SUNME (MYANMAR) INDUSTRIAL LIMITED

Environmental Management Plan

Manufacturing of Garment on CMP Basis

Prepared by

Myanwei Environmental Solutions Co., Ltd.

13-Feb-24

MYANWEI
ENVIRONMENTAL SOLUTIONS

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Date: 13.2.2024

Subject: Environmental Management Plan (EMP) Report in respect to manufacture of Garment by Sunme (Myanmar) Industrial Limited Limited.

EMP report describes the environmental condition of a project, including significant impact, formulation of mitigation measures and preparation of institutional requirements and environmental monitoring.

Myanwei Environmental Solutions Company Limited has prepared this report with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking into account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

We strongly commit that this report was prepared in compliance with Myanmar Environmental Laws and Regulations.

SUNME (MYANMAR) INDUSTRIAL LIMITED

MYAY TAING PLOT NO.14, LAND PLOT NO.106, SHWE THANLWIN INDUSTRIAL ZONE, HLAING THARYAR TOWNSHIP, YANGON.

Date: 13.2.2024

Subject: Environmental Management Plan (EMP) Report in respect to manufacture of Garment

We refer to the captioned EMP report, which has been prepared by Myanwei Environmental Solutions Co., Ltd. (Third Party Consultant) in compliance with EIA procedure (2015) and other related laws/rules.

We believe, to the best of our knowledge at the time of writing, that;

- The EMP report is accurate and complete
- The EMP report has been prepared in strict compliance with all applicable laws, rules, regulations and procedures in force.

Sunme (Myanmar) Industrial Limited will at all time comply fully with all commitment and obligations in the EMP report.

We acknowledge and understand that

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ABBREVIATION

1. CEMP = Construction Environmental Management Plan
2. CMP = Contract Manufacturing Process
3. CSR = Corporate Social Responsibility
4. ECC = Environmental Compliance Certificate
5. ECD = Environmental Conservation Department
6. EIA = Environmental Impact Assessment
7. EMoP = Environmental Monitoring Plan
8. EMP = Environmental Management Plan
9. GIIP = Good International Industry Practices
10. HSE = Health, Safety and Environment
11. IEE = Initial Environmental Examination
12. IFC = International Finance Corporation
13. NEQG = National Environmental Quality (Emission) Guidelines
14. MIC = Myanmar Investment Commission
15. MOECAF = Ministry of Environmental Conservation and Forestry
16. MONREC = Ministry of Natural Resources and Environmental Conservation
17. OEMP = Operation Environmental Management Plan
18. OSHA = Occupational Safety and Health Administration
19. PPE = Personal Protective Equipment
20. WHO = World Health Organization
21. YCDC = Yangon City Development Committee
22. YESB = Yangon City Electricity Supply Board

အစီရင်ခံစာအကျဉ်းချုပ်

နိဒါန်း

အဆိုပြုလုပ်ငန်းသည် CMP စနစ်ဖြင့်အဝတ်အထည်အမျိုးမျိုးချုပ်လုပ်ခြင်းလုပ်ငန်း အတွက် ရင်းနှီးမြှုပ်နှံသော ကုမ္ပဏီဖြစ်ပါသည်။ ရင်းနှီးမြှုပ်နှံမှုလိုင်စင်ကို ၂၀၁၈ခုနှစ်၊ ဇူလိုင်လ၊ ၄ရက်နေ့တွင် (ထောက်ခံချက်အမှတ် ဝ၆၂/၂၀၁၈)ဖြင့် ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီမှ ရရှိပြီးဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန်အတွက် မြန်မာနိုင်ငံသယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ၏ အတည်ပြုချက်ရယူရန် လိုအပ်ကြောင်း ကော်မရှင်မှ မှာကြားခဲ့ပါသည်။

ထို့ကြောင့် မြန်မာနိုင်ငံ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)အရ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) ပြုလုပ်ရန်လိုအပ်ကြောင်း ၂၀၁၈ ခုနှစ်၊ အောက်တိုဘာလ၊ ၂၂ ရက်နေ့တွင် (စာအမှတ်၊ ရက-၁/၃/၄ (အီးအိုင်အေ) (၁၄၀၂/၂၀၁၈) ဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ရန်ကုန်တိုင်းဒေသကြီးမှ သဘောထားမှတ်ချက် ရရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် EMP အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်းဖြစ်သော Myanwei Environmental Solutions Company Limited (MYANWEI) မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။

EMP အစီအစဉ်တွင် Sunme (Myanmar) Industrial Limited ၏ အဝတ်အထည်အမျိုးမျိုးချုပ်လုပ်ခြင်း စီမံကိန်းအတွက် MYANWEI မှရေးသားပြုစုထားသော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာဖြစ်သည်။ အဆိုပါ လေ့လာဆန်းစစ်ခြင်း၏ ရည်ရွယ်ချက်များမှာ-

- ✓ သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားပတ်ဝန်းကျင်အပေါ်စီမံကိန်းဆောင်ရွက်ချက်များကြောင့် ထိခိုက်မှုများကိုလေ့လာရန်။
- ✓ ထိုထိခိုက်မှုများကို လျော့ချနိုင်ရန် လျော့နည်းစေမည့်နည်းလမ်းများကို ဖော်ပြရန်။
- ✓ စီမံကိန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ပြင်ဆင်ရန်နှင့် အကောင်အထည်ဖော်ရန်။
- ✓ စီမံကိန်းအတွက်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အစီရင်ခံစာလုပ်ဆောင်ရာတွင်လုံလောက်မှုရှိစေရန်။
- ✓ ဒေသခံများ၏ လူမှုရေးသက်သာချောင်ချိမှုများ တိုးမြှင့်ရန် နှင့် ဒေသအတွင်း ဖွံ့ဖြိုးတိုးတက်မှုများ အတွက်မရှိမဖြစ်အရေးပါသောလူမှုစီးပွားတာဝန်ယူမှုအစီအစဉ်အား အကောင်အထည်ဖော်ရန်တို့ ဖြစ်ပါသည်။

အဆိုပြုထားသော စီမံကိန်း၏ ရည်ရွယ်ချက်သည် CMP စနစ် (ဖြတ်-လုပ်-ထုတ်) စနစ်ကို အသုံးပြု၍ အဝတ်အထည်အမျိုးမျိုးကို ထုတ်လုပ်ပီး နိုင်ငံခြားသို့ ၁၀၀% တင်ပို့ရန်ဖြစ်ပါသည်။

ဥပဒေနှင့် မူဝါဒဆိုင်ရာ အချက်အလက်များ

EMPရေးဆွဲရခြင်း၏ရည်ရွယ်ချက်မှာနိုင်ငံတော်နှင့်နိုင်ငံတကာမှချမှတ်ထားသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအစီအစဉ်များ၊ စည်းမျဉ်းစည်းကမ်းများ၊ ဥပဒေနှင့် နည်းဥပဒေများကို လိုက်နာပြီး ပတ်ဝန်းကျင်နှင့်လိုက်ရောညီထွေမှုရှိသောထိခိုက်မှုလျော့ချရေးအစီအစဉ်များပြုလုပ်ရန်ဖြစ်ပါသည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အစီရင်ခံစာရေးသားပြုစုသူများ၏ကျွမ်းကျင်မှု နယ်ပယ်ဆိုင်ရာ ဖော်ပြချက်များကို ရေးသားဖော်ပြထားပါသည်။ ဥပဒေနှင့် နည်းဥပဒေ အခန်းတွင် MONREC မှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များအပြင်စက်ရုံနှင့် ဆက်စပ်သက်ဆိုင်နေပြီး လိုက်နာရမည့် ဥပဒေနှင့် နည်းဥပဒေများ၊ ဒေသတွင်း သို့မဟုတ် အပြည်ပြည်ဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒများ၊ ဆက်စပ်နေသည့် နိုင်ငံတကာသဘောတူချက်များကို အကျဉ်းချုပ်ရေးသားဖော်ပြထားပါသည်။ စက်ရုံအတွင်းလိုက်နာ ဆောင်ရွက်ရမည့် စည်းမျဉ်းစည်းကမ်းများ၊ လုပ်ငန်းခွင် အန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ အခြေခံစည်းမျဉ်းစည်း ကမ်းများလည်း ထည့်သွင်းဖော်ပြထားပါသည်။ Sunme (Myanmar) Industrial Limited ၏ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ ကတိကဝတ်များအပြင် ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေး မူဝါဒများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

1. The Constitution Law, 2008
2. The Environmental Conversation Law, 2012
3. The Environmental Conversation Rule, 2014
4. Environmental Impact Assessment Procedure, 2015
5. National Environmental Quality (Emission) Guideline, 2015
6. National Myanmar Environmental Policy, 2019
7. Myanmar Investment Rule, 2017 Amendment 2018
8. Payment of Wages Law, 2016
9. Yangon City Development Committee Law, 2018
10. The Amended Law for Factories Act, 1951 (2016)
11. The Private Industrial Enterprise Law
12. The Export and Import Law, 2012
13. The Prevention of Hazard from Chemical and Related Substances Law, 2013
14. The Underground Water Act
15. Myanmar Fire Brigade Law, 2015
16. The Electricity Law, 2014
17. Boiler Law, 2015
18. The Social Security Law, 2012
19. Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)
20. The Employment and Skill Development (2013)
21. Prevention and Control of Communicable Disease Law (1995 Amendment in 2011)
22. Occupational Safety and Health Law, 2019

23. The Law on Standardization
24. Vehicles Safety and Motor Vehicle Management Law, 2020
25. The Conversation of Water Resources and River Law, 2006
26. The Commercial Tax Law (1990 Amended 2014)

စီမံကိန်းဆိုင်ရာအချက်အလက်

ရင်းနှီးမြှုပ်နှံသူ၏ အချက်အလက်

ရင်းနှီးမြှုပ်နှံသူ အမည်	Mr. Ji Debao
ID No.:	G57184319
နိုင်ငံသား	တရုတ်နိုင်ငံသား
မှတ်ပုံတင်သွင်းသည့် လိပ်စာ	Room1802, Unit 1, Building 5, No.9, Mochou Lake East Road, Jianye District, Nanjing, China.

အဆိုပြုထားသော စီမံကိန်း၏ အဓိကလက္ခဏာများ

အဆိုပြုထားသော စီမံကိန်း	CMPစနစ်ဖြင့်အဝတ်အထည်အမျိုးမျိုးချုပ်လုပ်ခြင်းလုပ်ငန်း
ရင်းနှီးမြှုပ်နှံမှုပုံစံ	၁၀၀% နိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှု
ရှယ်ယာအမျိုးအစား	ပုံမှန်အစုရှယ်ယာ
မြေနေရာပုံစံ	စက်မှုဇုန်မြေ
စုစုပေါင်းမြေကွက်ဧရိယာ	၁.၈၂၆ ဧက
မြေငှားကာလ	၃၀ နှစ်
တည်ဆောက်မှုကာလ	၁ နှစ် ၆လ
အဆိုပြုရင်းနှီးမြှုပ်နှံမှုကာလ	၃၀ နှစ်
စီမံကိန်း တည်နေရာ	မြေကွက်အမှတ်၁၀၆၊မြေတိုင်းရပ်ကွက်အမှတ်၁၄၊ ရွှေသံလွင်စက်မှုဇုန်၊လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။
ဆက်သွယ်ရန် ဖုန်းနံပါတ်	မအေးသီတာမြင့် (HR & Account) ၀၉-၂၅၆၁၈၁၁၇၆ ayethidamyint1176@gmail.com

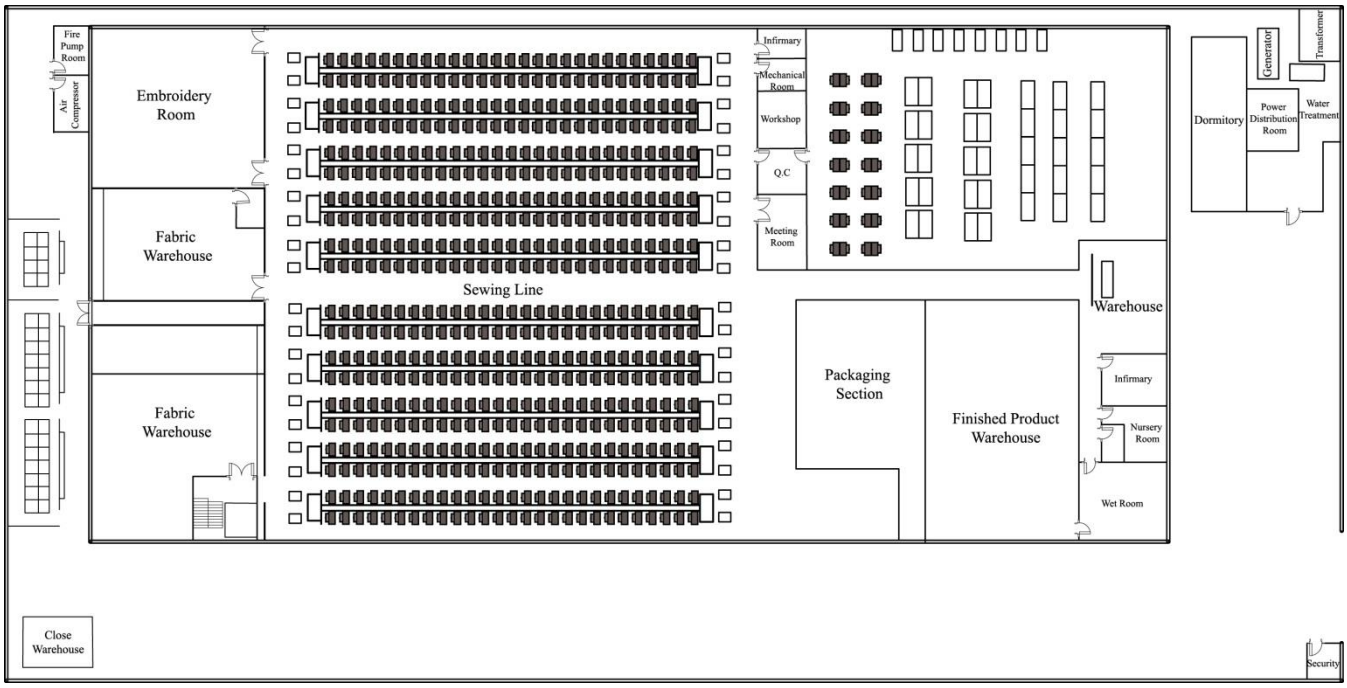
Sunme (Myanmar) Industrial Limited ၏ အထည်ချုပ်စက်ရုံသည် မြေကွက်အမှတ်၁၀၆၊ မြေတိုင်းရပ်ကွက်အမှတ်၁၄၊ ရွှေသံလွင်စက်မှုဇုန်၊လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။ တည်ရှိပါသည်။ စက်ရုံ၏အကျယ်အဝန်းမှာ ၁.၈၂၆ ဧက ရှိပြီး ဝန်းအတွင်းတွင် ၅၅,၀၀၀ စတုရန်းမီတာ ရှိသော စက်ရုံအဆောက်အဦး (၁) လုံးရှိပါသည်။


N
16° 52' 12" N
16° 51' 54" N
16° 51' 36" N
Legend
Project Area
Pan Hlaing River
Hlaing river Rd-Twantay Rd and Yagon Pathein Rd
Industrial Street
Google Earth
96° 2' 6" E
96° 2' 24" E
96° 2' 42" E
96° 3' 0" E
96° 3' 18" E
96° 3' 36" E
96° 3' 54" E
0
0.5
1
1.5
2
Mile

စက်ရုံတည်နေရာပြ မြေပုံ

1. Fire Pump 2. Air Compressor 3. Toilet 4. Close Warehouse 5. Mechanical Room
6. Workshop 7. Q.C 8. Meeting Room 9. Infirmary 10. Nursery Room 11. Wet Room
12. Dormitory 13. Generator 14. Power Distribution 15. Transformer 16. Water Treatment

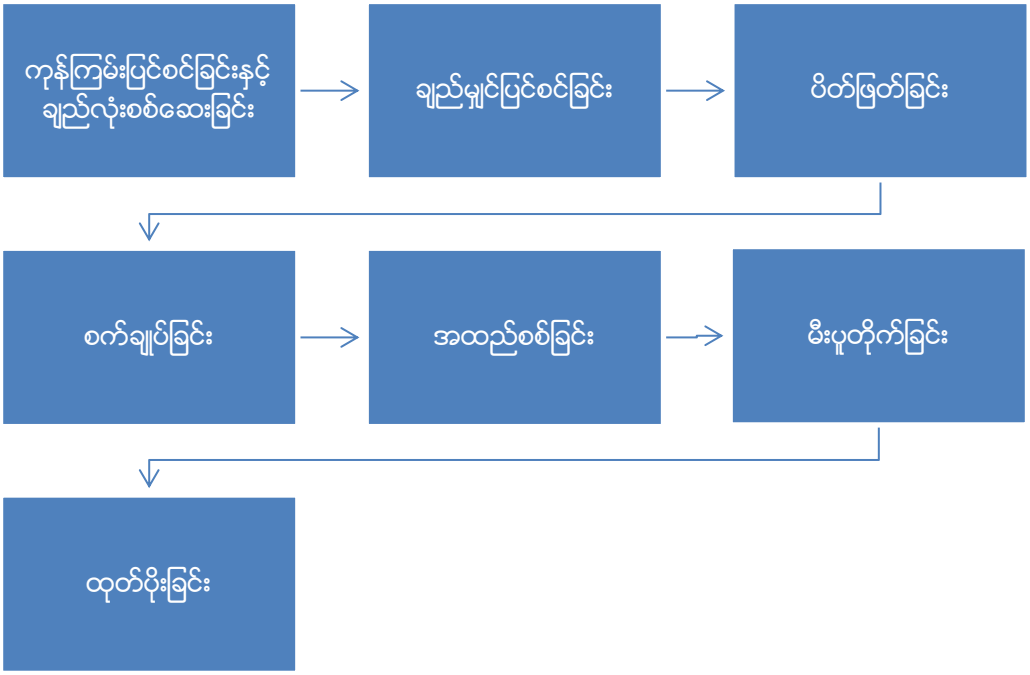
စက်ရုံတည် ဆောက်ထားမှု ပုံစံ



စက်ရုံတည်ဆောက်ထားမှု မြေပုံ

Sunme (Myanmar) Industrial Limited ၏ကုန်ကြမ်းပစ္စည်းများဖြစ်သည့် ပိတ်အထည်အလိပ်၊ အတွင်းခံလိုင်နင်စ၊ ချည်လုံး၊ ကြယ်သီး၊ ဇစ် နှင့်အခြားဆက်စပ်ပစ္စည်းများကို တရုတ်၊ ဂျပန် နှင့် ကိုရီးယား မှာယူတင်သွင်းပါသည်။ ကုန်ကြမ်းများကို ကုန်ကြမ်းသိုလှောင်ခန်းတွင် စနစ်တကျ သိုလှောင်ထားရှိပါသည်။

အဆိုပြုလုပ်ငန်းအတွက်တည်နေရာနှင့်စက်ရုံအတွင်းပါရှိသည့် အဆောင်များ၊စားသောက်ဆောင်၊ စတိုး၊ပြုပြင်ထိန်းသိမ်းရေးအခန်း၊ မီးဖိုချောင်အစရှိသည်တို့ကို သီးခြားဖော်ပြထားပါသည်။ ထို့အပြင် ထုတ်လုပ်မှုနည်းလမ်းများ၊ လိုအပ်သည့်ကုန်ကြမ်းများ၊ နှစ်စဉ်ထွက်ကုန်များနှင့် စက်ပစ္စည်းများအား ဖော်ပြထားပါသည်။ အဆိုပြုလုပ်ငန်းအတွက်လိုအပ်သည့်စွမ်းအင်နှင့် အသုံးပြုသည့်ပမာဏများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။ ကျန်လုပ်ငန်းသုံးယာဉ်နှင့် ရုံးသုံးပစ္စည်းများကို ပြည်တွင်းမှ ဝယ်ယူအသုံးပြုပါသည်။ ကုန်ထုတ်လုပ်ခြင်းလုပ်ငန်းမှာ automatic machine နှင့်လူစွမ်းအားကိုအသုံးပြုသောလုပ်ငန်းမျိုးဖြစ်ပါသည်။ ထုတ်လုပ်ပုံအဆင့်ဆင့်ကို အောက်ဖော်ပြပါ ပုံပြဇယားဖြင့် ဖော်ပြထားပါသည်။



ထုတ်လုပ်ပုံလုပ်ငန်းအဆင့်ဆင့်

လုပ်ငန်းမှ ပထမနှစ်မှ ၁၀ နှစ်အတွင်း အထည်ရေ ၂,၀၄၀,၀၀၀ မှ ၂,၁၄၄,၀၆၁ အထိ တိုးမြှင့်ထုတ်လုပ်သွားမည်ဖြစ်သည်။ နိုင်ငံခြားသားကျွမ်းကျင်ပညာရှင် (၃၀) ယောက်နှင့် နိုင်ငံသား (ပြည်တွင်း) ဝန်ထမ်းများကို ပထမနှစ် မှ ၁၀ နှစ်အတွင်း ၈၀၁ ဦး ခန့်အပ်ပြီး ဆောင်ရွက်သွားမည်ဖြစ်သည်။ EMP အတွက်ကွင်းဆင်းလေ့လာချိန်တွင် စက်ရုံတွင် ထုတ်လုပ်မှုအချို့ပြုလုပ်နေပြီး ပြင်ဆင်မှုများလဲပြုလုပ်နေသည်ကို တွေ့ရှိခဲ့ပါသည်။ စက်ရုံ၏ လုပ်ငန်းလည်ပတ်မှုကြောင့်လည်း သဘာဝပတ်ဝန်းကျင်အပေါ် ဆိုးဆိုးဝါးဝါးထိခိုက်မှု မရှိကြောင်း လေ့လာတွေ့ရှိခဲ့ပါသည်။

အနီးပတ်ဝန်းကျင် အခြေအနေ

ကနဦးစစ်တမ်းကောက်ယူခြင်းနှင့် ဒေသဆိုင်ရာမှအချက်အလက်များရယူခြင်းသည် အလွန်အရေးကြီးပါသည်။ ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာခြင်းကဲ့သို့သော ကနဦးစစ်တမ်းကောက်ယူခြင်းသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာတွင် အရေးပါသောအခန်းအဖြစ် တည်ရှိနေသည်။ ထို့အတွက် စီမံကိန်းဒေသသို့ ကွင်းဆင်းလေ့လာမှုများကို ၂၀၁၉ ခုနှစ်၊ မေလ၊ ၂၁ ရက်နေ့တွင် တွင် လက်တွေ့ကွင်းဆင်းလေ့လာခဲ့ပီး လိုအပ်သည့် လေအရည်အသွး၊ ဆူညံမှု အပူချိန်နှင့် စိုထိုင်းမှု အစရှိသည့် အချက်အလက်များကို ရယူခဲ့ပါသည်။ ကွင်းဆင်းလေ့လာထားသည့် အချက်အလက်များကို သက်ဆိုင်ရာခေါင်းစဉ်အလိုက် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့် နှိုင်းယှဉ်၍ ဖော်ပြထားပါသည်။ ထို့အပြင် စက်ရုံတည်နေရာနှင့် သက်ဆိုင်သည့် အချက်အလက်များဖြစ်သော လူမှုစီးပွားအခြေအနေ၊ ရူပပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ရာသီဥတုဆိုင်ရာ အချက်အလက်များ အစရှိသည်များကို ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်မှ တရားဝင်ပြဋ္ဌာန်းထားသော မြို့နယ်ဆိုင်ရာအချက်အလက်များမှ ကိုးကားဖော်ပြထားပါသည်။

အဆိုပြုလုပ်ငန်း၏စစ်တမ်းကောက်ယူမှု

အမျိုးအစား	ရလဒ်
ရာသီဥတုအခြေအနေ	
အပူချိန်	၃၉.၅ °C
စိုထိုင်းဆ	၅၅.၇%
ဆူညံသံ	
စက်ချုပ်ဌာန	၇၆.၃ dBA
ကုန်ချောထုပ်လုပ်သည့်ဌာန	၇၅.၇ dBA
ကုန်ကြမ်းများဖြတ်တောက်သည့်ဌာန	၇၆ dBA
လေထုအရည်အသွေး	
စက်ရုံအတွင်း လေထုအရည်အသွေး	
PM_{10}	၄၆.၂ µg/m^3
$PM_{2.5}$	၂၂.၈ µg/m^3
စက်ရုံပြင်ပ လေထုအရည်အသွေး	
PM_{10}	၁၂.၃ µg/m^3
$PM_{2.5}$	၃.၄ µg/m^3
SO_2	၁µg/m^3
NO_2	၅.၁ µg/m^3

O_3	၃၇.၅ µg/m^3
CO_2	၁၈၁.၁ µg/m^3

ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေး အစီအစဉ်

အဆိုပြု စီမံကိန်း၏ အဓိကဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုကို အခြေခံစစ်တမ်းများ ပေါ်မူတည်၍ ယေဘုယျ နည်းလမ်းများအတိုင်း လျော့ချမှုများ ပြုလုပ်သွားပါမည်။ ပတ်ဝန်းကျင် ထိခိုက်မှုကို လေ့လာဆန်းစစ်ရာတွင် စီမံကိန်းကာလအတွင်း ထိခိုက်မှု တစ်ခုချင်းစီ၏ ပမာဏ၊ ကြာမြင့်ချိန်၊ ကျယ်ပြန့်မှုနှင့် ဖြစ်နိုင်ချေတို့အား ဖော်ပြထားပါသည်။

အကဲဖြတ်ခြင်း	အတိုင်းအတာ				
	၁	၂	၃	၄	၅
ပမာဏ	မလုံလောက်သော	အနည်းငယ်နှင့် လုပ်ငန်းခွင်ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	အသင့်အတင့်နှင့် အနည်းငယ် လုပ်ငန်းခွင်ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	မြင့်မားနှင့် သိသာစွာလုပ်ငန်းခွင်ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	အလွန်မြင့်မားနှင့် အမြဲတမ်းလုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော
အချိန်	၀-၁ နှစ်	၂-၅ နှစ်	၆-၁၅ နှစ်	လုပ်ငန်း လည်ပတ်စဉ် ကာလ တစ်လျောက်	လုပ်ငန်းပိတ်သိမ်းခြင်းကာလအထိ
ကျယ်ပြန့်မှု	လုပ်ငန်းခွင်အတွင်း	ဒေသအတွင်း	မြို့နယ်အတွင်း	နိုင်ငံအတွင်း	နိုင်ငံတကာအတွင်း
ဖြစ်နိုင်ချေ	လုံး၀ မဖြစ်နိုင်သော	မဖြစ်နိုင်သော	ဖြစ်နိုင်သော	ဖြစ်နိုင်ချေမြင့် သော	အတိအကျ

သတ်မှတ်ချက် = (ပမာဏ+အချိန်+ကျယ်ပြန့်မှု) × ဖြစ်နိုင်ချေ

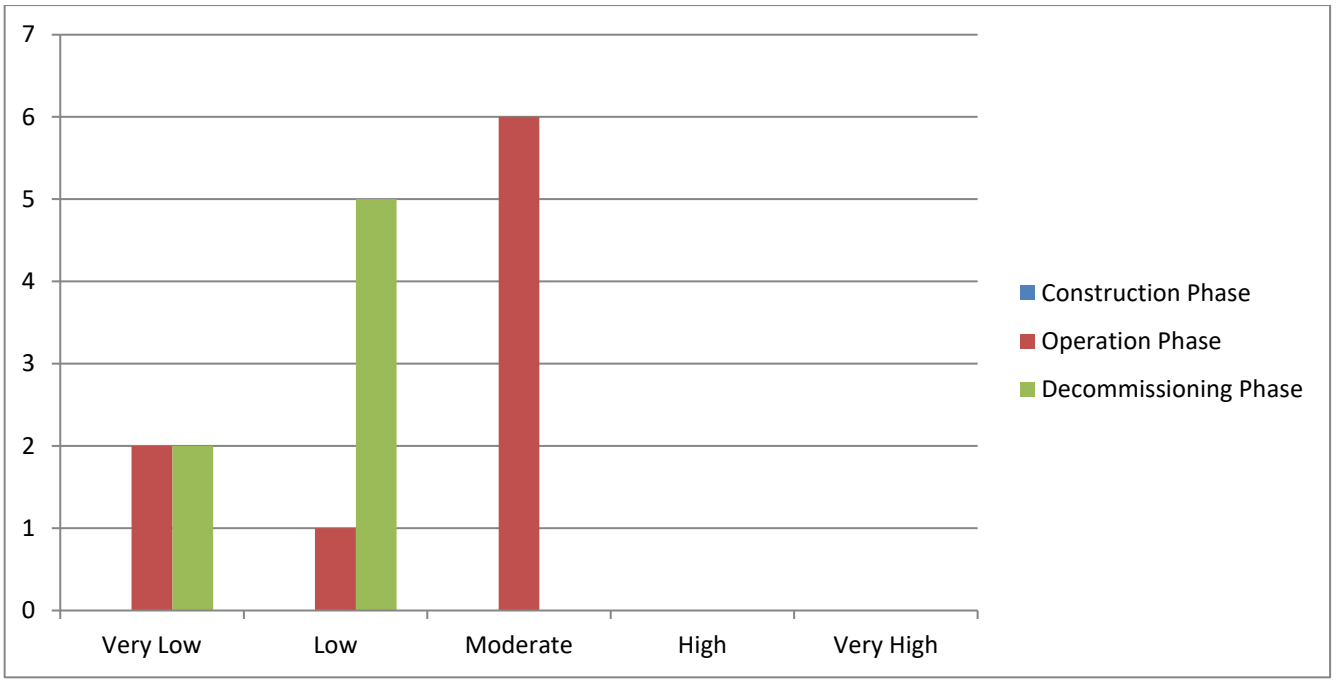
ပတ်ဝန်းကျင်ထိခိုက်မှုကို အောက်ပါအတိုင်း ခွဲခြားနိုင်သည်။

သတ်မှတ်ချက်	ထိခိုက်မှုအဆင့်
<၁၅	အလွန်နိမ့်
၁၅ - ၂၉	နိမ့်
၃၀ - ၄၄	အလယ်အလတ်
၄၅ - ၅၉	မြင့်
၆၀	အလွန်မြင့်

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
တည်ဆောက်ရေးကာလ။ ။ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာချိန်တွင် စက်ရုံတည်ဆောက်ပြီး လုပ်ငန်းလည်ပတ်နေချိန်ဖြစ်သောကြောင့် ဤကာလကိုထည့်သွင်း မစဉ်းစားတော့ပါ။			
လုပ်ငန်းလည်ပတ်ခြင်းကာလ			
• လေထုညစ်ညမ်းမှု	• သယ်ယူပို့ဆောင်ရေးသုံး မော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့်နှင့် ဖန်လုံအိမ်ဓာတ်ငွေ့ထွက်ခြင်း • လုပ်ငန်းခွင်အတွင်းဖုန်မှုန့်ထွက်ခြင်း • မီးဖိုမှမီးခိုးထွက်ခြင်း • အရေးပေါ်သုံးမီးစက်မှ စွန့်ထုတ်အိုးအငွေ့ထွက်ခြင်း	အနည်းငယ်	• ဘွိုင်လာနှင့်မီးစက် တို့တွင် မီးခိုးခေါင်းတိုင် တပ်ဆင်ခြင်းဖြင့် အခိုးအငွေ့ကြောင့် ပတ်ဝန်းကျင်ထိခိုက်မှုကို လျော့ချခြင်း၊ • စက်ရုံအတွင်းနှင့် အနီးအနားတွင် သစ်ပင်ပန်းမံ စိုက်ပျိုးခြင်းဖြင့် carbon ထွက်ရှိမှုကို လျော့ချပေးခြင်း။ • NOx ထွက်ရှိမှုနည်း သော နည်းပညာမြင့် စက်ပစ္စည်းများသုံးခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	• မိလ္လာစွန့်ထုတ်ရေ • စက်ပစ္စည်း၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း	အနည်းငယ်	• လက်ရှိရေဆိုးစွန့်ပစ်မှုပုံစံဖြစ်သော မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပေးခြင်း။ • မိလ္လာကန်နှင့် မိလ္လာ စနစ်ကိုလူဦးရေနှင့် သင့်တင့်သည့် ပမာဏ ရှိရန် စီစဉ်ထားခြင်း။ • ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ • စက်ပစ္စည်းများကိုပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	• မတော်တဆ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များ မှ ဆီယိုဖိတ်ခြင်း	အလွန်နည်း	• စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။ • မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
ဆူညံသံ	• မီးစက်၊ လေမှုတ်စက် နှင့် မော်တော် ယာဉ် အသုံးပြုမှုကြောင့် ပတ်ဝန်းကျင် ဆူညံမှု	အနည်းငယ်	• ဆူညံသံထွက်သောနေရာများကို အကာအကွယ် ဖြင့်ထားရှိခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ပေးခြင်း။
မီးဘေးအန္တရာယ်	• ကုန်ကြမ်းသိုလှောင်မှု နှင့် လျှပ်စစ်သုံးစွဲ ပေါ်လျော့မှု	အသင့်တင့်	• ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း။ • လျှပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း။

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
စွန့်ပစ်အမှိုက်	• ထုတ်လုပ်ရာတွင် ပိတ်ဖြတ်ခြင်း၊ထုပ်ပိုးခြင်းမှထွက်ရှိသည့်အမှိုက်များနှင့် ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ	အနည်းငယ်	• စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း။
စွန့်ပစ်အရည်	• စားသောက်ဆောင် တို့မှစွန့်ထုတ်ရေ။ မိလ္လာကန်စနစ်။	အသင့်တင့်	• စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း။
အန္တရာယ်ရှိအမှိုက်	• စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များ ပြုပြင်ထိန်းသိမ်း မှုမှ ထွက်ရှိသည့် အမှိုက်များ။	အလွန်နည်း	• စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း။ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း။
လုပ်ငန်းပိတ်သိမ်းခြင်းကာလ			
လေထုညစ်ညမ်းမှု	• အဆောက်အဦးများ ဖြိုချမှုများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• NOxထွက်ရှိမှုနည်းသောနည်းပညာမြင့် စက်ပစ္စည်းများသုံးခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	• ဖြိုချပစ္စည်းများနှင့် မိလ္လာဖျက်ဆီးမှုများ	အနည်းငယ်	• ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	• အဆောက်အဦးနှင့် ဆက်စပ်ပစ္စည်းများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
အမှိုက်စွန့်ပစ်မှု	• အဆောက်အဦးများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အလွန်နည်း	• စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း။
အန္တရာယ်ရှိအမှိုက်	• စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ် များ ပြုပြင်ထိန်းသိမ်းမှု မှ ထွက်ရှိသည့်အမှိုက်များ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အလွန်နည်း	• စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း။ • စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း။
မတော်တဆ ထိခိုက်မှုများ	• အဆောက်အဦးများ ဖြိုချမှုများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။

လုပ်ငန်းလည်ပတ်စဉ်ကာလတွင် သတ်မှတ်ချက်များမှာ အလယ်အလတ်အဆင့် သတ်မှတ်ချက် ၆ခု (မီးဘေးအန္တရာယ်၊ လုပ်ငန်းခွင်ဘေးအန္တရာယ်၊ စွန့်ပစ်အစိုင်အခဲ)၊ အနိမ့်ဆုံးအဆင့် သတ်မှတ်ချက် ၁၃ခု (လေထုအရည်အသွေး၊ ဆူညံသံနှင့် စွန့်ပစ်အရည်) နှင့် အလွန်နိမ့်သောအဆင့် သတ်မှတ်ချက် ၂ခု (ရေထုညစ်ညမ်းမှု၊ မြေဆီလွှာ၊ ကုန်းနေရေနေသတ္တဝါများ၊ ကျန်းမားရေးနှင့် အန္တရာယ်ရှိစွန့်ပစ်အမှိုက်) များနှင့် လုပ်ငန်းပိတ်သိမ်းစဉ်ကာလတွင် သတ်မှတ်ချက်များမှာ အလွန်နိမ့်သောအဆင့် သတ်မှတ်ချက် ၂ခု (စွန့်ပစ်အမှိုက်နှင့် အန္တရာယ်ရှိစွန့်ပစ်အမှိုက်) နှင့် အနိမ့်ဆုံးအဆင့် သတ်မှတ်ချက် ၅ခု (လေထုအရည်အသွေး၊ ရေထုညစ်ညမ်းမှု၊ မြေဆီလွှာညစ်ညမ်းမှု၊ ဆူညံသံနှင့် လုပ်ငန်းခွင်ဘေးအန္တရာယ်) တို့တွေ့ရှိရပြီး ၎င်းအားပုံနှင့် နှိုင်းယှဉ်ဖော်ပြထားပါသည်။



အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများအား နှိုင်းယှဉ်ပြပုံ

ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်

အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် Environmental Management System (EMS) စက်ဝိုင်းဖြင့် အစီစဉ်တကျ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင် စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များ ပါဝင်ပါသည်။ ၄င်း EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် သည် စက်ရုံတွင် ကျန်းမာရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ အဆိုပါစက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ရေရှည်ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်သော ပတ်ဝန်းကျင် အဖြစ် အကောင်အထည်ဖော်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ဆိုင်ရာ ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေရန်

စီမံခန့်ခွဲမှုအစီအစဉ်များနှင့် စောင့်ကြပ်ကြည့်ရှုရမည့်အစီအစဉ်များကို အောက်ပါအတိုင်းပတ်ဝန်းကျင်ဆိုင်ရာ အကြောင်းအရာတစ်ခုချင်းစီအလိုက် ခွဲခြားထားပါသည်။

၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

- စက်ရုံတွင် ကာဗွန် နှင့် လေထုညစ်ညမ်းမှု လျော့ချရန် သစ်ပင်ပန်းပင်များ စိုက်ပျိုးထားရှိခြင်း
- စက်ရုံအတွင်း မည်သည့် စွန့်ပစ်အမှိုက်များကို မီးရှို့ဖျက်စီးခြင်းအား မပြုလုပ်စေခြင်း
- အမှုန်များသောနေရာများတွင် လုပ်ငန်းလုပ်ဆောင်ရမည့် လုပ်သားများကို မျက်နှာအုပ် (Mask) များတပ်ဆင်စေခြင်း

၂။ ရေသုံးစွဲမှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

- ရေအသုံးပြုမှု အတွက် ရေအသုံးပြုမှု ထိန်းချုပ်သည့် ပစ္စည်း တပ်ဆင်ထားရှိစေခြင်း
- ရေအသုံးပြုသည့် နေရာများ ၊ အိမ်သာများတွင် ရေကို သင့်လျော်သော နည်းလမ်းနှင့် အသုံးပြုခြင်း နှင့် ထိန်းသိမ်းစောင့်ရှောက်ခြင်း ဆိုင်ရာ နည်းလမ်းများ သိရှိစေခြင်းနှင့် သင်တန်းပို့ချခြင်း

၃။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

- စက်ရုံ၏ မိလ္လာစနစ်နှင့် ရေစီးကြောင်းများနှင့် အနီးဝန်းကျင်ရှိ ရေမြောင်းစနစ်များကို ရေလုံစေခြင်းနှင့် လုံလောက်သော အရွယ်အစား ထားရှိစေခြင်း
- မိလ္လာလိုအပ်ချက်များကို ပုံမှန်စစ်ဆေးပေးခြင်းနှင့် ပြုပြင်ထိန်းသိမ်းခြင်း

၄။ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

- စက်ရုံအတွင်း မည်သည့်စွန့်ပစ်ပစ္စည်းများကို မြစ်၊ ချောင်း၊ အင်းအိုင် အတွင်းသို့ မစွန့်ပစ်ရ
- စွန့်ပစ်ပစ္စည်းများအား ပြန်လည်အသုံးပြုရန်နှင့် အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းအဖြစ် ခွဲခြားစွန့်ပစ်စေခြင်း
- အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ(ပလတ်စတစ်အိတ်ခွံ၊ စက္ကူဘူးခွံ)အား ပြည်တွင်းဝယ်ယူသူများထံ ပြန်လည်ရောင်းချစေခြင်း
- အိမ်သုံးစွန့်ပစ်အမှိုက်နှင့် လုပ်သားစွန့်ပစ် အမှိုက်များကို YCDC နှင့် နေ့စဉ် စွန့်ပစ်ခြင်း
- အမှိုက်စွန့်ပစ်ခြင်းနှင့် ပတ်သက်၍ သင်တန်းပို့ချပေးခြင်း

၅။ ဆူညံမှုထိန်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

- မီးစက်အသုံးပြုမှုအတွက် အသံလုံခန်းများဆောက်လုပ်ထားရှိခြင်း
- လုပ်ငန်းသုံးသည့်ယာဉ်များကို သတ်မှတ်အရှိန်ထက် ကျော်လွန်၍ မမောင်းနှင်စေခြင်း

- လုပ်ငန်းခွင်အတွင်း လုပ်သားများအတွက် တစ်ကိုယ်ရေသုံး ကာကွယ်ရေးပစ္စည်း (PPE) များလုံလောက်စွာ ထားရှိပေးခြင်း
- လုပ်သားများကို PPE အသုံးပြုမှုနှင့် ပက်သက်၍ သင်တန်းများပို့ချပေးခြင်းနှင့် ဆူညံသံများသော နေရာတွင် အလုပ်လုပ်စဉ်တွင် PPE များကိုသေချာစွာ အသုံးပြုစေခြင်း

၆။ အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်

- မီးသတ်ကိရိယာများနှင့် မီးသတ်နည်းစနစ်များကို လုပ်ငန်းဆောင်ရွက်သည့်နေရာတိုင်းတွင် ထားရှိပေးခြင်းနှင့် သိရှိစေခြင်း
- မီးဘေးကာကွယ်ရေး လမ်းကြောင်းမြေပုံ အသေးစိတ်ကို ပြုလုပ်ထားရှိရန်နှင့် လုပ်သားများကို အသိပေးထားခြင်း
- လုပ်သားများကို ငလျင်လှုပ် လျှင် လုပ်ဆောင်ရမည့် အချက်များကို အသိပေးထားခြင်း
- စက်ရုံ၏ ဆေးဘက်ဆိုင်ရာ အဖွဲ့အစည်းမှ ရှေးဦးသူနာပြုစုနည်းများ အတွက် ပြင်ဆင်ထားရှိခြင်း
- မီးသတ်တပ်ဖွဲ့ ၊ ကယ်ဆယ်ရေးအဖွဲ့များ ဖြင့် လုံခြုံရေးကော်မတီ ဖွဲ့စည်းခြင်း၊ ကော်မတီမှ လုံခြုံရေး စီမံခန့်ခွဲရေး နှင့် ပတ်သက်သည်များ ဆွေးနွေးရန် လစဉ် အစည်းအဝေးများ ပြုလုပ်စေခြင်း

၇။ စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်

၈။ လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ် CSR Plan

၉။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် ငွေကြေးလျာထားမှု

၁၀။ မကျေနပ်မှု ဖြေရှင်းခြင်း နည်းလမ်း

အဆိုပြုလုပ်ငန်း၏ လူထုအကျိုးတူပူးပေါင်းပါဝင်မှုများအဖြစ် အကျိုးအမြတ်၏ ၂% ကို ကျန်းမာရေး၊ ပညာရေးနှင့်နယ်ပယ်ဖွံ့ဖြိုးတိုးတက်ရေးများတွင်ထည့်ဝင်လှူဒါန်းသွားမည်ဖြစ်ပါသည်။အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးလုပ်ဆောင်ရမည့်လုပ်ငန်းစဉ်များနှင့်ဖြေရှင်းရမည့်နည်းလမ်းများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်ကို ၃၀ ရက်၊ ဇူလိုင်လ၊ ၂၀၁၉ ခုနှစ်တွင် အစည်းအဝေးခန်းမ၊ Sky Hotel၊ လှိုင်သာယာမြို့နယ် တွင် ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲ အစည်းဝေးတွင် သက်ဆိုင်ရာ အစိုးရအဖွဲ့ရုံး၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီ၏ တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုအပ်သည်များကို အကြံပေးခြင်း၊ စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြုချက်များပေးခဲ့ပါသည်။

အချိန်	ဗုဒ္ဓဟူးနေ့၊ နိုဝင်ဘာလ၊ ၆ရက်၊ ၂၀၁၉ခုနှစ်
နေရာ	Sky Hotel၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်မြို့။
အစီအစဉ်အကျဉ်း	• စက်ရုံနောက်ခံအကြောင်း • စက်ရုံလုပ်ငန်းအကြောင်း • ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေးအစီအစဉ် • ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ် • အမေးအဖြေကဏ္ဍ

နိဒါန်း

စီမံကိန်းဖော်ဆောင်သည့် အချိန်အတွင်း ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ၊ လျော့ချရေး နည်းလမ်းများ၊ အစီအစဉ်များ၊ တိုင်းတာမှုများ စသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များကို လုပ်ဆောင်ရပါသည်။ Sunme (Myanmar) Industrial Limited မှ စက်ရုံတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် အဖွဲ့အစည်းဖွဲ့စည်းခြင်း၊ ပုံမှန်ဆန်းစစ်လေ့လာခြင်းများပြုလုပ်သွားမည်ဖြစ်ပါသည်။ပတ်ဝန်းကျင် လေထုအရည်အသွေး၊ မိလ္လာစနစ်၊ စွန့်ပစ်အစိုင်အခဲ စွန့်ပစ်မှုများကို စက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အဖွဲ့အစည်းမှဆန်းစစ်သွားမည်ဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်းမှလူထုအကျိုးပြုလုပ်ငန်းများနှင့် အရေးပေါ်ဆောင်ရွက်ချက်များ၊ ဒေသဆိုင်ရာ အကျိုးပြုလုပ်ငန်းများကို လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။

အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒလမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင်ဖော်ပြရှင်းလင်းတင်ပြထားပါသည်။စီမံကိန်းနှင့်သက်ဆိုင်သူများအားစီမံကိန်းဆိုင်ရာ အကြောင်းအရာများရှင်းလင်းတင်ပြခြင်း၊အကြံပြုချက်များနှင့်ဆွေးနွေးတင်ပြလာသည့်သဘောထား အကြံဉာဏ်များကိုရယူပြီး အစီအရင်ခံစာတွင် ဖော်ပြထားပါသည်။

အကြံပြုချက်များအရ-

- အစီရင်ခံစာတွင် ဖော်ပြထားသည့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် ကတိကဝတ်များကို စီမံကိန်း၏ သက်တမ်းတလျှောက်တွင် အကောင်အထည်ဖော် ဆောင်ရွက်ပါမည်။
- အစိုင်အခဲနှင့်အရည်စွန့်ပစ်ပစ္စည်းများကိုရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ၏ စည်းကမ်းများအတိုင်း စွန့်ပစ်ပါမည်။
- အလုပ်သမားများအား သင့်တော်သော သင်တန်းများပေးခြင်း၊လုပ်ငန်းခွင်အတွင်း တစ်ကိုယ်ရည် ကာကွယ်ရေး ပစ္စည်းများ အသုံးပြုစေခြင်းများ ဆောင်ရွက်ပါမည်။
- ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်များကို နေ့စဉ်၊ လစဉ်နှင့် နှစ်စဉ် လုပ်ငန်းခွင်အတွင်း လုပ်ဆောင်မည်။

- ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ် မှတ်တမ်းများကို သေချာသိမ်းဆည်း၍တတိယအဖွဲ့အစည်း သို့ တင်ပြမည်။
- ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏လမ်းညွှန်ချက်များ၊ပတ်ဝန်းကျင်ဆိုင်ရာဥပဒေ၊နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ပါမည်။

အချုပ်အားဖြင့်ဆိုသော်အဆိုပြုသူသည်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှညွှန်ကြားလာသော အဆိုပြုချက်များ၊ အကြံပြုချက်များကို လိုက်နာဆောင်ရွက်ရမည်။ ထိရောက်သော ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုကို အဆိုပြုသူမှ ဆောင်ရွက်ရမည်။ အဆိုပြုသူသည် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့်ချမှတ်ထားသောမူဝါဒ လမ်းညွှန်ချက်များအတိုင်း လိုက်နာဆောင်ရွက်မည်။

EXECUTIVE SUMMARY

Introduction

Environment Management Plan is required for ensuring sustainable development. It should not affect the surrounding environment adversely. The management plan presented in this chapter needs to be implemented by the proposed expansion of Sunme (Myanmar) Industrial. The Environment Management Plan (EMP) aims at controlling pollution at source with available and affordable technology followed by treatment measures. Waste minimization and waste recycling measures are emphasized. In addition to the Industry specific control measures, the proposed industry should adopt following guidelines. **(Document of Sunme (Myanmar) Industrial Limited is presented in Appendix A).**

The project is new investment for manufacturing of Garment on Contract Manufacturing Process (CMP) basic company from China. The project is issued by the Yangon Region Investment Committee (YRIC) on July 4 2018 with the Endorsement No. (YGN- 062/2018). YRIC asked for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing of Garment under the name of Sunme (Myanmar) Industrial Limited as a solely owned foreign investment from the China

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka - 1/3/4 (EIA) (1402/2018) on 22 October 2018. Therefore Sunme (Myanmar) commissioned Myanwei Consulting Company Limited for EMP report study The specific objectives of this study are;

- ✓ Identify the major impacts that are may arise from the activities of the proposed project on natural environmental and socio-economic environment of the project area
- ✓ Describe the mitigation measures to minimize these impacts
- ✓ Prepare and implement Environmental Management Plan for the project
- ✓ Make sure that EMP is developed sufficiently and sound for the proposed project and
- ✓ Corporate Social Responsibility Plan (CSR Plan) plays an essential part for the improvement of the social welfare of community as well as development of the region.

The proposed project aims to manufacture of Garment on CMP Basis and 100% export to foreign country.

The main purpose of this EMP report is to obey the rule and regulation of Local and International Environmental Protection programs and harmonize with the environmental and also describes the responsible person and his responsibility.

Policy, Legal and Institutional Framework

National Laws and Regulations, International Guidelines are referred for Environmental Management Plan of the proposed project.

1. The Constitution Law, 2008
2. The Environmental Conversation Law, 2012
3. The Environmental Conversation Rule, 2014
4. Environmental Impact Assessment Procedure, 2015
5. National Environmental Quality (Emission) Guideline, 2015
6. National Myanmar Environmental Policy, 2019
7. Myanmar Investment Rule, 2017 Amendment 2018
8. Payment of Wages Law, 2016
9. Yangon City Development Committee Law, 2018
10. The Amended Law for Factories Act, 1951 (2016)
11. The Private Industrial Enterprise Law
12. The Export and Import Law, 2012
13. The Prevention of Hazard from Chemical and Related Substances Law, 2013
14. The Underground Water Act
15. Myanmar Fire Brigade Law, 2015
16. The Electricity Law, 2014
17. Boiler Law, 2015
18. The Social Security Law, 2012
19. Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)
20. The Employment and Skill Development (2013)
21. Prevention and Control of Communicable Disease Law (1995 Amendment in 2011)
22. Occupational Safety and Health Law, 2019
23. The Law on Standardization
24. Vehicles Safety and Motor Vehicle Management Law, 2020
25. The Conversation of Water Resources and River Law, 2006
26. The Commercial Tax Law (1990 Amended 2014)

Project Description

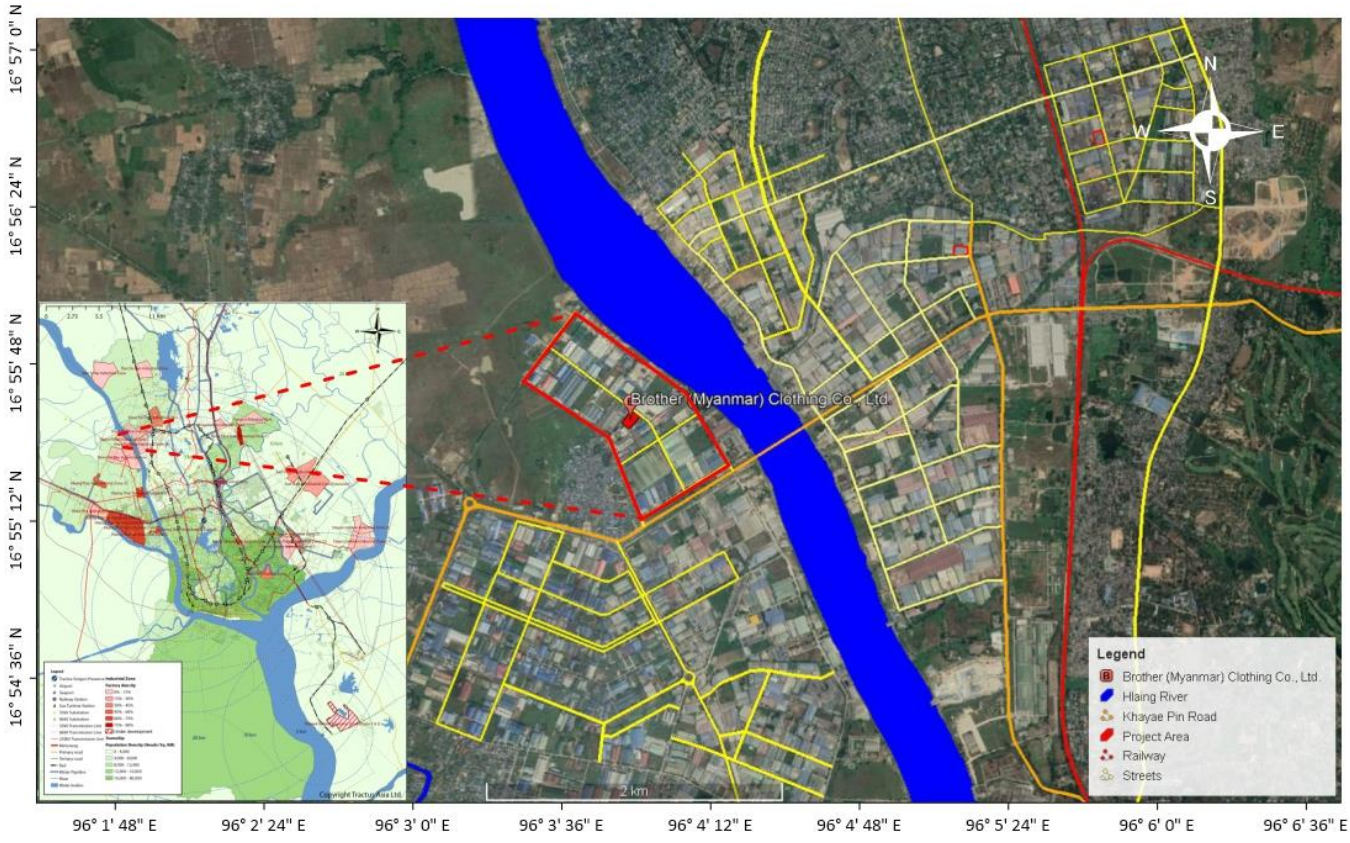
Information of Investor

Investor Name:	Mr. Lu WenHong
ID No.:	E65994994
Citizenship:	Chinese
Address of Registration office:	No. 88, Jiuji, HeKou New District, Haishu Town, Changshu City, Jiangsu Province, China.

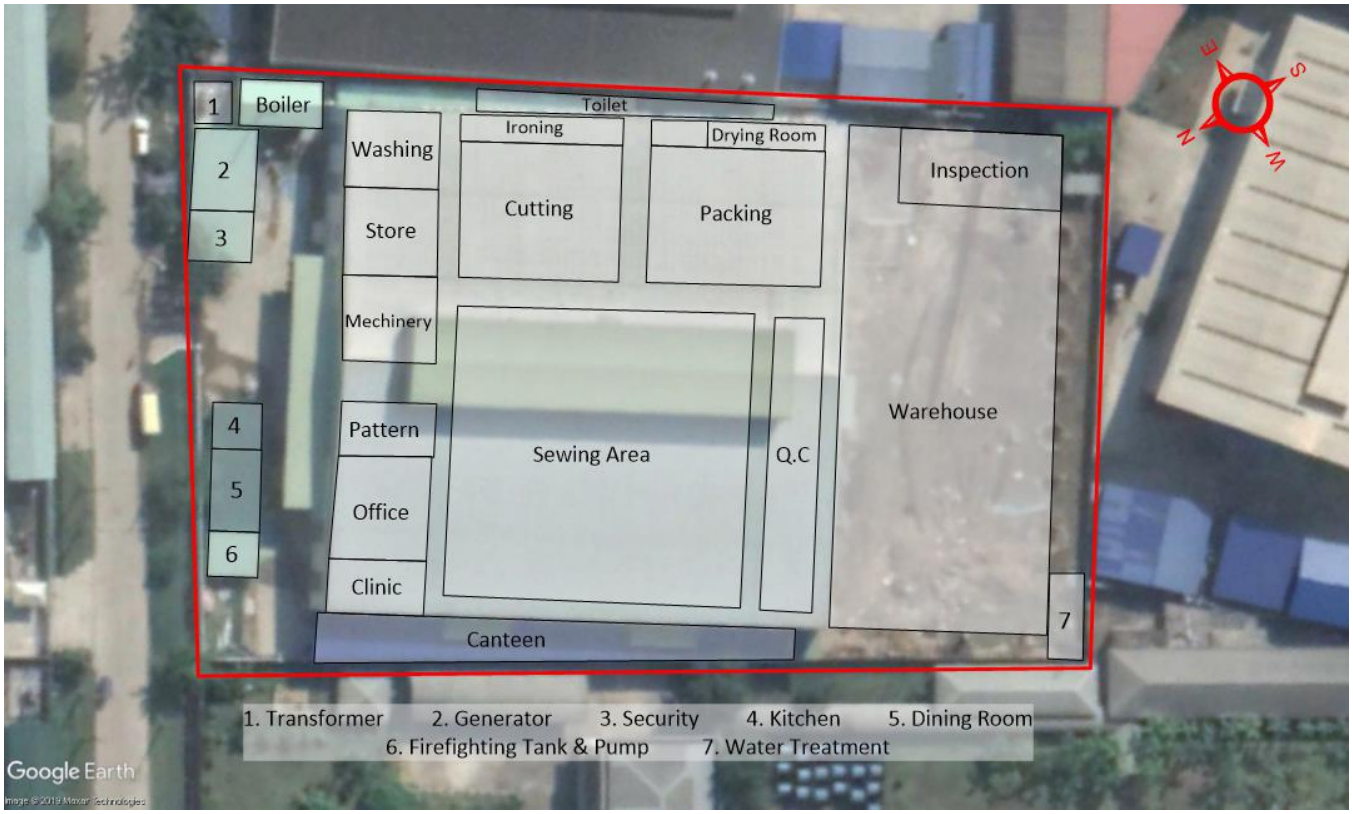
Salient Features of the Proposed Project

Type of Proposed Business	Manufacturing of Garment on CMP Basis
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	1.826 acres
Land lease year	30 years
Construction period	1 year and 6 months
Investment Period	30 years
Address	Plot No. 106, Myay Taing Block No. 14, Shwe Thanlwin Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Contact person	Ma Aye Thida Myint (HR & Account) ayethidamyint1176@gmail.com 09-256181176

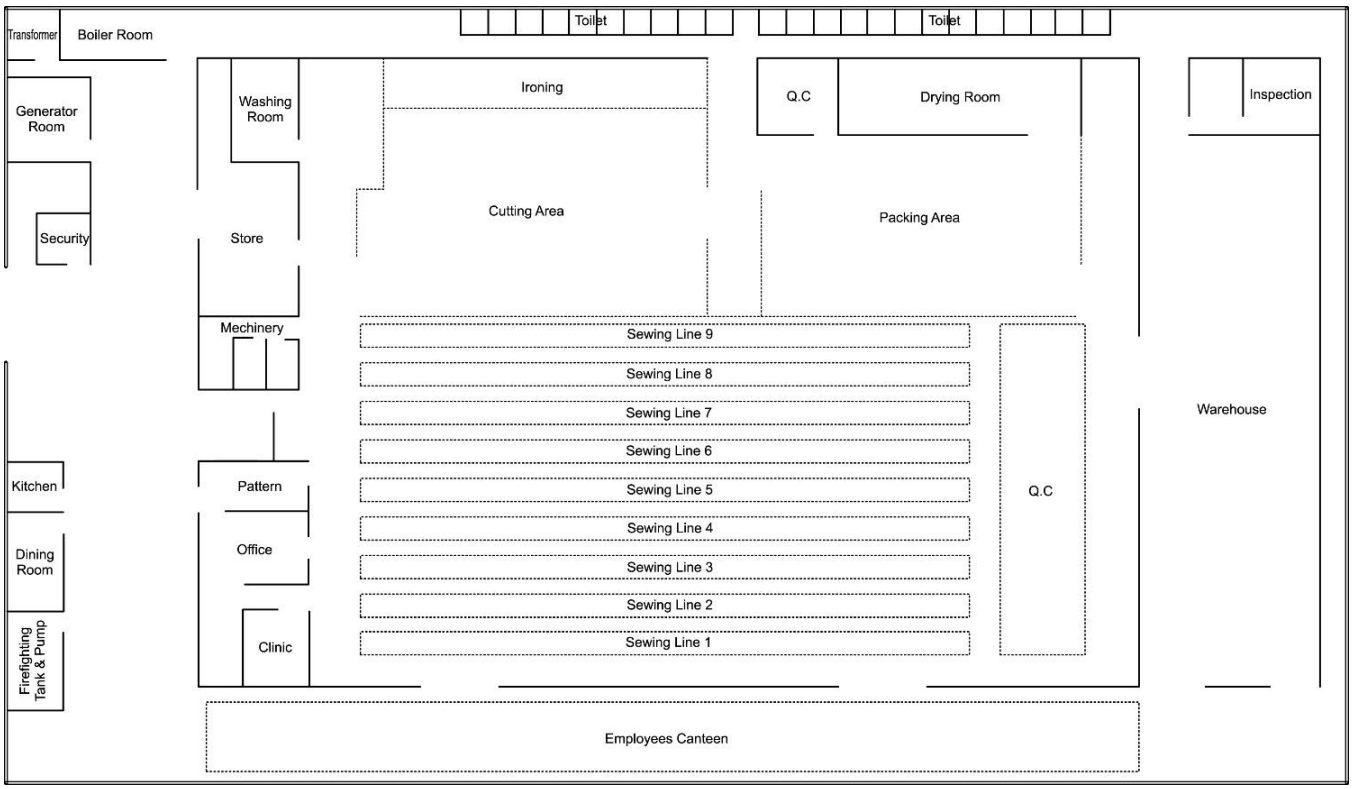
Sunme (Myanmar) Industrial Limited is located at Plot No. 106, Myay Taing Block No. 14, Shwe Thanlwin Industrial Zone, Hlaing Thar Yar Township, Yangon Region .The total area of project site 1.826 acre (7389.5598 square meters Transformer room and generator room are separated by main factory building structure. The factory layout plan which is also can be seen in this report.



Location map of Sunme (Myanmar) Industrial Limited



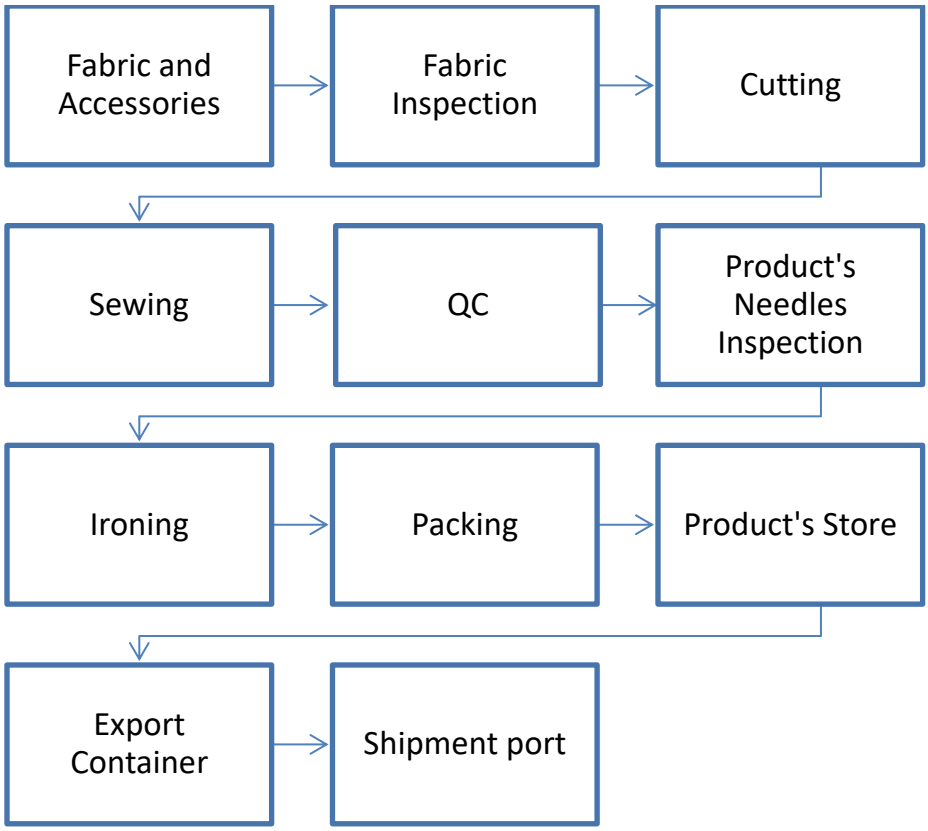
Sunme (Myanmar) Industrial Limited Site Layout Drawing



Factory Layout Drawing

The raw materials of Sunme (Myanmar) Industrial Limited are Fabric, Down Bag, Down, Padding, Thread, Zipper, etc. and other related materials which are imported from Korea, China and Japan which are stored in factory warehouse.

The main products of the Sunme (Myanmar) Industrial Limited are Padding Jacket, Men's Jacket, Padding Vest, Padding Pant, Pants, Kid's Jacket and Short Pants. The Utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for domestic use. Electric power is used for the purpose of to provide lighting.



Production rate of Sunme (Myanmar) factory is produced between first year of operation and ten years operation as 2,040,000 to 2,144,061 pieces annually. It's require of work force (30) foreigners technician and 801 local employees for first year operation to 10 years operation. Moreover, the factory is installed and upgrading for operation during our site survey for EMP report. The factory is not major insignificant effect on environmental and social condition because of the factory operation is simple process of sewing system for garment manufacturing.

Brief Description of Surrounding Environment

For environmental baseline, data were collected by on-site measurements analysis during operation phase on 21 March 2019. On-site measurement was taken by indoor temperature, humidity, noise level and operation light condition at the factory. Moreover, secondary data collection of proposed project site area such as socio-economic condition, physical/ biological environment, weather data were collected from official township data was obtained from Regional Data of Hlaing Thar Yar Township.

Survey Result in Proposed Project

Type	Result
Weather Condition	
Indoor Temperature	39.5 °C
Humidity	55.7 %
Noise Level	
Sewing Section	77.45 dBA
Finishing Section	75.7 dBA
Cutting Section	76 dBA
Air Quality	
Indoor Area	
PM_{10}	46.2 µg/m^3
$PM_{2.5}$	22.8 µg/m^3
Oudoor Area	
PM_{10}	12.3 µg/m^3
$PM_{2.5}$	3.4 µg/m^3
SO_2	1 µg/m^3
NO_2	5.1 µg/m^3
O_3	37.5 µg/m^3
CO_2	181.1 µg/m^3

Potential Environmental Impact and Mitigation Measure

The development of infrastructure for the proposed project likely to happen changes in the local environment in terms of physical, biological and socio-economic aspects along with the perspective on both positive and negative impacts. The potential environmental impacts brought by various activities of proposed factory project will be identified and judged by site surveying with checklist, meeting with client team, including plant manager and supervisor, representatives from the factory operators and assessing the environmental baseline information for operation and decommissioning phases along with its mitigation measure.

Impact Assessment Parameter and Its skill

Assessment	Scale				
	1	2	3	4	5
Magnitude (M)	Insignificant	small and will have no effect on working environment	Moderate and will result in minor changes on working environment	High and will result in significant changes on working environment	Very high and will result in permanent changes on working environment

Duration (D)	0 - 1 year	2 - 5 year	6 - 15 year	Life of operation	Post Closure
Extent (E)	Limited to the site	Limited to the local area	Limited to the region	National	International
Probability (P)	Very improbable	Improbable	Probable	Highly probable	Definite

Then, the Significant Point (SP) calculated by following formula.

Significant Point (SP) = (Magnitude + Duration + Extent) * Probability

Impact Significance: Based on calculated significant point, impact significance can categorize as follows:

Significant Point (SP)	Impact Significance
<15	Very Low
15-29	Low
30-44	Moderate
45-59	High
60	Very high

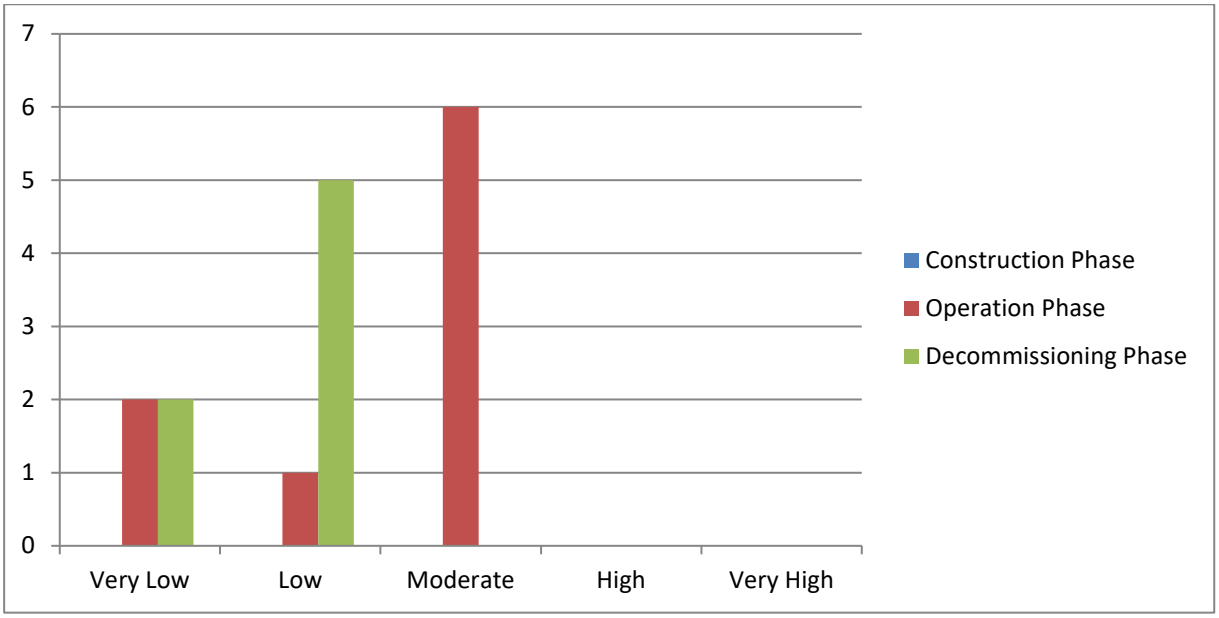
Evaluation of Significant Impacts and Mitigation

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase; It is not assessed in this phase, because of construction is already completed during EMP preparation.							
Operation Phase							
Air Pollution	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Particulate matters emission from the activities of production process • Emission of smoke from steam boiler and kitchen • Emission from emergency diesel generator	3	4	2	4	36	Low
Water Pollution	• Sewage disposed of from the toilets • Oil spill and grease leaks from transporting vehicles and machinery equipment used in operation phase	2	4	2	3	24	Low

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Soil Contamination	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very Low
Noise Pollution	• Generating noise from the production machinery • Noise from the generating of the emergency generators	3	4	1	4	32	Low
Fire Hazard	• Poor electrical installations • waste disposed area • Raw materials storage	3	5	2	4	40	Moderate
Solid Waste	• Residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	3	4	1	4	32	Low
Liquid Waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous Waste	• Engine oil leaks, spills at diesel storage and during fuel refueling. • Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	2	14	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Accidental cases cause by operating machines. • Electricity and emergency diesel generators. • Unloading, mixing, cutting, pressing and packaging activities. • Accidental cases of thermic fluid heater	3	4	1	4	32	Moderate
Social-economic Condition	• Job opportunities for local people	-	-	-	-	-	Positive Impact
Decommissioning Phase							
Air Pollution	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	4	20	Low
Water Pollution	• Sewage form decommissioning workers • Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	• Decommissioning of buildings and related materials	3	1	1	3	15	Low

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
	• Transportation of demolished materials						
Noise Pollution	• Decommission activities • Transportation of demolished materials	3	1	1	3	15	Low
Waste Disposal	• Sewage system • Demolished debris such as bricks, concrete materials	2	1	1	3	12	Very Low
Hazardous Waste	• Used lubricants from decommissioning vehicles and machines	2	1	1	3	12	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Decommissioning activities • Transportation of demolished materials	3	1	2	3	18	Low
Social-economic Condition	• Temporary job opportunities for local people	-	-	-	-	-	Positive Impact

The assessment of each impact is based on consideration of the magnitude, duration, extent and probability of activities, which are going to be carried out during operation phase. In operation phase, there are 2 very low significant impacts on environment and human (Water pollution, Soil, flora and fauna on terrestrial and aquatic life, health and hazardous waste), 1 low significant impacts on environment and human (Air, Noise and vibration and liquid waste) and 6 moderate significant impacts on environment and human (Fire, Occupational safety and solid waste). In decommissioning phase 2 very low significant impacts on environment and human (waste disposal and hazardous waste). 5 low significant impacts on environmental and human (air, water pollution, soil contamination, noise and vibration and occupationl health and safety). Significance impacts on environmental and human and detail impact assessment for operation phases and decommissioning can be seen in above tables. All of the impacts during operation phases and decommissioning phase can be minimized by using mitigation measures and implementing Environmental Management Plan.



Comparison of Impact Significant of Proposed Project

Environmental Management Program

The proposed project of environmental management plan, which need to made the Environmental Management System (EMS). In that plan, it includes not only reducing to the environmental and social-economic impact but also includes the environmental management plan and the monitoring plan. In this EMP to implement the health, safety and occupational for the industry, they need to create a team and to must be implemented that. The EMP for Sunme (Myanmar) Industrial Limited has been prepared to address potential issues based upon discussion with factory management, workers, local community's view, stakeholder consultation and from the site visit of experts. The EMP is additional to and compliments the factory's safety management system. The following environmental issues that require environmental management plans based upon the potential impacts of activities by for Sunme (Myanmar) Industrial Limited are as follows:

1. Air pollution/Dust Management plan
   - Must be plant around the proposed project to reduce carbon emission
   - Should be prohibited burning of waste material at the proposed project site
   - Must be control air pollution, the vehicles, generators and machineries have to check and maintain regularly.
   - The factory should use chimney for generator through which the flue gas is emitted for reducing the impact of stack emission on environment.
   - Must be ensuring vehicles, compressor and generator are well maintained.
2. Noise Management
   - Building noise insulated generator room and ensure satisfactory maintenance of relevant equipment
   - Impose speed limit to track and vehicles at the transportation route.
   - Provide sufficient personal protective equipment (PPE) at the work place
   - All the related personnel will be provided proper training about the relevant issues and ensure PPE wear during working in noisy area.
3. Solid Waste Management plan

- Must be provides separate garbage bins at each building.
- All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area
- Final wastes should be disposed by using YCDC's service.

4. Wastewater Management Plan
   - Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.
5. Energy Consumption Management Plan
   - Installation of timers and thermostats to control heating and cooling
   - Energy saving light installed in different area of the factory for saving energy
   - Used of energy saving devices must be installed
   - Ensure that good housekeeping measures such as turning off equipment and lights when not in use
6. Emergency Response plan
   - The factory management has taken proper measures to handle any emergency situation like fire, earthquake, flood and storm
   - Provision and inspection of firefighting equipment and fire hydrant system in all the sections
   - A detail evaluation plan (fire exist, emergency exit door, etc.) is established and communicated with workers
   - Periodic inspection of safety relief valve provided with pressure vessels and equipment, preventive maintenance; aware the workers about electric shock by necessary training.
   - Regular fire drill operation is conducted
   - Workers are informed about what to do in earthquake like stay in a safe place such as under table of desk, not to try move outside during earthquake, workers who will be outside during earthquake shall remain stay out of the building, trees, lump post, etc. Other relevant safety instruction of emergency situation it informed to workers by training
   - Workers are aware of dangers from physical hazards such as obstacles covered by floodwater (storm debris, drainage opening, ground erosion) and from displaced reptiles (Snake) or other animals.
   - A medical team has been prepared for primary treatment (First Aid)
   - Prepare an emergency contact directory consisting contact numbers of nearest fire service, local police station, hospitals, etc. and display it in a place that everybody can see it easy.
   - Build a safety committee which from firefighting team, rescue team. The committee arrange a meeting every month to discuss about safety management
   - Ensure proper training of the employees about the disaster management, fire safety as well as occupational health and safety
7. Corporate Social Responsible (CSR) Plan

Sunme (Myanmar) Industrial Limited will contribute 2% of our Net Profit to social welfare activities that will help society and country of Myanmar

No.	Particle	Contribution
1.	Public school	0.5%

No.	Particle	Contribution
2.	Non-profit training	1
3.	Employee healthcare	0.5%

Grievance Redress Mechanism

People who live near the project affected area or stakeholders can complain about the problems and impacts that they suffer; they can complain though Grievance Committee, which includes the responsible persons of Sunme (Myanmar) Industrial Limited representative from Hlaing Thar Yar Industrial Zone and representative from General Administration Department (Hlaing Thar Yar Township). Small issues will be solved at the Grievance Committee stage and other unsolved problems will be submitted to higher responsible authorities and finally the responsible person decided by the court in legal terms.

Public Consulting

This chapter presents results of public consultation and information disclosure conducted for the Sunme (Myanmar) Industrial Limited. Public participation can consider as the required element of the EMP process. In this study various stakeholder participation were made. Public consultation during preparation of EMP report was conducted on 30, July 2019 following the EIA procedure. The project's stakeholders in this category are key officials or representatives of the regional and local authorities who have direct responsibilities for the administration of the EMP process for environmental and social clearance and issuing operation permits for proposed development projects. For this factory, relevant key offices at the national level are Environmental Conservation Department (ECD) and Industry Supervision and Inspection Department. Relevant key office at the regional level is Yangon City Development Committee (YCDC), General Administrative Department, Fire Department, Factories and General Labor Law Inspection Department, Public Health Department, Industrial Supervision and Inspection Department.

Conclusion & Recommendation

In Conclusion, the environmental management practices, procedures and responsibilities are defined here in to get full compliance with the existing environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar. All the feed backs, desired and needs of local public recorded in public consultation meetings are well addressed and incorporated in formulation of EMP. It has been figured out that, the proposed garment factory is going to generate local employment opportunities and enhance capabilities and working skills of employees. Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended. The study further concluded that positive impacts will be of immense benefit to the local community and national development as well.

This is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to dispose according to YCDC rules and regulation

- Workers should be provided proper training and it should be ensured that workers use PPE during factory operation area.
- Daily, monthly and annual action plan shall be formulated based on this EMP and practiced at operation level.
- Keep full records of environmental management activities and present to annual independent third-party environment audit.
- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

Finally, the proponent should follow the comments and suggestions made by ECD after reviewing this EMP report. Once concerned authorities approve EMP, effective implementation of EMP by the project proponent is essential. The proponent should abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

1. INTRODUCTION

Everyone wants to live in a place that's clean and healthy. That is why one of the world's primary concerns is the environment. As sad as it is, the world today is dying. The environment is slowly decaying, and it's all because of human negligence Environmental Management Plan is required for ensuring sustainable development. It should not affect the surrounding environment adversely. The management plan presented which needs to be implemented by the proposed expansion of Sunme (Myanmar) Industrial Limited. The Environmental Management Plan (EMP) aims at controlling pollution at source with available and affordable technology followed by treatment measures. Waste minimization and waste recycling measures are emphasized. In addition to the industry specific control measures, the proposed industry should adopt following guidelines.

1.1. AIM OF ENVIRONMENTAL MANAGEMENT PLAN

- Provide environmental management plan that minimize the environmental impact of the works and identify those responsible for its implementation.
- Define the monitoring program, which assess the implementation.

1.2. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management System (EMS) is a framework that helps an organization achieves its environmental goals through consistent review, evaluation, and improvement of its environmental performance. The assumption is that this consistent review and evaluation will identify opportunities for improving and implementing the environmental performance of the organization. The EMS itself does not dictate a level of environmental performance that must be achieved; each organization's EMS is tailored to its own individual objectives and targets.

An EMS encourages an organization to continuously improve its environmental performance. The system follows a repeating cycle the organization first commits to an environmental policy, then uses its policy as a basis for establishing a plan, which sets objectives and targets for improving environmental performance. The next step is implementation. After that, the organization evaluates its environmental performance to see whether the objectives and targets are being met. If targets are not being met, corrective action is taken. The results of this evaluation are then reviewed by top management to see if the EMS is working. Management revisits the environmental policy and sets new targets in a revised plan. The company then implements the revised plan. The cycle repeats, and continuous improvement occurs.

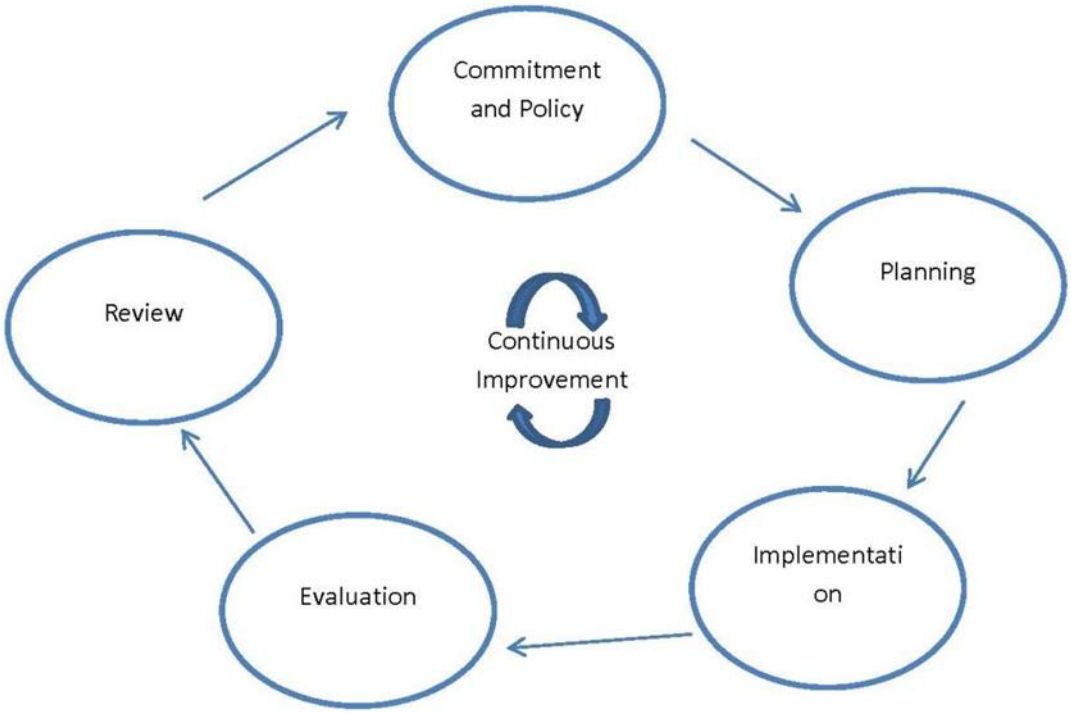


Figure 1-1 Continuous Improvement Circle

- **Commitment and Policy** – Top management commits to environmental improvement and establishes the organization's environmental policy. The policy is the foundation of the EMS.
- **Planning** – An organization first identifies environmental aspects of its operations. Environmental aspects are those items, such as air pollutants or hazardous waste that can have negative impacts on people and the environment. An organization then determines which aspects are significant by choosing criteria considered most important by the organization. For example, an organization may choose worker health and safety, environmental compliance, and cost as its criteria. Once significant environmental aspects are determined, an organization sets objectives and targets. An objective is an overall environmental goal (e.g., minimize use of chemical X). A target is a detailed, quantified requirement that arises from the objectives (e.g., reduce use of chemical X by 25% by September 1998). The final part of the planning stage is devising an action plan for meeting the targets. This includes designating responsibilities, establishing a schedule, and outlining clearly defined steps to meet the targets.
- **Implementation** – An organization follows through with the action plan using the necessary resources (human, financial, etc.). An important component is employee training and awareness for all employees. Other steps in the implementation stage include documentation, following operating procedures, and setting up internal and external communication lines.
- **Evaluation** – A company monitors its operations to evaluate whether targets are being met. If not, the company takes corrective action.
- **Review** – Top management reviews the results of the evaluation to see if the EMS is working. Management determines whether the original environmental policy is consistent with the

organization's values. The plan is then revised to optimize the effectiveness of the EMS. The review stage creates a loop of continuous improvement for a company.

1.3. INSTITUTIONAL REQUIREMENT

Sunme (Myanmar) Industrial Limited will manage the development of the proposed project. The project proponent should appoint Health, Safety and Environment (HSE) issues throughout the duration of the project phases. HSE team is responsible for implementation and monitoring of EMP and Environmental Monitoring Plan (EMP) as well as coordination with local authorities and the nearby communities. The HSE Team also makes regular review of EMP to cover all potential impacts, amendments and modifications.

1.3.1. Responsibilities of the EMP

In order to ensure the sound development and effective implementation of the EMP, it will be necessary to identify and define the responsibilities. The environmental management practices, procedures, and responsibilities are defined herein to get full compliance with the existing environmental policy, laws, rules and regulations of the Republic of the Union of Myanmar. The following entities should be involved in the implementation of this EMP:

Sunme (Myanmar) Industrial Limited: The proponent will be charged with the responsibility for ensuring that the proposed development has been accomplished in an environmentally sound manner. This can be achieved by inclusion of environmental specifications in the tender specifications, selection of environmentally conscious contractors, and supervision to ensure that the objectives of this EMP are met. The implementation of Environmental Management Plan (EMP) process will prepare and follow up by appointed persons for health, safety, and environmental management under the instruction of management team of Sunme (Myanmar) Industrial Limited for EMP implementation facilities.

ECD (Yangon Region): The responsibility of ECD is to exercise general supervision and coordinating over all matters relating to the environment and to be instrumental in providing guidance for recognized regulatory frameworks.

Third-Party Environmental Consultant: The environmental consultant will have to ensure that the proposed EMP is up to date and is being followed properly by the proponent. Periodic audits of the EMP will have to be done to ensure that its performance is as expected, by comparing with operating standards so that any corrective actions can be taken.

1.3.2. Structure and Responsibilities for the EMP Development and Implementation

The HSE officer is responsible to the HSE components of the project and on matters relating to the implementation of the EMP throughout operation life. The S&E officer will have responsibilities that include:

- Ensure a monitoring system is in place to track and report all health, safety and environmental incidents;
- Carry out a thorough initial site inspection of environmental controls prior to work commencement;
- Record and provide a written report to the General Manager and production team of non-conformances with the EMP and require the HR supervisor to undertake mitigation measures to avoid or minimize any adverse impacts on environment or report required changes to the EMP.

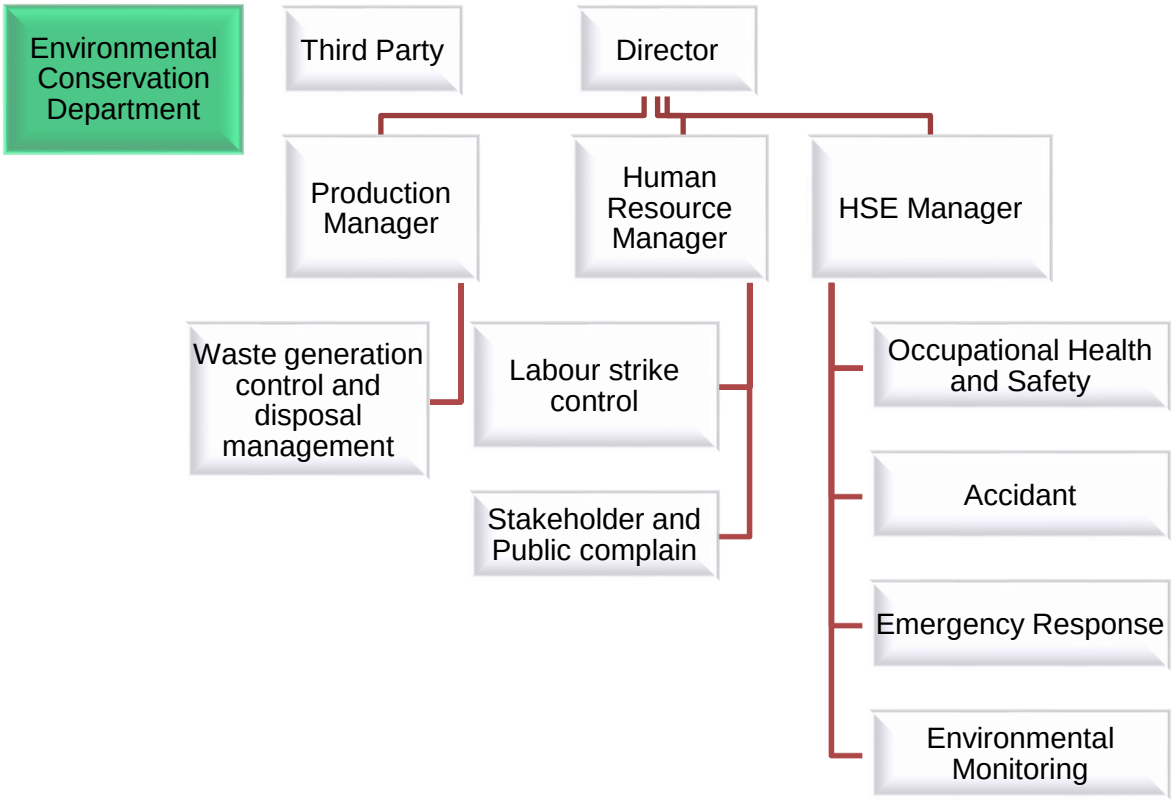


Figure 1-2 Organization Structure of Environmental Management Plan

Table 1-1 Responsibilities of HSE Members

Roles	Responsibilities
General Manager	The General Manager will be assisted by the Operations Manager and also the HR and HSE Officer. In terms of environmental protection commitments, the Operation Manager will be the key driving force and will be responsible for: • Establishing overall environmental direction and policy • Ensuring the implementation of the EMP • Ensuring investigation of all environmental incidents are reviewed and that reports are submitted on time • Ensuring an effective system of internal and external communication is in place • Providing advice regarding the environmental program
Operation Manager	The Operation Manager will assist the General Manager in looking into the overall environmental matters during the operational phase of the Project. The Operation Engineer will also be responsible for: • Adherence to the overall environmental direction and policy • Ensuring the implementation of the recommended actions in the investigation of all environmental incidents • Managing resources for operation wastes
HR Manager	The HR Manager will carry out the day-to-day management of workers and social issues in the factory. The HR Manager will be responsible for: • Assisting the management in publicising and implementing corporate and local policies, objectives and programs

Roles	Responsibilities
	• Maintaining key environmental-related documents and information • Communicating/ liaising with the local authorities on environmental issues
HSE Officer	The HSE Officer will be the key person in charge of all environmental matters pertaining to the site. The HSE Officer will be responsible for: • Coordinating the implementation of environmental programs, including monitoring of the project site environmental performance • Performing periodic internal environmental audits and inspections to ensure compliance with the legal environmental requirements • Ensure a monitoring system is in place to track and report all health, safety and environmental incidents; • Carry out a thorough initial site inspection of environmental controls prior to work commencement; • Record and provide a written report to the General Manager and production team of non-conformances with the EMP and require the HR Manager to undertake mitigation measures to avoid or minimize any adverse impacts on environment or report required changes to the EMP.

1.4. PROJECT BACKGROUND

Sunme (Myanmar) Industrial Limited is a new investment for manufacturing of Garment on CMP Basis 100% export company from China. The Yangon Region Investment Committee (YRIC) issues the project on July 4 2018 with the Endorsement No. (YGN- 062/2018). YRIC notified for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing of Garment on CMP Basis under the name of Sunme (Myanmar) Industrial Limited.

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka- 1/3/4 (EIA) (1402/2018) on 22 October 2018. Therefore Sunme (Myanmar) Industrial Limited commissioned Myanwei Environmental Solutions Co., Ltd (Myanwei) for EMP report study.

1.4.1. Project Proponent Profile

This is the information of project proponent from the MIC's registration that is describing in below Table 1-2 and Table 1-3. The estimated authorized capital investment is 0.97 million US Dollar Organization chart of Sunme (Myanmar) Industrial Limited is presented in Figure 1-3.

Table 1-2 Information of Investor

Investor Name:	Mr. Ji Debao
ID No.:	G57184319
Citizenship:	Chinese

Address of Registration office:	Room1802, Unit 1, Building 5, No.9, Mochou Lake East Road, Jianye District, Nanjing, China.

Table 1-3 Salient Features of the Project

Type of Proposed Business	Manufacturing of Garment on CMP basic
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	1.826 acres
Total building area	One Building (55,000) Sq ft. production building
Land lease year	30 years
Construction period	1 year and 6 months
Operation starting date	30 year investment permit
Address	Plot No. 106, Myay Taing Block No. 14, Shwe Thanlwin Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Contact person	Ma Aye Thida Myint (HR & Account) ayethidamyint1176@gmail.com 09-256181176

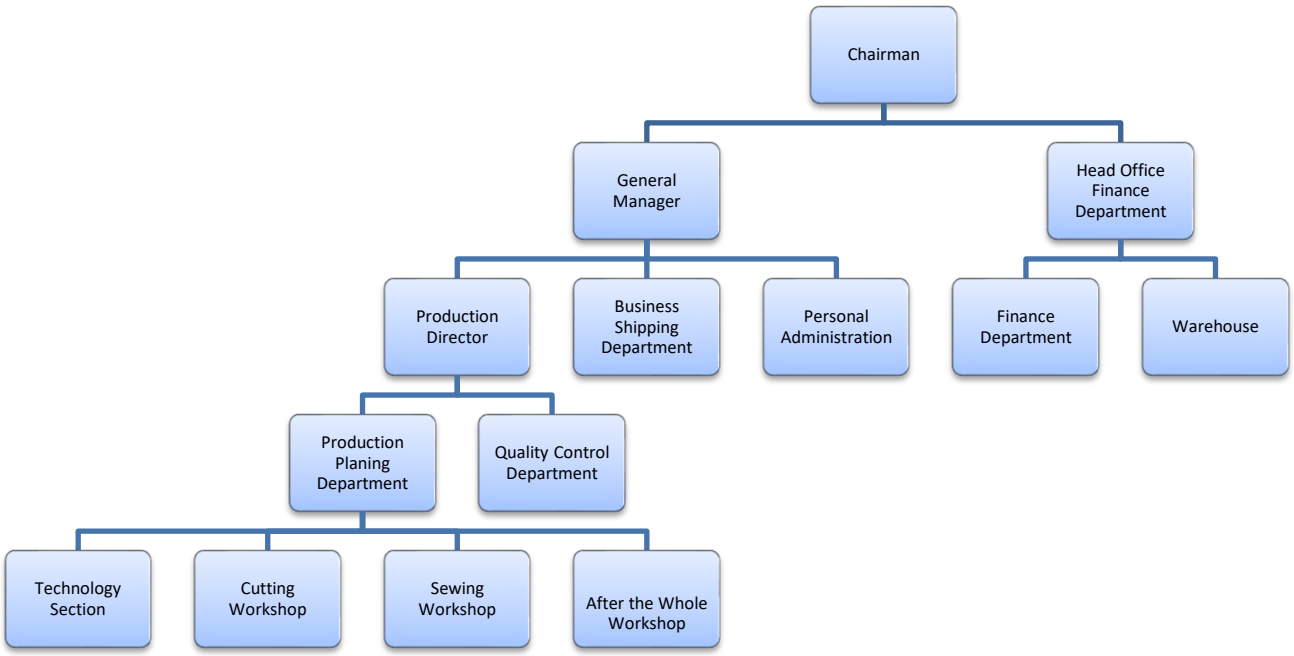


Figure 1-3 Organization chart of Sunme (Myanmar) Industrial Limited

1.4.2. Environmental Consultant Profile

Myanwei Environmental Solutions Company Limited prepares the EMP for the proposed project. The field studies were carried out by Myanwei having experiences in conducting environmental assessments for various types of projects in Myanmar. The Myanwei team conducted field survey, assessment activities, and prepared the report. A reconnaissance study was performed on the proposed project site and baseline environmental data were also collected from possible sources using the appropriate measuring devices. Data interpretation and analysis were made based on those collected data for the present and potential future conditions. Suitable measures were proposed for the impacts to be mitigated to reduce to acceptable ones. The environmental study was carried out by the study team and the following is a summary of team member's responsibilities during the study period.

Table 1-4 Member of EMP Study Team

Name	Qualification	Responsibility
Myanwei Environmental Solutions Co., Ltd.	**Transition Consultant Registration Certificate No. 0069**	**EIA Organization** No.2,Myay Nu Street, Sanchaung Township, Yangon, Myanmar. Website:www.myanwweiconsulting.com Ph-09421137569, 09-5185776
Mr. Lin Htet Sein	MSc (Regional Geology) BSc (Hons) Geology Dip in Environmental Science Certificate in Environmental & Social Assessment Certificate in Environmental Stainability **TCR No. 0048**	Project Director, Environmental Consultant, Project Management
Dr. Hein Lynn Aung	M.B, B.S (Yangon), Business Management (International Collage of Management Sydney, Australia)	Project Director, Public Health Consultant, Project Management
Ms. Wah Wah Zaw	B.E Material and Metallurgy Engineering Diploma in Environmental Planning and Management M.S Environmental Planning and Management	Senior Environmental Consultant, Social and Environmental Research, Quality control, Environmental Planning and Management
Ms. Khin Thu Zar Myint	B.E(Materials and Metallurgy) Dip in Environmental Planning and Management	Senior Environmental Consultant, Social Research, Public consultation, Social Economic Investigation
Mr. Saw Yan Naung	B.E. Chemical Engineering B. Tech Chemical Engineering	Senior Environmental Consultant, Monitoring Measure, Document Administration

Name	Qualification	Responsibility
Myanwei Environmental Solutions Co., Ltd.	**Transition Consultant Registration Certificate No. 0069**	**EIA Organization** No.2,Myay Nu Street, Sanchaung Township, Yangon, Myanmar. Website:www.myanwweiconsulting.com Ph-09421137569, 09-5185776
Mr. Myat Ko Ko	B.Sc (Hons) Geology M.Sc. Geology (Economic and Mining) Certificate of Environment Management Certificate of Geotechnical Engineering (Myanmar Geoscience Society)	Senior Environmental Consultant, Monitoring Measure, Document Administration
Mr. Kaung Sett Lwin	B.Sc (Hons) Geology Certificate of Geotechnical Engineering (Myanmar Geoscience Society)	Senior Environmental Consultant, Monitoring Measure, Document Administration
Ms.Haymar Htet Naing	B.A (English) Certificate of Achievement (English Access Micro Scholarship Program) U.S Embassy Rangoon	Senior Environmental Consultant, Monitoring Measure, Document Administration
Mr. Lynn Than Taung	B. Sc (Forestry)	Senior Environmental Consultant, Monitoring Measure, Document Administration
Ms. Pyae Phyo Win	B.Sc (Hons) Bontany M.Sc (Botany)	Senior Environmental Consultant, Monitoring Measure, Document Administration
Ms Wint Zar Ni Mg Mg	M.E (Environmental Science and Engineering) B.E Civil Engineering	Senior Environmental Consultant, Monitoring Measure, Document Administration
Mr. Aung Ye Thaw	B.Sc (Geology)	Junior Environmental Consultant, Monitoring Measure, Document Administration

2. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

This section provides a brief summary of relevant national environmental legislations established by the MONREC and overview of current local and international environmental and social policies including related international or regional convention for the proposed project.

2.1. MYANMAR REGULATORY FRAMWORK

Myanmar has 24 ministries under the Office of the President as of May 2016. The leading ministries in-charge of environmental and social considerations is the Environmental Conservation Department (ECD) of the MONREC that was reorganized Ministry of Environmental Conservation and Forestry (MOECAF) in April 2016.

2.1.1. Laws and Regulations Related to Environmental and Social Considerations

Requirements related to environmental (and social) impact management for development projects are described in Table 2-1.

Table 2-1 List of Myanmar's Law Relating to Environmental Management

Law and Regulation	Description
National Environmental Policy of Myanmar, (Notification No. 26/94 dated 5 December 1994)	To achieve harmony and balance between socioeconomic, natural resources and environment through the integration of environmental considerations into the development process enhancing the quality of the life of all its citizens.
Constitution 2008	
Section 37, (a)	The Union is the ultimate owner of all lands and all-natural resources above and below the ground, above and beneath the water and in atmosphere in the Union.
Section 37, (b)	The Union shall permit citizens rights of private property, right of inheritance, right of private initiative and patent in accord with the laws.
Section 372	The Union guarantees the right to ownership, the use of property and the right to private invention and patent in the conducting of business if it is not contrary to the provisions of this Constitution and the existing laws.
Section 45	The Union shall protect and conserve natural environment.
Section 390, (a), (b), (c), (d)	Every citizen has the duty to assist the Union in preserving and safeguarding the cultural heritage, conserving the environment, striving for the development of human resources, and protecting and preserving the public property.
Environmental Conservation Law, 30 March 2012	
Objectives	to contract a healthy and clean environmental and to conserve natural and cultural heritage for the benefit of present and future generations; to maintain the sustainable development through effective management of natural resources and to enable to promote international, regional and bilateral cooperation in the matters of environmental conversation.

Law and Regulation	Description
Section 3	c) to enable to emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generations; (d) to reclaim ecosystems as may be possible which are starting to degenerate and disappear; (e) to enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially;
Provisions of Duties and Powers relating to the Environmental Conservation of the Ministry: Section 7	(a) To specify categories and classes of hazardous wastes generated from the production and use of chemicals or other hazardous substances in carrying out industry, agriculture, mineral production, sanitation and other activities; (b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment; (c) To promote and carry out the establishment of necessary factories and stations for the treatment of solid wastes, effluents and emissions which contain toxic and hazardous substances; (j) To prescribe the terms and conditions relating to effluent treatment in industrial estates and other necessary places and buildings and emissions of machines, vehicles and mechanisms; (m) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment; (o) To manage 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 businesses which explore, trade and use the natural resources in environmental conservation works.
Chapter VI Environmental Quality Standards: Section10	The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards: (a) suitable surface water quality standards in the usage in rivers, streams, canals, springs, marshes, swamps, lakes, reservoirs and other inland water sources of the public; (b) water quality standards for coastal and estuarine areas; (c) underground water quality standards; (d) atmospheric quality standards; (e) noise and vibration standards; (f) emissions standards; (g) effluent standards; (h) solid wastes standards; (i) other environmental quality standards stipulated by the Union Government.
Section 14	A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the

Law and Regulation	Description
	environment in accord with stipulated environmental quality standards.
Section 15	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.
Section 16	A person or organization operating business in the industrial estate or business in the SEZ or category of business stipulated by the Ministry: (a) is responsible to carry out by contributing the stipulated cash or kind in the relevant combined scheme for the environmental conservation including the management and treatment of waste; (b) shall contribute the stipulated users' charges or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization; (c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, SEZ or business.
Section 24	The project proponent has to allow relevant governmental organization or department to inspect whether performing is conformity with the terms and condition include in prior permission, stipulated by the ministry, or not.
Section 25	The project proponent has to comply with the terms and conditions include in prior permission.
Section 29	The project proponent has to abide by the stipulations included in the rules, regulations, by-law, order, notification and procedure, which are issued by said law.
Environmental Conservation Rules, 2014	
Rules 58	The Ministry shall form the EIA Report Review Body with the experts from the relevant Government departments, organizations.
Rules 59	The Ministry may assign duty to the Department to scrutinize the report of EIA prepared and submitted by any organization or person relating to EIA and report through the EIA Report Review Body.
Rules 61	The Ministry may approve and reply on the EIA report or IEE or EMP with the guidance of the Committee.
Sub-rule (a) of rule 68	The project proponent has to avoid emit, discharge or dispose the materials which can pollute to environment, or hazardous waste or hazardous material prescribed by notification in the place where directly or indirectly injure to public.
Sub-rule (b) of rule 68	The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem.

Law and Regulation	Description
Environmental Impact Assessment Procedure (December 2015)	
Objectives	The project proponent has to be liable for all adverse impacts caused by doing or emitting of project owner or contractor, sub-contractor, officer, employee, representative or consultant who is appointed or hired to perform on behalf of project owner, under sub-paragraph (a) of paragraph 102. The project proponent has to support, after consulting with effected persons by project, relevant government organization, government department and other related persons, to resettlement and rehabilitation for livelihood until the effected persons by the project receiving the stable socio-economy which is not lower than the status in pre-project, under sub-paragraph (b) of paragraph 102 The project proponent has to fully implement all commitments of project and conditions included in EMP. Moreover, the project proponent has to be liable for contractor and sub-contractor who perform on behalf of him/her have to fully abide by the relevant laws, rules, this procedure, EMP and all conditions, under paragraph 103. The project proponent has to be liable and fully & effectively implement all requirements included in ECC, relevant laws and rules, this procedure and standards under rule 104. The project proponent has to inform the completed information, after specifying the adverse impacts caused by the project, from time to time, under paragraph 105. The project proponent has to continuously monitor all adverse impacts in the pre-construction phrase, construction phrase, operation phrase, suspension phrase, closure phrase and post-closure phrase, moreover has to implement the EMP with abiding the all conditions included in ECC, relevant laws & rules and this procedure, under paragraph 106. The project proponent has to submit, as soon as possible, the failures of his or her responsibility, other implementation, ECC or EMP. If dangerous impact caused by this failure or failure should be known by the Ministry the project proponent has to submit within 24 hours and other than this situation has to submit within 7 days from knowing it, under paragraph 107. The project proponent has to submit the monitoring report dually or prescribed time by Ministry in line with the schedule of EMP, under paragraph 108. The project proponent has to prepare the monitoring report in accord with the rule 109. The project proponent has to show this monitoring report in public place such as library, hall and website and office of project for the purpose to know this report by public within 10 days from the date which the report is submitted to the Ministry. Moreover, has to give the copy of this report, by email or other way which way agreed with the asked person, to any asked person or organization, under paragraph 110. The project proponent has to allow inspector to enter and inspect in working time and if it is needed by Ministry has to allow inspector to

Law and Regulation	Description
	enter and inspect in the office and work-place of project and other work-place related to this project in any time, under paragraph 113. The project proponent has to allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirements related to social or environment or caused to it, under paragraph 115. The project proponent has to allow inspector to inspect the contractor and sub-contractor who implement on behalf of project, under paragraph 117.
Screening: Section 23	(a) The project proponent shall submit the Project Proposal to the Ministry for Screening. (b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment. (c) Following the preliminary Screening and verification that the Project Proposal contains all required documents and related materials, subject to Articles 8, 9, 10, 11, 26 and 27 the Department shall make a determination in accordance with Annex 1=Categorization of Economic Activities for Assessment Purposes', taking into account Article 25 and the additional factors listed in Article 28 in order to designate the Project as one of the following, and then submit it to the Ministry: (i) An EIA Type Project, or (ii) An IEE Type Project, or (iii) A Non IEE or EIA Type, and therefore not required to
National Environmental Quality (Emission) Guidelines (NEQG) (December 2015)	
Objectives	To provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health.
National Environmental Policy of Myanmar (2019)	
National Environmental Policy Vision & mission	**Vision** A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar. **Mission** To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all polices, laws, regulation, plans, strategic, programmes and projects in Myanmar.
Section 17	(a) To abide by the existing laws of the Republic of the Union of Myanmar. (b) To carry out the business by forming a company under the existing laws of Myanmar by the investor. (h) To carry out not to cause environmental pollution or damage in accord with existing laws in respect of investment business.

Law and Regulation	Description
	(k) To carry out the systematic transfer of high technology relating to the business which are carried out by the investor to the relevant enterprises, departments or organizations in accord with the contract.
Myanmar Investment Rules, 2017 Amendment 2018	
Rule 202	The project proponent has to comply with the conditions of the permit issued by the MIC and applicable laws when making the investment
Rule 203	The project proponent has to fully assist while negotiating with the authority for settling the grievance of the local community which has been affected due to investment
Rule 206.	The project proponent has to submit the passport, expert evidence or document of degree and profile to the MIC office for approval if decide to appoint a foreigner as senior management, technician expert or consultant according to subsection (a) of section 51 of Myanmar Investment Law
Myanmar Insurance Law (1993)	Section 15 - If the project proponent uses the owned vehicles the project owner has to ensure the insurance for the injured person. Section 16 - The project proponent has to ensure insurance to compensate for general damages because the project may cause damages to the environment and injury to the public.
Payment of Wages Law (2016)	
Section 3 & 4	The project proponent has to pay the wages in accord with section 3 and 4 of said law,
Section 5	The project proponent has to submit with the agreements of employees & reasonable ground to the department if it is difficult to pay because of force majeure included in a natural disaster
Section 7-13	The project proponent has to abide by the provisions of section 7 to 13 in the chapter (3) in respect of deduction from wages.
Section 14	The project proponent has to pay the overtime fees, prescribed by law, to the employees who work over working hours
Yangon City Development Committee Law (2018)	
Section (317)	The proponent shall not block the natural river channel, change the course, and disrupt the water channel, filling with soil within the city boundaries without the consent of the Committee
Section (318)	The project proponent shall not construct buildings, factories, and industries without sewage, toilet, septic tanks, and wastewater treatment system
Section (322)	The project proponent is not allowed to make activities that will produce noise pollution, water pollution, air pollution, and soil pollution to impact the environment within the city's boundaries
The Amended Law for Factories Act, 1951 (2016)	
Hygiene in Working Environment: Section 3	Mentions responsibilities of employer and manager regarding waste disposal, ventilation, extreme temperature, dust and gas generation,

Law and Regulation	Description
	minimum space for each worker, lighting, portable drinking water and toilets for employees.
Safety in Working Environment: Section 4	States responsibilities of employer and manager concerning with machine guarding, personal protective equipment, housekeeping, aisles and exits, chemical storage and fire protection system to avoid accident.
The Private Industrial Enterprise Law, 1990	
Basic Principles: Section 3	Private Industrial Enterprises shall be conducted in accordance with the following basic principles: (a) to enhance the higher proportion of the manufacturing value added in the gross national product and value of services, and to increase the production of the respective economic enterprises which are related to the industrial enterprise; (b) to acquire modern technical know-how for raising the efficiency of industrial enterprises and to establish the sale of finished goods produced by the industrial enterprise not only in the local market, but also in the foreign market; (d) to cause narrowing down of the gap between rural development and urban development by causing the development and improvement of industrial enterprises; (e) to cause opening up of more employment opportunities; (f) to cause avoidance of or reduction of the use of technical know-how which cause environmental pollution; (g) to cause the use of energy in the most economical manner.
The Export and Import Law (2012)	
Objectives	The objectives of this law are as follows: (a) To enable to implement the economic principles of the State successfully. (b) To enable to lay down the policies relating to export and import that supports the development of the State. (c) To cause the policies relating to export and import of the State and activities are to be in conformity with the international trade standards. (d) To cause to be streamlined and speedy in carrying out the matters relating to export and import.
Prohibitions: Section 5	No persons shall export or import restricted, prohibited and banned goods.
Prohibitions: Section 6	Without obtaining license, no person shall export or import the specified goods which are to obtain permission.
Prohibitions: Section 5	A person who obtained any license shall not violate the conditions contained in the license.
The Preventation of Hazard from Chemical and Related Substances Law, 2013	
Chapter II Aims	This law was enacted with the objectives of:

Law and Regulation	Description
Section 3	a. To protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances; b. To supervise systematically in performing the chemical and related substances business with permission for being safety; c. To perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically; d. To perform the sustainable development for the occupational safety, health and environmental conservation. Regarding the chemical management and storage, currently, regulations governing chemicals management are divided between various Acts, mostly dating from colonial times; hence the legislation is in many respects related to the British framework. The Factory Act and the Public Health Act contain the provisions for chemicals management and storage. Some chemicals are likely to require permits.
Section 15	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 equipment 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 trainings 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	A person who has obtained a licence: - (a) shall abide the licence regulations; (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; (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 Boards 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;

Law and Regulation	Description
	(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; (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; (k) shall abide and perform in accordance with the related environmental laws not to impact and damage to the environment in operating the chemical and related substances business.
Section 17	A person who has obtained a licence, shall put the insurance in accordance with the 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	A person who has obtained the registration certificate shall abide the regulations consisted in the registration certificate furthermore shall also abide the order and instructions issued occasionally by the Central Supervisory Board.
Chapter IX Hazard Control and Decrease Section 27	A person who has obtained the licence 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; (d) performing in accordance with the stipulations in respect of transporting, possessing, storing, using, discharging the chemical and related substances;
Underground Water Act (21st June, 1930)	
The underground water act enacted on the date of 21st June in 1930 whereas it is expedient to conserve and protect underground sources of water supply in the Union of Burma. This act prohibits sinking of a tube for the purpose of obtaining underground water except under and in accordance with the terms of a license granted by the water officer. Township Officer or sub-divisional officer had power to close a license tube after exercising jurisdiction over the local area concerned and the expense of such closure shall be recoverable from the owner of the tube as if it were an arrear of land-revenue.	

Law and Regulation	Description
Section 3	No person shall sink a tube for the purpose of obtaining underground water except under and in accordance with the terms of a licence granted by the water officer. Every person owning a tube which was in existence before the extension of this Act to the local area concerned shall apply to the water officer for a licence for the said tube, and such licence shall be granted free of charge.
Section 5	Every person obtaining or attempting to obtain underground water shall supply the water officer with such information as the President of the Union may by rule prescribe.
Section 6	The President of the Union may make rules 1- (a) prescribing the conditions subject to which licences may be granted by the water officer under section 3; (b) prescribing the form of and the procedure for granting such licences and the fees payable for the issue thereof; (c) prescribing the information to be supplied to the water officer under section 5.
Myanmar Fire Brigade Law (2015)	
Chapter II Objectives Section 3	The objectives of this Law are as follows: (a) to prevent destruction of State-owned property, private property, cultural heritage and the lives and property of the public by fire and other natural disaster; (b) to organize the Fire brigade systematically and to train members of the fire brigade; (c) to carry out extinguishing fire, prevention and search and rescue when fire, other natural disaster, epidemic disease or any kind of sudden disaster occurs; (d) to educate, organize and incite extensively so as to achieve public cooperation when any disaster occurs; (e) to participate and help, if necessary, for the State safety, peace of the public and the rule of law
Chapter VIII Activities for Fire Safety Section 15	The different levels of Fire Safety Body shall: (a) perform the activities for fire safety in accord with the procedures laid down by the Central Body; (b) organize and educate to obtain the cooperation of the public in the activities for fire safety; (c) supervise as may be necessary the participation of all the relevant members of fire brigade in accord with the work programmes laid down by the Central Body when fire hazard, other natural disaster, epidemic disease or sudden disaster occurs; (d) appoint fire safety warning groups in coordination with the relevant administrative organizations.
Section 16	The person-in-charge of the Township Fire Services Department shall: (a) issue, from time to time, the directives on fire safety to be abided by the residents in the city, ward or village - tract;

Law and Regulation	Description
	(b) inspect or cause to inspect in accord with the stipulations whether the residents in the city, ward or village - tract abide by the directives issued under sub-section (a) and arrange to enable warning or taking action, as may be necessary, against those who do not abide by.
Chapter XI Prohibitions Section 24	No person shall fail to abide by the directives of fire safety issued under section 16 by the head of the relevant Township Department of Fire Services.
Section 25	The owner or manager of the factory, workshop, bus terminal, airport, port, hotel, motel, lodgings, condominium, market, department, organization or business exposed to fire hazard shall, in accord with the directive of the Department of Fire Services: (a) not fail to form the Reserve Fire Brigade; (b) not fail to provide fire safety equipment.
Section 26	No person shall, knowing that there is no outbreak of fire, report fraudulently the outbreak of fire to the Fire brigade.
Section 25	No person shall, without cause, obstruct, block, disturb, or attack the members of the fire brigade and vehicles which departed to extinguish the fire and direct by any means to the place which is not related to the outbreak of fire.
The Electricity Law (2014)	
In 2014, the new Electricity Law, a comprehensive piece of legislation covering licensing, a new regulatory commission, standards, inspection, tariff, and restrictions, replaced the Electricity Law of 1984. The Electricity Law divides projects into “small” (up to 10 MW), “medium” (between 10 MW to 30 MW) and large (upwards of 30 MW); the states and regions can issue permits for small and medium power plants. In case these plants are not connected to the national grid, the Union Government Ministry is not the primary authority involved. The authorities have a legal right to use land for the purpose of power plants under the Electricity Law, and have the right to expand and maintain their facilities. The law also provides that the authorities can build transmission lines in accordance with existing laws.	
Purpose	To ensure compliance with the conditions of permission for productions of in line with the above law.
Section 10 (b)	The project proponent will implement the project with the best practices to reduce the damages on the environment, health and socio-economy also will pay compensation for the damages and will pay the fund for environmental conservation.
Section 18	The project proponent has to take the certificate of electric safety, issued by the chief-inspector, before the commencement of power generation.
Section 21 (a)	The project proponent has to be liable for damages to any person or enterprise by failure to abide by the quality standards or rules, regulation, by-law, order, and a directive issued
Section 22 (a)	The project proponent has to be liable for damages to any person or enterprise by the negligence of project owner.
Section 26 (a, b)	The project owner has to comply with the permission for electric searching and generation.

Law and Regulation	Description
Section 27	The project proponent will inform promptly to chief-inspector and head officer of related office while occurring of accident in electricity generation.
Section 40	The project proponent will comply with the standards, rules, and procedure. Moreover, will allow the inspection by respected governmental department and organization if it is necessary.
Section 68	The project proponent will pay the compensation to anyone who is injured or caused to death in electric shock or fire caused by the negligence or omitting of the project owner or representative of the project owner.
Boiler Law (2015)	
Chapter (2) Objective	The objectives of this law are as follows: (a) To obtain boilers in compliance with Myanmar Standards or International Standards (b) To prevent the country and citizens from hazards caused by boiler accidents (c) To use boilers in compliance with Myanmar Standards or International Standards within the country (d) To develop boiler technology and to produce experts capable of manufacturing, handling, repair, and maintenance of boilers (e) To optimize the use of boilers through effective utilization of fuel energy (f) To reduce the environmental, social and health impacts through long-lasting use of boilers.
Chapter (3) 4. With the permission of the Ministry, the inspector general can:	Notify the inspection methods and instructions according to the national or international standards for safe operations of boilers in line with this law, procedures and instructions Only the results obtained from the prescribed boiler standards and inspection methods will be approved.
Chapter (4). Boiler Registration	5. Anybody who would like to use a boiler in any kind of business should be registered. 6. Boiler should be manufactured according to Myanmar Standards or International Standards. 7. Those who would like to apply for boiler registration according to Section 5 should apply to the inspector with the application, documents and vouchers related to boiler 8. If the application regarding registration of boiler according to Section 7, the Registration Officer should conduct necessary inspection and submit results of the findings to the Inspector General. 9. The Inspector General should assess and inspect the submission of the Registration Officer according to Section 8 and could allow or reject for registration of the boiler. 10. The Inspector General shall define boiler size according to heated surface area in accordance with adopted procedures.
Chapter (13) Prohibitions	59. According to Section 21, nobody must alter, change, deface, deform or make embossed registration unnoticeable illegitimately.

Law and Regulation	Description
	60. Nobody is allowed to repair a boiler without boiler repair certificate. 61. Nobody is allowed to maintain a boiler without boiler maintenance certificate. 62. Nobody must alter safety relief valve in order to exceed the allowable pressure due to his consent or direction given by the owner. 63. Nobody must manufacture boilers against Section 25, Subsection 25 (a) and (b) enacted.
The Social Security Law (2012)	
The Social Security Law, enacted in 2012, was amended the Social Security Act in 1954. It stipulates the formation and implementation of social security systems.	
Section 53(a)	The employers and workers shall co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment;
Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)	
This law was enacted for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. It stipulates that employer in which more than 30 workers are employed shall form the workplace coordinating committee consisting of the representatives of workers and the representatives of employer.	
Section 23	A party, employer or worker, may complain individual dispute relating to his grievance to the Conciliation Body and if he is not satisfied with the conciliation of such body in accord with stipulated manners, may apply to the competent court in person or by the legal representative.
Section 24	The relevant Conciliation Body shall, in respect of the collective dispute known or received by the complaint of either party, employer or worker, in respect of the dispute; information sent by the Minister or the Region or State Government or any other means, carry out as follows: (a) conciliating so as to be settled within three days, not including the official holidays, from the day of knowing or receipt of such dispute; (b) concluding mutual agreement if the settlement is reached in conciliating under sub-section (a), before the Conciliation Body.
Section 25	The Conciliation Body shall refer the collective dispute which does not reach settlement to the relevant Arbitration Body and inform the persons relating to the dispute.
Section 38	No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause.
Section 39	No employer shall alter the conditions of service relating to workers concerned in such dispute at the consecutive period before commencing the dispute within the period under investigation of the dispute before the Arbitration Body or Tribunal, to affect the interest of such workers immediately.
Section 40	The project proponent has to not close the work without negotiation, discussion on dispute in accord with this law, decision by Tribunal

Law and Regulation	Description
Section 51	The project proponent has to pay the compensation decided by Tribunal f violates any act or any emission to omission to damage the interest of labour by reducing of product without efficient cause.
Section 46	Any employer who violates any prohibition contained in sections 38 and 39 shall, on conviction, be punished with a fine for a minimum of one-lakh kyats.
The Employment and Skill Development (2013)	
This law was enacted for safeguarding the right of workers or having skillful of workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. Employer shall conduct occupational training to enhance the skills of workers.	
Section 5	The project proponent has to appoint employees with the contract in line with the provision of section 5 of said law.
Section 14	Employer shall conduct occupational training to enhance the skills of workers who are to be employed as well as workers who are presently employed in accordance with the requirements of the enterprise and the policy of the Skills Development Agency.
The Worker's Compensation Act, 1923	It stipulates that employer is required to make payments to employees who become injured or who die in any accidents arising during and in consequence of their employment. Such compensation also must be made for diseases which arise as a direct consequence of employment, such as carpal tunnel syndrome.
The Payment of Wages Act, 1936	The Payment of Wage Act defines the payment obligation to the workers employed in the factories or railway administration. It stipulates the method of payment stating that the payment should be made in cash on a regular payday, and allows legal action against delayed payment or un-agreeable deduction.
The Leave and Holidays Act (1951, partially revised in 2014)	This act has been used as the basic framework for leaves and holidays for workers with minor amendment in 2006 and 2014. This defines the public holidays that every employee shall be granted with full payment. It also defines the rules of leaves for workers including medical leave, earned leave and maternity leave.
The Minimum Wage Law (2013)	The minimum wage law, passed in March 2013, was replaced the 1949 Minimum Wage Act. The law provides a framework for minimum wage determination: the presidential office establishing a tripartite minimum wage committee shall decide minimum wage with industrial variation based on a survey on living costs of workers possibly every two years. This also stipulates equal payment.
Public Health Law (1972)	Chapter 2; Prevention of Public Health

Law and Regulation	Description
Objectives	To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. This law focuses as follows The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law. The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law. The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	4. When a Principal Epidemic Disease of a Notifiable Disease occurs; Immunization and other necessary measures shall be undertaken by the Department of Health, in order to control the spread thereof; The public shall abide by measures undertaken by the Department of Health under sub-section (a).
Chapter 4 Environmental Sanitation	For prevention of the outbreak of Communicable Disease and effective control of Communicable Disease when it occurs, the public shall under the supervision and guidance of the Health Officer of the relevant area, undertake the responsibility of carrying out the following environmental sanitation measures; Indoor, outdoor sanitation or inside the fence outside the fence sanitation; Well, ponds and drainage sanitation; Proper disposal of refuse and destruction thereof by fire; Construction and use of sanitary latrines; Other necessary environmental sanitation measures.
Occupational Safety and Health Law (2019)	
Purpose:	To effectively implement measures related to safety and health in every industry and to set occupational safety and health standards;
Section-26 Sub-section (e)	The project proponent has to provide adequate and relevant personal protective equipment to workers free of charge and make them wear it during work so as not to expose workers to any serious occupational diseases or hazards.
Section-26 Sub-section (1)	The project proponent has to arrange and display occupational safety and health instructions, warning signs, notices, posters, and signboards.
Section-30 Sub-section (a)	The worker shall wear or use at all times any protective clothes, equipment and tools provided by the employer for the purpose of safety and health.
Section-30 Sub-section (d)	The worker shall proper and systematic use any equipment and tools, machines, any parts of the machines, vehicles, electricity and other substances being used at the workplace.

Law and Regulation	Description
Section-30 Sub-section (e)	The worker shall take reasonable care for the safety and health of himself/ herself and of other persons who may be affected by his/ her acts or omissions at work.
The law on Standardization (2014)	
Objectives	The Objectives of this Law are as follows: to enable to determine Myanmar Standard to enable to support export promotion by enhancing quality of production organizations and their product, production processes and services to enable to protect the consumers and user by guaranteeing imports and products are not lower than prescribed standard, and safe from health hazards to enable to support protection of environment related to products, production process and services from impact, and conservation of natural resources to enable to protect manufacturing, distributing and importing the disqualified goods which do not meet the prescribed standard and those which are not safe and endangered to the environment to support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade to facilitate technological transfer and innovation by using the standards for the development of national economic and social activities in accordance with the national development programme.
Chapter 7 Taking Action by Committee No. 19	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 order: warning suspending the certificate of certification for limited period cancelling the certificate of certification
Vehicles Safety and Motor Vehicle Management Law, 2020	
Objectives	When the constructions periods and if it is needed in operation and production period for all vehicles • The project proponent has to promise to abide by the nearly all provisions of said law and rules, especially the provisions related to air pollution, noise pollution and life safety.
The Conservation of Water Resources and Rivers Law (2016)	
Chapter II Aims Section 3	The aims of this Law are as follows: (a) to conserve and protect the water resources and rivers system for beneficial utilization by the public; (b) to smooth and safety waterways navigation along rivers and creeks; (c) to contribute to the development of State economy through improving water resources and river system; (d) to protect environmental impact.
Chapter V	No person shall:

Law and Regulation	Description
Prohibitions Section 8	(a) carry out any act or channel shifting with the aim to ruin the water resources and rivers and creeks. (b) cause the wastage of water resources wilfully.
Section 11	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. (b) catch aquatic creatures within river-creek boundary, bank boundary or waterfront boundary with poisonous materials or explosives. (c) dispose of disposal soil and other materials from panning for gold, gold mineral dredging or resource production in the river and creek, into the river and creek or into the water outlet gully which can flow into the river and creek.
Section 11	11. 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. (b) catch aquatic creatures within river-creek boundary, bank boundary or waterfront boundary with poisonous materials or explosives. (c) dispose of disposal soil and other materials from panning for gold, gold mineral dredging or resource production in the river and creek, into the river and creek or into the water outlet gully which can flow into the river and creek.
Section 19	No one shall dispose of any substance into the river-creek that may cause damage to waterway or change of watercourse from the bank or vessel which is plying, vessel which has berthed, anchored, stranded or sunk.
Section 22	No one shall, without the permission of the directorate, pile sand, shingle and other heavy materials for business purposes in the bank area and waterfront area.
Chapter VI Penalties Section 29	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.
Chapter VII Miscellaneous Section 30	Any government department and organization or any person desirous of constructing drainage, utilizing river water intake, constructing bridges spanning rivers, connecting underground pipe, connecting underground electric power cable, connecting underground telecom cable or digging in rivers and creeks, bank boundary and waterfront boundary, under the requirement of work, shall in order not to adversely affect the water resources and rivers and creeks, carry out only after obtaining the approval of the Ministry of Transport.
The Commercial Tax Law (1990) Amended 2014	
Chapter 5	Any Person who commences operation of a goods production enterprise or service enterprise shall furnish letter of intimidation on

Law and Regulation	Description
Registration and Intimation of Commencement of Enterprise 11 (b)	the commencement of the operation as such to the relevant Township Revenue Officer as stipulated by regulations.
Chapter 6 Monthly Payment of Tax and Sending of Three-Monthly Return 12 (a)	Any person who has taxable proceed of sale or receipt from service within a year, shall pay due monthly tax within ten days after the end of the relevant month. Moreover, a three-monthly return shall be furnished to the relevant Township Revenue Officer within one month after the end of relevant three-month.
12 (b)	The Township Revenue Officer may intimate any person to pay due monthly tax and send three-monthly return if there is cause to consider that he has taxable proceed of sale or receipt from service within a year.
12 (c)	If it is failed to pay tax under sub-section (a) or (b), or if there is cause to consider that the tax paid is less than the tax payable, the Township Revenue Officer may, based on the information received, estimate and claim the tax payable or the additional tax payable.
12 (d)	The tax paid under sub-section (a), (b) or (c) shall be set-off from the tax due in the assessment.
12 (e)	The tax payable on goods imported under sub-section (c) of section 4 of the Law shall be collected together with the customs duties by the Customs Department in accord with the manner of collecting customs duties.

2.2. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUIDELINES

As specified in the EIA Procedure, all projects are obliged to use, comply with and refer to applicable national guidelines or standards or international standards adopted by the Ministry. As specified in the EIA Procedure, following project approval a project shall commence implementation strictly in accordance with the project EMP and any additional requirements set out in the project ECC, which will encompass conditions relating to emissions. While these Guidelines generally apply to all projects subject to the EIA Procedure, it is the prerogative of the Ministry to decide how the Guidelines should be applied to existing projects as referred to in the EIA Procedure.

According to the Environmental Conservation Law, MOECAF shall set standards of environmental qualities as agreed by the Union Government and the Environmental Conservation Committee to provide the basis for regulation and control of noise and vibration, air emissions and liquid

discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health.

2.2.1. General Guidelines

General guidelines of related environmental impact guideline for proposed project are -

2.2.2. Air Emission

Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that: (i) emissions do not result in concentrations that reach or exceed national ambient quality guidelines and standards, or in their absence current World Health Organization (WHO) Air Quality Guidelines1 for the most common pollutants as summarized below; and (ii) emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e. not exceeding 25 percent of the applicable air quality standards) to allow additional, future sustainable development in the same air shed. Industry-specific guidelines summarized hereinafter shall be applied by all projects to ensure that air emissions conform to good industry practice. Reference should be made to WHO's Air Quality Guidelines for Europe for air pollutants not included in the following Table 2-2.

Table 2-2 WHO's Air Quality Guideline

Parameter	Averaging Period	Guideline Value
Nitrogen Dioxide	1-year 1-hour	40 200
Ozone	8-hour	100
Particulate Matter PM10[a]	1-year 24-hour	10 50
Particulate Matter PM2.5[b]	1-year 24-hour	10 25
Sulfur dioxide	24-hour 10-minute	20 500

[a] Particulate matter 10 micrometers or less in diameter

[b] Particulate matter 2.5 micrometers or less in diameter

2.2.3. Wastewater

Industry-specific guidelines apply during the operations phase of projects and cover direct or indirect discharge of wastewater to the environment. They are also applicable to industrial discharges to sanitary (domestic) sewers that discharge to the environment without any treatment. Wastewater generated from project operations includes process wastewater, wastewater from utility operations, runoff from process and storage areas, and miscellaneous activities including wastewater from laboratories, and equipment maintenance shops. Projects with the potential to generate process wastewater, sanitary sewage, or storm water should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety or the environment. Industry-specific guidelines summarized hereinafter shall be applied by all projects, where applicable, to ensure that effluent emissions conform to good industry practice.

For project types where industry-specific guidelines are not set out in these Guidelines, the following general guideline values, or as stipulated on a case-by-case basis, apply during project operations.

Table 2-3 Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (general application)[1]

Parameter	Unit	Guideline Values
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 suspended solids	mg/l	50
Zinc	mg/l	2

[1] Pollution prevention and abatement handbook. 1998. Toward cleaner production. World Bank Group in collaboration with United Nations Environment Programme and the United Nations Industrial Development Organization.

a Standard Unit

b At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge

2.2.4. IFC EHS Guidelines

The EHS Guidelines by International Finance Cooperation (IFC) are technical reference documents with general and industry–specific examples of Good International Industry practice (GIIP), as defined in IFC's Performance Standard 3: Resources Efficiency and Pollution Prevention. The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC, and that are generally considered to be achievable in new facilities at reasonable costs by existing technology.

There are two kinds of guidelines, General EHS Guidelines and Industry Sector Guidelines. The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors in the following section: (1) Environment, (2) Occupational Health and Safety, (3) Community Health and Safety and (4) Construction and Decommissioning. Table 2-4 shows the contents of the section of Community Health and Safety.

Table 2-4 Community Health and Safety Contents

Contents	Brief Description
Water Quality and Availability	Drinking water sources should at all times be protected so that they meet or exceed applicable national acceptability standards or in their absence the current edition of WHO Guidelines for Drinking-Water Quality. Project activities should not compromise the availability of water for personal hygiene needs and should take account of potential future increases in demand. The overall target should be the availability of 100 liters per person per day.
Structural Safety of Project Infrastructure	Reduction of potential hazards is best accomplished during the design phase when the structural design, layout and site modifications can be adapted more easily. The following issues should be considered and incorporated as appropriate into the planning, siting, and design phases of a project (1) inclusion of buffer strips or other methods of physical separation around project sites to protect the public from major hazards associated with hazardous materials incidents or process failure (2) incorporation of siting and safety engineering criteria to prevent failures due to natural risks posed by earthquakes, tsunamis, wind, flooding, landslides and fire, and (3) application of locally regulated or internationally recognized building codes, standards and regulations, and mitigation measures.
Traffic Safety	Traffic safety should be promoted by all project personnel during displacement to and from the workplace, and during operation of project equipment on private or public roads. Prevention and control of traffic related injuries and fatalities should include the adoption of safety measures that are protective of project workers and of road users, including those who are most vulnerable to road traffic accidents.
Transport of Hazardous Materials	Projects should have procedures in place that ensure compliance with local laws and international requirements applicable to the transport of hazardous materials.
Disease Prevention	Recommended interventions against the communicable diseases at the project level include (1) providing surveillance and active screening and treatment of workers, (2) preventing illness among workers in local communities by undertaking health awareness and education initiatives, training health workers in disease treatment and conducting immunization programs for workers, and (3) providing treatment through standard case management in on-site or community health care facilities.

Contents	Brief Description
Emergency preparedness and Response	All projects should have an Emergency preparedness and Response Plan that is commensurate with the risks of the facility and that includes the following basic elements: (1) Administration (policy, purpose, distribution, definitions, etc.) (2) Organization of emergency areas (command centers, medical stations, etc. (3) Roles and responsibilities, (4) Communication systems, (5) Emergency response procedures, (6) Emergency resources, (7) Training and updating, (8) Checklists (role and action list and equipment checklist), and (9) Business Continuity and Contingency.

Source: IFC, Environmental, Health, and Safety (EHS) Guidelines, General EHS Guidelines: Community Health and Safety (April 30.20070)

2.3. INSTITUTIONAL ARRANGEMENT

The Ministry of Environmental Conservation and Forestry (MOECAF) was reformed as the Ministry of Natural Resources and Environmental Conservation (MONREC) on 30th March, 2016 in order to undertake both environmental and natural resources conservation and management more effectively. Under Section 3 of the Environmental Impact Assessment Procedure (2015), pursuant to section 21 of the law and Articles 52, 53 and 55 of the Environmental Conservation Rules, all projects and project expansions undertaken by any organization, which may cause impact on environmental quality that, are required to obtain prior permission. This is to be in accordance with section 21 of the Environmental Conservation Law, and Article 62 of the Environmental Conservation Rules, having the potential to cause adverse impacts, that are required to undertake IEE or EIA or to develop an EMP, and to obtain an Environmental Compliance Certificate (ECC) in accordance with this EIA procedure.

2.4. INTERNATIONAL GUIDELINES

Organization's Guidelines, World Bank Safeguard Policies, IFC Performance Standards and National Environmental Quality (Emission) Guidelines (2015) are referred for EMP of the proposed factory project.

2.5. COMMITMENT OF SUNME (MYANMAR) INDUSTRIAL LIMITED

Sumne (Myanmar) Industiral Limited shall be responsible for the preservation of the environment at and around the area of project site. In addition to this, it shall carry out as per instructions made by Ministry of Natural Resources and Environmental Conservation (MONREC) in which to conduct an EMP which describe the measure to be taken for preventing, mitigation and monitoring significant environment impacts resulting from the implementation and operation of proposed project or business or activity has to be prepared and submitted and to perform activities in accordance with this EMP and be abided by the environment policy, Environmental Conservation Law and other environmental related rules and procedures.

Sumne (Myanmar) Industiral Limited shall be responsible for the environmental assessment of factory development as follows:

- Monitoring the factory area operations according to EMP and Environmental Monitoring Plan (EMoP)
- Submitting environmental monitoring reports to ECD
- Planning and implementation of CSR activities

- To set up welfare plan such as staff medical checkup, training program and Public talk for getting knowledge, risk prevention, bonus and social security services
- To carry out fire safety assessment and ensure adequate and appropriate fire safety measures for employees

3. PROJECT DESCRIPTION

3.1. LOCATION OF PROPOSED PROJECT

The proposed project is located at Plot No. (21), Myay Taing Block No. 24, Ngwe Pin Lae Industrial Zone, Hlaing Thar Yar Township, Yangon Region. The location map of the proposed project site is shown in Table 3-1.

3.2. PROJECT OPERATION

Construction phase of the factory is started in November 2018 according to the YRIC's Endorsement. The operation phase of the factory is started from November 30, 2019 and the duration of project is 30 years. Sunme (Myanmar) Industrial Company Limited will close the factory as their MIC proposal.

Table 3-1 Sunme (Myanmar) Industrial Limited's Project Life Span

Year	2018	2019	2020	2025	2030	2035	2040	2044	2045	2046	Infinity
Construction Phase	→	→									
Operation Phase			→	→	→	→	→	→			
Decommissioning Phase									→	→	→

3.3. UTILITIES

The Utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for general uses. Electric power is used for the purpose of to run the machinery and to provide lighting.

3.3.1. Machinery and Equipment

Lists of machinery and equipment required for the Sunme (Myanmar) Industrial factory is following in Table 3-2.

Table 3-2 List of Machinery

No	Description	Brand	Unit	Quantity
1	High Speed Lockstitch Sewing Machine	JUKI	Set	500
2	Semi-dry-head, 2-Needle, Lockstitch Machine with Organized Split Needle Bar	JUKI	Set	20
3	Semi-dry-head,2-Needle,Lockstitch Machine with Organized Split Needle Bar	JUKI	Set	2
4	Four Thread Overlock Machine	JUKI	Set	20
5	Five Thread Overlock Machine	JUKI	Set	20

No	Description	Brand	Unit	Quantity
6	Direct-drive High Speed Lockstitch Sewing Machine with Edge Cutter	JUKI	Set	30
7	Cutting Machine	BAOYU	Set	10
8	Computer-controlled, High-speed, Bartacking Machine	JUKI	Set	20
9	Computer-controlled, High-speed, Lockstitch Buttonholing Machine	JUKI	Set	4
10	Automatic Round Eye Sewing Machine	JUKI	Set	1
11	Button Sewing Machine	JUKI	Set	20
12	Manual Heat Transfer Machine	XIAO LONG	Set	1
13	Automatic Stencil Machine	ZHONG FENG ZHONG GONG	Set	8
14	Splitter	WEI JIE	Set	2
15	Great White Mold Machine	HAO XUAN	Set	2
16	Needle Detector	SHANG HAI JIE TU	Set	1
17	Fusing Machine	SHANG HAI JIE TU	Set	1
18	Cutting Machine	KM	Set	4
19	Cutting Machine	DA YANG	Set	1
20	Automatic Cloth Cutting Machine	DA YANG	Set	8
21	Computerized Sticking Machine	SUO FEI TE	Set	1
22	Template Cutting Machine	KA WEI	Set	1
23	Cardboard Cutting Machine	KA WEI	Set	1
24	Plotter	KA WEI	Set	1
25	Cloth Inspecting Machine	BAO LUO	Set	1
26	Ironing Machine	PAO LUO	Set	6
27	Electric Steam Boiler	PAO LUO	Set	1
28	Electric Steam Boiler	PAO LUO	Set	1
29	Ironing Table	PAO LUO	Set	1
30	Suction Head Machine	PAO LUO	Set	1
31	Stencil Cutting Machine	KA WEI	Set	1
32	Card Board Cutting Machine	KA WEI	Set	1
33	Plotter	KA WEI	Set	1
34	Cloth Inspection Machine	BAO LUO	Set	1
35	Ventilating Ironing Table	BAO LUO	Set	10
36	Electric Heating Steam Generator (9 KW)	BAO LUO	Set	3
37	Electric Heating Steam Generator (24 KW)	BAO LUO	Set	1
38	One-piece Boiler Rocker Ironing Table	BAO LUO	Set	10

No	Description	Brand	Unit	Quantity
39	Suction Head Machine	BAO LUO	Set	1
40	Air Floating Cutting Bed	XI DAO	Set	15
41	Ordinary Cutting Bed	XI DAO	Set	60
42	Pulling Machine	XI DAO	Set	2
43	Filling Machine	XI DAO	Set	2
44	Cotton Filling Machine	XI DAO	Set	2
45	Cotton Machine	YU DAO	Set	1
46	Cotton Machine (Pai Mian)	YU DAO	Set	5
47	Packing Table	XI DAO	Set	40
48	Flow Table (Line)	XI DAO	Set	12
49	Work Bech	XI DAO	Set	900
50	Three-Layer Cutting Car	XI DAO	Set	24
51	Test Bench	XI DAO	Set	24
52	Wire Cutter	XI DAO	Set	10
53	Subcontracting Station	XI DAO	Set	12
54	Turnover Car	XI DAO	Set	5
55	Excipient Shelf	XI DAO	Set	16
56	Accessories Shelf	XI DAO	Set	16
57	Heavy Shelf Main Frame	XI DAO	Set	20
58	Heavy Duty Shelf Attachment	XI DAO	Set	10
59	Four Layers Of Loose Cloth	XI DAO	Set	8

3.3.2. Work Force

Human resource required by foreign experts/technicians and local persons for administrative and production process are about 831 persons.

Table 3-3 Employment Schedule of Sunme (Myanmar) Industrial Limited

No	Particular	Local	Foreign
1	Manager	1	5
2	Supervisor	50	10
3	Staff	120	-
4	Operation Section Manager	10	-
5	Operation Leader	20	-
6	Operators	600	-
7	Technician	-	15
Total		801	30

3.3.3. Water Requirement

Shwe Than Lwin industrial zone has no centralized water supply system and the factory gets water from the tube wells installed inside the factory compound. Groundwater from this tube well is pumped in the storage tanks for the factory and domestic use. The main water use in the proposed project is for domestic usage such as for personal washing, food preparation, and washing of utensils. Drinking water will be provided by outsource suppliers. Figure 3-4 is described by water storage tank and drinking water supply for Sunme (Myanmar) Industrial factory.

Figure 3-1 Water Storage Tank and Drinking Water Supply

3.3.1. Electricity and Fuel Requirement

The proposed project is intended to get required electricity supply form Yangon City Electricity Supply Board (YESB) and distributed by 315kVA of Transformer. Another source of energy 500 kVA generator will also be kept as the emergency generator if normal electricity supply could not provide for the proposed project.

Figure 3-2 Electricity facility at Sunme (Myanmar) Industrial Limited

3.3.1. Electric Steam Boiler

The factory has BL-ST series steamed boilers are used in ironing process for daily. Specification of steam boiler is presented in Table 3-2 and installed photo is shown in Figure.3-6.

Technical features:

1. Furnace adopts thicken seamless steel pipes, which is durable and greatly improve the safety coefficient
2. Stainless steel water tank, to recycle the iron trail steam so as to decrease the wastage and lower the cost
3. The heater adopts #304 stainless steel larger diameter pipe, to reduce heat load of the heater and extend
4. Use full copper head which id heatproof water pump, it is no easy to get rusty and stuck
5. Triplicated protection of heater circuit control: double protection warning function of water shortage
6. Equip with casters for the machine so that it is convenient to move

Table 3-4 Specification of diesel fuel steam boiler

Type	Unit	BL-9-ST
Heating tube power	kW	9
Water Pump power	kW	0.37
Evaporation Capacity	Kg/H	9
Steam Pressure	Mpa	0.45
Steam Temperature	℃	152
Water Capacity	L	3
Steam outlet caliber	Inch	G1/4
Inflow Caliber	Inch	G1/2

Pollution discharge caliber	Inch	G1/2
Safety valve caliber	Inch	G1/4
Voltage	V	220V, 50Hz 380V, 50Hz

Figure 3-3 Steam boiler Photos

3.4. PRODUCTION PROCESS

3.4.1.1. Raw Material

The main Raw Materials are yarns, which are imported from Korea, China and Japan. Raw materials require for a piece of product is described in Table 3-5..

Table 3-5 List of Raw Materials Requirement

No	Particular	Unit	Padding Jacket	Men's Jacket	Padding Vest	Padding Pants	Pants	Kid's Jacket	Short Pants
1	Fabrics	M	2.3	1.72	1.25	1.5	1.5	1.5	1.2
2	Down Bag	M	1.5	1.5	1.5	0.3	0.3	1	0.2
3	Interlining/ Interlining Tape	M	-	1.35	0.95	-	-	-	-
4	Down	Kg	1.6	-	-	-	-	1	-
5	Padding	M	2	-	-	2	-	-	-
6	Elastic Band / String	M	3	-	1.2	1	1	1.5	1
7	Thread (500 meter)	Coil	1.2	0.5	0.4	1	1	1	1
8	Tape	M	5	-	-	3	3	2	2
9	Label	Pcs	1	1	1	-	-	1	-
10	Stoper(resin/metal etc)	Pcs	3	2	2	1	1	3	1
11	Button (resin/metal etc)	Pcs	6	2	2	2	2	6	2

12	Badge(resin/metal etc)	Pcs	8	-	-	2	2	8	2
13	Buckle(resin/metal)	Pcs	2	-	-	-	-	2	-
14	Eyelet(metal)	Pcs	2	4	4	1	1	2	1
15	Ring/Clip(metal)	Pcs	4	-	-	4	4	4	4
16	Rivet(metal)	Pcs	4	-	-	2	2	4	2
17	Front/Back/Side zipper	Pcs	8	1	1	4	4	8	4
18	Pocket zipper	Pcs	1	2	2	1	1	1	1
19	Shoulder pad	Pcs	2	-	2	2	2	-	2
20	Hanger	Pcs	1	1	1	1	1	1	1
21	Tag	Pcs	1	1	1	1	1	1	1
22	Spare button bag	Pcs	1	1	1	1	1	1	1
23	Plastic bag	Pcs	1	1	1	1	1	1	1
24	Carton	Pcs	1	1	1	1	1	1	1
25	Seal tape	Pcs	1	1	1	1	1	1	1

3.4.1.2. Production Process

The process flow diagram for Garment manufacturing is shown in Figure 3-4. The sewing was operated one and two-needle sewing machine after fabric cutting and checked by quality control supervisor on each sewing line. The ironing process is completed after QC process. Then garment packing is completed and prior to shipping to its destinations.

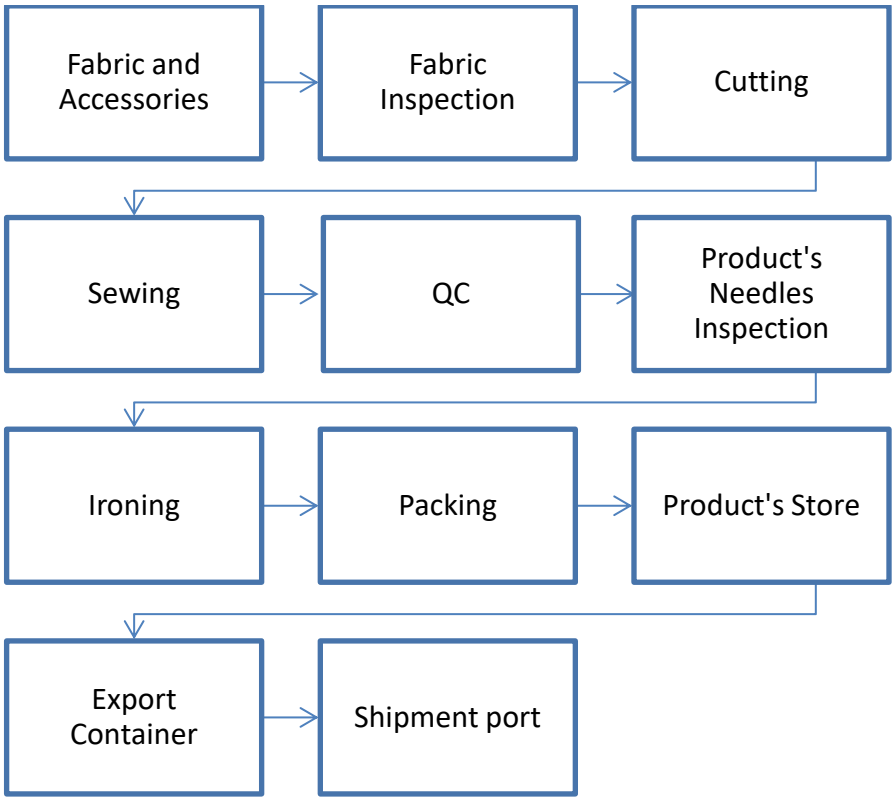


Figure 3-4 Process flow diagram of Sunme (Myanmar) Industrial factory

The first stage in the manufacturing of Garment is the cutting and for that pattern, making is the base. Once the marker is made, pattern pieces must be cut out of the specified fabric.

The process of sewing involves fastening of fabrics, or similar other flexible materials with the help of needle and threads. Stitching is the process of passing threaded needle in and out of a material to make a specific design pattern.

After completion of the sewing, quality control (QC) checks for any error. Quality control was done manually.

The QC passed products are sent to ironing section and after that the products are sent to packing section as a final production process. This step sends packed units for distribution to the customers. These packed units are sent to the countries per customer's specification. Packing process was done manually by manpower.

Accessories Store

Cutting Section

Sewing Area

Ironing Section

Final QC

Packing Area

Figure 3-5 Production process photo of Sunme (Myanmar) Industrial factory

3.4.2. Products

The products of Sunme (Myanmar) Industrial factory are Padding Jacket, Men's Jacket, Padding Vest, Padding Pant, Pants, Kid's Jacket, Short Pants. Table 3-6 is described in annual production rate.

Table 3-6 Annual Production Rate

No	Particulars	Unit	Yr - 1	Yr - 2	Yr - 3	Yr 4	Yr 5	Yr 6-10
1	Padding Jacket	Pcs	688,000	694,880	701,829	708,847	715,936	723,095
2	Men's Jacket	Pcs	96,000	96,960	97,930	98,909	99,898	100,897
3	Padding Vest	Pcs	320,000	323,200	326,432	329,696	332,993	336,323
4	Padding Pant	Pcs	200,000	202,000	204,020	206,060	208,121	210,202
5	Pants	Pcs	280,000	282,800	285,628	288,484	291,369	294,283
6	Kid's Jacket	Pcs	96,000	96,960	97,930	98,909	99,898	100,897
7	Short Pants	Pcs	360,000	363,600	367,236	370,908	374,617	378,364
	Total Production (Pcs)	**Pcs**	**2,040,000**	**2,060,400**	**2,081,004**	**2,101,814**	**2,122,832**	**2,144,061**

3.5. GENERATION OF WASTE, EMISSION, AND DISTURBANCES

3.5.1. Status of the Factory

Sunme (Myanmar) Industrial Limited is using ground water for both industrial and household purpose, which is supplied by deep tube well. The factory also has generators for electricity generation. The fuel used in the industry is Diesel and Purchased electricity. The sanitary liquid waste of the factory is stored in septic tank.

The major pollution caused by the factory's operation are water pollution by discharging liquid waste generated in wet process i.e. air pollution by generator's effluent gas emission, noise pollution created during the operation of generator and other machines.

Solid waste (recycle waste) such as broken machine parts, paper box, fabric scraps, etc., are hand over to local waste buyer. Although the factory causes some pollution but also has a positive side and that is the factory has created employment for many people, due to this factory local community has built up daily.

3.5.2. Industiral Waste

Wastes generated from the factory are cloth scraps of 50% from cutting section, 35% from sewing section and 15% from QC section. In addition, packing waste of plastic sheet, carton box and fabric paper tube are generated from cutting line and packing section. Total amount of waste about maximum 30 kg per day are generated from operation process.

3.5.3. Human Wastes

W The number of staff and workers required in the day shift for the factory is maximum 831 persons during operation. Solid waste generated from maximum amount of operators and office staffs with assumption of waste generation rate at 324.09 kg/day was calculated based on solid waste generation rate of 0.39 kg/person/day2.

[2]The Yangon City solid waste generation rate as of 2012 is 0.39 kg per person per day (Pollution Control and Cleansing Department, Yangon City Development Committee, 2014).

[2]The domestic wastewater generation was based on typical wastewater generation rate of 0.1 m3 per person per day (Metcalf & Eddy, 2004)

3.6. DECOMISSIONG PHASE

The proposed project investment duration is 30 years and their extendable year is 10 years in two times recommended by the Yangon Region Government. The project will be closed out according to their MIC proposal. During the decommission phase, the project will follow the rules and regulations to reduce the impacts on the environment.

[2] The Yangon City solid waste generation rate as of 2012 is 0.39 kg per person per day (Pollution Control and Cleansing Department, Yangon City Development Committee, 2014).

4. BRIEF DESCRIPTION OF SURROUNDING ENVIRONMENT

The purpose of this Chapter is to predict how environmental and socio-economic conditions will affect because of the implementation of the proposed Project. This requires a sound understanding of the baseline conditions at the project site, which established through desktop study research, site surveys, primary data collection and projections for future developments. Findings provide the current and future characteristics of the project site and the value and vulnerability of the key environmental and socio-economic resources and receptors. The following sections provide a description of the environmental and socio-economic aspects of the project.

4.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

The followings are methodologies used for the Environmental Management Plan (EMP) report preparation;

- Onsite Measurements and Analysis – Baseline parameters such as air quality and noise quality of the project site during operation phase were measured onsite. The analyzed results are mentioned in this chapter.
- Secondary data collection of proposed project site area – Socio economic condition, physical/biological environment, and weather data are collected from official township data of Hlaing Thar Yar Township, Yangon Region.

4.2. BASELINE ENVIRONMENTAL MONITORING

The baseline environmental quality at the Project Site and its immediate surroundings was established by temperature, humidity, light and ambient air quality samples; as well as noise measurements at immediate surrounding areas. The data is presented below.

4.2.1. Noise

The Noise level was measured by using Digital Sound Level Meter for working hours on 21 May 2019. The average noise level in the project site area is presented in Table 4-1compared with NEQ guideline. However, according to the Noise source monitoring at operation area (inside the production sector) of noise level is exceeding the acceptable level of National Environmental Quality (Emission) Guideline.

Table 4-1 Noise Level Measurement Result

Date and Time	Location	GPS value	Result value	NEQ Guideline
21 May 2019 (1:00pm to 4:00 pm)	Sewing section	16°51'50.2"N 96°03'02.0"E	76.3 dB	70 dB
	Finishing section	16°52'0.2"N 96°03'0.20"E	75.7 dB	70 dB
	Cutting Section	16°51'54.2"N 96°03'05.6"E	76 dB	70 dB

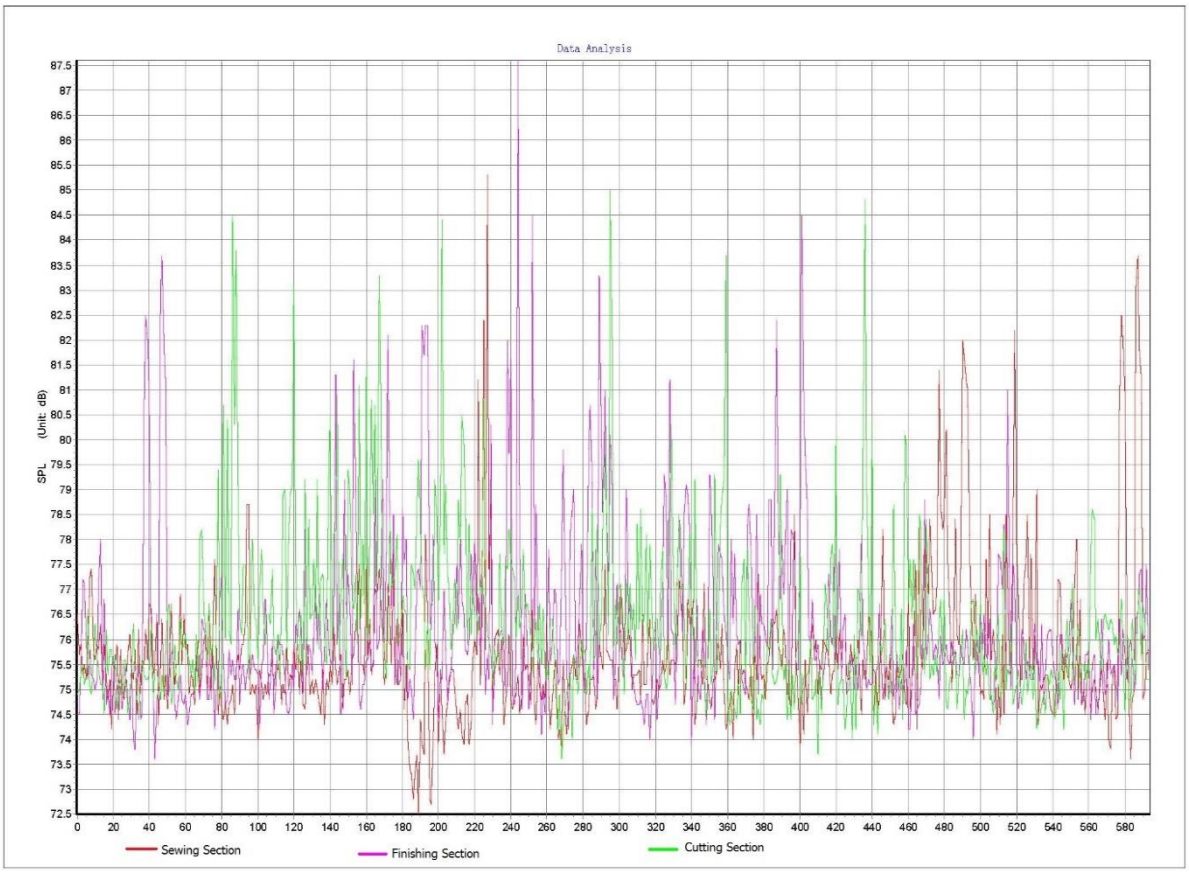


Figure 4-1 Noise Level Result Graph

Figure 4-2 Sound Level Measurement Photo

4.2.2. Air Quality

To determine the existing baseline ambient air quality status within the project site on 21, May 2019, 24hours of working period air pollutants level, which include dust (PM_{10} and $PM_{2.5}$) and gases (SO_2, NO_2), 8 hours of working period air pollutants level, which include dust (O_3) and 1 hour of working period air pollutants level, which include dust (NO_2) were measured at the selected site using the

HAZSCANNER air monitoring station. To reveal the existing status of baseline air quality, the average ambient air qualities measured were compared with National Environmental Quality (Emission) Guideline and international ambient air quality standard (NAAQS, ACGIH) guidelines. The measurement location point is situated at latitude 16°50'43.18"N and longitude 96°18'1.01"E.

It was observed that the air quality of CO_2 and SO_2 concentration level are within the limit of NEQ (emission) guideline but particulate matter (PM_{10}, $PM_{2.5}$) and gases level of Nitrogen Dioxide (NO_2, O_3) are also within the National Environmental Quality (Emission) Guideline.

Table 4-2 Observed Air Quality Results

Parameters	Observed value	Guideline value	Unit	Organization	Period
Indoor Air Quality Monitoring					
PM_{10}	46.2	50	µg/m^3	NEQG	24 hrs
$PM_{2.5}$	22.8	25	µg/m^3	NEQG	24 hrs
Outdoor Air Quality Monitoring					
PM_{10}	12.3	50	µg/m^3	NEQG	24 hrs
$PM_{2.5}$	3.4	25	µg/m^3	NEQG	24 hrs
SO_2	1	20	µg/m^3	NEQG	24 hrs
NO_2	5.1	200	µg/m^3	NEQG	1 hr
O_3	37.5	100	µg/m^3	NEQG	8 hrs
CO_2	181.1	NG	µg/m^3	-	24 hrs

NEQ = National Environmental Quality (Emission) Guideline

4.2.3. Light

Activities of the workers in the bag factory are highly dependent on the quality of light. Therefore, the consultant conducted the light measurement in the factory is presented. The illustrates the recommended illumination and limiting glare index applicable to typical works (fairly severe to very severe tasks) in factory is provided in Table 4-4.

Appropriate lighting is the need for every department, irrespective to the task being handled. Although, there are some areas where focus on maintaining proper illumination is very crucial in a bag factory, like the inspection points (on-floor and in stores), sampling, and the finishing section, as these areas are crucial for the quality of the production. The tasks involved in these areas require high levels of worker focus and accurate lighting to ensure lower errors and defects passing on to the next stage.

However, according to the result of light measurement at operation area (inside the production sector) is in good condition and at the acceptable level of standard.

Table 4-3 Recommended illumination and limiting glare index based on IES Code, 1968

Visual test	Illumination (lux)	Glare index
Casual seeing	100	28
Rough task with large detail	200	25-28
Ordinary task medium detail	400	25

Fairly severe task, small detail (e.g. drawing office, sewing)	600	19-22
Severe, prolonged task, very small detail (e.g. fine assembly, hand tailoring)	900	16-22
Very severe, prolonged task, very small detail (e.g. gem cutting, hosiery mending, gauging very small parts)	1,300 -2,000	13-16

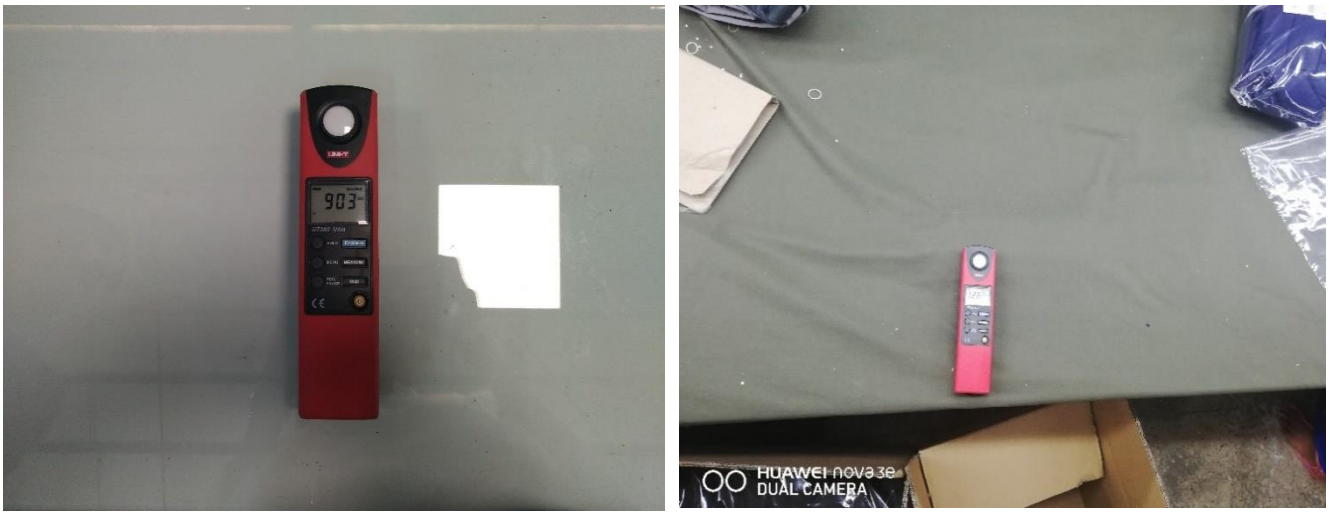


Figure 4-3 Light quality measurement photos

Table 4-4 Result of Light Measurement in Sunme (Myanmar) Industrial Limited

No.	Location	Measure value (Lux)	Standard*
1	Warehouse	280	300
2	Cutting Department	903	1000
3	Stitching Department	870	1000
4	Lasting Department	565	600
5	Packing Department	580	600

4.2.4. Weather Condition

The weather condition during 21 May 2019 shows the average temperature of 39.5 °C while the average humidity is 55.7 % and its sunny day. There were no raining on the day between 11:00 am and 4:00 pm and the wind speed is 1.2 m/s SSW, S, SE, SSE and ESE direction.

4.3. PHYSICAL COMPONENT (SECONDARY DATA)

4.3.1. Topography

The proposed project area is situated in Shwe Than Lwin Industrial Zone, Hlaing Thar Yar Township, and its topographic condition is flat. The proposed project site is primarily agricultural land, but now is initiated into the industrial zone area.

4.3.2. Geology

The Yangon area is underlain by alluvial deposits (Pliestocene to Recent), the non-marine fluvialtile sediments of Irrawady formation (Pliocene), and hard, massive sandstone of Pegu series (early-late Miocene). Alluvial deposits are composed of gravel, clay, silts, sands and laterite which lie upon the eroded surface of the Irrawaddy formation at 3-4.6 m above mean sea level (MSL). The rock type in Yangon is mainly soft rocks, which consist of sandstone, shale, limestones and conglomerate. Geological map of Yangon Regional area is shown in Figure 4-3.

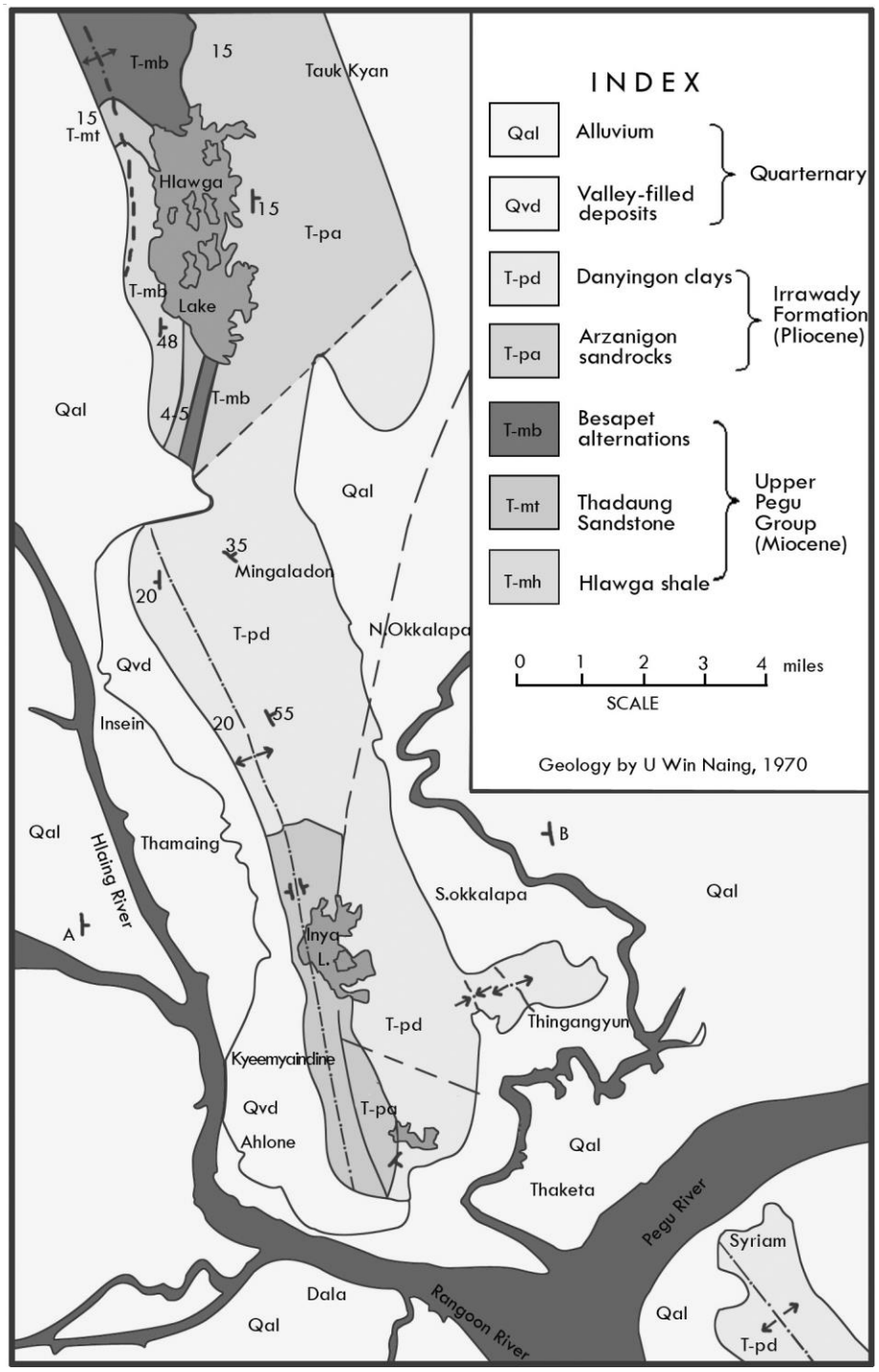


Figure 4-4 Geological Map of Yangon Region

4.3.3. Tectonics

Yangon is situated in the southern part of the Central Lowland which is one of the three major tectonic provinces of Myanmar. The Taungnio Range of the Gyophyu catchments area of Taikkyi District, north of Yangon, through the Thanlyin Ridge, south of Yangon forming a series of isolated hills probably resulted from the progressive deformation of the Upper Miocene rocks as the eastern continuation of the subduction or stretching and compression along the southern part of the Central Basin and regional uplifting of the Pegu Yoma (Aung Lwin 2012).

4.3.4. Soil

The underlying soil type at the Project Site and its surroundings is characterized as the Meadow and Meadow Alluvial Soil. Meadow Soil is soil which occurs near the river plains exposed to occasional tidal floods, is non-carbonate and usually contains a large amount of salt. Both materials mainly comprise silty clay loam and neutral soil rich in plant nutrient. The upper layers (approximately 0 to 7 m) of the soil at the Project Site comprise largely of cohesive layers with traces of sand and gravel, followed by sand layers with low silt content and trace gravel from 7 to 35 m. The lower layers comprise denser silt layer with traces of sand and gravel from approximately 57 to 70 m. Standard Penetration Test (SPT) results obtained from testing at the Project Site indicate that the soil strength generally increases with depth. The STP results showed that the current soil quality can accommodate the construction of the Project.

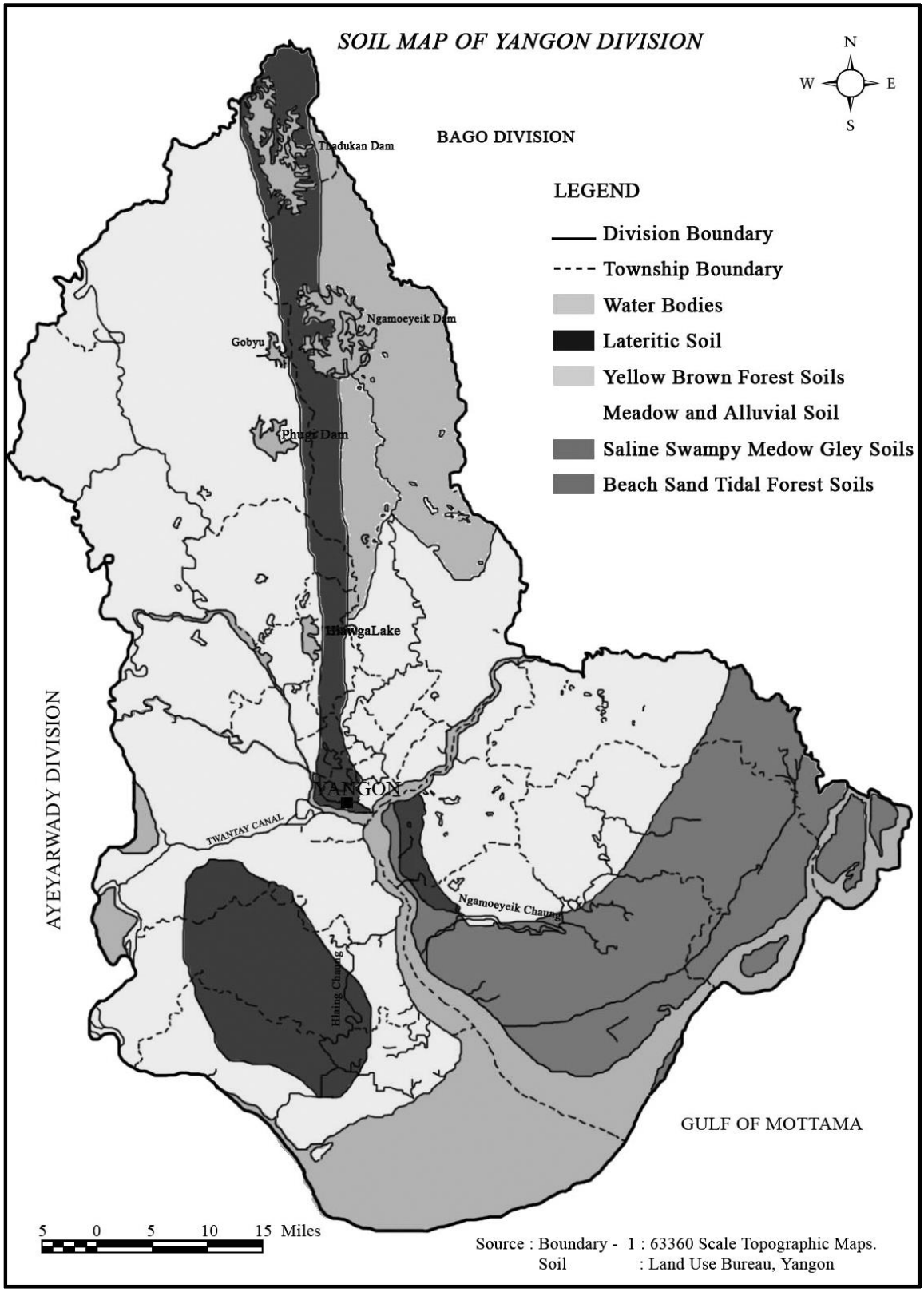


Figure 4-5 Soil Map of Yangon (Source: Land use of Bureau of Yangon)

4.3.5. Hydrogeology

Yangon is rich in groundwater resources conserved by unconsolidated Tertiary-Quaternary deposits. In Yangon, groundwater is mostly extracted from Valley filled deposits and Ayeyarwady sandstones.

Groundwater: Groundwater availability is generally based on the distribution of permeable and relatively impermeable rocks. The nature of openings in the rocks determines permeability of rocks. Based on local geological considerations, potential groundwater source of Yangon can be roughly divided into two sub regions, namely the low potential area and high potential area. Low potential areas are areas with those rock units of Hlawga Shale, Thadugan Sandstones and Basepet Alternation of upper Pegu Group (Miocene epoch) and Danyingon Clays of Irrawaddy rocks. These rocks and formations are a dense, massive and consolidated nature and have impervious characteristic. High potential areas are underlain by Pliocene Series and recent Formations. High potential area covers approximately 85 percent of the Yangon city including Pabedan. Stand pipe piezometers were installed at a depth of up to 30 m from the existing ground level while a pumping well was installed upon completion of the soil investigation works. Based on the results recorded up to the 8th of December 2012, stabilized groundwater level was observed to range between 0.49 m MSL to -1.81 m MSL4.

Water Supply: The Yangon City Development Committee (YCDC) has an overall responsibility for the management and distribution of water for Yangon City. Presently, YCDC's water supply is obtained from two main sources: (1) reservoir (Hlawga, Gyobu, Pugyi and Ngameoyeik reservoirs) and, (2) groundwater from YCDC's tube wells. Water from these sources is utilized to varying degrees. Areas not supplied with water from the YCDC rely on shallow surface wells and private boreholes. Water supply for the Project Site will be obtained from onsite borewells for both construction and operations due to the poor reliability of municipal supply. Permitting is part of the Planning Consent Application currently underway. The boreholes will be provided and operated by the Developer.

Hydrology: The Project Site lies along the catchment of the Pazundaung River which flows east of the site in a southerly direction to converge into the Yangon River. The Yangon River (also known as the Rangoon River or Hlaing River) is formed by the confluence of the Pegu and Myitmaka rivers and flows into the Gulf of Martaban which is part of the larger Andaman Sea. The river flows along a 40 km stretch flowing from southern Myanmar as an outlet of the Ayeyarwady River into the Ayeyarwady delta. A small portion of the Bago River (the estuary) lies within the Yangon Division. The Pazundaung Creek and Bago River joins the Yangon River and from there, flow towards the southwestern direction into Andaman Sea.

4.3.6. Climate and Meteorology

Yangon has a tropical monsoon climate under the Koppen climate classification system. The city typically experiences a distinct rainy season from the month of May through to October when a substantial amount of precipitation occurs; and dry season, which commences from November and ends in April. During the course of a year, average temperatures show some variance with average highs ranging from 26 °C to 36 °C and average lows occurring between 18 °C and 25 °C. The hottest period is between February and May, with little or no rain. At the end of this season, generally from March to April, the average monthly temperature reaches the upper 30 °C. The average temperatures in Yangon range from 24 °C to 36 °C in April during the hot season and it ranges from 18 °C to 32 °C in January during the cooler season.

Rainfall and Relative Humidity: The climate of Myanmar follows a typical monsoon pattern. Historically, the average annual mean rainfall for Yangon is 2,681 mm with the annual average rainy days of 129.3 days. During the course of 2013, the Department of Meteorology and Hydrology (Myanmar) reported an annual precipitation of approximately 2700 mm. The month with the most precipitation was in July. The relative humidity was generally higher from May to October 2013. The dry season occurs from November to April. Based on the historical weather for the last twelve months in Yangon, no precipitation was observed in December 2012, February 2013 and March 2013. The least humid month of the last 12 months was February 2013 with an average daily low humidity of 34%, and the most humid month was September with an average daily high humidity of 80%.

The proposed project is located at Shwe Than Lwin Industrial Zone, Hlaing Thar Yar Township and Yangon Region. The climate condition of Hlaing Thar Yar Township in which the project lies is the dry season , starts in February and ends in May. The raining season starts in June and ends in September and the cold season follow with the cooler, drier months of October to January. The highest temperature ranging 41°C and low range 27°C reference from Township Meteorology data, Regional Data of Hlaing Thar Yar Township. 2012 to 2017 Yearly data of rainfall and temperature is presented inTable 4-4. The weather condition during 21 May 2019 shows the average temperature of 39.1 ◦C while the average humidity is 61.46 percent (Table 4-5)

Table 4-5 Annual rainfall and temperature

Year	Rainfall		Temperature	
	Raining day	Rainfall value (Inches)	Summer season Max (°C)	Winter season Min (°C)
2012-2013	121	53.46	41	27
2013-2014	131	61.25	40	26
2014-2015	128	58.35	39	25
2015-2016	113	48.45	40	26
2016-2017	126	56.97	41	27

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

Table 4-6 Realtive humidity and temperature measures at factory

Date and Time	Description	Result value	Environmental parameter air station guideline
21 May 2019 (8:00 am to 4:00 pm)	Relative Humidity RH %	61.46 (%)	Present condition
	Temperature	39.1 °C	Present condition

Wind Speed and Direction. Based on 2013 data, it was reported that the month with the highest wind speed was April 2013 with an average wind speed of 3 m/s while the least windy month was December 2012 with an average wind speed of 1m/s. The highest sustained wind speed was 54 m/s, occurring on September 19, 2013 and the highest daily mean wind speed was 4 m/s, occurred on May 14, 2013.

Natural Hazards: Myanmar is exposed to multiple natural hazards including cyclones, earthquakes, floods and fire. It has been periodically exposed by natural disasters. The Yangon District is in the vicinity of the southern section of the Sagaing Fault which has not been active in the past 50 to

75 years indicating that the faults may be under accumulating stress increasing the potential for an earthquake to occur. The Sagaing Fault is the most prominent active fault in Myanmar trending roughly north to south. It has been the originator of a large proportion of destructive earthquakes in Myanmar. The Project Site is also located in an earthquake zone and therefore the building construction design needs to cater for this hazard with adequate planning on emergency response procedures. Myanmar is exposed to cyclones and associated storm surges from the Bay of Bengal. Annually, there are approximately 10 tropical storms in the Bay of Bengal from April to December. Severe cyclones occur during the pre-monsoon period of April to May and post-monsoon period of October to December. The threat of flooding usually occurs in three waves each year: June, August and late September to October.

4.3.6.1. Average weather in Yangon

In Yangon, the wet season is oppressive and overcast, the dry season is muggy and partly cloudy, and it is hot year-round. Over the course of the year, the temperature typically varies from 67 °F to 97 °F and is rarely below 62 °F or above 101 °F. [6]

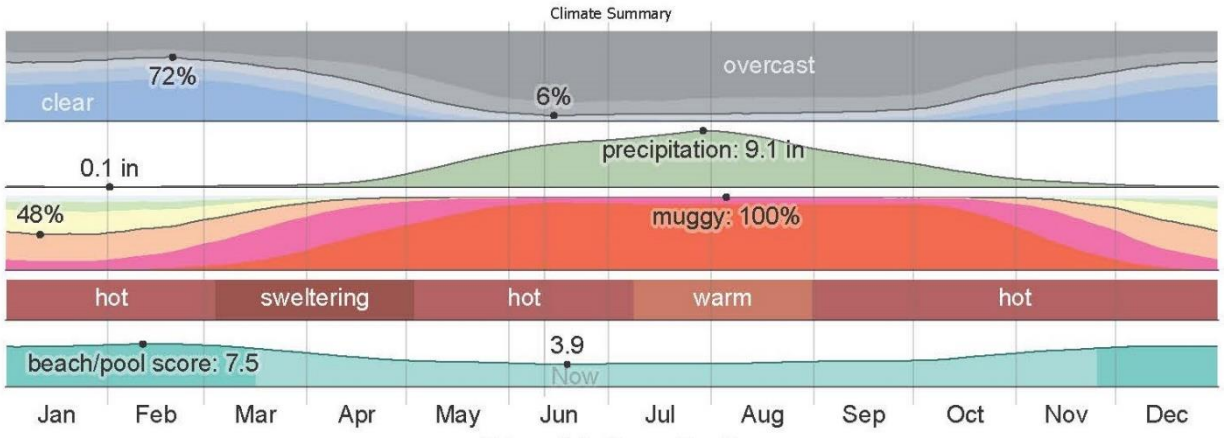


Figure 4-6 Climate Summary of Yangon Region

4.3.6.2. Temperature

The hot season lasts for 2.0 months, from March 2 to May 3, with an average daily high temperature above 95 °F. The hottest day of the year is April 11, with an average high of 97 °F and low of 78 °F.

The cool season lasts for 3.9 months, from June 2 to September 29, with an average daily high temperature below 87 °F. The coldest day of the year is January 10, with an average low of 67 °F and high of 88 °F.

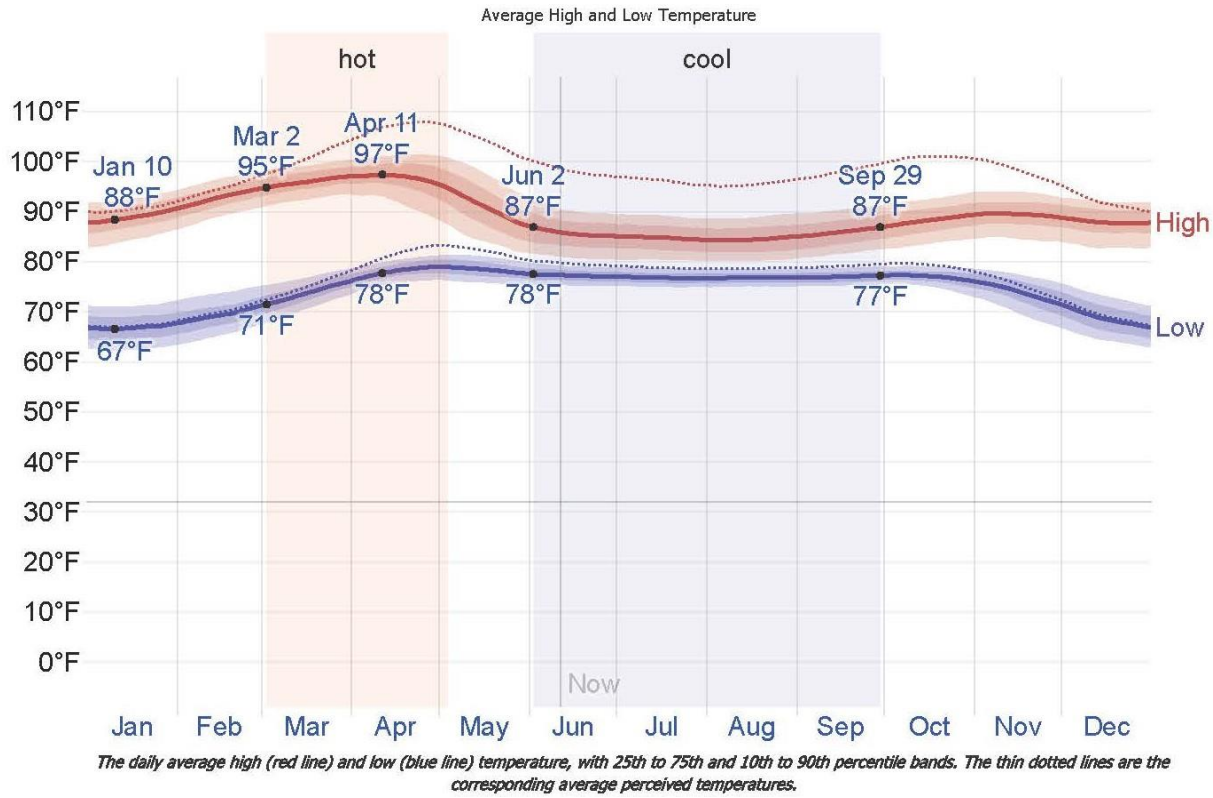


Figure 4-7 Average Temperature of Yangon Region

4.3.6.3. Clouds

In Yangon, the average percentage of the sky covered by clouds experiences extreme seasonal variation over the course of the year. In clearer part of the year in Yangon begins around November 2 and lasts for 5.6 months, ending around April 22. On February 20, the clearest day of the year, the sky is clear, mostly clear, or partly cloudy 72% of the time, and overcast or mostly cloudy 28% of the time.

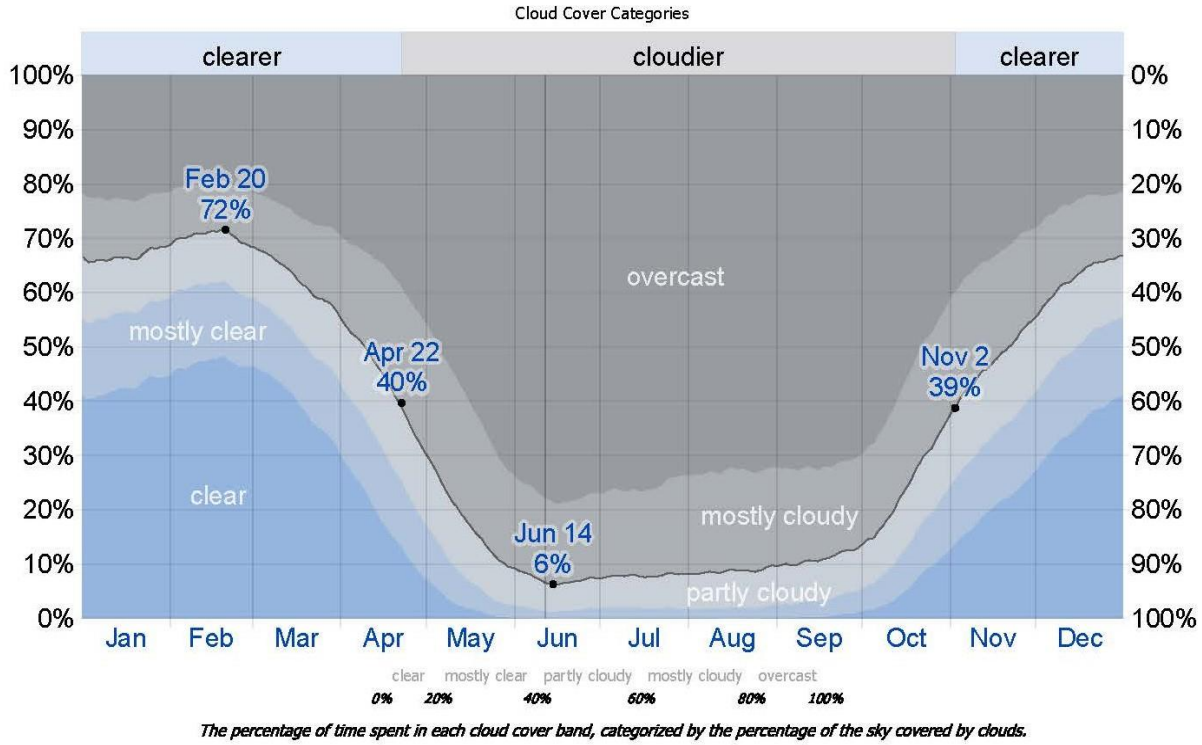


Figure 4-8 Cloud Cover Categories

4.3.6.4. Rainfall

To show variation within the months and not just the monthly totals, we show the rainfall accumulated over a sliding 31-day period centered around each day of the year. Yangon experiences extreme seasonal variation in monthly rainfall. The rainy period of the year lasts for 7.7 months, from April 5 to November 28, with a sliding 31-days rainfall of at least 0.5 inches. The most rain falls during the 31 days centered around July 30, with an average total accumulation of 9.1 inches. The rainless period of the year lasts for 4.3 months, from November 28 to April 5. The least rain falls around February 1, with an average total accumulation of 0.1 inches.

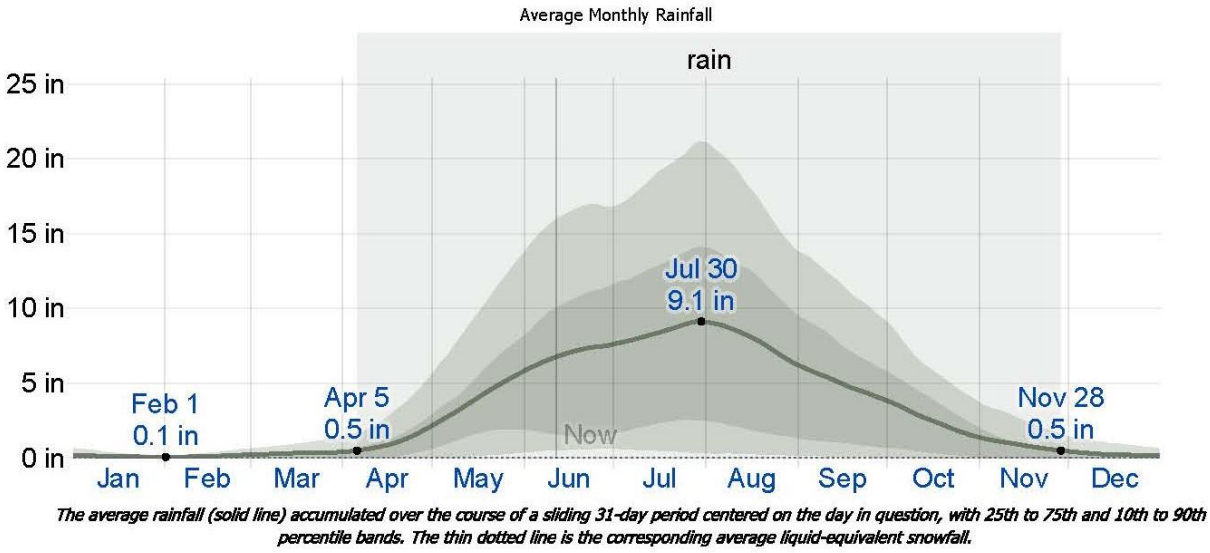


Figure 4-9 Average Monthly Rainfall at Yangon Region

Table 4-7 Annual Rainfall and Temperature

Year	Rainfall		Temperature	
	Raining Day	Rainfall Value	Summer Season Max (°C)	Winter Season Min (°C)
2017-2018	102	105.4	41	27
2018-2019	88	84.8	40	26

Source: Department of Administrative Hlaing Thar Yar Township, Regional Data (www.gad.gov.mm)

4.3.6.5. Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Yangon experiences extreme seasonal variation in the perceived humidity. The muggier period of the year lasts for 10 months, from February 22 to December 23, during which time the comfort level is muggy, oppressive, or miserable at least 61% of the time. The muggiest day of the year is August 5, with muggy conditions 100% of the time. The least muggy day of the year is January 11, with muggy conditions 48% of the time.

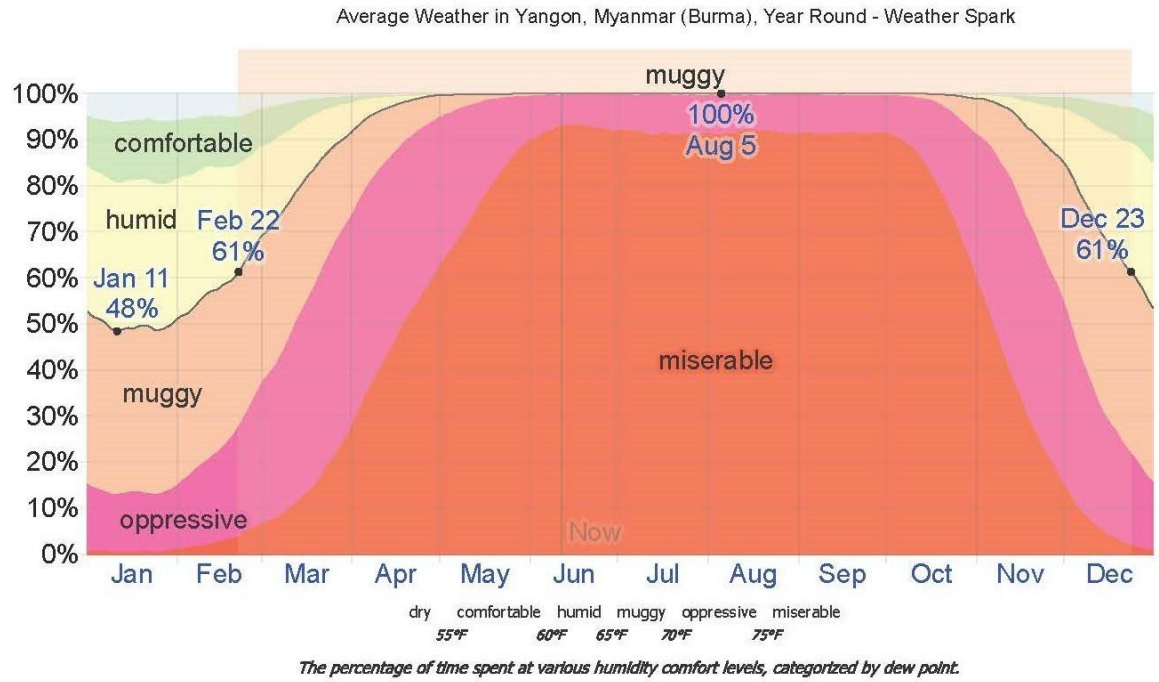


Figure 4-10 Humidity of Yangon

4.3.6.6. Wind

This section discusses the wide-area hourly average wind vector (speed and direction) at 10 meters above the ground. The wind experienced at any given location is highly depended on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages. The average hourly wind speed in Yangon experiences significant seasonal variation over the

course of the year. The winder part of the year lasts for 4.1 months, from May 1 to September 4, with average wind speeds of more than 8.2 miles per hour. The windiest day of the year is June 24, with an average hourly wind speed of 10.6 miles per hour. The calmer time of year lasts for 7.9 months, from September 4 to May 1. The calmest day of the year is January 9, with an average hourly wind speed of 5.8 miles per hour.

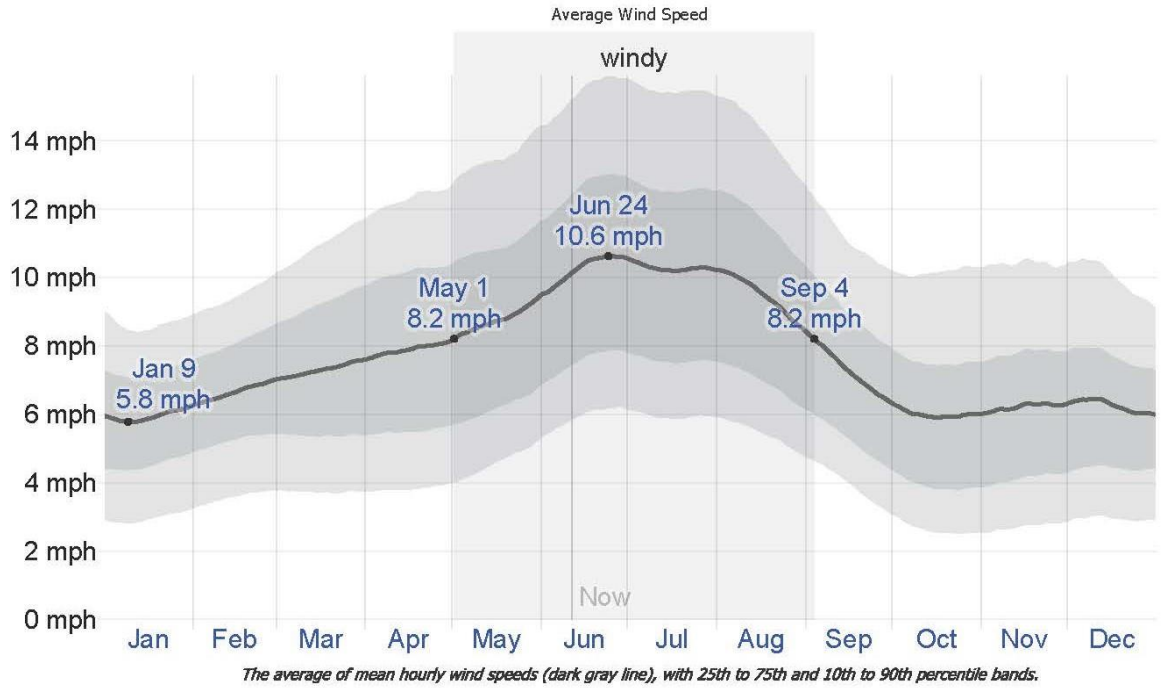


Figure 4-11 Average Wind Speed in Yangon

4.4. BIOLOGICAL COMPONENT (SECONDARY DATA)

The proposed project site is not located in or near a sensitive ecosystem as the proposed project area is situated in the Shwe Than Lwin industrial zone. The Project Site is a built-environment and the species of flora surveyed at the site are native species uncommon to the Yangon area. There were no protected species or species of conservation value identified.

Ecological Resources	Existing condition
Fisheries, aquatic biology	The nearest river is Hlaing River. Fresh water fish species are residing in the river
Wildlife	Non existence
Forests	Non existence
Rare or endangered species	Non existence
Protected areas	Non existence
Coastal resources	A few mangrove species observed at the river bank of Hlaing River

4.5. SOCIO-ECONOMIC COMPONENT

4.5.1. Population

Sunme (Myanmar) Industrial factory is located across Hlaing Thar Yar Township in Yangon Region. In 2017, the population of Hlaing Thar Yar Township is about 414,209 people as present in Table 4-6.

Table 4-8 Population of Males and Females at Hlaing Thar Yar Township (2019)

Item	Older 18 year			Younger 18 year			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Urban	105075	119903	224978	44884	49782	94666	149959	169685	319644
Rural	33257	31319	64576	14953	10536	29989	48210	46355	94565
Total	138332	151222	289554	59837	64818	124655	198169	216040	414209

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

4.5.2. Religion

The different kinds of religion present in Hlaing Thar Yar Township are shown in Table 4-7. More than 90% of the people living in the township are Buddhists. [1]

Table 4-9 Religion in Hlaing Thar Yar Township (2019)

Township	Buddhist	Christian	Hindu	Muslim	Total
Hlaing Thar Yar township	395789	6400	8320	3700	414209

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

4.5.3. Local Economy

Among regional towns, Hlaing Thar Yar Township has a variety of businesses and services operating in the community with other businesses/services, based in the region. Most of the source of livelihood in the Township is employment of factory. Services and facilities available include:

- post office
- beauticians
- butcher
- hairdressers
- furniture and electrical store
- restaurants
- cafes
- shoe and clothing shops
- industrial services
- pharmacy
- veterinarian
- bus service
- gift stores
- music store
- pubs and bars
- florist

4.5.4. Public Infrastructure and Access

4.5.4.1. Communication and Transportation

Major transportation route in Haling Thar Yar Township are railway, port, and car road as presented in Table 4-10. [1]

Table 4-10 Transportation Route

Categories	Township		Miles
Water Route	From Pun Hlaing River and Hlaing confluence	To Ngwe Pin Lae Industrial	8

No.	Township	Bus Stop	Transportation path	Type of Bus	No. of Bus
1.	Hlaing Thar Yar	16	11	YBS	125

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

4.5.5. Electricity

The electricity demand of Hlaing Thar Yar Township is higher and higher due to the normally increased in population and infrastructure. [1]

4.5.6. Education

Location of major schools were situated i.e. basic education primary school (B.E.P.S.), basic education middle school (B.E.M.S), basic education high school (B.E.H.S) and university, in the Hlaing Thar Yar Township.

Table 4-11 List of major school in Hlaing Thar Yar Township

No.	Name of School	Location
1.	West Yangon Technological University	Outside Padan Village Tract
2.	BEHS (1)	No. (2) ward
3.	BEHS (2)	No. (12) ward
4.	BEHS (3)	No. (17). Ward
5.	BEHS (4)	No. (5) ward
6.	BEHS (5)	No. (7) ward
7.	BEHS (6)	Yae Okken
8.	BEHS (7)	No. (16) ward
9.	BEHS (8)	No. (20) ward
10.	BEMS (Branch) (1)	No. (6) Ward
11.	BEMS (Branch) (2)	Nyaung Village Tract
12.	BEMS (Branch) (3)	Dine Su, Nyaung Village
13.	BEMS (Branch) (4)	No. (6) ward

No.	Name of School	Location
14.	BEMS (Branch) (5)	No. (1) ward
15.	BEMS (Branch) (6)	No. (10) ward
16.	BEMS (Branch) (7)	Outside Padan Village Tract
17.	BEMS (Branch) (8)	No. (18) ward
18.	BEMS (Branch) (9)	Shwe Lin Pan Village Tract
19.	BEMS (Branch) (10)	No. (9) Ward
20.	BEMS (Branch) (11)	No. (12) Ward
21.	BEMS (Branch) (12)	No. (18) Ward
22.	BEMS (Branch) (13)	No. (15) Ward
23.	BEMS (Branch) (14)	No. (14) Ward
24.	BEMS (Branch) (15)	No. (13) Ward
25.	BEMS (Branch) (16)	No. (11) Ward
26.	BEMS (Branch) (17)	No. (7) Ward
27.	BEMS (Branch) (18)	No. (11) Ward
28.	BEPS (1 to 32)	Hlaing Thar Yar
29.	Pre School (1 to 6)	Hlaing Thar Yar

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

5. ENVIRONMENTAL MANAGEMENT ACTION

5.1. AIR POLLUTION/DUST MANAGEMENT PLAN

Objectives:	➢ To minimize the adverse impact to air quality caused by stack gas emission from generator and also dust management generated from vehicular movement. ➢ To comply with relevant government rules	
Relevant government law and rule	➢ National Environmental Quality (Emission) Guidelines (2015) ➢ Motor Vehicles Act, (2015) ➢ Boiler Law (2015)	
Time Frame	➢ Entire life spans of the factory operation	
Management Action	➢ Must be plant around the proposed project to reduce carbon emission ➢ Should be prohibited burning of waste material at the proposed project site ➢ Must be control air pollution, the vehicles, generators and machineries have to check and maintain regularly. ➢ The factory should use chimney for generator through which the flue gas is emitted for reducing the impact of stack emission on environment. ➢ Must be ensuring vehicles, compressor and generator are well maintained.	
Monitoring & Reporting	Frequency	Biannually
	Monitoring Point	Indoor and Outdoor of proposed project
	Parameters	$PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3,CO_2
Estimated cost	1,000,000 Kyats per year	
Responsibility	Management of the factory; • Head of maintenance -Total implementation of above of air pollution management plan • Production manager -Air quality in the production area is good enough • Manager -To hire organization/independent third-party testing air quality • EHS officer-Monitor the hygiene of ambient air quality in surrounding of the factory	

5.2. NOISE MANAGEMENT PLAN

Objectives:	➢ To avoid nuisance noise to nearby residents generated from generator and other machineries. ➢ To comply with noise standard of National Environmental Quality (Emission) Guideline

Relevant government law and rule	➢ National Environmental Quality (Emission) Guidelines (2015)	
Time Frame	➢ Throughout the project life	
Management Plan	➢ Building noise insulated generator room and ensure satisfactory maintenance of relevant equipment ➢ Impose speed limit to track and vehicles at the transportation route. ➢ Provide sufficient personal protective equipment (PPE) at the work place ➢ All the related personnel will be provided proper training about the relevant issues and ensure PPE wear during working in noisy area.	
Monitoring & Reporting	Frequency	Biannually
	Monitoring Point	Two points in operation area
	Parameters	Sound Decibel
Estimated cost	500,000 Kyats per year	
Responsibility	HSE Manager or Environmental Management Team of Sunme (Myanmar) Industrial Limited	

5.3. SOLID WASTE MANAGEMENT PLAN

Objectives:	➢ To minimize waste generation by developing strategies for the management and disposal of all waste in a manner that is sustainable and sensitive to the environment ➢ To comply government waste management policy
Relevant government law and rule	➢ Yangon City Development Committee Law (2018), National Waste Management Strategy and Action Plan (Draft 2018)
Time Frame	➢ Entire life spans of the factory operation
Management Plan	➢ Must be provides separate garbage bins at each building. ➢ All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area ➢ Final wastes should be disposed by using YCDC's service.
Monitoring & Reporting	➢ Daily wastes have to be collected and hand over to YCDC waste collector ➢ The inventory record of waste disposal will be maintained as proof for proper management as designed
Estimated cost	50,000 Kyats per month
Responsibility	Manager (HR) ➢ Responsible for overall site cleanliness and waste management ➢ Regular waste collection to minimize excessive waste storage

5.4. LIQUID WASTE MANAGEMENT PLAN (WASTEWATER)

Objectives:	➢ To implementation plan for the management of liquid waste from collection, through treatment and resource recovery, to residual disposal	
Relevant government law and rule	➢ Yangon City Development Committee Law (2018), National Environmental Quality (Emission) Guidelines (2015), Underground Water Act	
Time Frame	➢ Entire life spans of the factory operation	
Management Plan	➢ Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.	
Monitoring & Reporting	Frequency	Biannually
	Parameters	pH, Turbidity, Conductivity, Iron, Sulpahte, TSS, TDS, Manganese, COD, BOD, Cyanide, Copper, Zinc, Carbonate
	Proper maintenance of drainage and sewerage system will be conducted periodically	
Estimated cost	50,000 Kyats per year	
Responsibility	Manager -To hire organization/independent third-party testing wastewater quality EHS officer-Monitor the condition of factory's drainage and sewerage system	

5.5. FIRE MANAGEMENT PLAN

Objectives:	➢ To ensure that fire control practices are implemented on site to minimise the risk of fire from site operations and bush fires
Relevant government law and rule	➢ Myanmar Fire Brigade Law 2015
Time Frame	➢ Entire life spans of proposed project operation
Management Plan	➢ Must be provide fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases. ➢ Must be indicated the emergency exit and assembly point in public area. ➢ Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire fighting. ➢ The emergency fire alarms are installed at the factory for alerting the workers in case of fire. ➢ The main entrances and route for emergency cases of the factory must not be blocked with materials or machines for fire emergency cases.

Monitoring & Reporting	To check monthly Visual inspection, Firefighting equipment (fire extinguisher, firefighting hose, portable fire pumps, fire hose reels, fire monitor and firefighting nozzles)
Estimated cost	500,000 Kyats per month
Responsibility	HSE Manager, Operation Manager or Environmental Management Team of Sunme (Myanmar) Industrial Limited.

5.6. OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT PLAN

Objective	➢ To provide a broad framework for improving standards of workplace health and safety to reduce work-related injury and illness.
Relevant Government Law and Rule	➢ Public Health Law (1972), Prevention and Control of Communicable Diseases Law 1995 (Amendment 2011), Occupational Safety and Health Law (2019)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers. ➢ According to the observed light intensity values, the proponent provides sufficient lighting for workers for safe working and reducing optical problems of the workers. ➢ Personal Protective Equipment (PPE) like earmuffs, safety gloves, helmets and goggles are provided for each department. ➢ To prevent electric shock hazards, electrical maintenance staff (handyman) is to be assigned to do regular inspections and take preventive measures. ➢ Manage the drainage systems of the factory to prevent health risk of the workers. ➢ The maximum allowable noise level for workers is 90dB(A) for 8hours exposure a day. Thus, adequate protective noise impact measures in the form of ear muffs/ear plugs to the workers working in high noise areas.
Monitoring and Reporting	➢ Weekly check fire extinguishers and water hydrant in position ➢ Daily inspect that all fire exist are open ➢ Servicing fire extinguisher and records accidents
Estimated Cost	1,000,000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of Sunme (Myanmar) Industrial Limited.

5.7. HAZARDOUS WASTE MANAGEMENT PLAN

Objective	➢ To avoid environmental pollution and adverse health effects due to its improper handling & disposal.
Relevant Government Law and Rule	➢ Yangon City Development Committee Law (2018), Explosive Ordnance Disposal Law (2018)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ Proper inspection and maintenance in storage of hazardous waste. ➢ Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. ➢ The empty chemical containers will hand over to suppliers for recycle or appropriate disposal ➢ The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (e.g. DOWA and YCDC)
Monitoring and Reporting	Any hazardous materials purchased should include a Material Safety Data Sheet (MSDS), otherwise known as a Safety Data Sheet (SDS) or Product Safety Data Sheet (PSDS). By mandate of the World Health Organization's Inter-Organization Programme for the Sound Management of Chemicals (IOMC), all manufacturers of hazardous materials are required to provide a MSDS so that end users can treat the materials properly.
Estimated Cost	500,000 Kyats per year
Responsible Person	HSE Manager or Environmental Management Team of Sunme (Myanmar) Industrial Limited.

5.8. ENERGY MANAGEMENT PLAN

Objectives:	➢ To improve energy efficiency, reduce cost, optimize capital investment, reduce environmental and greenhouse gas emissions, and conserve natural resources
Relevant government law and rule	➢ National Energy Management Committee (Myanmar Energy Master Plan 2015)
Time Frame	Once in a year throughout the factory life
Management Plan	➢ Installation of timers and thermostats to control heating and cooling ➢ Energy saving light installed in different area of the factory for saving energy ➢ Used of energy saving devices must be installed ➢ Ensure that good housekeeping measures such as turning off equipment and lights when not in use
Monitoring & Reporting	Conduct annual energy efficiency of adult to find out the scope for energy saving

Estimated cost	Approximately 1,000,000 Kyats per year
Responsibility	Manager ➢ To arrange energy audit technical personnel ➢ To monitor and record electricity consumption, other related energy issues and take necessary actions if any problem arises

5.9. EMERGENCY RESPONSE AND MANAGEMENT PLAN

Objectives:	➢ To reduce the harmful effects of all hazards, including disasters. The World Health Organization defines an emergency as the state in which normal procedures are interrupted, and immediate measures (management) need to be taken to prevent it from becoming a disaster, which is even harder to recover from.
Relevant government law and rule	➢ The Employment and Skill Development Law (August 2013), ILO guide to Myanmar Labour Law (2017)
Time Frame	➢ Entire life spans of the factory operation
Management Plan	➢ The factory management has taken proper measures to handle any emergency situation like fire, earthquake, flood and storm ➢ Provision and inspection of firefighting equipment and fire hydrant system in all the sections ➢ A detail evaluation plan (fire exist, emergency exit door, etc.) is established and communicated with workers ➢ Periodic inspection of safety relief valve provided with pressure vessels and equipment, preventive maintenance; aware the workers about electric shock by necessary training. ➢ Regular fire drill operation is conducted ➢ Workers are informed about what to do in earthquake like stay in a safe place such as under table of desk, not to try move outside during earthquake, workers who will be outside during earthquake shall remain stay out of the building, trees, lump post, etc. Other relevant safety instruction of emergency situation it informed to workers by training ➢ Workers are aware of dangers from physical hazards such as obstacles covered by floodwater (storm debris, drainage opening, ground erosion) and from displaced reptiles (Snake) or other animals. ➢ A medical team has been prepared for primary treatment (First Aid) ➢ Prepare an emergency contact directory consisting contact numbers of nearest fire service, local police station, hospitals, etc. and display it in a place that everybody can see it easy. ➢ Build a safety committee which from firefighting team, rescue team. The committee arrange a meeting every month to discuss about safety management ➢ Ensure proper training of the employees about the disaster management, fire safety as well as occupational health and safety
Monitoring & Reporting	Weekly check fire extinguishers and water hydrant in position Daily inspect that all fire exist are open

	Servicing fire extinguisher and records accidents,
Estimated cost	Approximately 1,500,000 Kyats per year
Responsibility	Manager and EHS officer ➢ Arrange firefighting training after every 3 months ➢ Responsible for fire control and response ➢ Monitoring daily danger warning and bans

5.10. ENVIRONMENTAL MANAGEMENT PLAN FOR DECOMMISSIONING PHASE

The following environmental issues which require environmental management plans for decommissioning phase are as follows:

5.10.1. Air Pollution/ Dust Management Plan

Objective	➢ To comply with relevant government rules	
Relevant Government Law and Rule	➢ National Environmental Quality (Emission) Guideline 2015, ➢ Motor Vehicles Act (2015)	
Time Frame	➢ During the decommissioning phase	
Management Action	➢ Spraying water to prevent dust from spreading into the air while demolishing budlings and transporting materials. ➢ Provision of Personal Protective Equipment (PPE) to employees in the workplace.	
Monitoring and Reporting	Frequency	One time
	Monitoring Point	At the project area
	Parameters	$PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3,
Estimated Cost	500,000 Kyats	
Responsibility	Sunme (Myanmar) Industrial Limited	

5.10.2. Noise Management Plan

Objective	➢ To maintain low noise exposures, such that human health and well-being are protected.
Relevant Government Law and Rule	➢ National Environmental Quality (Emission) Guideline 2015
Time Frame	➢ During the decommissioning phase

Management Action	➢ Provision of Personal Protective Equipment (PPE) to employees in the workplace.	
Monitoring and Reporting	Frequency	One time
	Monitoring Point	At the project area
	Parameters	Noise level
Estimated Cost	250,000 Kyats	
Responsibility	Sunme (Myanmar) Industrial Limited	

6.10.3 Solid Waste Management Plan

Objective	➢ To minimize waste generation by developing strategies for the management and disposal of all waste in a manner that is sustainable and sensitive to the environment	
Relevant Government Law and Rule	➢ National Waste Management Strategy and Master Plan (2018-2030)	
Time Frame	➢ During the decommissioning phase	
Management Action	➢ Some of demolished solid wastes will be stored in dedicated waste storage area in the project site and transferred to Township Municipal.	
Monitoring and Reporting	Frequency	One time
	Monitoring Point	At the project area
	Parameters	Solid waste
Estimated Cost	50,000 Kyats	
Responsibility	Sunme (Myanmar) Industrial Limited	

5.11. ENVIRONMENTAL MONITORING SCHEDULE AND REPORTING

The EMoP cell members responsible may conduct daily, weekly or monthly general inspections of the project area and facilities. The objectives are to identify non-compliances to EMoP. is provided the environmental monitoring schedule for Sunme (Myanmar) Industrial Limited. The factory submits monitoring report to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP,

Table 5-1 Environmental Monitoring Plan During Operation Phase

Issues	Parameter	Frequency	Area to be monitored	Monitoring cost	Responsible Organization
Operation Phase					
Air Quality	$PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3,CO_2	Biannually (throughout the operation period)	16°50'43.18"N 96°18'1.01"E	1,000,000 Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited
Noise	Noise level in decibel (dBA)	Biannually (throughout the operation period)	16°51'50.2"N 96°03'02.0"E 16°52'0.2"N 96°03'0.20"E 16°51'54.2"N 96°03'05.6"E	500,000 Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited
Solid Waste	Cutting line and Packing section Canteen,Kitchens, dormitory	Monthly	Recycle house and waste house and at the factory office	50,000 Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited
Liquid waste	Toilet facility, kitchen and canteen	Weekly	Recycle house and waste house and at the factory office	50,000 Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited
Hazardous waste	Type of waste and method of disposal	Monthly	Storage area	100,000 Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	500,000 Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited

Issues	Parameter	Frequency	Area to be monitored	Monitoring cost	Responsible Organization
Light Intensity	Illuminance	Monthly	At the production line	20,000 Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited
Crisis Situation and Occupational Safety and Health	Loss of property and injuries	Monthly	The whole factory	1,000,000Kyats	Environmental Management Team's Sume (Myanmar) Industrial Limited

Table 5-2 Environmental Monitoring Plan During Decommissioning Phase

Issues	Parameter	Frequency	Area to be monitored	Monitoring cost	Responsible Organization
Decommissioning Phase					
Air Quality	$PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3	One time during this phase	One point in the production area	500,000 Kyats	Project Proponent
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	250,000 Kyats	Project Proponent
Rehabilitation	Recovering and Revegetation		All decommissioning area		Project Proponent

5.12. CAPACITY BUILDING AND TRAINING PLAN

The emergency preparedness is vital, as quick and correct response is necessary in case of emergency to reduce injuries, harm and other damage. Care should be given for during processing activities in order to prevent synthetic errors and accidential cases (e.g., electricity shock and fire hazards).

The emergency response plans should be established for handling all foreseeable emergencies in the workplace and must provide the following;

5.12.1. Assignment of Responsibilities

All senior staff such as a line/production manager or safety officer should be assigned to lead the emergency response team and charged with the duties of (1) assessing the emergency and taking necessary actions (2) overseeing the implementation of the emergency response plan (3) organizing regular drill (4) ensuring all emergency equipment is well maintained.

5.12.2. Emergency Procedures

Emergency procedures are operating instructions for employees to follow in emergency case

About work safety in the concerned processing, the management team should

(a) Identify and list out all possible emergency situations in the workplace
(b) Assess the effects and impacts of the emergency situations
(c) Establish emergency response plans
(d) Provide and maintain emergency equipment and other necessary resources
(e) Ensure that staff are familiarized with the arrangements in case of emergencies by providing procedural instructions and employee training and organizing drills

5.12.3. Training for Emergencies

The type, amount and frequency of training varies, depending upon the task's employees are expected to perform. Although training must be provided to employees at least annually, safety meetings and drills should be conducted at more frequent intervals.

Regardless of the specific type of facility, training should include, though not be limited to the following;

- Hazard recognition and prevention (fire, explosion, etc.)
- Proper use of fire extinguishers
- Emergency reporting procedures
- Preventive maintenance
- Hazardous materials spill response
- First Aid

5.12.4. Fire Prevention and Protection

The fire prevention and protection program must address the following topics:

Prevention; policies, practices and procedures designed to keep the conditions necessary for a fire from coming together

- Hot work permits
- Lockout/tag out policies
- Design specifications for storage of flammable materials

Severity reduction; policies, practices and procedures designed to reduce the spared of fire and end the fire.

- Emergency plans
- Alarm systems
- Portable fire extinguishers
- Fire Protection Equipment

Cleanup; policies, practices and procedures designed to return the affected area to an operational level and reduce other losses created by improper cleanup

- First aid
- Removal of debris to an appropriate waste site

- Equipment and facility repair

5.12.5. Fire Protection Equipment

1. Explosion Suppression Systems: Explosion suppression systems should be used in unusually hazardous areas such as elevator legs, boots and head, or in areas such as bins, distributors and tanks.

2. Portable Fire Extinguishers: All buildings within a facility must have fully charged and operable portable fire extinguishers. If employees are expected to use portable extinguishers or other firefighting equipment against incipient fires, they must be trained to use the equipment. Training must include the following:
   - Correct type of extinguisher to use on different classes of fire
   - Proper techniques for use of the equipment to extinguish a fire
3. Standpipes and Hoses: All areas within a facility that are above 75 feet from ground level and in which combustible materials other than grain are stored should have wet or dry standpipes and hoses installed.

4. Automatic Sprinkler Systems: Automatic sprinkler systems are recommended in areas containing combustible materials.

5. Fire Hydrants: All grain and feed mill facilities should have adequate public or private fire hydrants on site. Each fire hydrant should have an adequate water supply.

5.12.6. Fire Safety and Evacuation Plan

Fire Evacuation plans should include the following information

- Emergency escape routes must be clearly shown on floor plans and workplace maps
- Employers must know that their employees know the emergency escape routes
- Procedures for employees who must remain to operate critical equipment before evacuating
- Identification and assignment of personnel responsible for rescue or emergency medical aid

Fire Safety Plans should include the following information:

1. Procedure for reporting a fire or other emergency
2. Site plans indicating the following
   - The Occupancy assembly point
   - The locations of fire hydrants
   - The normal routes of fire department vehicles access
3. Floor Plans identifying the locations of the following
   - Exits
   - Primary evacuation routes
   - Secondary evacuation routes
   - Accessible egress routes
   - Areas of refuge
   - Exterior area for assisted rescue
   - Manual fire alarm boxes
   - Portable fire extinguishers

- Occupant-use hose stations
- Fire alarm annunciators and controls

The following American National Fire Fighting Association (NFFA) Standards must be following.

Table 5-3 American National Fire Fighting Association (NFFA) Standards

No.	Parameters	Proposed Capacity	Remark
1.	Fire water flow	14 bars	
2.	Deluging rate	12.0 liters/m2/min	
3.	Foam rate	10.0 liters/m2/min	
4.	Maximum water pressure	190 liters/min	For storage area

Emergency Evacuation Drill: An exercise performed to train staff and occupants and to evaluate their efficiency and effectiveness in carrying out emergency excavation procedures

Employee Training and Response Procedures: Employee shall be trained in the fire emergency procedure described in their fire evacuation and fire safety plans and training should be based on these plans;

Frequency: Employee shall receive training in the contents of fire safety and evacuation plans and their duties as part of new employee orientation and at least annually thereafter. Records shall be kept and made available to the fire code official upon request.

Employee Training Program: Employee shall be trained in fire prevention, evacuation and fire safety in accordance with the following sections.

Fire Prevention Training - Employee shall be apprised of the fire hazards of the materials and processes to which they are exposed. Each employee shall be instructed in the proper procedures for preventing fires in the conduct of their assigned duties

Evacuation Training – Employees shall be familiarized with the fire alarm and evacuation signals, their assigned duties in the event of an alarm or emergency, evacuation routes, areas of refuge, exterior assembly areas and procedures for evacuation

Fire Safety Training – Employee assigned fire-fighting duties shall be trained to know the locations and proper use of portable fire extinguishers or other manual fire-fighting equipment and the protective clothing or equipment required for its safe and proper use.

5.12.7. Site Fire Control

1. Alert other people through fire alarm
2. If small, control using an extinguisher
3. Contact fire brigade if not under immediate control
4. Attend to human life in immediate danger
5. For electrical fires turn off power before fighting
6. Once out of the building, stay out. Do not allow people to go back into the burning building to collect valuables. While evacuating the building, close doors (but do not lock) to slow down the spread of fire
7. Obey all instructions
8. Proceed to an emergency evacuation area (Muster Point)

5.12.8. Employee Information and Training

Employees must be informed about any operations in their work area where hazardous chemicals or materials are present. They must also be informed about the locations and availability of the hazard communication program, list of chemicals and SDSs. Employees must receive training on the following:

- Methods for detecting the presence or release of a hazardous chemical, such as monitoring devices and the visual
- appearance or odor of the chemical
- Physical and health hazards of chemicals in their work area
- How to protect themselves using work practices, emergency procedures and personal protective equipment
- How to interpret the information on the labels and MSDS of chemical materials

5.12.9. Health and Safety Training Plan for Worker

Health and Safety Training plan currently used and provided in Sunme (Myanmar) Industrial Limited to all employees and workers by trainings internally and externally. Specific trainings are recommended and conducted according to the health and safety guidelines to enhance worker's health and to prevent all potential risks and hazards might occur in the factory. All required trainings related to health and the respective departments propose safety or operational parts, top management makes decision and HR organizes and conducts the trainings.

Table 5-4 Training Plan Used in Sunme (Myanmar) Industrial Limited

No.	Health and Safety Guidelines	Training needs
1.	Management	General fire and emergency response plan, evacuation. All training materials and procedures covering health and safety for workers and employees
2.	Machine safety and noise management	Training for machine operations to all operators Use of PPE and proper use of any necessary protection Maintenance and Emergency procedures
3.	Environment safety	Understanding and training on recognition and maintenance not to affect environment
4.	Material storage and safety	Safety use of related devices and machines Use of necessary protections in working areas Sanitation work
5.	Fire Safety	Firefighting and evacuating training and practices Firefighting materials/ devices use
6.	First Aid	first aid / CPR/ AED training from providers (Outsource) training on hazard of pathogens

5.13. GRIEVANCE REDRESS MECHANISM (GRM)

People who live near the project affected area or stakeholders can complain about the problems and impacts that they suffer; they can complain though Grievance Committee, which includes the

responsible persons of Sunme (Myanmar) Industrial Limited representative from Hlaing Thar Yar Industrial Zone and representative from General Administration Department (Hlaing Thar Yar Township). Small issues will be solved at the Grievance Committee stage and other unsolved problems will be submitted to higher responsible authorities and finally the responsible person decided by the court in legal terms. The following diagram show steps of Grievance Redress Mechanism of Proposed Factory Project.

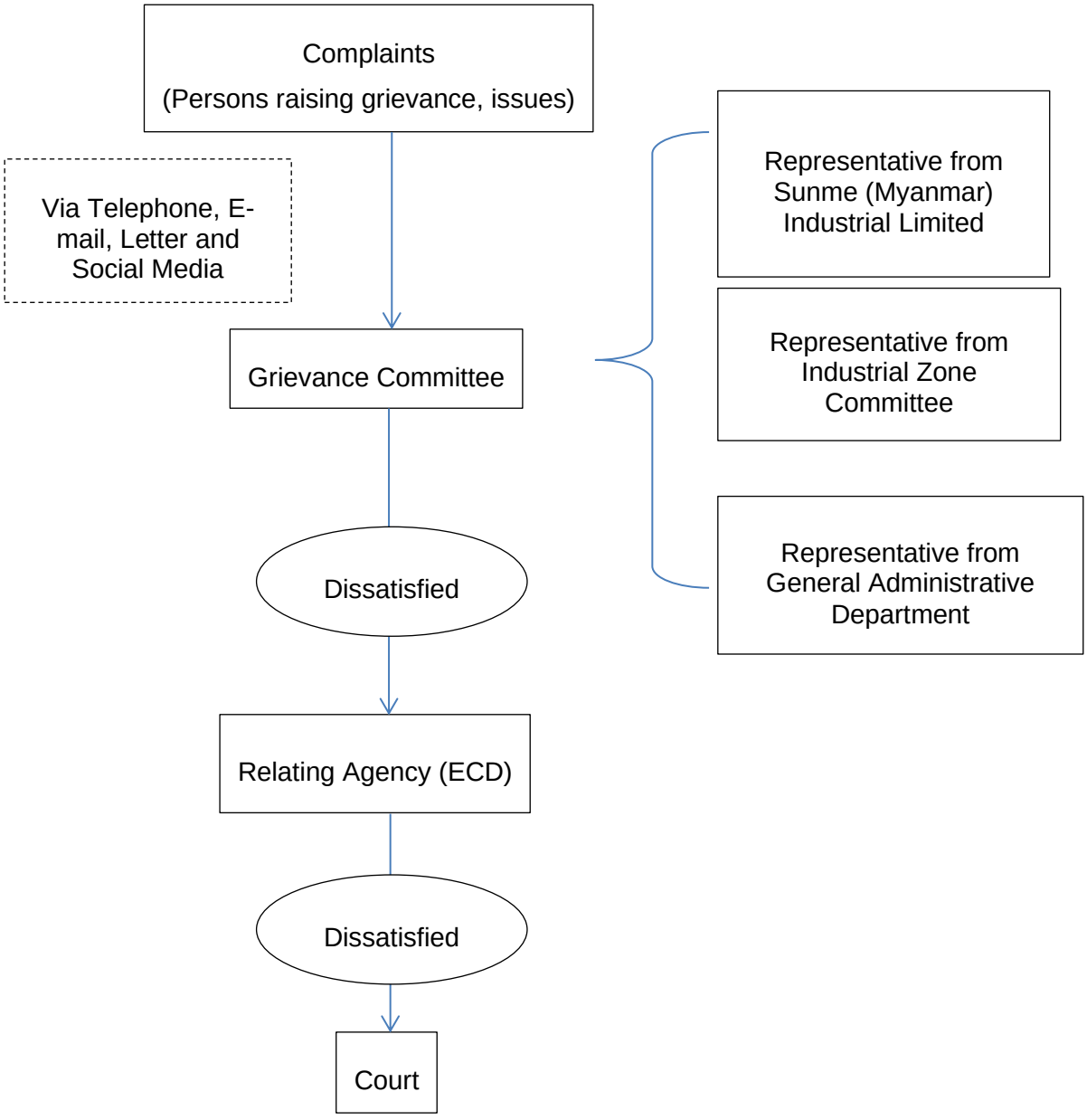


Figure 5-1 Grievance Redress Mechanism Flow Diagram

5.14. CORPORATE SOCIAL RESPONSIBILITY (CSR) PLAN

The CSR activities have the objective to uplift quality of life and gain favorable relations from all communities in the operation area. The CSR program for Sunme (Myanmar) Industrial Limited textile printing factory consists of three main sectors; Health, Education and Community Development Sector. CSR activities are conducted in compliance with MIC's guideline for implementation of CSR program. .

Sunme (Myanmar) Industrial Limited will contribute 2% of our Net Profit to social welfare activities that will help society and country of Myanmar. Our social welfare activities shall include training of our employees such as on job training to be more qualified, language (Chinese) training on weekends with experienced teachers and providing necessary healthcare such as medical checkups and giving proper medical knowledge about deceases and its prevention. Part of our CSR activity such as donations will also contribute to public school around our factory Table 6-5..

Table 5-5 CSR Plan at Sunme (Myanmar) Industrial Limited

Area	Priority item	Contribution (%)	Estimated Cost (Kyats)	Detail targets
Health	Healthcare for employees and their family	0.5 %	2,500,000	One of our main concerns is the well-being of our employees. We will contribute 0.5 % of our net profit for the healthcare which includes medical checkup for the employees and providing health education to our workers.
Education	Raising awareness education level and human right	0.5 %	5,000,000	We will contribute 0.5 % of our net profit to the public school near the factory to be a part of creating the better community. We will also work together with the school to understand more about the needs and we will also ensure that our contributions will be used in the most effective and efficient way for the society.
Community Development	Donation to local community	1%	2,500,000	• Donate to local charities with a worthy cause • Actively participate in community events • Encourage staff to participate, and to form a community engagement team to actively support community events • Embedding understanding and consciousness about human rights issues among the employees • Development of sexual harassment and power harassment (workplace bullying & harassment) prevention efforts

5.14.1. Health Status

The diseases of high prevalence reported in 2019 are Tuberculosis (TB), followed by Acute Respiratory Infection (ARI), Diarrhea, TB and snakebites. With reference to the Township Health Profile 2019 of Hlaing Thar Yar Township, no accidental work injuries reported to the township hospital in 2019. The common diseases are shown in Table 5-6.

Table 5-6 Common Diseases in the Hlaing Thar Yar Township

Disease	Hlaing Thar Yar	
	Morbidity	Mortality
Malaria (Per 100000P)	-	-
Dysentery	37	-
Diarrhea (Per 100000P)	21	-
TB (Sputum+) (Per 10000P)	67	-
Hepatitis	5	-

Table 5-7 Lists of hospital in the Hlaing Thar Yar Township

Hospital Name	Beds/Services	Responsible
Township Hospital	200	Government
Cottage Hospital (Shwe Lin Pan)	16	Government
Pan Hlaing	95	Private
Tun Foundation	20	Private
Total	330	-

Source: Department of Administrative Hlaing Thar Yar, Regional data (www.gad.gov.mm.com)

5.15. CULTURAL AND VISUAL COMPONEMTS

Hlaing Thar Yar Township is growing into a busy and vibrant community. The population fluctuates; however, there has been steady growth over the last decade. It tends to be a stopover on a journey rather than a destination. It has a number of sites that are interesting; however, there is no main attraction. Visitors to the town are generally visiting for work, investment or family reasons.

6. RISK ASSESSMENT AND MITIGATION MEASURE PLAN

6.1. IMPACT IDENTIFICATION

The development of infrastructure for the proposed project likely to happen changes in the local environment in terms of physical, biological and socio-economic aspects along with the perspective on both positive and negative impacts. The potential environmental impacts brought by various activities of proposed factory project will be identified and judged by site surveying with checklist, meeting with client team, including plant manager and supervisor, representatives from the factory operators and assessing the environmental baseline information for operation and decommissioning phases along with its mitigation measure.

6.1.1. Positive Impact

During the project implementation, local people can get job opportunities in administrative sectors, office works, transportation sectors, skill and unskilled workers, etc. Due to the implementation of the project, there will be employment opportunities especially for workers from the local community. Employees will also improve more in their professional knowledge and skills. The net effect of job creation is the improvement of the livelihoods and living standards of the beneficiaries and poverty reduction, development of local people's livelihood. Cause of the proposed project is located in Hlaing Thar Yar Township, there may have business opportunities to local people. Local people can have a market by selling foods, snacks and drinks nearby the factory.

6.1.2. Negative Impact

The following Figure 6-1 briefly described the potential negative impacts of the proposed project. There are four main types of impacts; impact on environmental resources, impact on ecological resource, impact on human and impact of waste generation.

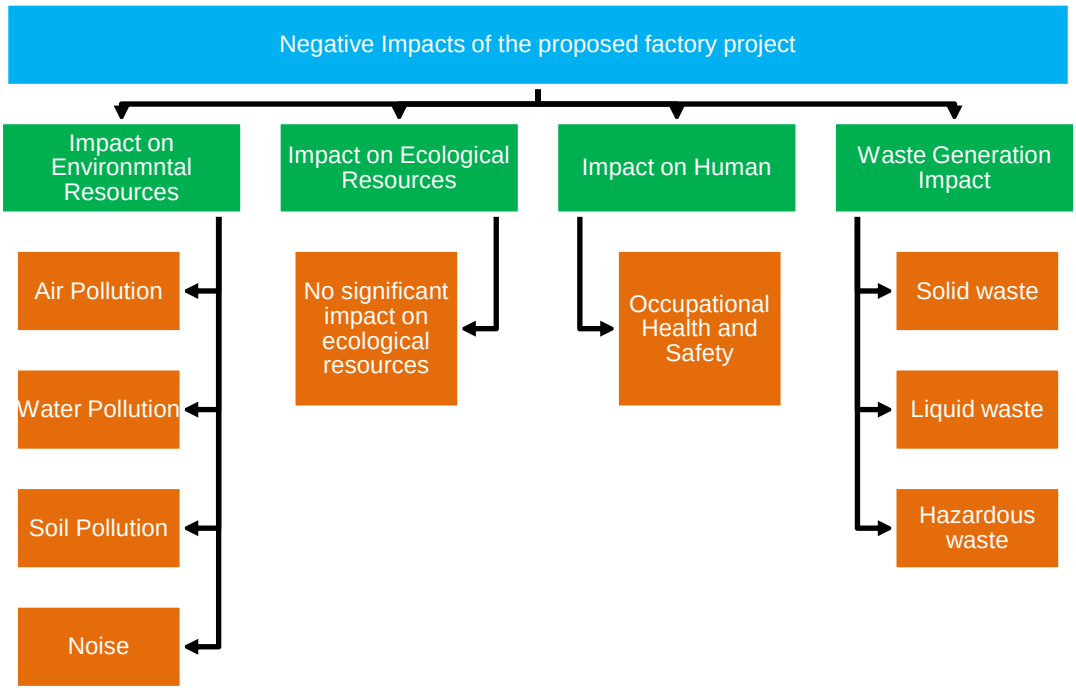


Figure 6-1 Potential negative impact affect from proposed factory project

6.2. METHODOLOGY FOR THE ASSESSMENTS

The assessment of each impact is based on consideration of the magnitude, duration, spatial and frequency of activities, which are going to be carried out during three phases and characteristics of the project site. The assessment is qualitative and the significance of each impact is classified into 5 categories in overall.

The following methodology has been applied to assess the environmental impacts of the factory mainly on air, water, land, biodiversity, including human beings. Each source of impact has been assessed by four parameters, magnitude, duration, extent and probability and each assess point have 5 scales as mentioned in Table 6-1.

Table 6-1 Impact assessment parameters and its scale

Assessment	Scale				
	1	2	3	4	5
Magnitude (M)	Insignificant	small and will have no effect on working environment	Moderate and will result in minor changes on working environment	High and will result in significant changes on working environment	Very high and will result in permanent changes on working environment
Duration (D)	0 - 1 year	2 - 5 year	6 - 15 year	Life of operation	Post Closure
Extent (E)	Limited to the site	Limited to the local area	Limited to the region	National	International
Probability (P)	Very improbable	Improbable	Probable	Highly probable	Definite

Then, the Significant Point (SP) calculated by following formula.

Significant Point (SP) = (Magnitude + Duration + Extent) * Probability

Impact Significance: Based on calculated significant point, impact significance can categorize as follows:

Significant Point (SP)	Impact Significance
<15	Very Low
15-29	Low
30-44	Moderate
45-59	High
60	Very high

6.3. POTENTIAL ENVIRONMENTAL IMPACT DURING CONSTRUCTION AND DECOMMISSIONING PHASE

Construction phase: The project factory is already constructed during environmental assessment study and site visit. Therefore, the proposed project is located in industrial zone and already finished the construction, the potential impact on environment is not assessed and affected must be caused the construction period.

Decommissioning phase: The proposed duration of the investment shall be 30 years. The term of the Lease shall be initial 6 years commencing from the date of signing of the Lease Agreement between Local owner and Sunme (Myanmar) Industrial Limited for proposed project site for 2 acres (8093.71 square meters) of land and 10 years extendable for two times after expiry of 6 years term of lease. The project of land and building will be restitution to land owner after close the operation. Therefore, the assessment study cannot be needed for environmental impact assessment during decommission phase.

These two phases of operation shall be represented by land owner. If the owner will be demolished their factory, they will need mitigation and monitoring plan for environmental impact. Therefore, Myanwei's environmental assessment team presented for monitoring plan during decommissioning phase.

6.4. SIGNIFICANT IMPACTS OF PROJECT ACTIVITY AND MITIGATION MEASURE

The project activities, their impacts and significance of impact are provided in Table 6-2.

Table 6-2 Evaluation and Perdition of Significant Impacts and Mitigation Measures on Operation Phase

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
Impact on Environmental Resource									
Air	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Emission from emergency diesel generator and vehicle movement	2	4	2	3	24	Low	• Air pollution in atmosphere. • Inhaling them can increase the chance you'll have health problems. • People with heart or lung disease, older adults and children are at greater risk from air pollution.	• To control air pollution, the vehicles, generators and machineries have to check and maintain monthly. • The factory uses chimney for generator through which the flue gas is emitted for reducing the impact of stack emission on environment. The height of chimney is about 50ft. • Ensuring vehicles, compressor and generator are well maintained by M&E Engineer. • The factory has planted trees to reduce carbon emission and minimize air pollution.
Water Pollution	• Production process	2	4	2	3	24	Low	• The factory has not generated wastewater from	• No Mitigation Measure

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
								production process on CMP basic	
Soil	• Engine oil leaks, spills at diesel storage and during fuel refueling.	1	4	1	2	12	Very Low	• The factory compound area was paved with concrete and hence, contamination due to the oil spillage at this area is insignificant.	• No Mitigation Measure
Noise and Vibration	• Generating noise from the production machinery	2	4	1	3	21	Low	• The factory not operate heavy machinery • The major noise source of CMP basic operation activities such as cutting, stitching/finishing and packaging by respective machines. There is insignificant impact on surrounding environment	• Use noise covering equipment and personal protective equipment (PPE) like ear plug/ earmuffs for factory workers in the noisy workplace. Provide 200 pieces of ear plug to the workers. • Should be used low noise equipments and built individual rooms like generator and compressor rooms
Impact on Ecological Resources									
Flora and fauna on terrestrial and aquatic life	Operation of the manufacturing of garment	1	4	1	1	6	Very Low	• Not Significant Impact on Ecological Resources	• No Mitigation Measure

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
Impact on Human									
Fire	• Poor electrical installations • Waste disposed area raw materials	3	5	2	4	40	Moderate	• Serious damage to property and even injury and death	• To provide fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases. In proposed project is provided the 50 fire extinguishers, 5 fire hose reels and 6 fire hydrants. • Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire fighting. • The emergency fire alarms are installed at the factory for alerting the workers in case of fire. • The main entrances and route for emergency cases of the factory must not be blocked with materials or machines for fire emergency cases.
Occupational Safety	• Accidental cases cause by operating machines. • Unloading, mixing, cutting, pressing	3	4	1	4	32	Moderate	• Accident in workplace (physical injuries or even death) can occur during operation.	• First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers. The project is

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
	and packaging activities. • Accidental cases of thermic fluid heater								provided 1 first aid kit for the workers. • According to the observed light intensity values, the proponent provides sufficient lighting for workers for safe working and reducing optical problems of the workers. • Personal Protective Equipment (PPEs) like earmuffs, safety gloves, helmets and goggles are provided for each department. • To prevent electric shock hazards, electrical maintenance staff (handyman) is to be assigned to do regular inspections and take preventive measures. Post the emergency ph no. on the visible of factory workers.
Health	• Influx of people • Noise from the generating of the emergency generators	2	4	1	2	14	Very Low	• Change in demographic structure, new diseases from immigrant workers • To cause a range of health problems ranging from stress,	• Manage the drainage systems of the factory to prevent health risk of the workers. In proposed project, the factory drainage is disposed in separated tank and which flows to municipal drainage.

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
								poor concentration, productivity losses in the workplace, and communication difficulties and fatigue from lack of sleep, to more serious issues	• The maximum allowable noise level for workers is 90dB(A) for 8hours exposure a day. Thus, adequate protective noise impact measures in the form of ear muffs/ear plugs to the workers working in high noise areas
Waste Generation									
Solid Waste	• Residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	2	4	1	4	28	Low	• Surrounding environmental pollution and soil contamination	• Provides separate garbage bins at each building. In proposed project, 10 garbage bins are provided in operation area. • All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area • Final wastes should be disposed weekly by using YCDC's service.
Liquid Waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate	• Contamination of soil, surface water, ground water	• Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
Hazardous Waste	• Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	2	14	Very Low	• Reduce the risk of contamination from fuels, oils and hazardous wastes • Response effectively to incident and accident	• Proper inspection and maintenance in storage of hazardous waste. • Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. • The empty chemical containers will hand over to suppliers for recycle or appropriate disposal • The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (eg., DOWA and YCDC)
Natural Disaster									
Earthquakes, Floods, Landslides and Cyclone	-	-	-	-	-	-	-	-	• Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

The proposed project should do environmental monitoring (every 6 months) and report to Ministry of Natural Resources and Environmental Conservation Department.

Table 6-3 Evaluation and Prediction of Significant Impacts and Mitigation Measure on Decommissioning Phase

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	S			
Air Pollution	Demolish of buildings and related materials Transportation of demolished materials	3	1	1	4	20	Low	Emissions of particulate matters and carbon dioxide gases into the air	Spray water twice a day Cover mesh trap around the decommission area Install shading net about 2 meters above temporary fence of decommission area Carry broken material with cover by canvas.
Water Pollution	Sewage from decommissioning workers Demolition machinery equipment	3	1	1	3	15	Low	Contamination of surface water and ground water	Systematically demolish the septic tanks.
Soil Contamination	Demolished of buildings and related materials Transportation of demolished materials	3	1	1	3	15	Low	Contamination of soil	Manage the spillage of oil and diesel and sewage.
Noise Pollution and Vibration	Decommission activities Transportation of demolished materials	3	1	1	3	15	Low	Noise pollution to the surrounding	Carry out the activities during day time. (working hour) Maintain the machines and vehicles to reduce noise pollution. Provide the ear plugs to the workers.

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	S			
Waste Disposal	Demolished debris such as bricks, concrete materials	2	1	1	3	12	Very Low	Dumping to the surrounding environment	Recyclable materials and dispose to the define areas. Should disposed with YCDC.
Hazardous Waste	Used lubricants from decommissioning vehicles and machines	2	1	1	3	12	Very Low	Spillage of lubricant	Manage the disposal way of hazardous waste. Should obey the MSDS rules and disposed if there have hazardous waste.
Occupational Health and Safety (Accidents, Injuries)	Decommissioning activities Transportation of demolished materials	3	1	2	3	18	Low	Injuries and accidents	Provide protective fencing or demarcation with tape at the boundaries of dangerous / hazardous zone and the appropriate warning signs, marking and safety signs and installation of the lost time injury notice board. Clean up excessive waste debris and liquid spills regularly. Use the third-party expert assisted by trained personnel to identify and remove hazardous materials.

The assessment of each impact is based on consideration of the magnitude, duration, extent and probability of activities, which are going to be carried out during operation phase. In operation phase, there are 2 very low significant impacts on environment and human (Water pollution, Soil, flora and fauna on terrestrial and aquatic life, health and hazardous waste), 1 low significant impacts on environment and human (Air, Noise and vibration and liquid waste) and 6 moderate significant impacts on environment and human (Fire, Occupational safety and solid waste). In decommissioning phase 2 very low significant impacts on environment and human (waste disposal and hazardous waste). 5 low significant impacts on environmental and human (air, water pollution, soil contamination, noise and vibration and occupationl health and safety). Significance impacts on environmental and human and detail impact assessment for operation phases and decommissioning can be seen in above tables. All of the impacts during operation phases and decommissioning phase can be minimized by using mitigation measures and implementing Environmental Management Plan.

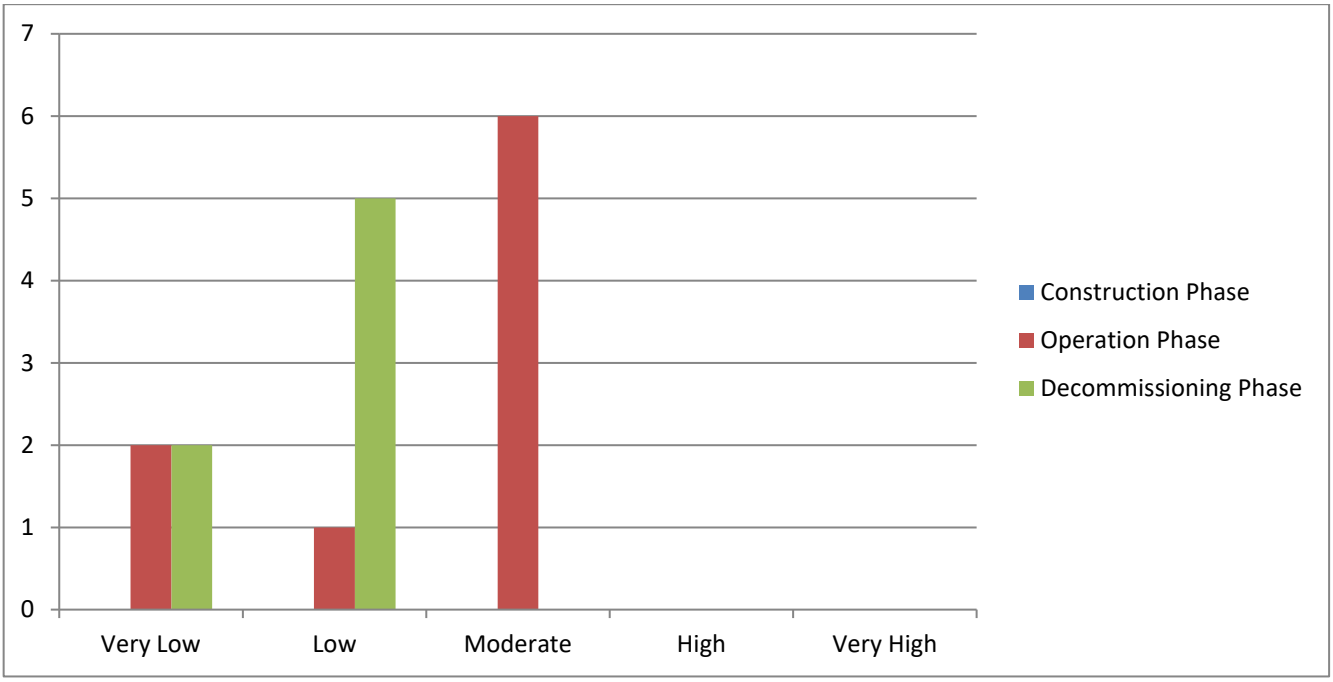


Figure 6-2 Comparison of Impact Significant of Proposed Project

7. PUBLIC CONSULTATION

7.1. PUBLIC CONSULTATION PROCESS

This chapter presents results of public consultation and information disclosure conducted for the the Sunme (Myanmar) Industrial factory. Public participation can be considered as the required element of the EMP process. In this study various stakeholder's participation were made.

Public consultation during preparation of EMP report was conducted on 06, November, 2019 following the EIA procedure.

The project's stakeholders in this category are key officials or representatives of the regional and local authorities who have direct responsibilities for the administration of the EMP process for environmental and social clearance and issuing operation permits for proposed development projects.

For this factory, relevant key offices at the national level are Environmental Conservation Department (ECD) and Industry Supervision and Inspection Department.

Relevant key office at the regional level is Yangon City Development Committee (YCDC), General Administrative Department, Fire Department, Factories and General Labor Law Inspection Department, Public Health Department, Industrial Supervision and Inspection Department.

Public consultation carried out after the presentation on the project, followed by questions, answers and discussion. Mr. Sai Thiha Maung presented EMP study and findings from Myanwei, after the presentation following question and answer section. Summary of public consultation meeting is presented Table 7-1. Figure 7-1 is shown the consultation meeting photo.

Table 7-1 Summary of public consultation meeting

Time and Date	Tuesday, 30 July 2019 10:30-12:30
Venue	Meeting room, Sky Hotel, Hlaing Tharyar Township, Yangon.
Agenda	• Presentation on the Background Information of Project, • Project Description, • Impact Assessment, Environmental Mitigation • Environmental Management Plan and Monitoring Plan Received and Answer from feedback of participants

Figure 7-1 Public Consultation Meeting Photo

7.2. RECOMMENDATION, SUGGESTION AND COMMENT

After the presentation, the floor opened for questions and answers. There is no question and comment for presentation and EMP draft report, because the project is sample manufacturing of garment (CMP basic). In addition, ECD were suggesting for the occupational health and safety, during project implementation about project planning and environmental issues. The following listed is suggestion of government officer.

U Kyaw Kyaw, Yangon City Development Committee (Cleaning Department and Industrial Zone management office;

- To construct the small pond in front of factory to filter the factory's wastewater before discharging to the surrounding drainage
- To store the fuel safely
- To plant the tree
- To get the septic tank capacity sufficiently with the number of employee

8. CONCLUSION AND RECOMMENDATION

8.1. CONCLUSION

Environmental Management Plan (EMP) has been prepared for Sunme (Myanmar) Industrial factory is located at Plot No. 106, Myay Taing Block No. 14, Shwe Than Lwin Industrial Zone, Hlaing Thar Yar Township, Yangon Region. The main objective of the study is focused specially on the required environmental management measures or creating environmentally friendly workplace. An EMP has been carried out for the factory according to the requirement of the proponent as it has been made for garment factory.

Sunme (Myanmar) Industrial Limited are using ground water for both industrial and household (drinking and sanitation) purpose, which is supplied by deep tube well. The factory also has generators for electricity generation. The fuel used in the industry is Diesel and purchased electricity. The sanitary liquid waste of the factory is stored in septic tank.

Thus, the factory management can take proper mitigation steps against adverse environmental impacts by following this EMP. The necessary measure to mitigate impact regarding different environmental parameter such as air, water, waste, noise has been proposed in this EMP.

However, all necessary implementation measures to mitigate adverse environmental, health and safety impacts have already been taken to meet National Environmental Quality (Emission) Guideline (2015). On the other, the factory has positive impacts in terms of environmental in the operation phase. Further, this will indirectly help in boosting up the national economic condition through foreign investment. An outline of EMP has been given in the present report to mitigate/enhance the impacts, which occurs during operation phase of the factory.

The effective implementation of the mitigation measures proposed will ensure towards good environmental management within the proposed project area. Furthermore, the environmental monitoring plan prepared as part of the EMP will provide adequate opportunities to address any residual impacts during the operation phase.

In conclusion, it has been figured out that, the proposed garment factory is going to generate local employment opportunities and enhance capabilities and working skills of employees. Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended. The study further concluded that positive impacts will be of immense benefit to the local community and national development as well.

8.2. RECOMMENDATION

It is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to be disposed according to Yangon City Development Committee (YCDC) rules and regulations
- Workers should be provided proper training and it should be ensured that workers use PPE during factory operation area

- Daily, monthly and annual action plans shall be formulated based on this EMP and practiced at operation level
- Keep full records of environmental management activities
- Abide environmental policies, laws, rules and instructions of the Republic of the Union of Myanmar

Finally, the proponent should follow the comments and suggestions made by ECD after reviewing this EMP report. Once concerned authorities approve EMP, effective implementation of EMP by the project proponent is essential. The Project Proponent shall submit monitoring report to the Ministry every six (6) months, as provided in a schedule in the EMP. The proponent should abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

9. REFERENCE

[1] General Administrative Department (Hlaing Thar Yar Township), Hlaing Thar Yar Township Data (2019).

[2] Hla Hla Aung, Potential Seismicity of Yangon Region (Geological Approach), “Yangon Surface Displacement As Detected by Insar Time Series Analysis” July 2011.

[3] Ministry of Natural Resources and Environmental Conversation (MONREC), “Environmental Impact Assessment Procedure” December 2015.

[4] Ministry of Natural Resources and Environmental Conversation (MONREC), “National Environmental Quality (Emission) Guidelines” December 2015.

[5] Specifications for accident prevention signs and tags, regulations (standards 29-CFR), Occupational Safety and Health Administration.

[6] https;//weatherspark.com/y/112503/Average-Weather-in-Yangon-Myanmar-(Burma)-Year-Round.

APPENDIX A
YRIC's Endorsement of Sunme (Myanmar) Industrial Limited

Form (5-B)

THE REPUBLIC OF THE UNION OF MYANMAR
YANGON REGION INVESTMENT COMMITTEE
ENDORSEMENT

No. 375
Date 4.7.2018

Endorsement No. YGN – 062/2018 Date 4 July 2018

This endorsement is issued by Yangon Region Investment Committee accordingto the section 25, sub-section (d) of the Myanmar Investment Law-

(1) Name of Investor MR. JI DEBAO

(2) Citizenship CHINESE

(3) Residence Address ROOM 1802,UNIT 1,BUILDING 5,NO.9 MOCHOU LAKE EAST ROAD,JIANYE DISTRICT,NANJING, PEOPLE' S REPUBLIC OF CHINA

(4) Name and Address of Principal Organization -

(5) Place of Incorporation -

(6) Type of business MANUFACTURING OF GARMENT ON CMP BASIS

(7) Place(s) of investment Project PLOT NO. 106, MYAY TAING BLOCK NO. 14, SHWE THANLWIN INDUSTRIAL ZONE, HLAING THAR YAR TOWNSHIP, YANGON REGION

(8) Amount of Foreign Capital US$ 1.317 MILLION

(9) Period for Foreign Capital to be brought in WITHIN 18 MONTHS FROM THE DATE OF ISSUANCE OF ENDORSEMENT

(10) Total Amount of Capital (Kyat) EQUIVALENT IN KYAT OF US$ 1.317 MILLION

(11) Construction/ Preparation Period 18 MONTHS

(12) Validity of Endorsement 30 (THIRTY) YEARS

(13) Form of Investment WHOLLY FOREIGN OWNED

(14) Name of Company Incorporated in Myanmar SUNME (MYANMAR) INDUSTRIAL LIMITED

YRIC2018062

4/7/2018
Chairman
Yangon Region Investment Committee

Confidential

THE REPUBLIC OF THE UNION OF MYANMAR
YANGON REGION INVESTMENT COMMITTEE
Plot No. 49, Seinlae May Street,
Kabar Aye Road Yankin Township, Yangon.

No. 375
Date 4.7.2018

Tel: 01- 658263
Fax: 01-658264

Our ref :YRIC-1/E-062/2018(375)
Date : 4 July 2018

Subject: **Decision of the Yangon Region Investment Committee on the Endorsement for manufacturing of garment on CMP basis under the name of Sunme (Myanmar) Industrial Limited**

Reference: Sunme (Myanmar) Industrial Limited's letter dated 12th June 2018

1. The Yangon Region Investment Committee, at its meeting (8/2018) held on 13th June 2018, approved the Endorsement for manufacturing of garment on CMP basis under the name of Sunme (Myanmar) Industrial Limited submitted by Mr. Ji Debao (90%) and Mr. Ji Dezhu (10%) from the People's Republic of China as a wholly foreign owned investment in accordance with the Myanmar Investment Law and Rules.

2. The terms and conditions of the "Endorsement" are stated in the following paragraphs:

(a) The term of an Endorsed project shall be thirty (30) years commencing from the date of the issuance of the Endorsement by the Yangon Region Investment Committee.

(b) The term of the Lease Agreement for land and buildings shall be initially (10) years and extendable for two times for ten (10) years commencing from the date of signing of the Lease Agreement between U Myint Zaw (Lessor) and Sunme (Myanmar) Industrial Limited (Lessee).

(c) The annual rent for the land and buildings shall be US$ 168888.00 (United States Dollar one hundred and sixty-

Confidential

eight thousand, eight hundred and eighty-eight cents only)calculated for the total land measuring 7389.5598 square meters (1.826 acres) and annual lease rates are as follow:

	Year	Annual Lease rate US$/sqm
(i)	First year	22.85
(ii)	Second year	23.99
(iii)	Third year	25.19
(iv)	Fourth year	26.45
(v)	Fifth year	27.77

(d) Sunme (Myanmar) Industrial Limited,which has obtained the Endorsement for enjoyment of exemptions and reliefs under sections 75, 77 and 78 of the Chapter XVIII of Myanmar Investment Law, may submit the application form.

(e) Sunme (Myanmar) Industrial Limited shall use its best efforts to achieve a timely realization of the work stated in the Endorsement application.

(f) Sunme (Myanmar) Industrial Limited shall obey and respect the responsibilities of investors under section 65 of Myanmar Investment Law and Chapter XX of Myanmar Investment Rules.

(g) Sunme (Myanmar) Industrial Limited shall carry out prevention, mitigation and monitoring of significant environmental impacts according to the type of investment activities in accordance with the relevant laws, rules, regulations and procedures.

(h) Sunme (Myanmar) Industrial Limited shall submit to the Myanmar Investment Commission any transfer of shares or transfer of the business to any person during the investment period in

accordance with section 72 of Myanmar Investment Law and rule 191of Myanmar Investment Rules.

(i) Sunme (Myanmar) Industrial Limited which has benefitted from the Endorsement or enjoyment of exemptions or reliefs shall submit an annual report in the prescribed form to the Myanmar Investment Commission within three (3) months at the financial year in accordance with rule 196 of Myanmar Investment Rules and shall publish a summary of the report on its website or the Myanmar Investment Commission's website.

(j) Sunme (Myanmar) Industrial Limited must, during the operation period under the Endorsement of the Yangon Region Investment Committee, submit its operating report quarterly in the prescribed form in accordance with rule 197 of Myanmar Investment Rules.

3. Sunme (Myanmar) Industrial Limited shall submit five (5) copies of all approvals, licences, permits and similar authorizations relevant to the initial implementation of the investment and the Lease Agreement for land and buildings to the Yangon Region Investment Committee.

17/7/2018

(Phyo Min Thein)
Chairman

Sunme (Myanmar) Industrial Limited

cc: 1. Ministry of Home Affairs
2. Ministry of Office of the Union Government
3. Ministry of Natural Resources and Environmental Conservation
4. Ministry of Labour, Immigration and Population
5. Ministry of Industry
6. Ministry of Commerce

7. Ministry of Planning and Finance
8. Office of the Myanmar Investment Commission
9. Chairman, CMP Enterprises Supervision Committee
10. Director General, Department of Environmental Conservation
11. Director General, Directorate of Labour
12. Director General, Department of Immigration
13. Director General, Directorate of Industrial Supervision and Inspection
14. Director General, Department of Trade
15. Director General,Directorate of Investment and CompanyAdministration
16. Director General, National Archives Department
17. Director General, Customs Department
18. Director General, Internal Revenue Department
19. Monitoring and Supervision Division , Directorate of Investment and Company Administration

(i) Brothers (Myanmar)Clothing Company Limited which has benefitted from the Endorsement or enjoyment of exemptions or reliefs shall submit an annual report in the prescribed form to the Myanmar Investment Commission within three (3) months at the financial year in accordance with rule 196 of Myanmar Investment Rules and shall publish a summary of the report on its website or the Myanmar Investment Commission's website.

(j) Brothers (Myanmar)Clothing Company Limited must, during the operation period under the Endorsement of the Yangon Region Investment Committee, submit its operating report quarterly in the prescribed form in accordance with rule 197 of Myanmar Investment Rules.

3. Brothers (Myanmar)Clothing Company Limited shall carry out in accordance with the stipulations of the relevant Union Ministries, governmental department and governmental organizations to obtain license, permit or registration as per section 65(d) of Myanmar Investment Law.

4. Brothers (Myanmar)Clothing Company Limited shall submit five (5) copies of all approvals, licences, permits and similar authorizations relevant to the initial implementation of the investment and the Lease Agreement for land and buildings to the Yangon Region Investment Committee.

30/11/2015

(Phyo Min Thein)

Chairman

Brothers (Myanmar)Clothing Company Limited

cc: 1. Ministry of Home Affairs

2. Ministry of Office of the Union Government

3. Ministry of Natural Resources and Environmental Conservation

4. Ministry of Labour, Immigration and Population

5. Ministry of Industry

7. Ministry of Planning and Finance
8. Office of the Myanmar Investment Commission
9. Chairman, CMP Enterprises Supervision Committee
10. Director General, Department of Environmental Conservation
11. Director General, Directorate of Labour
12. Director General, Department of Immigration
13. Director General, Directorate of Industrial Supervision and Inspection
14. Director General, Department of Trade
15. Director General,Directorate of Investment and CompanyAdministration
16. Director General, National Archives Department
17. Director General, Customs Department
18. Director General, Internal Revenue Department
19. Monitoring and Supervision Division , Directorate of Investment and Company Administration

APPENDIX B
Monitoring Result

Noise Result

MYANWEI
ENVIRONMENTAL SOLUTIONS
No(28), Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95) 1 526574, Mobile: (+95) 9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting .com

Project Name:	Sunme (Myanmar) Industrial Limited
Project Location:	Plot No. 106, Myay Taing Block No. 14, Shwe Thanlwin Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling Date:	21 March 2019
Sampling Time:	8:00 AM to 4:00 PM
Sampling Condition:	
Sampling By:	Environmental Team Represented by Myanwei Environmental Solutions Company Limited.

Instrument	Type	Sampling Rate	Location
Digital Sound Level Meter	GM 1356 USB	30-130 dB	16°51'50.2"N 96°03'02.0"E 16°52'0.2"N 96°03'0.20"E 16°51'54.2"N 96°03'05.6"E

No.	Place	Unit	Result	Standard	Remark
1.	Sewing Section	dBA	76.3	70 dBA	Slightly Above
2.	Finishing Section	dBA	75.7	70 dBA	Slightly Above
3.	Cutting Section	dBA	76	70 dBA	Slightly Above

National Environmental Quality (Emission) Guideline

Receptor	One Hour Laeq (dBA)	Guideline value
	Daytime	Nighttime
	7:00-22:00 (10:00-22:00 for public holidays)	22:00-7:00 (22:00-10:00 for public holidays)
Residential, Institutional, Educational	55	45
Institutional, Commercial	70	70

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

AirQuality Monitoirng Result

MYANWEI
ENVIRONMENTAL SOLUTIONS
No(28), Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95) 1 526574, Mobile: (+95) 9775405118, 979252867 7, 9449251888; Website: www.myanweiconsulting .com

Project Name:	Sunme (Myanmar) Industrial Limited
Project Location:	Plot No. 106, Myay Taing Block No. 14, Shwe Thanlwin Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling Date:	21 March 2019
Sampling Time:	8:00 AM to 8:00 AM
Sampling Condition:	
Sampling By:	Environmental Team Represented by Myanwei Environmental Solutions Company Limited.

Instrument	Type	Sampling Rate	Location
OCEANUS-AQM-09	Environmental Perimeter Air Station	1 second to 21 weeks	Indoor/Outdoor Area

National Environmental Quality (Emission) Guideline

Parameteer	Averaging period	Guideline value	Unit
PM_{10}	1-year 24-hour	20 50	(µg/M³)
$PM_{2.5}$	1-year 24-hour	10 25	(µg/M³)
CO	8 hour	10	(µg/M³)
O_3	8 hour	100	(µg/M³)
SO_2	24-hour 10-min	20 500	(µg/M³)
NO_2	1-year 1-hour	40 200	(µg/M³)

a. Particulate matter 10 micrometer or less in diameter
b. Particulate matter 2.5 micrometer or less in diameter

Monitoring Result

Parameters	Observed value	Guideline value	Unit	Organization	Period
Indoor Air Quality Monitoring					
PM_{10}	46.2	50	µg/m³	NEQG	24 hrs
$PM_{2.5}$	22.8	25	µg/m³	NEQG	24 hrs
Outdoor Air Quality Monitoring					
PM_{10}	12.3	50	µg/m³	NEQG	24 hrs
$PM_{2.5}$	3.4	25	µg/m³	NEQG	24 hrs
SO_2	1	20	µg/m³	NEQG	24 hrs
NO_2	5.1	200	µg/m³	NEQG	1 hr
O_3	37.5	100	µg/m³	NEQG	8 hrs
CO_2	181.1	NG	µg/m³	-	24 hrs

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED.

Light Result

MYANWEI
ENVIRONMENTAL SOLUTIONS
No(28), Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95) 1 526574, Mobile: (+95) 9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting .com

Project Name:	Sunme (Myanmar) Industrial Limited
Project Location:	Plot No. 106, Myay Taing Block No. 14, Shwe Thanlwin Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling Date:	21 March 2019
Sampling Time:	8:00 AM to 4:00 PM
Sampling Condition:	
Sampling By:	Environmental Team Represented by Myanwei Environmental Solutions Company Limited.

Instrument	Type	Sampling Rate	Location
Unit-T (Luminometer)	UT380 Series	100 times/second	Operation Area

No.	Location	Measure value (Lux)	Standard*
1	Warehouse	280	300
2	Cutting Department	903	1000
3	Stitching Department	870	1000
4	Lasting Department	565	600
5	Packing Department	580	600

IESNA Lighting Handbook

Visual test	Illumination (lux)	Glare index
Casual seeing	100	28
Rough task with large detail	200	25-28
Ordinary task medium detail	400	25
Fairly severe task, small detail (e.g. drawing office, sewing)	600	19-22
Severe, prolonged task, very small detail (e.g. fine assembly, hand tailoring)	900	16-22
Very severe, prolonged task, very small detail (e.g. gem cutting, hosiery mending, gauging very small parts)	1,300 -2,000	13-16

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

APPENDIX C
Boiler Information

技術參數：
Main Technical Parameters:

名稱 (Name)	單位 (Unit) / 型號 (Model)	BL-4.5-ST	BL-6-ST	BL-9-ST	BL-12-ST	BL-15-ST
發熱管功率 (Heating Tube Power)	KW	4.5	6.0	9.0	12	15
水泵功率 (Water Pump Power)	KW	0.37	0.37	0.37	0.37	0.37
蒸發量 (Evaporation Capacity)	kg/H	6.5	9	13.5	18	22.5
蒸汽壓力 (Steam Pressure)	Mpa	0.45	0.45	0.45	0.45	0.45
蒸汽溫度 (Steam Temperature)	˚C	150	152	155	158	158
水容積 (Water Capacity)	L	3	3	7	7	7
蒸汽出口口徑 (Steam Outlet Caliber)	Inch	G1/4	G1/4	G1/2	G1/2	G1/2
進水口徑 (Inflow Caliber)	Inch	G1/2	G1/2	G1/2	G1/2	G1/2
排污口徑 (Pollution Discharge Caliber)	Inch	G1/2	G1/2	G1/2	G1/2	G1/2
安全閥口徑 (Safety Valve Caliber)	Inch	G1/4	G1/4	G1/4	G1/4	G1/4
電壓 (Voltage)	V	220V、50Hz Or 380V、50Hz	220V、50Hz Or 380V、50Hz	380V、50Hz	380V、50Hz	380V、50Hz
外型尺寸 (Size)	mm	660x340x640	660x340x640	660x400x650	660x400x650	660x400x650

APPENDIX D
Firefighitng Training

消防演练

1）警官讲解

2）工人操作演习

工人疏散演习

由 扫描全能王 扫描创建

APPENDIX E
Public Consultation Meeting

Attendant List

တွေ့ဆုံဆွေးနွေးပွဲ အခမ်းအနားသို့ တက်ရောက်သူများစာရင်း

နေ့စွဲ - ၃၀ ရက်၊ ဇူလိုင်လ၊ ၂၀၁၉ ခုနှစ်

စဉ်	အမည်	ရာထူး	ဌာန / အဖွဲ့အစည်း	ဆက်သွယ်ရန်	လက်မှတ်
၁.	ဒေါ်ဖြူဖြူဇော်	ဒု-ကြီး၊ [illegible]	[illegible]	09-786596635	
၂.	ဒေါ်ရွှေရည်ဝင့်ဝါနိုး	ဦးစီး အရာရှိ	ECD. , Ygn.	09-764555989	
၃.	ဒေါ်သင်းသင်းနု	ဒု-လက်ထောက်ဦးစီးမှူး	ECD , Ygn	09-799699855	30.7.19
၄.	ဦးကျော်ကျော်	[illegible]	Y.C.D.C. PCCD	09-5098374	30.7 2019
၅.	" [illegible]	[illegible]	Y.C.DC. PCCD	09-4501623098	
၆	ဒေါ်သီတာအောင်	HR	Charis Company	09-424488840	
၇	ဦးမျိုးမင်းလှိုင်	Tha	"	09-969563999	
၈.	ဦးအောင်ကျော်ကျော်ဟိန်း	HR & Admin Manager.	Kameaine Mfg Myanmar.	09. 250044657	

Presentation Slide

9/2/2019

Sunme (Myanmar) Industrial Limited
CMP စနစ်ဖြင့် အဝတ်အထည်အမျိုးမျိုး
ချုပ်လုပ်ခြင်းလုပ်ငန်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာ
(မူကြမ်း) အတွက် သက်ဆိုင်သူများနှင့်
တွေ့ဆုံဆွေးနွေးပွဲ အခမ်းအနား

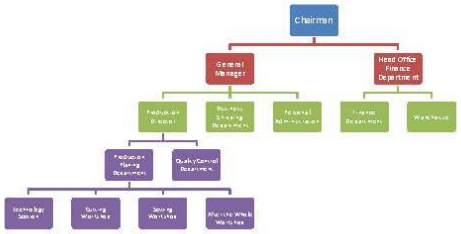
Prepared by
Myanwei Consulting Co., Ltd.

9/2/2019 MYANWEI CONSULTING CO., LTD.

အစည်းအဝေး အကြောင်းအရာ

၁။ Sunme (Myanmar) Industrial Limited အား မိတ်ဆက်ခြင်း
၂။ စက်ရုံအတွင်း ပြင်ဆင်ထားရှိမှုများ တင်ပြခြင်း
၃။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အား မိတ်ဆက်ခြင်း
၄။ စောင့်ကြပ်ကြည့်ရှုခြင်း ရလဒ်များနှင့် ထိခိုက်မှုအဆင့်
သတ်မှတ်ခြင်း
၅။ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုနှင့်လျော့ချရေးနည်းလမ်းများ
၆။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု

ကုမ္ပဏီဖွဲ့စည်းပုံ



1

]

Sunme (Myanmar) Industrial Limited

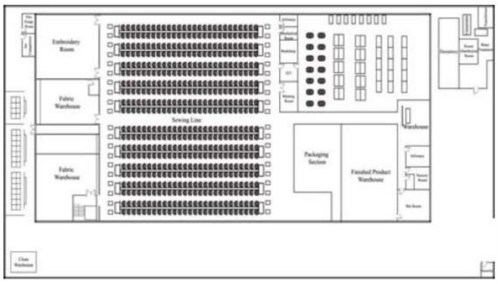
လုပ်ငန်းအမျိုးအစား	(CMP) စနစ်ဖြင့် အဝတ်အထည်အမျိုးမျိုးချုပ်လုပ်ခြင်း လုပ်ငန်း
ခွင့်ပြုမိန့်အမှတ်	(ရကတ-၀၆၂/၂၀၁၈) ၂၀၁၈ ခုနှစ်၊ ဇူလိုင်လ ၄ ရက်
ရင်းနှီးမြုပ်နှံမှု	၁၀၀ ရာခိုင်နှုန်း နိုင်ငံခြားရင်းနှီးမြုပ်နှံမှု
မြေဧရိယာ	မြေဧရိယာစုစုပေါင်း = ၁.၈၂၆ ဧက (၇,၃၈၉.၅၅၉၈ စတုရန်းမီတာ)
အဆောက်အဦး	စက်ရုံအဆောက်အဦး = ၅၅,၀၀၀ စတုရန်းပေ
ရင်းနှီးမြုပ်နှံသည့်ကာလ	နှစ် (၃၀) ရင်းနှီးမြုပ်နှံမှု
စက်ရုံလိပ်စာ	မြေကွက်အမှတ် ၁၀၆၊ မြေတိုင်းရပ်ကွက် အမှတ် ၁၄၊ ရွှေသံလွင်စက်မှုဇုန်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး
ရေအရင်းအမြစ်	အဝီစိတွင်းရေ (၁)တွင်း
လက်ရှိ လူဦးရေ	၈၃၁ ယောက်
အဓိကကုန်ကြမ်း	Fabrics, Down Bag, Interlining Tape, Padding, Elastic String, Thread and Label, Stopper, and Button
ထုတ်ကုန်ပစ္စည်း (နှစ်စဉ်)	ပထမနှစ် မှ ၁၀ နှစ်အတွင်း အထည်ရေ (၂,၀၄၀,၀၀၀ မှ ၂,၁၄၄,၀၆၁) အထိ

စက်ရုံတည်နေရာ

စက်ရုံဧရိယာ အကျယ်အဝန်း

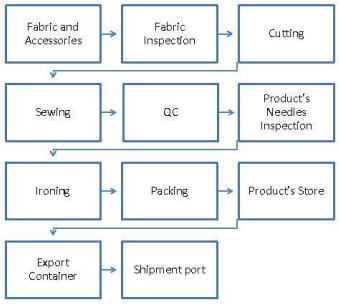
1. Fire Pump 2. Air Compressor 3. Toilet 4. Close Warehouse 5. Mechanical Room
6. Workshop 7. Q.C 8. Meeting Room 9. Infirmary 10. Nursery Room 11. Wet Room
12. Dormitory 13. Generator 14. Power Distribution 15. Transformer 16. Water Treatment

စက်ရုံဧရိယာ အတွင်း ထုတ်လုပ်မှုနေရာပြပုံ



2

ကုန်ထုတ်လုပ်မှုပုံစံအဆင့်ဆင့်



စက်ရုံတွင်းထုတ်လုပ်မှုဓါတ်ပုံများ


ကုန်ကြမ်းသိုလှောင်ခြင်း


ကုန်ကြမ်းစစ်ခြင်း


ဖိတ်ဖြတ်ခြင်း


စက်ချုပ်ခြင်း

စက်ရုံတွင်းထုတ်လုပ်မှုဓါတ်ပုံများ


စက်ချုပ်ခြင်း


မီးမှုတိုက်ခြင်း


ကွာလတီစစ်ဆေးခြင်း


ထုတ်ပို့ခြင်း

Sunme (Myanmar) Industrial Limited မှ ထုတ်ကုန်ပစ္စည်းများ


Padding Jacket


Padding Vest


Padding Jacket


Men's Jacket


Jacket

Sunme (Myanmar) Industrial Limited မှ ထုတ်ကုန်ပစ္စည်းများ


Pant


Padding Pant


Women's Pant


Short Pant

၂။ စက်ရုံအတွင်း ပြင်ဆင်ထားရှိမှုများ

သောက်သုံးရေနှင့် လုပ်သားများစားသောက်ဆောင်ပြင်ဆင်ထားရှိမှု



သောက်ရေနှင့်သုံးရေအတွက်ပြင်ဆင်ထားရှိမှု



လုပ်သားစားသောက်ဆောင်ပြင်ဆင်ထားရှိမှု

မီးဘေးအန္တရာယ် အတွက် ပြင်ဆင်ထားရှိမှု




လျှပ်စစ်အတွက် ပြင်ဆင်ထားရှိမှု

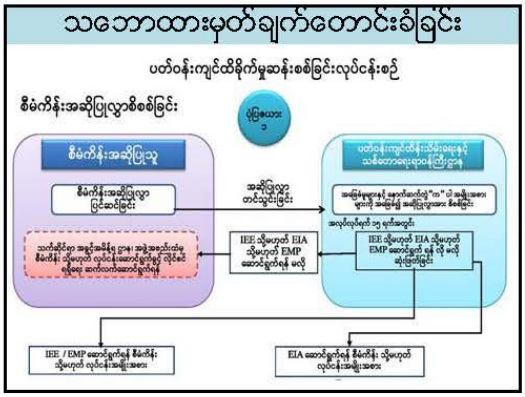
အိမ်သာနှင့်အမှိုက် အတွက် ပြင်ဆင်ထားရှိမှု

Toilet အတွက် ပြင်ဆင်ထားရှိမှု

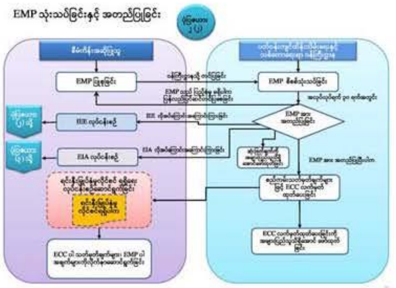
အမှိုက်စွန့်ပစ်ထားရှိမှု

၃။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲခြင်းအစီအစဉ်

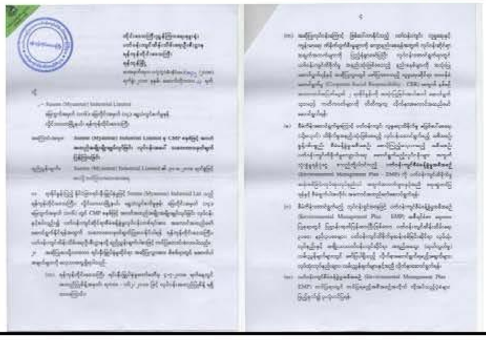
သဘောထားမှတ်ချက်တောင်းခံခြင်း



EMP ရေးဆွဲတင်ပြခြင်း



ပတ်ဝန်းကျင် သဘောထားမှတ်ချက်



၄။ စက်ရုံပတ်ဝန်းကျင်အနေအထား

စဉ်	အကြောင်းအရာ	ဖော်ပြချက်
၁	ကိုဩဒိနိတ်အမှတ်	မြောက်လတ္တီကျူ ၁၆°၅၁'၅၈.၂" နှင့် အရှေ့လောင်ဂျီကျူ ၉၆° ၀၃'၀၂.၀"
၂	ရာသီဥတုအခြေအနေ	ဒဂုံမြို့သစ်(အရှေ့ပိုင်း)မြို့နယ် နှစ်စဉ်ပျမ်းမျှအမြင့်ဆုံးအပူချိန် ၃၇°C မှ အနိမ့်ဆုံးအပူချိန် ၁၇.၉°C စုစုပေါင်း မိုးရေချိန်လက္မ ၈၀ မှ ၁၂၀ ကြား
၃	စက်ရုံနေရာတွင်မြေအသုံးချမှု	စက်မှုလုပ်ငန်းနှင့်သက်ဆိုင်သောမြေအသုံးချမှုပုံစံ
၄	လမ်းပန်းဆက်သွယ်ရေး	ရန်ကုန်-ပုသိမ်လမ်း နှင့် လှိုင်မြစ်လမ်း။
၅	အနီးဆုံး ရေအရင်းအမြစ်	ပန်းလှိုင်မြစ်
၆	ကန့်သတ်ကာကွယ်ထားသော ဒေသ	• မရှိ
၆	ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာမှု	• လေ အရည်အသွေး • ဆူညံသံ အရည်အသွေး • အလင်းရောင် အရည်အသွေး • အပူချိန် နှင့် စိုထိုင်းမှု အရည်အသွေး

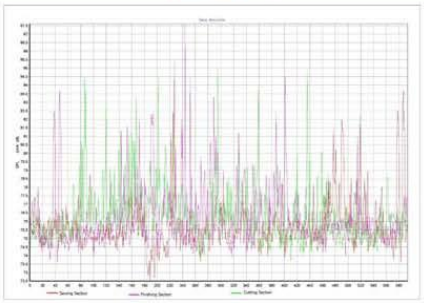
ဆူညံသံတိုင်းတာခြင်း

Sunme (Myanmar) Industrial Limited ၏ ဆူညံသံတိုင်းတာမှု၊ လုပ်ငန်းခွင်အလင်းရောင်ရရှိမှု တိုင်းတာခြင်း။
လေအရည်အသွေးတိုင်းတာခြင်း၊ စိုတိုင်းမှုနှုန်း အမှုမှိန်တိုင်းတာခြင်းတို့အား ၂၊၁၁၉ ခုနှစ်၊ မေလ ၂၁ ရက်နေ့တွင် သွားရောက် တိုင်းတာခဲ့ပါသည်။ တိုင်းတာမှုရလဒ်များအောအောက်တွင်ဖော်ပြတားပါသည်။

Date and Time	Location	GPS value	Result value	NEQ Guideline
21 May 2019 (1:00pm to 4:00 pm)	Sewing section	16°51'50.2"N 96°03'02.0"E	76.3 dB	70 dB
	Finishing section	16°51'0.2"N 96°03'0.20"E	75.7 dB	70 dB
	Cutting Section	16°51'54.2"N 96°03'05.6"E	76 dB	70 dB

အထက်ဖော်ပြပါ ဆူညံသံတိုင်းတာမှုရလဒ်များအရ Sunme (Myanmar) Industrial Limited ၏ဆူညံသံများမှာ အမျိုးသားပတ်ဝန်းကျင်စိုင်းရာ အရည်အသွေး (တုတ်လွတ်မှု) လမ်းညွှန်ချက် ထက် အနည်းငယ်ကျော်လွန်နေသည်ကို ဇလုံလာတွေ့ရှိရပါသည်။

Sunme (Myanmar) Industrial Limited ၏ဆူညံသံပြဂရပ်



လုပ်ငန်းခွင်အလင်းရောင်တိုင်းတာမှု

No	Location	Measure value (Lux)	Standard*
1	Sewing Line 1	427	300-500
2	Sewing Line 2	445	300-500
3	Sewing Line 3	368	300-500
4	Sewing Line 4	450	300-500
5	Sewing Line 5	641	300-500
6	Cutting Line 1	838	750-1000
7	Cutting Line 2	829	750-1000
8	Quality Control 1	833	750-1000
9	Quality Control 2	1132	750-1000
10	Warehouse	253	200-300

Lighting standards and codes usually provide recommended illuminance ratios between the task area and its surroundings (EN 12464-1:2002) (CIBSE 1997) (IESNA 2000, 6.7.6.1.05).

လေအရည်အသွေး

Location	GPS value	Parameters	Observed value	Guideline value	Unit
Sewing Section	16°51'50.2"N 96°03'02.0"E	PM_{10}	18.1	50	µg/m³
		$PM_{2.5}$	12.0	25	
Cutting Section	16°51'54.2"N 96°03'05.6"E	PM_{10}	17.8	50	µg/m³
		$PM_{2.5}$	12.3	25	

အထက်ဖော်ပြပါ လေအရည်အသွေးတိုင်းတာမှု ရလဒ်များအရ Sunme (Myanmar) Industrial Limited ၏ လေအရည်အသွေးမှာ လမ်းညွှန်ချက်အတွင်း တည်ရှိနေသည်ကိုလေ့လာတွေ့ရှိခဲ့ရပါသည်။

တိုင်းတာမှုဓါတ်ပုံများ


လုပ်ငန်းခွင်ဖိတိုင်းမှုနှုန်း အပူချိန်တိုင်းတာနေပုံ


ထုတ်လုပ်မှုစီလာ အတွင်း ဆူညံသံ တိုင်းတာမှု

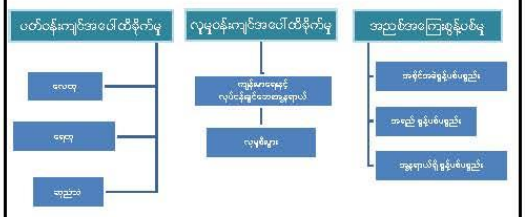
တိုင်းတာမှုဓါတ်ပုံများ


လုပ်ငန်းခွင်အလင်းရောင် ရရှိမှုတိုင်းတာခြင်း


လုပ်ငန်းခွင်လေအရည်အ သွေး တိုင်းတာခြင်း

၅။ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု နှင့် လျော့ချရေးနည်းလမ်းများ

စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ထိခိုက်မှု



သက်ရောက်မှု	စီမံကိန်းဆောင်ရွက်ချက်	လျော့နည်းစေရန် အစေးပေးဆောင်ရွက်မှု
လေအရည်အသွေး	လုပ်ငန်းသုံးစက်ပစ္စည်းများ၊ ဖြတ်စ၊ ညှပ်အမှုန်အမွှားများ၊ ဒီးစက်နှင့် မော်တော်ယာဉ်မှ ထွက်ရှိသော အနိုးအငွေ့များ	စက်ရုံအတွင်းနှင့် အနီးအနားတွင် သစ်ပင်ပန်းမံစိုက်ပျိုးခြင်း။ NOx ထွက်ရှိမှုနည်းသောနည်းပညာဖြင့်စက်ပစ္စည်းများသုံးခြင်း။ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ဆူညံသံ	လုပ်ငန်းသုံးစက်ပစ္စည်းများ၊ ဒီးစက်၊ နှင့် မော်တော်ယာဉ် အသုံးပြုခြင်း	ဆူညံသံများသော နေရာများကို သီးခြားတည်ဆောက်ခြင်း။ ဆူညံသံများသောနေရာတွင် အလုပ်လုပ်သော ဝန်ထမ်းများအား နားအကာအကွယ် ပစ္စည်းများထောက်ပံ့ပေးထားခြင်း
စက်ရုံစွန့်ပစ် ရေဆိုး	ရေအိမ်၊ စားသောက်ဆောင်တို့မှ စွန့်ထုတ်ရေ၊ လုပ်ငန်းသုံးစက်ပစ္စည်းများမှ ထွက်ရှိလာသော စွန့်ပစ်ရေများ	စက်ရုံတွင် ရေဆိုးသန့်စင်စနစ်တပ်ဆင်ထားခြင်း ပိလ္လာစနစ်နှင့် ရေဖြောင်းများကိုပံ့ပုံးသန့်ရှင်း ရေလုပ်ခြင်း။

သက်ရောက်မှု	စီမံကိန်းဆောင်ရွက်ချက်	လျော့နည်းစေရန် အစေးပေးဆောင်ရွက်မှု
စွန့်ပစ်ပစ္စည်း (အဓိကအခဲ)	• စက်ရုံမှထွက်သော စွန့်ပစ်ပစ္စည်း (ဆေးရေများ။ ထုတ်ပိုးပစ္စည်းများဖြစ်သော စက္ကူစုနှင့် ပလက်စတစ်စ) • ဝန်ထမ်းစွန့်ပစ်အမှိုက်များ၊	• စက်ရုံတွင် စွန့်ပစ်ပစ္စည်းများကို ပြန်လည်အသုံးပြုနိုင်သောပစ္စည်း၊ စွန့်ပစ်ရန်ပစ္စည်းနှင့် အန္တရာယ်ရှိပစ္စည်းဟူ၍ ခွဲခြားထားရှိခြင်း • စွန့်ပစ်ရာတွင် သက်ဆိုင်ရာအဖွဲ့အစည်းဖြင့် ဆက်သွယ်ပြီး စနစ်တကျစွန့်ပစ်စေခြင်း • YCDC သန့်ရှင်းရေးဌာနသို့ နေ့စဉ်အကြောင်းကြားပြီး သိမ်းဆည်းစေခြင်း

သက်ရောက်မှု	စီမံကိန်းဆောင်ရွက်ချက်	လျော့နည်းစေရန် အစေးပေးဆောင်ရွက်မှု
လုပ်သား ကျန်းမာရေးနှင့် လုပ်ငန်းခွင်အန္တရာယ် ကင်းရှင်းရေး	• ကူးစပ်ရောဂါ၊ လုပ်ငန်းခွင်အတွင်း ထိမိဒဏ်ရာများ • ကုန်ပစ္စည်း ဘယ်ယူပို့ဆောင်ခြင်းနှင့် မော်တော်ယာဉ်ဘေးလာခြင်း	• လုပ်သားများအတွက်ပုံမှန်ကျန်းမာရေးစစ်ဆေးပေးခြင်းကျန်းမာရေးစောင့်ရှောက်မှုပေးခြင်း၊ အသိပညာပေးခြင်း။ • စက်ရုံတွင်းအရေးပေါ်ပြုစုရန်ဆေးပေးခန်းထားရှိခြင်း • လုပ်ငန်းခွင်အန္တရာယ်ကင်းရှင်းရေးအတွက်သင့်တန်ဘိုးချပေးခြင်း • Personal Protective Equipment (PPE) ဟုခေါ်သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့်လေကာ/နေကာမျက်မှန်များ၊ နားခေါင်းစည်း၊ Helmets စသည်တို့အားထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း။

၆။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု

လေထုညစ်ညမ်းမှုလျှော့ချရေး

ရည်ရွယ်ချက်	• **စက်ရုံသုံးစက်ကိရိယာများကြောင့်ပတ်ဝန်းကျင်လေထုထိခိုက်မှုကိုလျှော့ချစေရန်နှင့် ကောင်းမွန်သောထိန်းသိမ်းမှု ပြုလုပ်ရန်**
လိုက်နာရမည့် စည်းကမ်း	• အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှု အစီအစဉ်	• စက်ရုံအတွင်းနှင့် အနားဝန်းကျင်တွင် သစ်ပင်ပန်းမန်စိုက်ပျိုးခြင်း • စက်ရုံအတွင်း မည်သည့်စွန့်ပစ်ပစ္စည်းအား မီးရှို့ဖျက်စီးခြင်း မပြုလုပ်ခြင်း • လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ်သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် လေကာ/နေကာမျက်မှန်များ၊ နှာခေါင်းစည်း၊ Helmets စသည်တို့အားထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း
စောင့်ကြည့်ရေးနှင့် မှတ်တမ်းပြုစုခြင်း	• ပတ်ဝန်းကျင်လေထုအရည်အသွေး $PM_{2.5}$, PM_{10} ကို တစ်နှစ်ကို ၂ ကြိမ်တိုင်းတာပေးရန်
အချိန်ကာလ	စက်ရုံလုပ်ငန်းလည်ပတ်နေစဉ်ကာလတလျှောက်လုံး
ခန့်မှန်းကုန်ကျစရိတ်	ပျမ်းမျှတစ်နှစ်ကို ၃ သိန်းခန့် ကုန်ကျမည်
တာဝန်ယူရမည့် ပုဂ္ဂိုလ်	• ပြုပြင်ထိန်းသိမ်းရေးအရာရှိ - လေထုညစ်ညမ်းမှုလျှော့ချရေးနည်းလမ်းများ • ထုတ်လုပ်ရေးမန်နေဂျာ- လုပ်ငန်းခွင်လေထုသန့်ရှင်းရေး • မန်နေဂျာ - ပတ်ဝန်းကျင်လေအရည်အသွေးတိုင်းတာရန် (Third Party) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

ဆူညံသံလျှော့ချရေး

ရည်ရွယ်ချက်	• **ဒေသပတ်ဝန်းကျင်ဆူညံမှုမဖြစ်စေရန်**
လိုက်နာရမည့် စည်းကမ်း	• ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) • အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှုအစီအစဉ်	• မီးစက်၊လေမှုတ်စက်တို့ကို ဆူညံသံထိန်းချုပ်နိုင်သော ခန်းဖွဲ့စည်းမှုပုံစံ တည်ဆောက်ထားခြင်း • လုပ်ငန်းသုံးယာဉ်များကိုဆူညံသံလျှော့ချရန် သတ်မှတ်အရှိန်ထက်ကျော်လွန်မမောင်းစေခြင်း • လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ်သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် လေကာ/နေကာမျက်မှန်များ၊ နှာခေါင်းစည်း၊ Helmets စသည်တို့အား ထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း
စောင့်ကြည့်ရေးနှင့် မှတ်တမ်းပြုစုခြင်း	လုပ်ငန်းခွင်ဆူညံသံပမာဏကို တစ်နှစ် ၂ ကြိမ်တိုင်းတာရမည်
အချိန်ကာလ	စီမံကိန်းကာလတစ်လျှောက်
ခန့်မှန်းကုန်ကျစရိတ်	ပျမ်းမျှ တစ်နှစ် ၅ သိန်းခန့် ကုန်ကျမည်
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	• မန်နေဂျာ - ဆူညံသံတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

စွန့်ပစ်အမှိုက် ထိန်းသိမ်းရေး

ရည်ရွယ်ချက်	• **စွန့်ပစ်အမှိုက်ထွက်ရှိမှုလျှော့ချစေရန်နှင့် စွန့်ပစ်အမှိုက်ကြောင့် ပတ်ဝန်းကျင်ညစ်ညမ်းမှုကို လျှော့ချရန်**
လိုက်နာရမည့်စည်းကမ်း	• ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) • National Waste Management Strategy and Action Plan (Draft 2018)
စီမံခန့်ခွဲမှု အစီအစဉ်	• စက်ရုံမှ မည်သည့်စွန့်ပစ်ပစ္စည်းမှ မြစ်၊ ချောင်း၊ အင်း၊ အိုင် အတွင်းသို့ မစွန့်ပစ်ရ • စက်ရုံတွင် စွန့်ပစ်ပစ္စည်းများကို ပြန်လည်အသုံးပြုနိုင်သောပစ္စည်း(ဆိုးဆေး၊ စက္ကူဗူး၊ ပလက်စတစ်၊ စသည်ဖြင့်) များကို ပြည်တွင်းဝယ်ယူသူများထံ ပြန်လည်ရောင်းချခြင်း • စွန့်ပစ်ရန်ပစ္စည်း(လုပ်သားများမှစွန့်ပစ်ပစ္စည်းနှင့်မီးဖိုချောင်ထွက်ပစ္စည်းများ)ကို မြို့တော်စည်ပင်သာယာရေးအဖွဲ့အစည်း ကို နေ့စဉ်ခေါ်ယူပြီး သိမ်းဆည်းစေခြင်း • အန္တရာယ်ရှိပစ္စည်း (စက်ဆီအဟောင်းများ၊ လျှပ်စစ်ပစ္စည်းအပျက်များ၊ သံထည်ပစ္စည်း) များကို ဝယ်ယူသူထံမှပြန်လည် သိမ်းဆည်းစေခြင်း • စက်ရုံတွင် အမှိုက်စွန့်ပစ်ရန် အတွက် အမှိုက်ပုံးများကို စီမံထားခြင်း • စက်ရုံဝန်းထမ်းအားလုံးကို စနစ်တကျ အမှိုက်စွန့်ပစ်ရန် တိုက်တွန်းနှိုးဆော်ထားခြင်း

စွန့်ပစ်အမှိုက် ထိန်းသိမ်းရေး

စောင့်ကြည့်ရေးနှင့် မှတ်တမ်းပြုစုခြင်း	• နေ့စဉ် အမှိုက်သိမ်းဆည်းမှုကို စစ်ဆေးရန် • အမှိုက်စွန့်ပစ်မှု စာရင်းကို စနစ်တကျပြုလုပ် မှတ်တမ်းတင်ရန်
အချိန်ကာလ	စက်ရုံလုပ်ငန်းလည်ပတ်နေစဉ်ကာလတလျှောက်လုံး
ခန့်မှန်းကုန်ကျစရိတ်	ပျမ်းမျှတစ်နှစ်ကို ၁၅ သိန်းခန့် ကုန်ကြမည်
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ • စက်ရုံအတွင်းသန့်ရှင်းရေးအတွက်စီမံခန့်ခွဲရန်တာဝန်ရှိသည် • အမှိုက်စွန့်ပစ်မှု ပုံမှန်ပြုလုပ်ရန်နှင့် စွန့်ပစ်ပစ္စည်းသယ်ယူသူများကို ပုံမှန်ပြုလုပ်ရန် တာဝန်ယူဆောက်ရွက်ရန်

10

ရေဆိုးစွန့်ပစ်မှု ထိန်းသိမ်းရေး

ရည်ရွယ်ချက်	• မြေပေါ်ရေနှင့် မြေအောက်ရေ ညစ်ညမ်းမှုမဖြစ်စေရေး
လိုက်နာရမည့်စည်းတမ်း	• ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) • အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှုအစီအစဉ်	• စက်ရုံရေမြောင်းများနှင့်မိလ္လာစနစ်ကို စနစ်တကျ သန့်ရှင်းအောင်ထားရှိခြင်း လုံလောက်သည့်အတိုင်းအတာ ပမာဏရှိခြင်း • မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပြီး လိုအပ်သကဲ့သို့ ထိန်းသိမ်းပြုပြင်ခြင်း • စက်ရုံရေမြောင်းအတွင်းတွင် ပိတ်ဆို့မှုမရှိစေရန်နှင့် အနံ့ဆိုးများမထွက်စေရန်စီမံခြင်း
စောင့်ကြည့်ရေးနှင့် မှတ်တမ်းပြုစုခြင်း	စက်ရုံရေမြောင်းနှင့် မိလ္လာစနစ်ကို ပျက်စီးမှုမရှိစေရေး စောင့်ကြည့်ရန်
အချိန်ကာလ	စက်ရုံလုပ်ငန်းလည်ပတ်နေစဉ်ကာလတလျှောက်လုံး
ခန့်မှန်းကုန်ကျစရိတ်	ပျမ်းမျှတစ်နှစ်ကို ၄ သိန်းခန့် ကုန်ကျမည်
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	• မန်နေဂျာ - စွန့်ထုတ်ရေအရည်အသွေးတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

အရေးပေါ်အခြေအနေတုန့်ပြန်မှု

ရည်ရွယ်ချက်	• စက်ရုံအတွင်းမတော်တဆထိခိုက်မှု လျော့ချရေး
လိုက်နာရမည့်စည်းတမ်း	• အလုပ်အကိုင်နှင့် ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ (၂၀၁၃), • ILO guide to Myanmar Labour Law (2017)
စီမံခန့်ခွဲမှုအစီအစဉ်	• အရေးပေါ်အခြေအနေဖြစ်သော (မီး၊ ငလျင်၊ ရေကြီးရေလျှံမှု) တို့အတွက် စက်ရုံတွင် စီမံခန့်ခွဲမှုရှိခြင်း • စက်ရုံ၏မီးသတ်စနစ်များကို ပုံမှန်စစ်ဆေးခြင်း • ရေးဆွဲထားသော အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်များကို ဝန်ထမ်းများ အကျွမ်းတဝင်ဖြစ်စေရန် စီမံထားခြင်း • လောင်စာသိုလှောင်နေရာများ၊ လျှပ်စစ်ဖြန့်ဖြူးရေးနေရာများကို အဓိကထားပြီး စောင့်ကြည့်စစ်ဆေးခြင်း၊ ပြုပြင်မွမ်းမံခြင်း • ပုံမှန်မီးဘေးကာကွယ်ရေး၊ ငလျင်လှုပ်ခတ်လျှင် ပြုလုပ်ရမည့်ပုံစံများ၊ ရေကြီးရေလျှံမှု အခြေအနေထိန်းသိမ်းရေး အစီအစဉ်များ၊ ရှေးဦးပြုစုခြင်းသင်တန်းများကို ပုံမှန်လေ့ကျင့်မှုများ သင်ကြားမှုများ ပြုလုပ်ခြင်း • အရေးပေါ်ဆက်သွယ်ရန် ဖုန်းနံပါတ်၊ လိပ်စာများ၊ အများသူငါမြင်သာစေသောနေရာများတွင် ကပ်ထားခြင်း • စက်ရုံတွင်း မီးသတ်အဖွဲ့ငယ်၊ အန္တရာယ်ကင်းရှင်းရေး စောင့်ကြည့်ရေးအဖွဲ့ငယ်များထားရှိပြီး လစဉ် [illegible]

အရေးပေါ်အခြေအနေ တုံ့ပြန်မှု

စောင့်ကြည့်ရေးနှင့် မှတ်တမ်းပြုစုခြင်း	• မီးသတ်ဆေးဘူး၊ မီးသတ်ပိုက်၊ မီးသတ်ရေကန် အပါတ်စဉ်စစ်ဆေးခြင်း • မတော်တဆထိခိုက်မှုနှင့် လေ့ကျင့်ရေးအစီအစဉ်များမှတ်တမ်းထားရှိခြင်း
အချိန်ကာလ	စက်ရုံလုပ်ငန်းလည်ပတ်နေစဉ်ကာလတစ်လျှောက်လုံး
ခန့်မှန်းကုန်ကျစရိတ်	ပျမ်းမျှတစ်နှစ်ကို ၃၀ သိန်းခန့် ကုန်ကြမည်
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	Manager and EHS officer • မီးသတ်သင်တန်းများ ၃ လတစ်ကြိမ်ပြုလုပ်ရန်စီမံပေးခြင်း • အရေးပေါ်အခြေအနေနှင့် မတော်တဆထိခိုက်မှုမရှိစေရေး စောင့်ကြည့်စစ်ဆေးခြင်း

ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်မှု

ကဏ္ဍ	အမျိုးအစား	နေရာ	ကြိမ်နှုန်း	တာဝန်ရှိသူ
ဆူညံမှု	ဆူညံမှု ပမာဏ	စက်ရုံလုပ်ငန်းခွင်အတွင်း	တစ်နှစ် နှစ်ကြိမ်	ပတ်ဝန်းကျင်ဆိုင်ရာအကြံပေးနှင့် ပူးပေါင်း၍ (စက်ရုံတာဝန်ရှိသူ)
စွန့်ပစ်ရေ	BOD, COD, TSS, pH, Temp, Arsenic,	ရေဆိုးသန့်စင်စက်မှ သန့်စင်ပြီးရေ	တစ်နှစ် နှစ်ကြိမ်	ပတ်ဝန်းကျင်ဆိုင်ရာအကြံပေးနှင့် ပူးပေါင်း၍ (စက်ရုံတာဝန်ရှိသူ)
စွန့်ပစ်ပစ္စည်း	စက်ရုံမှထွက်သည့် အမှိုက် ဝန်ထမ်းစွန့်ပစ်အမှိုက်	စက်ရုံတွင် ယာယီစွန့်ပစ်သည့် နေရာနှင့် ပြင်ပသို့စွန့်ပစ်သည့် စစ်တမ်း	တစ်ပတ် နှစ်ကြိမ်	စက်ရုံတာဝန်ရှိသူနှင့် သက်ဆိုင်ရာစည်ပင်သာယာရေး ကော်မတီပူးပေါင်း၍
လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေး	စစ်တမ်းကောက်ယူမှု	စက်ရုံအတွင်း	လစဉ်	စက်ရုံတာဝန်ရှိသူ
စွမ်းအင်	လျှပ်စစ်စွမ်းအင်၊ ရေအသုံးပြုမှု လောင်စာ အသုံးပြုမှု	စက်ရုံအတွင်း	နေ့စဉ်	စက်ရုံတာဝန်ရှိသူ

လူမှုအကျိုးတူပူးပေါင်း ပါဝင်မှု

Sunme (Myanmar) Industrial Limited တွင် CSR အတွက် အမြတ်ငွေ၏ ၂ % နှုန်းကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေးတို့အတွက် အသုံးပြုသွားမည် ဖြစ်သည်။

ကျန်းမာရေး	ဝန်ထမ်းများ ကျန်းမာရေး စောင့်ရှောက်မှု	၀.၈ %
ပညာရေး	ပညာရေးကဏ္ဍ ဖြန့်တင်ရေးနှင့် လူအခွင့်အရေး အသိပညာပေးခြင်း	၀.၈ %
နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေး	ဒေသတွင်း လိုအပ်သကဲ့သို့ လှူဒါန်းခြင်း	၀.၄ %

APPENDIX F
List of Commitments

Sunme (Myanmar) Indusrtial Limited ၏ အဝတ်အထည်အမျိုးမျိုး ချုပ်လုပ်ခြင်းလုပ်ငန်းလည်ပတ်ဆောင်ရွက်ခြင်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော သဘာဝပတ်ဝန်းကျင်၊ လူမှုဘဝ နှင့် ကျန်းမာရေး ထိခိုက်မှုများရှိခဲ့ပါက လျော့ချရေး၊ စီမံခန့်ခွဲရေး နှင့် တားဆီးရေး အစီအစဉ် များကို **ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (Environmental Management Plan – EMP)** တွင် ပါဝင်ရမည့် အချက်များကို အကောင်အထည်ဖော် စီမံဆောင်ရွက်သွားမည် ဖြစ်ကြောင်း၊ အောက်ဖော်ပြပါ ဇယားဖြင့် အကျဉ်းချုပ် စာရင်းပြုစု ဖော်ပြထားပါသည်။

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
နိဒါန်း	၁	ရည်ရွယ်ချက် လုပ်ငန်းလုပ်ဆောင်မှုများကြောင့်ဖြစ်ပေါ်လာသည့် ပတ်ဝန်းကျင်ထိခိုက်မှု အပေါ်လျော့ချရန် ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်အား အကောင်အထည်ဖော်ခြင်း ရည်မှန်းချက် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုစနစ်သည် ပတ်ဝန်းကျင်ဆိုင်ရာစွမ်းဆောင်ရည်ကို စဉ်ဆက်မပြတ် ပြန်လည်သုံးသပ်ခြင်း၊ စွမ်းဆောင်ရည်မြှင့်တင်ခြင်း ဖြင့် အောင်မြင်စေရန် လုပ်ဆောင်ပေးသော စနစ်တစ်ခုဖြစ်ပါသည်။ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစွမ်းဆောင်ရည်ကို မြှင့်တင်ရန် ပြန်လည်သုံးသပ်ခြင်းနှင့် အကဲဖြတ်ခြင်း သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုစနစ်သည် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစွမ်းဆောင်ရည်ကို မြှင့်တင်ရန် စဉ်ဆက်မပြတ်ပံ့ပိုးပေးသည်။	အခန်း(၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
	၁.၁	အဆိုပြုလုပ်ငန်း၏နောက်ခံအကြောင်းအရာ Sunme (Myanmar) Industrial Limited သည် CMP စနစ်ဖြင့် အဝတ်အထည်အမျိုးမျိုးကို ချုပ်လုပ်ပြီး ကိုရီးယား၊ တရုတ်၊ ဂျပန်၊ သို့တင်ပို့ရောင်းချသွားမည်ဖြစ်သည်။ ရန်ကုန်တိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီမှထောက်ခံချက်အမှတ်(ရကတ-၀၉၈/၂၀၁၈) သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏စာအမှတ်ရက-၁/၃/၄ (အီးအိုင်အေ)(၂၇/၂၀၁၉)ဖြင့်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ရေးဆွဲရန် သဘောထားပြန်ကြားခြင်း	အခန်း (၁.၄)
မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်များ	၂	ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂) ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး နည်းဥပဒေ (၂၀၁၄) ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅) မြန်မာနိုင်ငံမှ ချမှတ်ထားသော စက်ရုံနှင့် သက်ဆိုင်သည့် အခြား လိုက်နာဆောင်ရွက်ရမည့် လုပ်ထုံးလုပ်နည်း၊ ဥပဒေ၊ နည်းဥပဒေ နှင့် မူဝါဒများ အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅) နှင့် နိုင်ငံတကာ ပတ်ဝန်းကျင်ဆိုင်ရာ စံသတ်မှတ်ချက်များနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုဆိုင်ရာ လမ်းညွှန်ချက်များ	အခန်း (၂)
စီမံကိန်းအကြောင်းအရာဖော်ပြချက်	၃	မြေကွက်အမှတ်၁၀၆၊မြေတိုင်းရပ်ကွက်အမှတ်၁၄၊ ရွှေသံလွင်စက်မှုဇုန်၊လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။ မြေဧရိယာ ၁.၈၂၆ ဧက	အခန်းခွဲ(၃.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
	၃.၁	အဆိုပြုလုပ်ငန်းသည် ပြည်တွင်းလုပ်သား ၈၀၁ ဦးနှင့် ပြည်ပမှ ပညာရှင် ၃၀ ဦးဖြင့် အဝတ်အထည်အမျိုးမျိုးကို ချုပ်လုပ်သွားမည်ဖြစ်သည်။	အခန်းခွဲ (၃.၃.၂)
	၃.၂	အဆိုပြုလုပ်ငန်း၏ အဓိကကုန်ကြမ်းမှာ ပိတ်အထည်အလိပ်၊ အတွင်းခံလိုင်နင်စ၊ ချည်လုံး၊ ကြယ်သီး၊ ဇစ်၊ ခါးပတ်ချိတ်နှင့် အခြားဆက်စပ်ပစ္စည်းများကို ကိုရီးယား၊ တရုတ်၊ ဂျပန်၊ တင်သွင်းသွားမည်ဖြစ်သည်။	အခန်းခွဲ (၃.၄.၁.၁)
	၃.၃	အဆိုပြုလုပ်ငန်း၏ထုတ်ကုန်မှာ လေဖောင်းဂျာကင်အင်္ကျီ၊ဘောင်းဘီ၊ကလေးဝတ်ဂျာကင်၊ဘောင်းဘီတို တို့ဖြစ်ပါသည်။	အခန်းခွဲ (၃.၄.၂)
ပတ်ဝန်းကျင် အရည်အသွေးတိုင်းတာမှု	၄	အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅) နှင့် နိုင်ငံတကာ ပတ်ဝန်းကျင်ဆိုင်ရာ စံသတ်မှတ်ချက်များနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုဆိုင်ရာ လမ်းညွှန်ချက်များကို အခြေခံလေ့လာ တိုင်းတာထားပါသည်။	အခန်း (၄)
ဆူညံသံ	၄.၁	အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)၏ အမြင့်ဆုံးလက်ခံနိုင်သည့် ဆူညံသံအဆင့် (Noise level) လမ်းညွှန်သတ်မှတ်ချက် စက်မှုဇုန် ဇရိယာတွင် (70 One hour LAeq (dBA)) ဖြင့်နှိုင်းယှဉ် ဖော်ပြထားပါသည်။	အခန်းခွဲ (၄.၂.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
လေအရည်အသွေး	၄.၂	အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)၏ ထုတ်လွှတ်အခိုးအငွေ့ (Air emissions) လမ်းညွှန်သတ်မှတ်ချက် (PM10, PM2.5) တို့ဖြင့် နှိုင်းယှဉ် ဖော်ပြထားပါသည်။	အခန်းခွဲ (၄.၂.၂)
ဒေသဆိုင်ရာအချက်အလက်များ	၄.၃	အဆိုပြုလုပ်ငန်းတည်ရှိသည့် လှိုင်သာယာမြို့နယ်၏ဒေသဆိုင်ရာအချက်အလက်များ	အခန်းခွဲ(၄.၅)
ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု	၅	Sunme (Myanmar) Industrial Limited ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် (EMP) အတွက် စက်ရုံစီမံခန့်ခွဲရေးအဖွဲ့၊ အလုပ်သမားများ၊ ဒေသခံလူထုများ၏ အမြင်၊ သက်ဆိုင်ရာ တာဝန်ရှိသူတို့၏အကြံပြုချက်များနှင့် ကွင်းဆင်းလေ့လာသူများမှ ဆွေးနွေးတိုင်ပင်မှုတို့ အပေါ် အခြေခံပြီး ဆောင်ရွက်သွားမည် ဖြစ်သည်။ EMP တွင် စက်ရုံအတွင်း ဘေးအန္တရာယ် ကင်းရှင်းရေးစီမံခန့်ခွဲမှုများကို လိုက်နာရန်အတွက် ထည့်သွင်းဖော်ပြထားပါသည်။	အခန်း (၅)
လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်များ	၅.၁	ကာဗွန်ဒိုင်အောက်ဆိုက်လျော့ချရန်အတွက်စက်ရုံအနီးအတွင်း သစ်ပင်ပန်းပင်များစိုက်ပျိုးရမည်။ အဆိုပြုလုပ်ငန်းဇရိယာအတွင်း စွန့်ပစ်ပစ္စည်းများ မီးရှို့ခြင်းကို တားမြစ်ထားမည်။ လေထုညစ်ညမ်းမှုလျော့ချရန် လုပ်ငန်းသုံးယာဉ်များ၊ မီးစက်များနှင့် လုပ်ငန်းဆိုင်ရာ စက်ပစ္စည်းများကို ပုံမှန်စောင့်စစ်ဆေးရမည်။ ပတ်ဝန်းကျင်အပေါ် မီးခိုးထွက်ရှိမှုလျော့နည်းစေရန် မီးခိုးခေါင်းတိုင်များ တပ်ဆင်ရမည်။ မော်တော်ယာဉ်များ၊ရေစုပ်စက်များနှင့်မီးစက်များကို ပုံမှန် ပြုပြင်၊ ထိန်းသိမ်းထားရှိရမည်။	အခန်းခွဲ (၅.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
ဆူညံသံထွက်ရှိမှု	၅.၂	မီးစက်ခန်းများထားရှိခြင်းနှင့်အခြားသက်ဆိုင်သည့်ပစ္စည်းများအားစနစ်တကျ ထိန်းသိမ်းထားရှိရမည်။ဝန်ထမ်းများကိုသက်ဆိုင်ရာကိစ္စရပ်များနှင့်ပတ်သက်၍သင့်တော်သော သင်တန်းများပေးခြင်း၊ ဆူညံသံထွက်ရှိသည့်နေရာများတွင် PPE များကို ဝတ်ဆင်စေခြင်း။	အခန်းခွဲ (၅.၂)
အမှိုက်စွန့်ပစ်မှု	၅.၃	စက်ရုံအတွင်း အမှိုက်ပုံးများထားရှိခြင်း၊ သတ်မှတ်ထားသောနေရာတွင်သာ အမှိုက်စို၊ အမှိုက်ခြောက်များ ခွဲခြားစွန့်ပစ်ခြင်း၊ အမှိုက်များကို ရန်ကုန်စည်ပင်သာယာရေးကော်မတီနှင့် ချိတ်ဆက်၍စွန့်ပစ်ခြင်း။	အခန်းခွဲ (၅.၃)
စွန့်ပစ်အရည်	၅.၄	ဆီကန်၊ မိလ္လာကန်များကို ပုံမှန်စစ်ဆေးခြင်း၊ သန့်စင်ခြင်းများပြုလုပ်ခြင်း	အခန်းခွဲ (၅.၄)
မီးဘေးအန္တရာယ်	၅.၅	မီးအန္တရာယ်အရေးပေါ်အခြေအနေများအတွက်စက်ရုံအတွင်းတွင်မီးသတ်ဆေးဘူးများ၊ မီးသတ်ရေပိုက်များ၊ မီးသတ်ရေကန် ထားရှိရမည်။ အရေးပေါ်ထွက်ပေါက်များနှင့် စုရပ်နေရာများအား လမ်းညွှန်ပြ ထားရှိရမည်။ မီးသတ်ရေလှောင်ကန်များ၊ မီးငြိမ်းသတ်ရေးကရိယာများကို ပုံမှန်စစ်ဆေးခြင်း စက်ရုံအတွင်း အရေးပေါ်အချက်ပေးစနစ်များ တပ်ဆင်ခြင်း အရေးပေါ်ထွက်ပေါက်များတစ်လျောက်တွင် စက်ပစ္စည်းများနှင့် အခြားသောကုန်ပစ္စည်းများ ပိတ်ဆို့ထားခြင်း မရှိရန် စီစဉ်ထားရမည်။	အခန်းခွဲ (၅.၅)
လုပ်ငန်းခွင်ထိခိုက်မှုနှင့် ကျန်းမာရေး	၅.၆	ရှေးဦးပြုစုနည်းသင်တန်းများ၊ဘေးအန္တရာယ်ကင်းရှင်းရေးလေ့ကျင့်မှု၊ မီးငြိမ်းသတ်နည်းသင်တန်းများ၊ အခြားလိုအပ်သော လေ့ကျင့်မှုများ၊ စက်ပစ္စည်းများကို စနစ်တကျကိုင်တွယ်မှုများအား သင်တန်းပေးခြင်း	အခန်းခွဲ (၅.၆)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		လုပ်ငန်းခွင်အတွင်းအလုပ်သမားများအလင်းရောင်ကောင်းစွာရရှိစေရန်နှင့် အမြင်အာရုံမထိခိုက်စေရန် အလင်းရောင်များကို လုံလောက်စွာ ထားရှိခြင်း ဌာနတစ်ခုချင်းစီအတွက် တစ်ကိုယ်ရေသုံးကာကွယ်ရေးပစ္စည်းများ ထောက်ပံ့ပေးခြင်း လျှပ်စစ်အန္တရာယ်ကာကွယ်ရန်အတွက် လျှပ်စစ်ထိန်းသိမ်းရေးဝန်ထမ်းများအား ထားရှိ၍ အဆိုင်းခွဲ၍ ပုံမှန်စစ်ဆေးကာကွယ်မှုများပြုလုပ်စေခြင်း ဝန်ထမ်းများ၏ကျန်းမာရေးအတွက် စက်ရုံတွင် စီမံခန့်ခွဲခြင်း လုပ်သားများအတွက် ဓနာရီအတွင်း လက်ခံနိုင်သည့် အမြင့်ဆုံးဆူညံမှုနှုန်းမှာ 90 dB(A) ဖြစ်သည်၊ ထို့ကြောင့် အသံဆူညံသည့်နေရာများတွင် အသံလုံသည့် နားကြပ်များ နားအကာအကွယ်ပစ္စည်းများ တပ်ဆင်စေခြင်း	
အန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်း	၅.၇	အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများ သိမ်းဆည်းမှုအား ပုံမှန်စောင့်ကြပ်စစ်ဆေးခြင်း လုပ်ငန်းခွင်ကျန်းမာရေးလုံခြုံမှုနှင့်ပတ်ဝန်းကျင်ဆိုင်ရာလိုအပ်ချက်များနှင့်အညီ ဓာတုပစ္စည်းများကို စနစ်တကျစွန့်ပစ်ခြင်း ဓာတုပစ္စည်းသိုလှောင်သည့် ပုံးခွံများကို စနစ်တကျပြန်လည်အသုံးပြုခြင်း (သို့မဟုတ်) စနစ်တကျစွန့်ပစ်ခြင်း အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများကို ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ (သို့မဟုတ်) လိုင်စင်ရ အမှိုက်စွန့်ပစ်ရေးဆိုင်ရာ အဖွဲ့အစည်းများ (ဥပမာ DOWA or YCDC)နှင့် ချိတ်ဆက်၍ စွန့်ပစ်ခြင်း	အခန်း၃ (၅.၇)
စွမ်းအင်	၅.၈	အပူနှင့်အအေးထိန်းရန်အတွက်အချိန်ကန့်သတ်သည့်ကရိယာနှင့် သာမိုစတပ်များတပ်ဆင်ခြင်း စွမ်းအင်ချွေတာသောကရိယာများတပ်ဆင်ခြင်း	အခန်း၃ (၅.၈)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		အသုံးမပြုသည့် အချိန်တွင် မီးပိတ်ထားခြင်း၊ စက်ပစ္စည်းများ ရပ်နားထားခြင်း	
အရေးပေါ် အခြေအနေ	၅.၉	မီးဘေး၊ ငလျင်၊ ရေလွှမ်းမိုးမှု၊ မုန်တိုင်း နှင့်အခြားအရေးပေါ်ကိစ္စများကို ပို၍သင့်တော်သော စီမံခန့်ခွဲမှုများပြုလုပ်ခြင်း စက်ရုံ၏ ကဏ္ဍတစ်ခုချင်းတိုင်းတွင် မီးငြိမ်းသတ်ရေးကရိယာများနှင့် မီးငြိမ်းသတ်ရေးစနစ်များ ထားရှိခြင်းနှင့် စစ်ဆေးခြင်း မီးဘေးထွက်ပေါက်၊အရေးပေါ်ထွက်ပေါက်အစရှိသည်တို့ကိုအလုပ်သမားများနှင့် တိုင်ပင်ဆွေးနွေးပြီး အသေးစိတ်အကဲဖြတ်ခြင်း မီးငြိမ်းသတ်ခြင်းအား ပုံမှန်လေ့ကျင့်ထားရှိခြင်း ငလျင်လှုပ်တဲ့အခါလုံခြုံသည့်နေရာတွင်သာနေရန်၊အပြင်မထွက်ခြင်း၊ အပြင်တွင်လုပ်ကိုင်ရသည့် လုပ်သားများမှာ သစ်ပင်၊ အဆောက်အဦးများကို သတိထားရန်နှင့် သက်ဆိုင်ရာလုံခြုံရေးသင်တန်းများပို့ချခြင်း မုန်တိုင်းတိုက်ခြင်း၊ရေကြီးခြင်း၊မြေပြိုခြင်းတို့ကြောင့်မြွေကဲ့သို့သော အခြားအန္တရာယ်ရှိတိရိစ္ဆာန်များအန္တရာယ်များကို သတိပေးခြင်း ရှေးဦးသူနာပြုခြင်းကဲ့သို့သော ကျန်းမာရေးဆိုင်ရာအဖွဲ့အစည်းများ ပြင်ဆင်ထားရှိခြင်း နီးစပ်ရာ ဆေးရုံ၊ ဆေးခန်း၊ ဂဲစခန်း၊ မီးသတ်ဌာနတို့၏ ဆက်သွယ်နိုင်မည့် ဖုန်းနံပါတ်များအား လူအများမြင်သာသည့် နေရာများတွင် ထားရှိခြင်း မီးသတ်အဖွဲ့၊ကယ်ဆယ်ရေးအဖွဲ့နှင့်လုံခြုံရေးဟူသောအဖွဲ့များထားရှိ၍လစဉ် လုံခြုံရေးများအတွက် အစည်းအဝေးများပြုလုပ် စီမံခန့်ခွဲခြင်း	အခန်း၌ (၅.၉)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		ဘေးအန္တရာယ်ဆိုင်ရာ သင်တန်းများအား သေချာပြုလုပ်စေခြင်း	
စောင့်ကြပ်ကြည့်ရှုမှု	၆	အဆိုပြုစီမံကိန်းသည် ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာအား ၆လ တစ်ကြိမ် ဝန်ကြီးဌာနများသို့ တင်ပြရမည်။	အခန်း၌ (၅.၁၁)
လေအရည်အသွေး စစ်ဆေးမှု	၆.၁	• $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3,CO_2 • တစ်နှစ် ၂ ကြိမ် • အဆိုပြုလုပ်ငန်း/စက်ရုံဝန်းအတွင်း • ၁၀ သိန်း တစ်နှစ်	ဇယား (၅.၁)
ဆူညံသံစစ်ဆေးမှု	၆.၂	• ဆူညံသင့်အဆင့် (dBA)အတိုင်း • အဆိုပြုလုပ်ငန်း/စက်ရုံဝန်းအတွင်း • တစ်နှစ် ၂ ကြိမ် • ၃သိန်း	ဇယား (၅.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများထွက်ရှိမှုအခြေအနေ	၆.၃	• ဖြတ်တောက်ခြင်းနှင့် ထုတ်ပိုးခြင်းအပိုင်း၊ ကန်တင်း၊ မီးဖိုခန်း၊အိပ်ဆောင် • လစဉ် • အဆိုပြုလုပ်ငန်း/စက်ရုံဝန်းအတွင်း • ၅သောင်း	ဇယား (၅.၁)
စွန့်ပစ်အရည်ထွက်ရှိမှုအခြေအနေ	၆.၄	• အိမ်သာ၊ မီးဖိုချောင် နှင့် စားဖိုဆောင် • အပတ်စဉ် • စက်ရုံဝန်းအတွင်း • ၅သောင်း	ဇယား (၅.၁)
ဘေးအန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများထွက်ရှိမှုအခြေအနေ	၆.၅	• သိုလှောင်ဇရိယာအတွင်း • လစဉ် • ၁ သိန်း	ဇယား (၅.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
မီးဘေးအွန္တရာယ် စစ်ဆေးမှု	၆.၆	• မီးငြိမ်းသတ်ရေးကိရိယာများ • လစဉ် • စက်ရုံအတွင်း • ၅ သိန်း တစ်လ	ဇယား (၅.၁)
စက်ရုံတွင်း အလင်းရောင်အခြေအနေ	၆.၇	• အလင်းရောင် • လစဉ် • ကုန်ပစ္စည်းဖြတ်တောက်ခြင်း၊အရည်အသွေးစစ်ဆေးခြင်းကဲ့သို့သော လုပ်ငန်းများလုပ်ကိုင်သည့် နေရာ • ၂ သောင်း တစ်လ	ဇယား (၅.၁)
မကျေနပ်မှုများနှင့် ပြဿနာများ ဖြေရှင်းခြင်း	၇	စီမံကိန်းအနီးပတ်ဝန်းကျင်နေထိုင်သောသူများ(သို့)သက်ဆိုင်သူများသည် သူတို့ခံစားနေရသောပြဿနာများနှင့်သက်ရောက်မှုများနှင့်ပတ်သက်၍ ဖြေရှင်းမှုများပြုလုပ်ရန် စက်ရုံ၏ တာဝန်ရှိသူများ၊ စက်မှုဇုန် စီမံခန့်ခွဲရေး ကော်မတီ၊ အုပ်ချုပ်ရေးဦးစီးဌာနတို့ဖြင့် ပူးပေါင်း ချိတ်ဆက် လုပ်ဆောင်ခြင်း။ ကော်မတီအဆင့်တွင်အခြားမဖြေရှင်းနိုင်သောပြဿနာများကိုတာဝန်ရှိအာဏာပိုင်များသို့ တင်ပြပြီး တရားရေးအရ အဆုံးအဖြတ်ပြုလုပ်မည် ဖြစ်သည်။	အခန်းခွဲ (၅.၁၃)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
လူထုအကျိုးတူပူးပေါင်းပါဝင်မှု	၈	အဆိုပြုလုပ်ငန်းသည် လူထုအကျိုးပြုပူးပေါင်းပါဝင်မှုကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေးအတွက် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်က ချမှတ်သည့် အတိုင်း ကုမ္ပဏီ၏ အကျိုးအမြတ် ၂ ရာခိုင်နှုန်းအား နှစ်စဉ် ထည့်ဝင်သွားမည်ဖြစ်သည်။	အခန်း၁၃ (၈.၁၄)
ထိခိုက်မှုဆန်းစစ်ခြင်းနှင့်လျော့ချရေးနည်းလမ်းများ	၉	**ထိခိုက်မှုဆန်းစစ်ခြင်း** **ကောင်းကျိုး** အလုပ်ကိုင်အခွင့်အလမ်းများပေါများလာခြင်း၊လမ်းပန်းဆက်သွယ်ရေးကောင်းမွန်လာခြင်း၊ နည်းပညာများတိုးတက်လာခြင်း **ဆိုးကျိုး** • သဘာဝပတ်ဝန်းကျင်အရင်းအမြစ်များ၊ဂေဟစနစ်အရင်းအမြစ်များ၊ လူသားများအပေါ်ထိခိုက်မှုများ၊ အမှိုက်စွန့်ပစ်ခြင်းကြောင့်ထိခိုက်မှုများ	အခန်း၁၃ (၈.၁.၁)- အခန်း၁၃ (၈.၁.၂)
	၉.၁	ဆန်းစစ်ခြင်းနည်းလမ်း သိသာထင်ရှားသောသက်ရောက်မှု=(ပမာဏ+အချိန်+ကျယ်ပြန့်မှု) × ဖြစ်နိုင်ခြေ	အခန်း၁၃ (၆.၂)
အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်း	၁၀	သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်ကို ၃၀ ရက်၊ ဇူလိုင်လ၊ ၂၀၁၉ ခုနှစ်တွင် Sky Hotel၊ လိုင်သာယာမြို့နယ်၊ ရန်ကုန်မြို့တွင်ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲ အစည်းဝေးတွင် သက်ဆိုင်ရာ အစိုးရအဖွဲ့ရုံး၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီ၏	အခန်း(၇)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုအပ်သည်များကို အကြံပေးခြင်း၊ စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြုချက်များပေးခဲ့ပါသည်။	
နိဂုံးနှင့်သုံးသပ်ချက်	၁၁	အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒလမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြရှင်းလင်းတင်ပြထားပါသည်။	အခန်း(၈)