

YINGSHENG (MYANMAR) COMPANY LIMITED

Environmental Management Plan

Manufacturing of Shoe's Sole on CMP Enterprises



Myanwei Environmental Solutions Company Limited

20-May-22

Date: 20, 05, 2022

Attention: Dear Director

Environmental Conservation Department

Subject: Environmental Management Plan (EMP) Report in respect to manufacture of Various kinds of Shoe's Soles by Yingsheng (Myanmar) Company 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.



LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

Date: 20, 05, 2022

Dear: Director
Environmental Conservation Department
Nay Pyi Taw

Subject: Environmental Management Plan (EMP) Report in respect to manufacture of Various kinds of Shoe's Soles

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.

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

We acknowledge and understand that



Mr. Liu Lunquan
Promoter
Yingsheng (Myanmar) Co., Ltd.

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Environmental Management Plan

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. MOECF	= 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

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်ရေးရာညွှန်ကြားမှုဦးစီးဌာနမှ တောင်းဆိုချက်များနှင့် သေချာဖို့လိုအပ်ပါသည်။ ဒါဟာ ပတ်ဝန်းကျင်ကို ဆိုးရွားစွာထိခိုက်နိုင်ပါသည်။ အဆိုပြုလုပ်ငန်းသည် ဖိနပ်အောက်ခံဆိုးလ်များ ထုတ်လုပ်ခြင်းလုပ်ငန်းအတွက် ရင်းနှီးမြှုပ်နှံသော ကုမ္ပဏီဖြစ်ပါသည်။ ရင်းနှီးမြှုပ်နှံမှုလိုင်စင်ကို ၂၀၁၉ခုနှစ်၊ ဇူလိုင်လ၊ ၂၂ ရက်နေ့တွင် (ထောက်ခံချက်အမှတ်ရကတ-၂၂၅/၂၀၁၉) ဖြင့် ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီမှ ရရှိပြီးဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန်အတွက် မြန်မာနိုင်ငံသယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ၏ အတည်ပြုချက်ရယူရန် လိုအပ်ကြောင်း ကော်မရှင်မှ မှာကြားခဲ့ပါသည်။

ထို့ကြောင့် မြန်မာနိုင်ငံ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)အရ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) ပြုလုပ်ရန်လိုအပ်ကြောင်း ၂၀၁၉ ခုနှစ်၊ ဇူလိုင်လ၊ ၂၂ ရက်နေ့တွင် (စာအမှတ်၊ ရက-၁/၃/၄ (အီးအိုင်အေ) (၁၂၅၅/၂၀၁၉) ဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ရန်ကုန်တိုင်းဒေသကြီးမှ သဘောထားမှတ်ချက် ရရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် EMP အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်းဖြစ်သော Myanwei Environmental Solutions Company Limited (Myanwei) မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။

EMP အစီအစဉ်တွင် Yingsheng (Myanmar) Company Limited (Yingsheng) ၏ CMP စနစ်ဖြင့် ဖိနပ်အောက်ခံဆိုးလ်များ ထုတ်လုပ်ခြင်းစီမံကိန်းအတွက် Myanwei မှ ရေးသားပြုစုထားသော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာဖြစ်သည်။ အဆိုပါ လေ့လာဆန်းစစ်ခြင်း၏ ရည်ရွယ်ချက်များမှာ-

သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားပတ်ဝန်းကျင်အပေါ် စီမံကိန်းဆောင်ရွက်ချက်များကြောင့် ထိခိုက်မှုများကိုလေ့လာရန်။

ထိုထိခိုက်မှုများကို လျော့ချနိုင်ရန် လျော့နည်းစေမည့်နည်းလမ်းများကို ဖော်ပြရန်။

စီမံကိန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ပြင်ဆင်ရန်နှင့် အကောင်အထည်ဖော်ရန်။

စီမံကိန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အစီရင်ခံစာ လုပ်ဆောင်ရာတွင် လုံလောက်မှုရှိစေရန်။

ဒေသခံများ၏ လူမှုရေးသက်သာချောင်ချိမှုများ တိုးမြှင့်ရန်နှင့် ဒေသတွင်း ဖွံ့ဖြိုးတိုးတက်မှုများ အတွက် မရှိမဖြစ်အရေးပါသော လူမှုစီးပွားတာဝန်ယူမှုအစီအစဉ်အား အကောင်အထည်ဖော်ရန်တို့ဖြစ်ပါသည်။

အဆိုပြုထားသော စီမံကိန်း၏ ရည်ရွယ်ချက်သည် CMP စနစ် (ဖြတ်-လုပ်-ထုတ်) စနစ်ကို အသုံးပြု၍ ဖိနပ်အောက်ခံဆိုးလ်များကို ထုတ်လုပ်ပီး ပြည်တွင်းရှိ CMP လုပ်ငန်းများကိုရောင်းချရန်ဖြစ်ပါသည်။

ဥပဒေနှင့် မူဝါဒဆိုင်ရာ အချက်အလက်များ

EMP ရေးဆွဲခြင်း၏ရည်ရွယ်ချက်မှာ နိုင်ငံတော်နှင့် နိုင်ငံတကာမှ ချမှတ်ထားသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအစီအစဉ်များ၊ စည်းမျဉ်းစည်းကမ်းများ၊ ဥပဒေနှင့် နည်းဥပဒေများကို လိုက်နာပြီး

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ပတ်ဝန်းကျင်နှင့်လိုက်ရောညီထွေရှိသော ထိခိုက်မှုလျော့ချရေး အစီအစဉ်များပြုလုပ်ရန် ဖြစ်ပါသည်။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အစီရင်ခံစာရေးသားပြုစုသူများ၏ ကျွမ်းကျင်မှုနယ်ပယ်ဆိုင်ရာ ဖော်ပြချက်များကို ရေးသားဖော်ပြထားပါသည်။ ဥပဒေနှင့် နည်းဥပဒေ အခန်းတွင် MONREC မှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များအပြင် စက်ရုံနှင့်ဆက်စပ်သက်ဆိုင်နေပြီး လိုက်နာရမည့် ဥပဒေနှင့် နည်းဥပဒေများ၊ ဒေသတွင်း သို့မဟုတ် အပြည်ပြည်ဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒများ၊ ဆက်စပ်နေသည့် နိုင်ငံတကာသဘောတူချက်များကို အကျဉ်းချုပ်ရေးသားဖော်ပြထားပါသည်။ စက်ရုံအတွင်းလိုက်နာ ဆောင်ရွက်ရမည့် စည်းမျဉ်းစည်းကမ်းများ၊ လုပ်ငန်းခွင် အန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ အခြေခံစည်းမျဉ်းစည်းကမ်းများလည်း ထည့်သွင်းဖော်ပြထားပါသည်။ Yingsheng ၏ 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. Foreign Investment Law, 2012
8. Foreign Investment Rule, 2013
9. Myanmar Investment Rule, 2017
10. Myanmar Insurance Law, 1993
11. Payment of Wages Law, 2016
12. The Payment of Wages Act, 1936
13. Yangon City Development Committee Law, 2018
14. The Amended Law for Factories Act, 1951 (2016)
15. The Private Industrial Enterprise Law
16. The Export and Import Law, 2012

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17. The Prevention of Hazard from Chemical and Related Substances Law, 2013
18. The Underground Water Act
19. Myanmar Fire Brigade Law, 2015
20. Fire Safety Procedure
21. The Electricity Law, 2014
22. Boiler Law, 2015
23. Labor Dispute Settlement Law, 2012
24. The Law Amending the Settlement of Labor Dispute Law, 2019
25. The Social Security Law, 2012
26. The Employment and Skill Development, 2013
27. The Worker's Compensation Act, 1923
28. The Leave and Holidays Act (1951, partially reused in 2014)
29. The Minimum Wage Law, 2013
30. Public Health Law, 1972
31. Prevention and Control of Communicable Disease Law (1995 Amendment in 2011)
32. Occupational Safety and Health Law, 2019
33. The Law on Standardization
34. လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများဆိုင်ရာ ဥပဒေ (2018)
35. The Motor Vehicles Law, 2015
36. The Conservation of Water Resources and River Law, 2006
37. The Commercial Tax Law (1990 Amended 2014)

စီမံကိန်းဆိုင်ရာအချက်အလက်

ရင်းနှီးမြှုပ်နှံသူ၏ အချက်အလက်

ရင်းနှီးမြှုပ်နှံသူ အမည်	Mr. Liu Lunquan
ID No.:	E89017790

Environmental Management Plan

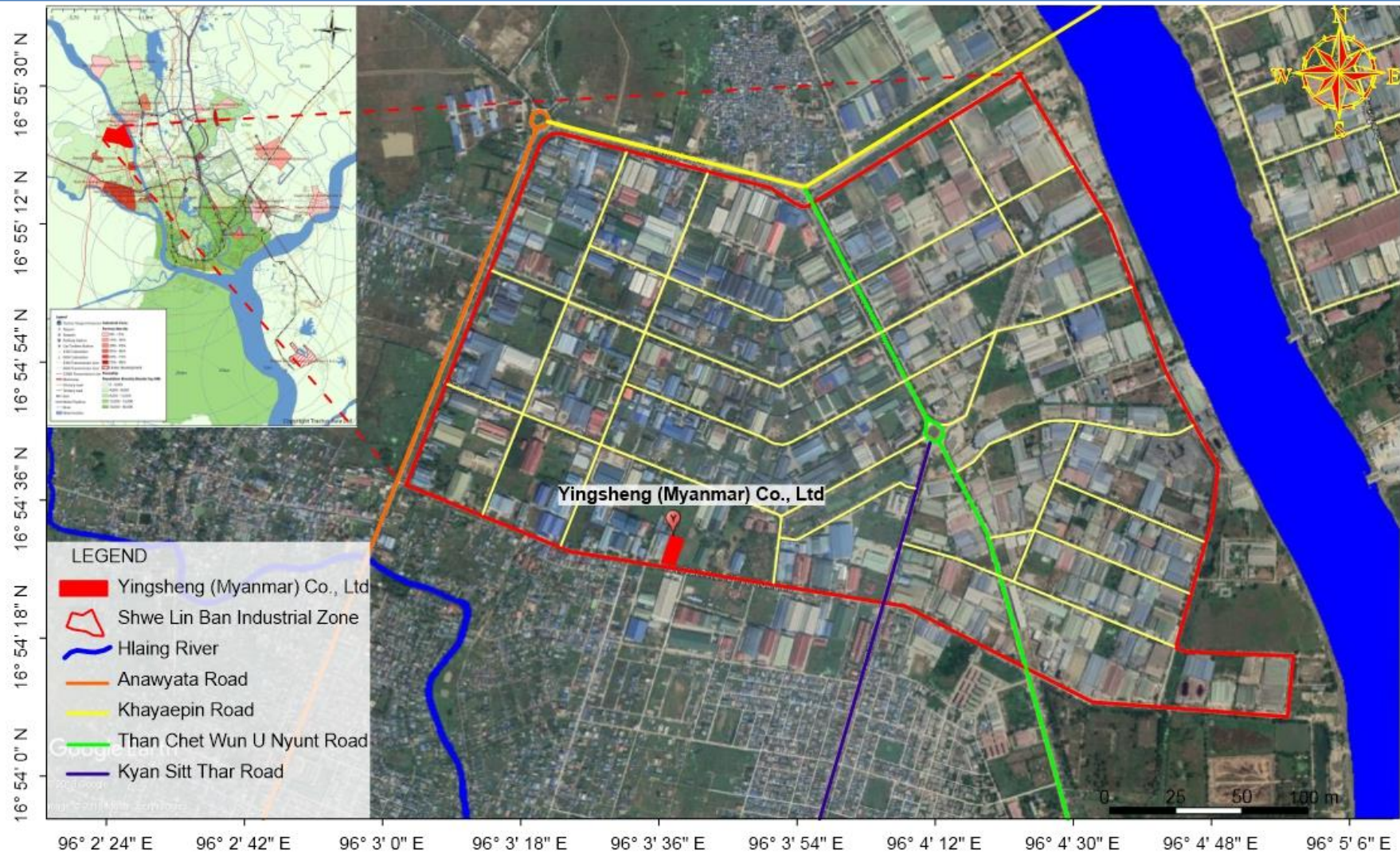
နိုင်ငံသား	တရုတ်နိုင်ငံသား
မှတ်ပုံတင်သွင်းသည့် လိပ်စာ	Room 4601, Villa Area, Putaozhuangyuan Dongguan City, Wanjiang District, Guangdong Province, China.

အဆိုပြုထားသော စီမံကိန်း၏ အဓိကလက္ခဏာများ

အဆိုပြုထားသော စီမံကိန်း	ဖိနပ်အောက်ခံဆိုးလ်များထုတ်လုပ်ခြင်းလုပ်ငန်း
ရင်းနှီးမြှုပ်နှံမှုပုံစံ	၁၀၀% နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု
ကုမ္ပဏီအမည်	Yingsheng (Myanmar) Company Limited
အဆိုပြုရင်းနှီးမြှုပ်နှံမှုကာလ	နှစ် ၃၀
စုစုပေါင်းမြေကွက်ဧရိယာ	၂.၃၄၇ ဧက (၉၄၉၇.၉၇၂ စတုရန်းမီတာ)
မြေနေရာပုံစံ	စက်မှုဇုန်မြေ
တည်ဆောက်မှုကာလ	၁ နှစ်
စီမံကိန်း တည်နေရာ	မြေကွက်အမှတ်(၁၀၂)၊ မြေတိုင်းရပ်ကွက်အမှတ် (၂၅)၊ ရွှေလင်ပန်းစက်မှုဇုန်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။
ဆက်သွယ်ရန် ဖုန်းနံပါတ်	မသိသိဟန် ၀၉-၂၅၄၁၄၂၇၀၇/၀၉-၇၇၀၈၅၃၁၁၄

Yingsheng ၏ ဖိနပ်အောက်ခံဆိုးလ်များ ထုတ်လုပ်သည့်စက်ရုံသည် မြေကွက်အမှတ် (၁၀၂)၊ မြေတိုင်းရပ်ကွက်အမှတ် (၂၅)၊ ရွှေလင်ပန်းစက်မှုဇုန်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် တည်ရှိပါသည်။ စက်ရုံ၏အကျယ်အဝန်းမှာ ၂.၃၄၇ ဧက (၉၄၉၇.၉၇၂ စတုရန်းမီတာ)ရှိပြီး ဝန်းအတွင်းတွင် (၁၄၀ ပေ x ၁၂၀ ပေ) ရှိသော (၂) ထပ်အဆောက်အဦး (၁) လုံး၊ (၁၄၀ ပေ x ၆၀ ပေ) ရှိသော (၁) ထပ်အဆောက်အဦး (၁) လုံး၊ (၁၄၀ ပေ x ၁၀၀ ပေ) ရှိသော (၂) ထပ်အဆောက်အဦး (၁) လုံးတို့ရှိပါသည်။

Environmental Management Plan



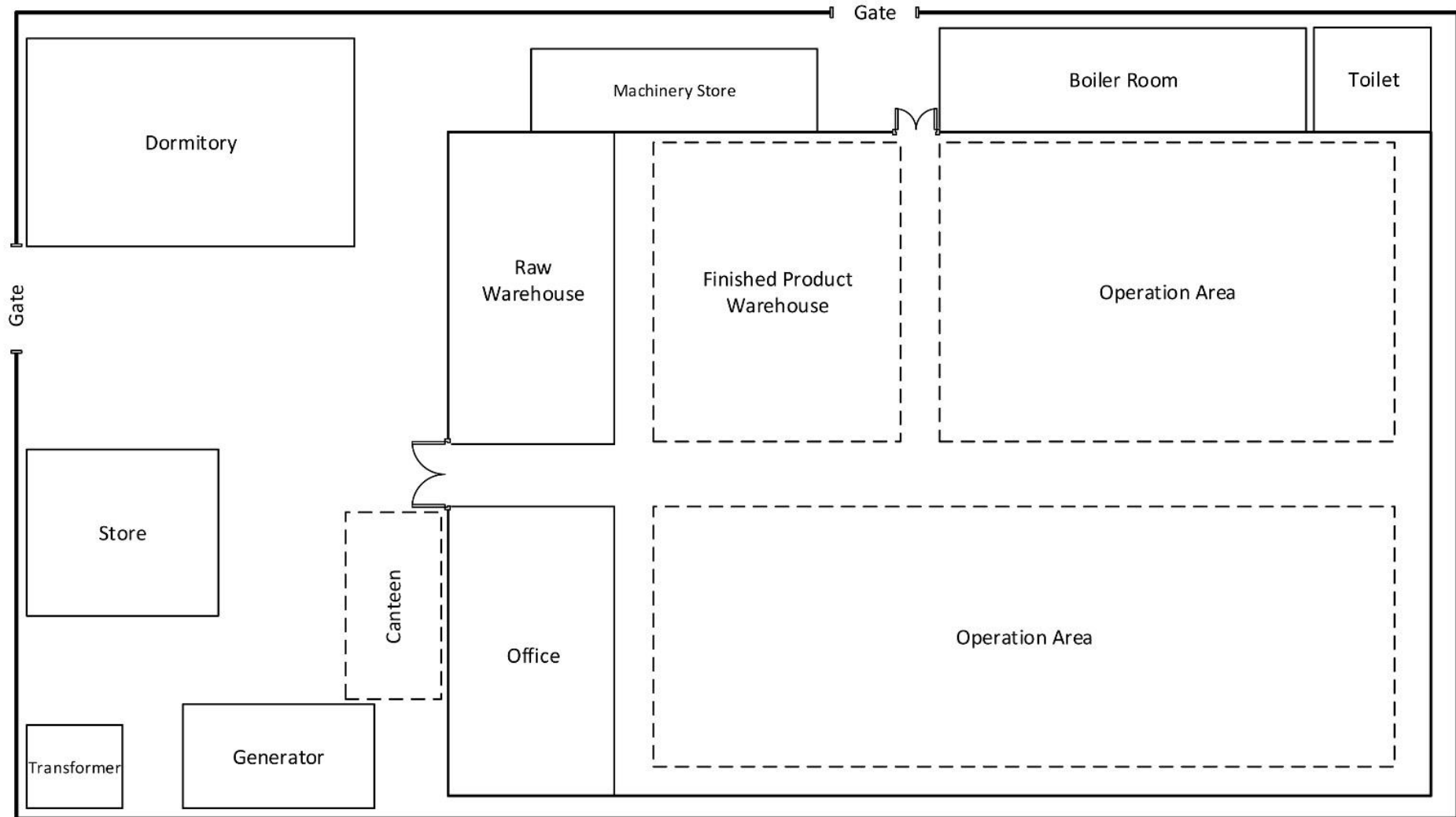
စက်ရုံတည်နေရာပြ မြေပုံ

Environmental Management Plan



စက်ရုံတည် ဆောက်ထားမှု ပုံစံ

Environmental Management Plan



စက်ရုံတည်ဆောက်ထားမှု မြေပုံ

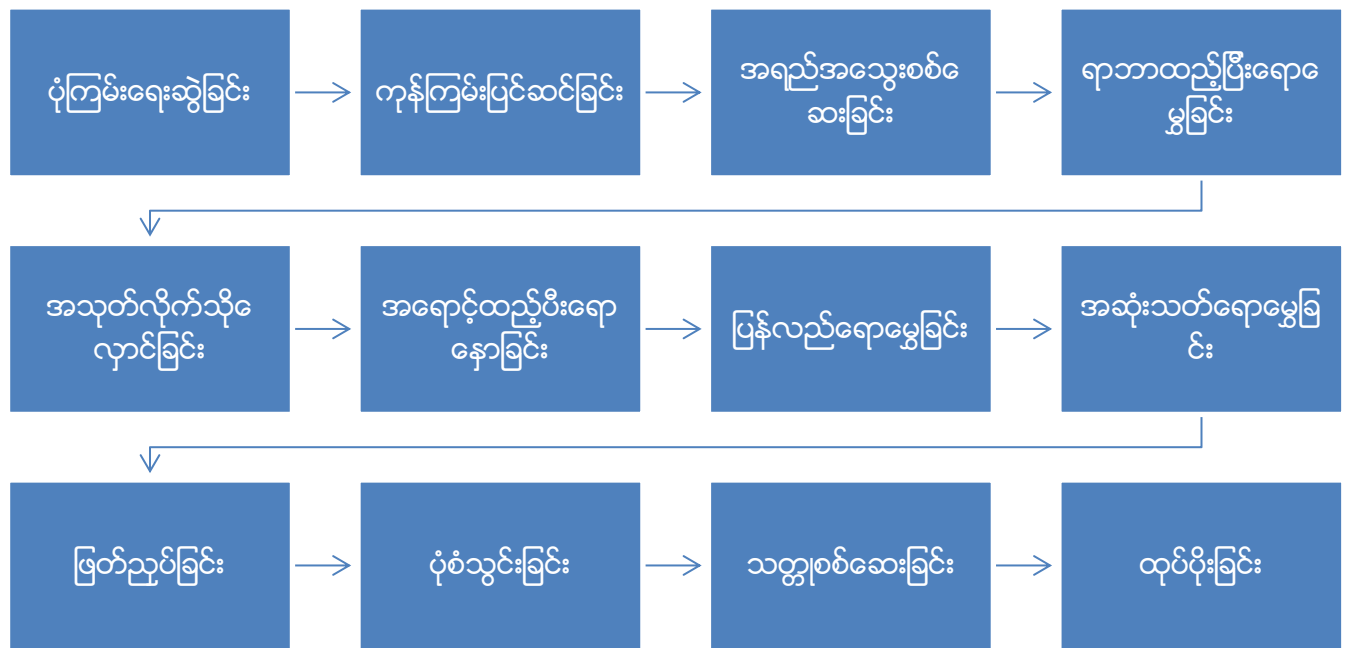
Environmental Management Plan

Yingsheng ၏ကုန်ကြမ်းပစ္စည်းများဖြစ်သည့် Butadiene ရာဘာ၊ SBR၊ Polyethyleneglycol/polyether Titanium dioxide၊ Silica၊ Zinc oxide၊ Accelerator၊ Toner၊ EVA ရာဘာ၊ Talcum အမှုန့်၊ Foaming agent၊ Stearic acid၊ TPR စသည့်လိုအပ်သော ဆက်စပ်ပစ္စည်းများကို တရုတ်နိုင်ငံ၊ ဂျပန်နိုင်ငံ၊ ကိုရီးယား၊ ဥရောပ၊ မွန်ဂိုလီးယား၊ UK တို့မှ မှာယူတင်သွင်းပါသည်။ ကုန်ကြမ်းများကို ကုန်ကြမ်းသိုလှောင်ခန်းတွင် စနစ်တကျ သိုလှောင်ထားရှိပါသည်။



ကုန်ကြမ်းထားရှိမှု ဓာတ်ပုံ

Yingsheng ၏အဓိကထုတ်ကုန်များမှာ ဖိနပ်အောက်ခံဆိုးလ်အမျိုးမျိုး တို့ဖြစ်ပါသည်။ အဆိုပြုလုပ်ငန်းအတွက် တည်နေရာနှင့် စက်ရုံအတွင်းပါရှိသည့် အဆောင်များ၊ စားသောက်ဆောင်၊ စတို၊ ပြုပြင်ထိန်းသေးရေးအခန်း၊ မီးဖိုချောင် အစရှိသည်တို့ကို သီးခြားဖော်ပြထားပါသည်။ ထို့အပြင် ထုတ်လုပ်မှုနည်းလမ်းများ၊ လိုအပ်သည့်ကုန်ကြမ်းများ၊ နှစ်စဉ်ထွက်ကုန်များ နှင့် စက်ပစ္စည်းများအား ဖော်ပြထားပါသည်။ အဆိုပြုလုပ်ငန်းအတွက်လိုအပ်သည့် စွမ်းအင်နှင့် အသုံးပြုသည့်ပမာဏများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။ ကျန်လုပ်ငန်းသုံးယာဉ်နှင့် ရုံးသုံးပစ္စည်းများကို ပြည်တွင်းမှ ဝယ်ယူအသုံးပြုပါသည်။ ကုန်ထုတ်လုပ်ခြင်းလုပ်ငန်းမှာ automatic machine နှင့် လူစွမ်းအားကို အသုံးပြုသော လုပ်ငန်းမျိုးဖြစ်ပါသည်။ ထုတ်လုပ်ပုံအဆင့်ဆင့်ကို အောက်ဖော်ပြပါ ပုံပြဇယားဖြင့် ဖော်ပြထားပါသည်။

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လုပ်ငန်းမှ ပထမနှစ်မှ ၁၀ နှစ်အတွင်းဖိနပ်အောက်ခံဆိုးလ်များ အရေအတွက် (၁၀,၆၀၀,၀၀၀) မှ (၁၁,၆၆၀,၀၀၀)အထိ တိုးမြှင့်ထုတ်လုပ်သွားမည်ဖြစ်သည်။ နိုင်ငံခြားသားလုပ်သား (၄)ဦး နှင့် နိုင်ငံသား (ပြည်တွင်း)လုပ်သား (၁၀၂) ဦးဖြင့် ဆောင်ရွက်သွားမည်ဖြစ်သည်။

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Rubber soles



EVA midsole



IP midsole

ထုတ်ကုန်ဓာတ်ပုံ**အနီးပတ်ဝန်းကျင် အခြေအနေ**

ကနဦး စစ်တမ်းကောက်ယူခြင်းနှင့် ဒေသဆိုင်ရာမှ အချက်အလက်များ ရယူခြင်းသည် အလွန်အရေးကြီးပါသည်။ ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာခြင်းကဲ့သို့သော ကနဦးစစ်တမ်းကောက်ယူခြင်းသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာတွင် အရေးပါသောအခန်းအဖြစ် တည်ရှိနေသည်။ ထို့အတွက် စီမံကိန်းဒေသသို့ ကွင်းဆင်းလေ့လာမှုများကို ၃ ရက်၊ ဒီဇင်ဘာလ၊ ၂၀၁၉ တွင်လက်တွေ့ကွင်းဆင်းလေ့လာခဲ့ပြီးလိုအပ်သည့် လေအရည်အသွေး၊ ဆူညံမှု၊ အလင်း၊ အပူချိန်နှင့် စိုထိုင်းမှု အစရှိသည့် အချက်အလက်များကို ရယူခဲ့ပါသည်။ ကွင်းဆင်းလေ့လာထားသည် အချက်အလက်များကို သက်ဆိုင်ရာခေါင်းစဉ်အလိုက် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့် နှိုင်းယှဉ်၍ ဖော်ပြထားပါသည်။ ထိုနည်းတူ လျှော့ချရမည့်နည်းလမ်းများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။ စီမံကိန်းတည်ရှိရာဒေသရှိ ရာသီဥတု၊ မိုးရေချိန်၊ လူမှုစီးပွားရေးဆိုင်ရာအချက်အလက်များကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

Environmental Management Plan

အဆိုပြုလုပ်ငန်း၏စစ်တမ်းကောက်ယူမှု

အမျိုးအစား	ရလဒ်
ရာသီဥတုအခြေအနေ	
အပူချိန်	၃၇.၁ °C
စိုထိုင်းဆ	၄၇.၀၄ %
ရူညံသံ	
ကုန်ထုတ်လုပ်သည့်နေရာ	၇၅.၁၂ dBA
လေထုအရည်အသွေး	
PM10	၁၈.၆၃ $\mu\text{g}/\text{m}^3$
PM2.5	၁၄ $\mu\text{g}/\text{m}^3$
SO2	၇၁.၈၁ $\mu\text{g}/\text{m}^3$
NO2	၃၉၈.၂၃ $\mu\text{g}/\text{m}^3$

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 လုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	အသင့်အတင့်နှင့် အနည်းငယ် လုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	မြင့်မားနှင့် သိသာစွာလုပ်ငန်းခွင်ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	အလွန်မြင့်မားနှင့် အမြဲတမ်းလုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော
အချိန်	၀-၁ နှစ်	၂-၅ နှစ်	၆-၁၅ နှစ်	လုပ်ငန်း လည်ပတ်စဉ် ကာလ တစ်လျှောက်	လုပ်ငန်းပိတ်သိမ်းခြင်းကာလအထိ
ကျယ်ပြန့်မှု	လုပ်ငန်းခွင်အတွင်း	ဒေသအတွင်း	မြို့နယ်အတွင်း	နိုင်ငံအတွင်း	နိုင်ငံတကာအတွင်း
ဖြစ်နိုင်ချေ	လုံးဝ မဖြစ်နိုင်သော	မဖြစ်နိုင်သော	ဖြစ်နိုင်သော	ဖြစ်နိုင်ချေမြင့် သော	အတိအကျ

$$\text{သတ်မှတ်ချက်} = (\text{ပမာဏ} + \text{အချိန်} + \text{ကျယ်ပြန့်မှု}) \times \text{ဖြစ်နိုင်ချေ}$$

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ပတ်ဝန်းကျင်ထိခိုက်မှုကို အောက်ပါအတိုင်း ခွဲခြားနိုင်သည်။

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

ပတ်ဝန်းကျင် လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
တည်ဆောက်ရေးကာလ။ ။ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာချိန်တွင် စက်ရုံတည်ဆောက်ပြီး လုပ်ငန်းလည်ပတ်နေချိန်ဖြစ်သော်ကြောင့် ဤကာလကိုထည့်သွင်း မစဉ်းစားတော့ပါ။			
လုပ်ငန်းလည်ပတ်ခြင်းကာလ			
လေထုညစ်ညမ်းမှု	သယ်ယူပို့ဆောင်ရေးသုံး မော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့်နှင့် ဖန်လုံအိမ်ခြံတံငွေထွက်ခြင်း လုပ်ငန်းခွင်အတွင်းဖုန်မှုန့်ထွက်ခြင်း မီးဖိုနှင့် ရေနွေးငွေ့ဘိုလ်လာတို့မှ မီးခိုးထွက်ခြင်း အရေးပေါ်သုံးမီးစက်မှာ စွန့်ထုတ်အမှိုက်အငွေ့ ထွက်ခြင်း	အသင့်တင့်	ဘိုလ်လာနှင့်မီးစက် တို့တွင် မီးခိုးခေါင်းတိုင် တပ်ဆင်ခြင်းဖြင့် အမှိုက်အ ငွေ့ကြောင့် ပတ်ဝန်းကျင် ထိခိုက်မှုကို လျော့ချခြင်း၊ စက်ရုံအတွင်းနှင့် အနီး အနားတွင် သစ်ပင်ပန်းမံ စိုက်ပျိုးခြင်းဖြင့် carbon ထွက်ရှိမှုကို လျော့ချပေးခြင်း၊ NOx ထွက်ရှိမှုနည်းသော နည်းပညာဖြင့် စက်ပစ္စည်း များသုံးခြင်း၊ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	မိလ္လာစွန့်ထုတ်ရေ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း	အနည်းငယ်	လက်ရှိရေဆိုးစွန့်ပစ်မှုပုံစံဖြစ်သော မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပေးခြင်း၊ မိလ္လာကန်နှင့် မိလ္လာ စနစ်ကို လူဦးရေနှင့် သင့်တင့်သည့် ပမာဏ ရှိရန် စီစဉ်ထားခြင်း၊ ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	မတော်တစ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း	အလွန်နည်း	စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင် ထိန်းသိမ်းပေးခြင်း။ မတော်တစမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
ဆူညံသံ	ဘိုလ်လာ၊ မီးစက်၊ လေမှုတ်စက် နှင့်	အသင့်တင့်	ဆူညံသံထွက်သောနေရာများကို

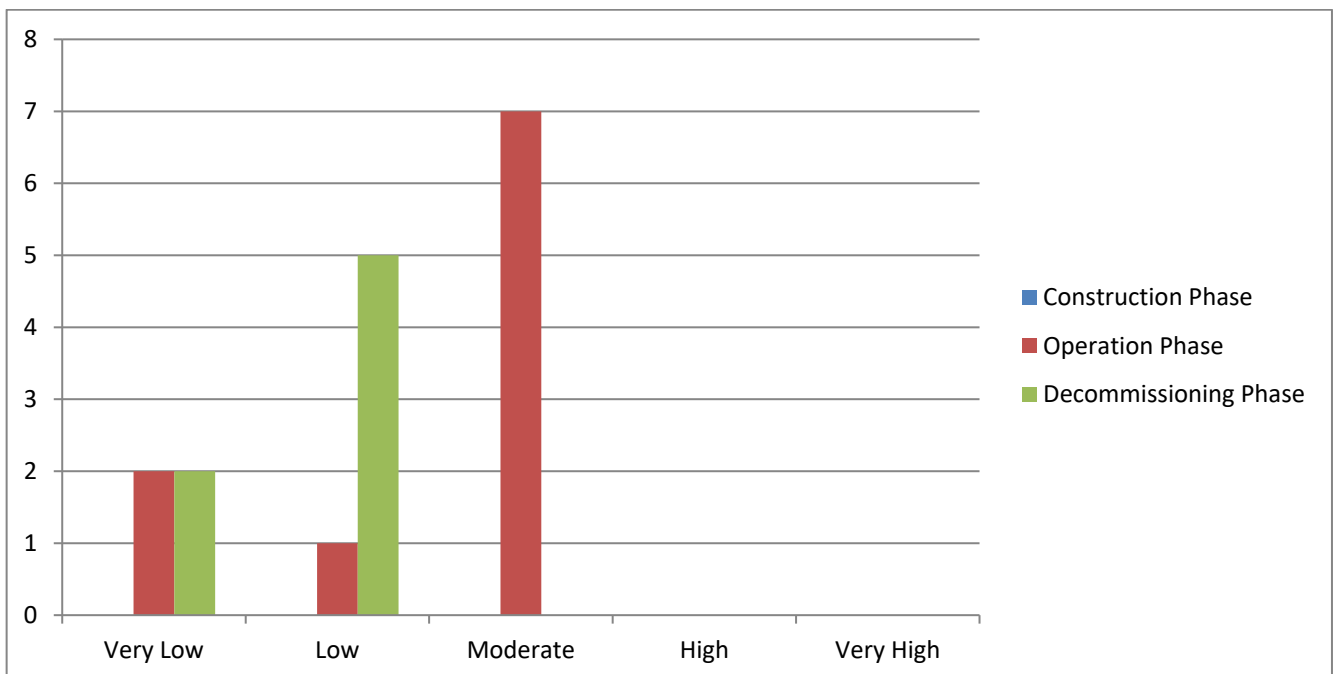
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	မော်တော် ယာဉ် အသုံးပြု မှုကြောင့် ပတ်ဝန်းကျင် ဆူညံမှု		အကာအကွယ် ဖြင့်ထားရှိခြင်း စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ပေးခြင်း
မီးဘေးအန္တရာယ်	ကုန်ကြမ်းသိုလှောင်မှု နှင့် လျှပ်စစ်သုံးစွဲ ပေါ့လျော့မှု	အသင့်တင့်	ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း လျှပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	ထုတ်လုပ်ရာတွင် ကျန်ရှိသော ပိတ်စ အပိုင်းအစများ၊ မီးဖိုချောင်နှင့် ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ	အသင့်တင့်	စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
စွန့်ပစ်အရည်	နေအိမ်၊ စားသောက်ဆောင် တို့မှစွန့်ထုတ်ရေ၊ မိလ္လာကန်စနစ်	အသင့်တင့်	စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များပြုပြင်ထိန်းသိမ်းမှု က ထွက်ရှိသည့်အမှိုက်များ	အလွန်နည်း	စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း
လူမှုစီးပွားဘဝ	ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ရရှိစေခြင်း		
လုပ်ငန်းပိတ်သိမ်းခြင်းကာလ			
လေထုညစ်ညမ်းမှု	အဆောက်အဦများ ဖြိုချမှုများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	NOx ထွက်ရှိမှုနည်းသော နည်းပညာဖြင့် စက်ပစ္စည်း များသုံးခြင်း၊ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	ဖြိုချပစ္စည်းများနှင့် မိလ္လာဖျက်ဆီးမှုများ	အနည်းငယ်	ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း၊ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	အဆောက်အဦနှင့် ဆက်စပ်ပစ္စည်းများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	မတော်တမူ မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
အမှိုက်စွန့်ပစ်မှု	အဆောက်အဦများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အလွန်နည်း	စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များပြုပြင်ထိန်းသိမ်းမှု က ထွက်ရှိသည့်အမှိုက်များ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အလွန်နည်း	စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း

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မတော်တဆ ထိခိုက်မှုများ	အဆောက်အဦများ ဖြိုချမှုများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
လူမှုစီးပွားဘဝ	ဒေသခံပြည်သူများအတွက်အလုပ်အ ကိုင် ခေတ္တရရှိခြင်း		

စီမံကိန်းဆောင်ရွက်ချက်များကြောင့် ပတ်ဝန်းကျင်ဆိုင်ရာအရင်းအမြစ်များ၊ ဂေဟဆိုင်ရာ အရင်းအမြစ်များ၊ လူ့စွမ်းအားအရင်းအမြစ်များနှင့် စွန့်ပစ်ပစ္စည်းများစွန့်ပစ်ခြင်း စသည့်ဖြစ်လာနိုင်သည့်ထိခိုက်မှုများကို ခွဲခြားသတ်မှတ်ပြီး ၎င်းတို့၏ ရလဒ်များကို ထိခိုက်မှုဆန်းစစ်သည့် နည်းလမ်းများကို အသုံးပြု၍ သတ်မှတ်ခဲ့ပါသည်။ စီမံကိန်းအား ထိခိုက်မှုများကို အပိုင်းသုံးပိုင်းခွဲ၍ သတ်မှတ်ထားသည်။ အမျိုးအစားမှာ တည်ဆောက်သည့်ကာလ၊ လုပ်ငန်းလည်ပတ်သည့်ကာလ နှင့် လုပ်ငန်းမျက်သိမ်းသည့်ကာလများ ဖြစ်ပါသည်။ ပတ်ဝန်းကျင်ထိခိုက်မှု လျော့ပါးစေရေး နည်းလမ်းများကိုလဲထည့်သွင်းဖော်ပြထားပါသည်။



ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်

အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် Plan-Do-Check-Act (P D C A) စက်ဝိုင်းဖြင့် အစီစဉ်တကျ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင် စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များ ပါဝင်ပါသည်။ ၎င်း EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် သည် စက်ရုံတွင် ကျန်းမားရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ အဆိုပါစက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ရေရှည်ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်သော ပတ်ဝန်းကျင် အဖြစ်

Environmental Management Plan

အကောင်အထည်ဖော်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ဆိုင်ရာ ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေရန် စီမံခန့်ခွဲမှုအစီအစဉ်များနှင့် စောင့်ကြပ်ကြည့်ရှုရမည့်အစီအစဉ်များကို အောက်ပါအတိုင်းပတ်ဝန်းကျင်ဆိုင်ရာ အကြောင်းအရာတစ်ခုချင်းစီအလိုက် ခွဲခြားမှု ပြုလုပ်ထားပါသည်။

- ၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်
- ၂။ ရေသုံးစွဲမှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်
- ၃။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်
- ၄။ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်
- ၅။ ဆူညံမှုထိန်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်
- ၆။ အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်
- ၇။ စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်
- ၈။ လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ် CSR Plan
- ၉။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် ငွေကြေးလျာထားမှု
- ၁၀။ မကြေနပ်မှု ဖြေရှင်းခြင်း နည်းလမ်း

အဆိုပြုလုပ်ငန်း၏ လူထုအကျိုးတူပူးပေါင်းပါဝင်မှုများအဖြစ် အကျိုးအမြတ်၏ ၂% ကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်ပယ်ဖွံ့ဖြိုးတိုးတက်ရေးများတွင် ထည့်ဝင်လှူတန်းသွားမည်ဖြစ်ပါသည်။ အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးလုပ်ဆောင်ရမည့် လုပ်ငန်းစဉ်များနှင့် ဖြေရှင်းရမည့်နည်းလမ်းများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်တွင် စက်ရုံ၏ EMPအစီရင်ခံစာ အကြောင်းကို ရှင်းလင်းတင်ပြခြင်းဖြစ်သည်။ တွေ့ဆုံပွဲကို ၇ ရက်၊ ဖေဖော်ဝါရီလ၊ ၂၀၂၀ ခုနှစ်တွင် အနော်ရထာစီမံခန့်ခွဲရေးရုံး၊ အစည်းအဝေးခန်းမ၊ လှိုင်သာယာမြို့နယ်တွင် ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲတွင် စက်ရုံ၏သက်ဆိုင်ရာပုဂ္ဂိုလ်များ၊ အစိုးရအဖွဲ့ရုံးများဖြစ်သော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၊ စက်မှုကြီးကြပ်နှင့် စစ်ဆေးရေး ဦးစီးဌာန ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သန့်ရှင်းရေးဌာန အစရှိသော သက်ဆိုင်ရာဌာနများ၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှု ကော်မတီ၏ တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုအပ်သည်များကို အကြံပေးခြင်း၊ စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြုချက်များပေးခဲ့ပါသည်။ ပြုလုပ်ခဲ့သည့် အစီအစဉ်အကျဉ်းကိုပါ ထည့်သွင်းဖော်ပြထားပါသည်။

Environmental Management Plan

အချိန်	၇ ရက်၊ ဖေဖော်ဝါရီလ၊ ၂၀၂၀ ခုနှစ် (သောကြာနေ့)
နေရာ	အနော်ရထာစီမံခန့်ခွဲရေးရုံး၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်မြို့။
အစီအစဉ်အကျဉ်း	<ul style="list-style-type: none"> စက်ရုံနောက်ခံအကြောင်း စက်ရုံလုပ်ငန်းအကြောင်း ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေးအစီအစဉ် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ် အမေးအဖြေကဏ္ဍ

နိဂုံး

စီမံကိန်းဖော်ဆောင်သည့် အချိန်အတွင်း ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ၊ လျော့ချရေး နည်းလမ်းများ၊ အစီအစဉ်များ၊ တိုင်းတာမှုများ စသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များကို လုပ်ဆောင်ရပါသည်။ Yingsheng မှ စက်ရုံတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် အဖွဲ့အစည်းဖွဲ့စည်းခြင်း၊ ပုံမှန်ဆန်းစစ်လေ့လာခြင်းများ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ ပတ်ဝန်းကျင် လေထုအရည်အသွေး၊ မိလ္လာစနစ်၊ စွန့်ပစ်အစိုင်အခဲ စွန့်ပစ်မှုများကို စက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အဖွဲ့အစည်းမှ ဆန်းစစ်သွားမည်ဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်းမှ လူထုအကျိုးပြုလုပ်ငန်းများ နှင့် အရေးပေါ်ဆောင်ရွက်ချက်များ၊ ဒေသဆိုင်ရာ အကျိုးပြုလုပ်ငန်းများကို လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။

အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒလမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြရှင်းလင်းတင်ပြထားပါသည်။ စီမံကိန်းနှင့် သက်ဆိုင်သူများအား စီမံကိန်းဆိုင်ရာ အကြောင်းအရာများ ရှင်းလင်းတင်ပြခြင်း၊ အကြံပြုချက်များနှင့် ဆွေးနွေးတင်ပြလာသည့် သဘောထား အကြံဉာဏ်များကိုရယူပြီး အစီအရင်ခံစာတွင် ဖော်ပြထားပါသည်။

အကြံပြုချက်များအရ-

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

Environmental Management Plan

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

အချုပ်အားဖြင့်ဆိုသော် အဆိုပြုသူသည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာနမှ ညွှန်ကြားလာသော အဆိုပြုချက်များ၊ အကြံပြုချက်များကို လိုက်နာဆောင်ရွက်ရမည်။ ထိရောက်သော ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုကို အဆိုပြုသူမှ ဆောင်ရွက်ရမည်။ အဆိုပြုသူသည် ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း လိုက်နာဆောင်ရွက်မည်။

EXECUTIVE SUMMARY

Introduction

Environmental 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 Yingsheng (Myanmar) Company Limited (YingSheng). 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.

The project is new investment for manufacturing of High-Quality soles from China. The project is issued by the Yangon Region Investment Committee (YRIC) on 22 July 2019 with the Endorsement No. (YGN- 225/2019). 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 shoe's soles of Yingsheng (Myanmar) Company 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) (1285/2019) on 22 July 2019. Therefore, Yingsheng commissioned Myanwei Environmental Solutions Company Limited (Myanwei) 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 manufacturing of shoe's soles under CMP system and 100% export to local factory and describes director list, salient features of proposed project and also describes the responsible person and his responsibility of this EMP report.

Policy, Legal and Institutional Framework

The main purpose of this EMP report is to obey the rules and regulations of Local and International Environmental Protection programs and harmonize with the environmental National Laws and Regulations, International Guidelines are referred for Environmental Management Plan of the proposed project. And also described the commitment of Yingsheng.

1. The Constitution Law, 2008

Environmental Management Plan

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. Foreign Investment Law, 2012
8. Foreign Investment Rule, 2013
9. Myanmar Investment Rule, 2017
10. Myanmar Insurance Law, 1993
11. Payment of Wages Law, 2016
12. The Payment of Wages Act, 1936
13. Yangon City Development Committee Law, 2018
14. The Amended Law for Factories Act, 1951 (2016)
15. The Private Industrial Enterprise Law
16. The Export and Import Law, 2012
17. The Prevention of Hazard from Chemical and Related Substances Law, 2013
18. The Underground Water Act
19. Myanmar Fire Brigade Law, 2015
20. Fire Safety Procedure
21. The Electricity Law, 2014
22. Boiler Law, 2015
23. Labor Dispute Settlement Law, 2012
24. The Law Amending the Settlement of Labor Dispute Law, 2019
25. The Social Security Law, 2012
26. The Employment and Skill Development, 2013

Environmental Management Plan

27. The Worker's Compensation Act, 1923
28. The Leave and Holidays Act (1951, partially reused in 2014)
29. The Minimum Wage Law, 2013
30. Public Health Law, 1972
31. Prevention and Control of Communicable Disease Law (1995 Amendment in 2011)
32. Occupational Safety and Health Law, 2019
33. The Law on Standardization
34. လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများဆိုင်ရာ ဥပဒေ (2018)
35. The Motor Vehicles Law, 2015
36. The Conservation of Water Resources and River Law, 2006
37. The Commercial Tax Law (1990 Amended 2014)

Project Description**Information of Investor**

Investor Name:	Mr. Liu Lunquan
ID No.:	E89017790
Citizenship:	Chinese
Address of Registration office:	Room 4601, Villa Area, Putaozhuangyuan Dongguan City, Wanjiang District, Guangdong Province, China.

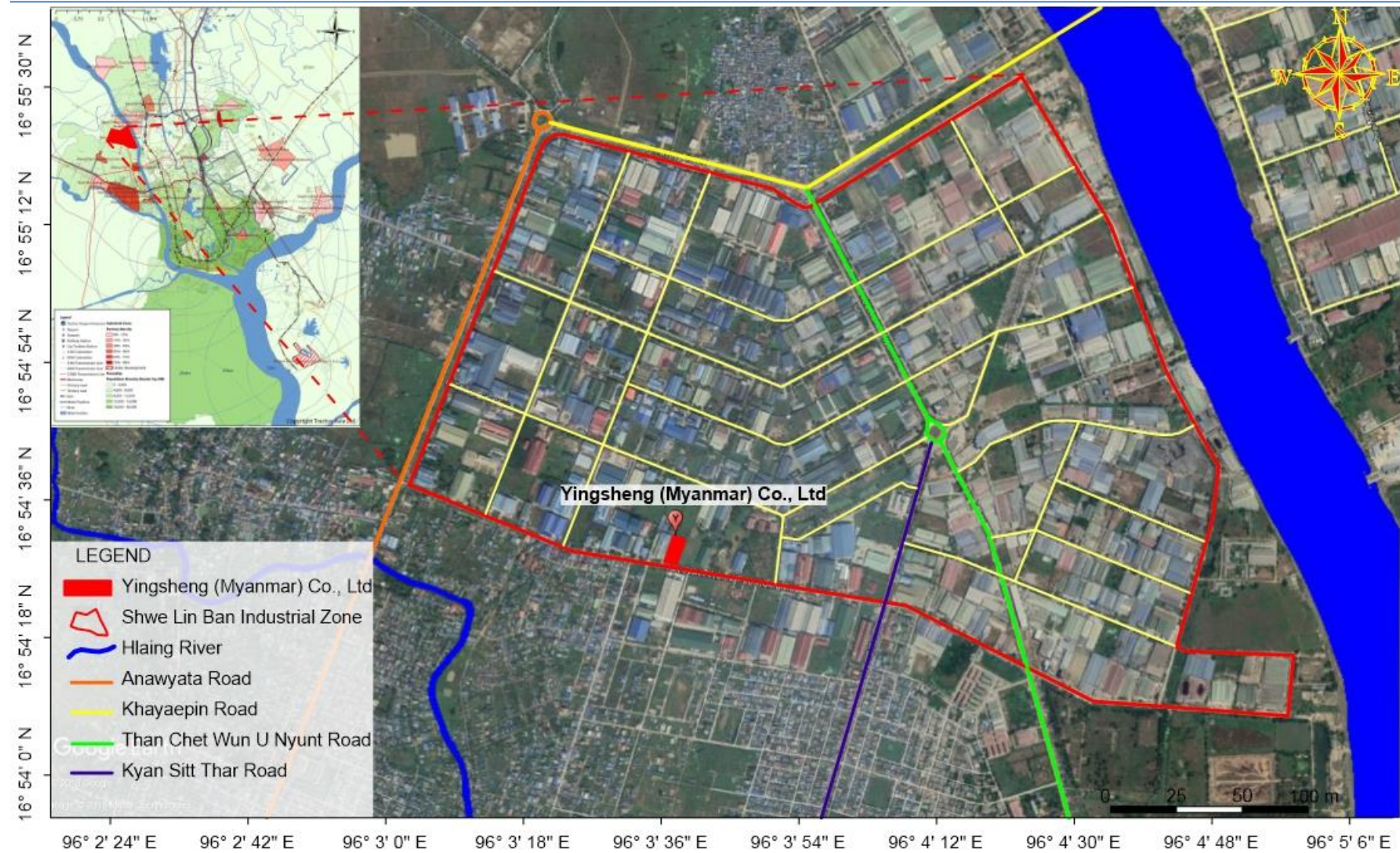
Salient Features of the Proposed Project

Type of Proposed Business	Manufacturing of shoe's sole for CMP enterprises
Type of investment	100% Foreign Investment
Name of Company	Yingsheng (Myanmar) Company Limited
Land lease year	30 years
Total land area	2.347 acres (9497.972 sq meter)
Type of land	Industrial Land
Construction Period	1 year
Address of Proposed Project	Plot No. (102), Myay Taing Block No. (25), Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region
Contact Person	Ma Thi Thi Han 09-254142707/09-770853114

Environmental Management Plan

The proposed project is located at Yangon region. The total area of project site is 2.347 acres (9497.972 square meters). This factory has 2 storey factory building (140ft x 120ft), 1 storey factory building (140ft x 60ft) and 2 storey factory building (140ft x 100ft). Transformer room, generator room and water treatment plant are separated by main factory building structure. The factory layout plan, which is also can be seen in this report.

Environmental Management Plan

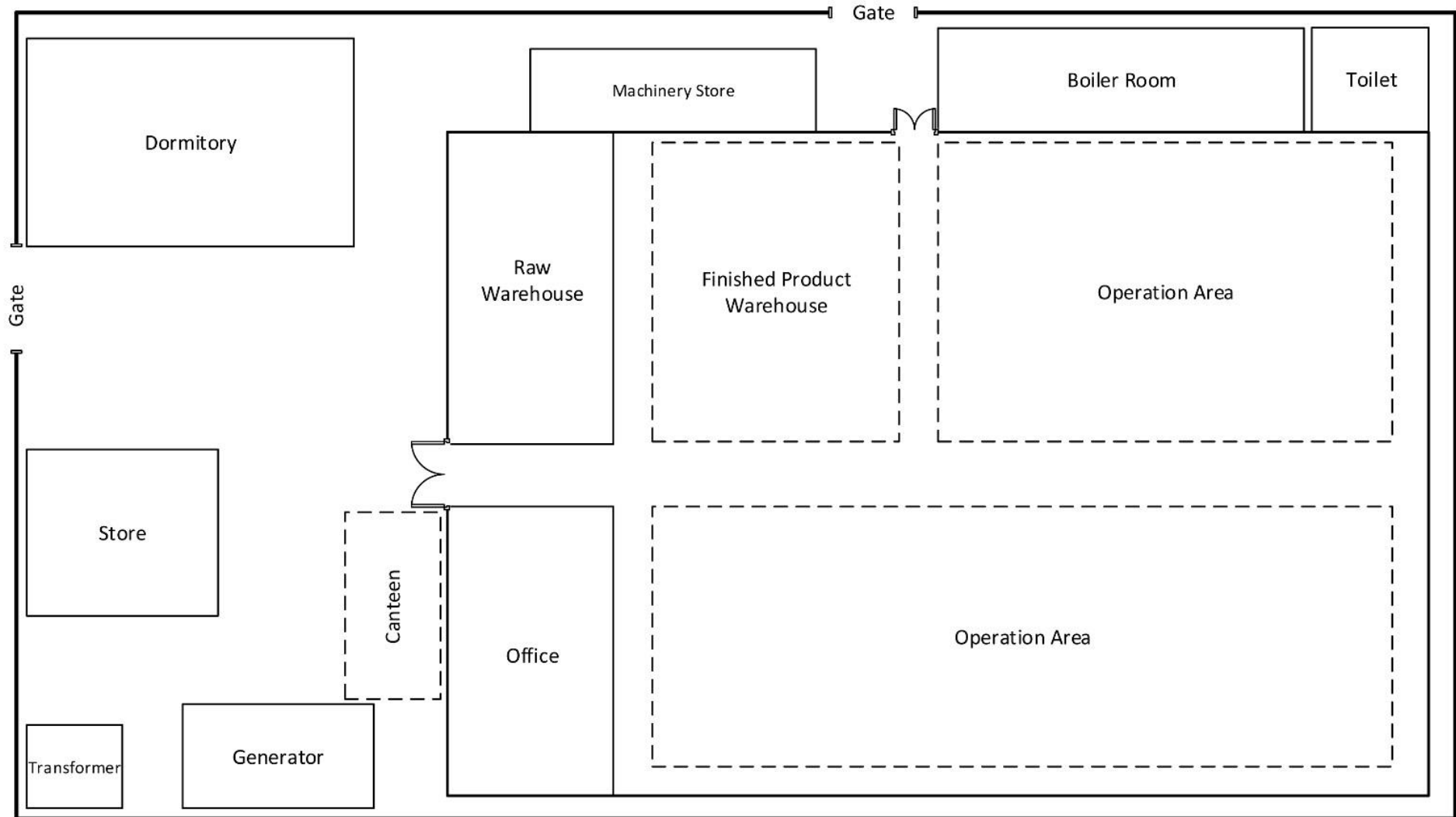


Location map of Yingsheng (Myanmar) Company Limited

Environmental Management Plan



Yingsheng (Myanmar) Company Limited Site Layout Drawing

Environmental Management Plan**Factory Layout Drawing**

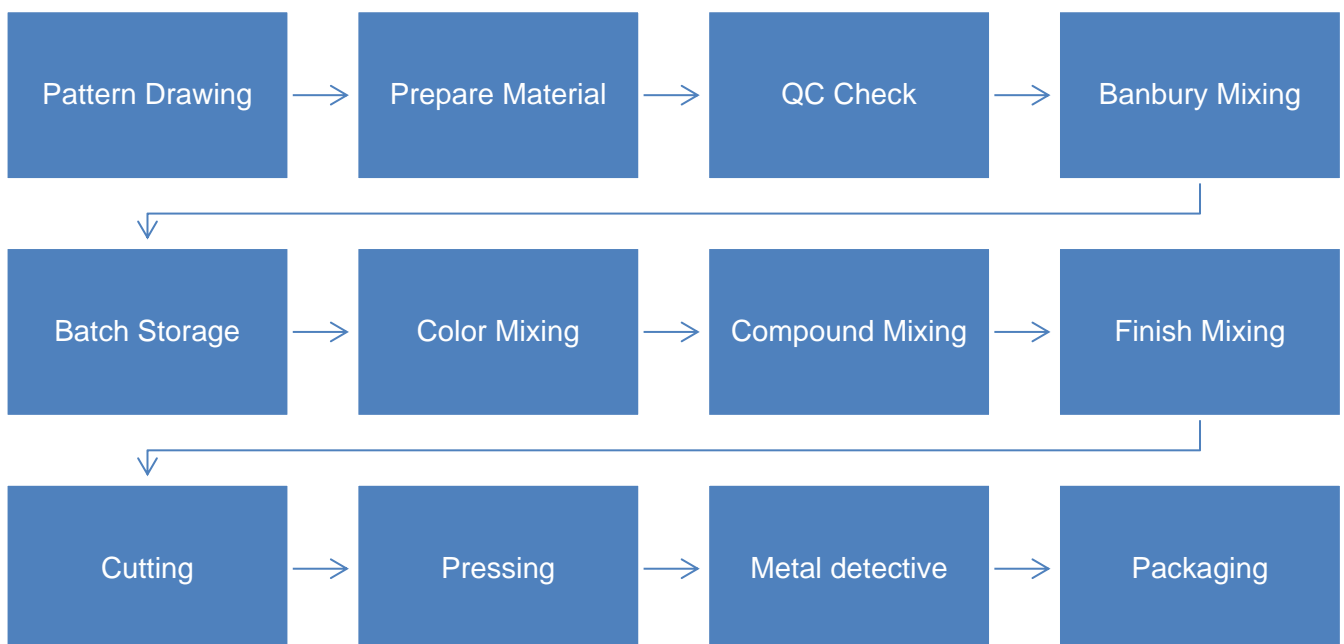
Environmental Management Plan

The main Raw Materials are Butadiene Rubber, SBR, Polyethylene glycol/polyether, Titanium dioxide, Silica, Zinc oxide, Accelerator, Toner, EVA Rubber, Talcum Powder, Foaming agent, Stearic acid and TPR which imported from China, Japan, Korea, Europe, Mongolia and UK which are stored in factory warehouse.



Raw Storage Photo

The main product of the Yingsheng factory is various kinds of shoe's soles. 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 run the steam boiler and to provide lighting.



Production Process of Yingsheng

Production rate of Yingsheng factory is produced between first year of operation and ten years' operation as 10,600,000 to 11,660,500 pieces annually. It is required of work force (4) foreigner technician and (102) local employees for first year operation to 10 years operation.

Environmental Management Plan



Rubber soles



EVA midsole



IP midsole

Product Photos**Brief Description of Surrounding Environment**

Primary data and secondary data collections are very important to assess environmental impacts. Primary data collections (environmental quality measurements and monitoring) play an important role for conducting EMP. Therefore, Myanmar conducted air quality, temperature and humidity, noise level measurement and light pollution measurement on 3 December 2019 and compared with the National Environmental Quality (Emission) Guidelines and also described how to reduce the impact and how to maintain the pollutions. Also described the weather conditions, rainfalls and socio-economic component of the proposed project.

Environmental Management Plan**Survey Result in Proposed Project**

Type	Result
Weather Condition	
Indoor Temperature	37.1 °C
Humidity	47.04 %
Noise Level	
Project Site (Production Area)	75.12 dBA
Air Quality	
PM ₁₀	18.63 µg/m ³
PM _{2.5}	14 µg/m ³
SO ₂	71.81 µg/m ³
NO ₂	398.23 µg/m ³

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

Evaluation and Perdition of Significant Impacts

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							

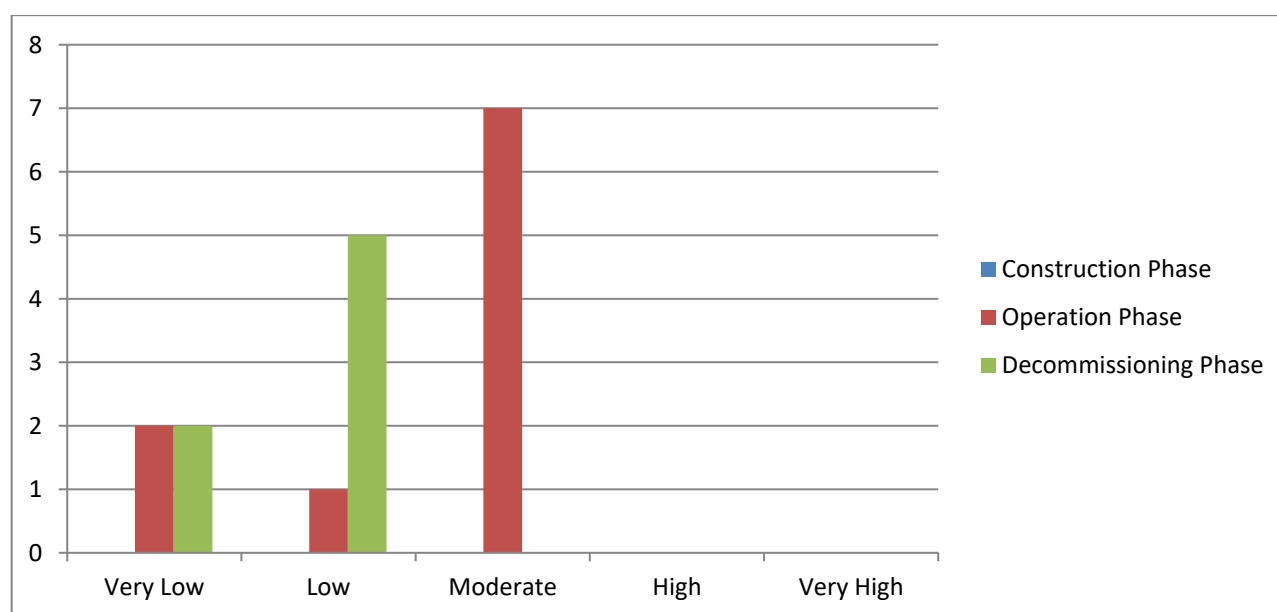
Environmental Management Plan

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
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 (rice briquettes) and kitchen Emission from emergency diesel generator	4	4	2	4	40	Moderate
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
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	4	4	1	4	36	Moderate
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	Moderate
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	3	1	1	4	20	Low

Environmental Management Plan

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
	related materials Transportation of demolished materials						
Water pollution	Sewage form decommissioning workers Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	Decommissioning of buildings and related materials Transportation of demolished materials	3	1	1	3	15	Low
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

According to the result of analysis, it can be concluded that most of the project activities have low significance on environment, in all phases. Project activities that can produce solid waste and liquid waste are moderate significance. Moreover, project activities that emit dust and GHGs and accidental cases are moderately significant. Fire hazard potential of the proposed project and noise pollution are highly significant. But this can be prevented or mitigated by using the following mitigation measures. The following figure shows the impact significance of the proposed project.



Impact significance of the proposed factory project

Environmental Management Plan**Environmental Management Program**

The proposed project of environmental management plan, which need to made the PDCA plan especially Plan-Do-Check-Act cycle. 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 Yingsheng 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 Yingsheng factory are as follows:

- Air pollution/Dust Management plan
- Water Consumption Management Plan
- Wastewater Management Plan
- Solid Waste Management plan
- Noise Management
- Emergency Response plan
- Environmental Monitoring and Reporting
- Corporate Social Responsible (CSR) Plan
- Budget Plan
- Grievance Redress Mechanism

Yingsheng 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%
2.	Non-profit training	1
3.	Employee healthcare	0.5%

Public Consulting

This chapter presents results of public consultation and information disclosure conducted for the Yingsheng 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 7, February 2020, 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.

Environmental Management Plan

Time and Date	7 February 2020 (Friday) 10:30-12:30
Venue	Anawrahta Office, Hlaing Tharyar Township, Yangon.
Agenda	<ul style="list-style-type: none"> • 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

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 shoe's soles 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.

Environmental Management Plan**1. INTRODUCTION**

Environmental 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 Yingsheng (Myanmar) Company Limited (Yingsheng). 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. PROJECT BACKGROUND

The project is new investment for manufacturing of shoe's soles conducted by Yingsheng (Myanmar) Company Limited. The Yangon Region Investment Committee (YRIC) issues the endorsement of project on 22 July 2019 with the No. YGN- 225/2018. YRIC is 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 Inner and Outer soles.

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) (1285/2019) on 22 July 2019. Therefore, Yingsheng (Myanmar) Company Limited commissioned Myanwei Environmental Solutions Company Limited (Myanwei) for EMP report study.

1.2. PROJECT PROPONENT PROFILE

This is the information of project proponent from the MIC's registration that is describing in below Table 1-1 and Table 1-2.

Table 1-1 Information of Investor

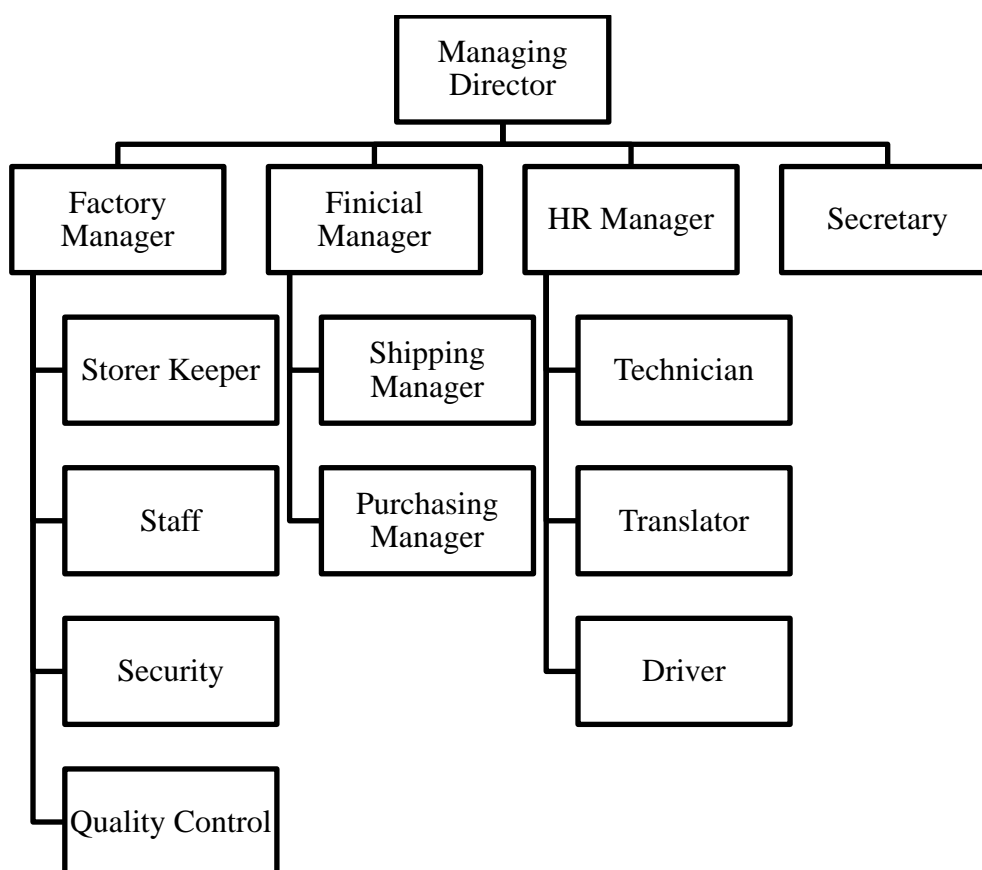
Investor Name:	Mr. Liu Lunquan
ID No.:	E88237457
Citizenship:	Chinese
Address of Registration office:	Room 4601, Villa Area, Putaozhuangyuan Dongguan City, Wanjiang District, Guangdong Province, China.

1.2.1. Investment Plan and Salient Features of the Project

The estimated authorized capital investment is 0.382 million US Dollar (Table 1-2). Organization chart of Yingsheng (Myanmar) Company Limited is presented in Figure 1-1.

Environmental Management Plan**Table 1-2 Salient features of the project**

Type of Proposed Business	Manufacturing of shoe's sole for CMP enterprises
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	4.546 acres (18,397.009 sq m)
Total building area	2.347 acres (9497.972 sq m)
Land lease year	30 years
Construction period	1 year
Operation starting date	30 years investment permit
Address	Plot No. (102), Myay Taing Block No. (25), Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Contact person	Ma Thi Thi Han 09-254142707/09-770853114

**Figure 1-1 Organization Chart of Yingsheng (Myanmar) Company Limited****1.3. 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 environmental team conducted field

Environmental Management Plan

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.

Myanwei Environmental Solutions Company Limited	No. 36-38, 9 th floor (A), Grand Myay Nu Condo, Myay Nu Street, Sanchaung Township, Yangon, Myanmar.	01-501221 env@myanweiconsulting.com www.myanweiconsulting.com.
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Table 1-3 Member of EMP Study Team

Member List	Responsibility
Dr. Hein Lynn Aung (Director) M.B, B.S (Yangon), Master of Management from Australia	Health Impact Assessment, Mitigation and Monitoring Report Reviewing
Mr. Lin Htet Sein (Environmental Consultant) MSc (Regional Geology) BSc (Hons) Geology	Base Line Data Collecting Management, Project Description, Legal Assessment, Impact Assessment, Mitigation Measure, Monitoring plan, Report Preparation and Reviewing
Mr. Sai Poeng Saing Kham (Member) B.A History	Report Writing, Secondary Data Study
Mr. Kyaw Win Han (Member) B.E. Chemical Engineering B. Tech Chemical Engineering	Baseline Data Monitoring, Site Surveying Communication with Stakeholder in Project Area
Mr. Aung Kyaw Moe (Member) B.E. Chemical Engineering B. Tech Chemical Engineering	Report Writing, Secondary Data Study
Mr. Saw Yan Naung (Member) B.E. Chemical Engineering B. Tech Chemical Engineering	Baseline Data Monitoring, Site Surveying, Communication with Stakeholder in Project Area
Mr. Myat Ko Ko (Member) B.Sc (Hons) Geology M.Sc (Economic & Mining Geology)	Baseline Data Monitoring, Site Surveying, Communication with Stakeholder in Project Area
Mr. Si Yan Hein (Member) B.Sc (Geology)	Baseline Data Monitoring, Site Surveying, Communication with Stakeholder in Project Area
Ms. Khin Thuzar Myint (Member) B.E. Materials and Metallurgy Engineering Diploma in Environmental Planning and Management	Report Writing, Secondary Data Study
Mr. Htoo Nanda Aung (Member) B.Sc (Forestry)	Baseline Data Monitoring, Site Surveying, Communication with Stakeholder in Project Area

Environmental Management Plan

Member List	Responsibility
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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 FRAMEWORK

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.
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;

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Law and Regulation	Description
Provisions of Duties and Powers relating to the Environmental Conservation of the Ministry: Section 7	<p>(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;</p> <p>(b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(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.</p>
Chapter VI Environmental Quality Standards: Section10	<p>The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards:</p> <p>(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;</p> <p>(b) water quality standards for coastal and estuarine areas;</p> <p>(c) underground water quality standards;</p> <p>(d) atmospheric quality standards;</p> <p>(e) noise and vibration standards;</p> <p>(f) emissions standards;</p> <p>(g) effluent standards;</p> <p>(h) solid wastes standards;</p> <p>(i) other environmental quality standards stipulated by the Union Government.</p>
Section 14	A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards.
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	<p>A person or organization operating business in the industrial estate or business in the SEZ or category of business stipulated by the Ministry:</p> <p>(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;</p> <p>(b) shall contribute the stipulated users 'charges or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization;</p> <p>(c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, SEZ or business.</p>

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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 o 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.
Environmental Impact Assessment Procedure (December 2015)	
Objectives	<p>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.</p> <p>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</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p>

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	<p>submit within 7 days from knowing it, under paragraph 107.</p> <p>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.</p> <p>The project proponent has to prepare the monitoring report in accord with the rule 109.</p> <p>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.</p> <p>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 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.</p> <p>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.</p> <p>The project proponent has to allow inspector to inspect the contractor and sub-contractor who implement on behalf of project, under paragraph 117.</p>
Screening: Section 23	<p>a) The project proponent shall submit the Project Proposal to the Ministry for Screening.</p> <p>b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment.</p> <p>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:</p> <p>i) An EIA Type Project, or</p> <p>ii) An IEE Type Project, or</p> <p>iii) A Non-IEE or EIA Type, and therefore not required to</p>
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	<p>Vision</p> <p>A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar.</p> <p>Mission</p> <p>To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all policies, laws, regulation, plans, strategic, programmes and projects in Myanmar.</p>
Foreign Investment Law, 2012	
Section 8	(a) To support the primary objectives of the national economic development plan, and for businesses that cannot yet be run by the State and citizens or businesses that have insufficient funds and technology.

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	(b) Development of employment activities (l) Protection and conservation of the environment. (q) Appearing the required modern services for the Union and citizens.
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. (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.
Foreign Investment Rule, 2013	
Rule 54	The promoter or investor shall: (a) comply with Environmental Protection Law in dealing with environmental protection matters related to the business; (b) shall carry out socially responsible investment in the interest of the Union and its people; (c) shall co-operate with authorities for occasional or mandatory inspection; (d) shall exercise due diligence to be in conformity and harmony with norms and standards prescribed by relevant Union Ministry in conducting construction of factories, workshops, buildings, and other activities; (e) shall enforce Safety and Health
Myanmar Investment Rules, 2017	
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

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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, 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

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	the license.
The Prevention of Hazard from Chemical and Related Substances Law, 2013	
<p>This law was enacted with the objectives of:</p> <ul style="list-style-type: none"> 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. <p>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.</p>	
Underground Water Act	
<p>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.</p>	
Myanmar Fire Brigade Law (2015)	
<p>The Pyidaungsu Hluttaw enacted this law by Law No.11/2015 on the date of 17th March, 2015 with the following objectives:</p> <ul style="list-style-type: none"> (a) to take precautionary and preventive measures and loss of state own property, private property, cultural heritage and the live and property of public due to fire and other natural disasters (b) to organize fire brigade systemically and to train the fire brigade (c) to prevent from fire and to conduct release work when fire disaster, natural disaster, epidemic disease or any kind of certain danger occurs (d) to educate, organize and inside extensively so as to achieve public corporation (e) to participate if in need for national security, peace for the citizens and law and order 	
Section-8 Fire Safety Procedures	
Rule17	<p>The relevant Government Department or organization shall, for the purpose of precaution and prevention obtain the approval of the Fire Force Department before granting permission for the following cases:</p> <ul style="list-style-type: none"> a) Constructing three-storied and above buildings market and condominium buildings, b) Operating hotel, motel, guest house enterprise c) Constructing factory, workshop, storage facilities and warehouse d) Operating business expose to fire hazard by using in inflammable materials or explosive materials e) Producing and selling fire-extinguishing apparatuses f) f. Doing transport business, public utility vehicles train, airplane, helicopter, vessel, ship, Tonkin-tug
Rule18	<p>The relevant government department or organization shall obtain the opinion of the Fire Services Department for the purpose of fire precaution and prevention, when laying down plans for construction for town, village and downtown or village development plans</p>

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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.	
Boiler Law (2015)	
Chapter (2) Objective	<p>The objectives of this law are as follows:</p> <ul style="list-style-type: none"> (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:	<p>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</p> <p>Only the results obtained from the prescribed boiler standards and inspection methods will be approved.</p>
Chapter (4). Boiler Registration	<p>5. Anybody who would like to use a boiler in any kind of business should be registered.</p> <p>6. Boiler should be manufactured according to Myanmar Standards or International Standards.</p> <p>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</p> <p>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.</p> <p>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.</p> <p>10. The Inspector General shall define boiler size according to heated surface area in accordance with adopted procedures.</p>
Chapter (13) Prohibitions	<p>59. According to Section 21, nobody must alter, change, deface, deform or make embossed registration unnoticeable illegitimately.</p> <p>60. Nobody is allowed to repair a boiler without boiler repair certificate.</p> <p>61. Nobody is allowed to maintain a boiler without boiler maintenance certificate.</p> <p>62. Nobody must alter safety relief valve in order to exceed the allowable pressure due to his consent or direction given by the owner.</p> <p>63. Nobody must manufacture boilers against Section 25, Subsection 25 (a)</p>

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	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
Section 51	The project proponent has to pay the compensation decided by Tribunal if violates any act or any 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.

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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
Objectives	<p>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</p> <p>The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law.</p> <p>The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law.</p> <p>The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.</p>
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	<p>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;</p> <p>The public shall abide by measures undertaken by the Department of Health under sub-section (a).</p>
Chapter 4 Environmental Sanitation	<p>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; -</p> <p>Indoor, outdoor sanitation or inside the fence outside the fence sanitation;</p> <p>Well, ponds and drainage sanitation;</p> <p>Proper disposal of refuse and destruction thereof by fire;</p> <p>Construction and use of sanitary latrines;</p> <p>Other necessary environmental sanitation measures.</p>
Occupational Safety and Health Law (2019)	
Purpose:	To effectively implement measures related to safety and health in every industry

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	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.
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	
Objectives	<p>The Objectives of this Law are as follows:</p> <ul style="list-style-type: none"> 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 program.
Chapter 7 Taking Action by Committee No. 19	<p>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:</p> <ul style="list-style-type: none"> warning suspending the certificate of certification for limited period cancelling the certificate of certification
လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ (၂၀၁၈)	
ရည်ရွယ်ချက်	<p>လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများကို စနစ်တကျပြုလုပ်ခြင်း၊ တင်သွင်းခြင်း၊ သယ်ယူခြင်း၊ သိုလှောင်ခြင်းနှင့် သုံးစွဲခြင်းတို့ပြုနိုင်ရန်၊</p> <p>ယမ်းဘီလူးနှင့် ဆက်စပ်သုံးပစ္စည်းများ အသုံးပြုသည့် လုပ်ငန်းခွင်ဘေးအန္တရာယ် ကင်းရှင်း၍ လုံခြုံမှုရှိစေရန်၊</p> <p>လုပ်ငန်းခွင်သုံး ပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများ ပြုလုပ်သုံးစွဲမှုများကို စနစ်တကျ ကြီးကြပ်နိုင်ရန်။</p>
အခန်း ၇	လိုင်စင်ရရှိသူနှင့် ခွင့်ပြုချက်ရရှိသူ မည်သူမျှ စစ်ဆေးရေးအရာရှိချုပ် သို့မဟုတ်

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Law and Regulation	Description
တားမြစ်ချက်များ အမှတ် ၁၈	စစ်ဆေးရေးအရာရှိ၏ စစ်ဆေးခြင်းကို ခံယူရန် ငြင်းပယ်ခြင်းမပြုရ။
အမှတ် ၁၉ (ခ)	ပုဒ်မ ၈ အရ ကာကွယ်ရေးဌာနကောင်စီ အမှုဆောင်အဖွဲ့၏ အတည်ပြုချက်မရရှိဘဲ လုပ်ငန်းခွင် ပေါက်ကွဲစေတက်သော ပစ္စည်းများကို ဖျက်ဆီးခြင်းမပြုရ။
အမှတ် ၁၉ (ဂ)	ဤဥပဒေအရ ထုတ်ပြန်သည့် နည်းဥပဒေ၊ စည်းမျဉ်း၊ စည်းကမ်း၊ အမိန့်ကြော်ငြာစာ၊ အမိန့်နှင့် ညွှန်ကြားချက်များနှင့်အညီ ဆောင်ရွက်ရန် ပျက်ကွက်ခြင်း မရှိစေရ။
The Motor Vehicles Law (2015)	
Objectives	When the constructions periods and if it is needed in operation and production period for all vehicles <ul style="list-style-type: none"> 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 (2006)	
Aims	The aims of this Law are as follows: <ul style="list-style-type: none"> (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 5 Prohibitions No. 8	No person shall: <ul style="list-style-type: none"> (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.
No. 10	No person shall anchor the vessels where vessels are prohibited from anchoring in the rivers and creeks.
No.11 (a)	No person shall: 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.
No. 12	No person shall carry out growing of garden, digging, filling, silt trapping, closing pond, dyke building or erecting spur in the river-creek boundary, bank boundary and waterfront boundary without the permission of the relevant government department and organization.
No. 15	No person shall carry out the construction of switchback, dockyard, wet dockyard, water-tight dockyard, building of jetty, pier, landing stage or vessel landing by drainage in the river-creek boundary, bank boundary and waterfront boundary without the permission of the Directorate.
The Commercial Tax Law (1990) Amended 2014	
Chapter 5 Registration and Intimation of Commencement of Enterprise 11 (b)	Any Person who commences operation of a goods production enterprise or service enterprise shall furnish letter of intimation on the commencement of the operation as such to the relevant Township Revenue Officer as stipulated by regulations.

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Law and Regulation	Description
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, MOECF 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 Guidelines-1 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

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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	40
	1-hour	200
Ozone	8-hour	100
Particulate Matter PM10 ^a	1-year	10
	24-hour	50
Particulate Matter PM2.5 ^b	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter

2.2.3. Noise Levels

Noise prevention and mitigation measures should be taken by all projects where predicted or measured noise impacts from a project facility or operation exceed the applicable noise level guideline at the most sensitive point of reception. Noise impacts should not exceed the levels shown below, or result in a maximum increase in background levels of three decibels at the nearest receptor location off-site.

Table 2-3 Noise Level Standard of NEQG

Receptor	One Hour LAeq (dBA)	
	Day Time (7:00-22:00) (10:00-22:00 for public holidays)	Night Time (22:00-7:00) (22:00-10:00 for public holidays)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

2.2.4. 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

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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 2-4 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

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.

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Total suspended solids	mg/l	50
Zinc	mg/l	2

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

2.2.5. 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 2-5 shows the contents of the section of Community Health and Safety.

Table 2-5 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.
Emergency	All projects should have an Emergency preparedness and Response Plan that is

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Contents	Brief Description
preparedness and Response	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 (MOECF) 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 YINGSHENG (MYANMAR) COMPANY LIMITED

Yingsheng (Myanmar) Company Limited has made the commitments and 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 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.

- The accuracy and completeness of the EMP,
- That the EMP has been prepared in strict compliance with applicable laws including this Procedure
- That the Project will at all times comply fully with the commitments, mitigation measures, and plans in the EMP Report.
- Monitoring the factory area operations according to EMP and Environmental Monitoring Plan (EMOP) and Submitting environmental monitoring reports to ECD frequency less then every 6 months.

3. PROJECT DESCRIPTION

3.1. LOCATION OF PROPOSED PROJECT

The proposed project is located at Latitude 16°54'27.02"N and Longitude 96°03'35.27"E, Plot No. (102), Myay Taing Block No (25), Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township. The location map of the proposed project size is shown in Figure 3-1.

3.2. OBJECTIVES OF PROPOSED PROJECT

The proposed project intends to manufacture of shoe's soles and to export 100% of the finished products.

3.2.1. Site Description of Proposed project site

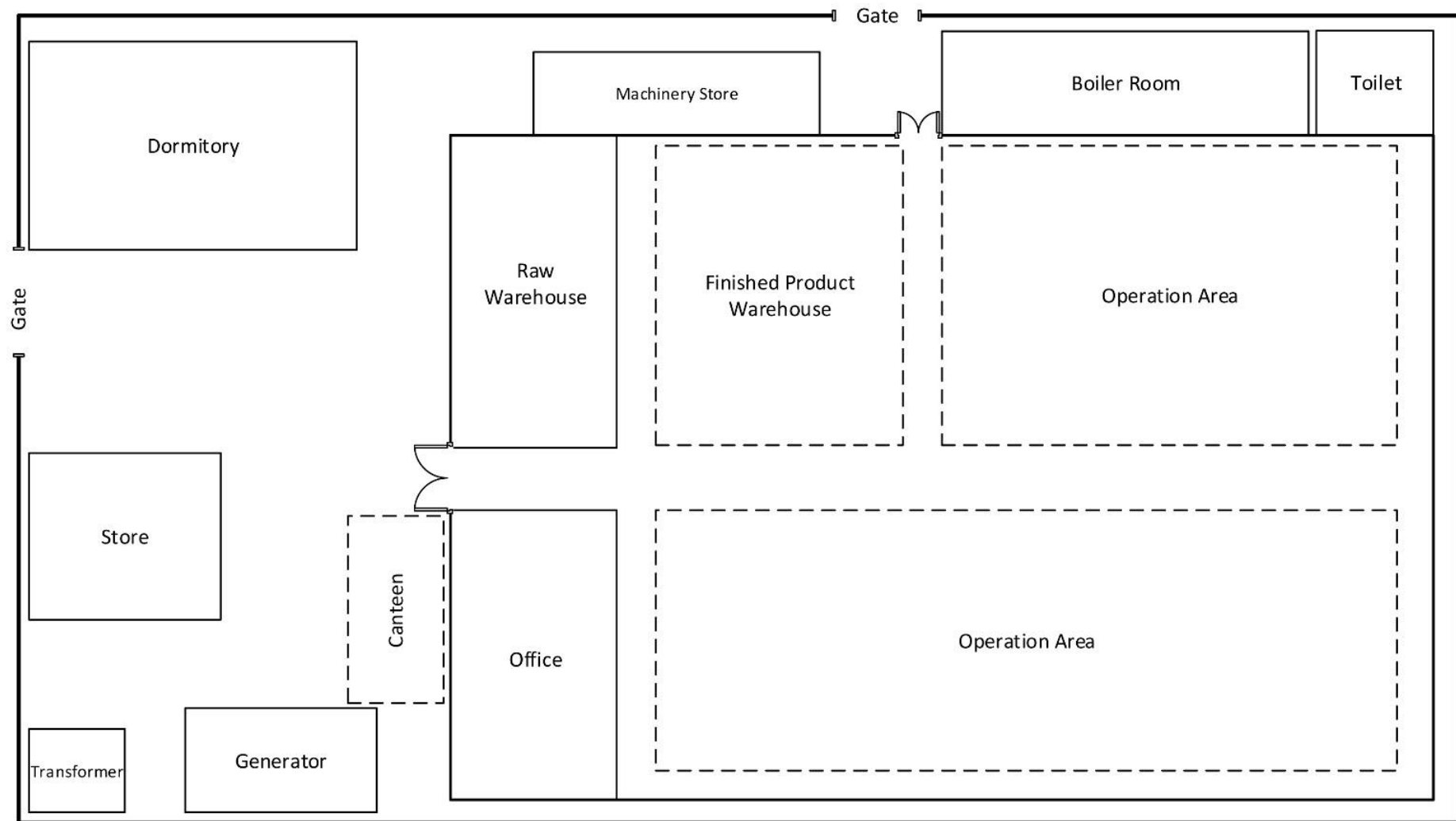
The total area of project site is (140ft × 120ft), (140ft × 60ft) and (140ft × 100ft) main building on 2.347 acres' land. The main structure is designed into store area, cutting area, material preparation area, warehouse area, packing area and quality control area. Office room, dormitory room, machine room, transformer room, generator room and water treatment plant are separated by main factory building structure. Factory layout map and drawing are able to seen in Figure 3-2 and Figure 3-3.

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Figure 3-1 Location Map

Environmental Management Plan**Figure 3-2 Factory Layout Map**

Environmental Management Plan**Figure 3-3 Factory Layout Drawing**

Environmental Management Plan**3.2.2. Production Process**

The proposed factory is to produce rubber outsoles. Production process of for rubber outsoles mainly consists of mixing, cutting and pressing. The required raw materials are imported from China, Japan, Korea, Europe, Mongolia and UK stored in warehouse. Before the produce rubber outsoles, production plan has to draw and be ready preparing the materials. The shoe mods are used to create two parts the insole and outsole. First, the outsole is prepped with color for a logo as well as a background color. The middle plate is closed with the colors added, and then raw rubber is placed into the mold, where it will soon flow in to form the outsole. Close the full mold and heat for a short time to create the outsole. Once out of the oven, the excess rubber is cut away to leave a perfectly formed outsole. Instead, of adding a logo and background color, the insole requires a heel color. Add raw rubber that will form the forefront and place the mold back into the heat to form the insole. The process flow chart for rubber outsoles production is shown in Figure 3-4.

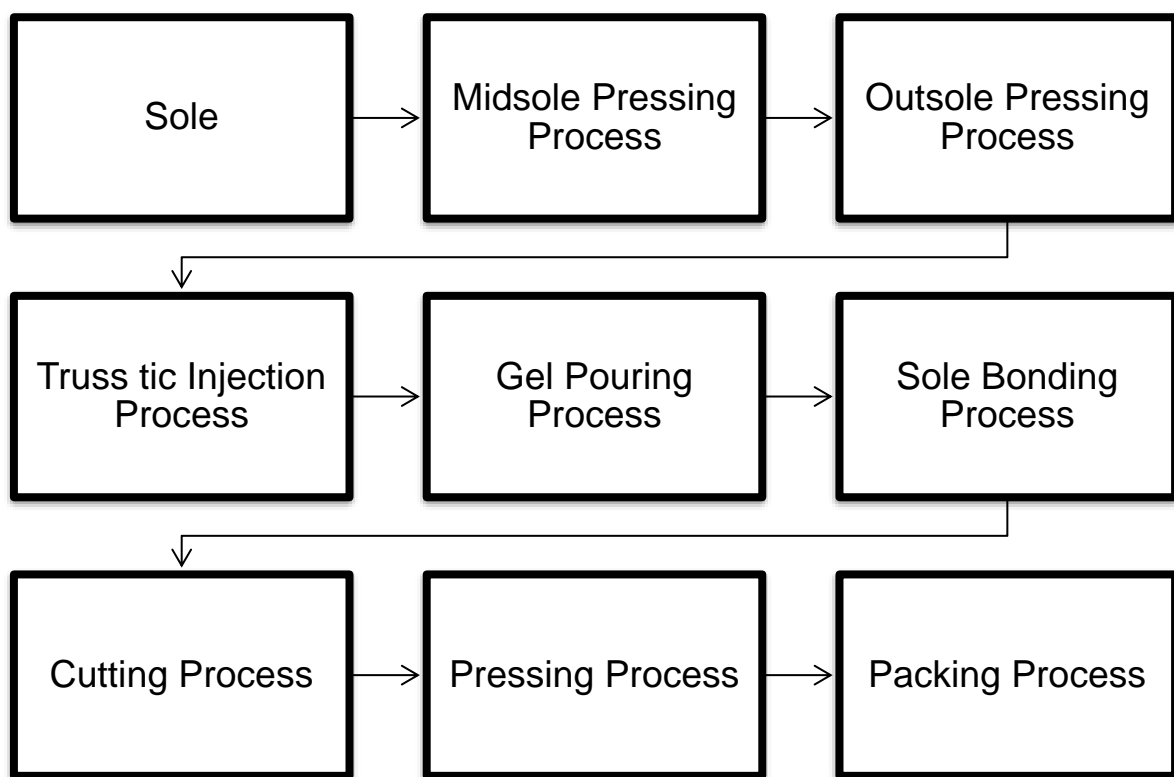
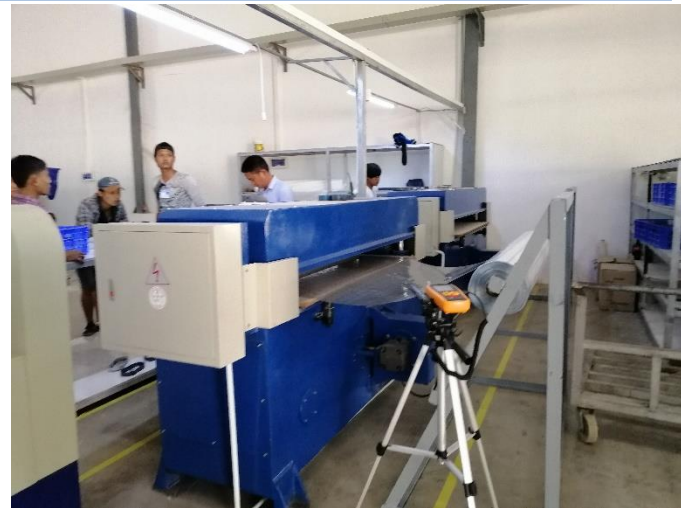


Figure 3-4 Outer Sole Manufacturing Process

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Pattern Drawing



Material Preparation



QC check



Mixing



Cutting



Pressing

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Metal Detective



Packaging

Figure 3-5 Production Process Photos of Yingsheng (Myanmar) Factory**3.2.3. Products**

The products of Yingsheng (Myanmar) factory are various kind of shoe's soles. Table 3-1 that is described in annual production rate.

Table 3-1 Annual Production Rate

No.	Particulars	Unit	Year	
			Year 1-3	Year 4-10
1	Rubber sole	Pr	5,000,000	5,500,000
2	EVA midsole	Pr	3,000,000	3,300,000
3	IP midsole	Pr	2,000,000	2,200,000
4	EVA insole	Pr	300,000	330,000
5	TPR	Pr	300,000	330,000
Total			10,600,000	11,660,000

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Rubber soles



EVA midsole



IP midsole

Figure 3-6 Products photo of Yingsheng (Myanmar) factory

3.3. UTILITIES

3.3.1. Machinery and Equipment

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

Table 3-2 List of Machinery and Equipment

No.	Particular	HS Code	Unit	Quantity
1.	Cutting Machine	8441	Set	1

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No.	Particular	HS Code	Unit	Quantity
2.	Liner Machine	8477	Set	1
3.	Rubber over ice gouache	4016	Set	2
4.	Bucket elevator	8428	Set	1

3.3.2. Work Force

Human resource required by foreign experts/technicians and local persons for administrative and production process are about 106 persons (Table 3-3).

Table 3-3 Employment Schedule of Yingsheng (Myanmar) Company Limited

No	Position	Local Person	Foreign Technicians
1	Factory Manager		1
2	Financial Manager		1
3	Purchasing Manager		1
4	Human Resources Manager	1	1
5	Shipping Manager	1	
6	Secretary	1	
7	Quality Control	9	
8	Store Supervisor	1	
9	Store Keeper	2	
10	Driver	2	
11	Security Staff	2	
12	Cleaner	2	
13	Skill and Semi-skill Workers	30	
14	Unskilled Workers	45	
15	Translator	3	
16	Fire Safety Officer	1	
17	Technician	2	
Total		102	4
		106	

3.3.3. Water

Shwe Lin Ban industrial zone has no centralized water supply system and the factory gets water from the tube wells installed inside the factory compound. The factory has two tube wells depth in 156ft. During operation, the water will be pumped from the groundwater; the water is stored in the water storage tank with the dimension of 15' x 10' x 10' (2,500 gallons). The factory also has a water storage tank (7,500 gallons) for firefighting. 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

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provided by outsource suppliers. Figure 3-7 is described by water storage tank and drinking water supply for Yingsheng (Myanmar) factory. Total water usage is 4000 liters per days.



Figure 3-7 Water Storage Tank and Drinking Water Supply System

3.3.4. Electricity

The proposed project intended to get required electricity supply form Yangon City Electricity Supply Board (YESB) and distributed by 315 kVA of Transformer. Another source of energy 500 kVA and 750kVA generators also will be kept as the emergency generator if normal electricity supply could not provide for the proposed project. Diesel fuel requirement for generator is 6000 liters per month.



Figure 3-8 Electricity facility at Yingsheng (Myanmar) factory

3.3.5. Boiler

The factory has DZG Electric Heated Steam Boiler is used in pressing process for manufacturing process. The fuel for this boiler is solid type coals which are imported from local coal supplier (Ngwe Nan Taw Coal Selling) and is properly stored in the coal storage area. The usage of coal for boiler is 4 tons/day and 120 tons/month. The annual usage of coal is 1440 tons. Specification of boiler is presented in Table 3-4 and boiler and fuel storage photo are shown in Figure 3-9.

Environmental Management Plan**3.3.5.1. Technical Features:**

- Equipped with fire tube structure, small volume and capacity, high safety, easy operation and easy for maintenance.
- This series is made with advanced technology, easy operation, fast start and energy saving.
- Equipped with imported burner to make fuel burn fully. Auto fire detection, which can stop working and warm when fire distinguished.
- The dryness of high-quality steam is above 85%.
- Equipped with multiple safety control system of pressure, temperature and water level.

Table 3-4 Specification of Boiler

Model No.	DZG-9D-A
Brand Name	JIESHI
Brief Description	Easy operation automatic control, high efficiency good evaporation, high safety devices for water level pressure
Evaporation	200 kg/h
Type	Industrial Boiler
Structure	Fire Tube
Weight	110 kg
Motor Power	550 W
Steam Capacity	0.024 t/h
Steam Pressure	0.4 Mpa
Temperature	150°C
Fuel	Coal Biomass

**Figure 3-9 Electric Heated Steam Boiler and Coal Storage Photo****3.3.6. Raw Material and its Storage**

The main Raw Materials are Butadiene Rubber, SBR, Polyethylene glycol/polyether, Titanium dioxide, Silica, Zinc oxide, Accelerator, Toner, EVA Rubber, Talcum Powder, Foaming agent, Stearic acid and TPR which imported from China, Japan, Korea, Europe, Mongolia and UK. These raw

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materials are imported by the permission of department of Trade with import license and stored in warehouse according to their various kinds of products. Raw materials list and imported amount per year are described in Table 3-5.

Table 3-5 List of Annual Raw Material

No	Particular	Unit	Year 1-3	Year 4-10
1	Butadiene Rubber	Kg	2,975,000	3,272,500
2	SBR	Kg	880,000	968,000
3	Polyethylene glycol/polyether	Kg	320,000	352,000
4	Titanium dioxide	Kg	360,000	396,000
5	Silica	Kg	350,000	385,000
6	Zinc oxide	Kg	134,000	147,400
7	Accelerator	Kg	125,000	137,500
8	Toner	Kg	26,200	28,820
9	EVA Rubber	Kg	3,710,000	4,081,000
10	Talcum Powder	Kg	1,325,000	1,457,500
11	Foaming agent	Kg	137,800	151,580
12	Stearic acid	Kg	39,200	43,120
13	TPR	Kg	217,800	239,580

3.3.7. Chemical Usage, Storage Plan and Handling

In the production stage of Rubber Outsoles, chemicals are used while mixing rubber with raw materials and mixing with colors. These chemicals are also imported mainly from abroad with import license and some are received from local suppliers and stored in chemical house in that proposed project. Chemicals are stored as per their types in the designated area which is placed well-designed chemical warehouse. Personal protective equipment such as hand gloves, safety shoes, goggles, and clothing will be provided to those handling hazardous chemicals. Chemical storage plan and handling method for the proposed project are stated in the following.

The chemical warehouse must be equipped with technical personnel with professional knowledge. The warehouses and places should be managed by special personnel. The management personnel must be equipped with reliable personal safety protection products (gloves, aprons, masks).

The chemicals stored in the warehouse should be partitioned, classified, and stored according to the performance of the dangerous goods. It is strictly forbidden to smoke and use open flames in the chemical warehouse.

The ventilation inside the warehouse should be activated regularly to prevent the concentration of harmful volatiles from being too high and dangerous.

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The luminaires and switches in the warehouse should be equipped with explosion-proof devices as required. In case of accidental leakage, it is necessary to store the leaked liquid in a special empty bucket in time and then process it.

Different chemicals are not allowed to be stored with other types of articles, and limited storage must be isolated separately. Flammable liquid, wet and flammable

Materials, flammable solids should not be mixed with oxidant, and the reducing oxidant should be stored separately. For corrosive articles, the packaging must be tight and no leakage is allowed. It is strictly forbidden to coexist with liquefied gases and other articles.

When the chemicals are put into storage, the quality, quantity, packaging, and leakage of the articles should be strictly checked. The warehouse management personnel carefully fill in the registration form in accordance with the relevant operation requirements. And store chemicals in designated areas

The temperature and humidity of the warehouse should be strictly controlled. Check frequently and find changes in time. Try to keep below 30 degrees

When Staff go to the warehouse to receive chemicals, they are responsible for receiving the chemicals in the prescribed manner. The warehouse personnel and the consignee should jointly confirm and use the registration form on the export registration form.

When handling, chemicals should be handled in accordance with relevant regulations, making them light and easy to disassemble. Fall, impact, impact, impact, drag, dump and roll.

It is forbidden to flammable material in chemical storage areas.

The chemical warehouse open time from 7:30-11:00 AM and 1:00-4:00 PM. If there are special needs, the relevant units should be designated to open the position.



Environmental Management Plan**Figure 3-10 Chemical Storage and Handling Photos****3.4. GENERATION OF WASTE, EMISSION AND DISTURBANCES****3.4.1. Status of the Factory**

Yingsheng (Myanmar) Company Limited is using ground water for both industrial and household purpose, which supplied by deep tube well. The sanitary liquid waste of the factory is stored in septic tank. Generation of waste from outsole production of proposed factory is presented in Table 3-6.

Table 3-6 Waste Generation of Outsole Production

Wastes		Type of waste	Estimated amount
Solid waste	Reusable	Residual pieces of rubbers scraps, raw materials cutting wastes packaging materials and outsoles,	200 kg/month
	Non-reusable	Food residues and domestic wastes	100 kg/day
Liquid waste		Sanitary wastewater	139.3 m ³ /day ²
Hazardous waste		Residual chemicals and chemical spills	5 kg/month
		Oil leakage, oil spills	

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

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 methodologies are used for Environmental Management Plan (EMP) for this report preparation;

Onsite Measurements and Analysis – Baseline parameters such as Indoor temperature, humidity, operation light conditions, and noise and water 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. PHYSICAL COMPONENT IN PROJECT AREA

4.2.1. Topography

The proposed project area is situated in Shwe Lin Ban 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.

4.2.2. Geology

The Yangon area is underlain by alluvial deposits (Pliocene to Recent), the non-marine fluvial sediments of Irrawaddy 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 4-1. ^[2]

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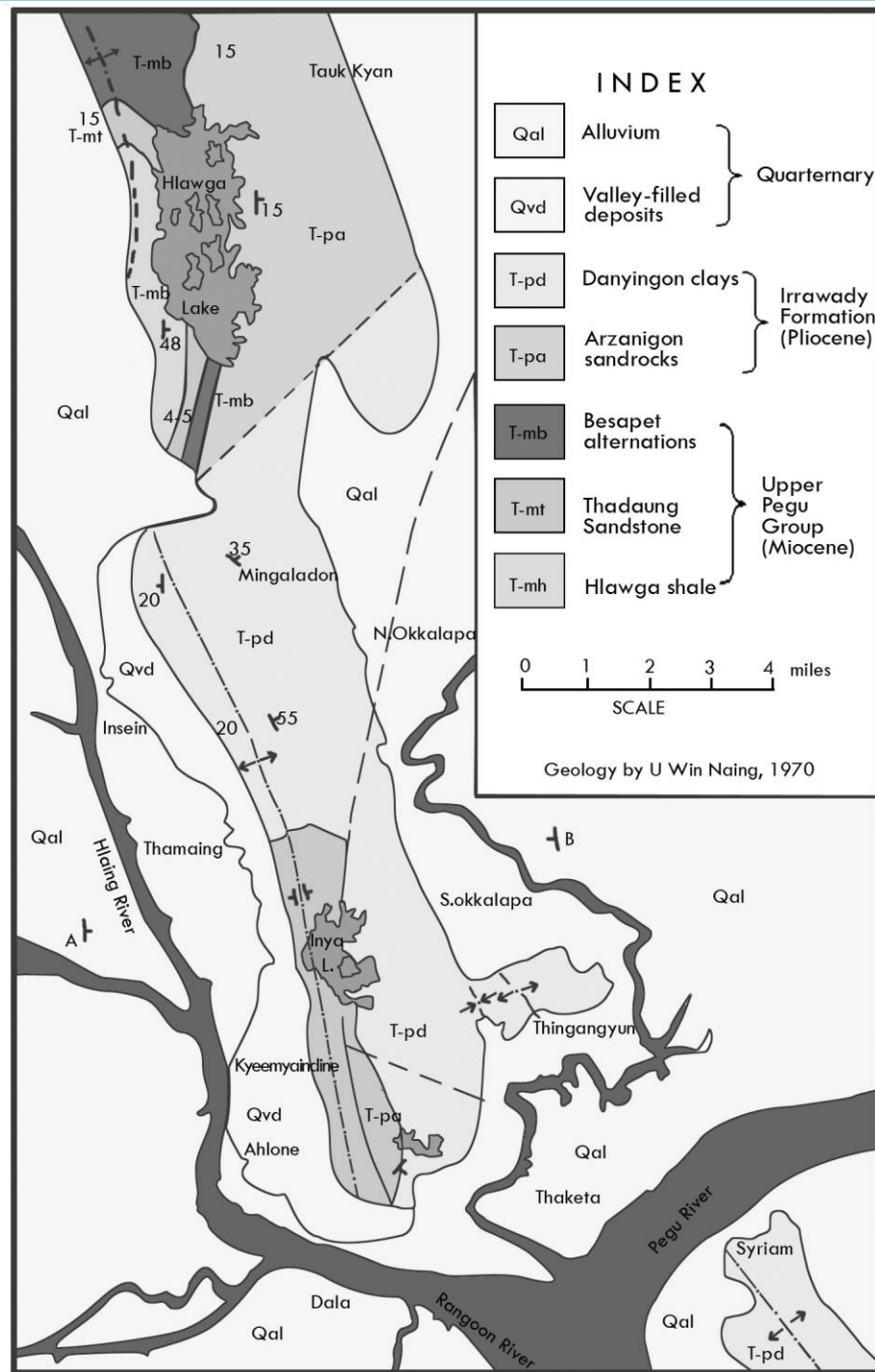


Figure 4-1 Geological Map of Yangon Region

4.2.3. 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). [2]

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4.2.4. 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. ^[2]

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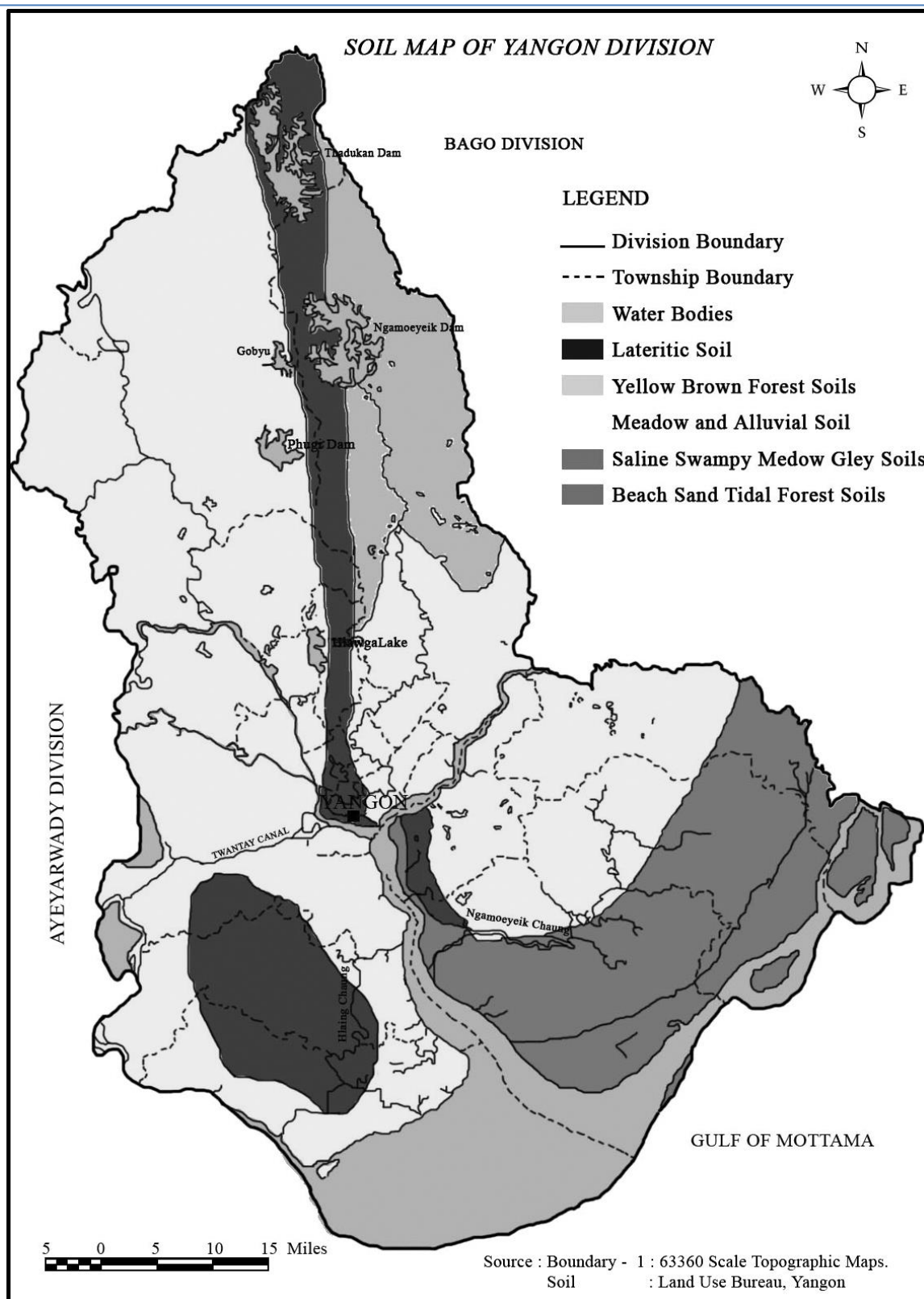


Figure 4-2 Soil map of Yangon (Source: Land use of Bureau of Yangon)

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4.2.5. 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. ^[2]

4.2.6. 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.

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Rainfall and Relative Humidity: The climate of Myanmar follows a typical monsoon pattern. Historically, the average annual mean rainfall for Yangon is 122.5 mm with the annual average rainy days of 109.3 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 Lin Ban 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 December and ends in March. 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. 2015 to 2018 Yearly data of rainfall and temperature is presented in Table 4-1. The weather condition during 3 December 2019 shows the average temperature of 37.1 °C while the average humidity is 47.04 percent Table 4-2. [1]

Table 4-1 Annual rainfall and temperature

Year	Rainfall		Temperature	
	Raining day	Rainfall value	Summer season Max (°C)	Winter season Min (°C)
2015-2016	100	101.96	39	26
2016-2017	102	108.56	40	27
2017-2018	126	156.97	41	27

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

Table 4-2 Relative humidity and temperature measure at factory

Date and Time	Description	Result value	Environmental parameter air station guideline
3 December 2019	Relative Humidity RH %	47.04 (%)	Present condition
	Temperature	37.1 °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

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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.

4.2.7. Air Quality

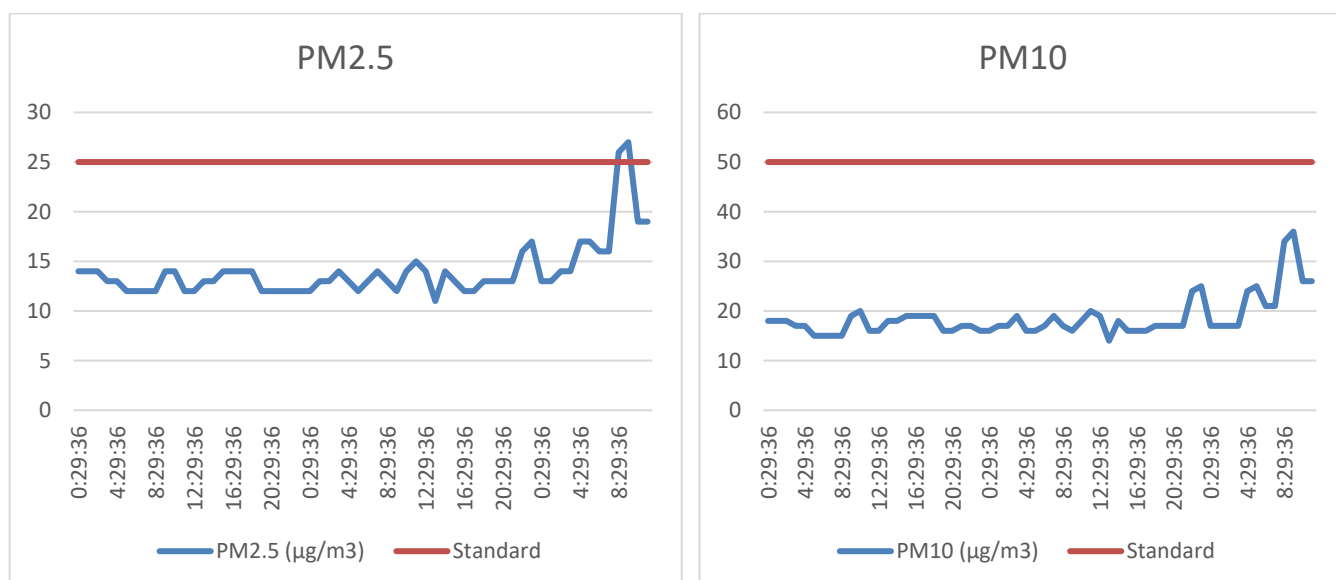
To determine the existing baseline ambient air quality status within the project site on 3, December 2019, 8-hours of working period air pollutants level, which include dust (PM₁₀ and PM_{2.5}) and gases (SO₂, NO₂) were measured at the selected site using the AQM-09 air monitoring station. To reveal the existing status of baseline air quality, the average ambient air qualities measured were compared with National Environmental Quality (Emission) Guideline. The measurement location point is situated at latitude 16°54'27.02" N and longitude 96°03'35.27" E.

It was observed that the air quality of SO₂ concentration level is within the limit of NEQ (emission) guideline but particulate matter (PM₁₀, PM_{2.5}) and gases level of Nitrogen Dioxide (NO₂) are also within the National Environmental Quality (Emission) Guideline. ^[4]

Table 4-3 Observed Air Quality Results

Parameters	Observed value	Guideline Value	Unit	Organization	Period
PM ₁₀	18.63	50	µg/m ³	NEQG	24 hrs
PM _{2.5}	14	25	µg/m ³	NEQG	24 hrs
SO ₂	71.81	500	µg/m ³	NEQG	10 min
NO ₂	398.23	200	µg/m ³	NEQG	1 hr

NEQ = National Environmental Quality (Emission) Guideline



Environmental Management Plan**Figure 4-3 Air Quality Measurement Photos****4.2.8. Noise**

The Noise level was measured by using Digital Sound Level Meter for working hours on 3 December 2019. The average noise level in the project site area is presented in Table 4-4 compared 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. ^[4]

Table 4-4 Noise Level Measurement Result

Date and Time	Location	GPS Value	Result Value	NEQ Guideline
3.12.2019	Production area	16°54'27.02"N 96°03'35.27"E	75.12 dBA	70 dBA

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Figure 4-4 Noise Level Result Graph



Figure 4-5 Sound Level Measurement Photo

According to the monitoring results, Yingsheng (Myanmar) factory the noise level is higher a bit than the NEQ guideline. Therefore, in that factory ought to use the ear protection to all labors. In this way can reduce the noise level. The noise source for this project is the running of machines and equipment. The personal protective equipment (PPE) must be provided to the labors to prevent the damage of earing during operation. The maintaining of machines and equipment should be carried out

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to reduce the noise emission. Moreover, it was found out that the noise emission cannot affect to the surrounding area.

4.2.9. Light

Activities of the workers in the shoe's sole factory are highly dependent on the quality of light. Therefore, the consultant conducted the light measurement in the shoe's sole factory is presented in Table 4-6. The illustrates the recommended illumination and limiting glare index applicable to typical works (fairly severe to very severe tasks) in shoe's soles factory is provided in Table 4-5.

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 shoe's sole 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 4-5 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

Source: Koenigsberger, et al. 1975



Figure 4-6 Light Quality Measurement

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Table 4-6 Result of light measurement in Yingsheng (Myanmar) Factory

No	Location	Measure value (Lux)	Standard*
1	Moulding Area	330	300
2	Cutting area	280	1000
3	Chemical Mixing Area 1	212	1000
4	Chemical Mixing Area 2	123.8	1000
5	Rubber cutting	190.3	1000

* Lighting standards and codes usually provide recommended illuminance ratios between the task area and its surroundings (EN 12464-1 2002) (CIBSE 1997) (IESNA 2000, 676708).

According to the monitoring results, Yingsheng (Myanmar) factory light level is a little bit higher than the NEQ guideline that's why some places need to reduce the light level and ought to put on the electricity bulb more over the higher places. On the other hand, some places are a bit lower than the NEQ guideline that is why which need to change like a more powerful light bulb in that light level lower places. In this way are able to adjust the light pollution of this factory.

4.2.10. Ground Water Quality

The baseline data on ground water quality were collected on 20 January, 2020 with respect to WHO Guidelines for Drinking Water Standard and Laboratory analysis results can be seen in Table 4-8 for groundwater. The water quality of the nearest water features, which are likely to be affected by the project, was studied with the aim of understanding, preventing and minimizing water pollutions in the public water sources so as to ensure human health and biodiversity. Water quality is one of the key factors affecting the environment and health. Analyzed results of groundwater result compare with Drinking water guideline,

The collected samples (ground water from treated water station at the factory) were tested at ISO Tech laboratory. ^[4]

Table 4-7 Coordinated point of groundwater collection point

Water Parameter	GPS Value	Location
Ground Water	16°54'27.02"N and 96°03'35.27"E	Within proposed site of Ground water tank

4.2.10.1. Ground water result**Table 4-8 Ground Water quality laboratory results**

No	Parameter	Unit	Water result	Drinking standard
1	pH	-	7.1	6.5-8.5
2	Colour (True)	TCU	Nil	15
3	Turbidity	NTU	Nil	5
4	Conductivity	micro S/cm	2	-
5	Total hardness	mg/l as CaCO ₃	Nil	500
6	Calcium hardness	mg/l as CaCO ₃	Nil	-
7	Magnesium hardness	mg/l as CaCO ₃	Nil	-

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No	Parameter	Unit	Water result	Drinking standard
8	Total Alkalinity	mg/l as CaCO ₃	1	-
9	Phenolphthalein Alkalinity	mg/l as CaCO ₃	Nil	-
10	Carbonate (CaCO ₃)	mg/l as CaCO ₃	Nil	-
11	Bicarbonate (HCO ₃)	mg/l as CaCO ₃	1	-
12	Iron	mg/l	0.02	0.3
13	Chloride (as CL)	mg/l	Nil	250
14	Sodium chloride (as NaCL)	mg/l	Nil	-
15	Sulphate (as SO ₄)	mg/l	Nil	200
16	Total Solids	mg/l	1	1500
17	Suspended Solids	mg/l	Nil	-
18	Dissolved Solids	mg/l	1	1000
19	Manganese	mg/l	Nil	0.05
20	Phosphate	mg/l	Nil	-
21	Phenolphthalein Acidity	mg/l	2	-
22	Methyl Orange Acidity	mg/l	Nil	-
23	Salinity	ppt	0.1	-

NG= No guideline



Environmental Management Plan**Figure 4-7 Waste Water and Drinking Water Treatment System****4.3. BIOLOGICAL COMPONENT**

The proposed project site is not located in or near a sensitive ecosystem as the proposed project area is situated in the Shwe Lin Ban 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.

4.4. SOCIO-ECONOMIC COMPONENT**4.4.1. Population**

Yingsheng (Myanmar) factory is located across Hlaing Thar Yar Township in Yangon Region. In 2017, the population of Hlaing Thar Yar Township is about 423,388 people as present in Table 4-9.
[1]

Table 4-9 Population of Males and Females at Hlaing Thar Yar Township (2017)

Item	Older 18 year			Younger 18 year			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Urban	106,792	121,785	228,577	46,633	51,763	98,396	153,425	173,548	326,973
Rural	33,629	31,732	65,361	15,448	15,448	31,054	49,077	47,338	96,415
Total	140,421	153,517	293,938	62,081	67,369	129,450	202,502	220,886	423,388

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

4.4.2. Religion

The different kinds of religion present in Hlaing Thar Yar Township are shown in Table 4-10. More than 90% of the people living in the township are Buddhists. [1]

Table 4-10 Religion in Hlaing Thar Yar Township (2017)

Township	Buddhist	Christian	Hindu	Muslim	Total
Hlaing Tharyar	404,968	6,400	8,320	3,700	423,388

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

Environmental Management Plan**4.4.3. 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

4.4.4. Public Infrastructure and Access**4.4.4.1. Communication and Transportation**

Major transportation route in Hlaing Thar Yar Township are railway, port, and car road as presented in Table 4-11. ^[1]

Table 4-11 Transportation route

Categories	Township		Miles
	From	to	
Rail	Pan Hlaing River and Hlaing confluence	Ngwe pin Lae Industrial	8
Bus line (61,23,68,16,6,69,17,74,20,52,53,54,67) City Bus	WYTU	Downtown area	
Car (Yangon - Patheingyi road)	King Ba Yin Naung bridge	Mya Sein yaung Stream	5.4
Car (Yangon – Nyaung U road)	Aung zaya Bridge	BOC traffic circle	3.2
Car (King Anawmyathari Road)	Shwe Pyi Thar Bridge	Thamakone Traffic circle	4.6

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

Environmental Management Plan**4.4.4.2. Electricity**

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

4.4.4.3. 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. The name and the located village tract/ ward of schools are described in Table 4-12. ^[1]

Table 4-12 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
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

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No.	Name of School	Location
14	BEPS (1 to 32)	Hlaing Thar Yar
15	Pre School (1 to 6)	Hlaing Thar Yar

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

4.4.4.4. Health Status

The diseases of high prevalence reported in 2013 are Tuberculosis (TB), followed by Acute Respiratory Infection (ARI), Diarrhea, TB and snakebites. With reference to the Township Health Profile 2014 of Hlaing Thar Yar Township, no accidental work injuries reported to the township hospital in 2013. The common diseases are shown in Table 4-13.

Table 4-13 Common Diseases in the Hlaing Thar Yar Township

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

Table 4-14 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)

4.5. CULTURAL AND VISUAL COMPONENTS

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. ^[1]

5. ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

5.1. 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 5-1.

Table 5-1 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.

$$\text{Significant Point (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) * \text{Probability}$$

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

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5.2. 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.

5.2.1. 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 Shwe Lin Ban Industrial Zone, 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.

5.2.2. Negative Impact

The following Figure 5-1 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.

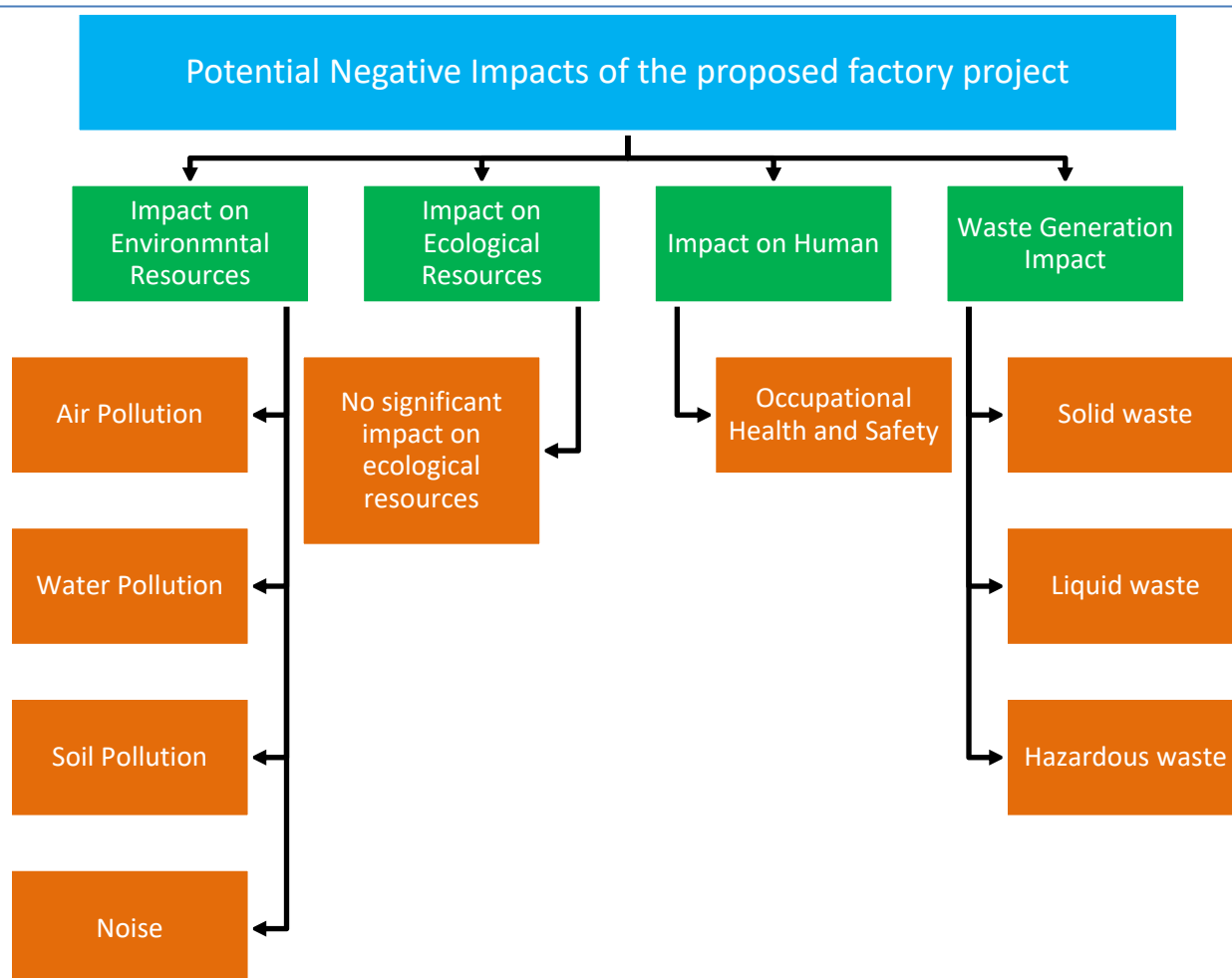
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Figure 5-1 Potential negative impact affect from proposed factory project

5.3. IMPACT ON ENVIRONMENTAL RESOURCES

5.3.1. Impact on Air Quality

The project factory is already constructed during environmental assessment study and site visit. During construction phase, dust emission was addressed as potential environmental impact and is expected to be non-significant because the construction phase is a short-term affect. So, we are not assessed potential environmental impact during construction phase.

During the operation phase, there have a few emissions of smoke from the process of production. Particulate matters are generated during cutting and pressing the raw materials. But that particles amount is low. Dust particles, CO₂ and SO₂ would be emitted from the activities of loading, unloading and transportation of the raw materials and final product. Various activities as cooking from kitchen, using air conditioners in office building, storage of raw materials, vehicles movements, operating diesel generators and boiler combustion would also be a factor slightly affecting to air quality.

Though main electricity source for the factory is the national grid line, sound-proof diesel generators will be set-up in case of electricity shortages. So, 500 kVA of standby generator will be used for both operation and administration appliances. The proposed project will use annually 1660 gallons of diesel for vehicles such as transportation vehicle and emergency use of a generator. The following table shows the amount of CO₂ emission coming from the combustion of fuels.

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Burning diesel or other fuels creates exhaust gasses. Diesel generators produce carbon dioxide (CO₂), nitrogen oxide (NO_x), and particulate matter. These generators and boiler release this into the atmosphere and substantially reduce air quality in the nearby regions. Every liter of fuel has 0.73 kg of pure carbon, 2.6 kg of carbon dioxide released per liter of diesel fuel.

Table 5-2 Category of GHGs Assessment

Category	Range
Negligible	no GHG assessment necessary
Low	< 20 kt/y CO ₂ -equivalent per year
Medium-Low	20 – 100 kt CO ₂ - equivalent per year
Medium-High	100 kt – 1 Mt CO ₂ - equivalent per year
High	>1 Mt CO ₂ -e equivalent per year

Source: EBRD GHG Assessment Methodology, 2010

Table 5-3 CO₂ Emission by the Uses of Fuel

No.	Type	Amount(gallon/year)	Equivalent CO ₂ emission (Kilotons)	Status
1	Diesel for generator	1660	0.1359	Negligible

Furthermore, likewise the construction phase, negative impact on ambient air quality such as emissions of dust particles emission from the movement of vehicles used for carrying decommissioned materials and gaseous emission from these vehicles and machines can be expected during the decommissioning phase of the proposed project after its lifespan, 30 years.

5.3.2. Impact on Water Quality

During the construction period, water consumption is for implementation of the construction works and domestic water usage by construction workers. Surface water and ground water could be contaminated from the several activities of construction works such as mixing of the concrete, wetting of dry surfaces, washing of the equipment, etc. Moreover, oil spill from the vehicles and machinery can pollute water quality and can enter into the ground water and run into near river during the rainy season. However, the project factory is already constructed during environmental assessment study and site visit. Therefore, impact on water quality is not assessed for this project.

During operation phase, water is used before cutting the products. When the final mixing made these are mixed-products have to pass into water line before cutting the products. Wastewater from the operation activities will be discharged and this discharged water will be treated before releasing. Moreover, sewage disposed from the employees, staffs, oils spill and grease leakage from transporting vehicles and machinery equipment used in operating the production of rubber outsoles can seriously pollute the quality of underground water source. But the factory plans to use separate waste water channels, septic type toilet system and sewage treatment plants in accordance with YCDC guidelines to avoid potential contaminations and hazards by waste water and sewages. So, it can cause low impact to the water quality.

During the decommissioning phase, oil spill from the demolished vehicles and machinery can penetrate into the ground water quality. Water can also be contaminated by activities related with decommissioning works and waste disposed by workers.

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5.3.3. Impact on Soil Quality

During the construction phase, the excavation works from the construction activities must be the major impact on soil. The soil is compacted by the vehicles and the solid waste disposal improperly by the workers can affect the soil quality. Oil spillage from the vehicles could be also polluted to the soil. However, the project factory is already constructed during environmental assessment study and site visit. Therefore, impact on water quality is not assessed for this project.

During the operational phase, there is no significant impact on soil quality due to shoe's soles manufacturing activities because concrete road facilities, which have been implemented at the whole project site area. However, there may be effect on soil if wastes from the operation period are disposed improperly.

During the decommissioning phase, transportation of decommissioning materials and transferred of heavy machinery may happen oil leakage and lubricants, and thus it can lead to impact on soil. Moreover, hazardous releases of materials or oil utilized in the infrastructure can contaminate the existing soil during the decommissioning phase.

5.3.4. Impact of Noise

During the construction phase, significant impact on noise and vibration to surrounding environment must be generated from the movements of vehicles, operating the machinery, excavation activities and transportation of equipment and construction materials by heavy trucks. However, 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 noise and vibration is not assessed and short-term affect must be caused the construction period is temporary.

During the operation phase, the major sources of the indoor noise pollution may be generated from mixing the raw materials, cutting, pressing and molding by using the relevant machine. And the emergency electric generator and vehicle movements from the transportation of the products may also be affected to the impact of noise level. The movement of vehicles and transportation activities of raw materials and final products can be the potential impact of vibration. Noise generation from the project activity may be the moderate significant impact.

During the decommissioning phase, the heavy vehicles, machineries and equipment used for decommissioning activities can affect the noise level and vibration of the area.

5.3.5. Impact of Odor

During the construction phase, the construction activities such as painting, vehicle exhaust, leaking heating, concrete mixing, etc. could be the major effect on impact of odor to the environment. But, impact of odor is not assessed in the construction period because of the project factory is already constructed during environmental assessment study and site visit.

During the operation phase, the major source to emit odor may be the use of raw materials like rubbers and storage of raw materials.

During the decommissioning phase, odor from the dumping of demolishing materials, vehicle exhaust could be emitted to the area.

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5.4. IMPACT ON ECOLOGICAL RESOURCES

The proposed project is located in the industrial zone. Therefore, there is no wildlife, forests, protected area, coastal resource or mangrove area and rare and endangered species are found around the project area. The nearest water body is Pan Hlaing River which is running south to north and later join into the Yangon River in the east.

5.5. IMPACT ON HUMAN**5.5.1. Socio-economic**

The proposed project is the long-term investment in the industrial sector. Most of the impacts of the proposed project on socio-economic environment may be positive. Implementation of proposed project may create temporary employment during construction and decommissioning phases and permanent jobs in the operation phase. Subsequently, socio-economic standards of local people will be increased and eventually it may lead to the economic growth at local and regional level.

5.5.2. Occupational Health and Safety

During the construction phase, significant accidents and injuries like electric shocks, falling from heights, chemical exposure, crushing injury, fire hazards can be occurred due to the construction activities including metal grinding and cutting, concrete work and welding the metals. Moreover, accidents and injuries to workers and local communities could be caused from heavy vehicles movement for the transport of construction materials and equipment. Small injuries due to slips, headache and sickness must be caused of the noise, air pollution and odor could also be affected to the workers and local people. However, the project factory is already constructed during environmental assessment study and site visit. Therefore, impact on water quality is not assessed for this project.

During the operation phase, using the machinery for production process can get injuries. Noise from the generating of the machine and generator may also affect the health of people working in the project area. Fire and explosion hazards are mainly cause from the storage of raw materials and poor management of waste disposal. The usage of fuel must carefully handle because spillage and leakage of oil and grease can cause ignition of fire. Domestic wastewater or grey water produced from canteen, kitchen and toilets will cause enormous breeding of mosquitos, which can lead to diseases like malaria and dengue fever, if not carefully managed.

During the decommissioning phase, activities related with decommissioning process can cause injuries and can affect the health of decommissioning workers.

5.5.3. Waste Disposal**5.5.3.1. Solid Waste**

During the construction and decommissioning phase, various kinds of solid wastes will be generated. These wastes will be collected and clean every day to avoid any undesirable working condition and environmental impacts. Based on their types (glass, metal, plastic, wood, cement residues, oil spills and paper based), these solid wastes will be collected separately in rubbish bins and regular and proper disposal will be done in accordance with YCDC guidelines.

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During operation phase, major solid wastes of the proposed rubber outsoles factory will be generated from production lines, molding, cutting and packaging. Factory shall use foam, rubber outsole and shoe box as raw materials in shoe production process. The residual pieces of rubbers, outsoles, the scraps from the production lines and rubbish from the packaging are the main source of solid waste. In addition to factory solid waste, canteen, kitchen and dormitory will produce solid wastes mainly personal remnants, household wastes and food residues.

5.5.3.2. Liquid Waste

There may be expected no significant liquid waste from the construction and decommissioning phase. The main source of the liquid waste of these two phases may be from the sanitary wastewater.

During the operation phases, sanitary wastewater from the usage of toilet facilities, kitchen and canteens will be discharged as liquid waste. All of the liquid waste will be collected in septic tanks which are attached with proper sewage treatment tanks (as mentioned in factory site plan) and regular monitoring should be done in cooperation with YCDC and follow the YCDC guidelines for proper disposal.

5.6. PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS

The relative importance of each impact is assessed based on the understanding that general mitigation measures will be integrated into the baseline project. Therefore, when the general mitigation measures reduce impacts to the point of rendering them negligible, they are excluded from further analysis. Once the significance of the impact is established as more than negligible, it is described and additional, specific mitigation measures may be proposed to allow optimal integration of the project into the environment.

Table 5-4 Evaluation and Perditiion of Significant Impacts

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 (rice briquettes) and kitchen Emission from emergency diesel generator	4	4	2	4	40	Moderate
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
Soil Contamination	Accidental spillage of oil used by vehicles	1	4	1	2	12	Very Low

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Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
	operating						
Noise Pollution	Generating noise from the production machinery Noise from the generating of the emergency generators	4	4	1	4	36	Moderate
Odor	Production activities such as rubber mixing and storage of raw materials	4	4	2	4	40	Moderate
Fire Hazard	Poor electrical installations waste disposed area Raw materials storage	3	5	2	4	40	Moderate
Solid waste	residual pieces from the production lines Waste from packaging materials Waste from kitchen, dormitory and office.	3	4	1	4	32	Moderate
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 from decommissioning workers Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	Decommissioning of buildings and related materials Transportation of demolished materials	3	1	1	3	15	Low
Noise Pollution	Decommission activities Transportation of demolished materials	3	1	1	3	15	Low
Waste disposal	Sewage system Demolished debris such as bricks,	2	1	1	3	12	Very Low

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Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
	concrete materials						
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

According to the result of analysis, it can be concluded that most of the project activities have low significance on environment, in all phases. Project activities that can produce solid waste and liquid waste are moderate significance. Moreover, project activities that emit dust and GHGs and accidental cases are moderately significant. Fire hazard potential of the proposed project and noise pollution are highly significant. But this can be prevented or mitigated by using the following mitigation measures. The following figure shows the impact significance of the proposed project.

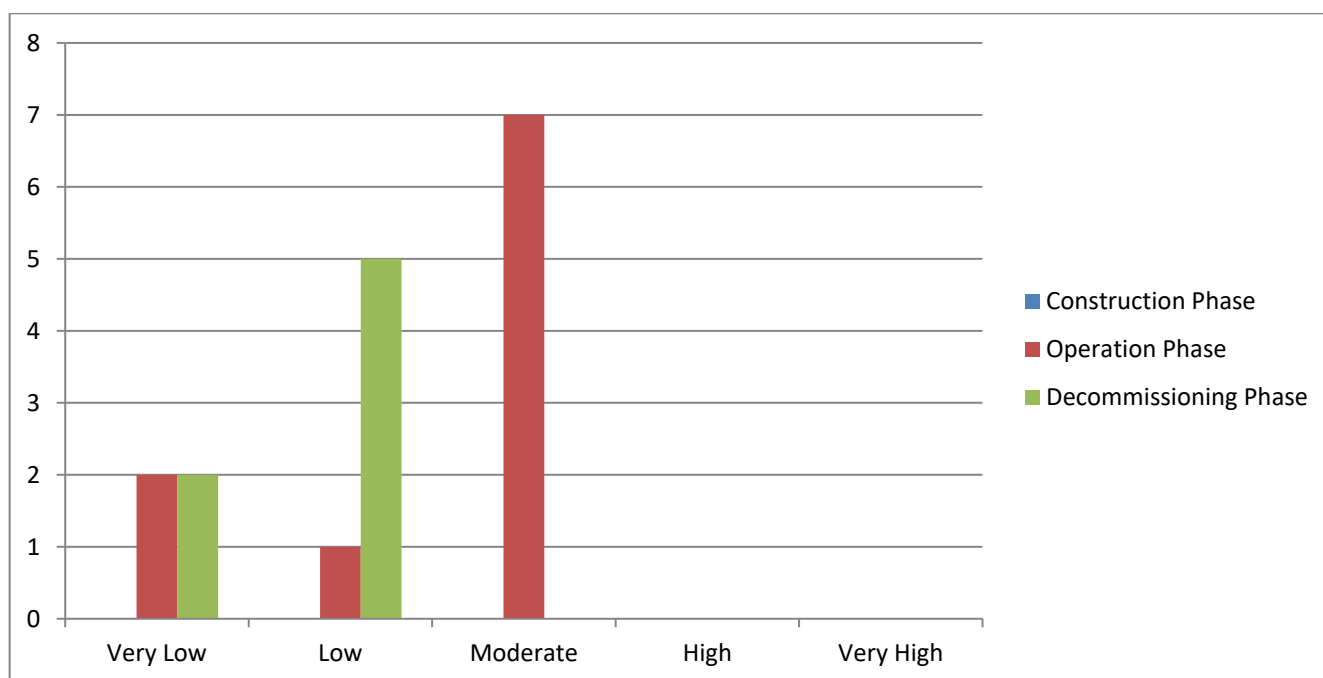


Figure 5-2 Impact significance of the proposed factory project

5.7. MITIGATION MEASURES OF IMPACT ON ENVIRONMENTAL RESOURCES

5.7.1. Recommended Air Impact Mitigation Measures

During the operation phases, ventilation system of the factory is enough for the workers because the proponent has installed Moist Fan around the factory building. To control air pollution, the vehicles, generators and machineries have to check and maintain regularly. Since the factory compound area is paved with concrete, dust emission from the movements of vehicles and cars is not significant. The project proponent must install good exhaust system at the kitchen to reduce adverse

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impacts of indoor air quality. The factory uses chimney for generator and steam boiler through which the flue gas is emitted for reducing the impact of stack emission on environment. Monitoring and check installed cyclones and ventilation system. The factory has planted trees in its premises to reduce carbon emission and thus minimize air pollution. Ensuring vehicles, compressor and generator, which are maintained well.

During the decommissioning phases, the impact on air quality can be controllable and reduced to minimum level and minimized dust emissions from material handling sources. Sprinkling water on the top soil can reduce dust emission from the demolishing activities. In the proposed project area, vehicle movements should be limit, maintain and check the vehicles and machineries regularly. Burning the demolished materials and residual wastes must not to be allow.

5.7.2. Mitigation Measure of Impact on Water

During the operation phase, water discharge from the factory site will treat by silts track tank before discharging. Water effluent levels should be within acceptable limit of the National Environmental Quality (Emissions) Guidelines values. The factory plan has kitchen, canteen and toilet facilities attached in various buildings of the factory. In the kitchen, separated drainage lines, they are providing to flow wastewater from the activities washing and cooking, etc. and around the compound area of the project area, drainages are also provided and maintain to flow storm water (rain water, snow and surface water). The compound area of the factory is paved with concrete and the drainages are covered and holes are there to flow the storm water. The existing drainage at the project area can be seen in Figure 5-3. Besides, the factory plans to use separate wastewater channels, septic type toilet system. Wastewater from the dining room, canteens and toilet facilities are collected in septic tanks which are attached with sewer treatment plant and the proponent will connect and cooperate with YCDC to be carried out for disposing of these septic tank wastes. To mitigate the impact on water, the drainages around the compound area of the factory have to maintain and clean regularly. Spillage and leakages of oil and grease should also be minimized.



Figure 5-3 Drainage and Septic tank in project area

During the decommissioning phases, appropriate sanitary facilities should be provided for demolishing workers. An accidental spill of fuel and oil should be avoided. Wastes generated from the demolishing activities should not be disposed directly into the drainage channels.

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5.7.3. Mitigation Measure of Impact on Soil Contaminate

During the operation phase, the compound area of the factory area will be paved with concrete and hence, contamination due to the oil spillage at this area is insignificant. But refilling fuel must be done with great care for preventing spillage.

During the decommissioning phase, impact on soil can be mitigated by using modernized machineries, these machines would be maintained regularly and isolated maintenance area would be identified. Any accidental spills of fuel, oil or other hazardous waste must be avoided. Construction wastes and demolishing debris should be disposed properly.

5.7.4. Mitigation Measure of Impact on Noise

During the operation phase, the regular maintenance plans for vehicles, machines generators should be provided to mitigate impact on noise. Using modernized low noise machines should be used if possible. Noise impact to employees shall be minimized by providing earmuffs and ear plugs to those working near the noisy machines.

During the decommissioning phases, temporary noise pollution can be controlled by planning regular maintenance for decommissioning vehicles and machines. Moreover, construction and decommissioning activities should not be worked during nighttime.

5.8. MITIGATION MEASURES OF IMPACT ON HUMAN**5.8.1. Mitigation Measures on Fire Hazard**

The project proponent has provided fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases. Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire frightening is also constructed with the capacity of 7,500 gallons at the proposed area. The emergency contact numbers of township and district fire services department must be printed and tagged at easily visible places for fire emergency cases. 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. In addition, the project proponent has plans to provide trainings on firefighting for the workers by a professional or otherwise by sending to training courses. The plan to install fire alarm system and fire-frightening system are mentioned in Figure 5-4.

Environmental Management Plan**Figure 5-4 Firefighting plan and Escape plan****5.8.2. Mitigation Measure for Occupational Health and Safety**

The proposed project has a clinic and a nurse. Medicines and first aid kits are provided in this clinic. Moreover, these medicines and first aid kits are provided for emergency cases of workers. First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for 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. The project proponent must manage the drainage systems of the factory to prevent health risk of the workers.

The Occupational Safety and Health Administration (OSHA) have recommended permissible noise exposure limit for industrial workers, which is based on 90 dB (A) for 8 hours exposure a day with 5dB trading rates. The limits are mentioned in Table 5-5. According to OSHA, the maximum allowable noise level for workers is 90 dB (A) for 8 hours 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, need to provide if actual noise level monitoring results are more than 90 dB (A) at the work site for working time hours for 8 hours.

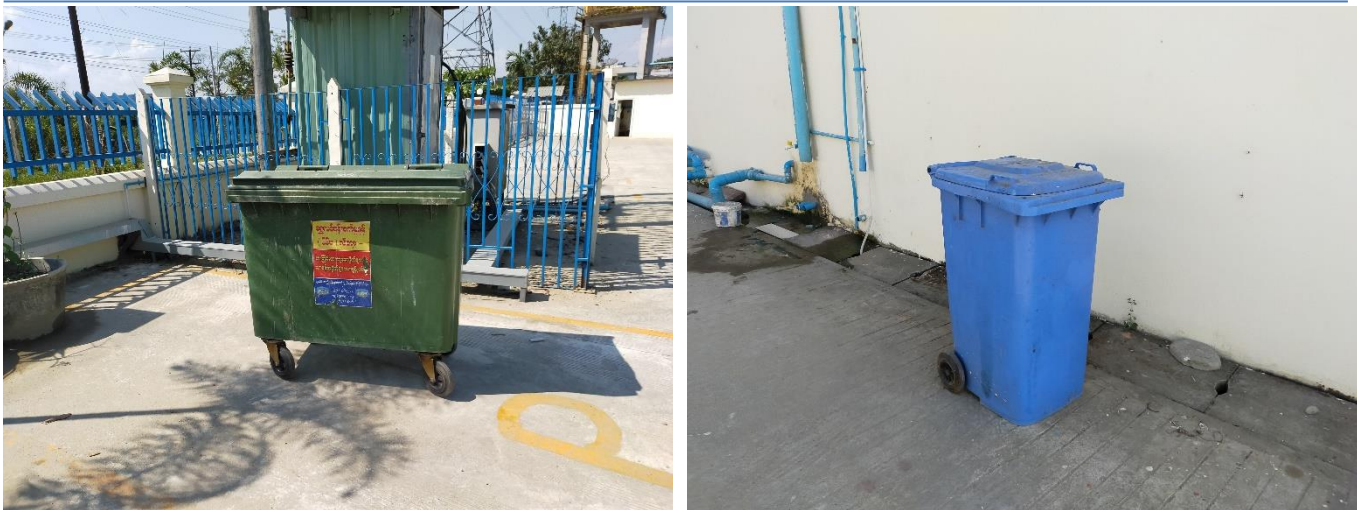
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Table 5-5 Permissible exposure of noise limits

Total Time of Exposure Per Day in Hours	Noise Level dB(A)
8	90
6	92
4	95
3	97
5	100
1	105
½	110
¼	115

**Figure 5-5 First Aid & Health Care Facilities****5.8.3. Mitigation Measure of Waste Generation**

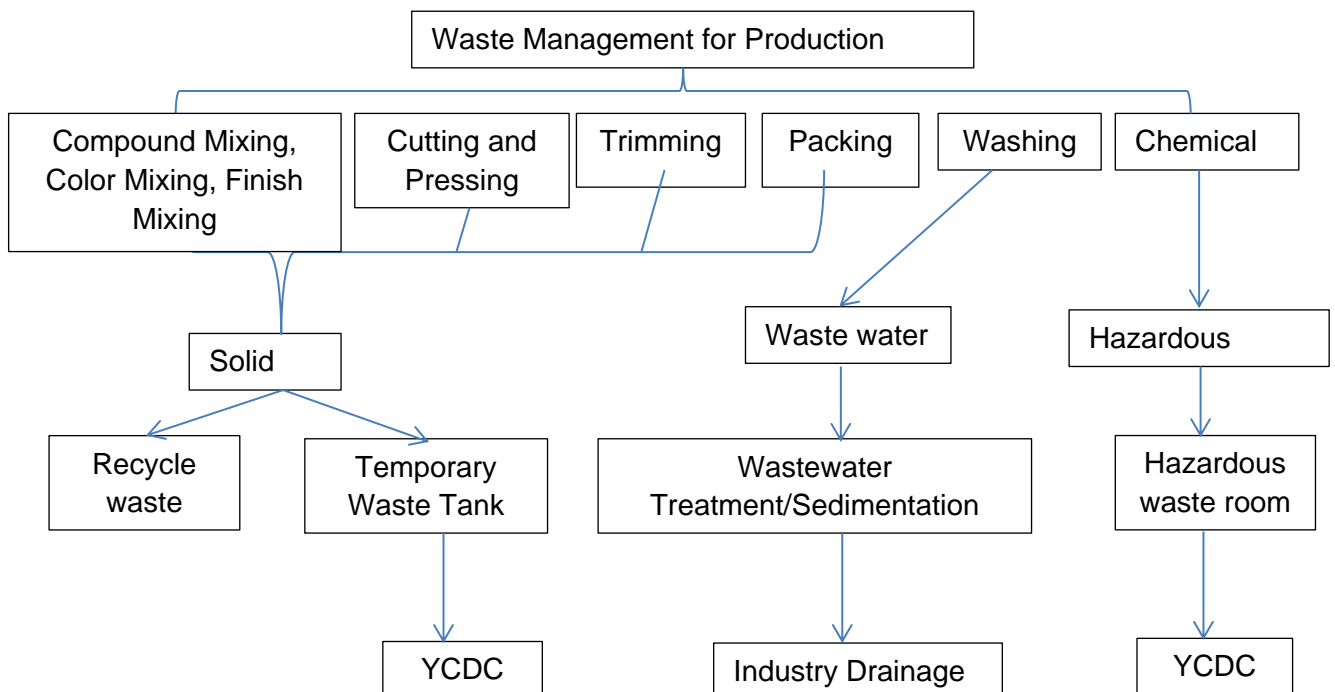
During the operation phase, the project proponent provides separate garbage bins at each building. All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste houses and final wastes will be disposed by using YCDC's service.

Environmental Management Plan**Figure 5-6 Waste Collection Service**

During the decommissioning phase, some of demolished solid wastes must be recycled and the other solid wastes should be stored in dedicated waste storage area in the project site and transferred to YCDC for final disposal.

5.8.4. Mitigation Measures of Hazardous Waste

During the operation phase, refueling the emergency generators must be done carefully. Chemical which is used in mixing process should be stored carefully. There will be provide hazardous waste house to dispose hazardous waste from the production process.

**Figure 5-7 Waste Management Plan**

6. ENVIRONMENTAL MANAGEMENT ACTION

6.1. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT

The objective of the environmental management is to ensure potential environmental issues are managed by proper mitigation measures in compliance with the relevant laws and regulations stipulated by national authorities. Environmental management based on the basic principles of management known as the P-D-C-A cycle (Figure 6-1). Environmental management consists of four related tasks as described below:

Plan (P) - What need to be done?

Mitigation measures for the potential environmental impacts of the factory such as air emission, noise, solid waste, wastewater and health and safety at work are described in this chapter. The Project Proponent will follow the plan for the mitigation measures according to the scheduled time.

Do (D) - Implement the plan

The mitigation measures for the potential environmental impacts will be implemented appropriately by the Project Proponent as described in this chapter.

Check (C) - Monitor and evaluate the results of implementation

The effectiveness of the mitigation measures will be monitored, evaluated and documented.

Act (A) - Taking corrective actions to improve the results, if found inadequate

If nonconformities are noted with reference to the environmental monitoring benchmarks, corrective actions need to be planned to mitigate the existing environmental impacts.

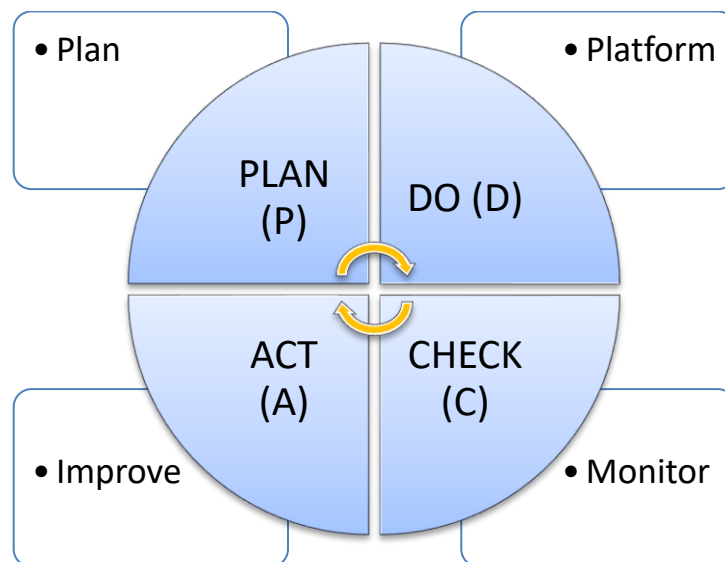


Figure 6-1 PDCA cycle

6.1.1. Institutional Requirement

Yingsheng (Myanmar) Company 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

Environmental Management Plan

authorities and the nearby communities. The HSE Team also makes regular review of EMP to cover all potential impacts, amendments and modifications.

6.1.2. 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:

Yingsheng (Myanmar) Company 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 Yingsheng (Myanmar) Company 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.

6.1.3. 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;

The following environmental issues that require environmental management plans based upon the potential impacts of activities by Yingsheng (Myanmar) factory are as follows:

Environmental Management Plan

6.2. AIR POLLUTION/DUST MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ National Environmental Quality (Emission) Guidelines (2015) ➤ Motor Vehicles Act, (2015) ➤ Boiler Law (2015) 	
Time Frame	➤ Entire life spans of the factory operation	
Management Action	<ul style="list-style-type: none"> ➤ 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	TSP, PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , CO
Estimated cost	1,000,000 Kyats per year	
Responsibility	Management of the factory; <ul style="list-style-type: none"> • 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 	

6.3. WATER CONSUMPTION MANAGEMENT PLAN

Objectives:	The water consumption management is aimed at minimizing ground water use
Performance Indicator:	Prohibitions on accessing and using underground water without a license Water consumption saving of general water use from groundwater
Relevant government law and rule	The Underground Water Act (1930)
Management Plan	<ul style="list-style-type: none"> • Install water meter for internal control of water consumption • All staff trains and makes aware conservation practices and proper methods of water use must be place in toilets and other areas of water consumption • The contamination of water is avoided by suitable management of oil and fuel used in machineries and vehicles • Trees plantation surrounding the factory
Responsibility	Manager Arrange audit on water usage controls environmental officer

Environmental Management Plan**6.4. 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, Sulphate, TSS, TDS, Manganese, COD, BOD, Cyanide, Copper, Zinc, Carbonate
	Proper maintenance of drainage and sewerage system will be conducted periodically	
Estimated cost	500,000 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	

6.5. 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	

6.6. 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)
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	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 Yingsheng (Myanmar) Company Limited	

6.7. 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	1,200,000 Kyats per year
Responsibility	HSE Manager, Operation Manager or Environmental Management Team of Yingsheng (Myanmar) Company Limited

6.8. 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	➤ Public Health Law (1972), Prevention and Control of Communicable Diseases

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Law and Rule	Law 1995 (Amendment 2011), Occupational Safety and Health Law (2019)
Time Frame	➤ Entire life spans of proposed project
Management Action	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ 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 Yingsheng (Myanmar) Company Limited

6.9. 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	<ul style="list-style-type: none"> ➤ 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 Program 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	1,000,000 Kyats per year

Environmental Management Plan

Responsible Person	HSE Manager or Environmental Management Team of Yingsheng (Myanmar) Company Limited
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6.10. ENERGY MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> ➤ To improve energy efficiency, reduce cost, optimize capital investment, reduce environmental and greenhouse gas emissions, and conserve natural resources
Relevant government law and rule	<ul style="list-style-type: none"> ➤ National Energy Management Committee (Myanmar Energy Master Plan 2015)
Time Frame	Once in a year throughout the factory life
Management Plan	<ul style="list-style-type: none"> ➤ 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 audit to find out the scope for energy saving
Estimated cost	Approximately 1,000,000 Kyats per year
Responsibility	<p>Manager</p> <ul style="list-style-type: none"> ➤ To arrange energy audit technical personnel ➤ To monitor and record electricity consumption, other related energy issues and take necessary actions if any problem arises

6.11. EMERGENCY RESPONSE AND MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ The Employment and Skill Development Law (August 2013), ILO guide to Myanmar Labor Law (2017)
Time Frame	<ul style="list-style-type: none"> ➤ Entire life spans of the factory operation
Management Plan	<ul style="list-style-type: none"> ➤ 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

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	reptiles (Snake) or other animals. <ul style="list-style-type: none"> ➤ 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 <ul style="list-style-type: none"> ➤ Arrange firefighting training after every 3 months ➤ Responsible for fire control and response ➤ Monitoring daily danger warning and bans

6.12. 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. Table 6-1 is provided the environmental monitoring schedule for Yingsheng (Myanmar) factory. 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 6-1 Environmental Monitoring Schedule for Yingsheng (Myanmar) Company Limited

Issues	Parameter	Frequency	Area to be monitored	Monitoring Cost	Responsible section
Operation Phase					
Common	Monitoring of mitigation measures	Yearly (3 years after operation)	The project	2,500,000 Kyats	Environmental Management Team's Yingsheng (Myanmar) Company Limited
Air Quality	PM2.5, PM10	Biannually	One point in the production area	800,000 Kyats	Environmental Management Team's Yingsheng (Myanmar) Company Limited
Water Quality	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	Biannually	Final discharge point of factory drainage	800,000 Kyats	Environmental Management Team's Yingsheng (Myanmar) Company Limited
Noise	Noise level in decibel (dBA)	Biannually	Two points (point source in operation area and sensitive receptor)	800,000 Kyats	Environmental Management Team's Yingsheng (Myanmar) Company Limited

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Issues	Parameter	Frequency	Area to be monitored	Monitoring Cost	Responsible section
Waste Generation	Solid waste, Liquid waste and Hazardous waste	Regularly	Recycle house and waste house and at the factory office	50,000 Kyats	Environmental Management Team's Yingsheng (Myanmar) Company Limited
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	500,000 Kyats	Environmental Management Team's Yingsheng (Myanmar) Company Limited
Light Intensity	Illuminance	Biannually	At the production line (especially cutting and QC)	20,000 Kyats	Environmental Management Team's Yingsheng (Myanmar) Company Limited
Decommissioning Phase					
Air Quality	PM2.5, PM10	One time during this phase	One point in the production area	1,000,000 Kyats	Land Owner or Yingsheng (Myanmar) Company Limited
Water Quality	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	One time during this phase	Final discharge point of factory drainage	1,000,000 Kyats	Land Owner or Yingsheng (Myanmar) Company Limited
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	1,000,000 Kyats	Land Owner or Yingsheng (Myanmar) Company Limited
Rehabilitation	Recovering and Revegetation		All decommissioning area		Land Owner or Yingsheng (Myanmar) Company Limited

6.13. 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 accidental 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;

6.13.1. 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.

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6.13.2. 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

6.13.3. 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

6.13.4. 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 spread 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

Environmental Management Plan

6.13.5. 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.

6.13.6. 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

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

Table 6-2 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.

6.13.7. 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)

Environmental Management Plan**6.13.8. 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

6.13.9. Health and Safety Training Plan for Worker

Health and Safety Training plan currently used and provided in Yingsheng (Myanmar) Company 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 6-3 Training Plan Used in Yingsheng (Myanmar) Company 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

6.14. 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 through Grievance Committee, which includes the responsible persons of Yingsheng (Myanmar) Company Limited representative from Hlaing Thar Yar Industrial Zone and representative from General Administration Department (Hlaing

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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.

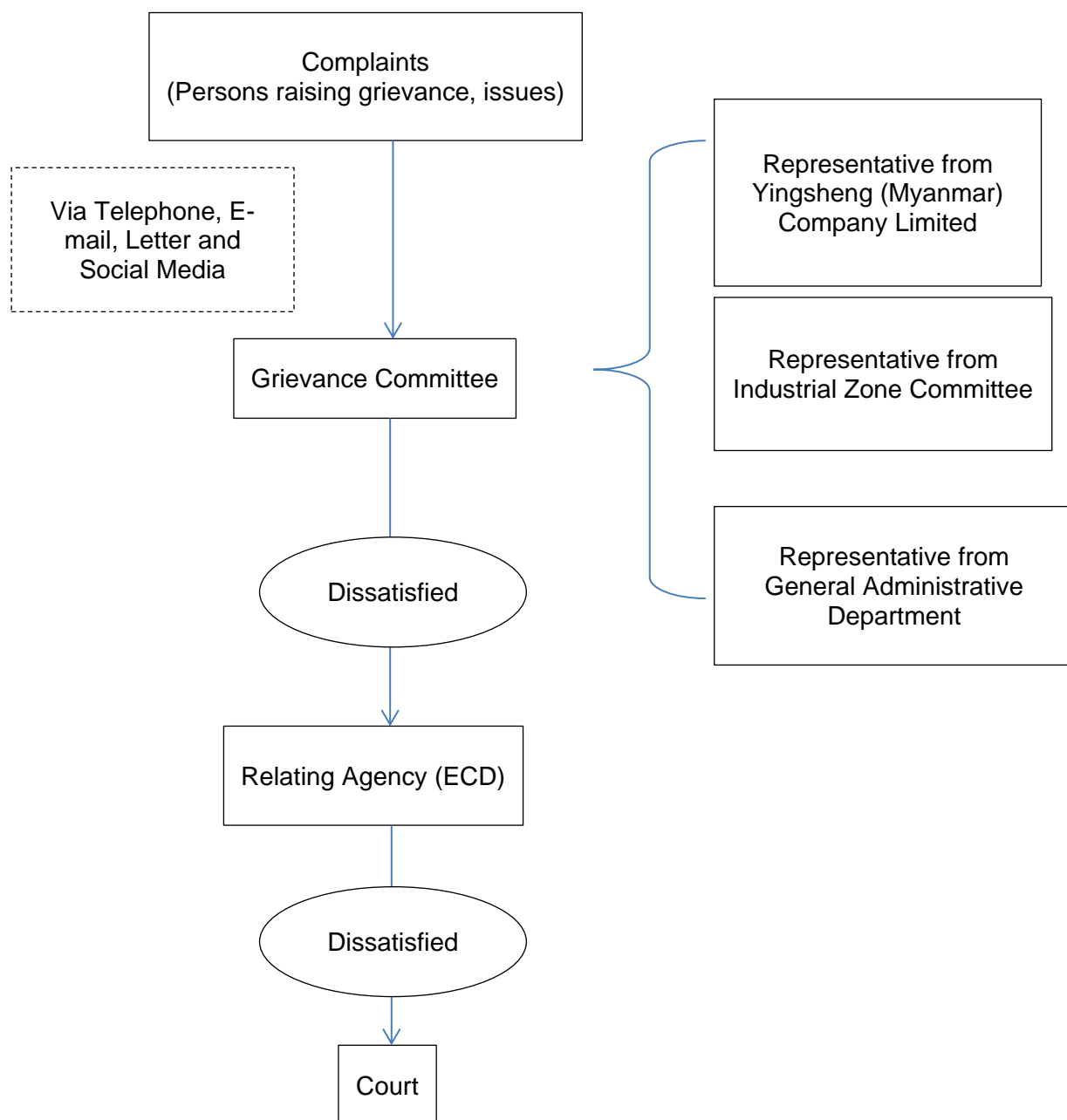


Figure 6-2 Grievance Redress Mechanism Flow Diagram

6.15. 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 Yingsheng (Myanmar) Company Limited 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.

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Yingsheng (Myanmar) Company 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 diseases and its prevention. Part of our CSR activity such as donations will also contribute to public school around our factory Table 6-4.

Table 6-4 CSR plan at Yingsheng (Myanmar) Company Limited

Area	Priority item	Contribution (%)	Estimated Cost (Kyats)	Detail targets
Health	Healthcare for employees and their family	0.5 %	7,500,000	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 %	10,000,000	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%	7,500,000	<ul style="list-style-type: none"> • 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

6.15.1. Public School

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.

6.15.2. Non-profit Training

We will contribute 1% of our net profit for the trainings of our Employees. Our trainings include job-related trainings, language trainings and safety trainings. The main objective of our trainings is that we want our shoe's soles with their work but also improving their other skills such as language and promoting knowledge about safety measures and occupational health employees to be not only become more productive and more qualified.

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6.15.3. Healthcare

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.

7. PUBLIC CONSULTATION

7.1. PUBLIC CONSULTATION PROCESS

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

Public consultation during preparation of EMP report was conducted on 7, February 2020, 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. Daw Khin Thuzar Myint presented EMP study and findings from Myanwei Environmental Solution Company Limited, after the presentation following question and answer section. Summary of public consultation meeting is presented. Figure 7-1 is shown the consultation meeting photo. **(PCM attendant list and presentation power point slide are described in Appendix)**

Table 7-1 Summary of public consultation meeting

Time and Date	Friday, 7 February 2020 10:30-12:30
Venue	Anawrahta Office, Hlaing Tharyar Township.
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

7.2. RECOMMEND SUGGESTION AND COMMENT

After the presentation, the floor opened for questions and answers. There is no suggestion and comment for presentation and EMP draft report, because the project is sample manufacturing of various kinds of shoe's soles (CMP basis). In addition,

Suggestion; U Htun Naing Win; Director (General Administration Office)

- To provide 2% of net profit for CSR program according to MIC's guideline for implementation of CSR program for education, health, society, and environment.

Environmental Management Plan**Suggestion; U Vial Ngaih Lian; Public Health Department**

- Factory workers shall be aware for using the person protective equipment
- To provide long time care of medical checking for workers
- To provide the medicines for aliment and must be enough the medicines for injuries
- To provide the PPE to the employees who work in that factory and
- To provide the nurse who is not only reality nurse but also got the experience in concerning filed.
- To provide healthy drinking water for employees

Suggestion; U Kyaw Kyaw; Assistant Supervisor (Environmental Conservation and Cleaning Department-Industrial Section) YCDC

- To compliance with YCDC procedure for solid waste management and disposed process
- To implement the sufficient septic tank design for workers



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Figure 7-1 Public Consultation Meeting

8. CONCLUSION & RECOMMENDATION

8.1. CONCLUSION

Environmental Management Plan (EMP) has been prepared for Yingsheng (Myanmar) Company Limited factory is located at Plot No. (102), Myay Taing Block No. (25), Shwe Lin Ban 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 shoe's soles product manufacturing factory.

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 shoe's soles 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

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.

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- 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 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 (2017).

[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.

APPENDIX A

Company Document's Yingsheng (Myanmar) Company Limited



ပုံစံ (၅-ခ)

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
ရန်ကုန်တိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ
အတည်ပြုမိန့်

- အတည်ပြုမိန့်အမှတ် ရကတ- ၂၂၅/၂၀၁၉ ၂၀၁၉ ခုနှစ် ဇူလိုင် လ ၂၂ ရက်
ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှု ကော်မတီသည် မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ဥပဒေ
ပုဒ်မ-၂၅(ဃ) အရ ဤအတည်ပြုမိန့်ကိုထုတ်ပေးလိုက်သည် -
- (၁) ရင်းနှီးမြှုပ်နှံသူ/ကမကထပြုသူ အမည် MR. LIU LUNQUAN
 - (၂) နိုင်ငံသား CHINESE
 - (၃) နေရပ်လိပ်စာ VILLAAREA, PUTAOZHUANGYUAN ROOM 4601, DONGGUANCITY, WANJIANG DISTRICT, GUANGDONG PROVINCE, PEOPLE'S REPUBLIC OF CHINA.
 - (၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ YINGFENG RUBBER INDUSTRIAL (HONG KONG)LIMITED, RM1405A 14/FSTANHOPE HSE 165-171 WANCHAI RD, WANCHAI, HONG KONG
 - (၅) ဖွဲ့စည်းရာအရပ် HONG KONG
 - (၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား ဖိနပ်အောက်ခံဆိုးလ်များ ထုတ်လုပ် ချဲ့ပြည်တွင်းရှိ CMP လုပ်ငန်းများသို့ ရောင်းချခြင်း လုပ်ငန်း
 - (၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ) မြေကွက်အမှတ် (၁၀၂)၊ (၁၁၅)၊ အနက်မှ မြေကွက်အမှတ် (၁၀၂)၊ မြေတိုင်းရပ်ကွက်အမှတ် (၂၅)၊ ရွှေလင်ပန်း စက်မှုဇုန်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်း ဒေသကြီး
 - (၈) နိုင်ငံခြားမတည်ငွေရင်း ပမာဏ အမေရိကန်ဒေါ်လာ ၀.၃၅ သန်း
 - (၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ အတည်ပြုမိန့် ရရှိသည့် နေ့မှ (၁)နှစ်အတွင်း
 - (၁၀) စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်) အမေရိကန်ဒေါ်လာ ၀.၃၅ သန်း နှင့် ညီမျှသော မြန်မာကျပ်ငွေ
 - (၁၁) တည်ဆောက်မှုကာလ တစ်နှစ်
 - (၁၂) ရင်းနှီးမြှုပ်နှံမှုခွင့်ပြုသည့် သက်တမ်း ၃၀နှစ်
 - (၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ရာခိုင်နှုန်းပြည့် နိုင်ငံခြား ရင်းနှီးမြှုပ်နှံမှု
 - (၁၄) မြန်မာနိုင်ငံတွင် ဖွဲ့စည်းမည့် ကုမ္ပဏီအမည် YINGSHENG (MYANMAR) COMPANY LIMITED



(ဖြိုးမင်းသိန်း)
ဥက္ကဋ္ဌ



Form (5-B)

THE REPUBLIC OF THE UNION OF MYANMAR

Yangon Region Investment Committee

ENDORSEMENT

Endorsement No. YGN 225/2019

Dated 22 July 2019

This endorsement is issued by Yangon Region Investment Committee
accordance with Section 25 (d) of the Myanmar Investment Law-

- (1) Investor Name MR. LIU LUNQUAN
- (2) Citizenship CHINESE
- (3) Residence Address VILLAAREA, PUTAOZHUANGYUAN ROOM 4601,
DONGGUANCITY, WANJIANG DISTRICT, GUANGDONG PROVINCE, PEOPLE'S
REPUBLIC OF CHINA.
- (4) Name and Address of Principal Organization YINGFENG RUBBER
INDUSTRIAL (HONG KONG)LIMITED, RM1405A 14/FSTANHOPE HSE 165-
171 WANCHAI RD, WANCHAI, HONG KONG
- (5) Place of Incorporation HONG KONG
- (6) Type of business MANUFACTURING OF SHOE'S SOLE FOR CMP
ENTERPRISES
- (7) Place(s) of investment Project PLOT NO.(102), MYAY TANG BLOCK
NO. (25), SHWE LIN BAN INDUSTRIAL ZONE, HLAING THAR YAR
TOWNSHIP, YANGON REGION
- (8) Foreign Capital Amount US\$ 0.382 MILLION
- (9) Period for Foreign Capital to be brought in WITHIN ONE YEAR FROM
THE DATE OF ISSUANCE OF ENDORSEMENT
- (10) Total Amount of Capital (Kyat) EQUIVALENT IN KYAT OF US\$ 0.382
MILLION
- (11) Construction/ Preparation Period one year
- (12) Validity of Endorsement 30 YEARS
- (13) Form of Investment WHOLLY FOREIGN OWNED
- (14) Name of Company Incorporated in Myanmar YINGSHENG (MYANMAR)
COMPANY LIMITED



YRIC2252019

(Phyo Min Thein)

Chairman



Confidential

THE REPUBLIC OF THE UNION OF MYANMAR
YANGON REGION INVESTMENT COMMITTEE

Plot No. 49, Seinlae May Street,
Kabar Aye Pogada Road, Yankin Township, Yangon.

Tel : 01- 658263

Our ref :YRIC-1/E225/2019(553)

Fax: 01- 658264

Dated : 22 July 2019

Subject : Decision of the Yangon Region Investment Committee regarding on
Endorsement for manufacturing of shoe's sole for CMP enterprises
under the name of Yingsheng (Myanmar) Company Limited.

Reference: Yingsheng (Myanmar) Company Limited's letter dated 8/7/2019.

1. The Yangon Region Investment Committee, at its (11/2019) meeting held on 9/7/2019, approved the Endorsement for investment for manufacturing of shoe's sole for CMP enterprises under the name of Yingsheng (Myanmar) Company Limited submitted by YingFeng Rubber Industrial (Hong Kong)Limited (60%) from The Hong Kong Special Administrative Region of the People's Republic of China, Mr. Liu, FeiFei (20%) and Mr. Liu, Lunquan from 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 as follows:

- (a) The term of the 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 Land and Building Lease Agreement shall be initial ten (10) years and extendable for two times for ten (10) years commencing from the date of the agreement between U Aung Lwin (Lessor) and Yingsheng (Myanmar) Company Limited (Lessee).
- (c) The annual rent for land and building shall be US\$ 47489.00 (United States Dollar forty-seven thousand four hundred and eighty-nine only) for the total area of the land measuring 2.347 acres out of total area of 4.546 acres.

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- 2 -

- (d) Yingsheng (Myanmar) Company Limited , may submit an application form for the right to use land under Chapter XII and exemptions and reliefs under Section 75, 77 and 78 of Chapter XVIII of the Myanmar Investment Law.
- (e) Yingsheng (Myanmar) Company Limited shall use its best efforts to achieve a timely realization of the work stated in the Endorsement application.
- (f) Yingsheng (Myanmar) Company Limited shall obey and respect the responsibilities of investors under Section 65 of the Myanmar Investment Law and Chapter XX of the Myanmar Investment Rules.
- (g) Yingsheng (Myanmar) Company Limited shall carry out of 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) Yingsheng (Myanmar) Company Limited shall abide by the Fire Services Department' s rules, regulations, directives and instructions. Moreover, Yingsheng (Myanmar) Company Limited shall undertake fire prevention measures such as the appropriate placement of water storage tank, fire hooks, sand bags, and fire extinguishers, and training will be provided to all employees regarding the use of fire fighting equipment. Yingsheng (Myanmar) Company Limited shall also appoint a specific individual who shall be called the Fire Safety Officer (FSO) who shall be designated responsible for on-site safety and coordination within the organization.
- (i) Yingsheng (Myanmar) Company Limited shall submit to the Myanmar Investment Commission any sublease, mortgage, 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 191 of the Myanmar Investment Rules.

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- 3 -

- (j) Yingsheng (Myanmar) Company Limited shall submit an annual report in the prescribed form to the Myanmar Investment Commission within three (3) months of the end of the financial year in accordance with Rule 196 of the Myanmar Investment Rules and shall disclose a summary of the report on its website or the Myanmar Investment Commission's website.
 - (k) Yingsheng (Myanmar) Company Limited must, during the operation period under the Endorsement of the Myanmar Investment Commission, submit its operating report quarterly in the prescribed form in accordance with Rule 197 of Myanmar Investment Rules.
3. Yingsheng (Myanmar) Company Limited shall carry out in accordance with the laws, regulations and stipulations of relevant Union Ministries, governmental department and governmental organizations the obtaining of any license, permit or registration as per Section 65(d) of the Myanmar Investment Law.
4. Yingsheng (Myanmar) Company Limited shall submit five (5) copies of all approvals, licences, permits and similar authorizations relevant to the initial implementation of the investment and Land Lease Agreement to the Yangon Region Investment Committee.



(Phyto Min Thein)

Chairman

Yingsheng (Myanmar) Company Limited

- cc:
- 1. The Office of the Union Government
 - 2. Ministry of Home Affairs
 - 3. Office of the Myanmar Investment Commission
 - 4. Ministry of Natural Resources and Environmental Conservation
 - 5. Ministry of Labour, Immigration and Population

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Confidential

- 4 -

6. Ministry of Industry
7. Ministry of Commerce
8. Ministry of Planning and Finance
9. Ministry of Investment and Foreign Economic Relations
10. Central Bank of Myanmar
11. Chairman, CMP Enterprises Supervision Committee
12. Director General, Department of Environmental Conservation
13. Director General, Directorate of Labour
14. Director General, Department of Immigration
15. Director General, Directorate of Industrial Supervision and Inspection
16. Director General, Department of Trade
17. Director General, National Archives Department
18. Director General, Customs Department
19. Director General, Internal Revenue Department
20. Director General, Directorate of Investment and Company Administration
21. Monitoring and Supervision Division , Directorate of Investment and Company Administration

Confidential

APPENDIX B

Transitional Consultant Registration Certificate



THE REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
Environmental Conservation Department



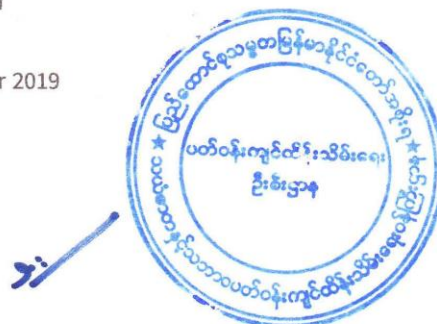
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10068 Date 24 MAY 2019

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

(ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို ထုတ်ပေးလိုက်သည်။)

- | | |
|--|--|
| (a) Name of Organization
(အဖွဲ့အစည်းအမည်) | Myanwei Consulting Co., Ltd. |
| (b) Name of the representative in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏အမည်) | U Nyan Lynn Aung |
| (c) Citizenship of the representative in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏နိုင်ငံသား) | Myanmar |
| (d) Identity Card /Passport Number of the representative person in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏ မှတ်ပုံတင်/ နိုင်ငံကူးလက်မှတ် အမှတ်) | 12/Sakhana(N)056196 |
| (e) Address of organization
(ဆက်သွယ်ရန်လိပ်စာ) | No. 28, Myay nu street, Sanchaung Township,
Yangon, Myanmar.
Mobile phone: 09440251888
E mail: ceo@myanweiconsulting.com |
| (f) Type of Consultancy
(အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) | Organization |
| (g) Duration of validity
(သက်တမ်းကုန်ဆုံးရက်) | 31 December 2019 |



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

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Geology and Soil

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား (၁-၁-၂၀၂၁) ရက်နေ့မှ (၃၀-၆-၂၀၂၁) ရက်နေ့အထိ (၆) လ သက်တမ်းတိုးမြှင့်သည်။

Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား (၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆) လ သက်တမ်းတိုးမြှင့်သည်။

Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)

The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား (၁-၁-၂၀၂၂) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။

Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉) လ သက်တမ်းတိုးမြှင့်သည်။

Soe Naing
10.6.2017
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။

Soe Naing
1.1.2020
For Director General
(Soe Naing, Director)
Environmental Conservation Department



REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

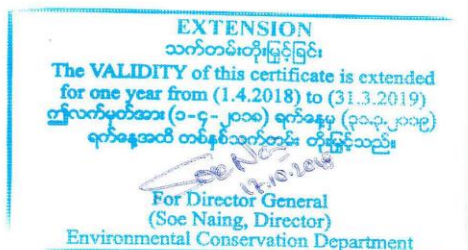


No. 0048 Date

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

(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

- | | |
|---|---|
| (a) Name of Consultant
(အကြံပေးပုဂ္ဂိုလ်အမည်) | U Lin Htet Sein |
| (b) Citizenship
(နိုင်ငံသား) | Myanmar |
| (c) Identity Card / Passport Number
(မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်) | 7/ Tha Ka Na (N) 101377 |
| (d) Address
(ဆက်သွယ်ရန်လိပ်စာ) | No.54, Room No.704, Waizayantar Tower,
Waizayantar Road, Thingangyun Township,
Yangon.
lin.tbs@gmail.com , 09 421137569 |
| (e) Organization
(အဖွဲ့အစည်း) | Total Business Solution Co., Ltd. |
| (f) Type of Consultancy
(အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) | Person |
| (g) Duration of validity
(သက်တမ်းကုန်ဆုံးရက်) | 31 March 2018 |



Director General

Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Facilitation of meeting,
2. Land use,
3. Legal analysis,
4. Geology and soil,
5. Occupational Safety and Health,
6. Public Health



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

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

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

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

APPENDIX C

Monitoring Result

Light Result



Plot No. (36, 38), Room No. 9A, 9th floor, Grand Myay Nu Condominium, 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:	Yingsheng (Myanmar) Co.,Ltd
Project Location:	Plot No. (102), Myay Taing Block No. (25), Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling Date:	3 December, 2019
Sampling Time:	1:00 pm to 4:00 pm
Sampling Condition:	
Sampling By:	Environmental Team Represented By MYANWEI CONSULTING GROUP LIMITED.

Instrument	Type	Sampling Rate	Location
Uni-T (Luminometer)	UT380 Series	100 times/second	16°54'27.02"N 96°03'35.27"E

No	Measure area	Unit	Result	Standard	Remark
1	Cutting Area	Lux	280	1000	Below
2	Moulding Area	Lux	330	300	Above
3	Chemical Mixing Area 1	Lux	212	1000	Below
4	Chemical Mixing Area 2	Lux	123.8	1000	Below
5	Rubber Cutting	Lux	190.3	1000	Below

IESNA Lighting Handbook

Area / Task / Process	Illuminance levels (lux)
Exterior calculating, walkways, stores, main entrances and exit roads, car parking, internal factory roads, etc.	20-50
Boiler house, transformer yards, furnace rooms, entrances, corridors, stairs, etc.	70-100
Calculation area in industry, stores, stock rooms and canteen.	100-150
Coarse Work	200-300
Medium work	300-500
Fine Work	500-1500
Very fine minute and precise work	1500-3000

Department	Type of Light	Wattage of Light	Lux Level
Fabric store	Fluorescent tube light	40 W	300
Sewing floor	LED tube light	20 W (T8)	400
Cutting floor	LED tube light	22 W (T8)	1000
Finishing	LED tube light	28 W (T8)	600
Inspection points	LED tube light	28 W (T8)	900 (except 1500 at audit tables)
Sampling	LED tube light	22 W (T8)	500
Office areas	Fluorescent tube light	36 W (T)	300


 Lin Htet Sain
 Environmental Consultant
 Myanwei Consulting Co., Ltd.

Noise Result



Plot No. (36, 38), Room No. 9A, 9th floor, Grand Myay Nu Condominium, 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:	Yingshen (Myanmar) Co., Ltd
Project Location:	Plot No. (102), Myay Taing Block No. (25), Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling Date:	3 December, 2019
Sampling Time:	1:00 pm To 4:00 pm
Sampling Condition:	
Sampling By:	Environmental Team Represented By MYANWEI CONSULTING GROUP LIMITED

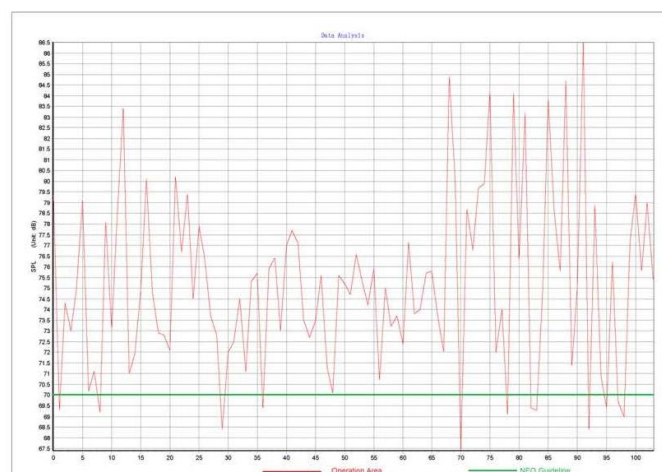
Instrument	Type	Sampling Rate	Location
Digital Sound Level Meter	GM 1356 USB	30 -130 dB	16°54'27.02"N and 96°03'35.27"E

No	Place	Unit	Result	Standard	Remark
1	Operation Area	dBA	75.12	70 dBA	Slightly Above

National Environmental Quality (Emission) Guideline

Receptor	One Hour Laeq (dBA)	Guideline value
	Daytime 7:00 – 22:00 (10:00 – 22:00 for Public holidays)	Nighttime 22:00 – 07:00 (22:00 – 10:00 for Public holidays)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70


Lin Htet Sein
Environmental Consultant
Myanwei Consulting Co., Ltd.



Air Result



Plot No. (36, 38), Room No. 9A, 9th floor, Grand Myay Nu Condominium, 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:	Yingshen (Myanmar) Co., Ltd
Project Location:	Plot No. (102), Myay Taing Blok No. (25), Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling Date:	3 December 2019
Sampling Time:	1:00 am to 4:00 pm
Sampling Condition:	Good
Sampling By:	Environmental Team Represented By MYANWEI CONSULTING GROUP LIMITED

Instrument	Type	Sampling Rate	Location
OCEANUS-AQM-09	PM, NO ₂ , SO ₂ , Detector	0-999.9 (µg/M ³)	Operation Area (Outdoor)

National Environmental Quality (Emission) Guideline

Parameter	Averaging period	Guideline value	Unit
PM 10 ^a	1-year	20	(µg/M ³)
	24-hour	50	
PM 2.5 ^a	1-year	10	(µg/M ³)
	24-hour	25	
NO ₂ ^a	1-year	40	(µg/M ³)
	1-hour	200	
SO ₂ ^a	24-hour	20	(µg/M ³)
	10-min	500	

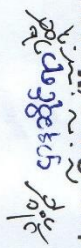
a. Values from air quality guidelines-global update 2005: particulate matter, ozone, nitrogen dioxide and sulfur dioxide.
b. Values from air quality guidelines for Europe, 2nd edition.




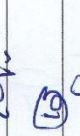







Monitoring Result

Location	GPS Value	Parameters	Observed Value	Unit	Guideline Value
Production Area	16°54'27.02"N 96°03'35.27"E	PM10	18.63	µg/m ³	50
		PM2.5	14	µg/m ³	25
		NO ₂	398.23	µg/m ³	200
		SO ₂	71.81	µg/m ³	500







Lin Htet Sein
Environmental Consultant
Myanwei Consulting Co., Ltd.

APPENDIX D Public Consultation Meeting


 Dishang Group (Myanmar) Company Limited
 အလုပ်ရုံဆွေးနွေးပွဲတက်ရောက်သူများ စာရင်း

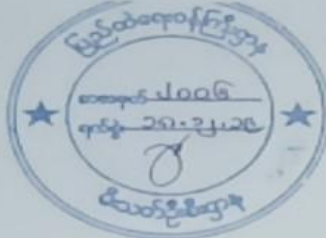
Date - 7.2.2020			နေရာ - ဒဂုံမြို့တော် ရွာလှိုင် အနီးရှိ အိမ်ရာ		
No စဉ်	Name အမည်	Designation ရာထူး	Department / Address ဌာန/လိပ်စာ	Signature လက်မှတ်	Ph no/ Email ဖုန်းနံပါတ် / အီးမေးလိပ်စာ
1 "	ဦး နုရ်ဇာ	HR	မြို့တော်အဖွဲ့အစည်း		0941201537932
2 "	ဦး နုရ်ဇာ	Dishang Group	(HR)		09470742615
3 "	ဦးစွာ ဦးစိုးမိုး	မြို့တော်အဖွဲ့အစည်း	မြို့တော်အဖွဲ့အစည်း		095062446
4 "	ဦးစွာ ဦးစိုးမိုး	အမျိုးသမီး			09764492323
5 "	ဦးစွာ ဦးစိုးမိုး	အမျိုးသမီး			09783577245
6 "	ဦးစွာ ဦးစိုးမိုး	"			09401037135
7 "	ဦးစွာ ဦးစိုးမိုး	အမျိုးသမီး	အမျိုးသမီး		09.5207485
8 "	ဦးစွာ ဦးစိုးမိုး	အမျိုးသမီး	အမျိုးသမီး		09788846798
9 "	ဦးစွာ ဦးစိုးမိုး	"	"		09404320448
10 "	ဦးစွာ ဦးစိုးမိုး	အမျိုးသမီး	အမျိုးသမီး		09-799487947
11 "	ဦးစွာ ဦးစိုးမိုး	အမျိုးသမီး	"		09.25943231
12 "					

၄၀၂၃၇
 ~~~~~  
 Dishang Group (Myanmar) Company Limited  
 အလုပ်ရုံဆွေးနွေးပွဲတက်ရောက်သူများ စာရင်း

| Date - 7.2.20 |                  | ဇန်နဝါရီလ ၁၆ ရက်နေ့   |                                       |                                                                                   |                                               |
|---------------|------------------|-----------------------|---------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------|
| No<br>စဉ်     | Name<br>အမည်     | Designation<br>ရာထူး  | Department /<br>Address<br>ဌာန/လိပ်စာ | Signature<br>လက်မှတ်                                                              | Ph no/ Email<br>ဖုန်းနံပါတ် /<br>အီးမေးလိပ်စာ |
| 13.           | U Ko Ko Htay     | AE                    | YESC                                  |  | 09251054112                                   |
| 14.           | U Kyaw Kyaw      | Assistant Supervisor  | Yoda Pech                             |  | 09-5098374                                    |
| 15.           | U Myint Soe.     | u                     | u                                     |  | 0949163698                                    |
| 16.           | U Tun Nang Win   | Staff Officer Grade 2 | GAD                                   |  | 09421412998                                   |
| 17.           | U Aung Myint Tun | Sec/Asst              | ကမ္ဘာ့လမ်းညွှန်                       |  | 09425502248                                   |
|               |                  |                       |                                       |                                                                                   |                                               |
|               |                  |                       |                                       |                                                                                   |                                               |
|               |                  |                       |                                       |                                                                                   |                                               |
|               |                  |                       |                                       |                                                                                   |                                               |
|               |                  |                       |                                       |                                                                                   |                                               |
|               |                  |                       |                                       |                                                                                   |                                               |
|               |                  |                       |                                       |                                                                                   |                                               |

## APPENDIX E

### Fire Safety Recommendation



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
ပြည်ထောင်စုဝန်ကြီးဌာန  
မီးသတ်ဦးစီးဌာန

စာအမှတ်၊ ၂၀၀၆ / ၁၀၀ / ၅၂ / ဦး ၁  
ရက် စွဲ၊ ၂၀၁၉ခုနှစ်၊ ဒီဇင်ဘာလ ၁၈ ရက်

သို့

**YINGSHENG (MYANMAR) CO., Ltd**  
အမှတ်(၁၀၂)၊ ယောအတွင်းဝန်ဦးစီးလှိုင်လမ်း  
ရွှေလင်ပန်းဇော်မှုန့်လှိုင်သာယာမြို့နယ်

အကြောင်းအရာ။ အဆောက်အဦးမီးဘေးလုံခြုံရေး (Fire Safety) အတွက် စစ်ဆေးခြင်း

၁။ အထက်အကြောင်းအရာပါ ကိစ္စနှင့်စပ်လျဉ်း၍ အထပ်မြင့်အဆောက်အဦ မဆောက်လုပ်မီ မီးဘေးလုံခြုံရေးအတွက် YINGSHENG (MYANMAR) CO., Ltd ၊ လှိုင်သာယာမြို့နယ်မှ တင်ပြလာသော အဆောက်အဦပုံစံအား မီးသတ်ဦးစီးဌာနမှ စစ်ဆေးပြီး ဖြစ်ပါသည်။ မီးဘေးလုံခြုံရေးအတွက် လိုက်နာဆောင်ရွက်ရန် ညွှန်ကြားချက်(၁၂)ချက်ကို ဤစာနှင့်အတူ ပူးတွဲပေးပို့ပါသည်။

၂။ လျှောက်ထားသူဘက်မှ ညွှန်ကြားချက်အတိုင်းပြည့်စုံစွာ လိုက်နာဆောင်ရွက်သွားမည်ဆိုပါက အောက်ဖော်ပြပါ အဆောက်အဦဆောက်လုပ်ခြင်းအတွက် ဤဌာနအနေဖြင့် ကန့်ကွက်ရန်မရှိကြောင်း အကြောင်းကြားပါသည်-

|                           |                                                                                    |
|---------------------------|------------------------------------------------------------------------------------|
| (က) လျှောက်ထားသူအမည်      | YINGSHENG (MYANMAR) CO., Ltd                                                       |
| (ခ) အဆောက်အဦဆောက်မည့်နေရာ | အမှတ်(၁၀၂)၊ ယောအတွင်းဝန်ဦးစီးလှိုင်လမ်း<br>ရွှေလင်ပန်းဇော်မှုန့်လှိုင်သာယာမြို့နယ် |
| (ဂ) အဆောက်အဦအမျိုးအစား    | Steel Structure (၁+mezzanine)ထပ်<br>(မိနပ်အောက်ခံဆိုးလ်များထုတ်လုပ်သည့်စက်ရုံ)     |

၃။ ဤအဆောက်အဦအတွက် ပူးတွဲပါမီးဘေးလုံခြုံရေး ညွှန်ကြားချက်အတိုင်း ဆောင်ရွက်ပြီးစီးချိန်တွင် မီးဘေးလုံခြုံရေး စစ်ဆေးထောက်ခံချက်လက်မှတ် (Fire Safety Certificate) ထုတ်ပေးရန် မီးသတ်ဦးစီးဌာနသို့ လျှောက်ထားရမည်။

၄။ ထိုသို့လျှောက်ထားလာသည့်အခါ မီးသတ်ဦးစီးဌာနမှ ဆောက်လုပ်ပြီးအဆောက်အဦအား လုပ်ထုံးလုပ်နည်းနှင့်အညီ ထပ်မံစစ်ဆေးပြီးပူးတွဲပါ မီးဘေးလုံခြုံရေးဆိုင်ရာညွှန်ကြားချက်(၁၂)ချက်အား ပြည့်စုံစွာ လိုက်နာဆောင်ရွက်လျှင် မီးဘေးလုံခြုံရေးစစ်ဆေးထောက်ခံချက် (Fire Safety Certificate) အားထုတ်ပေးသွားမည် ဖြစ်ပါသည်။


၅။ မီးဘေးလုံခြုံရေးညွှန်ကြားချက်များအား လိုက်နာဆောင်ရွက်ရန် ပျက်ကွက်မှုတစ်စုံတစ်ရာ စစ်ဆေးတွေ့ရှိလျှင် မီးဘေးလုံခြုံရေးစစ်ဆေးထောက်ခံချက် (Fire Safety Certificate) ထုတ်ပေးခြင်းမပြုပါ။ ထို့အပြင် မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ ဥပဒေအရအရေးယူခြင်းခံရမည် ဖြစ်ပါသည်။

အထပ်မြင့် အဆောက်အဦစစ်ဆေးရေးဆိုင်ရာ  
ဆောင်ရွက်ပေးမှုအတွက်သင့်ငွေပေါင်း  
၄၄၁၄၄၉၇/ ( ၁၀.၁၂.၁၉ ) ကို  
ဘဏ်ငွေသွင်းပြီး ချလံဖြင့် လက်ခံရရှိပါသည်။


ညွှန်ကြားရေးမှူးချုပ် (ကိုယ်စာ)  
(သိန်းထွန်းဦး၊ ညွှန်ကြားရေးမှူး)


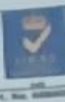
## APPENDIX F

### Drinking Water Treatment Result



**ISO  
TECH  
LABORATORY**



WTL-RE-001  
Issue Date - 01-12-2012  
Effective Date - 01-12-2012  
Issue No - 1.0/ Page 1 of 1

Laboratory Technical Consultant: U Saw Christopher Maung  
B.Sc Engg. (Civil), Dip S E(Dett) Lecturer of YIT (Reld), Consultants (Y.C.D.C), LWSE 001.  
Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

**W0120 555**

### WATER QUALITY TEST RESULTS FORM

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Client                                  | Yingsheng (Myanmar) Co., Ltd. |
| Nature of Water                         | Drinking Water                |
| Location                                | Hlaing Thar Yar Township      |
| Date and Time of collection             | 20.1.2020                     |
| Date and Time of arrival at Laboratory  | 20.1.2020                     |
| Date and Time of commencing examination | 21.1.2020                     |
| Date and Time of completing             | 23.1.2020                     |


#### Results of Water Analysis

#### WHO Drinking Water Guideline (Geneva - 1993)

|                                 |      |                           |                               |
|---------------------------------|------|---------------------------|-------------------------------|
| pH                              | 7.1  |                           | 6.5 - 8.5                     |
| Colour (True)                   | Nil  | TCU                       | 15 TCU                        |
| Turbidity                       | Nil  | NTU                       | 5 NTU                         |
| Conductivity                    | 2    | micro S/cm                |                               |
| Total Hardness                  | Nil  | mg/l as CaCO <sub>3</sub> | 500 mg/l as CaCO <sub>3</sub> |
| Calcium Hardness                | Nil  | mg/l as CaCO <sub>3</sub> |                               |
| Magnesium Hardness              | Nil  | mg/l as CaCO <sub>3</sub> |                               |
| Total Alkalinity                | 1    | mg/l as CaCO <sub>3</sub> |                               |
| Phenolphthalein Alkalinity      | Nil  | mg/l as CaCO <sub>3</sub> |                               |
| Carbonate (CaCO <sub>3</sub> )  | Nil  | mg/l as CaCO <sub>3</sub> |                               |
| Bicarbonate (HCO <sub>3</sub> ) | 1    | mg/l as CaCO <sub>3</sub> |                               |
| Iron                            | 0.02 | mg/l                      | 0.3 mg/l                      |
| Chloride (as CL)                | Nil  | mg/l                      | 250 mg/l                      |
| Sodium chloride (as NaCL)       | Nil  | mg/l                      |                               |
| Sulphate (as SO <sub>4</sub> )  | Nil  | mg/l                      | 500 mg/l                      |
| Total Solids                    | 1    | mg/l                      | 1500 mg/l                     |
| Total Suspended Solids          | Nil  | mg/l                      |                               |
| Total Dissolved Solids          | 1    | mg/l                      | 1000 mg/l                     |
| Manganese                       | Nil  | mg/l                      | 0.05 mg/l                     |
| Phosphate                       | Nil  | mg/l                      |                               |
| Phenolphthalein Acidity         | 2    | mg/l                      |                               |
| Methyl Orange Acidity           | Nil  | mg/l                      |                               |
| Salinity                        | 0.1  | ppt                       |                               |


Remark: This certificate is issued only for the receipt of the test sample.

**Tested by**

Signature: 

Name: **Zaw Hein Oo**  
**B.Sc (Chemistry)**  
**Sr. Chemist**

**Approved by**

Signature: 

Name: **Soe Thit**  
**B.E (Civil) 1980.**  
**Technical Officer**

**ISO TECH Laboratory**  
(a division of WEG Co., Ltd.)

No. 18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
Ph: 01-640955, 09-73225175, 09-30339681, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



## APPENDIX G

### List of Commitments

Yingsheng (Myanmar) Company Limited၏ ဖိနပ်အောက်ခံဆိုးလ်အမျိုးမျိုး ထုတ်လုပ်ခြင်းလုပ်ငန်းလည်ပတ်ဆောင်ရွက်ခြင်းကြောင့် 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        | <b>ရည်ရွယ်ချက်</b> <ul style="list-style-type: none"> <li>လုပ်ငန်းလုပ်ဆောင်မှုများကြောင့်ဖြစ်ပေါ်လာသည့် ပတ်ဝန်းကျင်ထိခိုက်မှု အပေါ်လျော့ချရန်</li> <li>ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်အား အကောင်အထည်ဖော်ခြင်း</li> </ul>                                                                                                                                                                                                                 | အခန်း (၁)                          |
|                         | ၁.၁      | <b>အဆိုပြုလုပ်ငန်း၏နောက်ခံအကြောင်းအရာ</b><br>Yingsheng (Myanmar) Company Limited သည် CMP စနစ်ဖြင့် ဖိနပ်အောက်ခံဆိုးလ်အမျိုးမျိုး ထုတ်လုပ်ပြီး နိုင်ငံခြားသို့တင်ပို့ရောင်းချသွားမည်ဖြစ်သည်။<br>ရန်ကုန်တိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ၏ အတည်ပြုမိန့်အမှတ် (ရကတ-၂၂၅/၂၀၁၉)<br>သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏စာအမှတ် ရက-၁/၃/၄ (အီးအိုင်အေ) (၁၂၈၅/၂၀၁၉)ဖြင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ရေးဆွဲရန် သဘောထားပြန်ကြားခြင်း | အခန်းခွဲ (၁.၁)                     |
| မူဝါဒ၊ ဥပဒေနှင့်        | ၂        | ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)                                                                                                                                                                                                                                                                                                                                                                                                             | အခန်း (၂)                          |

| ကတိကဝတ်၏ အတိုချုပ် အမည်        | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                                                                                                                                                                                                             | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
|--------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| အဖွဲ့အစည်းဆိုင်ရာမူဘောင်များ   |          | ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး နည်းဥပဒေ (၂၀၁၄)<br>ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅)<br>မြန်မာနိုင်ငံမှ ချမှတ်ထားသော စက်ရုံနှင့် သက်ဆိုင်သည့် အခြား<br>လိုက်နာဆောင်ရွက်ရမည့် လုပ်ထုံးလုပ်နည်း၊ ဥပဒေ၊ နည်းဥပဒေ နှင့် မူဝါဒများ<br>အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်<br>(၂၀၁၅) နှင့် နိုင်ငံတကာ ပတ်ဝန်းကျင်ဆိုင်ရာ စံသတ်မှတ်ချက်များနှင့် ပတ်ဝန်းကျင်<br>စီမံခန့်ခွဲမှုဆိုင်ရာ လမ်းညွှန်ချက်များ |                                    |
| စီမံကိန်းအကြောင်းအရာဖော်ပြချက် | ၃        | မြေကွက်အမှတ်(၁၀၂)၊ မြေတိုင်းရပ်ကွက်အမှတ် (၂၅)၊ ရွှေလင်ပန်းစက်မှုဇုန်၊<br>လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။<br>မြေဧရိယာ ၂.၃၄၇ ဧက (၉၄၉၇.၉၇၂ စတုရန်းမီတာ)                                                                                                                                                                                                                                                                                             | အခန်းခွဲ (၃.၁)                     |
|                                | ၃.၁      | <b>အဆိုပြုလုပ်ငန်း၏ရည်ရွယ်ချက်</b><br>တရုတ်နိုင်ငံ၊ ဂျပန်နိုင်ငံ၊ ကိုရီးယား၊ ဥရောပ၊ မွန်ဂိုလီးယား၊ UK တို့မှ<br>ကုန်ကြမ်းပစ္စည်းများကို ရယူပြီး CMP စနစ်ဖြင့် ထုတ်လုပ်၍<br>နိုင်ငံခြားသို့ပြန်လည်တင်ပို့ရောင်းချသွားမည်ဖြစ်ပါသည်။                                                                                                                                                                                                                          | အခန်းခွဲ<br>(၃.၃.၆)                |
|                                | ၃.၂      | အဆိုပြုလုပ်ငန်းသည် ပြည်ပမှ ပညာရှင် ၄ ဦး၊ ပြည်တွင်းလုပ်သား<br>၁၀၂ဦးထိခန့်အပ်ပြီး ဖိနပ်အောက်ခံဆိုးလ်အမျိုးမျိုးကို ထုတ်လုပ်သွားမည်ဖြစ်ပါသည်။                                                                                                                                                                                                                                                                                                                 | အခန်းခွဲ<br>(၃.၃.၂)                |
|                                | ၃.၃      | အဆိုပြုလုပ်ငန်း၏ အဓိကကုန်ကြမ်းမှာ- Butadieneရာဘာ၊ SBR၊<br>Polyethyleneglycol/polyether၊ Titanium dioxide၊ Silica၊ Zinc oxide၊<br>Accelerator၊ Toner၊ EVA ရာဘာ၊ Talcum အမှုန့်၊ Foaming agent၊ Stearic acid၊<br>TPRဖြစ်ပြီးအခြားလိုအပ်သည့်ဆက်စပ်ပစ္စည်းများကို တရုတ်နိုင်ငံ၊ ဂျပန်နိုင်ငံ၊<br>ကိုရီးယား၊ ဥရောပ၊ မွန်ဂိုလီးယား၊ UK တို့မှတင်သွင်းသွားမည်ဖြစ်ပါသည်။                                                                                           | အခန်းခွဲ<br>(၃.၃.၆)                |
|                                | ၃.၄      | အဆိုပြုလုပ်ငန်း၏ထုတ်ကုန်မှာ-<br>ဖိနပ်အောက်ခံဆိုးလ်အမျိုးမျိုး ဖြစ်ပါသည်။                                                                                                                                                                                                                                                                                                                                                                                   | အခန်းခွဲ<br>(၃.၂.၃)                |

| ကတိကဝတ်၏ အတိုချုပ် အမည်                             | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                                                                                                                            | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
|-----------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| 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 ဧရိယာတွင် (70 One hour LAeq (dBA)) ဖြင့်နှိုင်းယှဉ် ဖော်ပြထားပါသည်။                                                                                                                                        | အခန်းခွဲ (၄.၂.၈)                   |
| လေအရည်အသွေး                                         | ၄.၂      | အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)၏ ထုတ်လွှတ်အစိုးအငွေ့ (Air emissions) လမ်းညွှန်သတ်မှတ်ချက် တို့ဖြင့် နှိုင်းယှဉ် ဖော်ပြထားပါသည်။                                                                                                                                                                                                | အခန်းခွဲ (၄.၂.၇)                   |
| စက်ရုံတွင်း အလင်းရောင် ရရှိမှု                      | ၄.၃      | Illumination and Limiting Glare Index based on IES Code, 1968 ဖြင့် နှိုင်းယှဉ် ဖော်ပြထားပါသည်။                                                                                                                                                                                                                                                                           | အခန်းခွဲ (၄.၂.၉)                   |
| ဒေသဆိုင်ရာအချက်အလက်များ                             | ၄.၄      | အဆိုပြုလုပ်ငန်းတည်ရှိသည်လှိုင်သာယာမြို့နယ်၏ဒေသဆိုင်ရာအချက်အလက်များ ကိုဖော်ပြထားပါသည်။                                                                                                                                                                                                                                                                                     | အခန်းခွဲ (၄.၄)                     |
| ထိခိုက်မှုဆန်းစစ်ခြင်းနှင့်လျှော့ချရေးနည်း လမ်းများ | ၅        | <b>ထိခိုက်မှုဆန်းစစ်ခြင်း</b> <ul style="list-style-type: none"> <li>• ကောင်းကျိုး<br/>အလုပ်ကိုင်အခွင့်အလမ်းများပေါများလာခြင်း၊<br/>လမ်းပန်းဆက်သွယ်ရေးကောင်းမွန်လာခြင်း၊ နည်းပညာများတိုးတက်လာခြင်း</li> <li>• ဆိုးကျိုး<br/>သဘာဝပတ်ဝန်းကျင်အရင်းအမြစ်များ၊ ဂေဟစနစ်အရင်းအမြစ်များ၊<br/>လူသားများအပေါ် ထိခိုက်မှုများ၊ အမှိုက်စွန့်ပစ်ခြင်းကြောင့်ထိခိုက်မှုများ</li> </ul> | အခန်း (၅)                          |
|                                                     | ၅.၁      | <b>ဆန်းစစ်ခြင်းနည်းလမ်း</b><br>သိသာထင်ရှားသောသက်ရောက်မှု = (ပမာဏ+အချိန်+ကျယ်ပြန့်မှု) × ဖြစ်နိုင်ချေ                                                                                                                                                                                                                                                                      | အခန်းခွဲ (၅.၁)                     |

| ကတိကဝတ်၏ အတိုချုပ် အမည်            | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                                                                                                                                                                                                                                | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
|------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု         | ၆        | Yingsheng (Myanmar) Company 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 (၆)                          |
| လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်များ | ၆.၁      | ကာဗွန်ဒိုင်အောက်ဆိုက်လျော့ချရန်အတွက် စက်ရုံအနီးအတွင်း သစ်ပင်ပန်းပင်များစိုက်ပျိုးရမည်။ အဆိုပြုလုပ်ငန်းဧရိယာအတွင်း စွန့်ပစ်ပစ္စည်းများ မီးရှို့ခြင်းကို တားမြစ်ထားမည်။ လေထုညစ်ညမ်းမှုလျော့ချရန် လုပ်ငန်းသုံးယာဉ်များ၊ မီးစက်များနှင့် လုပ်ငန်းဆိုင်ရာ စက်ပစ္စည်းများကို ပုံမှန်စောင့်စစ်ဆေးရမည်။ ပတ်ဝန်းကျင်အပေါ် မီးခိုးထွက်ရှိမှုလျော့နည်းစေရန် မီးခိုးခေါင်းတိုင်များ တပ်ဆင်ရမည်။ မော်တော်ယာဉ်များ၊ ရေစုပ်စက်များနှင့် မီးစက်များကို ပုံမှန် ပြုပြင်၊ ထိန်းသိမ်းထားရှိရမည်။ | အခန်းခွဲ (၆.၂)                     |
| ဆူညံသံထွက်ရှိမှု                   | ၆.၂      | မီးစက်ခန်းများထားရှိခြင်းနှင့် အခြားသက်ဆိုင်သည့် ပစ္စည်းများအား စနစ်တကျ ထိန်းသိမ်းထားရှိရမည်။ ဝန်ထမ်းများကို သက်ဆိုင်ရာကိစ္စရပ်များနှင့် ပတ်သက်၍ သင့်တော်သော သင်တန်းများပေးခြင်း၊ ဆူညံသံထွက်ရှိသည့်နေရာများတွင် PPE များကို ဝတ်ဆင်စေခြင်း။                                                                                                                                                                                                                                    | အခန်းခွဲ (၆.၆)                     |
| အမှိုက်စွန့်ပစ်မှု                 | ၆.၃      | စက်ရုံအတွင်း အမှိုက်ပုံးများထားရှိခြင်း။ သတ်မှတ်ထားသောနေရာတွင်သာ အမှိုက်စို၊ အမှိုက်ခြောက်များ ခွဲခြားစွန့်ပစ်ခြင်း။ အမှိုက်များကို ရန်ကုန်စည်ပင်သာယာရေးကော်မတီနှင့် ချိတ်ဆက်၍စွန့်ပစ်ခြင်း။                                                                                                                                                                                                                                                                                  | အခန်းခွဲ (၆.၅)                     |

| ကတိကဝတ်၏ အတိုချုပ် အမည်                | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
|----------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| စွန့်ပစ်အရည်                           | ၆.၄      | ဆီကန်၊ မိလ္လာကန်များကို ပုံမှန်စစ်ဆေးခြင်း၊ သန့်စင်ခြင်းများပြုလုပ်ခြင်း။                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | အခန်းခွဲ (၆.၄)                     |
| မီးဘေးအန္တရာယ်                         | ၆.၅      | မီးအန္တရာယ်အရေးပေါ်အခြေအနေများအတွက် စက်ရုံအတွင်းတွင် မီးသတ်ဆေးဘူးများ၊ မီးသတ်ရေပိုက်များ၊ မီးသတ်ရေကန် ထားရှိရမည်။<br>အရေးပေါ်ထွက်ပေါက်များနှင့် စုရပ်နေရာများအား လမ်းညွှန်ပြ ထားရှိရမည်။<br>မီးသတ်ရေလှောင်ကန်များ၊ မီးငြိမ်းသတ်ရေးကရိယာများကို ပုံမှန်စစ်ဆေးခြင်း<br>စက်ရုံအတွင်း အရေးပေါ်အချက်ပေးစနစ်များ တပ်ဆင်ခြင်း<br>အရေးပေါ်ထွက်ပေါက်များတစ်လျှောက်တွင် စက်ပစ္စည်းများနှင့် အခြားသောကုန်ပစ္စည်းများ ပိတ်ဆို့ထားခြင်း မရှိရန် စီစဉ်ထားရမည်။                                                                                                                                                                                                                                                                                                                                                           | အခန်းခွဲ (၆.၇)                     |
| လုပ်ငန်းခွင်ထိခိုက်မှုနှင့် ကျန်းမာရေး | ၆.၆      | ရှေးဦးပြုစုနည်း သင်တန်းများ၊ ဘေးအန္တရာယ်ကင်းရှင်းရေး လေ့ကျင့်မှု၊ မီးငြိမ်းသတ်နည်းသင်တန်းများ၊ အခြားလိုအပ်သော လေ့ကျင့်မှုများ၊ စက်ပစ္စည်းများကို စနစ်တကျကိုင်တွယ်မှုများအား သင်တန်းပေးခြင်း<br>လုပ်ငန်းခွင်အတွင်း အလုပ်သမားများ အလင်းရောင်ကောင်းစွာရရှိစေရန်နှင့် အမြင်အာရုံမထိခိုက်စေရန် အလင်းရောင်များကို လုံလောက်စွာ ထားရှိခြင်း<br>ဌာနတစ်ခုချင်းစီအတွက် တစ်ကိုယ်ရေသုံးကာကွယ်ရေးပစ္စည်းများ ထောက်ပံ့ပေးခြင်း<br>လျှပ်စစ်အန္တရာယ်ကာကွယ်ရန်အတွက် လျှပ်စစ်ထိန်းသိမ်းရေးဝန်ထမ်းများအား ထားရှိ၍ အဆိုင်းခွဲ၍ ပုံမှန်စစ်ဆေးကာကွယ်မှုများပြုလုပ်စေခြင်း<br>ဝန်ထမ်းများ၏ကျန်းမာရေးအတွက် စက်ရုံတွင် စီမံခန့်ခွဲခြင်း<br>လုပ်သားများအတွက် ဓနာရီအတွင်း လက်ခံနိုင်သည့် အမြင့်ဆုံးဆူညံမှုနှုန်းမှာ 90 dB(A) ဖြစ်သည်။ ထို့ကြောင့် အသံဆူညံသည့်နေရာများတွင် အသံလုံသည့် နားကြပ်များ၊ နားအကာအကွယ်ပစ္စည်းများ တပ်ဆင်စေခြင်း | အခန်းခွဲ (၆.၈)                     |
| အန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်း            | ၆.၇      | အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများ သိမ်းဆည်းမှုအား ပုံမှန်စောင့်ကြပ်စစ်ဆေးခြင်း<br>လုပ်ငန်းခွင်ကျန်းမာရေး လုံခြုံမှုနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ လိုအပ်ချက်များနှင့် အညီ ဓာတုပစ္စည်းများကို စနစ်တကျစွန့်ပစ်ခြင်း                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | အခန်းခွဲ (၆.၉)                     |



| ကတိကဝတ်၏ အတိုချုပ် အမည် | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
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|                         |          | ဓာတုပစ္စည်းသိုလှောင်သည့် ပုံးခွံများကို စနစ်တကျပြန်လည်အသုံးပြုခြင်း (သို့မဟုတ်) စနစ်တကျစွန့်ပစ်ခြင်း<br>အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများကို ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ (သို့မဟုတ်) လိုင်စင်ရ အမှိုက်စွန့်ပစ်ရေးဆိုင်ရာ အဖွဲ့အစည်းများ (ဥပမာ-DOWA or YCDC )နှင့် ချိတ်ဆက်၍ စွန့်ပစ်ခြင်း                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                    |
| စွမ်းအင်                | ၆.၈      | အပူနှင့် အအေးထိန်းရန်အတွက် အချိန်ကန့်သတ်သည့်ကရိယာနှင့် သာမိုစတပ်များတပ်ဆင်ခြင်း<br>စွမ်းအင်ချွေတာသောကရိယာများတပ်ဆင်ခြင်း<br>အသုံးမပြုသည့် အချိန်တွင် မီးပိတ်ထားခြင်း၊ စက်ပစ္စည်းများ ရပ်နားထားခြင်း                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | အခန်းခွဲ (၆.၁၀)                    |
| အရေးပေါ် အခြေအနေ        | ၆.၉      | မီးဘေး၊ ငလျင်၊ ရေလွှမ်းမိုးမှု၊ မုန်တိုင်း နှင့်အခြားအရေးပေါ်ကိစ္စများကို ပို၍သင့်တော်သော စီမံခန့်ခွဲမှုများပြုလုပ်ခြင်း<br>စက်ရုံ၏ ကဏ္ဍတစ်ခုချင်းတိုင်းတွင် မီးငြိမ်းသတ်ရေးကရိယာများနှင့် မီးငြိမ်းသတ်ရေးစနစ်များ ထားရှိခြင်းနှင့် စစ်ဆေးခြင်း<br>မီးဘေးထွက်ပေါက်၊ အရေးပေါ်ထွက်ပေါက် အစရှိသည်တို့ကို အလုပ်သမားများနှင့် တိုင်ပင်ဆွေးနွေးပြီး အသေးစိတ်အကဲဖြတ်ခြင်း<br>မီးငြိမ်းသတ်ခြင်းအား ပုံမှန်လေ့ကျင့်ထားရှိခြင်း<br>ငလျင်လှုပ်တုအခါ လုံခြုံသည့်နေရာတွင်သာနေရန်၊ အပြင်မထွက်ခြင်း၊ အပြင်တွင်လုပ်ကိုင်ရသည့် လုပ်သားများမှာ သစ်ပင်၊ အဆောက်အဦများကို သတိထားရန်နှင့် သက်ဆိုင်ရာလုံခြုံရေးသင်တန်းများပို့ချခြင်း<br>မုန်တိုင်းတိုက်ခြင်း၊ ရေကြီးခြင်း၊ မြေပြိုခြင်းတို့ကြောင့် မြေကွဲသို့သော အခြားအန္တရာယ်ရှိတိရိစ္ဆာန်များအန္တရာယ်များကို သတိပေးခြင်း<br>ရှေးဦးသူနာပြုခြင်းကဲ့သို့သော ကျန်းမာရေးဆိုင်ရာအဖွဲ့အစည်းများ ပြင်ဆင်ထားရှိခြင်း<br>နီးစပ်ရာ ဆေးရုံ၊ ဆေးခန်း၊ ရဲစခန်း၊ မီးသတ်ဌာနတို့၏ ဆက်သွယ်နိုင်မည့် | အခန်းခွဲ (၆.၁၁)                    |

| ကတိကဝတ်၏ အတိုချုပ် အမည်          | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                  | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
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|                                  |          | ဗုဒ္ဓကံပါတ်များအား လူအများမြင်သာသည့် နေရာများတွင် ထားရှိခြင်း<br>မီးသတ်အဖွဲ့၊ ကယ်ဆယ်ရေးအဖွဲ့ နှင့် လုံခြုံရေးဟူသော အဖွဲ့များ ထားရှိ၍ လစဉ်<br>လုံခြုံရေးများအတွက် အစည်းအဝေးများပြုလုပ် စီမံခန့်ခွဲခြင်း<br>ဘေးအန္တရာယ်ဆိုင်ရာ သင်တန်းများအား သေချာပြုလုပ်စေခြင်း |                                    |
| စောင့်ကြပ်ကြည့်ရှုမှု            | ၆.၁၀     | အဆိုပြုစီမံကိန်းသည် ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာအား ၆လ<br>တစ်ကြိမ် ဝန်ကြီးဌာနများသို့ တင်ပြရမည်။                                                                                                                                                 | အခန်းခွဲ<br>(၆.၁၂)                 |
| လေအရည်အသွေး စစ်ဆေးမှု            | ၆.၁၁     | SO <sub>2</sub> , NO <sub>2</sub> , CO, CO <sub>2</sub> , PM <sub>2.5</sub> , PM <sub>10</sub><br>တစ်နှစ် ၂ ကြိမ် (လုပ်ငန်းစတင်ပြီး ၃နှစ်တွင်)<br>အဆိုပြုလုပ်ငန်း/စက်ရုံဝန်းအတွင်း<br>၈ သိန်း တစ်နှစ်                                                           | ဇယား (၆.၁)                         |
| စွန့်ပစ်ပစ္စည်းထွက်ရှိမှုအခြေအနေ | ၆.၁၂     | စွန့်ပစ်ပစ္စည်းအစိုင်အခဲ၊ စွန့်ပစ်ရည်နှင့် အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်း<br>အပတ်စဉ်<br>စက်ရုံအတွင်း ပြန်လည်အသုံးပြုရန်ထားရှိသည့်နေရာနှင့် အမှိုက်ကန်များ<br>၅ သောင်း (တစ်ကြိမ်)                                                                                    | ဇယား (၆.၁)                         |
| မီးဘေးအန္တရာယ် စစ်ဆေးမှု         | ၆.၁၃     | မီးငြိမ်းသတ်ရေးကိရိယာများ<br>လစဉ်<br>စက်ရုံအတွင်း<br>၅ သိန်း တစ်လ                                                                                                                                                                                               | ဇယား (၆.၁)                         |
| စက်ရုံတွင်း အလင်းရောင်အခြေအနေ    | ၆.၁၄     | အလင်းရောင်<br>လစဉ်<br>ကုန်ပစ္စည်းဖြတ်တောက်ခြင်း၊ အရည်အသွေးစစ်ဆေးခြင်းကဲ့သို့သော<br>လုပ်ငန်းများလုပ်ကိုင်သည့် နေရာ<br>၂ သောင်း (တစ်ကြိမ်)                                                                                                                        | ဇယား (၆.၁)                         |

| ကတိကဝတ်၏ အတိုချုပ် အမည်                     | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
|---------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| ဘေးအန္တရာယ်ဆိုင်ရာ သင်တန်းပို့ချခြင်း       | ၆.၁၅     | လုပ်ငန်းခွင်၌ ကြိုတင်ခန့်မှန်းနိုင်သော အရေးပေါ်အခြေအနေများကို အရေးပေါ်တုံ့ပြန်နိုင်ရန် အစီအစဉ်များ ချမှတ်ဆောင်ရွက်ခြင်း                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | အခန်းခွဲ (၆.၁၃)                    |
| မကျေနပ်မှုများနှင့် ပြဿနာများ ဖြေရှင်းခြင်း | ၆.၁၆     | စီမံကိန်းအနီးပတ်ဝန်းကျင်နေထိုင်သောသူများ (သို့) သက်ဆိုင်သူများသည် သူတို့ခံစားနေရသော ပြဿနာများ၊ သက်ရောက်မှုများနှင့် ပတ်သက်၍ ဖြေရှင်းမှုများပြုလုပ်ရန်။<br>စက်ရုံ၏ တာဝန်ရှိသူများ၊ စက်မှုဇုန် စီမံခန့်ခွဲရေး ကော်မတီ၊ အုပ်ချုပ်ရေးဦးစီးဌာနတို့ဖြင့် ပူးပေါင်း ချိတ်ဆက် လုပ်ဆောင်ခြင်း။<br>ကော်မတီအဆင့်တွင် အခြားမဖြေရှင်းနိုင်သော ပြဿနာများကို တာဝန်ရှိအာဏာပိုင်များသို့ တင်ပြပြီး တရားရေးအရ အဆုံးအဖြတ်ပြုလုပ်မည် ဖြစ်သည်။                                                                                                                                                                                          | အခန်းခွဲ (၆.၁၄)                    |
| လူထုအကျိုးတူပူးပေါင်းပါဝင်မှု               | ၆.၁၇     | အဆိုပြုလုပ်ငန်းသည် လူထုအကျိုးပြုပူးပေါင်းပါဝင်မှုကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေးအတွက် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်က ချမှတ်သည့် အတိုင်း ကုမ္ပဏီ၏ အကျိုးအမြတ် ၂ ရာခိုင်နှုန်းအား နှစ်စဉ် ထည့်ဝင်သွားမည်ဖြစ်သည်။                                                                                                                                                                                                                                                                                                                                                                  | အခန်းခွဲ (၆.၁၅)                    |
| အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်း       | ၇        | သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်ကို ၇ ရက်၊ ဖေဖော်ဝါရီလ၊ ၂၀၂၀ ခုနှစ်တွင် အနော်ရထာစီမံခန့်ခွဲရေးရုံး၊ အစည်းအဝေးခန်းမ၊ လှိုင်သာယာမြို့နယ်တွင် ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲတွင် စက်ရုံ၏သက်ဆိုင်ရာပုဂ္ဂိုလ်များ၊ အစိုးရအဖွဲ့ရုံးများဖြစ်သော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၊ စက်မှုကြီးကြပ်နှင့် စစ်ဆေးရေး ဦးစီးဌာန ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သန့်ရှင်းရေးဌာန အစရှိသော သက်ဆိုင်ရာဌာနများ၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှု ကော်မတီ၏ တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုအပ်သည်များကို အကြံပေးခြင်း၊ စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြုချက်များပေးခဲ့ပါသည်။ | အခန်း (၇)                          |

| ကတိကဝတ်၏ အတိုချုပ် အမည် | အမှတ်စဉ် | ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်                                                                                                                                                                                                                                                                                                                                         | အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း) |
|-------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| နီဂုံးနှင့်သုံးသပ်ချက်  | ၈        | အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒလမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြရှင်းလင်းတင်ပြထားပါသည်။ | အခန်း (၈)                          |