Cartagena, 2000
- (vii) Convention on Persistent Organic Pollution (POP). Stockholm, 2004
- (viii) UN Climate Change Conference, COP (conference of the parties) 21, Paris, 2015
- (ix) UN Climate change conference, COP 22, Marrakesh, 2016
- (x) International conference on climate change, 2017
- (xi) UN Climate Change Conference, COP 24, Katowice, Poland 2018
- (xii) Second international conference on climate change, Colombo, 2018 and all UN Climate change yearly conference hold in the frame work of UN Framework Convention on Climate Change (UNFCCC).
- (xiii) UN Climate Change Conference, COP 25, Madrid, Spain
- (xiv) UN Climate Change Conference, COP 26, Glasgow, U.K
- (xv) UN Climate Change Conference, COP 27, Sharm el-Sheikh, Egypt
- (xvi) UN Climate Change Conference, COP 28, Dubai, 2023

3.2.3 National and international standards and guideline

I. National Environmental Quality Guideline by Environmental Conservation Department (ECD)

(a) Air emission

Myanmar Brilliance Auto Co., Ltd will follow the general National Environmental Quality guideline values for air emission as prescribed by the Environmental Conservation Department (from Notification No.615/2015, December 2015, by ECD, then under the Ministry of Environmental Conservation and Forestry (MOECAAF), now MONREC, Code No. 1.1.

Parameter	Averaging Period	Guideline Value $\mu\text{g}/\text{m}^3$
Nitrogen dioxide	1-year	40
	1-hour	200
Ozone	8-hour daily maximum	100
Particulate matter $\text{PM}_{10}^{\text{a}}$	1-year	20
	24-hour	50
Particulate matter $\text{PM}_{2.5}^{\text{b}}$	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter

(b) Effluent

Myanmar Brilliance Auto Co., Ltd will follow the National Environmental Quality general guideline values for effluent levels (Notification No.615/2015, December 2015, by ECD, MOECAAF), Code No. 1.2

(Waste water, storm water runoff, effluent and sanitary discharges (general application))

Parameter	Unit	Guideline value
5 day biochemical oxygen demand	mg/l	50
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical oxygen demand	mg/l	250
Chlorine (total residual)	mg/l	0.2
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	20
Heavy metals (total)	mg/l	10
Iron	mg/l	3.5
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and grease	mg/l	10
pH	S.U. ^a	6-9
Phenols	mg/l	0.5
Selenium	mg/l	0.1
Silver	mg/l	0.5
Sulphide	mg/l	1
Temperature increase	°C	<3 ^b
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total nitrogen	mg/l	10
Total suspended solids	mg/l	50
Zinc	mg/l	2

^a Equivalent continuous sound level in decibels

Myanmar National Drinking Water Quality Standards (2019)

Parameters	Unit	Standard values*	WHO Guideline Values ⁴
Total Coliforms	Acceptable/No objectionable	3	None specified (recommended median value – 0 per 100 ml)
Fecal Coliforms	Acceptable/No objectionable	0	Must not be detectable in any 100 ml sample (recommended median value - 0 per 100 ml)
Taste	Acceptable/No objectionable taste		Non set (recommended median value - 3 DN)
Odor	Acceptable/No objectionable odor		Non set (recommended median value - 3 DN)
Color	True Color Unit (TCU)	15	Non set (recommended median value - 15)
Turbidity	Nephelometric Turbidity Unit (NTU)	5	Non set (recommended median value - 5)
Arsenic	mg/L	0.05	0.01 mg/l
Lead	mg/L	0.01	0.01 mg/l
Nitrate	mg/L	50	50 mg/l
Manganese	mg/L	0.4	0.4 mg/l
Chloride	mg/L	250	Non set (recommended median value - 250)
Hardness	mg/L as CaCO ₃	500	Non set (recommended median value - 500)
Iron	mg/L	1	Non set (recommended median value – 0.3)
pH	-	6.5 to 8.5	Non set (recommended median value – 6.5-8.5)
Sulphate	mg/L	250	Non set (recommended median value - 250)
Total Dissolved Solid (TDS)	mg/L	1000	Non set (recommended median value - 1000)

(c) Noise level

The National Environmental Quality general guideline for noise (from Notification No.615/2015, December 2015, by MOECAAF), code No.1.3.

Receptor	One Hour LAeq (dBA) ^a	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)
Residential, institutional, educational	55	45
Industrial, commercial	70	70

^a Equivalent continuous sound level in decibels

(d) Odour

Guideline standard for odorant unit is between 5 and 10.

3.2.4 Standards and guidelines

I. International standards

The project proponent may not be in a position to strictly comply with these international guidelines but will refer to these guideline as practical as possible (The project proponent has an obligation to comply with the national standards and guideline of Myanmar).

- 1) Automotive Engineering standards. Ansi.org>automotive
- 2) Auto safety and technical policies in China. Int.Jour.Auto.Industry.ijbssnet.com>journal>q.pdf.
- 3) China Vehicle Standards, GB Standards (English version translation). www.gbstandards.org>index>std.
- 4) IBC. International Building Code
- 5) IFC. Environment, Health and Safety (EHS) guidelines, 2007.
- 6) IFC. Construction and Infrastructure guideline. www.ifc.org>wps>wcm>coonect
- 7) ILO standard on Occupational Safety and Health (OSH). ilo.org.global>standards
- 8) ILO. Fundamental principles of Occupational Health and Safety (OHS). www.ilo.org.pub>wcm.097550

- 9) ISO-9001. Automotive ISO standards. 1999.
- 10) ISO/TS 16949. Wikipedia. <https://en.m.wikipedia.org/wiki/iso>.
- 11) ISO/TC. 22. Road vehicles. <https://www.iso.org/catalogue>.
- 12) ISO and Road vehicles. <https://www.iso.org/PUB100292>
- 13) ISO/DENSO Auto parts. densoautopart.com>the-international-st. <https://webstore>
- 14) ISO.91. Construction Materials and building. <https://www.iso.org/ics>
- 15) Motor Vehicle Assembly. EBRD subsector Environmental and Social Guidelines, 2014. <https://www.ebrd.com/doc>.

3.3 Contractual and other commitment

3.3.1 Commitments made by the project proponent

The project proponent has made a sincere commitment and confirmed that:

- (a) the information and data in this EIA report are true and accurate and that the report is complete,
- (b) the EIA has been prepared in strict compliance with applicable laws including EIA procedure and with the TOR for the EIA, and
- (c) that the project proponent will at all times comply fully with the commitments, mitigation measures, EMP and MP in the EIA report. (EIA procedure 616/2015, section-62, a, b, c)

Moreover the company pledges not to pollute the air, water and land environment as practical as possible throughout the entire life of the project from the Construction Phase through the Operation Phase to the Decommissioning and Rehabilitation Phase. The Company will endeavor to operate the plant with an environmentally and socially responsible manner. The Company will monitor and adopt suitable measures for environmental protection. And the Company will follow all at the mitigation measures to be taken and the EMP implemented as prescribed in this EIA report. The company pledges to spend 2% of its net profit for the implementation of CSR.

U Khin Maung San
Managing Director
Myanmar Brilliance Auto Co., Ltd

3.3.2 Commitments by the consultant firm, MESC

The consultant firm has made a sincere commitment and confirmed that:

- (a) the information and data in this EIA report are true and accurate and that the report is complete, and
- (b) that the EIA has been prepared in strict compliance with applicable laws including EIA procedure and with the TOR for the EIA. (EIA procedure 616/2015, section-62, a, b)

The report has been prepared by MESC with utmost effort with all reasonable skills, care and diligence within the term of contract with the client (Myanmar Brilliance Auto Co., Ltd). Recommendations are based on our experience, using professional judgement and based on the information that is available to us.

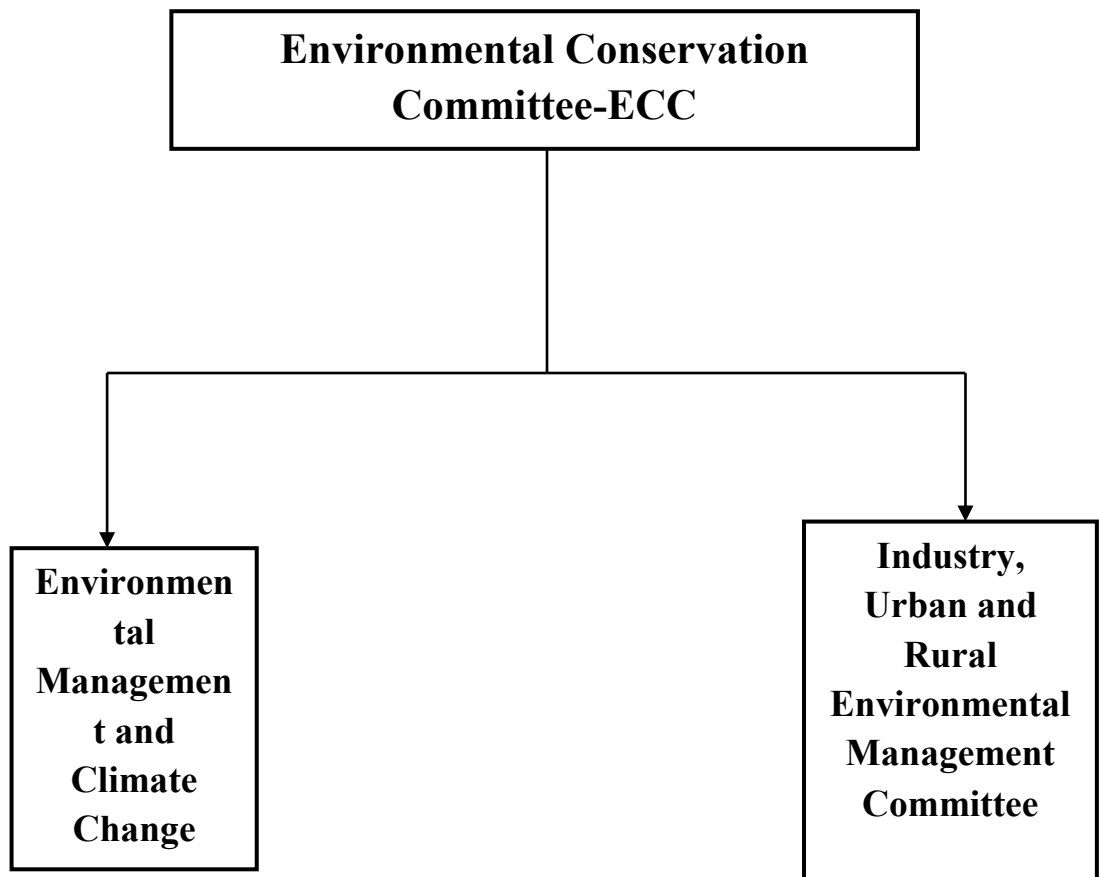


Myint Kyaw Thura
Managing Director
Myanmar Environment Sustainable
Conservation

3.4 Institutional frame work

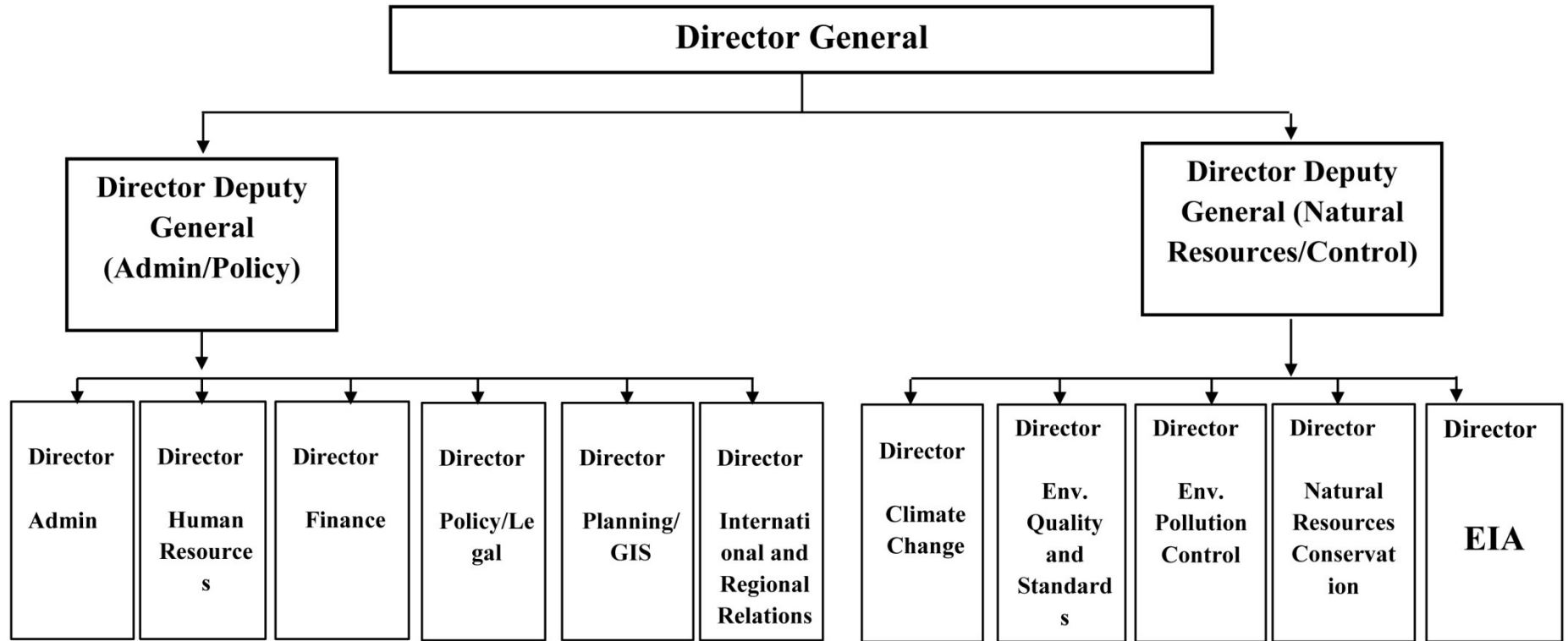
The National Environmental Conservation Committee (NECC) was formed in 2011 with the aim to achieve sound environmental management in the country. It is enlarged and reorganized as National Environmental Conservation and Climate Change Central Committee (NECCCCC).

Later the Environmental Conservation Committee- ECC was formed in 2021. The institutional organization of ECC is as follow:



Institutional organization of ECD

ECD is a major department under MONREC and is headed by a director general. Under the Director General are one Deputy Director General and 4 Directors at the directorate. ECD is the focal and coordinating agency for the overall environmental management of the country. It is also directly responsible for all the management of IEE, EIA, EMP etc. activities taking places all over the country.



These four departments are each headed by a director.

The main tasks of ECD include:

- implementing environmental conservation policy
- designing and implementing monitoring programmes
- prescribing environmental quality standards and,
- conducting activities relating to waste management and conducting environmental impacts assessments

Recently various Environmental Conservation Departments at States and Regional levels under the Directorate were established in all the 14 States and Regions of the nation. This will surely greatly enhance the conservation of the environment and especially the management of the environment of the country.

The Occupational and Environmental Health Division (OEHD)

The Occupational and Environmental Health Division (OEHD) under the Department of Public Health is the focal agency involves in environmental and health affairs.

The occupational and Environmental Health Division is involved in implementing Environmental Health Programme in the country.

At the moment it is involved in:

- Environmental monitoring: on air quality and water quality
- Medical monitoring: health assessment on workers (periodic medical examination, performing physical examination, chest X-ray, biomarker survey on workers)
- Work place assessment: eg- on air quality, waste (solid) and waste water, heat stress and light, noise level, soil quality, water sanitation and hygiene etc. in certain factories.
- Assessment of environmental health probably related to climate change and general health impact assessment.

Institutional frame work of Myanmar Brilliance Auto Co., Ltd

Myanmar Brilliance Auto Co., Ltd is a new company investing in car assembling/ manufacturing business in Myanmar.

The company has five executive members, namely, U Khin Maung San, Managing Director and four directors; U Myo Kyaw, U Win Min Maung, U Yan Myo Aung and U Aung Phone Myint.

The company institutional structures at the project site will be 224 permanent staff (219 locals and 5 foreigner technicians).

The institutional arrangement at the project site is as follow:

Assembly plant/Factory Manager	- 1
Assembly plant/Deputy Factory Manager	- 1
Workshop (assembly line) manager	- 2
Technicians (assembly)	- 60
Technicians (machinery)	- 25
Administrative staff	- 15
Skilled workers	- 35
General workers	- 80
Foreigner technicians	- 2
Foreigner supervisors	- 3
Total	- 224

3.5 Environmental and Social Standards (After IFC, 2012)

There are eight performance standards for a big company to do business in a new area.

1. Assessment and Management of Environmental and Social Risks and Impacts

- identify and evaluate environmental and social risks and impacts of the project
- adopt mitigation measures to avoid, or if avoidance is not possible, minimize or mitigate the impact; compensate for the impacts on people and on the environment
- promote improved environmental and social performance through the effective use of management system
- ensure that grievances from the effected people are responded and managed appropriately
- promote and provide means for adequate engagement with the community throughout the project period

2. Labour and Working Conditions

- promote the fair treatment, non-discrimination and equal opportunity of workers
- establish, maintain and improve the worker-management relationship
- promote compliance with national employment and labour laws
- promote safe and healthy working conditions and the health of workers
- avoid the use of forced labour and child labour

3. Resource Efficiency and Pollution Prevention

- avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities
- promote more sustainable use of resources, including energy and water
- reduce project-related GHG emissions

4. Community Health, Safety and Security

- avoid adverse impact on the health and safety of the community during the project life
- ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the community

5. Land Acquisition and Involuntary Resettlement

- avoid, and when avoidance is not possible, minimize displacement by exploring alternative project designs
- avoid forced eviction
- avoid, or where avoidance is not possible, minimize social and economic impacts from land acquisition or restriction on land use by
 - (i) providing compensation for loss of assets at replacement cost (value of asset plus transaction costs), and
 - (ii) ensure that resettlement activities are implemented with appropriate disclosure of information, consultation and the informed participation of those affected
- improve or restore, the livelihoods and standards of living of displaced persons

6. Biodiversity Conservation and Sustainable Management of living Natural Resources

- protect and conserve biodiversity
- maintain the benefits from ecosystem services
- promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities

7. Cultural Heritage

- protect cultural heritage from the adverse impacts of project activities and support its preservation
- promote the equitable sharing of benefits from the use of cultural heritage

3.6 Health standards for project with health impact

Auto parts assembling can have certain impacts on the health of the factory workers, in one way or another, though considered not serious.

Myanmar Brilliance Auto Co., Ltd will take the occupational health and safety (OHS) measures for its project such as:

- Ensure the integrities of general facility design and operation
- Protect workers from physical hazards, chemical hazards, biological hazards, radiological hazards.
- Provision of Personal Protective Equipment (PPE) for workers if level of dust, smoke and noise etc. are higher than guideline values level.
- Communicate, educate, train worker for OHS measures.

For safe working condition:

- Noise level at work place must not exceed 85-90 dBA (provide PPE when necessary)
- SO₂ must not exceed 350 µg/m³ (1 hr period)
- NO₂ must not exceed 400 µg/m³ (1 hr period)
- CO must not exceed 30,000µg/m³ (1 hr period)
- TSPM must not exceed 230 µg/m³ (1 hr period)
- RSPM must not exceed 150 µg/m³ (24 hrs period)
- SPM must not exceed 150 µg/m³ (24 hrs period) (provide PPE when necessary)
- If possible no radioactive and/or toxic substance is a normal place (provide PPE when necessary)
- All workers must pass medical examination prior to being employed.

As for Community Health and Safety (CHS) the company shall:

- ensure for water quality and availability
- ensure for structural safety of project infrastructure
- measures for life and fine safety L&FS
- measures for traffic safety
- measures for transport of hazardous materials if any, and disease prevention
- measures for preparation and response

As regards OHS:

- Work should take place in a safe and health working environment;
- Condition of work should be consistent with worker's well-being and human dignity;
- Occupational safety and health policy must be established
- Social partners (employers and employees) and other stakeholders must be consulted
- OHS programmes and policies must aim at both prevention and protection
- Continuous improvement of OHS must be promoted
- Health promotion is a central element of OHS practices
- Compensation, rehabilitation and curative services must be made available to workers who suffer occupational injuries, accidents and work related diseases
- Education and training are vital components of safe, healthy working environment
- OHS policy must be enforced

4. PROJECT DESCRIPTION AND ALTERNATIVES

4.1 Project back ground

Project objectives

- To assemble and produce Brilliance Vehicle V3, V6 and V7 series for marketing in Myanmar.
- To sell quality sedan/suv/cars at reasonable price for the people.
- To contribute to the development of vehicle manufacturing in Myanmar.
- To enhance the Industrial Sector of the country.

4.2 Project location, overview map and layout maps and size

The propose project site is located at Plot No. 246/M inside the Industrial Zone (2), Industrial Ward, Hlaing Thar Yar Township, Yangon Region.

Industrial Zone (2) is sandwiched between the Industrial Zone (1) in the east and the Industrial Zone (3) in the west. Further west is the Industrial Zone (4). The Industrial (1) is much larger in size than the other 3 zones which are less of equal size. All these zones are along the south of the Yangon-Pathein Highway No.5. The Industrial Zone (2) is north of the Pan Hlaing River.

The project site is inside the Industrial Zone 2. The area of the project site is 2.420 acres (9793.4015 sqm).

The coordinates at the sites are: N. Lat. 16° 51' 19.50" and E Long. 96° 04' 43.83"and the elevation is 26 ft asl.

The whole Hlaing Tharyar Industrial Zone is bound in the east by the Hlaing River and in the south by the Pan Hlaing River. The Hlaing Thar Yar Township is in the western Yangon District.

The Satmu Zone Zay Lann ward is in the east and south of the project site.

The total area of the whole Hlaing Tharyar Industrial Zone is 1401.98 acres. At the moment there are 724 factories in operation, 10 factories already completed in construction but not yet in operation, 13 factories in the process of construction and 44 plots of land occupied but construction not commence yet. At the moment all together are 22614 male workers and 58311 female workers employed in this whole industrial zone. It is learnt.

The Map of Hlaingthayar Township

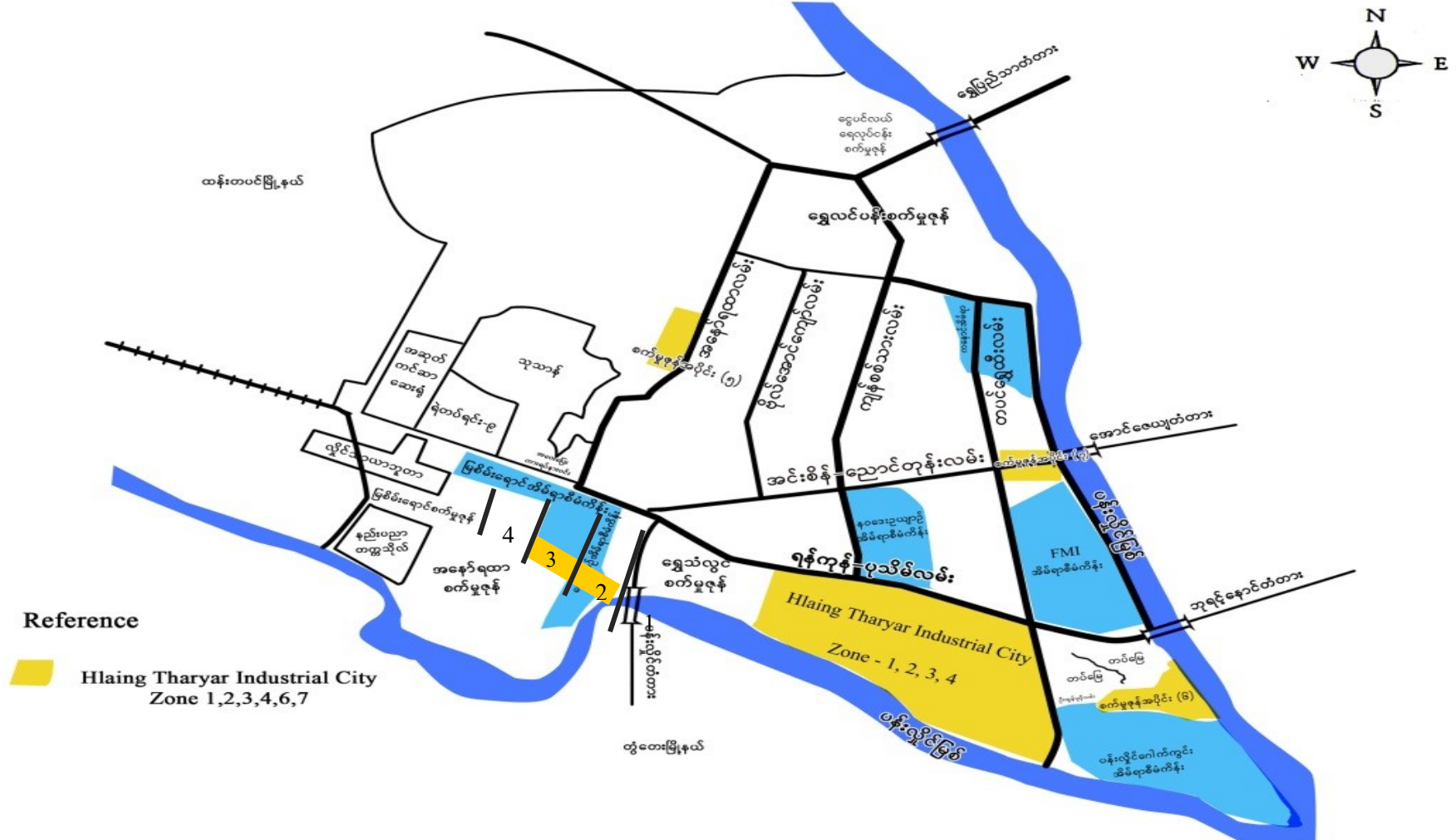
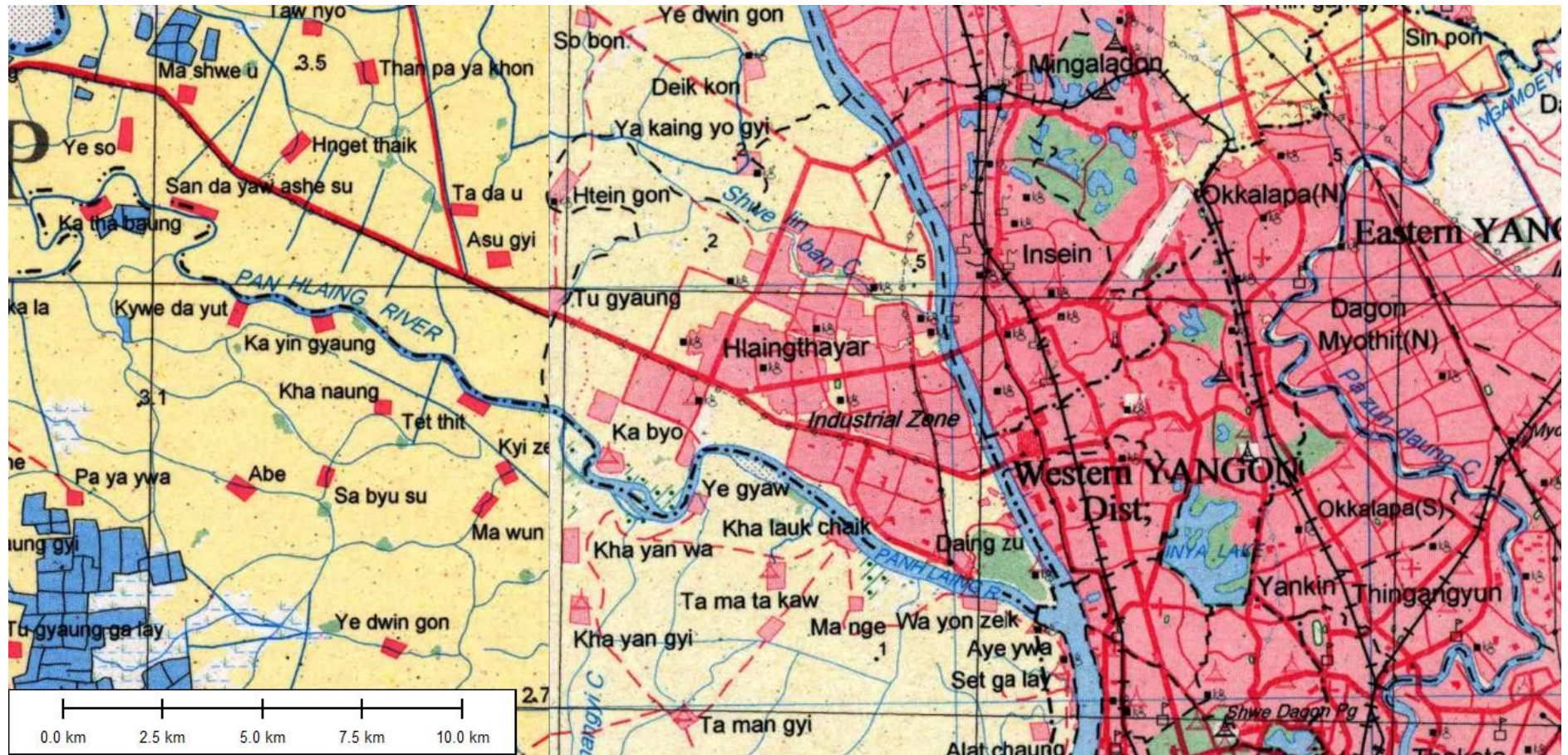


Figure – 5: Map of Hlaing Tharyar Township showing Industrial City (the project site is inside Zone 2)



Figure – 6: Satellite image of part of Zone 2 showing project site



Legend:




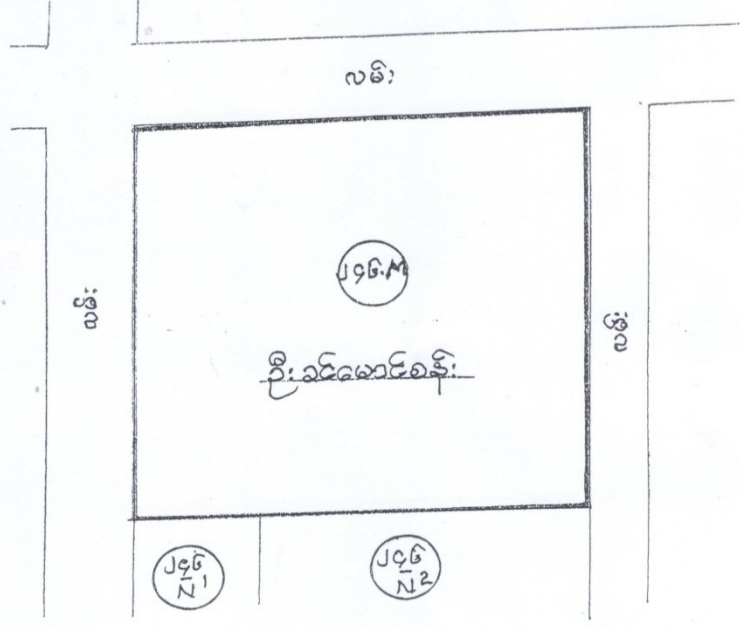
-  Stream/rivulet
-  Township border line/State border line
-  Village

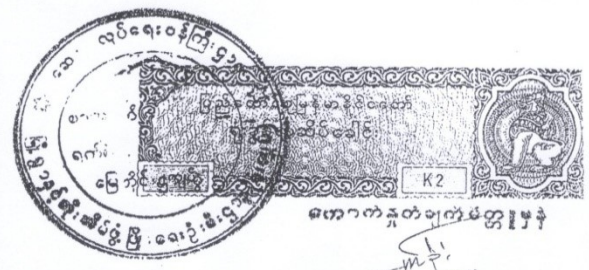
Figure – 7: Map of part of Yangon Region showing Hlaing Tharyar Industrial Zone

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Figure – 8: Document of project site plot

The area of the site is 2.420 acres (9793.401 sq.m).

The coordinates at the four corners (inflection points) are:

A - N. Lat. 16° 51' 20.25" and E Long. 96° 04' 50.87"

B - N. Lat. 16° 51' 17.03" and E Long. 96° 4' 49.72"

C - N. Lat. 16° 51' 17.87" and E Long. 96° 4' 47.46"

D - N. Lat. 16° 51' 21.24" and E Long. 96° 4' 48.28"

The site (plot) is rectangular in shape and bounded in the north by U Shwe Myu Street Lane and in the west by U Aung Thu Street (Lane). The site is deep within inside the Industrial Zone (2) and there is a large vacant plot in the west another vacant plot in the north. There is the gymnasium of (the Ministry of Health and Sport) in the west; in the southwest is the Dangwon M House Co., Ltd, and the No. 1 Market and in the east is also part of the market place where motorcycle and bicycle are sold and repaired.



Figure – 9: Satellite image showing project plot and four corners

4.3 Description of the project

4.3.1 Installation and infrastructure

Being inside the Industrial Zone the site is readily accessible by motor road and has access to gridline electricity. However public water system is not available and so the company has bored tube wells for sourcing ground water at a depth of 100 feet.

The main component of the project comprises three main building with dimensions of 180' x 80' each. All the buildings are three-storeyed ones.

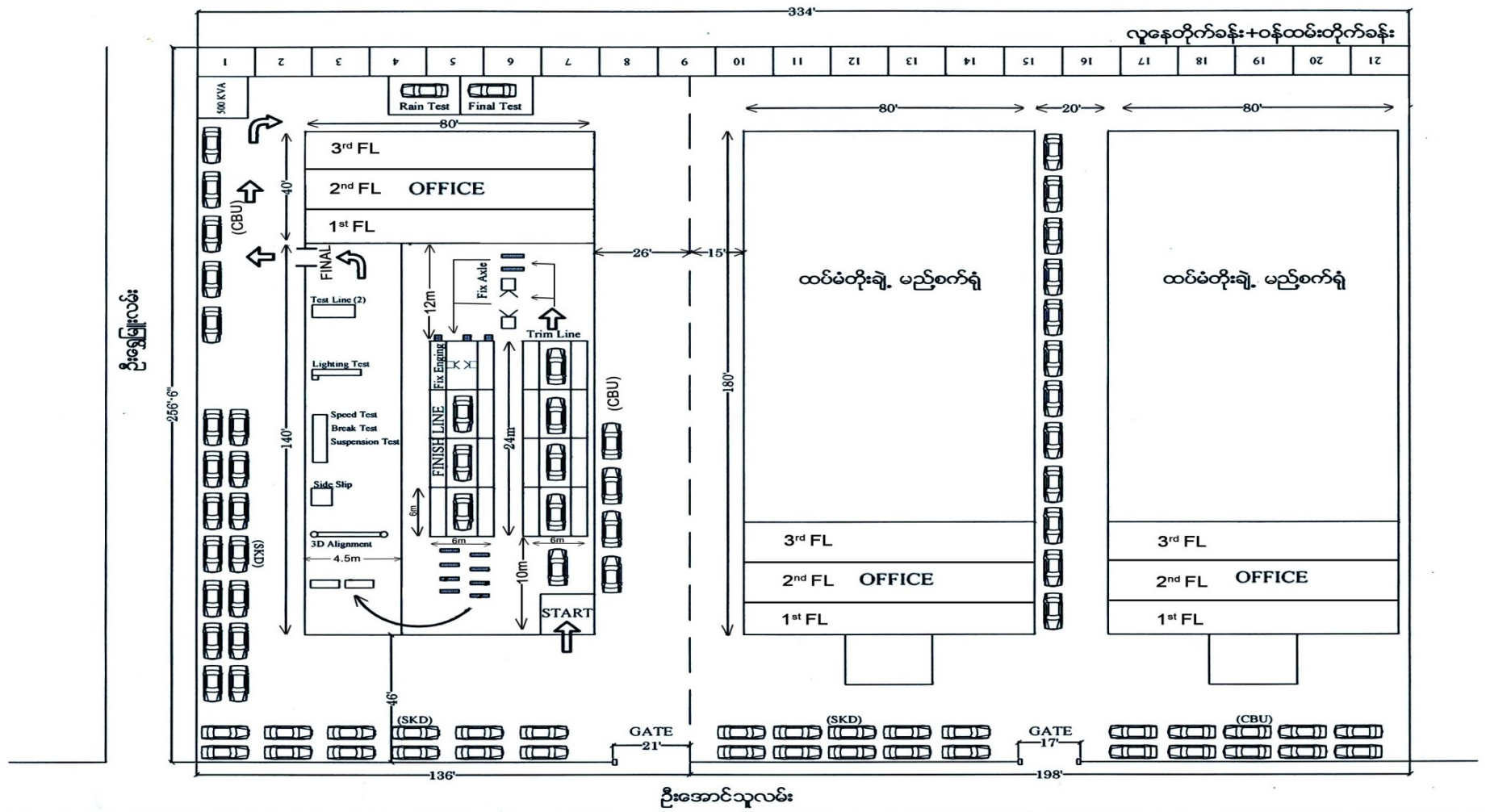


Figure – 10: Layout plan of project site

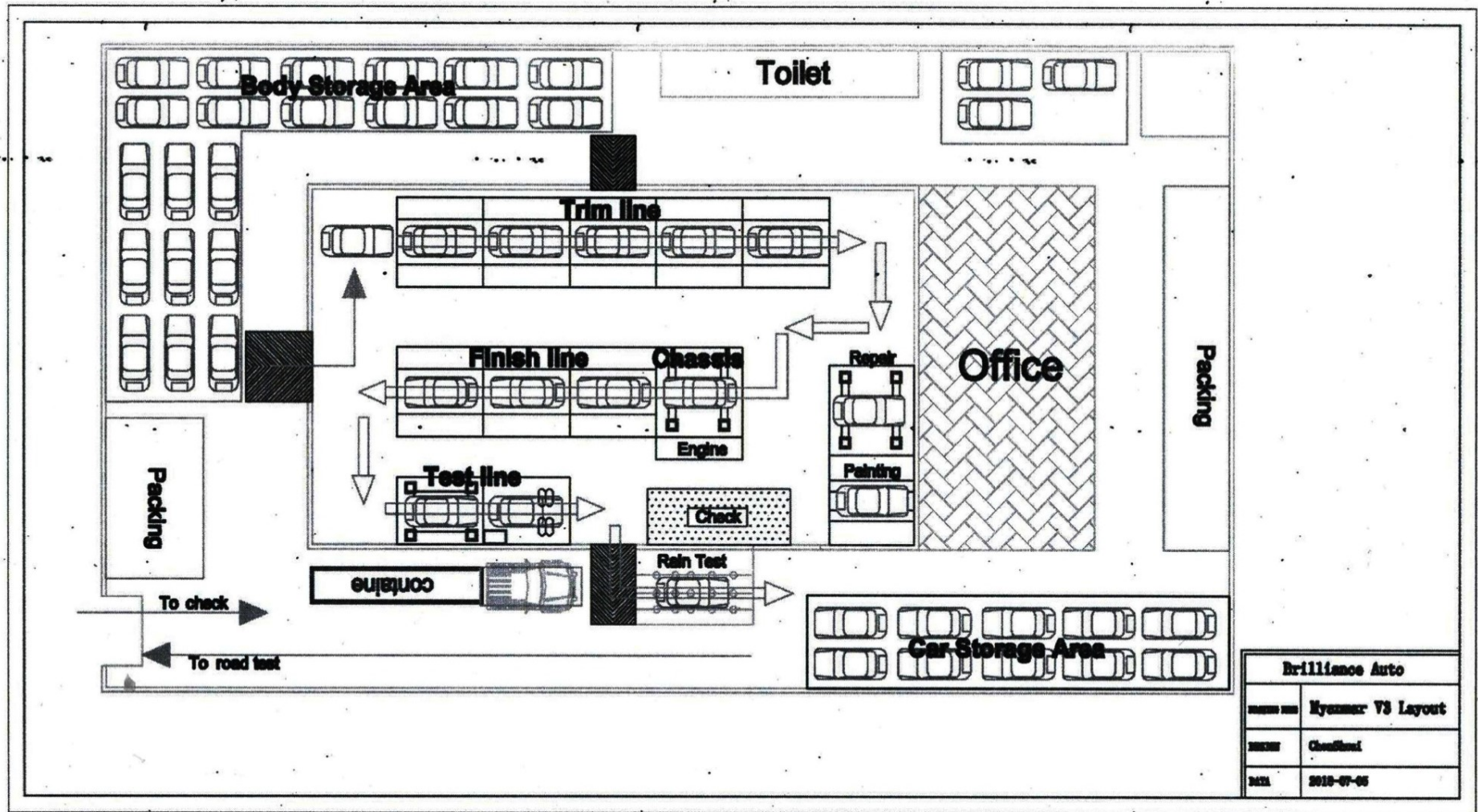


Figure – 11: Factory (Assembly line) layout plan

The plot, rectangular in shape, is 334 feet long from north to south and 356' 6" wide from east to west. It is bounded in the north by U Shwe Myu Lane and in the west by U Aung Thu Lane. There are gates in the west side (open at U Aung Thu Lane).

The three 3-storeyed building will be more or less similar in shape. The Floor 1 will be place for assembling of auto parts and Floor 2 will be for office. Floor 3 will be used for other purposes, such as storage of auto parts and component.

Three main assembly lines, namely, Trim line, Finish line and Test line will be installed in a parallel position along the length of the floor.

At one corner of the floor will be car body storage area while at another corner will be car storage area. Smaller parts and components will be stored in Floor 3.



Figure – 12: The factory (assembly plant)

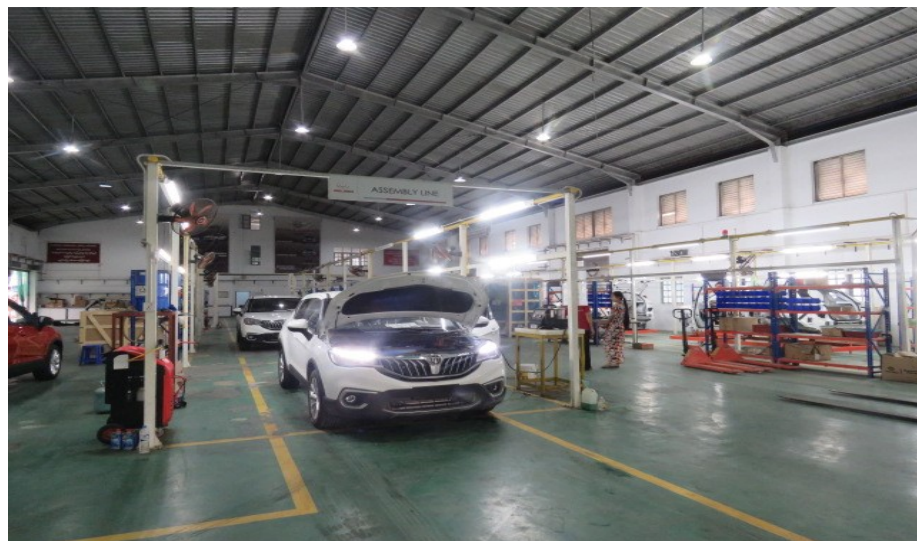


Figure – 13: Assembly line



Figure – 14: Chassis assembly line



Figure – 15: Trim line



Figure – 16: Cabin inspection



Figure – 17: Finishing line



Figure – 18: Exhaust inspection



Figure – 19: Light inspection



Figure – 20: Indoor test lane



Figure – 21: Shower/Rain test



Figure – 22: Outdoor test lane

4.3.2 Technology

The installation/assembly and manufacturing technology deploys the Semi-Knock-Down (SKD) system. SKD is a system where "partially assembly parts of a vehicle" (the raw materials) are imported from China and then assembled/installed and manufactured at the project site. The Knock-Down (KD) or Complete Knock-Down (CKD) system involves the meticulous installation/assembly of all completely un-assembled parts of the vehicle. This system needs a lot more space and time. Most of all, CKD technology needs a higher technology and expertise which is not yet suitable for the present situation in the country. SKD technology is at the moment more appropriate for the nation. However, one day in the near future when the company's Myanmar engineers and technicians have gained experience the CKD technology will be applied.

The vehicles to be assembled and produced are sedan/saloon cars.

Three model brands of Brilliance Vehicle (sedan, SUV) to be produced are:

Brilliance Vehicles V3, Brilliance Vehicles V6 and Brilliance Vehicles V7 and the production target for year 1 is shown in the tabulated form as follows:

Sr. No.	Brand Name, Model	Engine Power	Production unit/year	HS code
1.	Brilliance Vehicle V3	1498 CC	600	8703
2.	Brilliance Vehicle V6	1449 CC	60	8703
3.	Brilliance Vehicle V7	1598 CC	60	8703

* Production target for year 1.

The production target will be raised gradually year after year and by years 5-10 the target are 649, 64 and 64 for V3, V6 and V7, respectively.

All will be for domestic sale but later some may be considered for export.



Figure – 23: Brilliance Auto V3 1500cc (2018)



Figure – 24: Brilliance Auto V6 1500cc (2018)

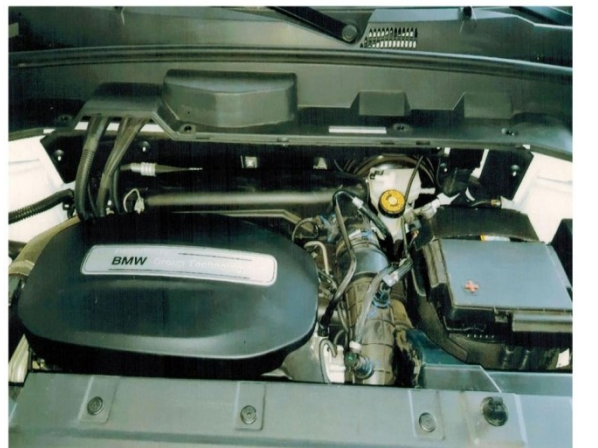


Figure – 25: Brilliance Auto V7 1600cc (2018)

The technology complies with ASEAN Motor Vehicle Requirement Standard. All the vehicles produced are Left Hand Drive type. Moreover the company will follow EU-4 standards as practical as possible.

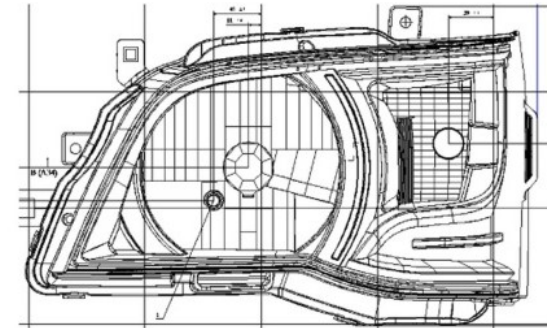
4.3.3 Production processes

The SKD parts (auto components and auto parts) imported for assembly are:

1. SKD Parts 1: Welded/painted body including chassis group (without installation of combination meters, interior trimming parts, lamps, wind shield and wire harness).
2. SKD Parts 2: Trimming parts, dashboard, instrument panel, windshield, wire harness and other accessories.
3. SKD Parts 3: Engine assembly, Transmission and Clutch system.
4. SKD Parts 4: Exhaust system.
5. SKD Parts 5: Wheel and tyres.
6. SKD Parts 6: Steering wheel and related parts.
7. SKD Parts 7: Door group (front, rear and back).
8. SKD Parts 8: Front axles/front independent suspension/rear axles.
9. SKD Parts 9: Suspension component.
10. SKD Parts 10: Seat assembly.

The code no. for all are HS Code: 8708.

SKD parts 1 to 10 are shown below:





1



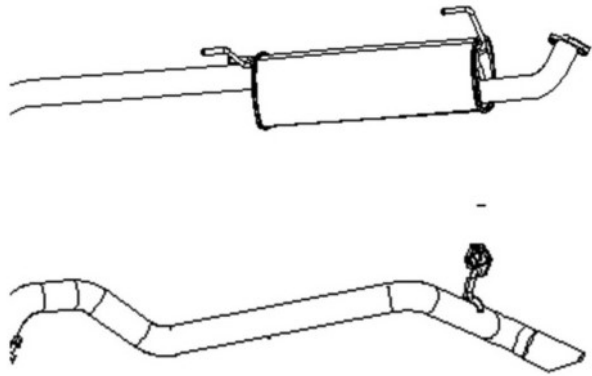
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2



3



4



5



6



7



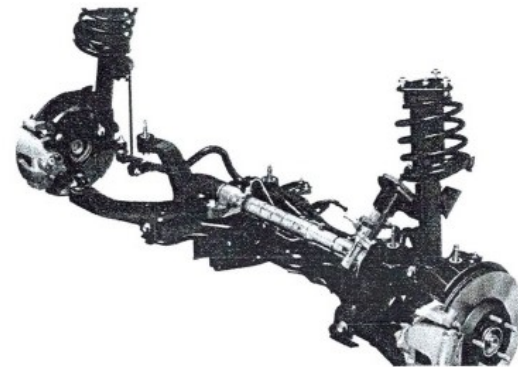
7



7



8



9



10



10

Figure – 26: SKD parts No. 1 to No. 10

The above mentioned SKD parts (motor vehicle parts) imported from China are assembled and installed at the assembly plant into the final product (complete vehicle). The SKD parts (auto parts and components) are manufactured and produced by the parent company, Brilliance Automobile Group Holdings Co., Ltd, Shenyang, Liaoning, China. The parent company had obtained the approval from the RDW, Vehicle Technology Division, The Netherlands (Nederland) (Approval No. E4-95 R-030284).

SKD system process planning and process flow chart is depicted below.

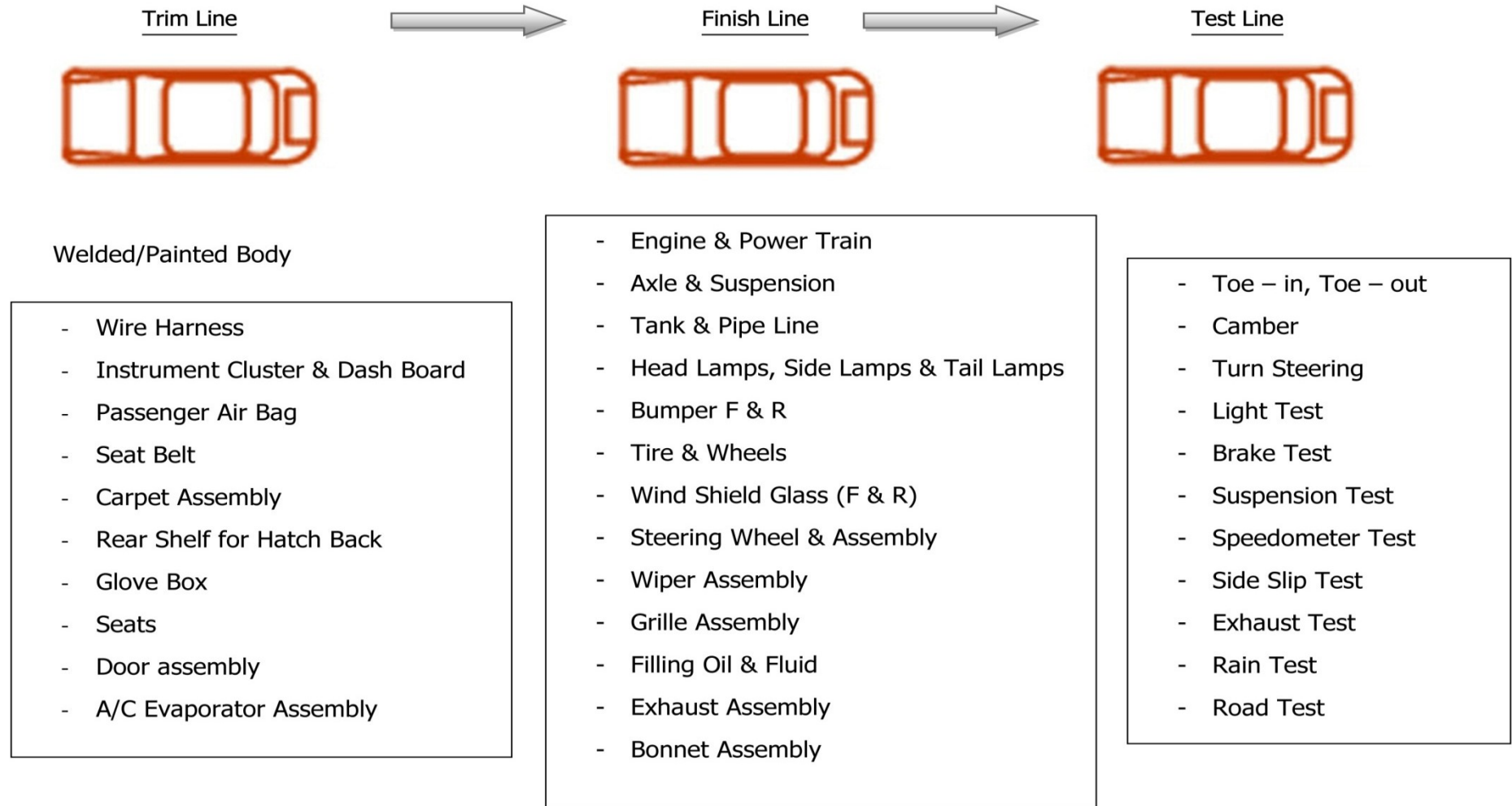


Figure – 27: Process planning

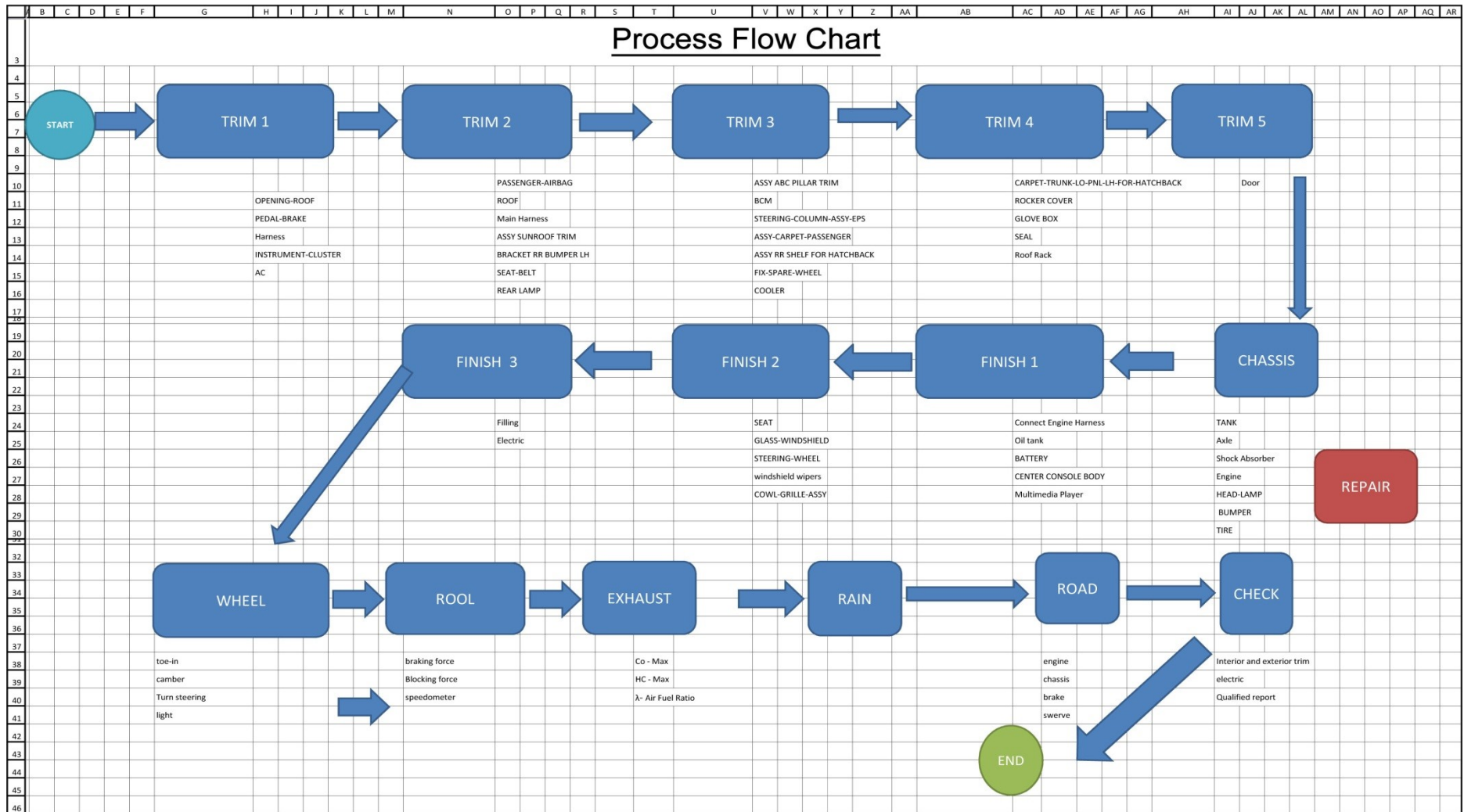
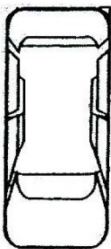


Figure – 28: Process flow chart

Detail steps to be taken during trim lining (process trim line 1-5), assembly of chassis process, finishing process (finish 1-3) and test lining process are depicted below

Trim Line - 1

Trim Process Left Side	Trim Process Area	Trim Process Right Side
(1) Painted Body Inspection (2) Interior wire harness (3) Roof rack RH / LH Assembly (4) Brake Pedal (5) Accellorator Pedal (6) Instrument Cluster (7) Wiper Motor and Links (8) A/C Evaporator Assembly (9) Rear Door Trim (LH) (10) Front Door Trim (LH)		(1) Washer Tank (2) Rear Door Trimming (RH) (3) Horn Assembly (4) Radiator (5) Engine Harness (6) Trunk Lid (7) Panel Wiring of Dash (8) Upper Dash Insulator (9) Lower Dash Insulator (10) Front Door Trim (RH)



Trim Line - 2

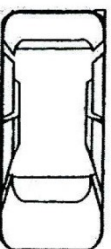
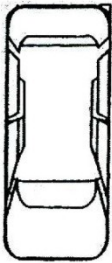
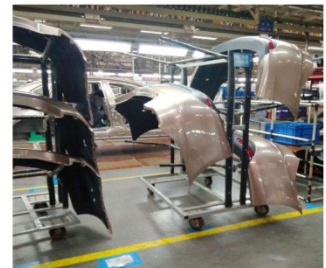
Trim Process Left Side	Trim Process Area	Trim Process Right Side
(1) Passenger Air Bag (2) Foof Trimming (3) Lamp Inside Wiring (4) Back Door Wiring (5) Room Wiring (6) Main Harness (7) Seat Belt (8) Rear Lamp (9) Bumper Bracket (LH) (10) Lamp Inside (LH) (11) Lamp Outside (LH)		(1) Handle Assembly (2) Wiring Assembly (Rear) (3) Wiring Assembly (Room) (4) Door wiring (Front) (5) Door wiring (Rear) (6) Heating Assembly (7) Bumper Bracket (RH) (8) Lamp inside (RH) (9) Lamp outside (RH)



Figure – 29: Trim line 1 and 2

Trim Line - 3

Trim Process Left Side	Trim Process Area	Trim Process Right Side
<ul style="list-style-type: none"> (1) Body Control Module (2) Steering Column (3) Carpet Assembly (4) Front Shock Absorber L/H (5) Rear Bumper (6) Front Bumper (7) Spare wheel 		<ul style="list-style-type: none"> (1) Roof Moulding Assembly (2) Lamp Assembly rear Combination (3) Roof Insulator (4) Door Wiring R/H (5) Front Shock Absorber R/H (6) Rear Shelf for Hatchback



Trim Line - 4

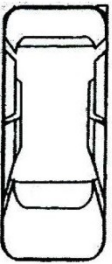
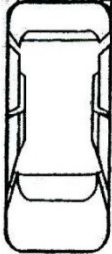
Trim Process Left Side	Trim Process Area	Trim Process Right Side
<ul style="list-style-type: none"> (1) Carpet - Trunk (2) Glove Box (3) Door Seal (4) Roof Rack (5) Pipe Line Assembly 		<ul style="list-style-type: none"> (1) Instrument Panel (2) Opener Filler Lid (3) Q.C Inspection (4) ABS Complete Unit (5) ABS Pipe Line Assembly



Figure – 30: Trim line 3 and 4

Trim Line - 5

Trim Process Left Side	Trim Process Area	Trim Process Right Side
(1) L/H Front Door Trimming (2) L/H Rear Door Trimming (3) L/H Door Install		(1) R/H Front Door Trimming (2) R/H Rear Door Trimming (3) R/H Door Install



Chassis

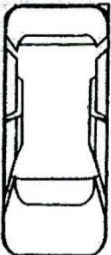
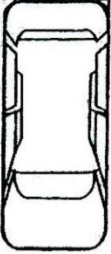
Trim Process Left Side	Trim Process Area	Trim Process Right Side
(1) Engine with Gear (2) Front Axle (3) Rear Axle (4) Front Absorber L/H (5) Fuel Tank (6) Fuel Pump & Piping (7) Cannister (8) Front Wheel Guard Assembly L/H (9) Rear wheel Guard Assembly L/H		(1) Front Shock Absorber R/H (2) Head Lamps (3) Front Bumper (4) Rear Bumper (5) Tyre and wheel (6) Parking Cable (7) Front wheel guard Assembly (R/H) (8) Rear wheel Guard Assembly R/H



Figure – 31: Trim line 5 and Chassis

Finish - 1

Trim Process Left Side	Trim Process Area	Trim Process Right Side
(1) Connet Engine Harness (2) Battery and Fuse Box (3) Connect Media Player (4) Body Centre Console (5) Rear Coil Spring L/H (6) Rear Shock Absorber L/H		(1) Multi-median Player (2) Rear Coil Spring R/H (3) Rear Shock AbsorberR/H (4) Rear Axle Docking



Finish - 2

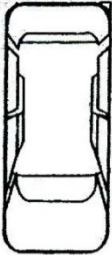
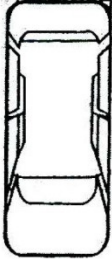
Trim Process Left Side	Trim Process Area	Trim Process Right Side
(1) Seat L/H (2) Front wind Shreld Glass (3) Rear wiper (4) Grille-Assembly		(1) Seat R/H (2) Rear wind Shield Glass (3) Front wiper (4) Steering wheel




Figure – 32: Finish 1 and 2

Finish - 3

Trim Process Left Side	Trim Process Area	Trim Process Right Side
(1) Engine Oil Filling (2) Brake Oil Filling (3) Coolant Filling (4) Electrical Socket (Engine)		(1) Gear Oil Filling (2) Washer Fluid Filling (3) Power Steering Fluid (4) Electrical Socket (Interior Room)



Test Line

Description	Trim Process Area
(1) Road Test (Before Alignment) (2) 3D wheel Alignment (3) Side Slip Testing (4) Suspension testing (5) Brake Force Testing (6) Speedometer Testing (7) Head Lamp Alignment Testing (8) Exhaust Gas Testing (9) Shower Testing (10) Final Check	

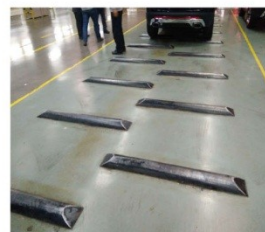
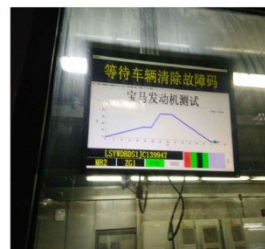


Figure – 33: Finish 3 and test line

The company has a specific vehicle testing workshop set up at the plant.

4.3.4 Uses of raw materials and resources

Actually no raw materials are needed in this project. The term “raw materials” refers only to car parts and/or partially assembled car parts (also known as SKD parts). These are imported from China. The resources required are only water and electricity.

Water is sourced from ground water at a depth of 100 feet.

Actually water is not necessary for assembling and manufacturing process but only for shower test. Water will be mostly for domestic use (sanitary) and watering plants.

Estimated annual water requirement: is 14,000 gallons.

Elevated tank -- There are 6 elevated tanks (600 gallons x 6, totaling 3600gallons)



Figur - 34 Elevated tanks

Electricity: will be sourced from gridline electricity.

The annual electricity requirement is 612,640 KW.

The company will also install backup generators 150 KVA for use in case of power outage.



Figure-35: Transformer



Figure – 36: Generator

Fuel requirement (annual)

Diesel - 6000 gallons

Petroleum - 800 gallons

Engine oil - 50 gallons

Lubricant etc. - 500 gallons

Fuels are not stored at the site. They can be easily procured from any petrol station.

No chemicals are used.

4.3.5 Main machinery and equipment

The essential machinery and equipment to be imported are:

- Assembly Limes and accessories.
- Vehicle Testing and general equipment and accessories.
- Filling machines and accessories.
- Workshop equipment.

Machinery and equipment are all locally purchased. (See ANNEX)

Vehicles for the factory uses are also locally purchased.

4.3.6 Other aspects of the project

The estimated budget is Ks 4177.9393 million (including US\$ 0.54995 million).

Duration of project life

- | | |
|-----------------------|---|
| Preconstruction Phase | - 1 year (2018) |
| Construction Phase | - 1 year (2019) |
| Operation Phase | - 30 plus years (30 years and extendable twice for 10 years, each)
(2019-2049 and probably up to 2069) |
| Decommissioning Phase | - 1 year (2050 or 2070) |

Staff organization

About 100 construction workers were employed during the Construction Phase.

There are 219 local staffs and 5 foreign technicians during the Operation Phase.

There are one factory manager and deputy manager each; two work shop (assembly line) manager, 60 technicians (assembly), 60 technicians (machinery), 15 administrative staffs, 35 skilled workers and 80 general workers.

The salaries range from Ks 160,000 to Ks 1,000,000. The salaries for foreigners range from US\$ 800 to US\$ 1000.

Working hours

8 hours/day; 40 hours/week

Housing/dormitory for staff

Myanmar Brilliance Auto Co., Ltd has dormitories for its staffs which are not inside the project site premise, but at a walking distance. There is no plan for ferrying the staff as the place is within walking distance from the factory. They will commute to the workplace (factory).

4.3.7 Generation of waste, emissions, effluents and disturbance

This assembly plant is not a factory where raw materials are transformed and produced into final products. Such a factory generates emission (smoke, dust) and high level noise. In addition large quantity of industrial solid wastes and liquid wastes are also generated. In this project context there will be little or no generation of waste, emission and disturbances as the main task simply is the installation and assembly of car parts into final product (whole car). There are welding work and painting work in the assembly of car parts.

These are described later in EIA report. Therefore, there will be no issue regarding painting and welding. Certain noise will be generated during the installation and assembly works but will be insignificant. Certain smoke will be generated from certain pumps and generators but will be insignificant.

So it can be stated that the SKD system assembly plant (factory) will be a smoke less factory and a non-waste generating factory. That is the situation for the whole long operation phase. Wastes (solid and liquid) generate during the long phase will be only domestic wastes from staffs and workers. There can be certain spillages of fuel oil from time to time. But this issue can be tackled effectively.

Of course, there have been generations of waste, emission and disturbances during the short construction phase. It is a well-known fact that construction works/civil works generates dust (due to earth works) and smoke (due to operation of engine, pump, etc.) and wastes (construction tailings, debris). These are discussed later in EIA report. However after construction phase these impacts (waste, emission, and disturbances) have ceased.

Green House Gas (GHG) emission

It is universally known that generally a sedan/saloon car emit 3.0 to 4.6 metric tons of CO₂ per year depending on duration of operation for GHG. These are described later in EIA report.

The project proponent is very aware of the fact that the vehicles, V3, V6, V7 they produced are polluters of the air environment. And that emission from vehicles also contribute to air pollution and Green House Gas effect. 720 vehicles will be produced each year and emission from these 720 vehicles can be quite considerable. But it is not realistic to do road transportation without vehicles which are powered by fuel yet. Electric cars and solar cars are not widely applicable yet. Fuel-powered cars will have to be used for some decades. Both Myanmar Brilliance Auto Co., Ltd Myanmar and its parent Co, Brilliance Automobile Group Holdings Co., Ltd, China, will do their best to adhere to the EU-4 standards for auto emission.

4.3.8 Project alternatives

I. The Preconstruction Phase/Planning Phase

The technology alternative

The holistic manufacturing of vehicle cannot be undertaken yet, in Myanmar. Therefore the so-called knock-down (KD) technology that involves the installation, assembly, manufacturing and production has to be adopted. In this project context the Semi-knock-down (SKD) technology is preferred to the complete-knock-down (CKD) one. More effort and more meticulous works and higher technology and expertise and more investment are necessary to implement CKD system and, therefore, the SKD technology is selected for this project. The SKD system is appropriate for the nation, for the time being. In the near future when the company has gained experience and technology and has acquired more expertise CKD technology will be applied.

II. The Construction Phase

Construction material alternative

The eco-friendly construction principle rather than the conventional construction principle is selected. The use of timber wood is minimized as a means of conservation of forest. Iron frames, materials, bricks, corrugated iron roofing and walling are utilized to minimize the use of timber wood.

This can have less impact on the biological component, the forest.

Durable high quality building materials are preferred to low quality ones. The basic building materials, e.g. sand, are selected from fresh water origin rather than marines origin; the later is corrosive in nature.

The minimization of the use of timber and the selection of durable building materials are all eco-friendly ways of thinking and ways of doing things.

Location alternatives

The project site location is rightly inside the Industrial Zone (2) of Hlaing Thar Yar Township. This zone was officially designated by the government since 1995. The site is readily accessible by motor road and it has also good access to gridline electricity. Water can be readily sourced from ground water at a rather shallow depth, 100 feet. Therefore, site location alternative is out of the question. Moreover there are no socio-economic issue such as land grabbing, forced eviction and forced relocation of people, forced labour etc. There are no natural habitats to be impacted and also no cultural, and religious components (such as monasteries, pagoda, church, historical monument, archeological site, etc.) to be impacted by the activities of the project.

When all these are taken into consideration there no better alternative for location to be found in this project context.

Orientation alternatives

Given the rather limited area (2.420 acres) for the project the design and layout plan drawn by the company's architects are good and appropriated. Actually there is little space left for maneuvering and orientation of the buildings.

Practically there is no better orientation alternative as the space is limited.

III. Operation Phase

The SKD system technology will be applied throughout the long operation phase. It is a technology that does not generate dust and smoke and industrial solid and liquid wastes (of course low level noise will be generated due to operational activities).

At the moment there is no better alternative than the SKD system when environmental affair taken into consideration. The company has applied the modern technology rather than the conventional technology when implementing this technology to minimize dust, smoke and to certain extent, noise level.

Energy alternative

As mentioned earlier the site has easy access to gridline electricity and the company takes the advantage of this. Gridline electric energy is pollution free and so it will be used throughout the long Operation Phase. However, there can be energy failure or power outage from time to time. But as an alternative for energy during power failure or power outage the company has installed one 150 KVA generator, as a backup system. The backup generator will be just an alternative during the short power outage only.

As regards fuel oil the company has no chance to select sulphur free diesel but to procure diesel that is available in the country. The 3 models of car produced will use petroleum (gasoline); of course diesel and gasoline have both advantage and disadvantages. Until electric cars or solar energy cars have become common uses there are no better alternative than gasoline powered cars at the moment.

Demand alternative

In the future the company will consider for the application solar panels (solar energy) for some lighting and for some domestic uses as a means of conservation of electricity to certain extent. The company has a plan for this but it is not materialized yet. The use of solar energy is environmentally friendly and it also conserves gridline electricity.

Supply alternative

For the consumption of water, fuel and energy the company will adhere to the principle of conservation rather than using them extravagantly; conservation is preferred to extravagance. Conservation and frugality are the basic principle of environmental protection and conservation and therefore the conservation or minimization of the uses of water, fuel and energy is a good and sound environmental conservation practice. The company shall consider

for the harvest of rain. Rain water can be used for watering plants, washing machinery and vehicles, suppressing dust etc. This will be an environmentally friendly approach and can reduce or minimize the use of the water resources.

Activities alternative

The company will educate, train and supervise its staffs for good working practice, good safety practice and good environmental practice rather than follow the traditional/conventional way in performing their jobs.

After gaining some experience the company will educate and train them to "work smarter" rather than "work harder".

The company will also educate them to walk or ride bicycle rather than riding car when commuting to and from workplace to conserve fuel and to contribute to emission reduction. This is also a good and sound environmental protection practice.

The "no go alternative" or "no project alternative"

The emergence of a vehicle assembly plant (factory) inside the Industrial Zone (2) of Hlaing Thar Yar Township will surely contribute to the further development of the Industrial Sector of the nation and also the Transportation Sector of the nation.

If there is no project, the site (the Plot No. 246/M) will remain vacant and this will not contribute anything to the development of Industry and Transportation Sector of the nation.

As a developing nation with low standards of living very few people can afford a car. A sedan/saloon car is of course not a luxury- it is a necessary item for transportation. It is estimated that for every 100 Myanmar people there is only one car. Or for every 23 households there is only one car (UNDP/World Bank Group, 2017).

When compared with other ASEAN nation the motor vehicles assembled and produced in Myanmar is still very small in number. The facts and figures from ASEAN nations for 2018 (up to end of September) are as follows:

Thailand	:	1,604,116
Indonesia	:	995,837
Malaysia	:	420,498
Vietnam	:	148,317
Philippine	:	64,292
Myanmar	:	8,014
Lao, Cambodia	:	NA

(Source: Weekly Eleven, 12-11-2018)

This proposed project can contribute to provision of car with reasonable price for Myanmar people with medium level of income.

The "no go alternative" will therefore cannot contribute anything to the development of motor mobile industry and transportation sector of the nation. The 224 people to be employed during the operation phase will lose their employment opportunities if this project is not implemented. This is also true for the 100 or so construction workers employed during the construction phase. There will be no increase in employment for the nation.

As the project can also boost the local economy in many ways all these chance will be lost and all benefits will be forgone if the "no project alternative" happen.

The direct investment of Ks 4177.9393 million by Myanmar Brilliance Auto Co., Ltd will not materialize and this cannot contribute to the increase in the GDP of the nation if the "no project alternative" prevails. There will be also no chance for an increase in earning for nation in the form of taxes, duties, loyalty, revenue etc. if the "no project alternative" happens.

Commitment

The Project proponent, Myanmar Brilliance Auto Co., Ltd will do its but for operation of the motor assembling plant in an environmentally sound manner as far as possible.

U Khin Maung San

Managing Director

Myanmar Brilliance Auto Co. Ltd

5. DESCRIPTION OF THE SURROUNDING ENVIRONMENT

The site is deep inside the Industrial Zone (2) of Hlaing Thar Yar Township and the whole area is a flat low land plain west of the Hlaing River which flows in a north-south direction. The site is 1.5 miles west of the Hlaing River and about 1 mile north of the Pann Hlaing River which flows from North West to the south east and drains into the bigger Hlaing River.

As mentioned earlier this Industrial Zone (2) is bounded in the north by the Yangon-Pathein Highway No.5. This Industrial Zone (2) is sandwiched between the Industrial Zone (1) in the east and the Industrial Zone (3) in the west.

The zone is bounded in the north by the Yangon-Pathein Highway (5) and on the other side of the highway in the Nawaday Garden Housing area. In the east is the Ka Naung Min Thar Gyi Road which is the border line between the Industrial Zone (1) and (2).

5.1 Setting the study limits

The study area encompasses the proposed project site (2.420 acres) and the surrounding area within a radius of ½ mile (0.8 sq. mile). As the Auto parts assembly plant is not a factory, the impacts, if any, can be felt or seen at most only within the ½ mile radius.

The site (plot of land) is bounded in the north by U Shwe Myu Lane and in the west by U Aung Thu Lane.

In the near vicinity are: the Gymnasium of the Ministry of Health and Sport and the large vacant plot are in the west; while the No. 1 Market of the Industrial Zone is in the south and part of market where motorbike and bicycle are sold is in the adjacent east.

The facility of Dongwon M. House Co., Ltd is in the south west. In addition there are many restaurants, food stalls and KTV in the south and south east.

In the north is another vacant plot about ¼ the size of the large vacant plot in the west and Aung Kan Bo Trading Co., Ltd is at northwest corner of this plot. In the adjacent northwest is the facility of Htun Nay Win Thitsa Co., Ltd where heavy machinery are put up for sale. Further northwest and further west on the west of the vacant plot are facilities own by Yangon Gem and Jewelry Sale Center. In the further west is the Ocean Super Center.

Actually there are no factories in the near and far vicinities. The GPS coordinates of the proposed site are: N. Lat. 16° 51' 19.50" and E Long. 96° 04' 43.83" and the elevation is 26 ft. asl.



Figure – 37: Satellite image of project site and other facilities in its environs

Legend

- 1) Project site
- 2) Ministry of Health and Sports
- 3) Dongwon M House Co., ltd
- 4) NO-(1) Market
- 5) Htun Nay Wun Thitsar Co., Ltd.
- 6) Yangon Gem and Jewellery sales centre
- 7) Ocean Super Center
- 8) Ever Sunny Industrial Co., Ltd
- 9) Aung Kenbo Trading Co., Ltd
- 10) Angel KTV (Heaven Restaurant & BBQ)
- 11) Hlaing Tharyar Industrial Zone Management Office

The Satmu Zone Zay Lann Ward with a population of 605 (M – 273, F – 332) is incorporated into the socio-economic aspect of EIA study.

5.2 Methodology and objectives

EIA work involved the visual inspection of the area, the surveying work and collection of baseline environmental and social data.

The physical data such as air quality, particulate matter (PM), SO₂, NO₂ and noise were all primary data, collected through field survey. The data for water analysis were also primary data. Soil data is also primary data while the information of local geology is secondary data.

Data on biodiversity; flora, fauna (birds, mammals, reptiles and amphibian) were all primary data collected through this study. There are no large wild mammals in the area. Data on fish was from secondary data.

The social data included both primary data collected through visual inspection and transect work, and secondary data acquired through Key Informant Interview (KII) or other secondary source (SS).

Methodology

The methodology involves:

- Desk top study: on references from domestic and international sources.
- Site visit and visual inspection and detail study and collection and documentation of baseline data/information as well as secondary data/information.

The testing and measurement of air quality, ambient air, PM, SO₂ and NO₂ involved the use of relatively sophisticated and bulky equipment. The portable air test kits has the advantage of measuring the in situ (on the spot) condition but not so reliable.

For measuring PM, SO₂ and NO_x etc. EPAS-HAZ Scanner and EPAS Air Sampler (Respirable dust Sampler Environmentech APM-460NC are deployed. Noise and vibration are measured by EXTECH Sound Level Meter and BEME-TECH Vibration meter.

Portable water test kits were also not so reliable and water samples have to be brought back to Yangon for analysis at a registered private laboratory, the ISO laboratory in Insein, The technicians at this laboratory carried out the analysis work.

The geology is secondary data obtained from secondary information from desktop study.

All meteorological data, monthly rainfall, monthly maximum and minimum temperature, humidity, wind speed etc. were secondary data. They were obtained from Yangon Township Meteorology Office.

The data on the biological components particularly flora were all primary data. All data on flora, birds, reptiles and amphibian were collected through this field surveys.

The flora study involved the overall taxonomic study of the artificial flora (cultivated plants) covering both annual and perennial plants (fruit trees) as well as certain natural vegetation found in the area.

As for fauna, different methods of study have to be applied for different major taxonomic groups, namely, Aves, Amphibia, Reptilia and Mammalia (only rodents). This will be discussed later in **Chapter-5**.

The essential tool for EIA field work includes computer, GPS, camera, telescopes (especially for birds) binoculars, hand lens, microscope (especially for aquatic microorganisms), compass, portable water and air test kits, anemometer, herbarium press, measuring tapes, ropes, pruners and cutter. Tool for catching and trapping wildlife as well as lamp for nocturnal study are not necessary in this context. Chemical preservatives (alcohol, formalin) together with plastic containers of various sizes for the preservation of specimens (especially those that could not be identified during the survey trip but to be identified later) were also necessary.

Geological earth satellite imagery was also applied for the overview of the area covering the site, the village, the fallow land around and the overall view of that portion of the stream.

As regards socio-economic data most were secondary data. These were gathered by means of conducting Key Informant Interview (KII) and also from certain Secondary Source (SS). Certain primary data were acquired by means of visual inspection, transect walks and focal group discussion (FGD).

As for cultural components there were no important cultural, religious, historical and archeological monuments or sites in the area.

Being inside the Industrial Zone there are no monasteries, pagoda, other religious monuments or buildings to be studied.

There is also no visual component such as scenic spot or conspicuous landmark or major historical/cultural site to be impacted by the project.

Objectives

The main objective is the collection, recording and documentation of all base line data for the preparation of EIA report.

5.3 Public administration and planning

The Satmu Zone Zay Lann Ward is in the nearby east and south east. Actually it is a market place but has also become a residential area.

The area is undergoing the industrial development plan and most of the plots of this industrial zone are already occupied by venturing companies. It is envisaged that the zone will developed into a true industrial zone in the near future. But there are still certain vacant plots.

All the four industrial zones and the wards are under the jurisdiction of Hlaing Thar Yar Township.

5.4 Legally protected area

There are no legally protected areas in the near and far vicinities.

The area used to be a lowland flat terrain with some paddy fields, and fallow land or bush land. Since a decade ago it was transformed into four industrial zones.

There are a few green patches here and there which are area of cultivated fruit trees and shade trees.

There are no parks, wild life sanctuaries, nature reserves, protected archeological area etc. in the near and far vicinities.

5.5 Physical components of the surrounding environment

5.5.1 Climate

The climate is tropical monsoon climate with a hot and dry season (premonsoon), a rainy season with moderate rainfall (monsoon) and a cool season (postmonsoon). The area also has the typical hot and humid climate of southern Myanmar.

The hot dry season (summer) generally starts from March to June and is a period of hot spell. The monthly record for temperature from 2010-2023 is shown in **Table-1**. The monthly maximum temperature for 2010-2023 was recorded at 40.4°C in April (2019). The monthly minimum temperature for 2010-2023 was recorded at 16.0°C in January (2013).

The rainy season (monsoon season) generally starts from the middle of June to the end of September. The monthly record for rainfall from 2010-2023 is shown in **Table-2**. The maximum rainfall was recorded at 3144 mm in 2018. The cool season (winter) generally starts from November to and continue till the end of February.

Table-1: Monthly minimum and maximum temperature (°C) of Yangon Township during 2010-2023

Monthly maximum temperature												
Max	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
2010	34.0	35.2	37.1	39.1	36.6	32.4	32.2	31.0	32.4	32.8	34.4	32.9
2011	32.2	34.7	33.8	36.7	32.8	31.5	31.1	30.5	31.2	33.0	34.3	33.2
2012	33.6	36.1	37.2	38.0	34.9	31.3	30.9	30.1	31.9	33.9	33.7	33.1
2013	32.9	36.6	37.2	38.4	35.5	31.3	30.3	30.8	31.0	32.5	34.0	30.7
2014	32.3	34.3	37.3	38.0	35.8	32.1	30.9	30.9	31.9	33.6	33.4	33.9
2015	32.6	34.9	37.5	37.9	35.7	32.0	30.9	30.4	31.6	32.3	33.8	33.2
2016	31.5	34.1	36.9	38.3	36.7	31.6	31.0	30.8	31.3	31.6	33.2	33.3
2017	32.9	34.7	36.8	36.3	35.2	31.9	29.8	30.4	32.4	32.2	33.2	31.9
2018	32.4	34.4	36.4	37.5	35.2	31.0	29.9	30.2	31.9	32.9	33.7	33.2
2019	32.3	35.7	36.9	40.4	36.1	31.8	30.7	30.1	31.9	34.3	33.3	32.4
2020	33.5	34.9	37.3	39.1	37.1	32.2	31.9	31.5	32.1	31.5	33.9	33.6
2021	33.2	35.2	38.3	36.2	36.9	32.3	31.3	32.3	31.2	32.4	34.4	33.1
2022	33.4	34.7	36.9	37.3	33.9	32.0	31.8	31.0	31.7	33.1	33.2	33.0
2023	32.5	34.9	36.3	38.6	36.5	31.3	31.6	32.0	31.6	32.2	34.3	34.0

Monthly minimum temperature												
Min	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
2010	16.4	18.7	23.8	25.7	26.3	25.4	25.1	24.5	24.4	24.1	22.4	19.2
2011	18.2	19.5	21.5	24.2	24.6	24.6	23.9	23.7	23.6	23.4	21.2	19.8
2012	17.1	19.1	22.1	24.8	23.8	23.8	22.8	22.5	22.8	22.7	22.2	17.5
2013	16.0	19.5	20.5	22.6	22.6	22.1	23.9	24.1	23.8	23.7	23	17.5
2014	16.3	17.9	20.1	24.1	23.7	22.9	21.9	21.7	21	22.7	22	19.5
2015	18.6	18.5	21.7	23.9	25	24.6	24.7	24.7	24.7	24.3	22.7	19.8
2016	16.7	19.5	23.1	25.2	25.6	24.7	24.2	24.2	25	24.5	22.2	21.9
2017	20.2	20.5	22.1	24.6	25.3	24.2	23.4	23.7	23.5	22.6	22.3	18.3
2018	17.3	17.4	20.4	22.8	23.2	21.6	21.4	21.0	21.1	20.5	18.7	17.9
2019	16.4	17.5	19.6	22.2	25.3	24.8	23.7	24.3	24.0	24.3	22.9	17.3
2020	17.5	18.2	21.6	24.6	25.7	24.1	24.2	23.7	23.8	23.2	22.5	19.7
2021	19.0	18.9	22.0	23.0	23.8	21.9	21.8	23.3	23.5	23.8	23.2	18.3
2022	18.5	17.2	22.9	24.9	25.0	24.6	24.3	23.4	23.9	23.7	22.6	21.1
2023	17.4	18.6	22.2	24.6	25.2	24.4	24.3	24.5	24.3	23.9	23.1	21.3

Table-2: Monthly rainfall (mm) of Yangon Township during 2010-2023

Months/ Years	Total rainfall per month (mm)												Total Rainf all
	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2010	8	0	0	0	253	434	278	399	230	229	0	61	1892
2011	81	0	108	Trace	284	789	490	357	453	118	Trace	Trace	2680
2012	Trace	Trace	Trace	18	113	492	686	745	481	73	128	2	2738
2013	Trace	1	0	0	222	543	590	759	603	254	25	Trace	2997
2014	0	0	0	0	182	390	760	547	249	82	190	0	2400
2015	0	0	Trace	29	256	358	828	315	264	197	25	0	2272
2016	38	1	23	0	387	310	581	509	332	208	6	0	2395
2017	Trace	0	0	98	319	427	643	491	326	328	10	0	2642
2018	Trace	0	0	42	259	627	806	578	472	229	70	61	3144
2019	50	0	0	0	271	551	630	782	450	183	167	0	3084
2020	0	0	0	6	221	671	410	406	336	275	69	0	2394
2021	Trace	Trace	0	70	135	819	596	227	408	433	50	0	2738
2022	2	6	44	15	431	344	529	796	304				2471

Table-3: Monthly humidity (%)

Month	Humidity (%)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	61.1	57.9	60.9	60.4	68.9	86.1	86	88.2	85.8	83.2	68.9	69.5
2011	68.9	60.2	69.6	65.9	84.2	88.3	89.3	91.0	90.8	82.6	67.2	63.8
2012	61.7	59.9	61.8	61.9	77.3	88.3	92.3	93.9	87.8	82.5	81.6	72.3
2013	64.1	59.3	60.3	60.7	77.1	91.7	92.7	91.6	91.9	86.0	83.8	83.1
2014	80.4	78.4	70.8	68.9	76.5	88.4	91.1	89.9	87.6	83.6	80.8	70.1
2015	64.5	57.1	58.1	62.3	74.6	87.6	90.1	90.4	88.1	84.1	74.9	68.3
2016	61.5	59.3	61.6	60.8	69.8	87.1	88.6	89.3	86.9	85.3	75.5	69.7

2017	65.6	57.2	56.7	65.1	74.9	86.9	91.4	89.9	85.2	85.3	78.6	73.0
2018	69.3	62.9	65.5	64.6	74.3	88.8	91.9	89.5	85.3	82.7	76.8	75.3
2019	70.7	61.6	61.5	60.6	72.7	84.2	89.1	90.3	86.0	79.7	79.2	68.8
2020	67.1	61.3	63.5	65.7	71.9	87.2	86.1	89.0	86.1	86.0	77.8	72.8
2021	69.6	64.8	63.2	75.2	75.0	88.2	89.5	86.8	89.0	86.0	81.0	70.8
2022	71.4	66.3	68.5	70.0	81.9	88.4	87.5	89.9	87.3	81.7	79.1	78.7
2023	71.5	68.5	69.1	68.5	76.1	91.2	90.3	89.0	90.6	87.6	78.9	76.8

A comparison of the values of mean monthly humidity (%) for the years 2010-2023 showed that the maximum value, 93.9, was recorded in August 2012 while the minimum value, 56.7, was record in March 2017.

The generalized prevailing wind system for the country as a whole shows the following system.

- S.W during the rainy (monsoon) season
- N.E during the cool (winter) season
- Erratic prevailing wind direction during the hot (summer) season.

Table-4: Prevailing wind speed (km/hr) in Yangon Township during 2010-2023

Month	Wind speed											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	5.1	5.1	6.3	7.3	7.2	5.9	5.9	5.3	5.1	5.3	4.6	4.7
2011	5.0	4.3	5.6	4.6	5.7	6.2	5.8	5.6	5.5	5.5	5.1	5.2
2012	5.0	4.7	5.8	7.0	7.0	7.7	5.6	5.7	5.8	5.5	4.9	4.5
2013	4.9	5.3	6.4	8.7	8.9	6.8	8.3	8.1	7.1	6.9	6.6	6.7
2014	6.0	7.1	7.8	8.9	8.4	8.4	8.3	7.9	7.3	6.8	6.2	6.6
2015	6.5	6.6	8.5	9.0	8.7	8.3	9.6	8.4	8.4	7.3	7.0	6.4
2016	6.7	7.1	8.6	9.6	9.1	9.1	8.6	9.1	7.5	7.1	7.1	7.4
2017	7.4	7.7	9.0	9.2	9.3	9.5	9.1	8.5	7.9	7.7	7.7	7.5
2018	7.2	8.0	8.6	9.4	9.4	10.2	8.9	9.7	7.8	6.7	6.8	6.5
2019	7.1	7.3	8.7	9.6	9.8	9.4	9.3	10.0	9.4	7.6	7.3	7.4
2020	7.5	8.2	10.2	10.2	9.6	9.4	7.9	9.5	7.6	8.5	7.0	6.7
2021	7.2	8.0	7.8	9.1	9.4	10.9	9.3	8.9	7.8	7.3	7.3	7.5
2022	8.6	8.8	9.5	10.5	9.5	8.2	8.4	8.9	8.5	8.2	7.2	7.0
2023	6.9	8.0	9.5	11.3	12.4	7.9	9.4	10.2	8.0	7.2	7.3	7.2

Due to the topography features surrounding the region and due to partial influence from the South China Sea the directions of the prevailing are rather erratic, that is, not consistent year after year. The highest wind speed of 10.9 km/h was recorded in June, 2021.

During the dry hot season there was no known prevailing wind or dominant wind. The climatic condition in the South China Sea sometimes influences the meteorological conditions of the area, bringing light to median rain in the area.

5.5.2 Topography

As already mentioned earlier the whole area is a low land area with flat terrain. The area used to be area of paddy field, fallow land and marsh. It is transformed into Industrial Zone.

There are no hills or low mountains in the area.

The elevation at the project site is only 26 ft. asl.

5.5.3 Local geology and soil

The area can be classified as that of Quarter nary Period (between 500,000 years ago and present). The rock is formed out of deposit of alluvial and deltaic sediments of the Hlaing River and the Pann Hlaing River.

The sediment is estimated to be 50 feet thick and mainly consists of yellowish grey, bluish grey, brownish grey silt, clay and sand.

Below the sediment that is below the depth of 50 feet is the hard clay layer with some red clay. It is estimated that the deposits are probably deposited in the late Pleistocene Epoch (about 200,000 years ago) up to Recent Epoch.

The surface and subsurface rock is generally fluvisol type (FAO classification) with certain organic matter such as decomposed wood distributed here and there.

General geological condition of the site is mostly alluvial deposit in upper layers and sand formation in deeper layers. The alluvial deposit (plastic soil) exists generally at the surface to a depth of 8-10 feet. The sand formation (non-plastic) generally exists below at the level between 10-40 feet. Most of the plastic soil (cohesive soil) has very small particles sizes. Sand is non-plastic.

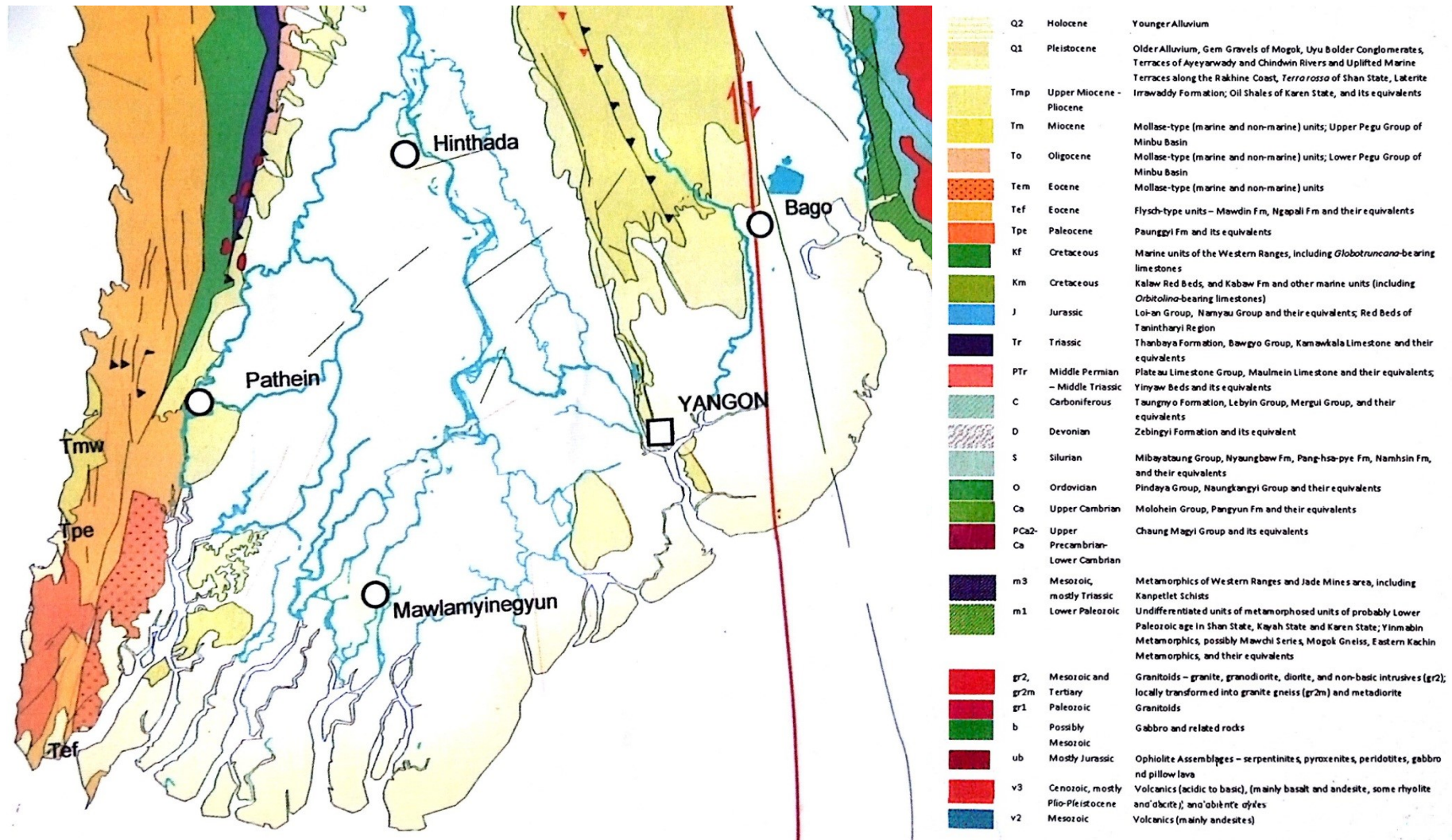


Figure - 38: General geology of the region

Soil

Soil cannot be tested due to the fact that the whole plot is paved with concrete plinth.

5.5.4 Hydrology

There are no water courses or water bodies in the near vicinities; Pan Hlaing River is in the south.

5.5.5 Water quality

Ground water

The company has constructed tube well with a depth of 100 ft. The water is used mainly for domestic purpose as the auto assembly plant needs little or no water (no industrial uses of water).

The water sample from the tube well was collected and brought back for analysis at the ISO, TECH laboratory, a registered laboratory at Insein. The coordinates for collecting water sample are 16° 51' 20"N, 96° 04' 51"E.

Date of collected: 8-1-2024.

The result of water analysis is shown in the ANNEX. The values are compared with the MDWQS values.

Table-5: Analysis of water sample from the project site

Parameters	Unit	Tube well water	Standard values*	WHO Guideline Values ⁴
Total Coliforms	Acceptable/ No objectionable	6	3	None specified (recommended median value – 0 per 100 ml)
Fecal Coliforms	Acceptable/ No objectionable	Not detected	0	Must not be detectable in any 100 ml sample (recommended median value - 0 per 100 ml)
Color	True Color Unit (TCU)	5	15	Non set (recommended median value - 15)
Turbidity	Nephelometric Turbidity Unit (NTU)	8	5	Non set (recommended median value - 5)
Arsenic	mg/L	Nil	0.05	0.01 mg/l
Lead	mg/L	Not detected	0.01	0.01 mg/l
Nitrate	mg/L	Nil	50	50 mg/l
Manganese	mg/L	Nil	0.4	0.4 mg/l

Chloride	mg/L	4	250	Non set (recommended median value - 250)
Hardness	mg/L as CaCO ₃	34	500	Non set (recommended median value - 500)
Iron	mg/L	0.26	1	Non set (recommended median value - 0.3)
pH	-	7.2	6.5 to 8.5	Non set (recommended median value - 6.5-8.5)
Sulphate	mg/L	10	250	Non set (recommended median value - 250)
Total Dissolved Solid (TDS)	mg/L	56	1000	Non set (recommended median value - 1000)

5.5.6 Ambient air quality

Sampling period

Air quality sampling and sound level measurement were done for 24 hrs at the project site. The coordinates at the factory site are: N. Lat. 16° 51' 19.71" E. Long 96° 04' 48.04".

Date of measurement: 8-1-2024

Parameters

Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Sulphur dioxide (SO₂), Carbon dioxide (CO₂), Volatile Organic Compound (VOCs) and Ammonia (NH₃) are measured in 24 hours average. Nitrogen dioxide (NO₂) is measured in 1 hour average and Ozone (O₃) is measured in 8 hours average.



Figure-39: Measuring ambient air

Table-6: Ambient air (base line data) results from the project site (in comparison with NEQEG guideline values)

Sr. No	Parameters	Averaging period	Existing values at the site	NEQEG guideline values
1.	Nitrogen dioxide (NO ₂)	1 - hour	5.4 µg/m ³	200 µg/m ³
2.	Ozone (O ₃)	8 - hours	9.88 µg/m ³	100 µg/m ³
3.	Particulate matter (PM ₁₀)	24 - hours	35.31 µg/m ³	50 µg/m ³
4.	Particulate matter (PM _{2.5})	24 - hours	23.51 µg/m ³	25 µg/m ³
5.	Sulphur dioxide (SO ₂)	24 - hours	0.09 µg/m ³	20 µg/m ³
6.	Carbon dioxide (CO ₂)	24 - hour	378.32 ppm	NEQEG - (NA)
7.	Volatile organic compound (VOC)	24 - hour	0.48 ppm	NEQEG - (NA)
8.	Ammonia	24 - hour	0.78 ppm	NEQEG - (NA)

All the parameters are lower than the National Environmental Quality Emission (NEQEG) guideline values. Guideline values for CO₂, VOC and Ammonia (NH₃) not available.

When the project is in full operation regular semi-annual monitoring of air quality will be conducted and reported to ECD.

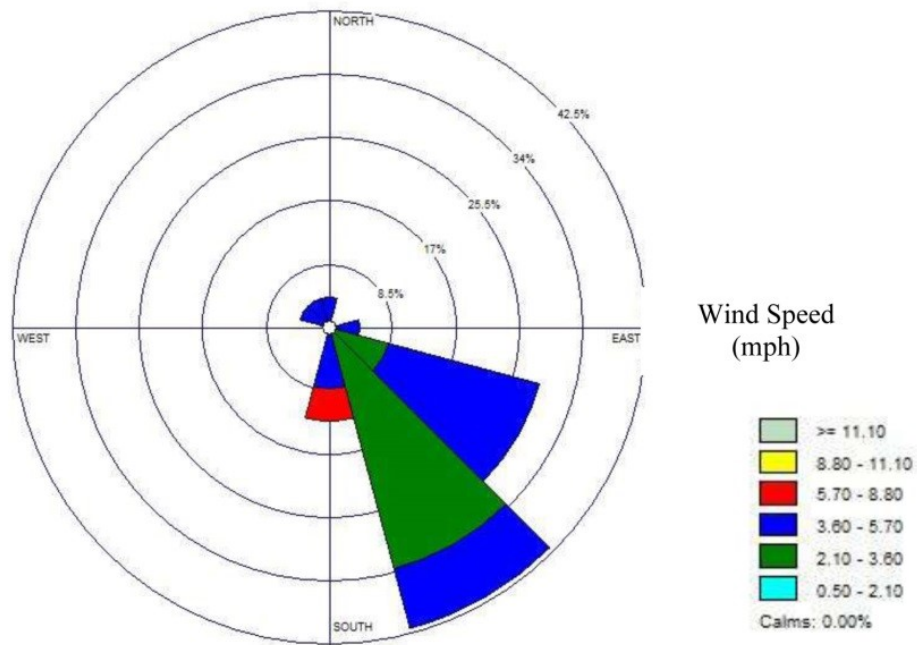


Figure-40: Wind rose map

5.5.7 Ambient noise and vibration



Figure-41: Measuring noise level

The coordinates for noise level are the same with air measuring spot.

Date of measurement: 8-1-2024

The noise levels are as follows:

Table-7: Quality of ambient noise level (dBA) by sample site (compared with NEQEG guideline)

	At the factory site		NEQEG guideline	
	Day	Night	Day	Night
(Residential, institutional, educational)	-	-	55	45
Industrial commercial	56.58	55.39	70	70

The noise levels values are all lower than NEQEG value of 55dBA for day and little higher than NEQEG value 45dBA for night.

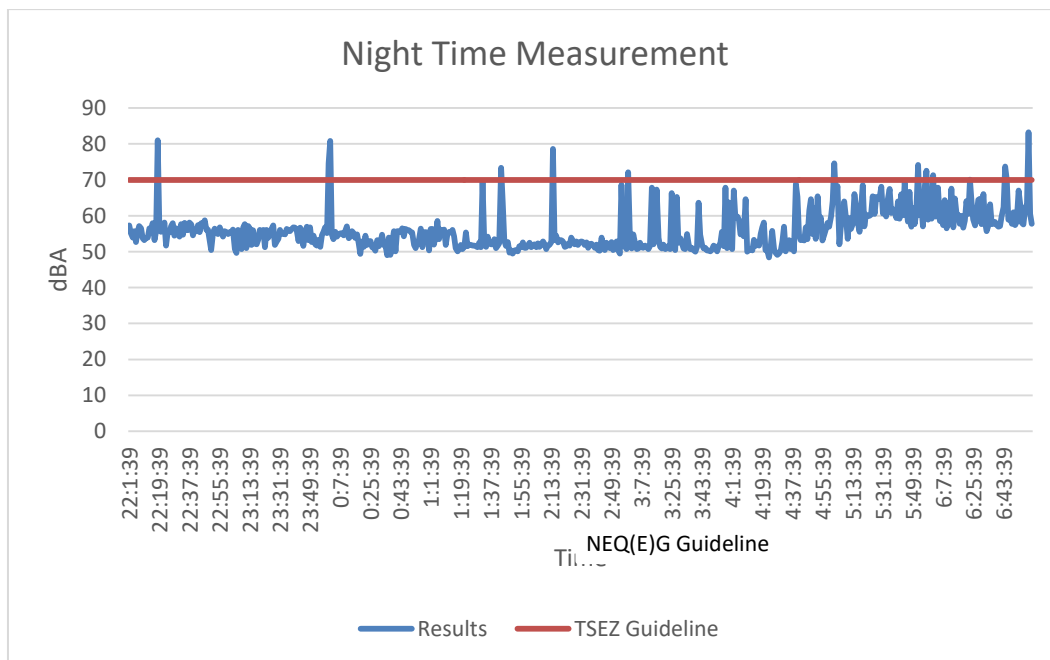
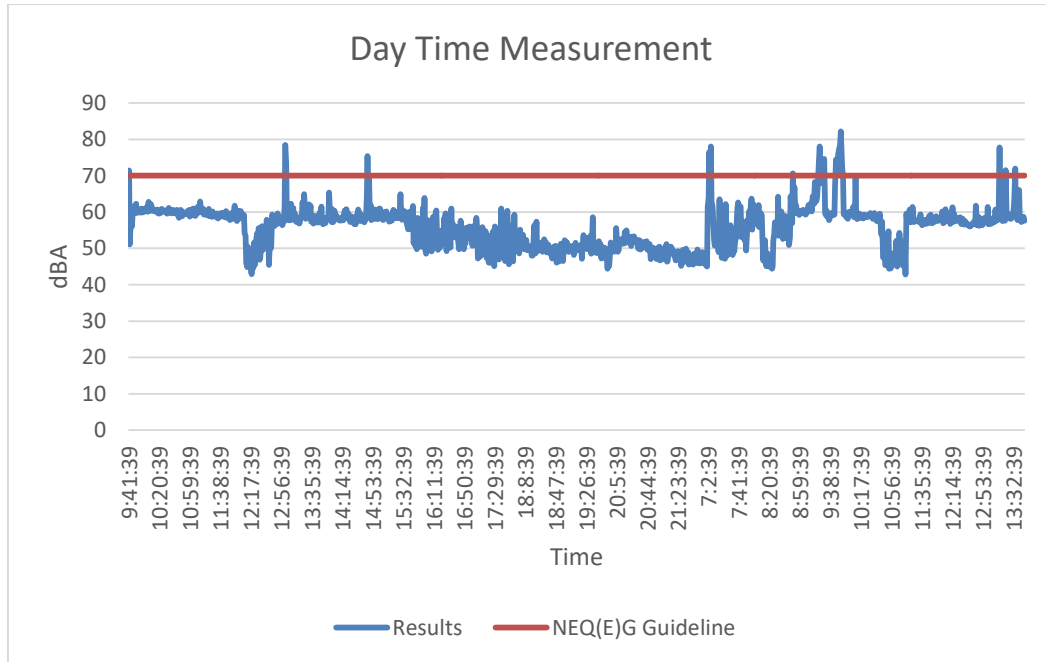


Figure-42: Graph showing noise level during 24 hrs period

Vibration

The vibration was measured at suspension area; the result is 1.2 mm/s.

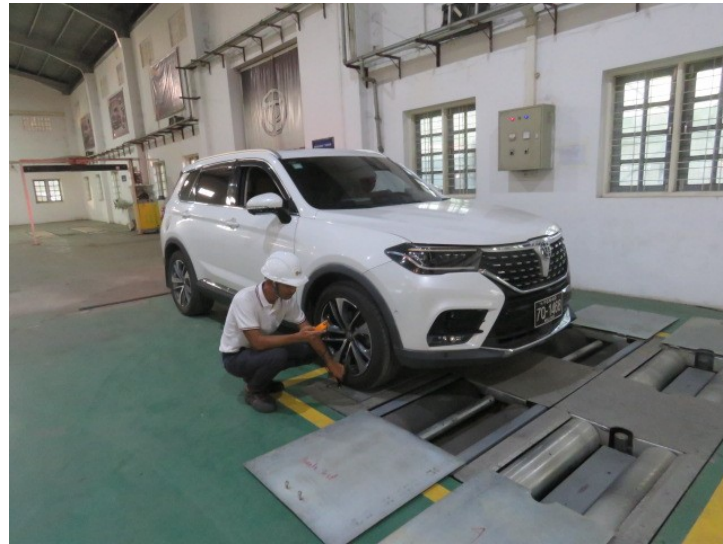


Figure-43: Measuring vibration at suspension area

5.5.8 Potential natural hazard of the area

According to local elders there were no known natural hazards such as earthquake, landslide, cyclone and storm, flood, draught and wildlife within living memories.

Earth quakes

The notorious Sagaing Fault which passes through Bago City is only about 20 miles in the east. But there was no precedent of major earthquake in the area within 50 years, it is learnt. The area is far away the infamous Sagaing Fault that runs north to south from Sagaing Region to Yangon Region ending at the eastern part of Yangon City area.

Landslide

The area being low flat land, landslide is not possible.

Cyclone, storm, floods

Myanmar coastal area and delta area are prone to cyclones and storms, but there was no precedent of violent cyclones and storm in the area, except during the Nargis Cyclone, 2008.

There used to be occasional minor floods in the low land paddy fields of the area during the monsoon season. However the project site and the ward are spared from floods.

Drought and wildfire

The area has heavy rainfall and so drought is out of the question. There are no dry forest (as in Australia and California) and therefore wildfire is also out of the question.

The impact of natural hazards on the project is not anticipated. Anyway the company will do its best for prevention of floods and have emergency plan for potential natural disaster and industrial disasters.

5.6 Biological component of the surrounding environment

5.6.1 Flora species

There is no forest in the area.

A survey on natural flora (grass, herbs, bushes) and artificial flora (cultivated plants both annual and perennial plants) was conducted within a 0.5 mile radius (0.8 sq.mile) of the proposed project site.

As the flora biodiversity is low only simple taxonomic study was made.

Diversity

A total of 34 species of plants both natural and cultivated plants, belonging to 24 families were identified and recorded. The inventory of plant species is shown in the following table.

Table-8: Inventory of species of flora (natural and artificial) of survey area

No	Botanical Name	Myanmar Name	Family Name	Habit	IUCN (2023)
1	<i>Acacia auriculiformis</i> A.Cunn.	Malaysia-padauk	Fabaceae	T	LC
2	<i>Albizia saman</i> (Jacq.) Merr	Kokko	Fabaceae	T	
3	<i>Alternanthera sessilis</i> L.	Pazonsar-yaing	Amaranthaceae	H	LC
4	<i>Arivela viscosa</i> L.	Taw- hin-ga-lar	Cleomaceae	H	
5	<i>Cardiospermum halicacabum</i> L.	Kalar-myet-si	Sapindaceae	C/C	
6	<i>Cassia fistula</i> L.	Ngu-shew-wa	Caesalpiniaceae	T	
7	<i>Cephalandra indica</i> Naud.	Kin-pon	Cucurbitaceae	C/C	
8	<i>Cleome burmanii</i> Wight & Arn.	Taw-hin-galar	Cleomaceae	H	
9	<i>Colocasia affinis</i> Schott.	Pein	Araceae	H	
10	<i>Commelina paludosa</i> Blume.	Wet-Gwut	Commelinaceae	H	
11	<i>Cyperus compressus</i> L.	Wet-lar	Cyperaceae	G	LC
12	<i>Cyperus diffusus</i> Vahl.	Wet-kyan	Cyperaceae	G	LC
13	<i>Dactyloctenium aegyptium</i> (L.) Willd	Myat-laykwa	Poaceae	G	
14	<i>Delonix regia</i> (Bojer ex Hook.Rof)	Sein-pan-gyi	Caesalpiniaceae	T	LC

15	<i>Ficus glomerata</i> Roxb.	Ye-tha-phan	Moraceae	T	
16	<i>Ficus hispida</i> L.	Kha-aung	Moraceae	T	
17	<i>Ficus religiosa</i> L.	Bawdi-nyaung	Moraceae	T	
18	<i>Flueggea leucopyrus</i> Willd.	Kone-chin-ya	Euphorbiaceae	S	
19	<i>Heliotropium indicum</i> L.	Sin-namaung	Boraginaceae	H	
20	<i>Impomoea aquatica</i> Forssk.	Yay-kazon	Convolvulaceae	C/C	
21	<i>Jatropha curcas</i> (L.)	Siyo-kyetsu	Euphorbiaceae	S	
22	<i>Lagerstromia speciosa</i> (L.) Per.	Pyin-ma	Lythraceae	T	
23	<i>Leucaena leucocephala</i> (Lam.) De wit	Baw-sa-gaing	Mimosaceae	ST	
24	<i>Limnocharis flava</i> L.	Tap-pyar-pin	Limnocharitaceae	Aquatic	
25	<i>Mangifera indica</i> L.	Tha-yet	Anacardaceae	T	
26	<i>Merremia hederaceae</i> (Burm.f.) Hallier f.	Unknown	Convolvulaceae	C	
27	<i>Mikania micrantha</i> H.B.K.	Bizet-new	Asteraceae	C/C	
28	<i>Nauclea orientalis</i> L.	Mau-lat-tan-shae	Rubiaceae	T	
29	<i>Operculina turpethum</i> L.ex.Manso.	Kya-hin-pin	Convolvulaceae	C/C	
30	<i>Sida cordifolia</i> L.	Tabyatsi-ywet-wine	Malvaceae	S	
31	<i>Solanum nigrum</i> L.	Baung-laung-nyo	Solanaceae	S	
32	<i>Swietenia macrophylla</i> King.	Mahaw-gani	Meliaceae	T	VU
33	<i>Syzygium cumini</i> L.	Java plum	Myrtaceae	ST	
34	<i>Urena lobata</i> L.	Ket-si-nae	Malvaceae	S	

T = Tree

C = Climber

ST = Small Tree

C/C = Climber/Creeper

H = Herb

G = Grass

S = Shrub

LC = Least Concerned

VU = Vulnerable

5.6.2 Fauna species

Natural biodiversity (natural fauna)

Avian fauna

The only fauna commonly found are avian fauna (birds). These common and ubiquitous birds are termed as city birds and are very familiar with city life.

A total of 15 species of birds were found and identified.

Table-9: Bird species recorded in the area

No.	Common New Name	Scientific name	IUCN
	ARDEIDAE: ARIDEINAE		
1	Little Egret	<i>Egretta garzetta</i>	LC
	COLUMBIDAE: COLUMBINAE		
2	Rock Pigeon	<i>Columba livia</i>	LC
3	Red Collared-Dove	<i>Streptopelia tranquebarica</i>	LC
4	Spotted Dove	<i>Streptopelia chinensis</i>	
	APODIAE: APODINAE		
5	House Swift	<i>Apus affinis</i>	LC
	CORACIIDAE		
6	Indian Roller	<i>Coracias benghalensis</i>	LC
	MEROPIDAE		
7	Little Green Bee-eater	<i>Merops orientalis</i>	LC
	DICRURIDAE		
8	Black Drongo	<i>Dicrurus macrocercus</i>	LC
	CORVIDAE		
9	House Crow	<i>Corvus splendens</i>	LC
	PLOCEIDAE		
10	Baya Weaver	<i>Ploceus philippinus</i>	LC
	PASSERIDAE:		
11	House Sparrow	<i>Passer domesticus</i>	LC
12	Eurasian Tree-Sparrow	<i>Passer montanus</i>	LC
	MOTACILLIDAE		
13	White Wagtail	<i>Motacilla alba</i>	LC
	STURNIDAE: STURNINAE		
14	Common Myna	<i>Acridotheres tristis</i>	LC
	PYCNONOTIDAE:		
15	Red-vented Bulbul	<i>Pycnonotus cafer</i>	LC

Herpetofauna

Eight species of amphibian and reptilian were found and identified.

Table-10: Herpetofauna species recorded in the area

No.	Family Name	Scientific Name	Common Name	IUCN
1.	Bufonidae	<i>Duttaphrynus melanostictus</i>	Common Toad	
2.	Dicroglossidae	<i>Fejervarya limnocharis</i>	Paddy Frog	LC
3.	Agamidae	<i>Calotes vericolor</i>	Garden Fence Lizard	
4.		<i>Calotes mystaceus</i>	Blue Forest Lizard	
5.	Gekkonidae	<i>Hemidactylus brookii</i>	Brook's House Gecko	
6.		<i>Hemidactylus garnotii</i>	Garnot's House Gecko	
7.	Scincidae	<i>Eutropis multifasciata</i>	Common Sun Skink	
8.	Colubridae	<i>Flowea piscator</i>	Chequered Keelback Water Snake	

Mammalia

Regarding mammalian fauna only small rodent, e.g. House Rat *Rattus rattus* and Asian House Mouse *Mus musculus* were found during scoping study.

Aquatic fauna

There are no water courses or water bodies in the near vicinity.

5.7 Infrastructure and services

Being inside the Industrial Zone the site is easily accessible by motor road. It is just south of the Yangon-Pathain Highway (5). There is another road, the Min Gyi Maha Min Gaung Street which was constructed as an access road to the three Industrial Zones. It runs parallel to the Highway No.5. In addition there are parallel road/street/lanes within each Industrial Zone in such a way that each and every plot is easily accessible by hard top roads.

The area has also access to gridline electricity as electrification for an Industrial Zone is a priority. Public water system has not materialized yet. The project proponent has bored its own tube wells for sourcing water from ground water.

Table-11: Data on infrastructure and services

Sr. No.	Infrastructure and services	Satmu Zone Zay Lann Ward
1.	Accessibility - Motor road - Rail - Water way	√ × ×
2.	Access to gridline electricity (%)	√
3.	Education - Primary School - Post Primary School - Middle School - High School - No. of students and teachers	× × × × ×
4.	Health facilities - Clinic - Hospital	× ×
5.	Library	×
6.	Government building and public building	×
	*From KII data	



Figure-44: Satmu Zone Zay Lann Ward

5.8 Socio-economic components of the surrounding environment

The nearest residential area is Satmu Zone Zay Lann Ward, Hlaing Thar Yar Township.

A socio-economic study was conducted on the community of Satmu Zone Zay Lann Ward.

The generalized income and livelihood of the locals are shown in tabulated form as follows:

Table-12: Data on basic socio-economic aspects of the ward

Attributes	Satmu Zone Zay Lann Ward Village/Ward
House holds	360
Population	605 (M.273, F.332)
Ethnicity:	
- Bamar	90%
- Rhakine	5%
- Others	5%
Spoken language:	Bamar
Religion:	
- Buddhists	98%
- Christian	2%
Main occupations:	
- Vendors, seasonal jobs, odd jobs	50%
- Working at Industrial Zone	50%
Few government employees:	1 doctor 2 polices
*From KII questioners	

5.8.1 Livelihoods and incomes

The livelihoods and income of the people of the three villages are shown in tabulated form.

Table-13: Data on main livelihood and incomes of the villages

Sr. No.	Livelihoods and incomes	Satmu Zone Zay Lann Ward
1.	<u>Livelihood/occupation (% of households)</u>	
	- Agriculture: (Mostly Rice farmers, Eugenia planters and Guava orchards)	-
	- Working at factory and companies else where	50%
	- vendors, working seasonal job/odd jobs and others	50%
	- Daily wages	Ks 5000- 10,000
2.	<u>Government services (at the village and elsewhere)</u>	
	Teachers	-
	Doctor	1
	Soldiers	-
	Policemen	2
3.	<u>Annual income per household (%)</u>	
	Less than 10 lakh (Kyats)	10%
	11-20 lakh kyat	25%
	21-30 lakh kyat	15%
	31-40 lakh kyat	5%
	41-50 lakh kyat	30%
	51 and above	5%
	Unknown (cannot estimate their income)	10%
	* Based on HHI on 10% of households encompassing main livelihoods from different walks of life. The daily wages in this area range from Ks 5,000 – 10,000.	

5.8.2 Access to public services and natural resources

The industrial zones as well as the wards are easily accessible by hard top road. The four industrial zones are on the southern side of the Yangon-Pathein Highway No.5 while the wards are on the northern side of the high way.

The area is easily accessible to both Yangon City and Patheingyi City and eventually to virtually every part of the country.

The whole area has also access to National Gridline electricity, particularly the industrial zone areas.

Water is sourced from either shallow wells or tube wells.

As regard non-living natural resources such as minerals coal, oil and gas there are none. Fish in the Hlaing River and the Pan Hlaing River can be termed the living natural resources. The two rivers are quite far away and there are no or very few local fishermen. Fish in these two rivers are also getting scarcer and scarcer each year.

As there is no forest in the area there are also no forest resources.

5.8.3 Land use

The region although at the sub-urban or outskirts of Yangon City actually used to be a rural agrarian area (and the locals are agrarian society) and underdeveloped.

The land uses were then a mixture of agriculture area, fallow land, bush land, and residential area (villages).

The rapid expansion of Yangon City has resulted in the change from rural area to urban or outskirts area of the city.

The whole area is now transformed into industrial zones and the subsequently the land use has become industrial zone. There was a rapid settlement and the village has grown quickly and become heavily populated.

Virtually there are no substantial cultivated lands now.

The land use of Hlaing Tharyar Township (from secondary Information)

- (a) Industrial area (acreage) - 3455.678 acres
- (b) Residential area - 13191.552 acres

5.8.4 Population distribution and demography

Table-14: The nearest residential area (ward) is the Satmu Zone Zay Lann Ward.

Sr. No.	Basic demography	Satmu Zone Zay Lann village/ward
1.	<u>Population</u>	
	Total	605
	Male	273
	Female	332
	Households	360
	Houses	360

5.8.5 Other socio-economic status

Poverty rate

Poverty rate is relatively high even though the area is within the outskirts of Yangon City; but not as high as remote rural area of the Dry Zone and Chin State.

Unemployment rate

Unemployment rate is still relatively high; the four industrial zones cannot yet provide jobs for all the unemployed local youths, yet. It is hoped that the unemployment rate will go down considerably when all four industrial zones are all in full operation.

The main reason of unemployment is due to the fact that there are too many migrants, looking for a better future, in Yangon Region. Squatter (Kyu) is still a real issue for the Regional Government.

Literacy rate

The literacy rate is high and up to none than 80% of the adult is literate. The Monastery Education (BaKa Education) is one of the factors that contribute to high literacy rate in the region.

Note: Based from KII and HII interviews.

5.9 Public health component of the surrounding environment

The locals have easy access to public health care. The ward does not have ward clinic; the Hlaing Thar Yar Township Hospital is about one mile in northwest. There are a couple of private clinics.

The locals can also go to the Yangon General Hospital, with excellent facilities, which is about 7 miles away in the southeast.

Regarding health status there are no available data on the mortality, morbidity HIV/AIDS etc.

Malaria is not an issue but dengue can be still an issue during the wet season of a year.

Sporadic cases of cholera, though no serious, usually occurs during the early rainy season.

Every household has its own toilet or latrine.

The locals rely on own tube wells or shallow wells (or rainwater during the rainy season).



Figure-45: A private clinic at the ward



Figure-46: Hlaing Tharyar Township Hospital

5.10 Cultural components of the surrounding environment (religious, cultural, historical, archeological attributes etc.)

The large majority (98%) of the locals are Buddhists. There also a few Christian.

There is one Pagoda inside the Buddhist monastery with 35 monks.

Myanmar Buddhists still worship Nat spirit and the locals are not an exception. The Buddhists believe in the 31 abodes of life. The lowest abode of Nat spirit is close to that of human being and these Nat are worshiped. Many still keep this tradition of worshipping or rather propitiating the Nat while the main faith is Buddhism. Offertory (Hnget-pyaw-pwei, Ohn-pwei) for the Nat spirits usually included one coconut and three or five combs of bananas arranged on a receptacle, usually a large bowl or a tray. Or the offertory could be a coconut (Nat-ohn-thee) hung up at a place as offering to the nat.

There is no known annual or seasonal festival for Nat spirit in the area.

The ward does not have a "Nat Shrine".

Regarding cultural heritage there is no historical monuments, no archaeological site or site of natural or spiritual values in the area. There are no sacred sites, sacred rocks, sacred trees etc in the area.

The construction workers shall be instructed to report back promptly if they accidentally find any archaeological evidences or UXO while doing the construction work.

The project cannot have any negative impact on the cultural component of the surrounding environment.



Figure-47: Aung Theikdi Pagoda inside the monastery

5.11 Visual components of the surrounding environment

As the area is a wide flat low land with no hills or mountain there is no outstanding landmark. There are also no scenic spot of aesthetic beauty for tourist attraction.

There are no large historical monuments or building in the area. There are also no large and prominent structures, except the Bayint Naung Bridge, across the Hlaing River, about 1.7 miles in the east.



Figure-48: Bayint Naung Bridge

All the buildings inside the Industrial Zones are relatively large to large ones and therefore these buildings are the only prominent landscape of the area. The houses and buildings inside the Nawaday Garden Housing in the north also constitute the prominent landscape of the area.

It is anticipated that this auto assembly plant will not have any considerable impact on the visual component of its surrounding environment. The factories will not stand out prominently in contrast to the surrounding. After the creation of green belt at its periphery the whole premise can become a green zone with copious shade trees.

At night time the project proponent will use dim light only for security reason so as not to have any offensive light (light pollution) to the locals and to avoid the attraction of insects at night.

Commitment

Myanmar Brilliance Auto Co. Ltd is committed to running the motor services business without any serious adverse impact on the physical, biological, socio-economic, cultural and visual components of its surrounding environment. Mitigation measures will be duly taken whenever, and wherever necessary.

U Khin Maung San

Managing Director

Myanmar Brilliance Auto Co. Ltd

6. IMPACT AND RISK ASSESSMENT AND MITIGATION MEASURES

6.1 Impact and risk assessment methodology

The methodology was based mainly on prediction and this was based from personal practical experience and also from theoretical knowledge from available references for conducting EIA.

Prediction and identification of the impacts, both negative and positive, and subsequent assessments were made after comprehensive group discussion with EIA practitioners and appraisers.

The visual inspection of the proposed project site was essential for the prediction, identification and assessment of the impacts.

The method addresses both project-related effects and cumulative environmental effects. If possible both qualitative and quantitative assessments are made.

The methods generally involve 8 main steps:

- i) scoping of the assessment (based from references from abroad)
- ii) existing condition (through field study)
- iii) assessment of project related environmental effects (based from references from abroad)
- iv) assessment of cumulative environmental effects (if any anticipated)
- v) determination of significance (pragmatic way; not involving mathematical and computer modeling and complex formulae)
- vi) follow-up and monitoring (not conducted yet)
- vii) consideration for mitigation measures (based from reference)
- viii) consideration for potential accidents, malfunctions and unplanned events (based from references)

The approach is an integrated approach covering all the 5 main Valued Environmental Components (VECs), namely, the physical, biological, socio-economic, cultural and visual component, of the environment.

To sum up, the Experts Consensus Method or Ad hoc method is applied in risk and impact assessment. This method may not be so accurate but it will never go wrong as common sense and simple logic are applied. It is a pragmatic way of thinking and pragmatic way of doing things method. In addition Experts Consensus Method/Ad hoc Method the risk/impact matrix rating table by IFC is also applied which is based on likelihood multiply by consequences (likelihood x consumes = outcome).

(A) IFC table of risk assessment (risk ranking table)

Likelihood	Consequences				
	Insignificant (A)	Minor (B)	Moderate (C)	Major (D)	Catastrophic (E)
(A) Almost certain	L	M	E	E	E
(B) Likely	L	M	H	E	E
(C) Moderate	L	M	H	E	E
(D) Unlikely	L	L	M	H	E
(E) Rare	L	L	M	H	H

Legend:

E = Extreme risk; immediate action required

H = High risk; senior management attention required

M = Moderate risk; management responsibility should be specified

L = Low risk; manage by routine procedure

(b) Risk rating matrix

Actual risk outcome					
Low (1-3)	Moderate (4-6)	High (8-12)		Extreme (15-25)	
Consequence	Likelihood				
	Rare 1	Unlikely 2	Possible (moderate) 3	Likely 4	Almost certain 5
Catastrophic (Extreme) 5	5	10	15	20	25
Major (High) 4	4	8	12	16	20

Moderate (Medium) 3	3	6	9	12	15
Minor (Low) 2	2	4	6	8	10
Negligible 1	1	2	3	4	5

Note: - Consequence x Likelihood=actual outcome

- Red: avoid, control, mitigate;
- Yellow and orange: control, mitigate;
- Green: accept/assume

Actual risk outcomes are categorized into 4 levels:

- Low - (Scoring 1-3)
- Moderate - (Scoring 4-6)
- High - (Scoring 8-12)
- Extreme - (Scoring 15-25)

Note: - This simple, pragmatic and straight forward matrix method is selected for assessment of impact and risk. Moderation is undertaken applying Experts Consequences Method (Ad hoc method).

As the project is not in full operation yet for long time all the impact/ potential impact described are, more or less, prediction and/or anticipation on envision. The next steps of identification and subsequent assessment are also based from predication and anticipation on envision. In short these are all theoretical aspects. (Impacts can be seen, felt and measured only when the assembly plant is in full Operation Phase for many years.)

Mitigation measures to be put in place are therefore, also based from all these theoretical aspects.

As the project site is inside the industrial zone, there is no forest and any impact on the biodiversity (biological component) will be negligible.

As the main task in the assembly of auto parts, not holistic manufacturing works, the impact on the socio-economic component, if any, will be also negligible. In the same way there will be no impact on the cultural and religious monument (pagoda, monastery, church, etc.) as there are none in the near vicinity. The buildings and structure to be built will not stand out prominently against and contrast to the background landscape affecting the visual component of the environment.

The spatial boundary for the assessment is within a ½ mile radius from the site. Satmu Zay Lann Ward is incorporated into the study area for detail assessment of socio-economic and cultural impacts.

6.2 Impact and risk identification, assessment and mitigation for each project phase

6.2.1 Identification and assessment of environmental impact

0, 9, 8 and 2 potential negative impacts were predicated, identified and assessed for the Pre-construction Phase, Construction Phase, Operation Phase and Decommissioning Phase, respectively.

The positive/beneficial impacts during the Construction and Operation Phase were also mentioned. While it was very necessary to mitigate negative impacts it was also very necessary to optimize or enhance the positive impacts.

A. Potential negative impacts during the Preconstruction Phase

No negative impact was envisaged and identified during this phase. Theoretically the probable social impacts during the Preconstruction Phase can be:

- Land disputes, land grabbing and forced eviction.
- Public outcry and protest (anti-project)
- Polarization of locals into pro and anti-project groups
- A hike in the prices of land properties
- False claims for compensation by certain unscrupulous locals

None of these have happened.

B. Potential negative impacts during the Construction Phase

The Construction Phase starts after the Planning Phase. In this Myanmar Brilliance Auto Co., Ltd context the Construction Phase last for up to 1 year.

The works during the Construction Phase generally involve the fencing of the site, clearing of land, sourcing of water and electricity, mobilization of materials and workers to site and the actual construction of the auto assembly plant and associated buildings and structures.

There were, no doubt, many negative impacts during this phase. The followings are real or potential impacts identified or predicted and assessed.

(1) Impact: mobilization and preparation activities for construction

Mobilization action, preparation action and transportation action in early phase and later phase of construction can cause nuisance to the public or road users.

The rapid mobilization of large volume of building materials, timber, bricks, cement, sand, gravel, iron materials, etc. can overspill inside or outside the site and on the road side. These can cause nuisance and also hinder the smooth and easy movement of people in the area and also vehicles and motorcycles.

(2) Occupational Health and Safety issue (Potential accidents at workplace)

Accidents can occur from time to time during construction work either to construction workers or neighbours if they are close to construction site. This can also happen to passers-by near the construction site.

The slipshodness of the construction workers and the falling of bits and pieces of construction materials or tools from above can cause minor or major injury to other workers or passers-by.

Certain accidents can be fatal.

The 10 most common construction site accidents worldwide are:

- fall from heights (scaffolding); slip and fall; electrocution; falling debris, materials and objects; getting caught-in between objects and materials; fire and explosion; over exertion; machinery accidents; getting hit by a vehicle; and trench (for wiring and pipes) collapses.

(3) Impact on air quality

(i) Nature of impact: dust

Dust is one of the main issues during the Construction Phase. Wind speed and direction plays an important role in the impact. The clearing of land and earth work such as digging, excavation and refilling of earth greatly generate dust. The loading and unloading of building materials such as sand, cement bags, gravel, lime powder and the stockpiling of these materials also generate dust.

Vehicular movements, the operation of certain equipment and machinery such as engines and pumps as well as the batching of cement (the mixing of cement with sand, gravel, lime powder and water) also emit a lot of dust.

Nuisance and health impacts are associated with increased level of dust.

Construction works are always associated with dust but temporary.

(ii) Nature of impact: smoke and fugitive emission

Smoke generated during the Construction Phase is low. The sources of emissions are from vehicles and some machines used during construction work such as engines and pumps.

Smoke can have impact on health if the level is high. The emission of Green House Gases (GHG) can eventually leads to global climate change.

(4) Impact: noise and vibration

Noise is generated from construction work in many ways. Cement mixing machine doing cement batching produces loud noise; engines and pumps also generate noises. Carpentry works that involve noisy saws and planes, drilling machine and hammer also generate relatively loud noises.

Movements of vehicles, loading and unloading of materials etc. also produce noise. Concrete roads also generate more noise than tarred roads.

The National Environmental Quality Emission Guideline value for noise level, as prescribed by ECD, is 70 dBA during daytime, 70 dBA during night time. The internationally accepted noise level in the work place must not exceed 85 dBA.

Prolonged exposure to the noise level above 85 dBA can impair hearing and in severe case can become permanent impaired hearing (deaf). High noise level is, therefore, a major health impact. Noise generally causes nuisance and disturbance to the community.

Vibration is generated from machinery or mechanical operation during construction work and also from heavy trucks on road. Vibration is usually associated with loud noise; it can damage machines and equipment and also, to some extent, damage buildings or structures.

Construction works are always associated with noise and vibration but temporary.

(5) Potential impact on soil

During the Construction Phase there can be potential and real impact on soil due to ground clearing, excavation work, digging and moving of large quantity of earth. There can be potential destruction of soil profile by mixing of top soil and sub-soil.

Erosion and siltation can be quite a serious issue during rainy season, if not well-managed. These can have impact on the drainage system and can also cause ground water contamination. There can be movement of sediment and pollutants into water courses.

Fuel oil or chemical spills can contaminate the soil and eventually ground water if not well-managed.

(6) Potential impact on water

As public water system is not available the factory will rely on the ground water at a depth of 100 feet. The demand for water during the Construction Phase is quite high. Relatively large quantity of water has to be used in mason work or concrete work such as the batching of cement and other works. The daily suppression of dust by water spray also needs quite a lot of water. The domestic consumption by the workers especially for sanitation purpose during working hours can also have certain impact on the natural water.

There can be also domestic sewage which can percolate into ground water, if not well-managed.

(7) Impact of waste (construction waste)

Waste water may not be an issue during the Construction Phase as virtually all the water used is for construction purpose only.

Solid waste generated during the Construction Phase will be large quantity of debris in the form of bits and pieces of building materials; construction waste; iron materials, timber, soft wood, bamboo used as scaffolds, left over brick, sand, gravel and so on.

Many of the leftover materials are unused or surplus materials because even well-experienced planning and design engineers may not be able to estimate the exact quantity of building materials to be used. There will always be unused or surplus timber, iron bars, cement, brick etc, not to mention nails and other small iron items. Unless systematically resold, reused, recycled and systematically disposed off these materials can pose a great impact on the area. There can be other litters inside the factory compound as a result of construction work.

(8) Potential social issue

This impact can be a two-way impact. The project which attracts a large number of construction workers can have an impact on the workers. On the other hand, these workers can have an impact on the project.

During the Construction Phase there is the potential of the occurrence of undesirable social issues such as quarrels, disputes, brawls among the workers themselves or with the locals youths; theft, misappropriation of materials and money, vandalism, unethical sexual practices or sexual offensive and so on. All these have potential to hinder the progress of construction works.

(9) Potential security issue

The Construction Phase is the period when it is usually difficult to maintain security. The working atmosphere is rather fluid and dynamic in nature. The in (entering the jobs) and out (quitting the jobs) of workers tend to happen almost all the time. This is the period when cases of thefts, misappropriations and vandalisms happen most.

Unlike the permanent employees during the Operation Phase who are well-disciplined, the temporary workers during the Construction Phase are usually quite difficult to discipline. The building contractor usually has no chance to hand pick them but to select them in haste due to the nature of construction work.

There is always the potential security issue for the proposed project. If left unchecked the construction workers can pose a potential for security issue.

Some of the local and neighbours may also pose a security issue.

All these nine potential negative impacts envisaged during the Construction Phase are temporary or transient. After Construction Phase all will be ceased. All construction wastes accumulated after construction works will be cleared and the site, tidied up.

Note: Impact on biodiversity not envisaged, there is no forest or shrub to be cleared. The site is deep inside the industrial zone; the ground is a flat plain; no need to cut the land or to level the land.

(10) Positive (beneficial) impact during the Construction Phase

The positive or beneficial impacts during the Construction Phase are in socio-economic aspects. The economic benefits to the region are expected to be substantial.

The proposed project will invigorate and boost the local economy and will bring economic benefits to local people who are involve in extraction/production and sale of building materials of all sorts, both raw materials and manufactured goods.

Contractors of raw materials such as sand, gravel and bricks get the chance for doing lucrative and brisk business in providing these raw materials for sales. The extraction or production of these raw materials will also provide jobs for many locals.

Timber merchants and merchants of soft wood and bamboo (for scaffolding) as well as merchants of certain construction material locally available can promote their sales. At the same time more jobs for the locals can be provided by these merchants; small business men and small sub-contractors will be also benefited by the production, extraction and sale of these building merchandize.

The proposed project has provided jobs for about 100 local construction workers for 1 year. This is quite a substantial contribution to provision of jobs for young people and unemployed people, partially solving unemployment problem when unemployment is high in the country. Many unskilled workers will have the chance to become skilled workers during the period of one year.

Benefit will accrue to the country as a result of the project, that is, a direct investment inflow of Ks 4177.9393 million including US\$ 0.54995 million. Follow up benefit such as tax, duty, royalty; revenue etc. will go into the national coffer.

Myanmar Brilliance Auto Co., Ltd will bear in mind that while negative impacts should be mitigated or minimized positive impacts should be promoted or enhanced.

C. Potential negative impacts during the Operation Phase

This phase will last for 30 plus years (30 years and extendable 5 years twice). The main tasks during this long operation phase are assembling, manufacturing and marketing of the brand models, Brilliance V3, Brilliance V6 and Brilliance V7.

(1) Potential traffic issue

The proposed assembling plant is in inside the Industrial Zone No.2 and there can be certain traffic issues. The company has to use its vehicles daily during the Operation Phase – e.g. transportation of raw material (car parts) and other commodities.

There will be an increase in traffic flow on the Kanaung Min Thar Gyi Road and the Yangon-Pathein High Way and beyond. There are road users of all sorts – motorists, motorcyclists, cyclists and pedestrians. There can be issue when vehicles, especially trucks, are leaving or entering the Yangon-Pathein Highway at the intersection.

However, the impact can be termed insignificant, as this highway is already heavy with traffic.

The impact can be termed insignificant, as the company will not have to use many vehicles or a daily basis but only from time to time.

(2) Impact on air quality

The generation of dust, smoke and the emission of gases have been already addressed in the Construction Phase.

Dust, smoke and fugitive emission will also occur during the Operation Phase, but to a much lesser extent.

Dust can be generated outside the assembling plant due to vehicular movements; smoke (fugitive emission) can be generated due to operation of vehicles, machinery and equipment such as engines and pumps.

In this Operation Phase the authority will be more concerned with the air quality inside the plant. It is the quality of air inside the building, if polluted, can have potential effect on the health and performances of the employees. Good indoor air quality is essential for asthma and allergic preventions and also prevention of headaches and nausea.

Potential air emission in the compound (that is outside the assembling plant) will be mainly from vehicles, generator and pump etc. CO, NO₂, SO_x, oxides, hydrocarbon and Particulate Matter (PM₁, PM_{2.5}, PM₁₀) are products of combustion from vehicles and generators, pumps etc.

As regards air quality inside the assembling plant this will be addressed in "Occupational Health and Safety" and "Accidents at workplace" later.

Works inside the factory will mainly involve assembling and installation and the factory is more like a "smoke less factory".

The impact on air environment is on the whole, insignificant.

However authority of Myanmar Brilliance Auto Co., Ltd is very aware of the fact that the vehicles they are producing are the small polluters of air environment. It is generally accepted that a sedan car emits 3.0 to 4.6 metric ton of CO₂ per year depending on duration of operation.

The company will produce 720 vehicles in Year 1 and production will be increased to 777 by Year 5. The emission contributed by these vehicles per year will be quite considerable.

(3) Noise and vibration

Noise inside the compound/premise will be mainly from the vehicular movement and also from machines, generator and pumps. During power outage generator has to be operated, generating loud noise.

Noise inside the assembling plant will be generated from a variety of assembling and installation works etc., and also involving the use of machinery and equipment. On the whole the noise level inside the factory/plant building will be relatively high.

Vibration is generated from the above-mentioned vehicular movement and operation of machinery, generator, pump etc and vibration, if high, can damage certain machinery but not the building and structure.

The potential impact of noise on the employees will be described latter in "Occupational Safety and Health" and Accidents at work place" later.

Low noise level generated from the assembling plant will have little or no impact on the surrounding environment.

(4) Impact of project on gridline electricity and vice versa (impact of electricity consumption and electricity outage)

During the Operation Phase the assembling plant consumes substantial amount of electric energy. The operation of the plant can have an impact on the main gridline electricity to a certain extent.

On the other hand the power outage due to defect in electricity or natural disaster or load-shedding can have a negative impact on the plant, especially if the duration of power outage is long. Substantial quantity of diesel fuel will have to be used for the backup generator. This will have a negative economic impact on the factory business. Power load-shedding is commonly practiced by electricity authority whenever there is case of power over load somewhere else. This is probably the easiest and pragmatic way of regulating power supply. Most power outages happening in Myanmar are not due to natural disasters, but due to load-shedding by the electricity authority.

The lack of adequate power supply is still a bottleneck for the development of the nation, especially the infrastructural and industrial developments.

Myanmar Brilliance Auto Co., Ltd will adhere to its work frame for electricity consumption (612,640 kilowatt/year) and conserve energy, as practical as possible.

(5) Impact of waste

Solid waste

Unlike during the Construction Phase where large quantity of debris, construction tailings and refuse are generated the debris waste generated during the Operation Phase will be negligible.

There will be virtually no debris or tailings from the assembly line since manufactured parts and components are assembled.

However, there can be substantial quantity of old packing materials (e.g. wood, plastic materials, foams, pieces of iron) for packing motor parts imported from China. Most of these packing material wastes can be either reused or put up for sale; the remaining will be disposed at the approved landfill.

Debris, scrap and refuse can be generated from the welding zone (if certain welding has to be undertaken) but only in small quantity (no welding is required).

Solid waste from the office and messing room will include used papers, used toners, cardboard items, plastic items, packing waste trash etc and organic waste from kitchen and messing room. Certain quantity of solid waste such as fallen leaves, debris, weeded or mowed grass and weed will be generated outside the factory (inside the compound).

Liquid waste

Since little water is used for industrial purpose industrial waste water will be non-existent or very negligible (only occasional shower testing). Domestic waste water will be also minor as there will be no staffs camped inside the compound. Maintenance and washing of machinery and vehicles will also use water occasionally. Liquid waste in the form of used fuel oil hydrocarbons, paints, thinner etc. can be also substantial in such a big factory. Used paints, solvent paints etc and used batteries are considered hazardous or dangerous wastes.

Waste will be well-managed and reduced, reused, recycled, and recovered as practical as possible.

(6) Occupational health and safety (potential accidents at workplace)

Six potential serious safety hazards in the workplace of a factory or assembling plant are:

- Hazardous materials/substance – e.g. flammable, combustible, toxic, corrosive ones have to be used.
- Falls, slip, trips (due to spillage of oil on the floor; uneven floor).
- Heavy machinery (e.g. forklift due to carelessness or lack of good training).
- Fire (eg. from engine, welding equipment, electrical equipment).
- Confined space (e.g. depletion of O₂).
- Non-employees (people who should not be there in the first place).

As regards occupational health hazards most of the industrial diseases are caused by dust, chemicals and fumes. Common industrial diseases are: Occupational asthma, occupational dermatitis, industrial deafness, asbestos related illness, hand-arm vibration syndrome, latex allergies and legion nares disease.

Working in an assembly line normally seems to be safe but when working for long hours over along period unexpected occupational hazards and accidents can occurs. Shared dining, shared hygiene facilities and crowded condition can contribute to spreading of diseases. Monotonous nature of work at assembly line can lead to psychological disorder eg-outbreak of hysteria.

Regarding occupational health hazards in an assembly line, workers who are working standing up for long hours can suffer from stress and strain, sore feet, swelling of legs, general muscular fatigue, lower back pain etc.

Assembly line workers can be exposed to risk of, exhaustion and overuse injuries which can be termed minors, such as:

- Repetitive strain injuries (doing the same movement over and over can wear out bones, ligaments, cartilages, nervous system, muscles).
- Assembly line workers can be exposed to the threat of machinery; working repetitive work for long hours can lead to carelessness and slackness of attention resulting in accidents.
- Assembly line workers can be exposed to inhalation and contact with harmful or toxic chemicals including certain paints, varnish, thinner etc, if paint and thinner have to be used sometimes (But no substantial painting and thinning will be necessary).

The Occupational Health and Safety (OHS) impact can be two-way. OHS can impact the staffs/employees while the impacted staffs/employees (in the form of sick leaves and staff-turnovers) can have negative impact on the project (eg. decline in productivity).

Accidents in assembly line zone

Machinery in an assembly line can easily cause bodily harm if proper protocols are not followed. Common types of injuries are:

- Loss of limbs in machinery accidents
- Fractures and shattered bones
- Blows to the head from falling objects
- Repetitive uses injuries -- at least suffer from stress and strain
- Slips, trips and falls (rarely happen in assembly line)

"The accidents in workplace impact" can be serious eg- loss of life and limbs and impeding the operation of the factory especially production.

(7) Potential social issue

The potential social impacts during the Construction Phase have been already mentioned. Social issues such as quarrels; disputes; brawls among workers themselves or with the locals; theft; misappropriation, vandalism unethical sexual practices or sexual offensive, spread of sexually transmitted disease (STD), HIV etc. All these have the potential to hinder or jeopardize the progress of the production work.

Unlike the construction workers during the Construction Phase employees during the long Operation Phase are well-selected, trained and disciplined. So the social impacts may not be so serious. However, there can always be social illness and ill-social behaviour among certain employees.

(8) Potential security issue

Potential security issues were already mentioned in the Construction Phase. But these were mostly in the form of theft and vandalism.

The issue during the Operation Phase can be also mostly in the form of theft and vandalism. There is always the potential issue of theft when many locals are living below the poverty line.

Vandalism and sabotage cannot be ruled out given the fact that many people have anti-rich and anti-big business mind set or class antagonistic mind set. So far there is no precedent of terrorists attacking or destroying a factory. A plant can be a soft target for terrorists; security should be tight or effective.

(9) Positive (beneficial) impacts during the Operation Phase

The potential positive impacts during the Construction Phase had been already mentioned.

The positive impacts during the Operation Phase are long term positive socio-economic impacts.

The most significant positive impact that can be easily seen is job creation. 219 workers, mostly locals will be employed permanently. This is a not so small benefit for the country, and a very big benefit for the region, especially in this time of high unemployment. It is a well-known fact that many of our youths have to go abroad for jobs and have to work in unfavourable work places and working conditions.

The proposed salaries for the 219 employees in the first year range from 160,000 kyats (the lowest blue collar job) to 1,000,000 kyats (the highest white collar job) are quite reasonable.

These employees can enjoy certain social benefits such as; free ferry and overtime wages. There will be a worker welfare teashop and food shop with reduced price for the workers. There will be recreation facility for them and they will have the rights to enjoy their leisure time. (Housing will be provided for all staff) at a place outside the compound.

There can be employment opportunities from vacant posts from time to time or extra jobs when the plant operation progress well and when there is a probable expansion of the plant business in the near future. The company has plan for increasing the production especially the electric sedan cars. The door is still open for this. There can also emerge part time jobs or jobs associated with the operation of the factory.

The benefit that will accrue to the nation as result of the direct investment inflow of Ks 4177.9393 million (including US\$ 0.54995 million) has been already mentioned. This will contribute in one way, or another, to the GDP of the nation, to a certain extent. The follow up economic benefit to the country in the form of income tax, duties and revenues from the assembly project (including those from the workers) will also contribute to the economy of the nation in one way or another.

Above all, the project will contribute to the further development of the Industrial Sector of the Nation, especially the automobile industry. It will also contribute to the development of the Transportation Sector of the Nation and will offer more Sedan/Saloon/SUVcars with reasonable prices for family uses.

D. Potential negative impacts during the Decommissioning Phase

Because this phase will begin 30 plus years later this will be dealt not in detail but only in general.

The main task during this phase will be:

- The isolation (disconnect electric cable, phone line, water pipes etc.) and shut down of the assembling plants.
- The decommissioning work involves demolition and dismantling works for building and structure
- Dismantling of machinery

- Materials that are still useable shall be reused or put up for sale; those that are not useable will be disposed off at appropriate dump site
- Contaminated soil and water, if any, will be removed and disposed off; tidying up the compound.

A contractor and party will be hired for this job.

(1) Impact: Occupational health and safety (accidents at workplace)

This is the same as the potential accident during the Construction Phase. Good engineering practice and good safety practices are necessary not only for the construction works, but also for the decommissioning works. Accidents tend to occur more during the decommissioning works than during the construction works.

(2) Potential residual impact

After the very long Operation Phase the soil (and ground water probably) can be contaminated. This has to be remediated. The structure of the soil has to be restored to its original condition.

Summary of Impact assessment

Summary of Assessment of impact identified during the Construction, Operation and Decommissioning Phase applying Risk/impact Rating Matrix and Experts Consensus Method (Experts moderation method).

During the Construction Phase

Sr.	Impact/potential impact	Like- lihood	Consequ ence	Outcome		Outcome after mitigation
1	Impact mobilizations and preparation activities of construction	2	2	4 (moderate)	Mitigation measures	low
2	Occupational Health and Safety issue (potential accidents at work places)	1	2	2 (low)		low
3	Impact on air quality	5	2	10 (high)		low
4	Noise and vibration	5	2	10 (high)		low
5	Impact on soil	3	2	6 (moderate)		low
6	Potential impact on water	1	2	3 (low)		low
7	Impact of waste	3	3	9 (high)		low
8	Potential social issue	1	2	2 (low)		low
9	Potential security issue	2	1	2 (low)		low

During the Operation Phase

Sr.	Impact/potential impact	Likelihood	Consequence	Outcome		Outcome after mitigation
1	Potential traffic issue	1	2	2 (low)	Mitigation measures	low
2	Impact on air quality	3	2	6 (moderate)		low
3	Noise and vibration	5	2	10 (high)		low
4	Impact of project gridline electricity and vice versa	1	2	2 (low)		low
5	Impact of waste	2	2	4 (moderate)		low
6	Occupation health and safety issue	1	2	2 (low)		negligible
7	Potential social issue	1	2	2 (low)		low
8	Potential security issue	1	2	2 (low)		low

During the Decommissioning Phase

Sr.	Impact/potential impact	Likelihood	Consequence	Outcome		Outcome after mitigation
1	Occupation health and safety (potential accident at work place)	1	2	2 (low)	Mitigation	low
2	Potential residential issue	3	2	6 (moderate)		low

6.2.2 Identification and assessment of the likelihood and severity of the natural and industrial hazard related to the project

Natural hazards

The whole area is a flat low land and is about 100 miles away from the sea in south. There is no mountain range between and so the area is directly under the influence of the south west monsoon winds during the wet rainy season (May to September). In Myanmar violent storms (cyclones) occur from time to time during the rainy season, especially during the earlier part of the rainy season.

The coastal area of Rakhine State, Ayeyarwaddy Region and Yangon Region can be termed as prone to cyclones. But this industrial zone is quite far away from the coastal area (100 miles away) and so is not prone to Cyclones. The exceptional case: the super cyclone, Nargis (2008) which had wreaked havoc to many States and Regions had also devastated this area. On the whole the area is not prone to violent storms or major floods. There can be minor floods during July and August. It is also not prone to excessive rainfall and/or severe draught and also wild fire. (no case of wildfire so far).

The area is not very far (20 miles) from the southern tip of the Sagaing Fault line. But it is not prone to earth quakes or tremors. (No precedent of major earthquakes within memory). Tremors can happen from time to time within a decade.

So it can be stated that there can be no likelihood and severely of natural hazards at the project site.

Industrial hazards

No industrial hazards are anticipated during the short construction phase of 1 year. Large quantity of building wastes will be generated during this phase but they are not hazardous materials. All the construction tailings and wastes will be cleared and the site tidied up after the construction work. Also no industrial hazards are anticipated during the long operation. The auto part assembly plant that applies SKD technology will be a "smoke less factory" and "industrial waste less factory". No major smoke and dust (emission) will be generated due to assembling and installation activities. Also no major industrial waste (solid and liquid) will be generated.

There can be certain industrial waste in the forms of packing materials such foams, wooden boxes, plastic materials, containers etc. from time to time when auto parts or components imported arrived at the factory. But these packing materials will not arrive on a daily or weekly, but only occasionally. Some of the packing materials will be reused while the remaining will be systematically disposed of at the landfill approved by the Township Development Committee.

The SKD technology actually needs no painting and no welding works. No chemicals are used in the assembling works. It can be simply stated that there can be no substantial industrial hazards due to the implementation of this project.

6.2.3 The design, layout, functioning, management and implementation of appropriate impact and risk mitigation measures

As already described earlier in this chapter (6.2, 6.2.1.2, 6.2.1.3, and 6.2.1.4). The impact/potential impacts identified during the Preconstruction Phase, Construction Phase, Operation Phase and Decommissioning Phase are: 0, 9, 8 and 2, respectively.

For each and every impact/potential impact different options of mitigation measures to be taken are described in this sector. The design, management and implementation of a variety of mitigation measures to be put in place for each and every impact are described in technical details.

(A) Mitigation measures to be taken during the Preconstruction Phase

No mitigation measures necessary as no impact is actually anticipated or envisaged during this phase. (Mentioned earlier)

(B) Mitigation/corrective measures to be taken during the Construction Phase

(1) Mitigation for impact of mobilization and preparation activities for construction work

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- carefully plan for mobilization, storage and preparation works
- have logistic plan for heavy trucks loaded with building materials
- systematically store or pile up all the building materials within the premise
- ensure that the wall or fence is reliable and can effectively prevent theft
- prevent the spilling over of the building materials outside the premise or on nearby roads, No.5 Patheingyi-Yangon Highway.
- temporary parking of heavy trucks, should be made inside the compound

(2) Mitigation for impact of Occupational Health and Safety issue (potential accidents at workplace)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for zero accident
- set up "Safety First" sign boards at places where workers can see easily
- create safety condition for all workers; create accidents free environment
- educate, train and supervise construction workers for good working practice, good engineering practice, good safety practice and good house-keeping practice so that these good practices will be ingrained in each and every worker's mind
- try to meet all statutory requirement for safety construction (rules, regulation, labour Act)
- provide adequate Personnel Protection Equipment (PPE) where necessary
- keep first aid kits well-stocked with medicine and drugs
- accidents or near-missed to be duly reported
- prohibit the drinking of alcohol during working hours; ban the use of narcotics among workers

- plan and manage for effective emergency response
- cover the whole structure during the Construction Phase with nylon lace or netting to prevent accidental falling of debris and tools etc (a common engineering practice implement in construction work)
- provision of firefighting equipment and tools,
- provision of adequate sanitation – e.g. toilets, clean water,
- provision of Personnel Protective Equipment (PPEs)
- apply safe and effective procedures for storages of fuel and chemicals; display warning sign/pictogram
- display addresses/phone numbers of Fire Brigade, Red Cross Society, Ambulance Service, Hospital, Police Station so that everyone can see easily
- take out insurance for the factory/plant and also fire insurance

(3) Mitigation for impact on air quality

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a plan for air quality management to meet statutory requirement (rules, regulations, Municipal Act, NEQEG guideline values prescribed by ECD)
- plan in the Pre-construction Phase for the procurement of equipment, vehicles that emit less smoke (to be certified for emission compliance)
- keep equipment and vehicles well-maintained, well-operated and well-lubricated
- use fuel with low emission rate, if possible
- avoid open burning of debris
- spray water for suppression of dust
- restrict vehicular movement; maintain road clear of mud and dirt
- limit open stockpile of earth, sand etc
- minimize drop height during loading and unloading of earth, sand or lime
- provide PPE to workers who are exposed to smoke or dust for long period
- the local community should be able to file complaints regarding dust and smoke
- cover bulk materials during transportation
- plant fast growing trees to trap dust

(4) Mitigation for noise and vibration

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan in the Preconstruction Phase for procurement of equipment, machinery and vehicle that emit lower noise level (that is eco-friendly equipment vehicles).
- plan for noise management to meet NEQEG guideline values for noise and vibration.
- avoid construction works at night;
- schedule high noise activities only during day time hours.
- limit transportation during unsocial hours to reduce noise.
- switch off or throttle down equipment during idle hours.
- limit the speed of vehicle to mitigate noise as well as vibration.
- if possible install silencers, noise abators on inlet and outlet of fans to reduce noise level.
- keep machinery and equipment well-maintained, well-operated and well lubricated to reduce noise level.
- design stable foundation to mitigate vibration; if possible install vibration absorbers.
- provide PPEs, ear plugs, ear muffs to workers exposed to high noise level.
- the local community should be able to file complaints regarding noise and vibration.

(5) Mitigation for potential impact on soil

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a plan for management of soil
- try to avoid potential destruction of soil profile
- separate top soil (for later creation of green belt) from sub-soil (for construction work-earth filling etc.)
- draw up a plan for prevention and mitigation of contamination of soil
- manage to meet statutory requirement (rules, regulations, Municipal Act)
- prevent spill of fuel oil; clean up spill with absorbent promptly (do not wash down with water)
- properly instruct workers with respect to handling of fuel cleanup of spills
- display warning signs; identify high risk spill area (generator, fuel drums)

- implement soil conservation techniques to prevent soil erosion (during rainy season)
- Prevent wash water from carrying earth and materials into drainage system
- resurface and stabilize the exposed ground surface after earth work
- the ground should not be laid bare for long period during the rainy season
- dispose all waste materials (from construction work and from domestic use) at approved land fill
- train workers for good housekeeping; do not litter
- the local community should be able to file complaints if their lands are impacted

(6) Mitigation for potential impact on water

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for the conservation of water
- also plan and manage to prevent the pollution of water (no surface water to be impacted)
- do not use water more than necessary during the Construction Phase
- if possible recycle water; it can be used for dust suppression or for watering plants
- discipline workers for the conservation of water;
- monitor the daily use of water for construction
- avoid the spillage of fuel oil which will contaminate the soil and eventually ground water;
- if there is spillage clean up spill with absorbent promptly (do not wash down with water)
- properly train workers with respect to handling of fuel oil and cleanup of accidental spill
- adequately maintain vehicles and machinery to prevent spillage resulting to ground water contamination
- display warning signs; identify high spill areas (generator, garage etc.)
- avoid disposing of waste (solids and liquids) into water body, if any
- the local community should be able to file complaint, if there is any impact on their drinking water

(7) Mitigation for impact of waste (construction waste)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan for the management of waste
- manage to meet statutory requirement (rules, regulations, Municipal Acts)
- draw up a plan for management of solid waste
- avoid open burning of debris
- clear the ground regularly; ensure dumping at approved landfill
- educate workers for good housekeeping; do not litter
- plan for reuse and disposal of construction tailings and left overs
- at the end of Construction Phase put up construction spoils, left over materials for sale
- hire a contractor and party for tidying up the site after Construction Phase
- the local community should be able to file complaints if regarding waste disposal

Note: There will be virtually no waste water during the Construction Phase. All required water will be used up during mason works or concrete works etc.

(8) Mitigation for potential social impact/issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a plan for management of social illness and anti-social behaviour
- educate and train workers on discipline and code of conduct
- try to build good relation with the locals
- conduct public consultation so that the locals will have a positive perception on the project
- educate the workers for appropriate behavior when dealing with locals; to respect their culture and tradition
- plan to avoid or minimize the potential negative impacts on the socio-economic life of the locals
- apply punitive measures such as suspension of the wrong doer
- manage misbehavior and social illness of workers
- strictly prohibit the drinking of alcohol during working hours; ban the use of narcotics and stimulants
- deal with workers on a fair and square basis
- avoid unhealthy relationship with workers; they should not be over worked and underpaid

- maintain the good relation between the company and the locals
- provide adequate welfare programme for workers

Note: The local community should be able to file complaint regard social impact.

(9) Mitigation for potential security issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a security management plan
- campaign against social evil to ensure security and order
- undertake effective walling of the compound
- all accesses must be controlled; effectively control all accesses
- set up security gates; deploy adequate guards or watchmen
- do not let the workers (mostly construction workers) enter the neighbouring ward without preauthorization; do not let workers mingle freely with locals
- store building materials under lock and key as far as possible
- ask the building contractor to discipline his workers
- apply punitive measures, such as suspension or termination of employment if necessary
- provide ID cards for all workers for easy identification

(C) Mitigation/corrective measures to be taken during the Operation Phase

(1) Mitigation for potential traffic issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a traffic management plan
- schedule the logistics; avoid rush hours; avoid road with heavy traffic road; if possible
- educate drivers, staffs (motorists and motorcyclists) for defensive driving; drive at reduced speed; follow road regulations
- set up signage or traffic sign at the entrance of the site and suitable places
- avoid overloading of truck, or any vehicles
- regular maintenance of vehicles
- keep a log book for each vehicle

- ensure that drivers are not overworked, over-fatigued
- aim to achieve zero road accident
- local community should be able to file complaints regarding traffic issue

Note: All these facts are actually for mitigation for potential traffic issue anticipated during the Operation Phase.

- The company will ensure that all the vehicles produced are up to ASEAN Motor Vehicle Requirement as stated earlier
- The company will adhere to Left Hand Drive principle to be compatible with the motor traffic system in Myanmar
- The company will ensure that thorough vehicle testing is conducted for every vehicle produced before distribution and marketing.

(2) Mitigation for impact on air quality

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a plan and implement for air quality management for the long term Operation Phase
- try to meet all statutory requirements (rules, regulations); follow the NEQEG guideline values prescribed by ECD, MOECAAF (2015)
- if possible cover the whole compound/premise with concrete plinth or at least sealed (hardened) high traffic area
- spray water adequately to suppress dust
- Also deploy sweepers to clean dirt
- reduce the speed of vehicle to reduce dust generation
- plan for effective mitigation and management of smoke and emission
- avoid open burning of solid waste
- use well-maintained and well-operated equipment and vehicles
- regularly check all the engines of vehicles and machinery
- use vehicles and machines that emit less smoke and use less fuel (procure ecofriendly vehicles and machinery in the first place)
- conserve fuel and prevent unnecessarily emission of gas (smokes)
- plant trees and create green zone; trees will sequesterate CO₂ in the smoke, trees will also trap dust.
- provide adequate PPE such as face masks, nose and mouth covers to workers
- the local community should be able to file complaints regarding dust and smoke

For the management of air quality inside the assembling plant:

- plan for good ventilation and natural air flow as far as possible
- follow safety procedures including good ventilation
- avoid the use of "air fresher" (not good for health; only good ventilation is necessary)
- if possible, designate "smoking zone" in one part of the factory
- use exhaust ventilation with pressure control

All these facts are actually for the mitigation for impact on air environment anticipated during the operation phase of the project. It is universally accepted that a generally a Sedan/Saloon/SUV car emits 3.0 to 4.6 metric tons of CO₂ per year, depending on duration of operation. The cars produced from this site are fairly eco-friendly cars.

It is the responsibility of the buyer to consider for reduction of GHG emitted from his car.

Some of the main points to reduce GHG from own cars are:

- if possible walk and ride bike rather than drive a car
- use a fuel efficient car (these models are fuel efficient EU emission No. 4)
- use a low sulphur fuel oil – diesel
- use gasoline lower in lead
- change the air filters regularly
- avoid unnecessary driving
- change your driving style - 35 mph is the best for fuel consumption and for emission
- keep your car well-maintained, well-operated and well-lubricated

(3) Mitigation for noise and vibration

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan for effective management of noise and vibration
- try to meet all statutory requirements (law, regulation)
- follow the NEQEG guideline values for noise and vibration prescribed by ECD, MOECAAF (2015)
- restrict or limit vehicular movements
- plan for appropriate choice of machinery and vehicles (that emit low noise level); method of working, efficient material handling
- installation of noise abating devices e.g.- silencers, mufflers at air inlet and outlet of fan and compressor; place noisier sources far away in overall design

- well-operated, well-maintained and well-lubricated, vehicles and machinery generate lower noise level and prevent undesirable noise level
- modified old machinery, vehicles and equipment by incorporating minor design change for reducing noise level
- develop green belt (plant trees) inside the compound; trees abate noise and serve as noise sink (pollution sink)
- create smooth road surface as far as possible to mitigate vibration due to vehicular movement
- create suitable foundation design for machinery and equipment (e.g. grinder, compressor and pumps etc.) to mitigate vibration
- if necessary install vibration absorbers or vibration abators
- provide adequate PPE eg- ear muffs, ear protectors to workers exposed to long hours of high noise level; conduct regular noise monitoring to ensure that the levels are within noise exposure standard (not higher than 85-90 dBA) especially for generators and pumps
- local community should be able to file complaints regarding noise and vibration

For the management of noise level inside the assembling plant:

- fit mufflers or silencers on all noisy machines and equipment especially inlet and outlet fans, etc. if necessary.
- position, enclose and isolate noisier equipment, if possible.
- minimize sound level inside the plant as far as possible
- provision of PPE for workers where necessary (ear plugs and ear muffs)
- limit transportation during unsocial hours to reduce noise
- conduct a noise survey and mark out dedicated areas with signage where there are elevated noise levels
- reduce vibration exposure time, where possible.

(4) Mitigation for impact of project on gridline electricity and vice versa

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- consider for application of environmentally sound idea and technology when sourcing for electricity
- acquire conservation of energy knowledge in the planning and design phase of the assembling plant.
- plan and manage for the conservation of electricity energy
- design the building to take advantage of sunlight and air flow

- optimize building orientation for sunlight; allowing sun-light to penetrate building to provide light to illuminate interiors
- ensure that the consumption of electricity be in the work frame as stated earlier
- monitor electricity consumption weekly
- use electrical equipment, devices that are energy efficient, particularly use energy efficient equipment associated with heating, ventilation, air conditioning and cooling (HVAC)
- use high efficiency light bulbs, lamps, tubes etc
- use day light as much as possible
- use day light control (adjust interior lighting by incoming day light so that there is no need to switch on the light during day time)
- ensure that the backup generator is operational immediately after power outage or use automatic backup system
- liaise with electricity authority from time to time

(5) Mitigation for impact of wastes (solid & liquid)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and implement the management of wastes

For liquid wastes

- if necessary, treat all the waste water before discharge into the sewage system (the readily available chemical water treatment is chlorine at 5 mg/l or Monochloramine at 3 mg/l which are effective and cheap). This is not necessary at all as the assembling plant will produce no effluent; no water is required for assembling works; small quantity will be necessary for car shower/rain test.
- monitor waste water drainage from time to time, especially for domestic waste water and storm water.
- ensure that the natural of drainage is effective (industrial used water/old water e.g. from car shower test will simply flows down the drain and dry up; no special treatment required).
- The domestic black water (from toilet) will end up in septic tank and soak pit (no need for vacuum truck to remove the sewage)
- monitor the tube well water quality to check for contamination
- comply with the NEQEG guideline values (for effluent) prescribed by ECD
- manage the used water and domestic waste water to a level that is consistent with the conventional treatment and discharge of sanitary waste water
- ensure that waste water is not discharge into any watercourse

For solid waste in general:

- plan and implement the management of solid wastes
- dispose the solid wastes outside the factory at an approved landfill or dumping site
- avoid open burning of debris or trash in the compound

For solid waste inside the plant and at the office and messing room etc. (domestic waste).

- when buying things for use, buy in bulk quantity wherever possible (to reduce packing waste)
- use refillable bulk dispenser, (eg- toiletries) rather than individually packed products
- buy products with minimal product packing (because all packing materials become waste)
- implement organic-waste compositing of some wastes from the kitchen for organic fertilizer to apply in lawn, and green
- segregate wastes into categories; waste that can be recycled and that has to be disposed of, using two different waste bins
- dispose waste only after all waste prevention and possible recycling strategies have been explored (adhere to the principles of 5 Rs, reduce, reuse, recover, recycle and redesign as far as possible)
- dispose wastes only at approved landfill
- return packaging materials such as plastic, paper and drums etc. to supplier for reuse; recycle packaging materials whenever possible
- give priority to reduction of solid waste, recovery and reuse

(6) Mitigation for Occupational Health and Safety issue (Potential Accidents at workplace)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a comprehensive plan and manage for the safety working conditions for workers; create a safety working conditions at the work place.
- try to meet all statutory requirements for safety at work places
- educate, train and supervise workers for good working practice, good engineering practice, good safety practice and good housekeeping practice so that all these good practices are ingrained in their minds and become good habits; especially train them for corrects use of machinery and safety devices; correct lifting technique; where possible install mechanical lifting aids. eg. forklift,
- educate, train and supervise them for skills; for handling and operation of equipment; handling and application of chemicals; especially harmful one

- educate them for good health practice, hygiene, environmental awareness and occupational health hazards, and other hazards awareness.
- all workers must pass a medical examination prior to employment
- conduct yearly medical checkup for workers
- draw a programme for workers' health monitoring and implement it
- provide free Medicare for workers
- compensation, rehabilitation and curative services will be made available to workers who suffer occupational injuries, accidents and work related diseases
- fuel oil will not to be stored in bulk – (fuel will be purchased from town fuel stations)
- install device to prevent spills and overfills for fuel and chemicals, if necessary.
- maintain and inspect storage unit regularly
- keep all machinery, equipment and vehicles well-maintained, well-operated and well-lubricated; and also well-lubricated for sophisticated equipment.
- check the machinery for signs of wear and tear, degradation, leaks, weak etc.
- check on automatic safeguards on machines to prevent accidental injuries
- draw up a plan and manage for zero accidents at work place
- beware of all the common accidents and common injuries mentioned earlier that used to happen (as well as potential accidents and injuries) and implement a prevention, protection and mitigation measures for each
- provide adequate PPEs – outfits, boots, helmet, gloves, face mask, goggles, ear muff, ear plug, etc. also tools such as sit – stand tools for workers who have to stand for long hours
- also provide adequate First Aid Kits well-stocked with medicines & drugs
- provide adequate sanitation facility eg. toilets, clean water, baths room etc. for workers
- beware of the stress, strain and psychological impacts on workers doing monotonous and tedious work for long hours
- minimize manual labour; maximize mechanical labour
- relieve them from strain and stress from time to time; plan job rotation to relieve from long hours of repetitive work.
- reorganize staff organization at assembly line occasionally for better cooperation among them
- redesign work station; make tool redesign, create adjustable fixtures; readjust work brakes, make job rotation etc. (to increase team cooperation and enhance productivity)
- train some workers for First Aid training.

(7) Mitigation for potential social impact

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan to avoid or minimize – potential negative impacts on the socio-economic life of the locals
- try to build and maintain good relative with the locals; avoid friction between the locals and the company as far as possible.
- buy local produces as far possible.
- conduct public consultation from time to time so that the locals will have a positive perception of the project
- educate workers for appropriate behaviours when dealing with locals; to respect their culture and tradition
- plan and manage for antisocial behaviours, misbehaviours and social illness
- discipline workers for work place regulation and code of conducts including social conduct
- take disciplinary action/punitive action for wrong doer eg. suspension, discharge
- prevent and manage disputes, quarrels, brawls among workers and also between workers and locals.
- strictly prohibit the drinking of alcohol during working hours; totally ban the use of narcotics
- deal with workers on a fair and square basis – (not overworked, underpaid)
- community should be able to file complaint regarding social impact, if any, (through Grievance Redress Mechanism, GRM)
- the company will consider and execute CSR activities during the Operation Phase

(8) Mitigation for potential security issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for site security
- ensure that the fence/wall is secure
- do not let the assembling plant become a soft target for terrorists
- implement strict security as far as possible
- deploy adequate security staffs; security guards at gate; inside the plant and at office
- if possible install security/watching towers

- perform security check on each and every one entering and leaving the plant and compound.
- in addition to worker suits issue Identity Cards for all employees for easy identification
- keep all important materials secured and safe; e.g. under lock and key as far as possible
- campaign against social evil to ensure security and order
- apply punitive measures such as suspension and termination of employment if a worker infringes security regulation

(D) Mitigation/corrective measures to be taken during the Decommissioning/ Rehabilitation Phase

(1) Mitigation measures for potential accident at workplace (OHS issue)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for safe and effective decommissioning work
- hire a decommissioning contractor and party for the demolition of buildings/structures and dismantling of equipment; and also for tidying up the site
- dispose those that are no longer usable at the approved City landfill
- obsolete machinery and equipment will be made into scrap and sent to smelting mill
- put up for sale materials and machinery that are still usable and saleable
- remove soil contaminated by fuel and/or chemical spills, if any, and dispose at the city landfill
- plant trees and commence rehabilitation work and restore the site to original condition as far as possible

(2) Mitigation for potential residual issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- clear and remove all residuals
- remove all soil contaminated by the fuel oil, if any
- test the soil for the last time to ensure that no contaminants remain
- test the water and air for the last time for contamination
- restore the plot and soil to its original condition
- vegetate or rehabilitate the plot

6.2.4 Characterization and assessment of residual impacts and risks and comparison with applicable regulations, standards and guidelines

Potential residual impacts

Substantial residual impacts are not anticipated during the whole life of the project.

During the Construction Phase

Large quantity of solid wastes in the form of construction tailings, construction wastes, unused construction materials, discarded construction materials and debris are generated during this phase.

These wastes will be regularly collected and disposed at the approved land fill. When the Construction Phase is completed all the solid wastes will be removed and disposed, and the site will be cleared. A contractor and party will be hired to do the tidying up job.

Therefore there can be no residuals impact after the Construction Phase.

There can be certain accidental spills of fuel, chemical, etc. from time to time during the Construction Phase. All accidental spillage of fuel oils and chemicals will be immediately removed (not using water for wash down but absorbents – eg. rags, and/or saw dust will be used to removed and clear the spills). There will be no chance for residual impact and subsequent contamination of soil and ground water.

Therefore there can be no residual impacts and contamination of soil after construction phase.

During the Operation Phase

The same good practice for the removal and clearance of solid and liquid wastes and fuel & chemical spillages will be undertaken during the Long Operation Phase. There can be no substantial residual impact during and after the Operation Phase.

That auto parts assembly plant is not a factory that generates large quantity of smoke and dusts, emit high level sound and generate large quantity of solid wastes and liquid wastes.

The auto parts assembly plant that applies the SKD technology is actually a "smoke less factory", a "silence factory" and "waste less factory".

Therefore there will be no residuals during the long operation phase.

Generally welding and painting works are not necessary; only welded parts and painted parts will be imported for assembly and installation. In exceptional cases there can be certain final touches regarding painting but here will not be any residual paints or chemicals.

During the Decommissioning Phase/Rehabilitation Phase

After the completion of the long Operation Phase a decommissioning task (the comprehensive clearance and tidying up of the site) will be undertaken. A decommissioning contractor and party will be hired to carry out this decommissioning task.

The plant will be shut down; all the buildings and structures will be dismantled or demolished. The machinery and equipment will be dismantled.

Certain old building materials that are still usable and saleable will be put up for sale. Those that are obsolete will be removed and disposed at the approved city landfill.

Machinery and equipment that are usable and saleable will be put up for sale and those that are no longer usable will be made into scrap iron and sent to a smelting plant.

The soil, if contaminated, will be removed and discarded. The soil will be tested for the last time to ensure that there is no contamination. In the same way the ambient air and water will be tested for the last time to ensure that the ecology is restored.

After that the site will be rehabilitated (planting trees) and restored to its quasi-ecological condition.

Therefore no serious residual impact is anticipated during the whole life of the project.

6.2.5 Comprehensive monitoring plan

Monitoring of physical, biological and social environments is of paramount importance for the successful implementation of a project.

First of all the working environment will be monitored for occupational hazards. But virtually all activities taken place at a project site need to be monitored for effective and successful implementation of the project.

Monitoring Plan (MP) is an essential tool for ensuring that mitigation measures for each and every negative impact is undertaken effectively throughout the life of the project. It is also an essential tool for ensuring that the positive (beneficial) impacts are enhanced, or CSR programme are effectively and meaningfully implemented. Monitoring will be planned, designed and implemented by professionals or specially trained persons e.g. EMP cell members.

Monitoring Plan (MP) is actually an integral part of Environmental Management Plan (EMP); these two are the different sides of the same coin.

In implementing monitoring plan, the NEQEG guideline values by ECD, 2015 will be the reference guideline values and monitored results/values will be always compare with NEQEG guideline values for compliance. Attempts will be made until all are within the said guideline values; (already described earlier in **Chapter-3**).

Frequency of monitoring will be as stated in the table (6 months) quarterly, monthly, weekly and daily as stated).

All activities will be recorded and report of monitoring will be submitted to the authority in time, preferably, every 6 months.

Monitoring Plans for Construction, Operation and Decommissioning Phases of the project are shown in tabulated forms.

Table-15: Summary of monitoring programme for Construction Phase in tabulated form (the pragmatic approach)

Sr. No	Components	Parameters to be monitored	Monitoring place/spot	Frequency	Responsible persons	Cost (once off cost)
1.	Air environment/ air emission	- NO ₂ , Ozone, PM ₁₀ , PM _{2.5} , SO ₂	16° 51' 19.71"N 96° 04' 48.04"E	Once during construction phase	Hired technicians	Ks 1,700,000
2.	Noise and vibration	- Day time dBA and Night time dBA	16° 51' 19.71"N 96° 04' 48.04"E	Once during construction phase	Hired technicians	Ks 70,000
3.	Effluent	- 5 day BOD, Ammonia, Arsenic, Cadmium, COD, Chlorine, Chromium, Copper, Cyanide, Fluoride, Iron, Lead, Mercury, Nickel, Oil and grease, P ^H , Sulphide, Temperature increase, Total coliform bacteria, Total phosphorus, Total suspended solids, Zinc	16° 51'20.80"N 96°04'48.13"E	Once during construction phase	Hired technicians	Ks 80,000
4.	Contamination of soil and ground water	- monitor spillage of fuel oil, grease, chemical, etc, if any	16° 51' 20"N 96°04' 51"E	Weekly	EMP cell members	Free of charges
5.	Erosion and siltation	- monitor earth work and drainage system	16°51'18.79"N 96° 04'47.40"E	Weekly (especially during rainy season)	EMP cell members	Free of charges

6.	Solid waste (construction tailing, debris)	- monitor type, amount generated reused, recycled, and disposed of	16°51'19.73"N 96° 04'48.05"E	Weekly	EMP cell members	Free of charges
7.	Biodiversity component	- monitor clearing of grass and small vegetation	16°51'18.81"N 96° 04'47.52"E	Weekly	EMP cell members	Free of charges
8.	Plan for prevention of fire outbreak	- monitor the plan and the readiness for prevention of fire - monitor the stock piling of building materials that can easily catch fire	16°51'19.44"N 96° 04'49.07"E	Weekly	EMP cell members	Free of charges

Note: By the time EIA study was conducted the Construction Phase was already completed; so actual monitoring will be undertaken during the long Operation Phase.

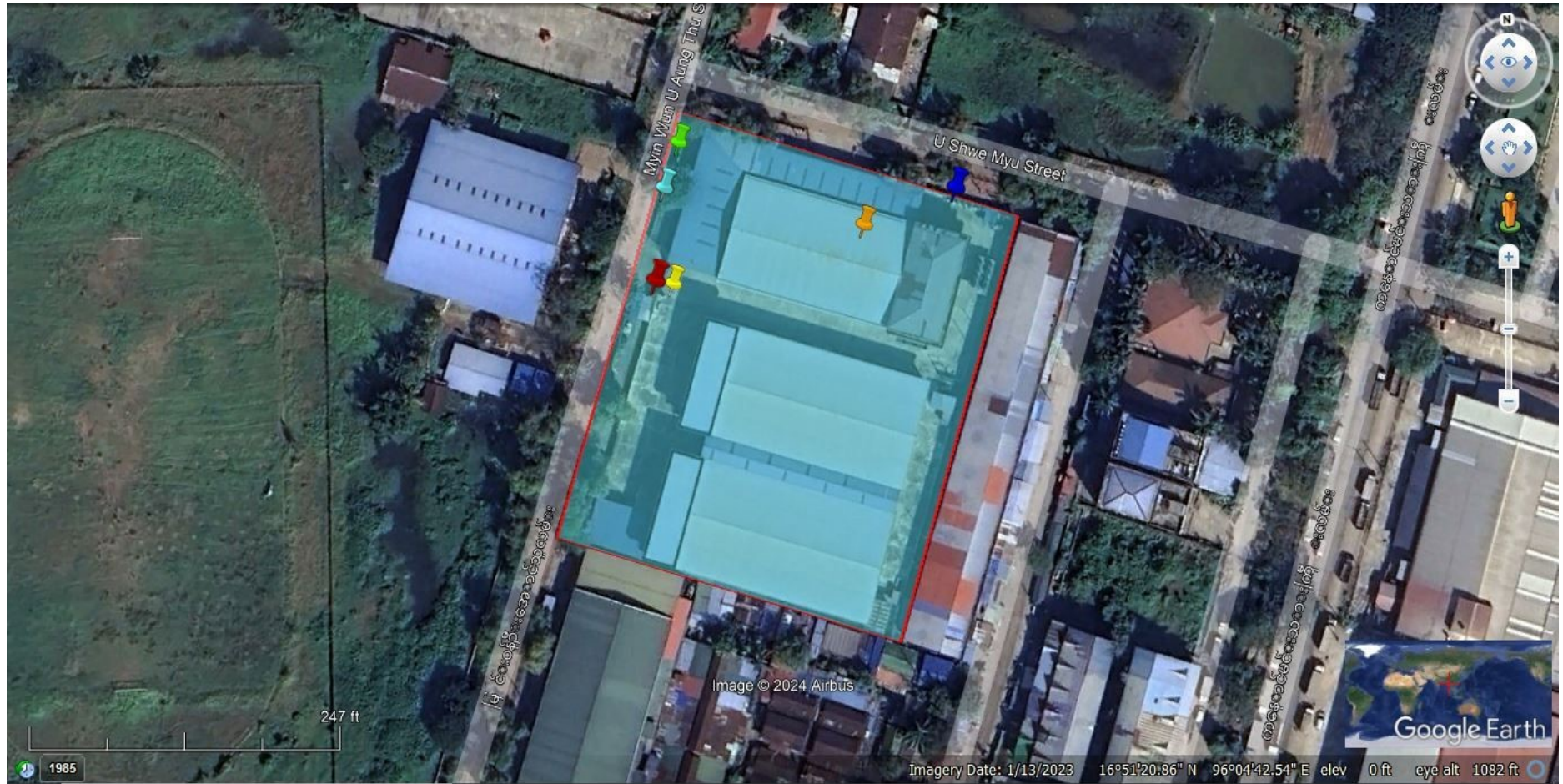
There will be a specific regular monitoring on physical environment namely air, water, soil quality on a semi-annual basis. This will be undertaken throughout the long Operation Phase in accordance with instruction by the environmental authority, the ECD.

Technicians will be hired for undertaking these specific monitoring.

Table-16: Summary of monitoring programme for Operation Phase (tabulated form)

(a) The pragmatic approach

Sr. No.	Components	Parameters to be monitored	Monitoring place/spot	Frequency	Responsible persons	Costs (once off cost)
1.	Emission	- NO ₂ , Ozone, PM ₁₀ , PM _{2.5} , SO ₂	16° 51' 19.71"N 96° 04' 48.04"E	- Every six months	- Hired technicians	- Ks 1,700,000
2.	Effluent	- 5 day BOD, Ammonia, Arsenic, Cadmium, COD, Chlorine, Chromium, Copper, Cyanide, Fluoride, Iron, Lead, Mercury, Nickel, Oil and grease, P ^H , Sulphide, Temperature increase, Total coliform bacteria, Total phosphorus, Total suspended solids, Zinc	16° 51'20.80"N 96°04'48.13"E	- Every six months	- Hired technicians	- Ks 80,000
3.	Noise and vibration	- Day time dBA and Night time dBA - monitor the wearing of PPE - monitor at suspension area	16° 51' 19.71"N 96° 04' 48.04"E 16° 51' 20.10"N 96° 04' 49.65"E	- Every six months - Every six months	- Hired technicians - Hired technicians	- Ks 70,000 - Ks 100,000
4.	Soil	- monitor contamination of soil (if any)	16°51'20.44"N 96° 04'47.99"E	- From time to time	- Hired technicians	- Ks 140,000
5.	Solid waste	- monitor the packing materials collection and disposal - monitor trash/garbage generated, collection and disposal	16°51'19.73"N 96° 04'48.05"E	- Daily - Weekly	- EMP cell members - EMP cell members	- Free of charge - Free of charge
6.	Ground water (Tube well)	- Total coliforms, Fecal coliforms, Color, Turbidity, Arsenic, Lead, Nitrate, Manganese, Chloride, Hardness, Iron, pH, Sulphate, Total Dissolved Solids	16° 51' 20"N 96°04' 51"E	- Daily	- EMP cell members	- Ks 300,000



Legend

- 📌 Emission and noise
- 📌 Vibration
- 📌 Effluent
- 📌 Soil
- 📌 Solid waste
- 📌 Ground water (tube well)

Figure-49: Satellite image showing monitoring points

(b) The generalized monitoring of other parameters (practiced in many countries)

Sr. No.	Components	Parameters to be monitored	Monitoring place/spot	Frequency	Responsible persons	Remarks
1.	Weather	- monitor weather	- At the site	- Daily	- EMP cell members	- Free of charge
		- listen to weather news, fore cast	- At the site	- Daily	- EMP cell members	- Free of charge
2.	Daily activities at work places	- monitor daily activities of workers at work places	- Inside the assembling plant	- Daily	- EMP cell members	- Free of charge
3.	Water consumption	- monitor water consumption	- Inside the assembling plant	- Daily	- EMP cell members	- Free of charge
4.	Fuel consumption	- monitor fuel oil purchased, used, used oil generated, oil waste	- Inside the assembling plant	- Monthly	- EMP cell members	- Free of charge
5.	Monitor electricity consumption	- monitor electricity consumption	- Inside the assembling plant	- Weekly	- EMP cell members	- Free of charge
6.	Routine operation of machinery equipment, etc	- monitor operation hours of machinery and equipment	- Inside the assembling plant	- Daily	- EMP cell members	- Free of charge
		- monitor distance travel of vehicles	- Every car	- Weekly	- EMP cell members	- Free of charge
		- monitor log books	- Every log book	- Weekly	- EMP cell members	- Free of charge
7.	Occupational health and safety measures and emergency measures	- monitor OHS measures taken	- At the work place	- Weekly	- EMP cell members	- Free of charge
		- inspect facilities for emergency preparedness	- At the work place	- Monthly	- EMP cell members	- Free of charge
		- monitor training (fire fighting and first aid) and drill	- At the f work place	- From time to time	- EMP cell members	- Free of charge
8.	Social illness, ill social behavior	- check disciplinary action taken	- At the work place	- Occasionally	- EMP cell members	- Free of charge
		- monitor conducts of workers	- At the work place	- Occasionally	- EMP cell members	- Free of charge
9.	Security	- monitor performance of security staffs	- At the site	- Monthly	- EMP cell members	- Free of charge

10.	Capacity building	- monitor effectiveness of capacity building programme and other trainings	- At the site	- From time to time	- EMP cell members	- Free of charge
11.	Compliance with regulation	- monitor all main activities to ensure compliance with legal requirements and corporate commitment	- At the site	- Monthly	- EMP cell members	- Free of charge
12.	Effectiveness of mitigation measures	- monitor mitigation measures taken and check their effectiveness	- At the site	- Weekly or monthly	- EMP cell members	- Free of charge
13.	Green belt creation and landscaping	- monitor the creation of green belt and landscaping - monitor the nursery of sapling and on-growing	- Inside the compound	- Monthly - Monthly	- EMP cell members - EMP cell members	- Free of charge - Free of charge

Note: EMP cell member are full time staff and well-paid. Honourium fees for two locals.

Table-17: Summary of monitoring programme for Decommissioning/Rehabilitation Phase (tabulated form)

Sr. No.	Components	Parameters to be monitored	Monitoring place/spot	Frequency	Responsible persons	Remarks
1.	Decommissioning and Rehabilitation	- monitor the Decommissioning process including the removal of all residuals, if any - monitor rehabilitation process	- Inside the compound - Inside the compound	- Weekly - Monthly	- EMP cell members - EMP cell members	- Free of charge - Free of charge

Note: There will be specific regular monitoring on physical components, namely, air, water, soil quality on a semi-annually basis throughout the whole long Operation Phase, as instructed by the environmental authority, the ECD. Technicians will be hired for this task and the semi-annual report will be duly submitted to ECD.

6.3 Location of sources of impacts and their potential spatial and temporal distribution

The construction phase

As already mentioned earlier the potential impacts anticipated and identified during the construction phase are:

- impact of mobilization and preparation for construction work
- potential accident at workplace (OHS)
- impact on air quality
- noise and vibration
- potential impact on soil
- potential impact on water
- impact of waste (construction waste)
- potential social issue
- potential security issue

The location of sources of impacts is inside the construction site (the project site). Only potential social issue can happen out the site (e.g. at the nearby ward).

And as already mentioned earlier all this impacts/potential impacts are generally minor or insignificant and are transient or temporary. All these impacts will cease after the end of construction phase.

With the exception of potential social impact the sources or potential sources of all other impacts are inside the project site.

The extents of these impacts are within the foot print of the project site, except social impact which can be beyond the foot print.

Since all the impact are all transient (the construction phase of 1 year) and insignificant no actual spatial and temporal distribution of the impacts are envisaged.

The Operation Phase

As already mentioned earlier the potential impacts anticipated and identified during the Operation Phase are:

- potential traffic issue
- impact on air quality
- noise and vibration
- impact of project on gridline electricity and vice versa
- impact of waste
- potential accidents at workplace (OHS)
- potential social issue
- potential security issue

And as already mentioned earlier all the impacts/potential impacts are generally insignificant but are long term. (This is not a big factory that spewing out dark smoke, emitting loud noise and generating large quantity of industrial solid waste and liquid waste. It is just an auto assembly plant).

With the exception of "potential traffic issue", "impact of project on gridline vice versa" and "potential social impact" the sources of all other impacts are either inside the factory or inside the factory compound. In other word, all sources are within the footprint of project site. Traffic issue, impact on gridline and potential social issue can happen beyond the foot print.

As virtually all the impact are insignificant there can be no spatial and temporal distribution of impacts regarding this auto parts assembly plant. (Say for example, if the project is a large factory spewing out large quantity of smoke into the air shed there can be certain change in temporal distribution depending on prevailing wind that blows during a certain season. For instance, the prevailing wind blows from S.W to N.E during the monsoon season and the temporal distribution of impact (smoke) will be from S.W to N.E during that season (that is beyond the footprint of the project site). The prevailing wind blows from N.E to S.W during the post monsoon season and therefore the temporal distribution of impact (smoke) will be from N.E to S.W and beyond the footprint of the project. As this auto-parts assembling plant is actually a "smoke less" factory the spatial and temporal distribution of impacts of emission are not significant.

As regards effluent is can be envisaged this way. For instance, a large factory that generates large quantity of effluent can have spatial and temporal distribution of the impact (effluent). During the dry months (pre monsoon and post monsoon month) effluent distribution will be within the factory site (at network of drainage) and at discharged point. But during the wet season (monsoon season) distribution of effluent can be beyond the project site and discharged point due to rain water influx and/or storm water.

However, in this auto-parts assembling plant it is not only a "smoke less" factory but also an "effluent less" factory as no water is used in assembling processes, Therefore, there can also no temporal distribution of effluent.

The impacts will be seen or felt only within the foot print, except the traffic, gridline and social impact.

The Decommissioning Phase

The two potential impacts are:

- potential accident at workplace (OHS)
- potential residual impact

These are also generally insignificant and temporary. The sources are within the foot print. There can be no conceivable spatial and temporal distribution of these insignificant and transient impacts.

Commitment

Myanmar Brilliance Auto Co. Ltd has made a commitment to take all the mitigation measures mentioned in this chapter, whenever and whenever necessary.

U Khin Maung San

Managing Director

Myanmar Brilliance Auto Co. Ltd

7. CUMULATIVE IMPACTS ASSESSMENT

The term cumulative impact refers to either:

- The addition of impacts from other sources (combined impact or simultaneous impacts) at the same time,

OR

- Successive addition of impacts (or incremental cumulative impacts) over a long period

Green House Effect that lead to global warming is the result of the accumulation of CO₂ (in other word cumulative impacts of CO₂) in the atmosphere from different sources all over the world.

It is necessary to understand and minimize cumulative environmental impacts in order to prevent "death by a thousand cuts".

Since the auto parts (SKD parts) assembly plant is not a factory that has substantial or serious negative impacts (smoke, dust, high level noise, large industrial wastes etc.) the term "cumulative impact" is actually out of context.

The Hlaing Thar Yar Industrial Zone (2) is not a developed industrial zone yet. It is still in the initial and developmental stage. Actually there are –factories in the adjacent and near vicinity of this proposed site. In the adjacent west of the project site is the Gymnasium, in the east and south east is the No.1 Market of the zone, and in the south is the Dong-won-m-House Co., Ltd where heavy machinery are stored. In the north is north east is Htun Nay Win Thitsa Co., Ltd and the Ocean Supermarket Center. Yangon Gem and Jewellery Sale Center is also in the vicinity. The above-mentioned gymnasium, market and enterprises are actually out of place and out of context for an industrial zone.

As the main works are only assembly of auto parts the operation of this proposed project (auto part assembly) will have only insignificant impact on the surrounding environment.

The term cumulative impact in this project context is therefore, out of context. However to befit a standard EIA report the cumulative impact, if any, will be addressed. (Over the years there can be successive cumulative impact/incremental cumulative impact from only this plant source).

Incremental or successive impacts over the years

As the assembling plant will be in operation for 30 years there will be incremental/successive impacts (incremental cumulative impacts) over the year.

7.1 Methodology and approach

Usually cumulative effects are not considered if a project has no substantial impact; say for example, if a factory or plant is a small one, or if there are no other factories or plant in the vicinity.

As the term "cumulative" implies the appropriate time to conduct CIA should be at least 5-10 years after the commencement of the Operation Phase.

Cumulative Impact Assessment (CIA) is more or less similar to EIA but only for the long term impact assessment and/or combined impact assessment.

The process of CIA can be put in this way:

- It is a process of analyzing the potential impacts and risks of the project in the context of potential effects of human activities and natural environmental and social external drivers on the chosen Valued Environmental and Social Component (VESC).
- It is a process of proposing concrete measures to avoid, reduce or mitigate such CIs and risks to the extent possible.

General process or steps for implementing CIA involves 5 steps:

Step-1 : Scoping Phase

Step-2 : Establish information or base line status of Valued Environmental and Social Components (VESC)

Step-3 : Assess Cumulative Impacts (CI) on VESC

Step-4 : Assess significance of predicted CI

Step-5 : Management of CI; plan design and information

CIA and CIM (Cumulative Impact Management) are necessary whenever there is concern that a project may contribute to cumulative impact on one or more VESC. (For example-when there is a big factory and other factories occur within this area or when more than one project of any kinds occurs within this area and impact the same VESC.)

Several methods/approaches are available for the CIA but there is no one method that could always be used.

For CIA specifically for an auto parts assembly plant project the following factors have to be considered:

- Site location, condition
- Capacity of the assembly plant
- Wastes (solid and liquid) if any, to be generated
- Land or water environment (surface and ground water) to be impacted
- Effective prevention/mitigation/remediation measures
- Any social economic impact and mitigation measures
- The predicted or anticipated environmental (physical, biological, socio-economic) situation at least 10 -20 years from now.).

In developed and industrialized the subjects of CIA and CIM have developed to an advanced phase. But actually these are the works of scholars or pure academicians that involve the application of computer programming, complex mathematical models, mathematical formulae, statistical calculations and manipulations. In short, CIA is a multi-disciplinary task that involves scientists and social scientists and is beyond the scope of this EIA report.

7.2 Cumulative impact assessment

7.2.1 Brief description and map of relevant existing and future private and public projects and development

As already mentioned above the Industrial Zone (2) is not yet a developed industrial yet. The gymnasium, the No.1 market, the Htun Nay Win Thitsa Co., Ltd, Dong-won M.House Co., Ltd, Ocean Super Market Center, and the Yangon Gems and Jewellery Sale center (already mentioned) are outs of context for the industrial zone. However, the good thing from environmental point of view, is that there will be no serious impact due to the operation of the facilities.

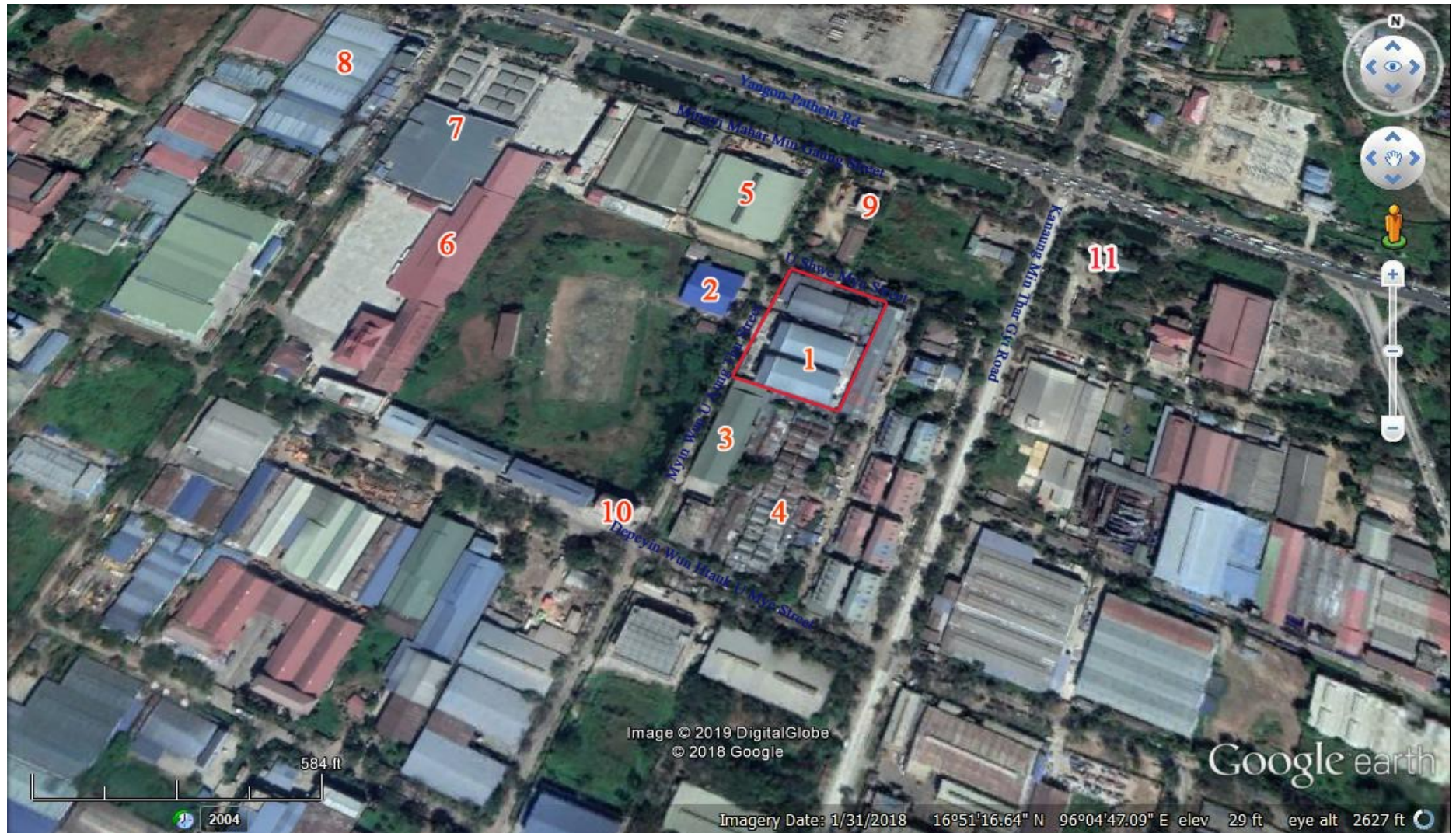


Figure-50: Satellite image of project site and other factories in its environs

- 1) Project site
- 2) Ministry of Health and Sports
- 3) Dongwon M House Co., ltd
- 4) NO-(1) Market
- 5) Htun Nay Wun Thitsar Co., Ltd.
- 6) Yangon Gem and Jewellery sales centre
- 7) Ocean Super Center
- 8) Ever Sunny Industrial Co., Ltd
- 9) Aung Kenbo Trading Co., Ltd
- 10) Angel KTV (Heaven Restaurant & BBQ)
- 11) Hlaing Tharyar Industrial Zone Management Office

7.2.2 Identification and assessment of the potential cumulative impacts on the components in the surrounding environment and the project contribution to such impact

All the facilities in the vicinities e.g. gymnasium, market, and other enterprises are not factories and therefore potential considerable cumulative impacts are not envisaged due to the operation of these facilities

The auto parts assembly plant to be operated by Myanmar Brilliance Auto Co., Ltd is actually a "smoke less", "noise less" and "waste less" factory. Therefore considerable or substantial cumulative impacts are also not envisaged or anticipated.

7.2.3 Determination of the leverage and influence that the project may have over the significant and project related cumulative impacts

In Chapter-6 of this EIA report impact and risk identifications, assessments and mitigations are already described in technical details.

There are no impacts anticipated or envisaged for the Preconstruction Phase. There are 9, 8 and 2 potential negative impact anticipated and identified for the Construction, Operation and Decommissioning Phases, respectively. As described earlier all potential impact is generally minor or negligible or insignificant.

All impacts are mitigable and if meaningful mitigation measures for each and every impact are taking in a timely manner there can be no significant cumulative impact.

Therefore, the leverage and influence that the project may have over the significance and project related cumulative impacts, if any, will be negligible.

There are also no other sources (simultaneous or combined sources) in the area. That will contribute to additional cumulative impact on the surrounding environment. None of the facilities (e.g. the gymnasium, the markets and the sale center and other enterprises) mentioned above are factories. And this auto parts assembly plant is not in competition with irrigation or any agricultural project that use large quantity of water.

However, from theoretical perspectives, incremental cumulative impact caused by this project can be considered and calculated as follows.

The auto-parts assembling plant does not generate any substantial emission like a factory with boiler/furnace and stack. However, this auto-parts assembling plant can indirectly contribute to incremental cumulative impact in the form of air pollution to the atmosphere in this way. This plant can assemble produce up to a total of 720 sedan cars (3 models) per year starting from Year 1 to Year 5. By Year 6 and onwards up to 777 sedan cars can be produced. Therefore, it is expected that by Year 30 up to 23100 cars can be produced. A sedan car has the potential for emitting 3.0-4.6 tons of CO₂ per year. Therefore 69,300 tons to 106,260 tons of CO₂ can be emitted from all the cars produced from this assembling plant.

Therefore, over a period of 30 years the incremental cumulative impact in the form of CO₂ emission by the cars produced from this plant will be 450,000 to 690,000 tons.

However, as the auto parts assembling plant does not require any raw materials/natural resources there will be no incremental accumulative loss of natural resources over the years. For instance a large cement factory requires thousands of tons of limestone as raw material for the production of cement. Therefore, the incremental cumulative impact in the form of loss of limestone over the years will be tremendous. There is no such as issue in the assembling plant.

7.2.4 Description of measures to mitigate the project, contribution to the cumulative impacts

Since no considerable or substantial cumulative impacts are envisaged or anticipated during the construction, operation and decommissioning phases of the project mitigation measures to be taken for cumulative impact, if any, are not necessary. Mitigation measures to be put in place for each and every impact/potential impact that can occur during the three phases of the project are already described in technical and meticulous details in Chapter-6, 6.2.3, and will not be repeated here. (At least there are more than 5 mitigation measures to be taken for each and every impact).

All impact/potential impacts described earlier are mitigable. Therefore, if all mitigation measures to be put in places for each and every impact are duly taken in a timely manner there can be no chance of incremental or successive cumulative impact over the years. The timely implementation of mitigation is imperative.

Commitment

The project proponent, Myanmar Brilliance Auto Co. Ltd, is committed to taking effective mitigation measures and management measures for solid wastes and liquid wastes in a timely manner so that there will be no incremental(Successive) cumulative impact over the years.

U Khin Maung San

Managing Director

Myanmar Brilliance Auto Co. Ltd

8. ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan (EMP) is the key to ensure that the environmental quality of the area does not deteriorate due to the implementation of a project. EMP involves the management of the overall environmental issue including the physical, biological, socio-economic, cultural and visual issues. EMP is a long term systematic approach from planning, development, implementation, monitoring and feedback. EMP also involves management for quality of the project.

The overall EMP includes planning and design of an environmentally friendly auto parts assembling plant that fully utilized eco-friendly machinery, equipment and vehicles that emit less smoke, lower noise level, and those that are fuel and energy efficient; and also the conservation of water and recycling of water and waste as far as possible. EMP covers so many aspects of the project it is difficult to consider all the aspects of EMP.

The EMP is an essential tool for ensuring that mitigation of the negative impacts and enhancement of the positive impacts is undertaken effectively throughout the life of the project. An EMP will ensure the best available technologies (BATs) and best environmental management practices are pragmatically, efficiently and cost-effectively implemented.

8.1 Project description by project phase

As already mentioned earlier this project is for the construction and operation of an auto assembling plant for assembling, manufacturing and sales of motor vehicles in Myanmar. These will be again briefly described again as below.

The project is for the construction and operation of an auto-parts assembling plant at the Industrial Zone (2) of Hlaing Thar Yar Industrial Zone, Yangon. The technology is SKD technology.

The area of the project site is 2.420 acres.

The estimated budget is Ks 4177.9393 million (including USD 0.54995 millions).

The proposed assembling plant has the capacity of assembling and producing 720 sedan cars (three models) in Year 1. From Year 6 and onwards 777 cars will be produced. All cars produced are left hand drive type.

The raw materials to be used are auto-parts manufactured in China by Brilliance Automotive Group Holding Co., Ltd, Shenyang, China. These auto parts will be imported and assembly at the project site of Myanmar Brilliance Auto Co., Ltd. A great variety of auto parts have to be imported. Each sedan can require 9 main auto components or parts manufactured in China.

For the operation of this auto part assembly plant altogether various items of manufacturing and equipment have to be also imported.

Water is sourced from underground water at a depth of 100 feet. (Auto parts assembly plant needs little water. As staffs are not camped inside the plant compound there will be also little domestic uses of water).

Electricity is sourced from National Gridline Electricity readily available for this Industrial Zone.

About 100 construction worker were deployed during Construction Phase. 219 staffs (including 5 Chinese technicians) are employed during the Operation Phase.

The salaries for local staffs range from Ks 160,000 to Ks 1,000,000. Salaries are for foreigner range from USD\$ 800 to 1000.

Working hours is 8 hours/day, 40 hours/week, 250 working days/years.

All cars assembling and produced will be for local markets.

1. The Preconstruction Phase/planning phase/design Phase

The works involve planning, designing and also variety of official paper works, that is, bureaucratic procedure.

The planning involves contacting Chinese company and hiring Chinese experts and technicians for designing the auto-parts assembling plants and facilities and for the procurement of machinery and equipment (those that are ecofriendly). Chinese experts and technicians are also required for the smooth and efficient operation of the auto-parts assembling plant, maintenance and also for technology transfer and training of Myanmar nationals.

A variety of official paper works involved many ministries and departments are to be undertaken for the official approval of the proposed project and also for importing raw materials (auto parts), machinery and equipment.

From environmental perspective, the preparation and writing of scoping report and EIA report and submitting the report to the environmental authority, the ECD.

The phase last for 6 months.

2. The Construction Phase

After approval from the relevant authorities construction works begin. A construction company is hired for the construction of the facility under the supervision of Chinese experts. The main building and structures include:

- the main auto-parts assembling plant
- the office
- the warehouse and stores
- housing for some staff (outside compound) and
- canteen

In addition there is the painting/coating room, shower test room, inspection room, road test area, parking area etc. All construction works can be categorized into: preparation work, earth work and foundation work, structural construction (major construction work) and finishing/final touches.

The Construction Phase last for one year.

3. The Operation Phase

After completion of all construction works and installation works the Chinese experts will test run the plant.

Then the routine operation of the assembling plant will go on and continue for a long time up to the end of the Operation Phase (30 years).

The Chinese experts and technicians will educate, train and supervise Myanmar staffs for good engineering practice, good working practice and good safety practice in the daily routine operation of the assembling plant for a certain period. Training in maintenance works will be also provided, and there were be a transfer of technology to Myanmar staff.

The routine works during the long Operation Phase will involve the regular import of raw materials (auto-parts) from China in batches and the daily routine assembling, installation and production of auto vehicles. Moreover the quality control work and testing works will be conducted. Finally the finished products (the assembled vehicles) will be ready for market.

4. The Decommissioning Phase

At the end of the Operation Phase the auto-parts assembling plant and facility will be isolated and shutdown.

All the buildings and structures will be dismantled; all the machinery and equipment will be dismantled.

Old construction materials, machinery and equipment that are still useable and saleable will be put for sales; those that are not saleable will be given away to locals who want them or disposed at the landfill. Iron scraps will be sent to smelters.

The soil, if contaminated (with fuels) will be removed. The air, water and will be tested for the last time to ensure that the ecology of the site is not deteriorate. Technicians will be hired for testing the air, water and soil quality.

A decommissioning and rehabilitation contractor and party will be hired for tidying up the site and rehabilitation of the site.

This phase will not last for 1 year.

8.2 Project environmental, socio-economic and where possible health policy, legal requirement and institutional arrangements

The project's environmental, socio-economic policies are already described earlier in Chapter-3 of this report.

Commitments made by the project proponent and consultant firm are also already mentioned in Chapter-3 and at the end of all chapters.

Legal requirement and institutional arrangement for ECC, ECD and the project proponent are also mentioned earlier in Chapter-3 of this report.

In this section of Chapter-8 the Health Policy as well as the institutional arrangement of National Health Committee (NHC) is described.

8.2.1 Health policy

The health policy of the Nation is "Health for All".

The policy guidelines for health service provision and development have been provided in the constitution. **Section-28** of the constitution of the Republic of Union of Myanmar (2008) States that:

The Union shall:

- i) earnestly strive to improve education and health of the people

Section 367:

Every citizen shall, in accord with the health policy laid down by the Union, have the right to health care.

National Health Policy (1993)

The National Health Policy was developed with the guidance of the National Health Committee in 1993.

The National Health Policy has placed "Health for All" goal as a prime objective. There are 15 main points regarding the National Health Policy (1993). The first main point No.1 is:

- to raise the level of health of the country and promote the physical and mental well-being of the people with the objective of achieving "Health for All"

The main point, No.9 concerns environment which states:

- to intensify and expand environmental health activities including prevention and control of air and water pollution

Health Legislation

Certain portion of health legislation also addresses environmental sanitation and communicable disease prevention, as far as environmental affair is concerned. That includes the control of disposal of human and other wastes, concerns for water purity and hygiene of housing and food sanitation.

Certain health legislation that are relating in one way or another, to environmental affairs are:

- The Public Health Law (1972)
Which includes environmental sanitation and cleanliness of food, among others
- Prevention and Control of Communicable Diseases Law (1995)
This law describes measures to be taken in relation to environmental sanitation, among others.
- The Control of Smoking and Consumption of Tobacco Product Law (2006)
This law describes the creation of tobacco smoke free environment, among other. This is of relevant at the work place and project site where many employees are working.

Health Development Plan and Myanmar Health Vision 2030

This long term plan has been drawn up to meet any future health challenge. This plan has 9 main objectives and one of them is:

- to develop a health system in keeping with the changing political, socio-economic and environmental situations

8.2.1.1 National Environmental Health Agenda

Environmental Health is actually one of the integral parts of Environmental Protection and Conservation aspect. EIA, IEE and EMP works normally encompass the physical, biological, socio-economic, cultural and visual components of the surrounding environment. The third component, that is socio-economic, includes public health component, (mortality and morbidity, diseases, accident and injuries etc.).

The Occupational and Environmental Health Division under the Department of Public Health is the focal point agency concerning Occupational and Environmental Health aspects.

This Department (Division) is involved in:

- environmental monitoring e.g.- air quality, water quality
- work place assessment e.g.- air quality, waste and water quality, heat stress, light, noise level

Health Impacts Assessment (HIA) and Social Impacts Assessment (SIA) are actually important parts of environmental protection and conservation works.

8.2.1.2 Environmental, Health and Safety (EHS)

The International Finance Corporation (IFC), a division of World Bank, has prescribed EHS general guidelines for general industrial practices. It provides guidance to users on EHS issues in doing their business.

The applicability of the EHS guideline shall be tailored to the hazards/risks or impacts identified as the result of EIA.

The IFC's EHS General Guidelines encompass Environmental, Occupational Health and Safety (OHS) and Community, Health and Safety (CHS).

Environmental

This main section includes:

- a) air emission and ambient air quality
- b) energy conservation
- c) waste water and ambient water quality
- d) water conservation
- e) hazardous materials management
- f) waste management
- g) noise management and
- h) contaminated land management

Occupation Health and Safety (OHS)

The Occupation Health and Safety guideline by IFC encompasses:

- general facility design and operation
- physical hazards
- chemical hazards
- biological hazards
- radiological hazards
- Personal Protective Equipment (PPE)
- special hazard environments
- communication, training and monitoring

Community Health and Safety (CHS)

The Community Health and Safety guideline by IFC encompasses:

- water quality and availability
- structural safety of project infrastructure
- life and fire safety L&FS
- traffic safety
- transport of hazardous materials and disease prevention
- emergency preparedness and response

8.2.1.3 Occupational Health and Safety (OHS) by ILO

OHS is defined by International Labour Organization (ILO) as:

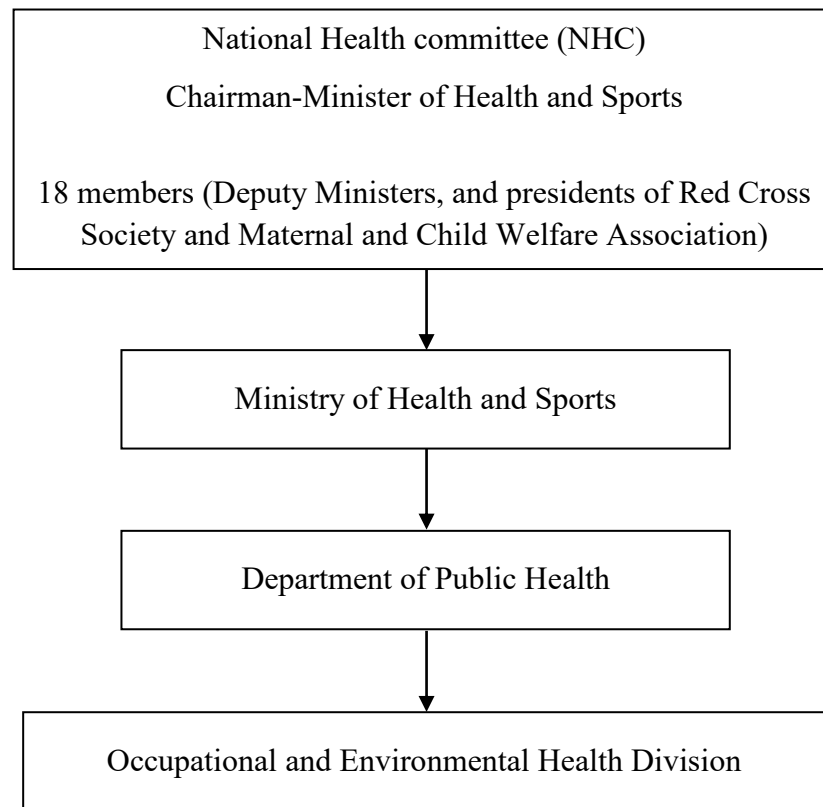
- The science of the anticipation, recognition, evaluation and control of hazards arising in or from the work place that could impair the health and well-being of workers taking into account the possible impact on the surrounding communities and the general environment.

Some core principles of OHS

- All workers have rights and employers must ensure that:
 - work should take place in a safe and health working environment;
 - condition of work should be consistent with worker's well-being and human dignity;
- Occupational safety and health policy must be established
- Social partners (employers and employees) and other stakeholders must be consulted
- OHS programmes and policies must aim at both prevention and protection
- Continuous improvement of OHS must be promoted
- Health promotion is a central element of OHS practices
- Compensation, rehabilitation and curative services must be made available to workers who suffer occupational injuries, accidents and work related diseases
- Education and training are vital components of safe, healthy working environment
- OHS policy must be enforced

8.2.2 Institutional Arrangement of National Health Committee (NHC)

Institutional Arrangement (organization)



The National Health Committee (NHC) is an umbrella organization comprising 18 members from 9 ministries and one member of Nay Pyi Taw Council, and presidents of Red Cross Society and Maternal and Child Welfare Association.

The Chairman of NHC is the Union Minister of Health and Sports while the Vice Chairman is the Union Minister of Labour. 9 deputy ministers under 9 ministries, a member of Nay Pyi Taw Council, the president of Red Cross Society, and the presidents of Maternal and Child Welfare Association are also members of NHC.

The Deputy Minister of Health and Sports is the secretary while the Director General of Department of Health Planning, is the Joint secretary.

The Occupational and Environmental Health Division (OEHD)

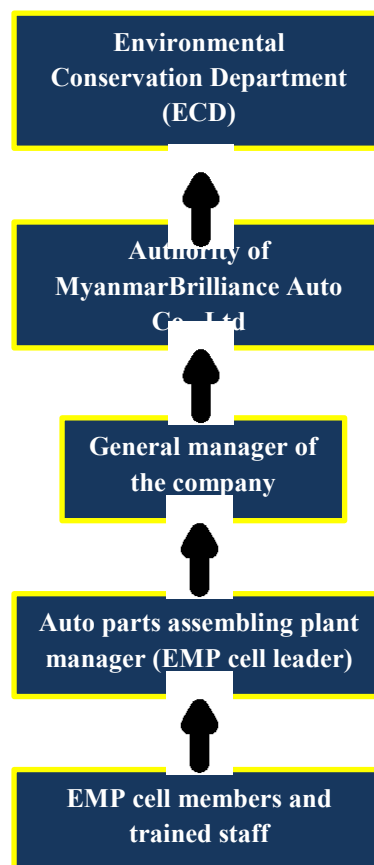
The Occupational and Environmental Health Division (OEHD) under the Department of Public Health is the focal agency involves in environmental and health affairs.

The occupational and Environmental Health Division is involved in implementing Environmental Health Programme in the country.

At the moment it is involved in:

- Environmental monitoring: on air quality and water quality
- Medical monitoring: health assessment on workers (periodic medical examination, performing physical examination, chest X-ray, biomarker survey on workers)
- Work place assessment: eg- on air quality, waste (solid) and waste water, heat stress and light, noise level, soil quality, water sanitation and hygiene etc. in certain factories.
- Assessment of environmental health probably related to climate change and general health impact assessment.

Institutional Arrangement of Myanmar Brilliance Auto Co., Ltd for the implementation of EMP



To execute EMP a nucleus organization (EMP) cell is organized. The cell comprises one EMP cell leader and 4 EMP cell members and two local people.

There are also specially train staffs for working with EMP cell members.

EMP cell

An EMP cell (a small nucleus organization) is formed for the effective implementation of EMP and MP. The cell members include the manager, who is the EMP cell leader, two engineers and two technicians. This EMP cell is also the monitoring committee. Two local people are added to this monitoring committee.

Myanmar Brilliance Auto Co., Ltd has formed the EMP cell as follow:

Sr no.	Name	Designation	Responsibility
1.	U Htay Lwin	Manager	EMP cell leader
2.	U Yan Naing Tun	Engineer	Cell member
3.	U Zwe Thu Ya Aung	Engineer	Cell member
4.	U Myo Zaw Aung	Technician	Cell member
5.	U Aung Soe	Technician	Cell member
6.	U Soe Lwin	Yar Eain Moo	Cell member
7.	U Aung Kyaw Htoo	Local	Cell member

The main task of EMP will be monitoring works, e.g. compliance monitoring, monitoring mitigation activities, monitoring the effectiveness of EMP and mitigation measures etc.

The monitoring works will cover the Operation Phase and Decommissioning Phase of the project life as the project is already in operation. The EMP cell leader (monitoring committee leader) and members are responsible for the holistic execution of the EMP and monitoring programme.

20 employees will be specially trained for implementation of EMP.

They will be specially trained for doing this. As for monitoring specific parameters e.g. air quality, water quality and soil, technicians or experts from Yangon will be hired to do the analysis works.

It is not pragmatic for the EMP members, especially the five employees, of the company to get involve solely in EMP and MP activities because their main task is the operation of factory (production works) while EMP and MP activities are actually supplementary works. The company will not be in a position to set aside 20 well-paid employees just to engage in EMP or MP work alone; it will otherwise result in under-staffed situation for the project. Therefore the EMP cell leader, members and assistants have also to get involved in the routine management and operation work (production works) as far as possible. An additional 4- 5 employees will be deployed as assistant EMP cell members.

Responsibility

The duties and responsibilities of EMP cell members are as follow: -

1. U Htay Lwin (Manager)

- (i) He will doubles as EMP cell leader.
- (ii) Overall environmental officers; responsible for all social and environmental issues arising from the activities at the assembly plant.
- (iii) Monthly meeting with all EMP cell members and 20 specially trained workers.
- (iv) Gather monthly information/data from 4 full time EMP cell members.
- (v) Writing monthly report and submit the report to the company's authority.
- (vi) Submit a special quarterly report to the company's authority.

2. U Yan Naing Tun (Engineer) and EMP cell member

- (i) Designated as environmental security officer.
- (ii) Responsible for all environmental issues arising from the activities at the assembly plant.
- (iii) Supervision of EMP activities including monitoring works and execution of mitigation measures.
- (iv) Also participate (personally involve) regularly in EMP, MP and mitigation works.
- (v) Provide monthly data/information to EMP leader (Myanmar).

3. U Zwe Thu Aung (Engineer) and EMP cell member

- (i) Designated as work place security officer.
- (ii) Responsible for all social issues arising from the activities at the assembly plant.
- (iii) Co-supervision of EMP activities including monitoring works and execution of mitigation measures.
- (iv) Regularly supervize activities at work places.
- (v) Also participate regularly in EMP, MP and mitigation works.
- (vi) Provide monthly data/information to EMP cell leader.

4. U Myo Zaw Aung (Technician)/EMP cell member

- (i) Designated as liaison officer for dealing with locals
- (ii) Responsible for social issues, if any, coming from the local community.
- (iii) Co-supervision of EMP, monitoring works undertaken by 10 trained workers.
- (iv) Also participate in EMP, and MP works.
- (v) Provide monthly data/information to EMP cell leader.

5. U Aung Soe (Technician)/EMP cell member

- (i) Co-supervision of EMP, especially mitigation works undertaken by 10 trained workers.
- (ii) Also participate in EMP especially all mitigation measures taken.
- (iii) Supervize and participate in monitoring of water, fuel and electric energy consumption; regulate consumption.
- (iv) Provide monthly data/information of EMP cell leader.

6. U Soe Lwin (Ward Administrator)/EMP cell member

- (i) Appoint to monitor the transparency regarding the activities at the assembly plant
- (ii) Work as part-time in environmental monitoring works with U Yan Naing Tun (no fixed working days or hours).
- (iii) Monthly regular visual inspection of activities.
- (iv) Provide information about the assembly plant to follow locals on a regular basis every 2 or 3 months.

7. U Aung Kyaw Htoo (Local)/EMP cell member, part time

- (i) Appoint to monitor the transparency regarding the activities at the assembly plant
- (ii) Work as part-time in environmental monitoring works (no fixed working days or hours).
- (iii) Monthly regular visual inspection of activities.
- (iv) Provide information about the assembly plant to follow locals on a regular basis every 2 or 3 months.

8. 20 specially trained workers:

10 to be fully involved in monitoring work

10 to be fully involved in taking mitigation work.

The EMP cell members and 20 specially trained workers will also involve in regular works (production works) as practical as possible.

8.3 Summary of impacts and mitigation measures

Impacts and mitigation measures to be put in place for each and every impact have been described in technical details earlier in **Chapter-6** and is summarized here again in tabulated form.

They are again summarized as follow:

Mitigation/corrective measures to be taken during the Construction Phase

1. Mitigation for impact of mobilization and preparation activities for construction work

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- carefully plan for mobilization, storage and preparation works
- have logistic plan for heavy trucks loaded with building materials
- systematically store or pile up all the building materials within the premise
- ensure that the wall or fence is reliable and can effectively prevent theft
- prevent the spilling over of the building materials outside the premise or on nearby roads, No.5 Patheingyi-Yangon Highway.

2. Mitigation for impact of Occupational Health and Safety issue (potential accidents at workplace)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for zero accident
- set up "Safety First" sign boards at places where workers can see easily
- create safety condition for all workers; create accidents free environment
- educate, train and supervise construction workers for good working practice, good engineering practice, good safety practice and good house-keeping practice so that these good practices will be ingrained in each and every worker's mind
- provide adequate Personnel Protection Equipment (PPE) where necessary
- keep first aid kits well-stocked with medicine and drugs
- plan and manage for effective emergency response
- provision of firefighting equipment and tools,
- provision of adequate sanitation – eg. toilets, clean water,
- apply safe and effective procedures for storages of fuel and chemicals; display warning sign/pictogram

3. Mitigation for impact on air quality

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan in the Pre-construction Phase for the procurement of equipment, vehicles that emit less smoke (to be certified for emission compliance)
- keep equipment and vehicles well-maintained, well-operated and well-lubricated
- avoid open burning of debris
- spray water for suppression of dust
- restrict vehicular movement; maintain road clear of mud and dirt
- provide PPE to workers who are exposed to smoke or dust for long period

4. Mitigation for noise and vibration

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan in the Preconstruction Phase for procurement of equipment, machinery and vehicle that emit lower noise level (that is eco-friendly equipment vehicles).
- avoid construction works at night;
- limit transportation during unsocial hours to reduce noise.
- limit the speed of vehicle to mitigate noise as well as vibration.
- if possible install silencers, noise abators on inlet and outlet of fans to reduce noise level.
- keep machinery and equipment well-maintained, well-operated and well lubricated to reduce noise level.
- design stable foundation to mitigate vibration; if possible install vibration absorbers.
- provide PPEs, ear plugs, ear muffs to workers exposed to high noise level.

5. Mitigation for potential impact on soil

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- try to avoid potential destruction of soil profile
- separate top soil (for later creation of green belt) from sub-soil (for construction work-earth filling etc.)
- draw up a plan for prevention and mitigation of contamination of soil

- prevent spill of fuel oil and chemicals; clean up spill with absorbent promptly (do not wash down with water)
- properly instruct workers with respect to handling of fuel and chemical and cleanup of spills
- implement soil conservation techniques to prevent soil erosion (during rainy season)
- Prevent wash water from carrying earth and materials into drainage system
- the ground should not be laid bare for long period during the rainy season
- dispose all waste materials (from construction work and from domestic use) at approved land fill
- train workers for good housekeeping; do not litter

6. Mitigation for potential impact on water

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for the conservation of water
- also plan and manage to prevent the pollution of natural pond water (no surface water to be impacted)
- do not use water more than necessary during the Construction Phase
- discipline workers for the conservation of water;
- monitor the daily use of water for construction
- avoid the spillage of fuel oil which will contaminate the soil and eventually ground water;
- if there is spillage clean up spill with absorbent promptly (do not wash down with water)
- bund fuel depot to prevent spreading of fuel oil

7. avoid disposing of waste (solids and liquids) into water body if any

8. Mitigation for impact of waste (construction waste)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a plan for management of solid waste
- avoid open burning of debris
- clear the ground regularly; ensure dumping at approved landfill
- educate workers for good housekeeping; do not litter
- plan for reuse and disposal of construction tailings and left overs
- at the end of Construction Phase put up construction spoils, left over materials for sale
- hire a contractor and party for tidying up the site after Construction Phase

9. Mitigation for potential social impact/issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a plan for management of social illness and anti-social behaviour
- educate and train workers on discipline and code of conduct
- try to build good relation with the locals
- conduct public consultation so that the locals will have a positive perception on the project
- educate the workers for appropriate behavior when dealing with locals; to respect their culture and tradition
- manage misbehavior and social illness of workers
- deal with workers on a fair and square basis
- maintain the good relation between the company and the locals
- provide adequate welfare programme for workers

10. Mitigation for potential security issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a security management plan
- campaign against social evil to ensure security and order
- undertake effective walling of the compound
- set up security gates; deploy adequate guards or watchmen
- store building materials under lock and key as far as possible
- apply punitive measures, such as suspension or termination of employment if necessary
- provide ID cards for all workers for easy identification

Mitigation/corrective measures to be taken during the Operation Phase

1. Mitigation for potential traffic issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a traffic management plan
- schedule the logistics; avoid rush hours; avoid road with heavy traffic road; if possible

- educate drivers, staffs (motorists and motorcyclists) for defensive driving; drive at reduced speed; follow road regulations
- set up signage or traffic sign at the entrance of the site and suitable places
- avoid overloading of truck, or any vehicles
- regular maintenance of cars and motor bikes
- keep a log book for each vehicle
- aim to achieve zero road accident

2. Mitigation for impact on air quality

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a plan and implement for air quality management for the long term Operation Phase
- spray water adequately to suppress dust
- Also deploy sweepers to clean dirt
- reduce the speed of vehicle to reduce dust generation
- avoid open burning of solid waste
- use well-maintained and well-operated equipment and vehicles
- use vehicles and machines that emit less smoke and use less fuel (procure ecofriendly vehicles and machinery in the first place)
- conserve fuel and prevent unnecessarily emission of gas (smokes)
- plant trees and create green zone; trees will sequestrate CO₂ in the smoke, trees will also trap dust.
- provide adequate PPE such as face masks, nose and mouth covers to workers

For the management of air quality inside the assembling plant:

- plan for good ventilation and natural air flow as far as possible
- if possible, designate "smoking zone" in one part of the factory

3. Mitigation for noise and vibration

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan for effective management of noise and vibration
- restrict or limit vehicular movements
- plan for appropriate choice of machinery and vehicles (that emit low noise level); method of working, efficient material handling

- installation of noise abating devices eg- silencers, mufflers at air inlet and outlet of fan and compressor; place noisier sources far away in overall design
- well-operated, well-maintained and well-lubricated vehicles and machinery generate lower noise level and prevent undesirable noise level
- develop green belt (plant trees) inside the compound; trees abate noise and serve as noise sink (pollution sink)
- create smooth road surface as far as possible to mitigate vibration due to vehicular movement
- create suitable foundation design for machinery and equipment (eg. grinder, compressor and pumps etc.) to mitigate vibration
- if necessary install vibration absorbers or vibration abatons
- provide adequate PPE eg- ear muffs, ear protectors to workers exposed to long hours of high noise level; conduct regular noise monitoring to ensure that the levels are within noise exposure standard (not higher than 85-90 dBA)especially for generators and pumps

For the management of noise level inside the assembling plant:

- fit mufflers or silencers on all noisy machines and equipment especially inlet and outlet, a fans, etc. if necessary.
- position, enclose and isolate noisier equipment, if possible.
- minimize sound level inside the plant as far as possible
- provision of PPE for workers where necessary (ear plugs and ear muffs)
- if possible, enclose noisy machines to isolate workers from the noise
- limit transportation during unsocial hours to reduce noise
- conduct a noise survey and mark out dedicated areas with signage where there are elevated noise levels
- reduce vibration exposure time, where possible.

4. Mitigation for impact of project on gridline electricity and vice versa

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- acquire conservation of energy knowledge in the planning and design phase of the assembling plant.
- plan and manage for the conservation of electricity energy
- design the building to take advantage of sunlight and air flow
- ensure that the consumption of electricity be in the work frame as stated earlier
- monitor electricity consumption weekly

- use electrical equipment, devices that are energy efficient, particularly use energy efficient equipment associated with heating, ventilation, air conditioning and cooling (HVAC)
- use day light as much as possible
- ensure that the backup generator is operational immediately after power outage or use automatic backup system
- liaise with electricity authority from time to time

5. Mitigation for impact of wastes (solid & liquid)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and implement the management of wastes

For liquid wastes

- if necessary, treat all the waste water before discharge into the sewage system (the readily available chemical water treatment is chlorine at 5 mg/l or Monochloramine at 3 mg/l which are effective and cheap). This is not necessary at all as the assembling plant will produce no effluent; no water is required for assembling works; small quantity will be necessary for car shower test.
- monitor waste water drainage from time to time, especially for domestic waste water and storm water.
- The domestic black water (from toilet) will end up in septic tank and soak pit (no need for vacuum truck to remove the sewage)
- comply with the NEQEG guideline values (for effluent) prescribed by ECD

For solid waste in general:

- dispose the solid wastes outside the factory at an approved landfill or dumping site
- avoid open burning of debris or trash in the compound

For solid waste inside the plant and at the office and messing room, at housing, etc. (domestic waste).

- implement organic-waste composting of some wastes from the kitchen for organic fertilizer to apply in lawn, and green
- dispose waste only after all waste prevention and possible recycling strategies have been explored (adhere to the principles of 5 Rs, reduce, reuse, recover, recycle and redesign as far as possible)
- dispose wastes only at approved landfill
- return packaging materials such as plastic, paper and drums etc. to supplier for reuse; recycle packaging materials whenever possible
- give priority to reduction of solid waste, recovery and reuse

6. Mitigation for Occupational Health and Safety issue (Potential Accidents at workplace)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- draw up a comprehensive plan and manage for the safety working conditions for workers; create a safety working conditions at the work place.
- educate, train and supervise workers for good working practice, good engineering practice, good safety practice and good housekeeping practice so that all these good practices are ingrained in their minds and become good habits; especially train them for corrects use of machinery and safety devices; correct lifting technique; where possible install mechanical lifting aids. e.g. forklift,
- educate, train and supervise them for skills; for handling and operation of equipment; handling and application of fuel; especially harmful one
- educate them for good health practice, hygiene, environmental awareness and occupational health hazards, and other hazards awareness.
- all workers must pass a medical examination prior to employment
- conduct yearly medical checkup for workers
- provide free Medicare for workers
- compensation, rehabilitation and curative services shall be made available to workers who suffer occupational injuries, accidents and work related diseases
- maintain and inspect storage unit regularly
- keep all machinery, equipment and vehicles well-maintained, well-operated and well-lubricated; and also well-lubricated for sophisticated equipment.
- check on automatic safeguards on machines to prevent accidental injuries
- beware of all the common accidents and common injuries mentioned earlier that used to happen (as well as potential accidents and injuries) and implement a prevention, protection and mitigation measures for each
- provide adequate PPEs – outfits, boots, helmet, gloves, face mask, goggles, ear muff, ear plug, etc. also tools such as sit – stand tools for workers who have to stand for long hours
- also provide adequate First Aid Kits well-stocked with medicines & drugs
- provide adequate sanitation facility e.g. toilets, clean water, baths room etc. for workers
- minimize manual labour; maximize mechanical labour

7. Mitigation for potential social impact

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- try to build and maintain good relative with the locals; avoid friction between the locals and the company as far as possible.
- conduct public consultation from time to time so that the locals will have a positive perception of the project
- educate workers for appropriate behaviours when dealing with locals; to respect their culture and tradition
- discipline workers for work place regulation and code of conducts including social conduct
- take disciplinary action/punitive action for wrong doer eg. suspension, discharge
- prevent and manage disputes, quarrels, brawls among workers and also between workers and locals.
- strictly prohibit the drinking of alcohol during working hours; totally ban the use of narcotics
- deal with workers on a fair and square basis – (not overworked, underpaid)

8. Mitigation for potential security issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for site security
- ensure that the fence/wall is secure
- do not let the assembling plant become a soft target for terrorists
- implement strict security as far as possible
- deploy adequate security staffs; security guards at gate; inside the plant and at office
- perform security check on each and every one entering and leaving the plant and compound.
- in addition to worker suits issue Identity Cards for all employees for easy identification
- campaign against social evil to ensure security and order

Mitigation/corrective measures to be taken during the Decommissioning/Rehabilitation Phase

1. Mitigation measures for potential accident at workplace (OHS issue)

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- plan and manage for safe and effective decommissioning work
- hire a decommissioning contractor and party for the demolition of buildings/structures and dismantling of equipment; and also for tidying up the site
- dispose those that are no longer usable at the approved landfill
- obsolete machinery and equipment shall be made into scrap and sent to smelting mill
- put up for sale materials and machinery that are still usable and saleable
- remove soil contaminated by fuel spills, if any, and dispose at the city landfill

2. Mitigation for potential residual issue

Myanmar Brilliance Auto Co., Ltd will take the following measures:

- clear and remove all residuals
- remove all soil contaminated by the fuel oil, if any
- test the soil for the last time to ensure that no contaminants remain
- test the water and air for the last time for contamination
- restore the plot and soil to its original condition
- vegetate or rehabilitate the plot

8.4 Overall budget for implementation of the EMP

Since EMP involves the management of all environmental issues during the three phases of the project there has to be adequate budget of the implementation of EMP. This is particularly true for the long operation phase, the most important phase of the project life.

This budget will be only for the implementation of EMP but it will cover the procurement of certain equipment and devices for uses in monitoring, and certain materials for uses in emergency eg. PPEs, fire fighting and first aid facilities etc.

In order to effectively execute EMP and MP the company has set a side 2% of the budget (Ks 83,558,786) for the EMP fund which will cover the initial cost and recurring expense for the implementation of the EMP and MP.

Allotment of EMP fund

The sub-budget allotted for each programme under EMP and MP are as follows: -

- Cost of organizing EMP 2% of EMP fund (Ks 1,671,175)
- Cost for actual execution and dissemination of EMP in the forms of:
 - (a) Taking mitigation measure 25% of EMP fund (Ks 20,889,696)
 - (b) Monitoring actions 25% of EMP fund (Ks 20,889,696)
- Cost for partial procurement of equipment and materials 20% of EMP fund (Ks 16,711,757)
- Cost for capacity building and training 7% of EMP fund (Ks 5,849,115)
- Cost for emergency/contingency (for probable emergency cases) 10% of EMP fund (Ks 8,355,878)
- Cost for reporting, documentation work 8% of EMP fund (Ks 6,684,702)
- Miscellaneous (including casual fees for two locals, who are EMP cell members) 3% of EMP fund (Ks 2,506,763)

The EMP fund cannot cover the whole life of the project of 30 plus years. The fund is simply seed money; as time goes on no more will have to be added to the fund. Labour cost will be kept at a minimum. Only staff will be involved in the implementation of EMP and MP. Staff will be first trained for the purpose.(there are no EMP contractors in Myanmar yet)

Procurement for equipment and materials that are essential for the execution EMP such as firefighting equipment and accessories, Personnel Protection Equipment (PPEs), First Aid Kit and medicine and drugs etc. will be from the main projects budget, not the EMP budget.

Most of the EMP fund will be used for the implementation of mitigation measures (which are integral part of EMP) and implementation of MP (which is also integral part of EMP).

The above-mentioned cost estimation for EMP fund is based on the current unit price. Because the project will be implemented over many years (even decades) price fluctuation and inflation will be unavoidable. A contingency amount shall be prepared for any unavoidable event in the future. Unfortunately, if a major accident happens the EMP fund has to be greatly increased.

8.5 Management and monitoring sub-plan by project phases

The project is already in the operation phase. Therefore sub-plans for preconstruction and construction phases are omitted. Only sub-plans for Operation Phase, Decommissioning/Mine Closure Phase and Post Closure/Rehabilitation Phase are described.

These sub-plans address such environmental and social issues as:

- noise and vibration
- waste
- hazardous waste
- waste water and storm water
- air quality
- odour
- chemicals
- water quality
- erosion and sedimentation
- biodiversity
- occupational health and safety
- community health and safety
- cultural heritage
- employment and training
- emergency response plan and
- traffic

(As prescribed in EIA procedure, Notification No.616/2015).

8.6 Content of each Sub-Plan

As the project is already in operation Sub-plans for Preconstruction and Construction Phase are omitted.

For pragmatic purpose Sub-plans for Operation and Decommissioning Phase are outlined as follow.

I. During the Operation Phase

These are summarized as follow:

1. Sub-plan for Noise and vibration

Objectives:

- To mitigate/reduce noise and vibration levels; to create a safety work place; not to cause nuisance to the local.

Legal requirement:

- Comply with NEQEG (emission) guideline, 2015; Code No.1.3.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below:

Implementation schedule:

The sub-plans will be implemented during the Operation Phase.

Management action

Motor parts assembling plant does not generate high level noise. However, for the safe side the following management actions will be taken.

- Procure eco-friendly machinery that emits low noise level in the first place.
- Restrict vehicular movement to reduce noise and vibration.
- Keep machinery and vehicles well-maintained and well-lubricated to reduce noise level.
- Develop green belt as noise pollution sink (abate noise).
- To mitigate vibration, ensure that foundations for machinery are stable to reduce vibration.
- Create smooth road surface to mitigation vibration by trucks movements.
- Provide PPE, ear muffs, where necessary, for workers who are exposed to relatively high level noise, if any.
- Conduct daily inspection of noise condition.
- Implement GRM, so that locals can file complaints regarding noise and vibration.
- Regularly monitor effectiveness of mitigation measures taken.

Monitoring plan

Parameter to be monitor : dBA during day and night time.

Monitoring point

- Inside factory compound : N. Lat. 16° 51' 19.71" and E. Long. 96° 04' 48.04"
- At suspension area : N. Lat. 16° 51' 21.10" and E. Long. 96° 04' 49.65"

Frequency – Semi-annually (have to hire technicians)

Also casual monitoring daily or weekly.

Also monitor effectiveness of mitigation measures taken.

Budget and responsibilities

Ks 170,000 (once off cost)

Responsibilities – hired technicians and EMP cell members.



Legend

- 📌 Noise
- 📌 Vibration

Figure – 51: Satellite image showing monitoring point of management and monitoring sub-plan for noise and vibration

2. Sub-plan for Waste

Objectives:

- To mitigate/reduce industrial and domestic wastes; not to pollute the environment; to create a healthy environment.

Legal requirement

- Comply with Environmental Conservation Law, 2012 (Section 14, 15, 31) and Environmental Conservation Rules, 2014 (Rule 69) (to discharge wastes in accord with environmentally sound method).

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

Motor parts assembling plant does not generate any substantial industrial waste. Moreover no substantial domestic wastes are produced as workers are not camped inside the plant premise. However on the safe side the following management actions will be taken.

- Educate and train workers for the proper handling of wastes; educate them for good housekeeping and minimization of waste as practical as possible.
- Separate wastes into recyclable and non-recyclable ones; dispose only those that are non-recyclable.
- Landfill wastes that cannot be recycled or reused. (The landfill is inside the premise; there is no official landfill for the village).
- Avoid open burning of solid wastes.
- Monitor waste management weekly and monthly.
- Monitor effectiveness of mitigation measures taken.
- Implement GRM (locals can file complaint regarding solid wastes).

Monitoring plan

- Monitor (visual inspection) of waste regularly
- Monitor record book or log book of solid wastes (industrial and domestic) generated weekly or monthly; quantity and mode of collection; tackle issue, if any promptly.

Monitoring point

- company's waste bin: N. Lat. 16° 51' 19.73"; E. Long. 96° 04' 48.05".

Frequency – weekly, monthly.

Also monitor effectiveness of mitigation measures taken.

Budget and responsibilities

Free of charge (all EMP cell leader and members are well-paid employees of the factory no extra fees for them; no EMP contractor exist in Myanmar yet, for hire).

Responsibilities – EMP cell leader and EMP cell members.



Legend

 waste

Figure – 52: Satellite image showing monitoring point of management and monitoring sub-plan for waste

3. Sub-plan for Hazardous waste

Objectives

- To control, and manage hazardous wastes, if any, to operate an ecofriendly business.

Legal requirement

- Comply with Environmental Conservation Law, 2012 and Environmental Conservation Rules, 2014.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

Actually no real hazardous chemical or substances are used. Used fuel oils, engine oil, used filter bags, old lamps and batteries are considered hazardous.

- Collect used oil and engine oil in old drums and give away to recyclers.
- Discard used filters, old lamps; old batteries at the approved land fill of the company.

Monitoring plan

- Monitor the storage, handling and uses of fuel oils.
- Monitor the collection of used fuel oil engine oil in old drums and give away to recyclers.

Monitoring point

- Waste bin: N. Lat. 16° 51' 19.73"; E. Long. 96° 04' 48.05".
- Frequency – weekly, monthly.

Also monitor effectiveness of mitigation measures taken.

Budget and responsibilities

Free of charge (all EMP cell leader and members are well-paid employees of the factory no extra fees for them; no EMP contractor exist in Myanmar yet, for hire).

Responsibilities – EMP cell leader and EMP cell members.



Legend

 Hazardous waste

Figure – 53: Satellite image showing monitoring point of management and monitoring sub-plan for hazardous waste

4. Sub-plan for Waste water and storm water

Objectives

- To control, manage and mitigation waste water and storm water; to create a healthy environment.

Legal requirement

- Comply with EIA guideline for mining sector, November, 2018; Environmental Quality Standard Code No.1

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

Auto parts assembling plants does not generate waste water. Water is occasionally used only for spraying over a finished car for testing water tightness. Anyway management actions will be taken.

- Educate and train workers in the handling, and uses of water.
- Water used for testing tightness simply flow down the drain; no special treatment required.
- Set up drainage system for domestic waste water and storm water.
- Domestic waste water (used water) from office and workplace etc. are ended up in the drainage system. (no special treatment required)
- Domestic waste water (black water) from toilets is ended up in septic tanks and soaks pits.
- Avoid disposing of used/washed water on open ground.
- Avoid disposing of liquid waste such as used fuel into open ground by all means.
- Monitor waste water/used water every six months (hired technicians).
- Conduct weekly visual inspection of waste water condition.
- Monitor effectiveness of mitigation measures taken, monthly.

Monitoring plan

Parameters to be monitored: 5 day BOD, Ammonia, Arsenic, Cadmium, COD, Chlorine, Chromium, Copper, Cyanide, Fluoride, Iron, Lead, Mercury, Nickel, Oil and grease, P^H, Sulphide, Temperature increase, Total coliform bacteria, Total phosphorus, Total suspended solids, Zinc

Monitoring points:

At the drainage : N. Lat. 16° 51' 20.80" and E. Long. 96° 04' 48.13"

Frequency : Semi-annually (have to hire technicians).

Also monitor effectiveness of mitigation measures taken.

Budget and responsibilities: Ks 1,000,000 (once off cost).

Responsibilities : Hired technicians and EMP cell members.



Legend

 waste water and storm water

Figure – 54: Satellite image showing monitoring point of management and monitoring sub-plan for waste water and storm water

5. Sub-plan for Air quality

Objectives

- To prevent pollution of air environment
- To mitigate/reduce air emission and air pollution and control air quality as practical as possible; to create a healthy environment for all in the area.

Legal requirement

- Comply with NEQEG (emission) guideline (2015); Code No.1.1 prescribed by ECD.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

Motor parts assembling plant does not generate any substantial emission (no smoke); however on the safe side the following management actions will be taken.

- Avoid open burning of any trash, debris.
- Keep equipment, vehicles well-operated, well-maintained and well-lubricated to reduce smoke.
- Spray water for suppression of dust.
- Provide PPE, face mask where necessary.
- Plant fast growing trees to sequestrate CO₂ and trap dust.
- Conduct regular monitoring; hired technicians.
- Daily overall inspection of smoke and dust, if any.
- Implement GRM so that locals can file complaint about smoke and dust.

Monitoring plan

- Parameters to be monitored: for air quality, NO₂, SO₂, PM₁₀, PM_{2.5}, O₃; for emission (compare with NEQEG guideline).

Monitoring point

- At the plant : N. Lat. 16° 51' 19.71" and E. Long. 96° 04' 48.04"

Frequency – Semi-annually (have to hire technicians)

Visual inspection of condition: weekly

Also monitor effectiveness of mitigation measures taken.

Budget and responsibilities

Budget: Ks 1,700,000 (once off cost).

Responsibilities – hired technicians and ESMP cell members.



Legend

 air quality

Figure – 55: Satellite image showing monitoring point of management and monitoring sub-plan for air quality

6. Sub-plan for Odour

Note: Odour is not an issue; no bad odour is generated. Theoretically odorant unit should be within 10, workers involve in occasional minor spray painting to wear mask.

7. Sub-plan for Chemicals

Note: Chemicals is not an issue. No chemicals are used.

8. Sub-plan for Ground water quality

Objectives

- To prevent pollution of surface water.
- To control/manage water quality and quantity; not to pollute the water environment.
- Not to causes any negative impact on water resources of the local community.

Legal requirement

- Comply with Myanmar National Drinking Water Quality Standard guideline.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

- Ensure no wastes (solid, liquid) are disposed/discharged into the any water courses, e.g. natural pond and stream
- Create systematic drainage system in the first place.
- Wash equipment and vehicle in designated areas.
- Avoid disposal of any waste into water bodies or onto land.
- Avoid accidental spills of fuel oil into water bodies by all means, (also avoid spills on ground; should spill occur do not wash down with water but use absorbents).
- Maintain machinery and vehicles to prevent spills or leaks.
- Mange water conservation; reduce water consumption, educated workers for this.
- Test water quality semi-annually (hired technicians).
- Conduct weekly visual inspection of water condition.

Monitoring plan

Parameters to be monitored: Total coliforms, Fecal coliforms, Color, Turbidity, Arsenic, Lead, Nitrate, Manganese, Chloride, Hardness, Iron, P^H, Sulphate, Total Dissolved Solids

Monitoring point:

- Tube well, coordinate: N. Lat. 16° 51' 20" and E. Long. 96° 04' 51"

Frequency – Semi-annually (have to hire technicians)

Visual inspection of water condition: weekly.

Also monitor effectiveness of mitigation measures taken.

Budget and Responsibilities

Budget: Ks 1,000,000 (once off cost)

Responsibilities: hired technicians and EMP cell members.



Legend

 ground water quality

Figure – 56: Satellite image showing monitoring point of management and monitoring sub-plan for ground water quality

9. Sub-plan for Erosion and sedimentation

Objective:

- To avoid, prevent, manage and mitigate potential erosion and sedimentation;
- To maintain natural ecology as far as possible.

Legal requirement

- Comply with the Environmental Conservation Law, (2012) and Environmental Conservation Rules, (2014); not to cause destruction of soil structure and profile, and conservation of soil ecology.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

- Ensure that all activities do not impact soil structure.
- If digging have to be done ensure that the spots are backfilled.
- Minimize the area of bare soil exposed as practical as possible (do not clear the vegetation more than necessary leaving large area of bare land).
- Construct effective drainage system.
- Control sediment if necessary, inside the compound.
- Ensure that the soil profile of the site is stable and not easily eroded.
- Regularly monitor erosion (rainy season).

Monitoring plan

- Regular visual inspection of ground and soil condition only.

Monitoring point:

At the drainage, coordinate: N. Lat. 16° 51' 18.79" and E. Long. 96° 04' 47.40"

Frequency – weekly during raining season (wet months); monthly during dry months.

Also monitored effectiveness of mitigation measures taken.

Budget and responsibilities

Free of charge (all EMP cell leader and members are well-paid employees of the project no extra fees for them; no EMP contractor exist in Myanmar yet, for hire).

Responsibilities – EMP cell leader and EMP cell members.



Legend

 erosion and sedimentation

Figure – 57: Satellite image showing monitoring point of management and monitoring sub-plan for erosion and sedimentation

10. Sub-plan for Biodiversity

Objectives

- To protect and conserve the biodiversity of the area as far as possible.

Legal requirement

- Comply with the Conservation of Biodiversity and Protected Areas Law, 2018; not to impact or destroy natural habitats and biological ecosystem.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

There is no forest or no natural bush in the area; only paddy fields and grass land. Natural biodiversity is low.

- Plan for minimum disturbance to the flora and fauna, if any.
- Do not clear small vegetation such as grass, more than necessary.
- Avoid open burning of debris.
- Educate workers for fire awareness and protection; get rid of all debris that can cause fire.
- Establish green lawn and plant trees after Construction Phase in available space.
- Restrict vehicular movement to the access road to prevent habitat disturbance of birds and small animals, if any.
- Prevent the potential injury or death of small animals, if any, due to vehicular movements especially during night time.
- Avoid the use of excessive bright light for long hours at night to prevent the aggregation and eventual death of large number of insects.

Monitoring plan

- Monitor the situation of flora and fauna in the surrounding area (both natural and artificial flora and fauna).
- Monitor the greening activities.

Monitoring point :

- At the factory, coordinate: N. Lat. 16° 51' 18.81" and E. Long. 96° 04' 47.52"

Frequency – quarterly (during dry season, wet season, cool season).

Also monitor effectiveness of mitigation taken for biodiversity.

Budget and responsibilities

Free of charge (all EMP cell leader and members are well-paid employees of the project no extra fees for them; no EMP contractor exist in Myanmar yet, for hire).

Responsibilities – EMP cell leader and EMP cell members.



Legend

 biodiversity

Figure – 58: Satellite image showing monitoring point of management and monitoring sub-plan for biodiversity

11. Sub-plan for Occupational Health and Safety

Objectives

- To prevent workers from any occupational health risks and accidents; to create a safety working atmosphere for workers,
- To provide free health cares for workers.

Legal requirement

- Comply with Occupational Health and Safety Law, 2019; Prevention and Control of Community Disease Law, 1995; to ensure for a healthy and productive workforce for successful implementation of the project.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

- Plan and manage for creation of a safe working environment, (safe working place and working condition for all staff.
- Provide adequate potable drinking water, lavatory facilities
- Provide healthy living space (housing) and clean eating areas.
- Provide sufficient natural light or artificial illumination and good ventilation system.
- Workers are providing with PPE, where necessary.
- Conduct annual medical check-up for all.
- Emergency and logistics plan for sick and injured staffs; First Aid treatment and; admission to nearest hospital, Hlaing Thar Yar Hospital or Yangon General Hospital.

Training

- Induction training (new task employee training) for workers covering: knowledge of materials, equipment, tools; known hazards in the operation and control; potential to risk and precaution; hygiene requirement; wearing of PPEs; appropriate/emergency response to accident, to natural disaster.
- Education and training for safety handling and operation of machinery, equipment; safety storage, handling and uses of fuels etc.

- Provide OHS training for all staff; educate and train them for good working practice, good safety practice, good housekeeping practice, good health and hygiene practice.
- Provide firefighting training and First Aid training.

Physical hazards

- Design all machine to eliminate trap hazards; extremities (hands, fingers) are kept out of harm way during operation; avoid machinery accidents by all mean.
- Ensure that no worker is exposed to noise level greater than 85-90 dBA. (Provide ear muffs, ear plugs).
- Avoid, prevent whole body vibration, and hand-arm vibration. Reduce working hours for high level noise and vibration works.
- Ensure that worker who have to do occasional minor welding have protective cover, goggle, face mask.
- Also ensure that workers who have to do occasional minor spray painting wear face mask, nose and mouth covers.

Electrical

- Use new electric cords, cables, device and equipment; regularly check them for faults.
- Mark all electrical devices and lines with warning signs.

Eye hazards

- Provide goggle or face mask where necessary; provide eye wash station sink for emergency washing of eyes.

Industrial vehicle driving and site traffic and outward traffic

- Train operators in the safe operations of vehicles and forklift.

Ergonomics, repetitive motions and manual handling

- Ensure that workers are not subjected to excessive repetitive movement, over exertion and excessive manual handling to prevent strain, sprain, and injuries.
- Use mechanical labour rather than manual labour; apply automation system as far as possible.

Fire and explosion

- Store flammable away from ignition sources and oxidizing materials.
- Specialized training for handling and uses of fuels.
- Keep adequate fire extinguishers, equipment, (firefighting tank to be always full of water).
- Define and label warning signs for all fire hazards and explosion hazards area.

Monitoring plan

- Regular inspection of work places and working condition.
- Monitor log book on accident, injuries, sickness; number of patients treatment at village clinic and admitted to hospital.
- Inspection of medicines and drugs; refill where necessary
- Monitor First Aid training.

Parameter to be monitored: working conditions.

Monitoring point

- Inside the factory : N. Lat. 16°51' 20.08" and E. Long. 96° 4'49.54"

Frequency: daily and weekly.

Also monitor effectiveness of mitigation/corrective measures taken.

Budget and responsibilities

Budgets: Ks. 2,000,000, costs for provision of medicines and drugs and First Aid facility at processing site for one year. (This will be from the allotted EMP fund).

Responsibilities – EMP leader and EMP cell members.



Legend

 occupational health and safety

Figure – 59: Satellite image showing monitoring point of management and monitoring sub-plan for Occupational Health and Safety

12. Sub-plan for Community Health and Safety

Objectives

- To ensure that the activities of the project do not have any adverse effect on the health and safety as well as social well-being of the local community.

Legal requirement

- Comply with The Public Health Law, 1972; the Prevention and Control of Communicable Diseases Law, 1995; the Environmental Conservation Law, 2012 and the Environmental Conservation Rules, 2014.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

- Control smoke and dust as practical as possible; avoid open burning of debris and trash so that smoke do not reach the Satmu Zone Zay Tan Lann Ward; educate the driver to lower speed when passing near or through the village (the reduction of speed from 40 km to 35 km can reduce dust to 50%, it is learnt).
- Locals should be able to file complaints regarding dust, noise and vibration (through GRM system).
- Ensure that the water tanks do not become breeding ground for mosquitoes; annihilation of mosquito larvae by all means; educate workers to use mosquito's nets at night and provision of mosquito nets.
- Also ensure that domestic solid wastes, liquid waste water and drainage do not become breeding ground for flies, mosquitoes and insect for prevention of vector borne diseases and water borne or water related disease.
- Prevent the occurrence and spread of infectious and communicable diseases by all means; undertake health awareness and educations initiative (health education campaign) in local community as far as possible.
- Avoid/minimize by all means, vector borne, water borne (water based, water related) disease and communicable diseases that would result from project activities. Liaise with Hlaing Thar Yar Township Health Authority regularly.
- Avoid/minimize by all mean spread of diseases from workers. Educate long distance truck driver regarding sex education example for use of prophylactic condom; prevent spread of STD, HIV/AIDS.

- Educate drivers for safe driving and defensive driving and to comply with rules and regulation regarding traffic; also conduct road safety education campaign for the local community, if possible; locals should be able to file complaint regarding traffic (through GRM system).
- Comply with law and regulation relevant to transportation of hazardous materials such as fuel oils; also plan for measures for preventing and/or mitigation the consequence of accidental release/spill of (fuel oil); avoid/minimize community exposure to hazardous materials, e.g. fuel oil spill.
- Develop emergency preparedness and emergency response plan and contingency plan (action plan) for effective implementation when necessary; provide operation manuals for external emergency plan and internal emergency plan for all workers. Cooperation with local community and authority in preparation of emergency plan.

Monitoring plan

- Monitor the overall health situation of the Satmu Zone Zay Tan Lann Ward; occasional inquiry of the health issues of the locals; providing Health Education; giving health education lectures.

Parameters to be monitored: overall health situation of locals.

Monitoring point

- At the Satmu Zone Zay Tan Lann Ward: N. Lat. 16° 51' 15.10" and E. Long. 96° 04' 50.74"

Frequency: annually (with the help of personnel from Hlaing Thar Yar Township Health Department).

Budget and responsibilities

Budgets: Ks 2,000,000, costs for fees or courtesy gifts to Township Health Department personals who will give health educative speeches and lectures. (The expenses will be from the allotted EMP fund, where 7% of the fund under capacity building and training.)

Responsibilities

EMP cell members and personals from Township Health Department (who will be requested to help execution of Community Health and Safety programme).



Legend

 community health and safety

Figure – 60: Satellite image showing monitoring point of management and monitoring sub-plan for Community Health and Safety

13. Sub-plan for Culture heritage

The project site being deep inside the Industrial Zone and there are no Buddhist monastery or cultural and religious monuments or building to be impacted by the project.

14. Sub-plan for Employment and training

Objectives

- To prioritize employment of the locals as practical as possible; to organize induction training and long term professional training.

Legal requirement

- Comply with Employment and Skill Development Law, 2013.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

- Plan for human resource development.
- Prioritize employing locals as far as possible.
- Organize new task employees for job training.
- Also provide systematic induction training for new workers to enable them to do their jobs efficiently.
- Induction training will cover: general training; skill training for efficiency and mandatory training relating to health and safety (e.g. safety operation of machinery and handling of hazardous materials such as fuel.
- Educate and train them for good working practice, good safety practice, good health and hygiene practice and good environmental awareness practice until all these practices are ingrained in their mind sets and become good habits.
- Educate and train them for familiarization with negative impacts and subsequent taking of mitigation measures.
- Educate and train them for basic eco-friendly behaviours e.g. good house-keeping practice, do not litter, do not dirty your place, minimize the use of water, fuel.

- More specific training for operation of heavy machinery and specific machinery and equipment and heavy trucks will be organized.
- Review on the effectiveness of training will be done for improvement.
- Overall regular monitoring of activities at the processing site will be conducted.

Monitoring plan

Monitoring point :

- At the assembly plant: N. Lat. 16° 51' 19.89" and E. Long. 96° 04' 49.08"

All main work places (inspect/monitor training programme, training course, training in process; work efficiency of workers).

Also monitor effectiveness of training programme: monthly or every training session.

Budget and responsibilities

Budgets

- Free of charges (the company's senior staff member, technicians and experienced staff with educate, train and supervise new workers.
- However, appropriate Ks 2,000,000 (fees and courtesy gifts for trainers and educators from relevant governmental department).

Responsibilities

The factory managers, senior staffs and EMP cell members.



Legend

 employment and training

Figure – 61: Satellite image showing monitoring point of management and monitoring sub-plan for Employment and training

15. Sub-plan for Emergency response

Objectives

- To maintain emergency preparedness, and response to any emergency in a systematic and effective way.
- To execute emergency response plan, emergency procedure plan, rescue operation plan, contingency plan and aftermath plan, all in a systematic manner.

Legal requirement

- Comply with The Fire Brigade Law, 2015 and Occupational Health and Safety Law, 2019.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

- Prepare Emergency Response Plan (ERP) and team to prevent fatalities and injuries, to reduce damage and to protect environment and community.
- Prepare emergency preparedness plan and execute the plan.
- (Emergency Response Plan will cover emergency resources, emergency preparedness and training, emergency response procedures, administration of the plan, first aid work, rescue operation works, communication and procedures, and debriefing and post-traumatic stress procedures.)
- For practical purpose provide training for firefighting, training for First Aid and Rescue.
- Provide facilities e.g. extinguishers, equipment, suit, first aid kits, emergency vehicle.
- Display phone members of Firefighting Department, Ambulance Services, Red Cross Society, Hospital and Police Station so that anybody can see easily.
- Review on the effectiveness of training will be done for improvement.
- Regular monitoring of all activities at the work place site will be conducted, weekly and monthly.
- Mock drill for ERP will be conducted, on a regular basic; bi-annually.

Monitoring plan

- Monitor firefighting training activities during training session,
- Monitor First Aid training activities during training session.
- Also monitor rehearsal or mock drill session for emergency response.
- Monitor activities at main work places such as assembling and installation works on a daily or weekly basis.
- Inspect facilities for emergency preparedness.

Monitoring point:

- At the factory: N. Lat. 16° 51' 20.59" and E. Long. 96° 04' 48.47"

Frequency

- Daily or at least weekly at all main work sites; monitoring training only during training session; monitor mock drill only during drill session.

Budget and responsibilities

Budget – Ks 13,000,000, set aside for execution of emergency response plan. In case of major accident like fire budget for emergency will be used mainly for compensation for injured, sick or dead employees; and also for rehabilitation of injured and disabled employees.

No other fees or charges as emergency response plan will be executed by EMP cell members who are well-paid employees.

Responsibilities

EMP cell leaders, EMP cell members and some staff trained for emergency response.



Legend

 emergency response

Figure – 62: Satellite image showing monitoring point of management and monitoring sub-plan for Emergency response

16. Sub-plan for Traffic safety

Objectives

- To ensure for the safety of traffic in the area.
- To avoid traffic congestion along the access road and particularly at the intersection where the access road meets the High way.
- To aim for zero road/traffic accidents.

Legal requirement

- Comply with Vehicle Safety and Motor Vehicle Management Law, 2020; the High Way Law, 2000 and regulation regarding road traffic.

Overview maps, layout map, images, aerial photo, satellite image

These are shown in below.

Implementation schedule:

- The sub-plans will be implemented during the Operation Phase.

Management action

The project site is near the Patheingyi-Yangon High way; the high way is heavy with traffic throughout the day time and night time.

- Plan for traffic safety; try to achieve zero traffic accident.
- Draw up a traffic management plan.
- Set up more signage's for speed limits, if necessary, e.g. at the entrance of the factory.
- Schedule the logistic, especially for company's trucks.
- Avoid over loading trucks; comply with regulation.
- Cover haulage with tarpaulin to prevent spills.
- Educate driver (heavy truck drivers) for driving at reduced speed and adhere to the principle of defensive driving.
- Educate drivers for complying with traffic and road regulations.
- Provide traffic education, not only for drivers, but also for motorcyclists.
- Keep a log book for each vehicle.
- Check the arrival and departure of all vehicles at the factory.
- If possible, conduct education campaign for traffic to the local communities.

Monitoring plan

- Inspect the condition of the vehicles fortnightly;
- Monitor traffic on the access road on a weekly basis.
- Monitor the daily arrival and departure of vehicle at the factory/assembling plant.
- Monitor the log book for each vehicle on a weekly basis.

Monitoring point:

- At Patheingyi-Yangon Highway Road: N. Lat. 16° 51' 24.16" and E. Long. 96° 4' 55.71"

Frequency: daily, weekly and fortnightly as mentioned above.

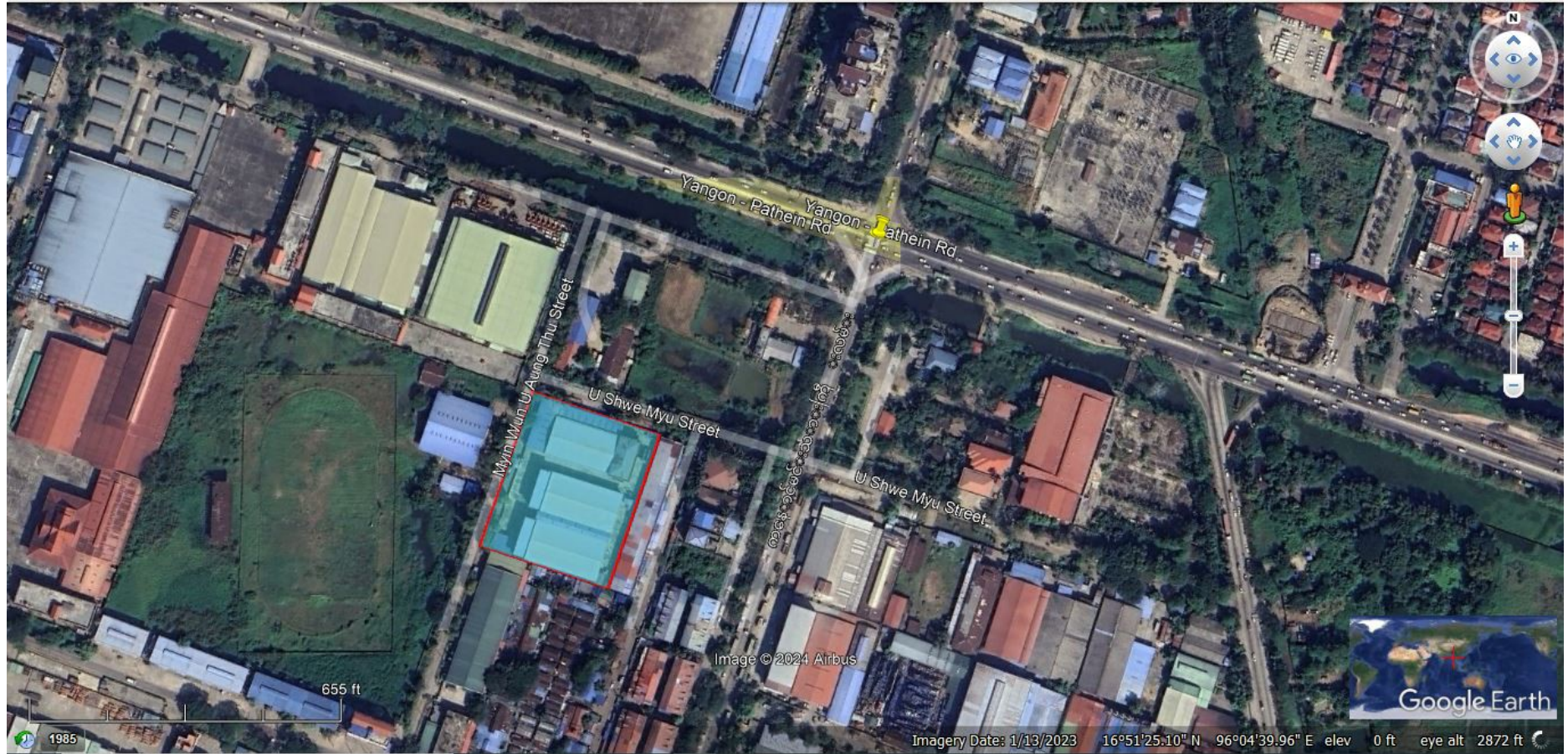
Budget and responsibilities

Free of charge. The EMP cell members who are well-paid employees will do this work free of charge.

The costs for vehicular repairs or maintenance will be borne by the main budget, not by the EMP fund.

Responsibilities

ESMP cell leaders and ESMP cell members.



Legend

 traffic safety

Figure – 63: Satellite image showing monitoring point of management and monitoring sub-plan for Traffic safety

II. During the Decommissioning Phase

Management and Monitoring Sub-plan for Mine Closure/Decommissioning

Objective:

- To ensure a systematic Decommissioning process after the end of the Operation Phase.
- To reclaim and to rehabilitate the project site.

Legal requirement

- The Environmental Conservation Law, 2012; The Environmental Conservation Rules, 2014.

Overview maps, layout map, images, aerial photo, satellite image

- These are already shown earlier will not be repeated here.

Implementation schedule

This sub-plan will be implemented during the Decommissioning Phase.

Management action

Deploy some staff for implementation of decommissioning.

At the factory/Assembling plant

- Carry on systematic decommissioning.
- Isolate and shut down the factory/assembling plant.
- Systematically demolish all buildings and structures.
- Put up for sale or give away to local those building materials that can are still useable.
- Dispose those that are no longer useable.
- Put up for sale machinery, equipment, vehicles that are still useable.
- For those that are no longer useable make them into scrap for smelting.
- Tidy up the site.
- Remove soil contaminated by fuel, if any.
- Test air, water and soil quality for the last time, to ensure that the ecology is restored.
- Continue greening of the area; plant trees in all available space.

Monitoring plan

- Monitor overall decommissioning works.
- Monitor overall tidying up of the site.
- Monitor the drainage system.
- Monitor specific decommissioning activities; ensure for safety decommissioning as demolition of old buildings and structures is relatively risky.
- Monitor the specific tidying up of the site; removal of contaminated soil, if any.
- Monitor the testing of air, water and soil quality.

Monitoring point

- At the factory compound : N. Lat. 16° 51' 19.97" and E. Long. 96° 04' 49.21"

Budget and responsibilities

Budget: Free of charge, some of the staffs are employed for the implementation Decommissioning. All are well-paid as during the Operation Phase.

But once off cost for measures air, water and soil quality. Ks 5,000,000.

Responsibilities – EMP cell members.

Commitment

Myanmar Brilliance Auto Co., Ltd has made a commitment to duly implement the EMP described in this chapter 8 as practical as possible.

U Khin Maung San
Managing Director
Myanmar Brilliance Auto Co., Ltd

9. PUBLIC CONSULTATION AND DISCLOSURE

Public consultation is an integral part of EIA, IEE and EMP. Involving the public participation in the EIA work is fundamental to increasing the understanding and acceptance of the project.

Public consultation and participation have to be started as early as possible in the preparation of EIA, IEE and EMP. And it has to be a continuous process, especially during the Operation Phase, carry out from time to time.

Purposes of the consultation during the preparation of the EIA report

- to enlighten the locals/stakeholders about the project
- to increase the understanding and acceptance of the project
- to give the locals/stakeholders the opportunity to present their views, opinions, perception of the project, express their concerns, complaints, grievances etc
- to identify impacts and issues that are not immediately obvious to project proponent and the EIA team
- to access social assistant and community development needs for the locals/stakeholders
- to gain community consent and to interact with the people to further strengthen existing cordial relationship
- to tap local knowledge and to negotiate for mutually beneficial future that is sustainable and locally relevant

Requirements for public consultations:

- public consultation must be conducted in the early phase of project
- must ensure the direct involvement of the locals/stakeholders
- must ensure that all locals/stakeholders who are interested will have the chance to fully participate, especially the vulnerable and marginalized group,
- it must be a continuous process --- throughout the entire phase of the project, especially during the long Operation Phase, and
- there must be an action plan or response programme such as complaints and grievances mechanism (CGM) or Grievances Redress Mechanism (GRM) to tackle any issue.

9.1 Methodology and approach

Standard methodology applied here includes:

- (i) **Consensus building:** First of all a pre-sensitizing visits to the local authority (Village Administrator and party, elders) and briefing on the proposed project to be carried out and ask for their approval and assistant for holding the public consultation.
- (ii) **Transect walk:** site visit (visit to the village) and conduct visual inspection.
- (iii) **Actual public consultation meeting:** mainly involves disclosure of the proposed project and giving complete and accurate information; consultation mainly in the form of two-way conversation --- listening and talking; waiting for their response; further discussion.
- (iv) **Interviews and discussions:**
 - in the form of KII/SS, (Key Informant Interview/Secondary Source) for the gathering of secondary baseline socio-economical data and community profile with the aid of questionnaires
 - in the form of FGD (Focal Group Discussion); interview with few selected people (authority, knowledgeable persons) especially for ranking the pressing need of the locals for prioritizing the needs for community assistance and implementation of CSR.
 - Household Interview (HII) not conducted (not a comprehensive social-economic assessment).

Project Affected People (PAP)

Satmu Zone Zay Tan Lann Ward is within the designated 1/2 mile radius area for EIA study.

In this project context the PAP are local people from Satmu Zone Zay Tan Lann Ward. All heads of the households are invited to attend the public consultation meeting during the scoping study. The locals are very familiar with this and show little interest in such meeting.

9.2 Pre-public consultation meetings during the scoping study

Public consultation meeting at Myanmar Brilliance Auto Co., Ltd

Date : 29-5-2019

Venue : At the factory

Time : 09:00 to 10:50 hours

Attended : 30 persons including officers from Fire Brigade of Hlaing Tharyar Township, members of Village/Ward administration, stakeholders and interested persons



Figure-64: Preliminary public meeting at the factory



Figure-65: KII interview

Minutes of meeting

U Chan Win, responsible officer of the Brilliance Auto Co., Ltd: Mingalarbar to all. The name of our company is Myanmar Brilliance Auto Co., Ltd. I am the responsible officer of the Myanmar Brilliance Auto Co., Ltd's motor assembling plant. We are going to produce cars. The parent company is Brilliance Auto International Trade Co., Ltd from Shenyang, China. This company applies the modern technology for auto assembly and production from Germany. The cars to be produce from our company are Brilliance Model No. V3, V6 and V7. The policy regarding auto production in Myanmar has changed. We will apply SKD technology in motor assembly. SKD stands for Semi-Knock-Down and auto parts imported from China are assembled at our factory. We will apply safety and quality measures for assembly. In doing the assembling works we will use only machinery and equipment that do not emit CO₂ or generator waste. There will be no welding work. The 10 auto parts we are going to import are welded and painted in China and there will be virtually no air and water pollution due to this project.

U Myint Kyaw Thura, (MESC): Mingalarbar to all. My name is Myint Kyaw Thura. Thank you all for finding your time to attend this meeting. The name of our Organization is Myanmar Environment Sustainable Conservation (MESC) and is a neutral third party. We come here to assess the impact, both negative and positive, due to the operation of this project. We make visual inspection and investigation, collect information and data and also take record on the views and opinions of the local people. Based on the findings a report is prepared and written and submitted to the authority which make the decision. Formerly we tested air for 24 hours. Later water sample, soil samples are collected and tested at registered laboratories in Yangon. Studies have to be made also on the flora and fauna of the environment. There are all incorporated in the report. Unlike other factories this one does not emit smoke and wastes and have little or no impact on the environment. Unlike the days of yesteryears the condition has now becoming transparent and we can learn about the true public opinions and views during such meeting. I, therefore, invite you to ask questions and to give comments or express yours view and opinion, frankly.

Daw Thet Thet Lwin, a local: There is a factory in the vicinity of my house. The plastic materials burned at that factory emit bad and repugnant odour. How can the environmental conservation people solve that problem for us?

U Khin Maung San, Managing Director of the company: This matter concerns the Industrial Zone Committee. MESC is a third party doing impact assessment and the findings together with local people opinions/views are reported in the report. The Industrial Zone Committee is responsible for any environmental and/or social issue rising from this zone. You should inform the Committee and responsible organization will have to take action for the issue.

U Myint Kyaw Thura, MESC: Our organization is an environmental affair one but we are not a governmental organization. We cannot solve such problem. We can report this matter in our report. Only the Zone Committee is responsible for this. You should cooperate with this Committee and solved this problem.

U Khin Maung San, Managing Director of the company: The SKD method of auto assembly is simple and is similar to fixing buttons on an already sewn garment. It is simply the assembly of ready-made components. We need workers and machine for assembly. Welders are not necessary but only bolts, and nuts are required. We treat our factory and environs as our own home and family. I would be glad to contribute to community development.

U Aung Kyaw Htoo, a local: This factory is not a factory that produces consumers goods and the assembling works are done with only air gun. There can be no negative impact on the environment. There will be no solid water, but odour, waste water like other factories. This is good for the area.

U Khin Maung San, Managing Director of the company: Our country is lagging behind in all aspects. So it is appropriate to do the assembly work with human labour. Actually the

manufacturing of a car requires a lot of machinery, electricity, labour and modern technology and so it is not easy. Our factory only assembles car parts. Brilliance International Trade Co., Ltd has also SKD systems and facilities in other countries. The price for experience and investment is high and so we have to be well-prepare for this. We have to perform up to their standards. They made a monthly inspection and if it is not up to standard, they will not allow the project to produce. Very soon the company will send outstanding workers abroad for training. After training they will return and provide multiplier trainings for other workers.

U Myint Kyaw Thura, (MESC): Then asked the participants if there is anyone against this project.

U Soe Lwin, (Yar-ain-hmoo, members of village administration): We are not against the project. Owing to establishment of such project there arise employment opportunities for our local youths. These youths can select the jobs suitable for them form such project.

U Chan Win, responsible officer of the Brilliance Auto Co., Ltd: Soon we will inform the village/ward administrator about job vacancies.

U Myint Kyaw Thura, (MESC): Thank you all for finding time and attending this meeting.

The meeting was over at 10:50 hours.

Result of consultation

U Chan Win responsible officer of the factory and U Khin Maung San (Managing Director of the company) explained to the participants about the project in relative detail. U Myint Kyaw Thura (MESC) explained to them about conducting EIA study on this project.

One local, Daw Thet Thet Lwin filed a complaint about the burring of plastic materials at a nearby factory the repungent odour emitted.

U Khin Maung San and U Myint Kyaw Thura replied that the Industrial Zone Committee is responsible for the systematic management of the Industrial Zone and take action for this. This should be reported to the Committee.

One local, U Aung Kyaw Htoo spoke in support of the project; that no emission, waste and disturbance are generated and that this project is good for the area.

U Soe Lwin, yar-ein-hmoo also spoke in support of the project.

No one has expressed their views or opinions against the implementation of the project. The relation between the company and the local community is generally good. Industrial is in existence since 20 years ago and so the locals are very familiar with the factories operating in the area. This auto parts assembly plant is not a polluter of the environment and so the locals see no reason to be against the project.

9.3 Public consultation meeting during the EIA study

A public consultation meeting during the EIA study period cannot be held due to security reason, (Army security personals are stationed closed to the site inside the Gymnasium compound. Gathering of people in this area is not allowed).

Further ongoing consultation

Public consultation meetings shall be a continuous process throughout the project life, especially during the Operation Phase, where annual or bi-annual meetings shall be held or from time to time when there is a need for such meeting.

Complaints and Grievances Mechanism (CGM)

Complaint and grievance mechanism or Grievance Redress Mechanism (GRM) programme will be implemented throughout the Operation Phase.

The CGM (or) GRM programme will be practical, applicable and effective, not merely a formality. The public relation officer and EMP cell leader shall always give special attention to this programme. The phone numbers and address of the factory will be made available at the Village Administrator Office; moreover a hot line for complaint will be set up. A log book will be kept for recording the date and time of complaints, name and address of complainants, details of complaint, action taken (and if no action is required the reason why) shall be explained and recorded and documented. Priority will be given to this CGM programme and prompt action will be taken as far as possible.

Example of the log book sheet for GRM:

1. Name of complainant (person/organization) -----
2. Date of receipt -----
3. Summary of complaint/grievance -----
4. Date of action taken -----
5. Action taken by who -----
6. If action is not required give the reason why -----
7. Grievance resolved/settled (Yes/No) -----
8. Any post GRM contact (Yes/No) -----
9. Any follow up issue or action (Yes/No) -----
10. Need a legal expert (Yes/No) -----

The company will keep a separate file for each complaint, where details of the complaint/grievance, how the grievance is assessed, and how it is resolved and settled (or not) will be duly recorded.

Information disclosure

Information disclosure in the form of press release will be made after the follow up EIA trip.

For the moment the news and information about public consultation meeting is launched at the facebook website of MESC, http://www.Myanmar_Environment_Sustainable_Conservation.com. When the follow up EIA study will be commenced the information will be again launched at the website of MESC and the news will be published in the Voice Daily newspaper.

Some copies of the EIA report (after approval by ECD) will be kept at the factory office for perusal for anyone interested in this project.

Commitment:

The project proponent has made a commitment to hold a public consultation meeting when the security situation of the area is improved.

U Khin Maung San

Managing Director

Myanmar Brilliance Auto Co., Ltd

List of Commitments

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ANNEX



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
စက်မှုဝန်ကြီးဌာန
စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန
ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်လက်မှတ်

စက်မှုမှတ်ပုံတင်အမှတ် ရက်စွဲ ၁၂.၆.၂၀၁၉
 လုပ်ငန်းအရွယ်အစား အကြီးစား ပြည်ထောင်စုနယ်မြေ/တိုင်းဒေသကြီး/ပြည်နယ် ရန်ကုန်
 အောက်ပါလုပ်ငန်းသည် ပုဂ္ဂလိကစက်မှုလုပ်ငန်း ဥပဒေ ပုဒ်မ ၇ ပုဒ်မခွဲ (ဝ) အရ မှတ်ပုံတင်ပြီး
 ဖြစ်ပါသည်။ Myanmar Brilliance Auto Co., Ltd. မော်တော်ယာဉ်အမျိုးမျိုးကို (SKD) စနစ်ဖြင့်

၁။ လုပ်ငန်းအမည် တပ်ဆင်ခြင်း၊ ထုတ်လုပ်ခြင်းနှင့် ဖြန့်ဖြူးရောင်းချခြင်းလုပ်ငန်း
 ၂။ လုပ်ငန်းအမျိုးအမည် သယ်ယူပို့ဆောင်ရေးယာဉ်များထုတ်လုပ်ငန်း
 ၃။ အဓိကကုန်အမျိုးအမည် Brilliance V3, Brilliance V6, Brilliance V7
 "BRILLIANCE" အမှတ်တံဆိပ်

၄။ တည်နေရာလိပ်စာ ပြင်ကွက်အမှတ် (၂၉၆/M) ဦးရွှေမြို့လမ်းနှင့် ဦးအောင်သူလမ်းထောင့် စက်မှုဇုန်(၂)
 လှိုင်သာယာမြို့နယ်၊ မြောက်ပိုင်းခရိုင်

၅။ ပိုင်ဆိုင်မှုအမျိုးအစား ကုမ္ပဏီပိုင်
 ၆။ လုပ်ငန်းစဉ်အမည် ဦးဆောင်စနစ်(M.D)
 ၇။ တိုင်ဆောင်သည့်မှတ်ပုံတင်အမှတ် ၁၂/လသန(နိုင်)၀၀၇၄၉၉၉
 ၈။ ရင်းနှီးမြှုပ်နှံမှုတန်ဖိုး(ကျပ်) ၉၀,၇၆၂,၂၀၀ ကို အခြေခံပြီး တည်ထောင်သည့် ခုနှစ် ၂၀၁၉
 ၉။ အသုံးပြုသည့်အားအမျိုးအစား ထရန်စဖော်မာ/လျှပ်ထုတ်စက် ပြင်းတောင်ဓရ ၅၀၀ KVA/
 ၁၀။ အလုပ်သမားဦးရေ ၂၉ ဦး ၇၈ KVA
 ၁၁။ မှတ်ပုံတင်သက်တမ်းကုန်ဆုံးသည့်နေ့ရက် ၃၀.၆.၂၀၂၀




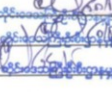
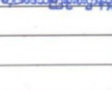
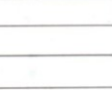



အေးအေးဝင်း
 ညွှန်ကြားရေးမှူးချုပ်

လုပ်ငန်းစဉ်များလိုက်နာရန်စည်းကမ်းချက်များ

၁။ ဤမှတ်ပုံတင်လက်မှတ်ကို အများပြည်သာသည့်နေရာတွင် ချိတ်ဆွဲထားရမည်။
 ၂။ ဤမှတ်ပုံတင်လက်မှတ်ကို မသက်ဆိုင်သူအား လွှဲအပ်ခြင်း သို့မဟုတ် လွှဲပြောင်းပေးခြင်းမပြုရ။
 ၃။ ဤမှတ်ပုံတင်လက်မှတ်ပါ အချက်အလက်များကို ပြင်ဆင်ခြင်း သို့မဟုတ် ပြည့်စွက်ခြင်းမပြုရ။
 ၄။ ဤမှတ်ပုံတင်လက်မှတ် ပျောက်ဆုံးလျှင် မှတ်ပုံတင်လက်မှတ်မိတ္တူကို ထုတ်ပေးရန် ပြည်ထောင်စုနယ်မြေ
 သို့မဟုတ် တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်ဦးစီးဌာနမှူးထံ ခိုင်လုံသော အထောက်အထားနှင့်အတူ
 လျှောက်ထားရမည်။
 ၅။ မှတ်ပုံတင်လက်မှတ်ပျက်စီးလျှင် သို့မဟုတ် မထင်မရှားဖြစ်လျှင် သို့မဟုတ် မှတ်ပုံတင်လက်မှတ် ပါ
 အချက်အလက်များ ပြောင်းလဲရန်လိုအပ်လျှင် ပြည်ထောင်စုနယ်မြေ သို့မဟုတ် တိုင်းဒေသကြီး သို့မဟုတ်
 ပြည်နယ်ဦးစီးဌာနမှူးထံ မှတ်ပုံတင်လက်မှတ်နှင့် ပူးတွဲတင်ပြလျှောက်ထားရမည်။
 ၆။ ဤမှတ်ပုံတင်လက်မှတ်ကို စက်မှုလုပ်ငန်းနှင့်စပ်လျဉ်းသည့်ကိစ္စများအပေါ် မည်သည့်ကိစ္စတွင်မျှ အသုံးမပြုရ။
 ၇။ မှတ်ပုံတင်သက်တမ်းကုန်ဆုံးပြီး သက်တမ်းတိုးမြှင့်ပေးရန် လျှောက်ထားရာတွင် ဤမှတ်ပုံတင်
 လက်မှတ်ကို ပူးတွဲတင်ပြရမည်။
 ၈။ သက်တမ်းကုန်ဆုံးပြီး ရက်ပေါင်း (၆၀)အတွင်း သက်တမ်းတိုးမြှင့်လျှောက်ထားပါက သတ်မှတ်သည့်
 ဒဏ်ကြေးကို ပေးဆောင်ရမည်။
 ၉။ သက်တမ်းတိုးမြှင့်ရန် လျှောက်ထားခြင်းမရှိပါက မှတ်ပုံတင်ပျက်ပြယ်ပြုဖြစ်သည်။

မှတ်ပုံတင်သက်တမ်းတိုးမြှင့်ခြင်း

စဉ်	ချလန်အမှတ်/ရက်စွဲ	မှတ်ပုံတင်သက်တမ်းကုန်ဆုံးမည့်နေ့ရက်	ခွင့်ပြုသူလက်မှတ်
၁	၅၇/၂၃.၆.၂၀၂၀	၃၀.၆.၂၀၂၁	
၂	၁၀၆/၁၉.၁၀.၆.၂၁	၃၀.၆.၂၀၂၂	
၃	၁၇၃/၆.၇.၆.၂၂	၃၀.၆.၂၀၂၃	
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Laboratory Technical Consultant: U Saw Christopher Maung
 B.Sc Engg: (Civil), Dip S.E(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.
 Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

WTL-RE-001
 Issue Date - 01-1-2016
 Effective Date - 01-1-2016
 Issue No - 1.0/Page 1 of 1

M0124 004

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client MESC
 Nature of Water Tube Well Water (Project Site)
 Location Hlaing Thar Yar Township
 Date and Time of collection 8.1.2024
 Date and Time of arrival at Laboratory 8.1.2024
 Date and Time of commencing examination 8.1.2024
 Date and Time of completing 9.1.2024

Results of Water Analysis

**WHO Drinking Water Guideline
(Geneva - 1993)**


Total Coliform Count	6	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	Not detected (<1)	CFU/100ml	Not detected
pH	7.2		6.5 - 8.5
Turbidity	8	NTU	5 NTU
Colour (True)	5	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

Remark : Unsatisfactory for drinking purpose.


: This certificate is issued only for the receipt of the test sample.

: < - Less than

Tested by

Signature: 
 Name: Zaw Hein Oo
B.Sc (Chemistry)
Sr.Chemist
ISO Tech Laboratory

Approved by

Signature: 
 Name: Soe Thit
B.E (Civil) 1980
Technical Officer
ISO TECH Laboratory

(a division of WEG Co., Ltd.)

No.18. Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.
 Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

W0124 119

WATER QUALITY TEST RESULTS FORM

Client _____ **MESC**
 Nature of Water _____ **Tube Well Water (Project Site)**
 Location _____ **Hlaing Thar Yar Township**
 Date and Time of collection _____ **8.1.2024**
 Date and Time of arrival at Laboratory _____ **8.1.2024**
 Date and Time of commencing examination _____ **9.1.2024**
 Date and Time of completing _____ **11.1.2024**

Results of Water Analysis

**WHO Drinking Water Guideline
 (Geneva - 1993)**

pH			6.5 - 8.5
Colour (True)		TCU	15 TCU
Turbidity		NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness	34	mg/l as CaCO ₃	500 mg/l as CaCO ₃
Calcium Hardness		mg/l as CaCO ₃	
Magnesium Hardness		mg/l as CaCO ₃	
Total Alkalinity		mg/l as CaCO ₃	
Phenolphthalein Alkalinity		mg/l as CaCO ₃	
Carbonate (CaCO ₃)		mg/l as CaCO ₃	
Bicarbonate (HCO ₃)		mg/l as CaCO ₃	
Iron	0.26	mg/l	0.3 mg/l
Chloride (as CL)	4	mg/l	250 mg/l
Sodium Chloride (as NaCL)		mg/l	
Sulphate (as SO ₄)	10	mg/l	500 mg/l
Total Solids		mg/l	1500 mg/l
Total Suspended Solids		mg/l	
Total Dissolved Solids	56	mg/l	1000 mg/l
Manganese	Nil	mg/l	0.05 mg/l
Phosphate		mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by
 Signature: Zaw Hein Oo
 Name: B.Sc (Chemistry)
Sr.Chemist

Approved by
 Signature: Soe Thit
 Name: B.E (Civil) 1980
Technical Officer

(a division of WEG Co., Ltd.)

ISO Tech Laboratory

ISO TECH Laboratory

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.

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WTL-RE-001
 Issue Date - 01-12-2012
 Effective Date - 01-12-2012
 Issue No - 1.0/Page 2 of 2

W0124 119

WATER QUALITY TEST RESULTS FORM

Client _____ MESC
 Nature of Water _____ Tube Well Water (Project Site)
 Location _____ Hlaing Thar Yar Township
 Date and Time of collection _____ 8.1.2024
 Date and Time of arrival at Laboratory _____ 8.1.2024
 Date and Time of commencing examination _____ 9.1.2024
 Date and Time of completing _____ 11.1.2024

Results of Water Analysis

**WHO Drinking Water Guideline
(Geneva - 1993)**

Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	Nil mg/l	0.01 mg/l
Nitrate (N.NO ₃)	Nil mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia Nitrogen (NH ₃)	mg/l	
Ammonium Nitrogen (NH ₄)	mg/l	
Dissolved Oxygen (DO)	mg/l	
Chemical Oxygen Demand (COD)	mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	* mg/l	
Cyanide (CN)	mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (SiO ₂)	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by
 Signature: _____
 Name: **Zaw Hein Oo**
 B.Sc (Chemistry)
 Sr.Chemist
 ISO Tech Laboratory

Approved by
 Signature: _____
 Name: **Soe Thit**
 B.E (Civil) 1980
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DEPARTMENT OF AGRICULTURE (LAND USE)

WATER ANALYTICAL DATA SHEET

MESC (8.1.2024)

Division - ရန်ကုန်တိုင်းဒေသကြီး။

Sheet No. 1

Township - လှိုင်သာယာမြို့နယ်။

Sr No. W 1 / 2024

Sr No.	Sample	Lead (Pb) ppm
1	Project Site	Not Detected

(ဒေါက်တာသန္တာညီ)

ဒုတိယညွှန်ကြားရေးမှူး

ဓာတ်ခွဲခန်းတာဝန်ခံ

မြေအသုံးချရေးဌာနခွဲ

၆

၁၄၊ စက်ပစ္စည်းစာရင်း (ပုံစံ)

စဉ်	စက်ပစ္စည်းအမျိုးအမည်	ရေ တွက် ပုံ	အရေ အ တွက်	အသုံး ပြုခြင်း ကောင်းရေ	ထုတ်လုပ် သည့်နိုင်ငံ	တန်ဖိုး (USD)	တန်ဖိုး (MMK)
I	<u>Assembly Line</u>						
1	TJST - 8235 / Alignment double scissor Lift (TOJUST)	Set	1	3 Hp	China		13,000,000
2	TELOS005/0.5 Ton Transmission Jack (Telescoping cylinder 2 pump)	Set	1		China		700,000
3	LD 10 HA / Air Dryer 10 HA (PUMA)	Set	1	0.5 Hp	China		3,666,000
4	RK - 1000 / Table Lift 1000 KG	Pcs	2		China		1,800,000
5	T32002/2T Engine Crane (Torin/Foldable)	Pcs	1		China		672,000
6	C301/10 L Oil Extractor (Air)	Pcs	1		China		320,000
7	F 450/2 Post Lift 4.5 TON (Base Plate) (TOJUST)	Set	2		China		9,600,000
8	NIULI PALLET TRUCK 550mm x 1150mm 3 Ton (Narran)	Pcs	1		China		700,000
9	10 HP Electrical cut of swift	Pcs	1		China		40,000
10	CO 15/Air horse air Line Filter B - 015	Pcs	1		China		184,200
11	BO15/ Air Horse air Line Filter B - 015	Pcs	1		China		184,200
12	AO 15/ Air Horse air Line Filter A - 015	Pcs	1		China		184,200
13	81023 / Quick Connectors modes - Lock Type 9mm (besta)	Pcs	6		China		19,200
14	12 MNI Flexible pipe	Nos	2				180,000
15	81001 / Quick connectors fende outer teeth 1/4	Pcs	24				384,000
16	81006/Quick connectors Fenale inner teeth 1/2	Pcs	6				96,000
17	81003/Quick connector mate outer teeth 1/4 (Bestia)	Pcs	12				38,400
18	ပိုက်စွပ်ပြား 1/2" x 12	Pcs	24				72,000
19	ပိုက်စွပ်ပြား 1/4 x 12	Pcs	24				48,000
20	SFC 200 / Weiteng air oil fitter	Pcs	24				1,200,000

စဉ်	စက်ယန္တရားအမျိုးအမည်	ရေ တွက် ပုံ	အရေ အ တွက်	အသုံး ပြု ခြင်း ကောင်းရေ	ထုတ်လုပ် သည့်နိုင်ငံ	တန်ဖိုး (USD)	တန်ဖိုး (MMK)
21	Hydraulic oil filter	Pcs	12				432,000
22	1.5mm, 1/2" G1 Sub supply Line	Pcs	100				800,000
23	1.5mm, 2" G1 Main supply Line	Feet	277				2,770,000
24	24m Long Assembly Line 40WLED + 6" Fan + 2" dia pipe for air Line	Unit	2				13,500,000
25	Final Test Frame	Unit	1				1,995,000
26	Shower test	Unit	1				3,250,000
27	Painting (Material + Labours)		1				650,000
28	Transportation Charges						250,000
29	ပိုဒေါင်စင် (100 kg H 200 cm)	Set	26				2,340,000
30	51332 / Finishing hammer 45mm	Pcs	8				200,000
31	DJZ 03 - 16A (Electric Drill JIZ FF 02 - 16A)	Pcs	4				266,000
32	74010/Automotive Vdtage tester (Big Head) 6V - 12V - 24V	Pcs	7				35,000
33	6699, 365 pcs super tools trolley set	Set	4				9,180,000
34	73037/3/8 Professional grade Adj Torque Wrench	Pcs	4				1,032,000
35	73040, 1/2 Digital torque wrench	Pcs	4				2,684,000
36	73035, 1/2 Professional grade Adj Torque wrench	Pcs	4				1,200,000
37	6606, 150 Pcs Metric Tool Set	Pcs	4				1,892,000
38	140106 / လေစိုက်ခွက် (Steel)	Pcs	8				168,000
II	Vehicle Testing & General Equipment						
1	Test Lane Cabibration kits	Set	1		Taiwan		2,560,000
2	TJST - 8235 / Alignment double scissor Lift (TOJUST)	Set	1	3 Hp	China		13,000,000
3	H 701/3D Alignment (Auto) HENCER	Set	1	0.7 Hp	China		19,000,000
4	TSR-5700 Vehicle Test Line Speedometer, Brake, suspension installation and supervision charges	Unit	4				4,000,000
5	Slow down (ဝါ 10 + နက် 10)	Pcs	20				320,000

စဉ်	စက်ပစ္စည်းအမျိုးအမည်	ရေတွက်ပုံ	အရေအတွက်	အသုံးပြုခြင်းကောင်ရေ	ထုတ်လုပ်သည့်နိုင်ငံ	တန်ဖိုး (USD)	တန်ဖိုး (MMK)
6	Exhaust Testing Equipment	Set	1		China	5600	
7	3 Ton Fork Lift CPCD 30 - XRG2 Hongcha	No	1		China	13800	
8	X 431 Pro 3 Launch Scanner (Diagnosis Tester)	Set	2		China	4800	
9	TSR-5700 Vehicle Quintuple Test Lane Brake Tester, Sideslip Tester,	Set	1	15 HP	China	25000	
10	6 Ton Movable dock Leveler	Set	1		China	17200	
11	JVH - M 100 / Headlight Tester	Set	1		China	6540	
12	Generator KOHLER KD 66 1V (Silent Type) and KD 33 IV (Silent Type)	Set	2		USA	28500	
13	Exhaust Fans (Yongshung) Installation	Nos	14	14 HP	China	6300	
III	<u>Filling Machines</u>						
1	GM 720 A AC Machine (GAT)	Set	1		China	4400	
	Total			36.2 HP		112140	114,612,200








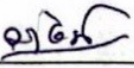

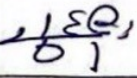
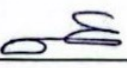


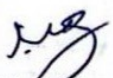


KHIN MAUNG SAN
MANAGING DIRECTOR
MYANMAR BRILLIANCE AUTO COMPANY LIMITED

ကျေးဇူးအမည် ကိုယ်ပိုင်အမည်

ရက်စွဲ-၂၉-၅-၂၀၁၉

အမည်အစားတက်ရောက်သူများစာရင်း

စဉ်	အမည်	လက်မှတ်	မှတ်ချက်
၁	ဦးသန်းဝေ		အုပ်ချုပ်ရေးမှူး
၂	ဦးစောအောင်		
၃	ဒေါ်ဇော်		
၄	ဒေါ်ဖြူဖြူသန်း		
၅	ဒေါ်အေးအေး		
၆	ဒေါ်စန္ဒြာ		
၇	ဒေါ်ခင်မာမာ		
၈	ဒေါ်စန်းစန်း		
၉	ဦးစိုးစိုး		
၁၀	ဦးကျော်စိုး		
၁၁	ဦးစိုးစိုး		
၁၂	ဦးအောင်အောင်		
၁၃	ဒေါ်ခင်ခင်		
၁၄	ဦးအောင်အောင်		

အမည်အစေးတက်ရောက်သူများစာရင်း

စဉ်	အမည်	လက်မှတ်	မှတ်ချက်
၁၅၈	ဦးအောင်ကျော်ထွန်း		
၁၅၉	ဦးစိုးလွင်		ရက်စွဲမရှိပါ။
၁၆၀	ဦးသိန်းဦး		
၁၆၁	ဦးအောင်ဦးမောင်		
၁၆၂	ဦးစွာအောင်		မရောက်ပါ။
၁၆၃	ဦးအောင်မောင်		
၁၆၄	ဦးကျော်စင်		
၁၆၅	ဦးမျိုးကျော်		
၁၆၆	ဦးစောထိန်		
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