Myanmar Xiang Rui Fashion Co., Ltd.

Environmental Management Plan

Manufacturing of Garment

Prepared by

Myanwei Environmental Solutions Co., Ltd.

22-Feb-24

MYANWEI
ENVIRONMENTAL SOLUTIONS

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Date: 22, 2, 2024

Subject: Environmental Management Plan (EMP) Report in respect of the Manufacturing of Garment by Myanmar Xiang Rui Fashion 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.

MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED
No.....
Date.....

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

MYANMAR XIANG RUI FASHION COMPANY LIMITED

No.152,Thar Du Kan Industrial Zone,Shwe Pyi Thar Township,Yangon Region Myanmar

Date: 22,2,2024

Subject: Environmental Management Plan (EMP) Report in respect of the Manufacturing of Garment

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

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

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

Myanmar Xiang Rui Fashion Company Limited will at all times comply fully with all commitment and obligations in the EMP report.

We acknowledge and understand that

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နိဒါန်း

(Myanmar Xiang Rui Fashion Co., Ltd.) အထည်ချုပ်စက်ရုံသည် မြေတိုင်းအမှတ် (၁၅၂)၊ မြေကွက်အမှတ် (၅၁)၊ သာဓုကန်စက်မှုဇုန်၊ ရွှေပြည်သာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် တည်ရှိသည်။ အဆိုပြုစီမံကိန်းသည် (၁၀၀%) နိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှုဖြစ်ပါသည်။ အဆိုပါစက်ရုံသည် အမျိုးသားဝတ်၊ အမျိုးသမီးဝတ်၊ ကလေးဝတ် အထည်အမျိုးမျိုးကို CMP စနစ်ဖြင့်ချုပ်လုပ်၍ ပြည်ပသို့တင်ပို့ခြင်းလုပ်ငန်းဖြစ်ပါသည်။ စီမံကိန်းဧရိယာသည် ၄၉၅၀၀ စတုရန်းပေ ကျယ်ဝန်း၍ ပင်မအဆောက်အအုံတစ်လုံးနှင့် ကုန်ပစ္စည်းသိုလှောင်ရုံတစ်လုံးပါဝင်၍ အကျယ်အဝန်းမှာ ၂၃၁၀၀ စတုရန်းပေဖြစ်ပါသည်။

မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်ခွင့်ပြုမိန့်၏ ပုဒ်မ ၁၉ အရ Myanmar Xiang Rui Fashion Co., Ltd. သည် စီမံကိန်း နှင့် စီမံကိန်းပတ်ဝန်းကျင်ဆိုင်ရာ ကာကွယ်မှုများကို ဆောင်ရွက်ရပါမည်။ ထို့အပြင် သယံဇာတနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဝန်ကြီးဌာန လက်အောက်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ လမ်းညွှန်ချက်အရ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အားဆောင်ရွက်ရမည် ဖြစ်ပါသည်။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ ပေါ်လစီများ၊ ဥပဒေများ၊ နည်းဥပဒေများ နှင့် လုပ်ထုံးလုပ်နည်းများ အရ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အားဆောင်ရွက်ခြင်း၊ ပြင်ဆင်ခြင်း၊ တင်ပြခြင်းများလုပ်ဆောင်ရပါသည်။ Myanmar Xiang Rui Fashion Co., Ltd.၏ အထည်ချုပ်စက်အတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်ကို Myanwei Environmental Solutions Co., Ltd. မှ စက်တင်ဘာ၃ရက်၊ ၂၀၁၈ မှ စတင်ဆောင်ရွက်ပေးခဲ့ပါသည်။

အဆိုပြုထားသော စီမံကိန်း၏ အဓိကလက္ခဏာများ

အဆိုပြုထားသော စီမံကိန်း	CMP စနစ်ဖြင့် အဝတ်အထည်ချုပ်လုပ်ခြင်းလုပ်ငန်း
ရင်းနှီးမြှုပ်နှံမှုပုံစံ	ရာနှုန်းပြည့်နိုင်ငံသားရင်းနှီးမြှုပ်နှံမှု
အစုရှယ်ယာအမျိုးအစား	သာမန်အစုရှယ်ယာ
မြေနေရာပုံစံ	စက်မှုဇုန်မြေ
မြေဧရိယာအကျယ်အဝန်း	၄၅၀ ပေ × ၁၁၀ ပေ
အဆောက်အဦးအရေအတွက်	၃၀၀ပေ× ၇၇ပေ တစ်ထပ် အဆောက်အဦးတစ်လုံး ၂ထပ် ရုံးခန်းအဆောက်အဦးတစ်လုံး
မြေဌားသက်တမ်း	နှစ် ၅၀
တည်ဆောက်မှုကာလ	၂ နှစ်
စီမံကိန်း တည်နေရာ	မြေတိုင်းအမှတ် (၁၅၂)၊ မြေကွက်အမှတ် (၅၁)၊ သာဓုကန်စက်မှုဇုန်၊ ရွှေပြည်သာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။
ဆက်သွယ်ရန် ဖုန်းနံပါတ်	ဦးအောင်ကျော်မိုး

	၀၉-၉၆၃၉၁၈၉၃၈

ဥပဒေနှင့် မူဝါဒဆိုင်ရာ အချက်အလက်များ

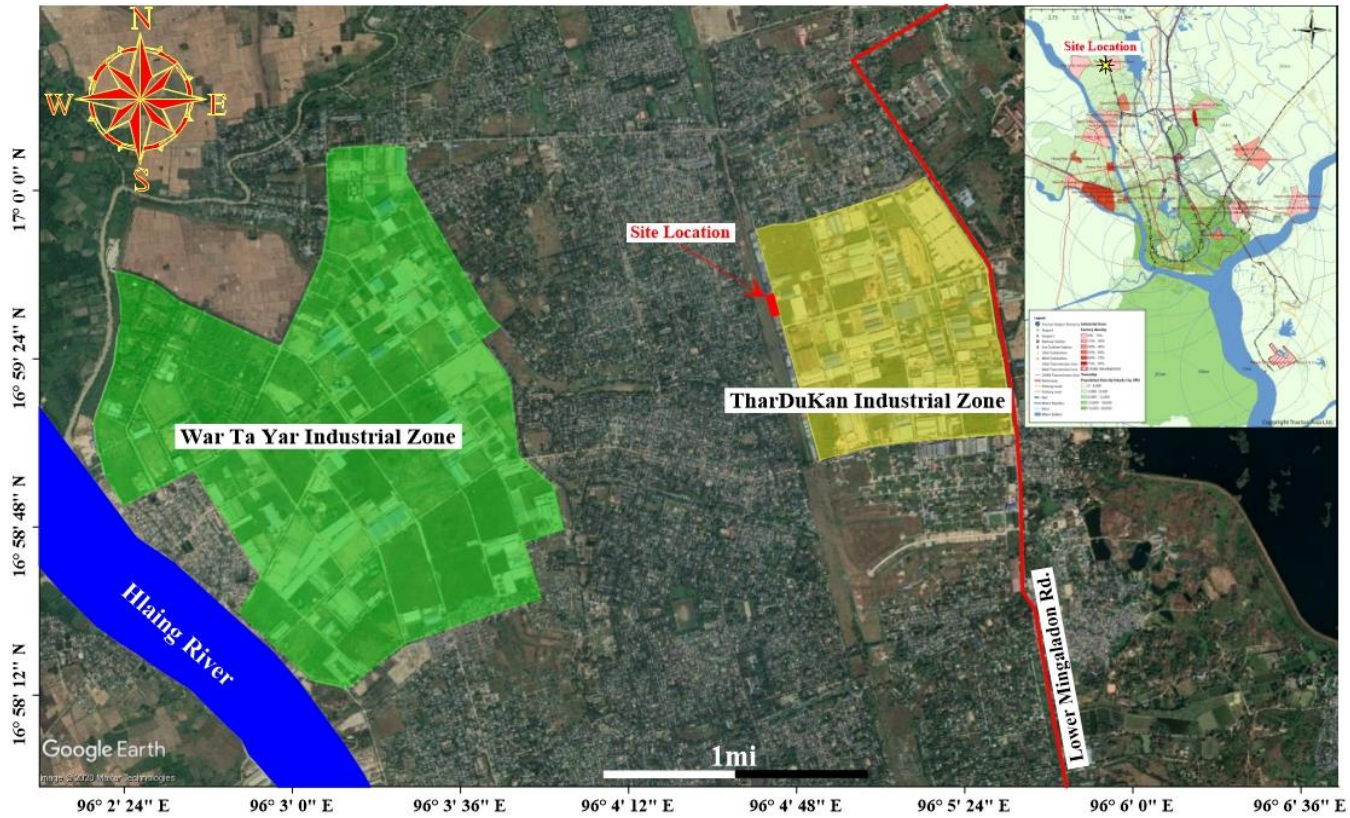
ဥပဒေနှင့် နည်းဥပဒေ အခန်းတွင် MONREC မှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များအပြင် စက်ရုံနှင့်ဆက်စပ်သက်ဆိုင်နေပြီး လိုက်နာရမည့် ဥပဒေနှင့် နည်းဥပဒေများ၊ ဒေသတွင်း သို့မဟုတ် အပြည်ပြည်ဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒများ၊ ဆက်စပ်နေသည့် နိုင်ငံတကာသဘောတူချက်များကို အကျဉ်းချုပ်ရေးသားဖော်ပြထားပါသည်။

1. Constitution 2008
2. Environmental Conservation Law, 30 March 2012
3. Environmental Conservation Rules, 2014
4. Environmental Impact Assessment Procedure (December 2015)
5. National Environmental Quality (Emission) Guideline (NEQG) (December 2015)
6. National Environmental Policy of Myanmar (2019)
7. Myanmar Investment Law (2016)
8. Myanmar Investment Rule, 2017
9. Myanmar Insurance Law (1993)
10. Payment of Wages Law (2016)
11. The Amended Law for Factories Act, 1951 (2016)
12. The Private Industrial Enterprise Law, 1990
13. The Export and Import Law (2012)
14. The Prevention of Hazard from Chemical and Related Substances Law, 2013
15. Underground Water Act
16. Myanmar Fire Brigade Law (2015)
17. The Electricity Law (2014)
18. Boiler Law (2015)
19. Labor Dispute Settlement Law (28 March 2012 replacing 1929 version)
20. The Social Security Law (2012)
21. The Employment and Skill Development (2013)
22. The Worker's Compensation Act, 1923
23. The Payment of Wages Act, 1936
24. The Leave and Holidays Act, (1951, partially revised in 20140

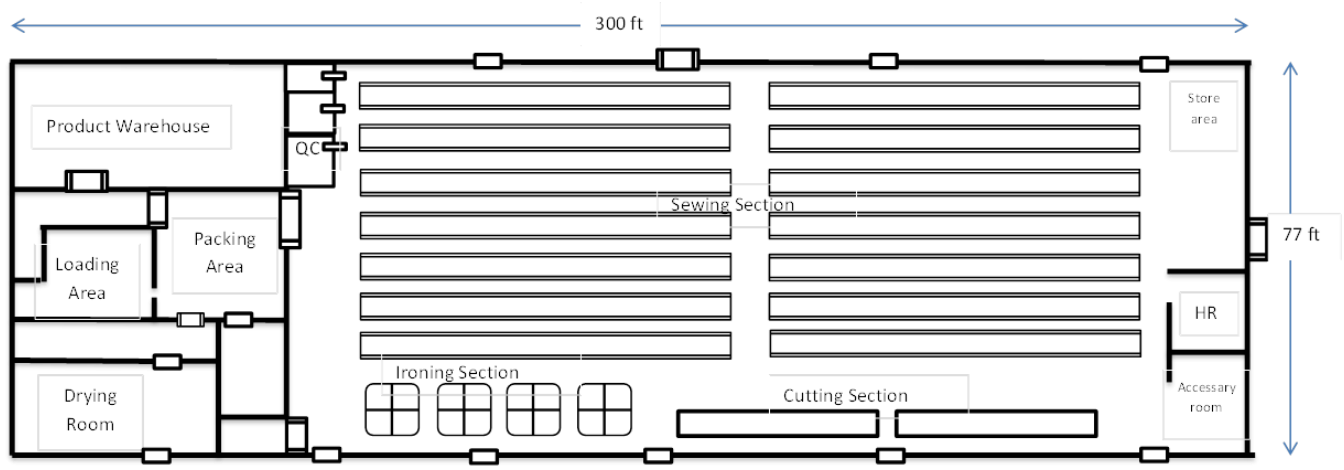
25. The Minimum Wage Law (2013)
26. Public Health Law (1972)
27. Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)
28. Occupational Safety and Health Law (2019)
29. The Law on Standardization
30. လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သောဝတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ (၂၀၁၈)
31. The Motor Vehicles Law (2015)
32. The Conservation of Water Resources and River Law (2006)
33. The Commercial Tax Law (1990) Amended 2014

လုပ်ငန်းအကြောင်းအရာဖော်ပြချက်

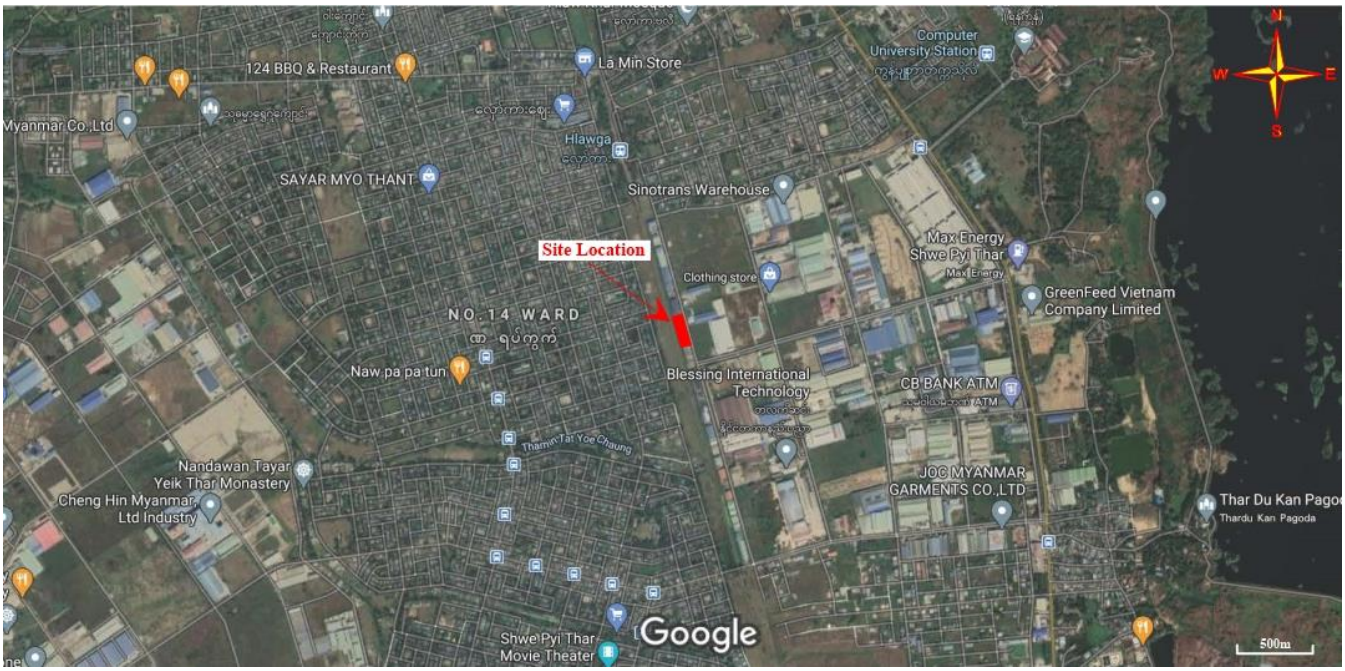
Myanmar Xiang Rui Fashion Co., Ltd. စက်ရုံသည် မြေတိုင်းအမှတ် (၁၅၂)၊ မြေကွက်အမှတ် (၅၁)၊ သာဓုကန်စက်မှုဇုန်၊ ရွှေပြည်သာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး တွင်တည်ရှိပြီး မြေဧရိယာ စုစုပေါင်း၄၉,၅၀၀ စတုရန်းပေ ကျယ်ဝန်း ပါသည်။ စက်ရုံ၏ အရှေ့ဘက်တွင် စက်မှုလမ်း (ပတ္တမြားလမ်း) နှင့် အနောက်ဘက်တွင် သမင်တက်ရိုးချောင်းတည်ရှိပါသည်။



စက်ရုံ၏ တည်နေရာပြမြေပုံ

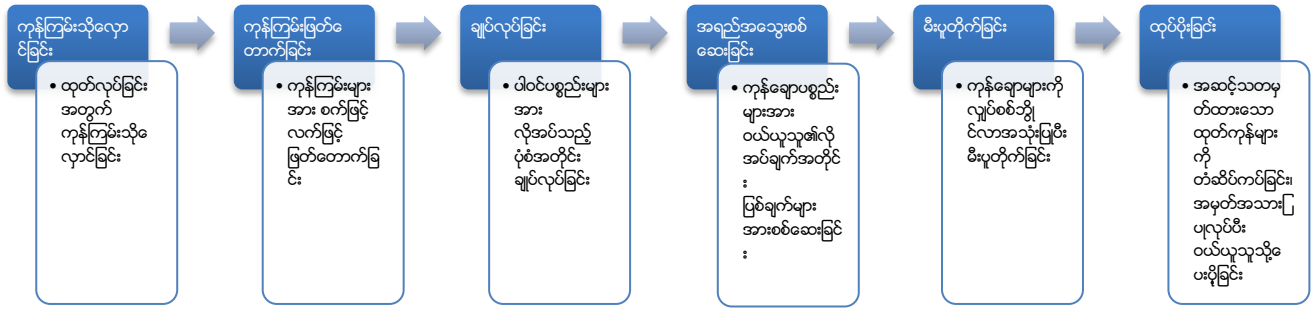


စက်ရုံ၏ တည်ဆောက်မှုပြပုံ



စက်ရုံ၏ပတ်ဝန်းကျင်ပြမြေပုံ

စက်ရုံ ၏ အဓိက ကုန်ကြမ်းမှာ knitting fabric, woven fabric, lace, label, hang tag, zipper, button နှင့် အခြားဆက်စပ်ပစ္စည်းများဖြစ်ပြီး တရုတ်နိုင်ငံမှ အဓိကမှာယူတင်သွင်းပါသည်။ ကုန်ကြမ်းများကို ကုန်ကြမ်းသိုလှောင်ခန်းတွင် စနစ်တကျ သိုလှောင်ထားရှိပါသည်။ စက်ရုံ ၏ အဓိက ထုတ်ကုန်မှာ T-shirt, Vest, Polo, Sportwear, Dress, Pants, Jacket တို့ဖြစ်ပါသည်။



ထုပ်လုပ်ပုံ လုပ်ငန်းအဆင့်ဆင့်

လုပ်ငန်းမှ ပထမနှစ်မှ ၃၀ နှစ်အတွင်း အထည်ရေ (၂,၄၀၀,၀၀၀) မှ (၁၃,၃၈၀,၀၀၀) အထိ တိုးမြှင့်ထုတ်လုပ်သွားမည်ဖြစ်သည်။ နိုင်ငံခြားသားလုပ်သား နှင့် နိုင်ငံသား (ပြည်တွင်း) လုပ်သား (၂၀၀) ဦးခန့်ဖြင့် ဆောင်ရွက်သွားမည်ဖြစ်သည်။

Warehouse section

Cutting section

Sewing section

Ironing section

Hanging room

Quality Control room

ထုတ်လုပ်ပုံအဆင့်ဆင့်

ထုတ်ကုန်ဓာတ်ပုံ

အနီးပတ်ဝန်းကျင်အခြေအနေဆိုင်ရာ ဖော်ပြချက်

လက်ရှိပတ်ဝန်းကျင်အနေအထားကို အကဲဖြတ်ရန် နိုဝင်ဘာ ၂၈ တွင် စက်ရုံသို့ ကွင်းဆင်းဆောင်ရွက်ခဲ့ပါသည်။ စီမံကိန်းဆိုင်ရာ အခြေခံစစ်တမ်းများ ကောက်ယူမှုကို စီမံကိန်း လည်ပတ်စဉ်အတွင်းတွင် ဆောင်ရွက်ခဲ့ပါသည်။ စစ်တမ်းကောက်ယူသည့် အဖွဲ့တွင် အကြံပေးပုဂ္ဂိုလ်များ၊ ပတ်ဝန်းကျင်အရည်အသွေးဆန်းစစ်သူများ ပါဝင်ပါသည်။ အခြေခံ ပတ်ဝန်းကျင်ဆိုင်ရာ စစ်တမ်းများကောက်ယူမှုကို အောက်ပါအတိုင်းခွဲခြား၍ ကောက်ယူခဲ့ပါသည်။ စက်ရုံ၏ ကုန်ထုတ်လုပ်သည့်နေရာတွင် လေထုအရေအသွေး၊ အသံဆူညံမှု၊ အလင်းရောင်ရရှိမှု အခြေအနေများကို တိုင်းတာခဲ့ပါသည်။

အမျိုးအစား	တိုင်းတာမှု
လေအရည်အသွေး	(1) Sulfur dioxide (SO2), (2) Carbon monoxide (CO), (3) Nitrogen dioxide (NO2), (4) PM10 and PM2.5
ဆူညံမှု	စက်ရုံတွင်း ဆူညံသံ (LAeq)
အလင်းရောင်ရရှိမှု	အလင်းရောင်ရရှိမှု အခြေအနေ (Lux)

တိုင်းတာမှု ရလဒ်များအရ Sulfur dioxide (SO2), Carbon monoxide (CO), Nitrogen dioxide (NO2), PM10 and PM2.5 များသည် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ လမ်းညွှန်ချက်များ၏ သတ်မှတ် စံချိန်၊ စံညွှန်းများအောက်တွင်ရှိသည်ကို တွေ့ရှိရပါသည်။ ကုန်ထုတ်လုပ်မှု ဇရိယာရှိ အသံဆူညံမှုသည်လည်း အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ လမ်းညွှန်ချက်များ၏ သတ်မှတ် စံချိန်၊ စံညွှန်းများအောက်တွင်ရှိသည်ကို တွေ့ရှိရပါသည်။ လုပ်ငန်းခွင်အတွင်းအလင်းရောင်ရရှိမှု အခြေအနေသည်လည်း သတ်မှတ် စံချိန်၊ စံညွှန်းများအောက်တွင်ရှိသည်ကို တွေ့ရှိခဲ့ရပါသည်။

လူမှုစီးပွားအခြေအနေ၊ ရုပ်ပတ်ဝန်းကျင်နှင့် ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ရာသီဥတုအခြေအနေစသည့် ရွှေပြည်သာမြို့နယ်ဆိုင်ရာ အစိုးရဌာနမှ တင်ပြထားသည့် အချက်အလက်များမှ ရယူ၍ ထည့်သွင်းထားပါသည်။ အဆိုပြုစီမံကိန်းမြေသည် စက်မှုဇုန်ဇရိယာအတွင်းတွင်တည်ရှိပါသည်။ စီမံကိန်းအနီးတွင် လှိုင်မြစ်တည်ရှိ၍ ၃ မီတာ ကွာဝေးပါသည်။ လော်ကားအင်းမှ ၅မီတာကွာဝေးပါသည်။ ၂၀၁၇ခုနှစ် စစ်တမ်းအရ ရွှေပြည်သာမြို့၏ လူဦးရေမှာ ၂၇၃၇၂၁ ဖြစ်ပါသည်။

ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းနှင့် လျော့ချရေးနည်းလမ်းများ

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	အနည်းငယ် နှင့် လုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	အသင့်အတင့် နှင့် အနည်းငယ် လုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	မြင့်မားနှင့် သိသာစွာလုပ်ငန်းခွင်ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	အလွန်မြင့်မားနှင့် အမြဲတမ်းလုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော
အချိန်	၀-၁ နှစ်	၂-၅ နှစ်	၆-၁၅ နှစ်	လုပ်ငန်း လည်ပတ်စဉ် ကာလ တစ်လျောက်	လုပ်ငန်းပိတ်သိမ်းခြင်းကာလအထိ
ကျယ်ပြန့်မှု	လုပ်ငန်းခွင် အတွင်း	ဒေသအတွင်း	မြို့နယ်အတွင်း	နိုင်ငံအတွင်း	နိုင်ငံတကာအတွင်း
ဖြစ်နိုင်ချေ	လုံး၀ မဖြစ်နိုင်သော	မဖြစ်နိုင်သော	ဖြစ်နိုင်သော	ဖြစ်နိုင်ချေမြင့် သော	အတိအကျ

သတ်မှတ်ချက် = (ပမာဏ+အချိန်+ကျယ်ပြန့်မှု)* ဖြစ်နိုင်ချေ

ပတ်၀န်းကျင်ထိခိုက်မှုကိုအောက်ပါအတိုင်း ခွဲခြားနိုင်သည်။

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

အုပ်စုများ	**သက်ရောက်မှု အရင်းအမြစ်**	**လျော့ချရေးနည်းလမ်းများ**
လေအရည်အသွေး	• ကုန်ကြမ်းပစ္စည်းများ၊ ကုန်ချောပစ္စည်းများသယ်ဆောင်သော ယာဉ်များ မှ ဖုန်မှုန့်များ၊ ဖန်လုံအိမ်အာနိသင်ဖြစ်စေ	• လေညစ်ညမ်းမှုများကိုထိန်းချုပ်ခြင်း၊ ယာဉ်များ၊ မီးစက်များ၊ စက်ပစ္စည်းများကို ပုံမှန်စစ်ဆေးခြင်း။ • စက်ရုံမှ ဘွိုင်လာရေနွေးငွေ့နှင့် မီးစက်များမှ ဓာတ်ငွေ့များ ထုတ်ရန် မီးခိုးခေါင်းတိုင်တပ်ဆင်ခြင်း နှင့် ပတ်၀န်းကျင်

	သာ ဓာတ်ငွေ့များထွက်ရှိခြင်း • ရေနွေးငွေ့သုံးဘွိုင်လာမှ အခိုးအငွေ့များထွက်ခြင်း • အရေးပေါ်မီးစက်များနှင့် ယာဉ်အသွားအလာမှ ထွက်သော မီးခိုးများ	ထိခိုက်မှုလျော့နည်းစေရန် မီးခိုးများကို စစ်၍ ထုတ်လွှတ်စေခြင်း • ယာဉ်များ၊ ကွန်ပရက်ဆာ၊ မီးစက်များကို ကောင်းမွန်စွာ ထိန်းသိမ်းခြင်း
ရေအရည်အသွေး	• ထုတ်လုပ်ရေးလုပ်ငန်းများ	ထိခိုက်မှုလျော့ချရန်မလိုပါ။
မြေအရည်အသွေး	• အင်ဂျင်ဆီများ၊ ဒီဇယ်ဆီများသိုလှောင်ခြင်းနှင့် မတော်တဆ ဆီဖိတ်ယိုခြင်း	ထိခိုက်မှုလျော့ချရန်မလိုပါ။
ဆူညံသံနှင့် တုန်ခါမှု	• ကုန်ပစ္စည်းထုတ်လုပ်သည့်လုပ်ငန်းများမှ စက်ပစ္စည်းများမှ ဆူညံသံများထွက်ခြင်း	ထိခိုက်မှုလျော့ချရန်မလိုပါ။
ကုန်းနေ အပင်နှင့် သတ္တဝါများ၊ ရေနေသတ္တဝါများ	• အထည်ချုပ်လုပ်ငန်းလုပ်ဆောင်ခြင်း	ထိခိုက်မှုလျော့ချရန်မလိုပါ။
မီးဘေးအန္တရာယ်	• လျှပ်စစ်တပ်ဆင်ရာတွင် စနစ်တကျတပ်ဆင်မှု မရှိခြင်း • ကုန်ကြမ်းပစ္စည်း စွန့်ပစ်ခြင်း၊ ဓာတုပစ္စည်း သိုလှောင်ခြင်း။	• စက်ရုံ၏မီးဘေးအန္တရာယ်ကာကွယ်ရန်အတွက် မီးသတ်ပူး၊ မီးသတ်ပိုက်၊ မီးသတ်ခေါင်း များထားရှိခြင်း။ • မီးသတ်ဆိုင်ရာစက်ပစ္စည်းကိရိယာများကိုပုံမှန်စစ်ဆေးခြင်း၊ အရေးပေါ်အခြေနေအတွက် မီးသတ်ရေကန်အဆင်သင့်ထားရှိခြင်း။ • စက်ရုံအတွင်းအရေးပေါ်အချက်ပေးစနစ်များထားရှိခြင်း။ • အရေးပေါ်ထွက်ပေါက်များတွင်တစ်လျှောက်တွင် ကုန်ပစ္စည်းများပိတ်ဆိုခြင်းမရှိအောင်ရှင်းလင်းထားရှိခြင်း။
လုပ်ငန်းခွင်ဘေးအန္တရာယ်	• စက်ပစ္စည်းများလည်ပတ်ခြင်းကြောင့် မတော်တဆထိခိုက်မှုများဖြစ်ပေါ်နိုင်ခြင်း။ • ပစ္စည်းတင်ချပြုလုပ်ခြင်း၊ ဖြတ်တောက်ခြင်း၊ ရောနှောခြင်း၊ ဖိနှိပ်ခြင်း၊	• အရေးပေါ်အခြေအနေများအတွက် စက်ပစ္စည်းကိုင်တွယ်မှုသင်တန်းပေးခြင်း၊ ကြက်ခြေနီသင်တန်းပေးခြင်း၊ မီးသတ်သင်တန်းပေးခြင်း။ • လုပ်ငန်းခွင်တွင်း အလုပ်သမားများ အလင်းရောင်ကောင်းစွာရရှိစေရန်နှင့် အမြင်အာရုံမထိခိုက်စေရန် အလင်းရောင်များကို လုံလောက်စွာထားရှိခြင်း။ • အလုပ်သမားများအတွက်တစ်ကိုယ်ရေကာကွယ်ရေးသုံးပစ္စ

	ထုတ်ပိုးခြင်း။ • ရေနွေးငွေ့သုံးမီးပူများကြောင့် မတော်တဆထိခိုက်မှုများဖြစ်ပေါ်နိုင်ခြင်း။	ည်းများဖြစ်သည့် နားကြပ်၊ လက်အိတ်၊ ဦးထုတ်၊ မျက်မှန်များ အသုံးပြုစေခြင်း။ • လျှပ်စစ်အန္တရာယ်မဖြစ်စေရန် နှင့် ပြုပြင်ထိန်းသိမ်းမှုများ ပြုလုပ်ရန်အတွက် ဝန်ထမ်းထားရှိ၍ ပုံမှန်စစ်ဆေးခြင်း။
ကျန်းမာရေး	• အရေးပေါ် မီးစက်များမှ ဆူညံသံများထွက်ပေါ်လာခြင်း။	• လုပ်သားများအတွက်ကျန်းမာရေးမထိခိုက်စေရန် ရေမြောင်းများကိုစနစ်တကျထားရှိခြင်း။ • လုပ်သားများအတွက် ရှစ်နာရီအတွင်းလက်ခံနိုင်သည့်အာမြင့်ဆုံး ဆူညံမှု နှုန်းမှာ 90dB(A) ဖြစ်သည်။ အသံဆူညံမှုအမြင့်ဆုံးနေရာများတွင် နားကြပ်များ တပ်ဆင်စေခြင်း။
စွန့်ပစ်အစိုင်အခဲများ	• ကုန်ထုတ်လုပ်သည့်နေရာမှ ထွက်ရှိသော ပိတ်အပိုင်းအစများ။ • ကုန်ပစ္စည်းထုတ်ပိုးခြင်းမှထွက် ရှိသော အပိုင်းအစများ။ • မီးဖိုချောင် လူနေဆောင် ရုံးခန်းမှတွက်ရှိသောအမှိုက်များ။	• စက်ရုံအတွင်း အမှိုက်ပုံးများထားရှိခြင်း။ • သတ်မှတ်ထားသောနေရာတွင် အမှိုက်စို၊ အမှိုက်ခြောက်များခွဲခြားစွန့်ပစ်ခြင်း။ • အမှိုက်များကို ရန်ကုန်စည်ပင်သာယာရေးကော်မတီနှင့် ချိတ်ဆက်၍စွန့်ပစ်ခြင်း။
စွန့်ပစ်အရည်	• မိလ္လာစနစ်ထားရှိခြင်း။ • ရုံးခန်း၊ မီးဖိုချောင် နှင့် လူနေဆောင်များမှ စွန့်ပစ်အရည်များတွက်ရှိခြင်း။	• ဆီကန်၊ မိလ္လာကန်များ ကိုပုံမှန်စစ်ဆေးခြင်း၊ သန့်စင်ခြင်းများပြုလုပ်ခြင်းဖြင့် စွန့်ပစ်အရည်များ စိမ့်ဝင်မှုများကိုလျော့ကျစေနိုင်ခြင်း။
အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများ	• မော်တော်ယာဉ်များ စက်ပစ္စည်းများ ပြုပြင်ထိန်းသိမ်းခြင်းမှ ဆီများတွက်ရှိခြင်း။	• အန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်းများသိုလှောင်မှု အားထိန်းသိမ်းခြင်း စစ်ဆေးခြင်း။ • လုပ်ငန်းခွင်ကျန်းမာရေး လုံခြုံမှုနှင့်ပတ်ဝန်းကျင်ဆိုင်ရာ လိုအပ်ချက်များ နှင့်ကိုက်ညီမှုရှိစေရန် ဓာတုပစ္စည်းများကို စနစ်တကျစွန့်ပစ်ခြင်း။ • ဓာတုပစ္စည်းသိုလှောင်သည့် ပုံးခွန်များကို စနစ်တ

		ကျပြန်လည်အသုံးပြုခြင်း(သို့မဟုတ်)စနစ်တကျစွန့်ပစ်ခြင်း။ • အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများကို ရန်ကုန်မြို့တော်စည်ပင်သာယာရေး ကော်မတီ (သို့မဟုတ်) လိုင်စင်ရ အမှိုက်စွန့်ပစ်ရေးဆိုင်ရာအဖွဲ့အစည်းများ (ဥပမာ DOWA (သို့) YCDC နှင့်ချိတ်ဆက်၍စွန့်ပစ်ခြင်း။

သိသာထင်ရှားသော သက်ရောက်မှုများကိုတွက်ချက်ရာတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုနှင့် ဆန်းစစ်ခြင်းအဖွဲ့အစည်း (IEMA) မှ ချမှတ်ထားသော နည်းလမ်းကို အသုံးပြု၍ ဆန်းစစ်ထားပါသည်။ စီမံကိန်းလုပ်ဆောင်ချက်များပေါ် မူတည်၍ ရလဒ်များ နည်းသည်၊ အလွန်နည်းသည်ကို ဖော်ပြထားပါသည်။ အချို့ရလဒ်များမှာ အသင့်အတင့် ရှိပါသည်။ လူမှုစီးပွားဆိုင်ရာတိုးတက်မှုများအနေဖြင့် ကောင်းမွန်သောသက်ရောက်မှု ရှိသည်ကို တွေ့ရှိရပါသည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု ဆောင်ရွက်ချက်

စီမံကိန်းဖော်ဆောင်သည့်အချိန်အတွင်း ပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှုများ၊ လျော့ချရေးနည်းလမ်းများ၊ အစီအစဉ်များ၊ တိုင်းတာမှုများ စသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များကို လုပ်ဆောင်ရပါသည်။ Myanmar Xiang Rui Fashion Co., Ltd. မှ စက်ရုံတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် အဖွဲ့အစည်းဖွဲ့စည်းခြင်း၊ ပုံမှန်ဆန်းစစ်လေ့လာခြင်းများ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ ပတ်ဝန်းကျင် လေထုအရည်အသွေး၊ မိလ္လာစနစ်၊ စွန့်ပစ်အစိုင်အခဲ စွန့်ပစ်မှုများကို စက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အဖွဲ့အစည်းမှ ဆန်းစစ်သွားမည်ဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်းမှ လူထုအကျိုးပြုလုပ်ငန်းများ နှင့် အရေးပေါ်ဆောင်ရွက်ချက်များ၊ ဒေသဆိုင်ရာ အကျိုးပြုလုပ်ငန်းများကို လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်းသည် ရရှိလာသော အကျိုးအမြတ်၏ ၂% ကို လူမှုဖူလုံရေးလုပ်ငန်းများတွင် သုံးစွဲသွားမည် ဖြစ်ပါသည်။

Myanmar Xiang Rui Fashion Company Limited ၏ လူထုအကျိုးပြုလုပ်ငန်းများဆောင်ရွက်မည့် အစီအစဉ်

စဉ်	အကြောင်းအရာ	လှူဒါန်းမှု ရာခိုင်နှုန်း	ခန့်မှန်းလှူဒါန်းငွေကျပ်
၁။	စာသင်ကျောင်းများ	၀.၅%	၇၅၀,၀၀၀
၂။	သင်တန်းကျောင်းများ	၁%	၁,၅၀၀,၀၀၀
၃။	ဝန်ထမ်းများ၏ ကျန်းမာရေးစောင့်ရှောက်မှု	၀.၅%	၇၅၀,၀၀၀

စက်ရုံအတွက် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာလုပ်ဆောင်ချက်များသည် စက်ရုံသို့ကွင်းဆင်းလေ့လာခဲ့သော ကျွမ်းကျင်ပညာရှင်များမှ စက်ရုံ၏ဆောင်ရွက်ချက်များ၊ စက်ရုံဝန်ထမ်းများ၊ နယ်ပယ်ဆိုင်ရာအဖွဲ့အစည်းများ၏ အမြင်များ နှင့် စက်ရုံမှ သက်ဆိုင်သူများ၏တိုင်ပင်ဆွေးနွေးအကြံပြုချက်များအပေါ် အခြေခံ၍ ရေးဆွဲပြင်ဆင်ထား

ပါသည်။ ဖြစ်နိုင်ချေရှိသော ပတ်ဝန်းကျင်ထိခိုက်မှုများအပေါ် မူတည်၍ လိုအပ်သည့် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုလုပ်ဆောင်ချက်များမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်

၂။ ဆူညံသံဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်

၃။ မီးဘေးအန္တရာယ် စီမံခန့်ခွဲမှုအစီအစဉ်

၄။ လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်

၅။ အစိုင်အခဲစွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲမှုအစီအစဉ်

၆။ စွန့်ပစ်အရည် (ရေဆိုး) စီမံခန့်ခွဲမှုအစီအစဉ်

၇။ အန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲမှုအစီအစဉ်

၈။ အရေးပေါ်အခြေအနေဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်

၉။ အရေးပေါ်တုံ့ပြန်မှုနှင့် သဘာဝဘေးအန္တရာယ်စီမံခန့်ခွဲမှုအစီအစဉ်

၁၀။ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် အစီရင်ခံခြင်း

၁၁။ သင်ကြားပို့ချမှု အစီအစဉ်

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်တွင် စက်ရုံ၏ EMP အစီရင်ခံစာ၏ တစ်စိတ်တပိုင်း ဖြစ်ပြီး၊ ပတ်ဝန်းကျင် ထိခိုက်မှု ဆန်းစစ်ခြင်းများအတွက် အကူအညီ ဖြစ်စေသော ကဏ္ဍ တစ်ခုဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်း၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အစီရင်ခံစာ အကျဉ်းကို ၂၄ ရက်၊ စက်တင်ဘာလ၊၂၀၁၈ ခုနှစ်တွင် လူထုတွေ့ဆုံပွဲအစီအစဉ်ကို သာဓုကန်စက်မှုဇုန်၊ ရွှေပြည်သာမြို့နယ်ရှိ (Myanmar Xiang Rui Fashion Company Limited) တွင် ကျင်းပပြုလုပ်ခဲ့ပါသည်။

နိဂုံးနှင့် အကြံပြုချက်

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 ဆောင်ရွက်ရမည်။
- အစိုင်အခဲနှင့် အရည် စွန့်ပစ်ပစ္စည်းများကို စည်ပင်သာယာရေးကော်မတီ၏ စည်းကမ်းများအတိုင်း စွန့်ပစ်ရမည်။
- အလုပ်သမားများအား သင့်တော်သော သင်တန်းများပေးခြင်း၊ လုပ်ငန်းခွင်အတွင်း တစ်ကိုယ်ရည် ကာကွယ်ရေး ပစ္စည်းများ အသုံးပြုစေခြင်းများ ဆောင်ရွက်ရမည်။
- ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်များကို နေ့စဉ်၊ လစဉ်နှင့် နှစ်စဉ် လုပ်ငန်းခွင်အတွင်း လုပ်ဆောင်ရမည်။
- ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ် မှတ်တမ်းများကို သေချာသိမ်းဆည်း၍ တတိယအဖွဲ့အစည်း သို့ တင်ပြရမည်။
- ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ရ မည်။

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

EXECUTIVE SUMMARY

Introduction

The Garment Factory of Myanmar Xiang Rui Fashion Co., Ltd. project is located on Plot No.152, Myay Taing Block No.51, Thardukan Industrial Zone, Shwepyithar Township, Yangon Region Myanmar. The said project is 100% foreign direct investment of by Myanmar Xiang Rui Fashion Co., Ltd. (China). The purpose of the investment is to manufacture Garment on Cutting-Making-Packaging (CMP) System and to export the products fully. The project utilizes 49,500 ft^2 of land and consist of main factory and warehouse of which total area is 23,100 ft^2.

According to the MIC permit, which confidential was issued in Section 19, Xiang Rui shall responsible for the preservation of the environment and around the area of the project site. In addition to this, it shall carry out as per instructions made by Ministry of the Natural Resources and Environmental Conservation (MONREC) under Environmental Conservation Department (ECD) in which to conduct an Environmental Management Plan (EMP). It has to prepare, submit, perform activities in accordance with this EMP, and abide by the environmental policy, Environmental Conservation Law and other environmental related rules and procedures. EMP for garment factory to be implemented by Myanmar Xiang Rui Fashion Co., Ltd has been started by Myanwei Environmental Solutions Co., Ltd. (Myanwei) in 3 September, 2018.

Salient Features of the Proposed Project

Type of Proposed Business	Manufacturing of Garment (CMP)
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	450’ × 110’
Total building area	300’ × 77’ Steel Structure building (1 story) Office building (2 stories)
Land lease year	50 years
Construction period	2 years
Operation period	50 years investment permit
Address of Xiang Rui factory	Plot No. 152, Myay Taing Block No. 51, Thardukan Industrial Zone, Shwe Pyi Thar Township, Yangon region.
Contact	Phone: 09786817635 Email: 15824279542@163.com

Policy, Legal and Institutional Framework

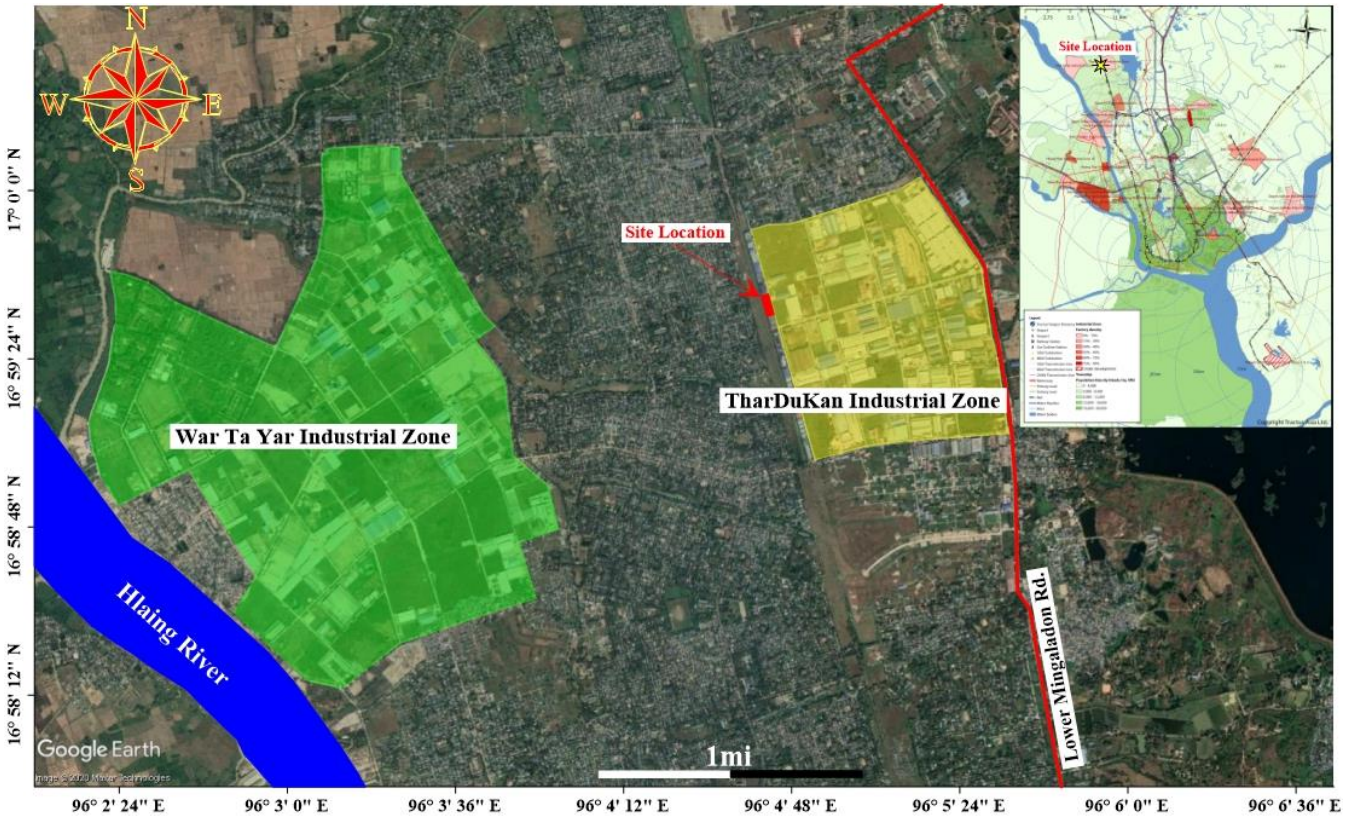
The brief summary of relevant national environmental legislations such as Environmental Impact Assessment Procedure (2015) and National Environmental Quality (emission) Guidelines, established by the Ministry of Natural Resources and Environmental Conservation (MONREC) and overview of current local and international environmental and social policies including related international or regional convention for the proposed project. These are as follow:

1. Constitution 2008

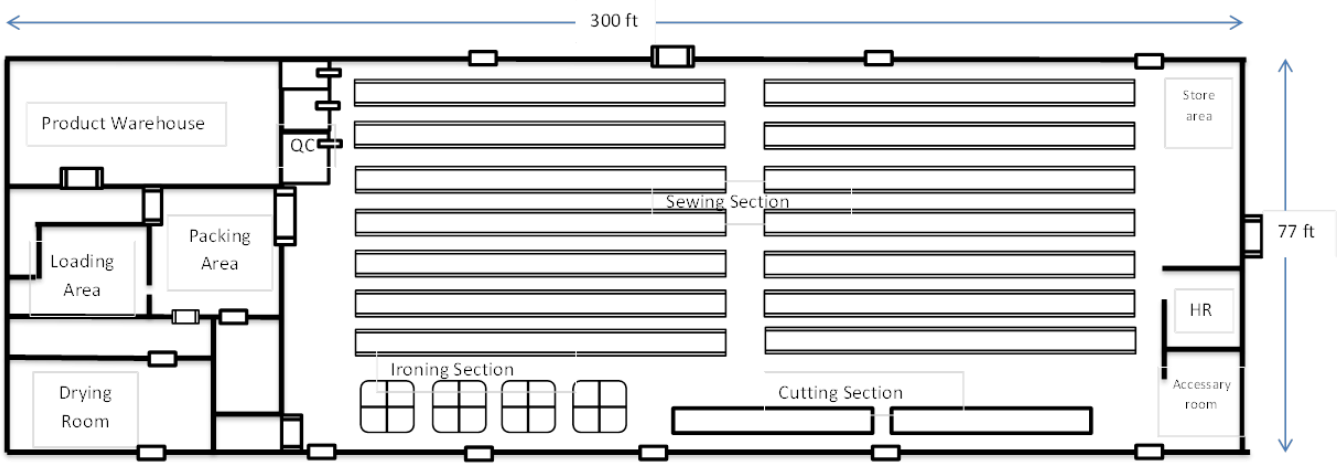
2. Environmental Conservation Law, 30 March 2012
3. Environmental Conservation Rules, 2014
4. Environmental Impact Assessment Procedure (December 2015)
5. National Environmental Quality (Emission) Guideline (NEQG) (December 2015)
6. National Environmental Policy of Myanmar (2019)
7. Myanmar Investment Law (2016)
8. Myanmar Investment Rule, 2017
9. Myanmar Insurance Law (1993)
10. Payment of Wages Law (2016)
11. The Amended Law for Factories Act, 1951 (2016)
12. The Private Industrial Enterprise Law, 1990
13. The Export and Import Law (2012)
14. The Prevention of Hazard from Chemical and Related Substances Law, 2013
15. Underground Water Act
16. Myanmar Fire Brigade Law (2015)
17. The Electricity Law (2014)
18. Boiler Law (2015)
19. Labor Dispute Settlement Law (28 March 2012 replacing 1929 version)
20. The Social Security Law (2012)
21. The Employment and Skill Development (2013)
22. The Worker's Compensation Act, 1923
23. The Payment of Wages Act, 1936
24. The Leave and Holidays Act, (1951, partially revised in 20140
25. The Minimum Wage Law (2013)
26. Public Health Law (1972)
27. Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)
28. Occupational Safety and Health Law (2019)
29. The Law on Standardization
30. လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သောဝတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ (၂၀၁၈)
31. The Motor Vehicles Law (2015)
32. The Conservation of Water Resources and River Law (2006)
33. The Commercial Tax Law (1990) Amended 2014

Project Description

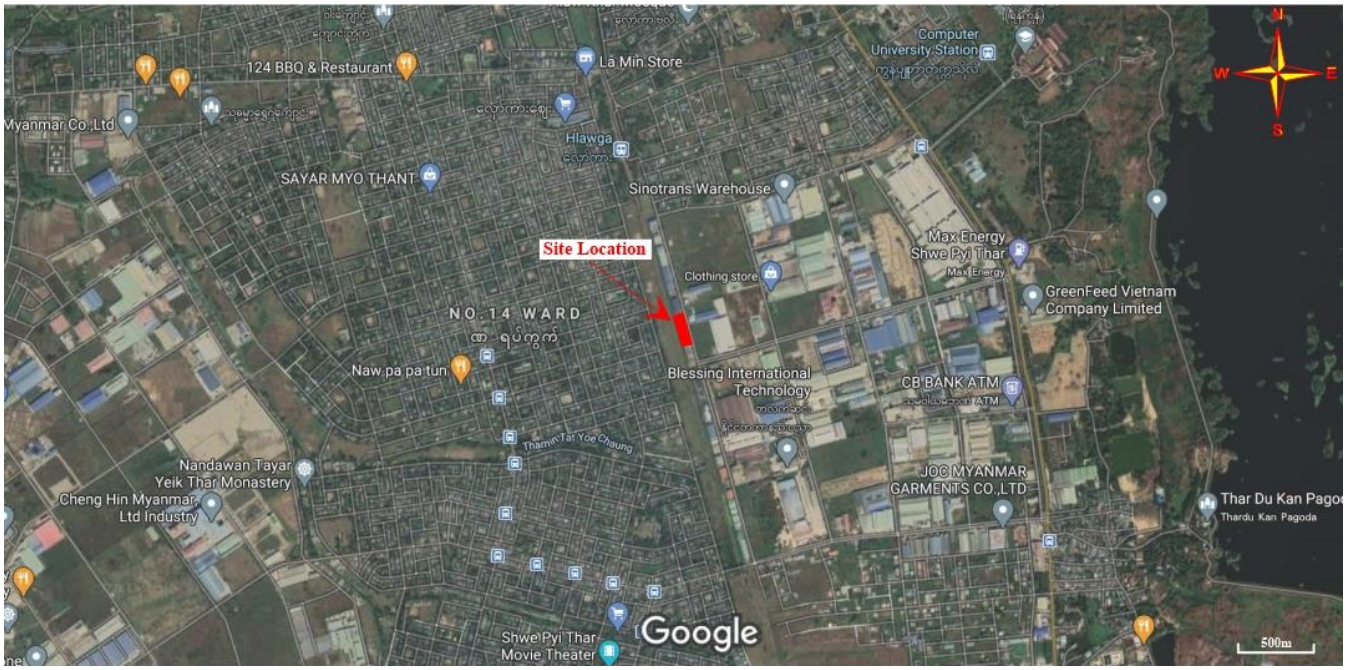
Myanmar Xiang Rui Fashion Co., Ltd. is located at Plot No. 152, Myay Taing Block No. 51, Thardukan Industrial Zone, Shwe Pyi Thar Township, Yangon region. The location point of proposed project is between latitude of 16°59'27.89"N and 16°59'32.15"N, longitude of 96° 4'43.07"E and 96° 4'44.37"E. Industrial Road (Padamyar Street) was situated at the front of the factory and Thamin Tat Yoe Chaung was situated the west of factory compound.



Location Map of Proposed Project



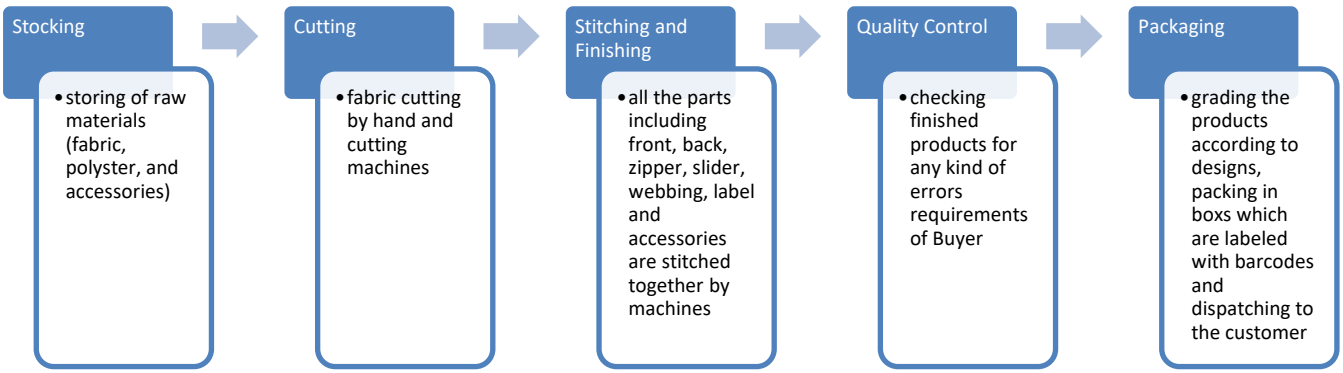
Factory Layout Drawing



Adjacent Location Map of Proposed Project

The main Raw Materials are knitting fabric, woven fabric, lace, label, hang tag, zipper, button etc. which imported from China.

The main product of factory is garments. The Utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for domestic use. Electric power is used for the purpose of to provide lighting.



Warehouse section

Cutting section

Sewing section

Ironing section

Hanging room

Quality Control room

Production Process

Production rate of factory is produced between first year of operation and thirty years operation as 2,400,000 to 13,380,000 pieces annually. It is required employees for operation is about 200 persons.


Product Photos

Brief Description of Surrounding Environment

To determine the existing baseline environmental quality within the project site on November 2018. The field observation for determining the environmental baseline of the proposed project area was undertaken during operation period. The survey team consists of the senior consultant and environmental quality team. The baseline data collected regarding the environmental condition of the project area was conducted in the following section. On-site measurement includes indoor air quality, noise level and operation light condition at the factory.

Item	Parameter
Air quality	(1) Sulfur dioxide (SO2), (2) Carbon monoxide (CO), (3) Nitrogen dioxide (NO2), (4) PM10 and PM2.5
Noise level	Indoor sound level (LAeq)
Light Level	Industry light condition (Lux)

The contents of CO, CO_2 and SO_2 concentration level are within the limit of NEQ (emission) guideline but particulate matter (PM_{10}, $PM_{2.5}$) and gases level of Nitrogen Dioxide (NO_2) are also within the National Environmental Quality (Emission) Guideline. Noise in the workshop area is acceptable when compared with National Environmental Quality (Emission) Guideline. The result of light measurement at operation area (inside the production sector) is good condition to the acceptable level of standard.

Moreover, secondary data collection of proposed project site area such as socio-economic condition, physical/ biological environment, weather data where be received from official township data was reference by Regional Data of Shwe Pyi Thar Township. The proposed project site is initiated into the industrial zone area. The nearest sensitive water body is about 3 km far from the Hlaing River and about 5 km from Hlawga Lake. In 2017, the population of Shwe Pyi Thar Township is about 273,721 people.

Risk Assessment and Mitigation Measure Plan

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

Impact Assessment Parameter and Its Skill

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

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

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

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

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

Categories	Source of Impact	Mitigation Measure
Air	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Emission of smoke from steam boiler	• To control air pollution, the vehicles, generators and machineries have to check and maintain regularly. • The factory uses chimney for generator and steam boiler through which the flue

Categories	Source of Impact	Mitigation Measure
	• Emission from emergency diesel generator and vehicle movement	gas is emitted for reducing the impact of stack emission on environment. • Ensuring vehicles, compressor and generator are well maintained.
Water	• Production process	• No Mitigation Measure
Soil	• Engine oil leaks, spills at diesel storage and during fuel refueling.	• No Mitigation Measure
Noise and Vibration	• Generating noise from the production machinery	• No Mitigation Measure
Flora and fauna on terrestrial and aquatic life	• Operation of the garment factory	• No Mitigation Measure
Fire	• Poor electrical installations • Waste disposed area raw materials and chemical storage	• To provide 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. • The emergency fire alarms are installed at the factory for alerting the workers in case of fire. • The main entrances and route for emergency cases of the factory must not be blocked with materials or machines for fire emergency cases.
Occupational Safety	• Accidental cases cause by operating machines. • Unloading, mixing, cutting, pressing and packaging activities. • Accidental cases of thermic fluid heater	• 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 (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.
Health	• Influx of people • Noise from the generating of the	• Manage the drainage systems of the factory to prevent health risk of the

Categories	Source of Impact	Mitigation Measure
	emergency generators	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
Solid Waste	• Residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	• 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.
Liquid Waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	• Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.
Hazardous Waste	• Used oil and lubricant discharged from the maintenance of vehicles and machines.	• Proper inspection and maintenance in storage of hazardous waste. • Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. • The empty chemical containers will hand over to suppliers for recycle or appropriate disposal • The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (eg., DOWA and YCDC)
Natural Disaster (Earthquakes, Floods, landsides and cyclone)		• Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency
Decommissioning Phase		
Air pollution	Decommissioning of buildings and related materials Transportation of demolished materials	Spray water twice a day Cover mesh trap around the decommission area Install shading net about 2 meters above temporary fence of decommission area Carry broken material with cover by canvas.
Water pollution	Sewage form decommissioning workers Demolition machinery equipment	Systematically demolish the septic tanks.
Soil	Decommissioning of buildings and related	Manage the spillage of oil and diesel and sewage.

Categories	Source of Impact	Mitigation Measure
Contamination	materials Transportation of demolished materials	
Noise Pollution	Decommission activities Transportation of demolished materials	Carry out the activities during day time. Maintain the machines and vehicles to reduce noise pollution. Provide the ear plugs to the workers.
Waste disposal	Demolished debris such as bricks, concrete materials	Recyclable materials and dispose to the define areas.
Hazardous waste	Used lubricants from decommissioning vehicles and machines	Manage the disposal way of hazardous waste.
Occupational Health and Safety (Accidents, Injuries)	Decommissioning activities Transportation of demolished materials	Provide protective fencing or demarcation with tape at the boundaries of dangerous / hazardous zone and the appropriate warning signs, marking and safety signs and installation of the lost time injury notice board. Clean up excessive waste debris and liquid spills regularly. Use the third-party expert assisted by trained personnel to identify and remove hazardous materials.

Modified method of Institute of Environmental Management and Assessment (IEMA) from United Kingdom is applied in this report to assess the significance of the impacts. Results of analysis mention that most of the project activities are very low/low significant and some are moderate significant to be improved for environmental performance. Social and economic developments are positive impacts of the proposed project.

Environmental Management Action

The Environmental Management Plan (EMP) formulated with the anticipated impacts, mitigation measures, management and monitoring plans during all phases are implemented. Myanmar Xiang Rui Fashion Co., Ltd. has organized Environmental Management Team to accomplish these plans and to review EMP regularly for improvements and modifications. The project proponent has performed Corporate Social Responsibility (CSR) plan and Emergency Preparedness for the benefits of residents and local community. Myanmar Xiang Rui Fashion Co., Ltd. will contribute 2% of our Net Profit to social welfare activities that will help society and country of Myanmar.

CSR plan of Myanmar Xiang Rui Fashion Co., Ltd

No	Particle	Contribution	Estimate Cost (Kyats)
1	Public school	0.5%	750,000
2	Non-profit training	1	1,500,000
3	Employee healthcare	0.5%	750,000

The environmental management action for the factory 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 action based upon the potential impacts of activities:

1. Air pollution/Dust Management plan
2. Noise Management Plan
3. Fire Management Plan
4. Occupational Safety and Health Management Plan
5. Solid Waste Management plan
6. Liquid Waste Management Plan
7. Hazardous Waste Management Plan
8. Energy Management plan
9. Emergency Response and Disaster Management Plan
10. Environmental Monitoring Schedule and Reporting
11. Capacity Building and Training Plan

Public Consulting

Public participation can be considered as the required element of the EMP process. In this study various stakeholder's participation were made.

On 24, September 2018, a public consultation and disclosure ceremony was held at the proposed project site of Myanmar Xiang Rui Factory, Thar Du Kan industrial zone, Shwe Pyi Thar Township, Yangon Region in order to disclose the summary of EMP process to the General Administrative Department, Medical Center, ECD and affected persons at proposed factory site.

Conclusion and Recommendation

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

This is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to dispose according to Yangon City Development Committee rules and regulation
- Workers should be provided proper training and it should be ensured that workers use PPE during factory operation area.
- Daily, monthly and annual action plan shall be formulated based on this EMP and practiced at operation level.

- Keep full records of environmental management activities and present to annual independent third party environment audit.
- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

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

1. INTRODUCTION

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

1.1. PROJECT BACKGROUND

The project is new investment for manufacturing of Garment on Cutting, Making and Packaging (CMP) basic company from China. The project is issued by the Myanmar Investment Commission (MIC) to approve the permit (No.1293/2017). The permit for investment in manufacturing of Garment under the name of Seduno (Myanmar) Knitting Co., Ltd. as a wholly owned foreign investment from the China.

The Myanmar Investment Commission, at its meeting 9/2018 held on 7th July 2018 approved the place and name of investment of Myanmar Xiang Rui Fashion Co., Ltd. to be changed from Seduno (Myanmar) Knitting Co., Ltd. It is notified that Myanmar Xiang Rui Fashion Co., Ltd. shall have to abide by all terms and conditions stated in the Commission's Letter No. MIC-3/FI-1439/2017(589-M) dated 21-6-2017 and MIC-3/FI-1439/2018(243) dated 15-5-2018. Myanmar Xinag Rui Fashion Co., Ltd. is changed the place and name of investment be hereby amended to Plot No.152, Myay Taing Block No.51, Thardukan Industrial Zone, Shwepyithar Township, Yangon Region accordingly on the Permit No. 1293/2017 dated 21-6-2017 **(Appendix A).**

According to the MIC permit, which confidential was issued in Section 19, Xiang Rui shall responsible for the preservation of the environment and around the area of the project site. In addition to this, it shall carry out as per instructions made by Ministry of the Natural Resources and Environmental Conservation (MONREC) under Environmental Conservation Department (ECD) in which to conduct an Environmental Management Plan (EMP). It has to prepare and submit and perform activities in accordance with this EMP and abide by the environmental policy, Environmental Conservation Law and other environmental related rules and procedures. Therefore, Xiang Rui commissioned Myanwei Consulting Co., Ltd. (Myanwei) for EMP report study.

This EMP report is prepared based on the impact identified in EIA procedure (2015). The EMP is prepared provide additional guidance on the means, methods and mechanisms by which such mitigation measures will be implemented. The EMP is one of the most important outputs of the environmental assessment process. The EMP is the synthesis of all proposed mitigate and monitoring actions, set to a timeline with specific responsibility assigned and follow up actions defined. The EMP can be prepared at different times of the project life. Operation environmental management plan is developed to ensure that appropriate environmental practices are followed during a project's operation and decommissioning phases. As the factory is already built operation environmental management plan is designed for this factory.

1.1.1. Project Proponent Profile

This is the information of the project proponent from the registration of MIC which is described in below Table 1-1. The estimated authorized capital investment is about 10,000,000 US Dollar. Organization chart of Xiang Rui is presented in Figure 1-1.

Table 1-1 Salient Features of the Project

Type of Proposed Business	Manufacturing of Garment (CMP)
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	450’ × 110’
Total building area	300’ × 77’ Steel Structure building (1 story) Office building (2 stories)
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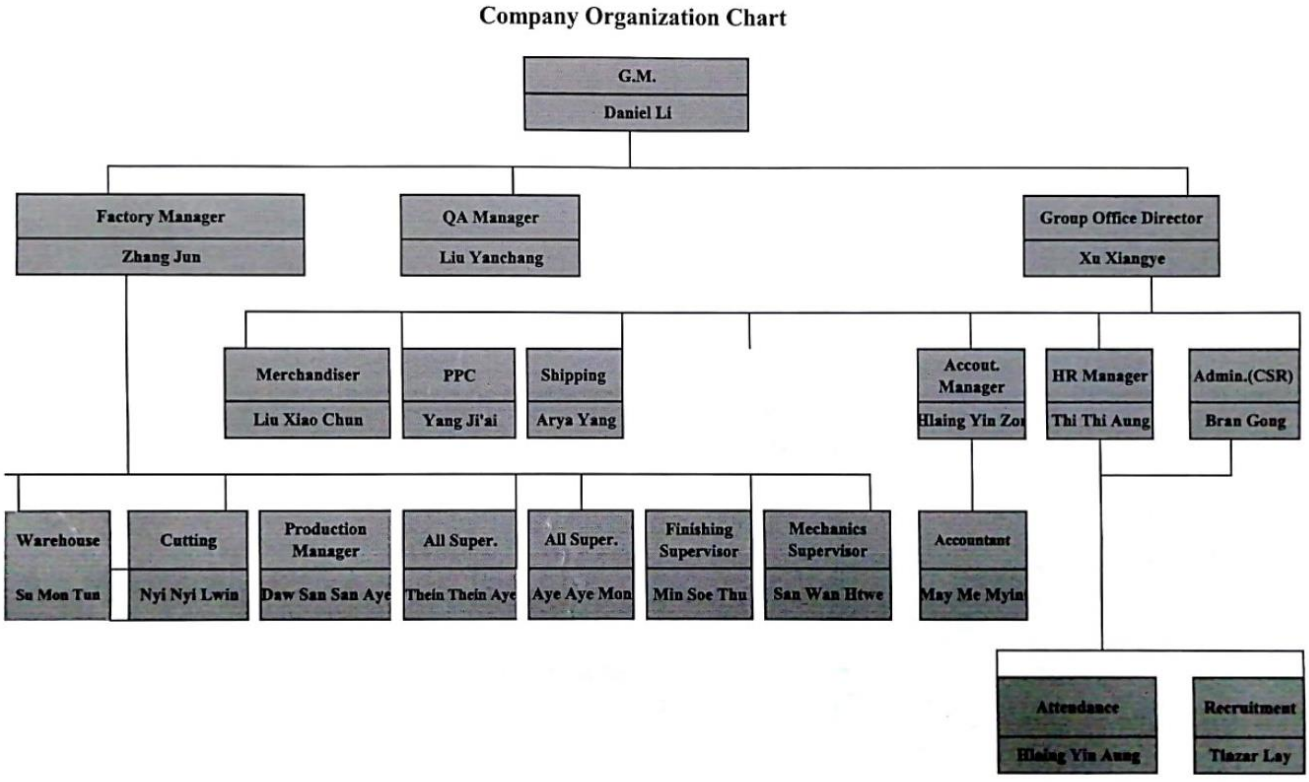


Figure 1-1 Organization Chart of Myanmar Xiang Rui Fashion Co., Ltd.

1.1.2. Environmental Consultant Profile

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

Myanwei Environmental Solutions Company Limited	No. 36-38, 9th floor (A), Grand Myay Nu Condo, Myay Nu Street, Sanchaung Township, Yangon, Myanmar.	01-501221 env@myanweiconsulting.com www.myanwweiconsulting.com.

Table 1-2 Member of EMP Study Team

Name	Qualification	Responsibility
Myanwei Environmental Solutions Company Limited	**Transition Consultant Registration Certificate No. 0069**	**EIA Organisation**
Dr. Hein Lynn Aung	M.B, B.S (Yangon), Business Management (International Collage of Management Sydney, Australia)	Reviewer
Mr. Lin Htet Sein	MSc (Regional Geology) BSc (Hons) Geology Dip in Environmental Science Certificate in Environmental & Social Assessment **TCR No. 0048**	Team Leader Environmental Management Program
Mr. Saw Yan Naung	B.E. Chemical Engineering B. Tech Chemical Engineering	Co-Leader Brief Description of Surrounding Environment Public Consultation
Mr. Htun Lin Kyaw	B.Sc (Hons) Geology M.Sc (Structural Geology)	Co-Leader Project Description Brief Description of Surrounding Environment
Mr. Kaung Sett Lwin	B.Sc (Hons) Geology Certificate of Geotechnical Engineering (Myanmar Geoscience Society)	Policy, Legal and Institutional Framework Brief Description of Surrounding Environment
Ms. Su Myat Hlaing	B.E. Civil Engineering B. Tech Civil Engineering	Environmental Impact and Mitigation Measures

Zin Phyo Oo	B.A (Eco)	Leader Site management and communication
Wint Zarni Mg Mg	M.E (Environmental Science & Engineering) B.E (Civil Engineering)	Co-leader Noise measurement
Pyae Phyo Win	M. Sc (Botany) B.Sc (Hons) Botany	Air quality monitoring PCM
Lynn Than Thaung	B. Sc (Forestry)	Mapping Document preparation
Aung Ye' Thaw	B. Sc (Geology)	Document preparation Water Sampling
Haymar Htet Naing	B.A (English) Certificate of Achievement (English Access Micro Scholarship Program) U.S Embassy Rangoon	Document preparation PCM
No No Shee Sho	B.A (Myanmar)	Document preparation
Min Thu Kyaw	B. Sc (Geology)	Document preparation

1.2. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN

The primary purpose of the EMP is to provide an easily interpreted reference document which ensures that the project environmental commitments, safeguards and mitigation measures from the environmental planning documents, project approvals and project implementation. It aims to minimized impacts associated with the operation of the project. The purpose of operational EMP is to:

- Define details of who, what, where and when environmental management and mitigation measures are to be implemented
- Provide government and their stakeholders batter on-site environmental management control over the life of operation
- Ensure that the commitments made as a part of the project's EMP are implemented throughout the project life
- Ensure the environmental management detail is captured and documented at all stages of the project

1.2.1. **This EMP documents aims**

- ❖ Provide environmental management plans that minimize the environmental impact of the works and identify those responsible for its implementation.
- ❖ Define the monitoring program which assesses the implementation.

2. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

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

2.1. MYANMAR REGULATORY FRAMWORK

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

2.1.1. Laws and Regulations Related to Environmental and Social Considerations

Requirements related to environmental (and social) impact management for development projects are described in **Error! Reference source not found.**.

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;
Provisions of Duties and Powers relating to the Environmental Conservation of the Ministry: Section 7	(a) To specify categories and classes of hazardous wastes generated from the production and use of chemicals or other hazardous substances in carrying out industry, agriculture, mineral production, sanitation and other activities; (b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment; (c) To promote and carry out the establishment of necessary factories and stations for the treatment of solid wastes, effluents and emissions which contain toxic and hazardous substances; (j) To prescribe the terms and conditions relating to effluent treatment in industrial estates and other necessary places and buildings and emissions of machines, vehicles and mechanisms; (m) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment; (o) To manage to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the businesses which explore, trade and use the natural resources in environmental conservation works.
Chapter VI Environmental Quality Standards: Section10	The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards: (a) suitable surface water quality standards in the usage in rivers, streams, canals, springs, marshes, swamps, lakes, reservoirs and other inland water sources of the public; (b) water quality standards for coastal and estuarine areas; (c) underground water quality standards; (d) atmospheric quality standards; (e) noise and vibration standards; (f) emissions standards; (g) effluent standards; (h) solid wastes standards; (i) other environmental quality standards stipulated by the Union Government.
Section 14	A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards.
Section 15	The owner or occupier of any business, material or place which causes a point source of pollution shall install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduce or eliminate environmental pollution. If it is impracticable, it shall be arranged to dispose the wastes in accord with environmentally sound methods.
Section 16	A person or organization operating business in the industrial estate or business in the SEZ or category of business stipulated by the Ministry: (a) is responsible to carry out by contributing the stipulated cash or kind in the relevant combined scheme for the environmental conservation including the management and treatment of waste; (b) shall contribute the stipulated users 'charge s or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization;

	(c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, SEZ or business.
Section 24	The project proponent has to allow relevant governmental organization or department to inspect whether performing is conformity with the terms and condition include in prior permission, stipulated by the ministry, or not.
Section 25	The project proponent has to comply with the terms and conditions include in prior permission.
Section 29	The project proponent has to abide by the stipulations included in the rules, regulations, by-law, order, notification and procedure, which are issued by said law.
Environmental Conservation Rules, 2014	
Rules 58	The Ministry shall form the EIA Report Review Body with the experts from the relevant Government departments, organizations.
Rules 59	The Ministry may assign duty to the Department to scrutinize the report of EIA prepared and submitted by any organization or person relating to EIA and report through the EIA Report Review Body.
Rules 61	The Ministry may approve and reply on the EIA report 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	The project proponent has to be liable for all adverse impacts caused by doing or emitting of project owner or contractor, sub-contractor, officer, employee, representative or consultant who is appointed or hired to perform on behalf of project owner, under sub-paragraph (a) of paragraph 102. The project proponent has to support, after consulting with effected persons by project, relevant government organization, government department and other related persons, to resettlement and rehabilitation for livelihood until the effected persons by the project receiving the stable socio-economy which is not lower than the status in pre-project, under sub-paragraph (b) of paragraph 102 The project proponent has to fully implement all commitments of project and conditions included in EMP. Moreover, the project proponent has to be liable for contractor and sub-contractor who perform on behalf of him/her have to fully abide by the relevant laws, rules, this procedure, EMP and all conditions, under paragraph 103. The project proponent has to be liable and fully & effectively implement all requirements included in ECC, relevant laws and rules, this procedure and standards under rule 104. The project proponent has to inform the completed information, after specifying the adverse impacts caused by the project, from time to time, under paragraph 105. The project proponent has to continuously monitor all adverse impacts in the pre-construction phrase, construction phrase, operation phrase, suspension phrase, closure phrase and post-closure phrase, moreover has to implement the EMP with abiding the all conditions included in ECC, relevant laws & rules and this procedure, under paragraph 106. The project proponent has to submit, as soon as possible, the failures of his

	or her responsibility, other implementation, ECC or EMP. If dangerous impact caused by this failure or failure should be known by the Ministry the project proponent has to submit within 24 hours and other than this situation has to submit within 7 days from knowing it, under paragraph 107. The project proponent has to submit the monitoring report dually or prescribed time by Ministry in line with the schedule of EMP, under paragraph 108. The project proponent has to prepare the monitoring report in accord with the rule 109. The project proponent has to show this monitoring report in public place such as library, hall and website and office of project for the purpose to know this report by public within 10 days from the date which the report is submitted to the Ministry. Moreover, has to give the copy of this report, by email or other way which way agreed with the asked person, to any asked person or organization, under paragraph 110. The project proponent has to allow inspector to enter and inspect in working time and if it is needed by Ministry has to allow inspector to enter and inspect in the office and work-place of project and other work-place related to this project in any time, under paragraph 113. The project proponent has to allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirements related to social or environment or caused to it, under paragraph 115. The project proponent has to allow inspector to inspect the contractor and sub-contractor who implement on behalf of project, under paragraph 117.
Screening: Section 23	a) The project proponent shall submit the Project Proposal to the Ministry for Screening. b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment. c) Following the preliminary Screening and verification that the Project Proposal contains all required documents and related materials, subject to Articles 8, 9, 10, 11, 26 and 27 the Department shall make a determination in accordance with Annex 1 ‗ Categorization of Economic Activities for Assessment Purposes ‘, taking into account Article 25 and the additional factors listed in Article 28 in order to designate the Project as one of the following, and then submit it to the Ministry: i) An EIA Type Project, or ii) An IEE Type Project, or iii) A Non IEE or EIA Type, and therefore not required to
National Environmental Quality (Emission) Guidelines (NEQG) (December 2015)	
Objectives	To provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health.
National Environmental Policy of Myanmar (2019)	
National Environmental Policy Vision & mission	Vision A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar. Mission To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all polices, laws, regulation, plans, strategic, programmes and projects in Myanmar.

Myanmar Investment Law (2016)	
Chapter II Objective Section 3	(a) to develop responsible investment businesses which do not cause harm to the natural environment and the social environment for the interest of the Union and its citizens; (b) to protect the investors and their investment businesses in accordance with the law; (c) to create job opportunities for the people; (d) to develop human resources; (e) to develop high functioning production, service, and trading sectors (f) to develop technology, agriculture, livestock and industrial sectors; (g) to develop various professional fields including infrastructure around the Union; (h) to enable the citizens to be able to work alongside with the international community; (i) to develop businesses and investment businesses that meet international standards.
Chapter XIII Employment of Staff and Workers No.51	The investor (a) may appoint of any citizen who is a qualified person as senior manager, technical and operational expert, and adviser in his investment within the Union in accordance with the Laws; (b) shall appoint them to replace, after providing for capacity building programs in order to be able to appoint citizens to different level positions of management, technical and operational experts, and advisors; (c) shall appoint only citizens for works which does not require skill; (d) shall appoint skilled citizen and foreign workers, technicians and staff by signing an employment contract between employer and employee in accordance with the labor laws and rules;
Chapter XVII Insurance Section 73	The investor shall ensure the types of insurance stipulated in the provision of the rules at any insurance enterprise which is entitled to carry out insurance businesses within the Union.
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
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 Basis 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 Basis which are related to the industrial enterprise; (b) to acquire modern technical know-how for raising the efficiency of industrial Basis 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 Basis; (e) to cause opening up of more employment opportunities; (f) to cause avoidance of or reduction of the use of technical know-how which cause environmental pollution; (g) to cause the use of energy in the most economical manner.
The Export and Import Law (2012)	
Objectives	The objectives of this law are as follows: a) To enable to implement the economic principles of the State successfully. b) To enable to lay down the policies relating to export and import that supports the development of the State. c) To cause the policies relating to export and import of the State and

	activities are to be in conformity with the international trade standards. d) To cause to be streamlined and speedy in carrying out the matters relating to export and import.
Prohibitions: Section 5	No persons shall export or import restricted, prohibited and banned goods.
Prohibitions: Section 6	Without obtaining license, no person shall export or import the specified goods which are to obtain permission.
Prohibitions: Section 5	A person who obtained any license shall not violate the conditions contained in the license.
The Prevention of Hazard from Chemical and Related Substances Law, 2013	
This law was enacted with the objectives of: a. To protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances; b. To supervise systematically in performing the chemical and related substances business with permission for being safety; c. To perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically; d. To perform the sustainable development for the occupational safety, health and environmental conservation. Regarding the chemical management and storage, currently, regulations governing chemicals management are divided between various Acts, mostly dating from colonial times; hence the legislation is in many respects related to the British framework. The Factory Act and the Public Health Act contain the provisions for chemicals management and storage. Some chemicals are likely to require permits.	
Underground Water Act	
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.	
Myanmar Fire Brigade Law (2015)	
The Pyidaungsu Hluttaw enacted this law by Law No.11/2015 on the date of 17th March, 2015 with the following objectives: (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	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: 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. Doing transport business, public utility vehicles train, airplane, helicopter, vessel, ship, tonkin tug
Rule18	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
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	The objectives of this law are as follows: (a) To obtain boilers in compliance with Myanmar Standards or International Standards (b) To prevent the country and citizens from hazards caused by boiler accidents (c) To use boilers in compliance with Myanmar Standards or International Standards within the country (d) To develop boiler technology and to produce experts capable of manufacturing, handling, repair, and maintenance of boilers (e) To optimize the use of boilers through effective utilization of fuel energy (f) To reduce the environmental, social and health impacts through long-lasting use of boilers.
Chapter (3) 4. With the permission of the Ministry, the inspector general can:	Notify the inspection methods and instructions according to the national or international standards for safe operations of boilers in line with this law, procedures and instructions Only the results obtained from the prescribed boiler standards and inspection methods will be approved.
Chapter (4). Boiler Registration	5. Anybody who would like to use a boiler in any kind of business should be registered. 6. Boiler should be manufactured according to Myanmar Standards or International Standards. 7. Those who would like to apply for boiler registration according to Section 5 should apply to the inspector with the application, documents and vouchers related to boiler 8. If the application regarding registration of boiler according to Section 7, the Registration Officer should conduct necessary inspection and submit results of the findings to the Inspector General. 9. The Inspector General should assess and inspect the submission of the Registration Officer according to Section 8 and could allow or reject for registration of the boiler. 10. The Inspector General shall define boiler size according to heated surface area in accordance with adopted procedures.
Chapter (13) Prohibitions	59. According to Section 21, nobody must alter, change, deface, deform or make embossed registration unnoticeable illegitimately.

	60. Nobody is allowed to repair a boiler without boiler repair certificate. 61. Nobody is allowed to maintain a boiler without boiler maintenance certificate. 62. Nobody must alter safety relief valve in order to exceed the allowable pressure due to his consent or direction given by the owner. 63. Nobody must manufacture boilers against Section 25, Subsection 25 (a) and (b) enacted.
Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)	
The Pyidaungsu Hluttaw hereby enacts this Law 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.	
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 f violates any act or any emission to omission to damage the interest of

	labour by reducing of product without efficient cause.
Section 46	Any employer who violates any prohibition contained in sections 38 and 39 shall, on conviction, be punished with a fine for a minimum of one-lakh kyats.
The employment and skill development (2013)	
This law was enacted for safeguarding the right of workers or having skillful of workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. Employer shall conduct occupational training to enhance the skills of workers.	
Section 5	The project proponent has to appoint employees with the contract in line with the provision of section 5 of said law.
Section 14	Employer shall conduct occupational training to enhance the skills of workers who are to be employed as well as workers who are presently employed in accordance with the requirements of the enterprise and the policy of the Skills Development Agency.
The Worker's Compensation Act, 1923	It stipulates that employer is required to make payments to employees who become injured or who die in any accidents arising during and in consequence of their employment. Such compensation also must be made for diseases which arise as a direct consequence of employment, such as carpal tunnel syndrome.
The Payment of Wages Act, 1936	The Payment of Wage Act defines the payment obligation to the workers employed in the factories or railway administration. It stipulates the method of payment stating that the payment should be made in cash on a regular payday, and allows legal action against delayed payment or un-agreeable deduction.
The Leave and Holidays Act (1951, partially revised in 2014)	This act has been used as the basic framework for leaves and holidays for workers with minor amendment in 2006 and 2014. This defines the public holidays that every employee shall be granted with full payment. It also defines the rules of leaves for workers including medical leave, earned leave and maternity leave.
The Minimum Wage Law (2013)	The minimum wage law, passed in March 2013, was replaced the 1949 Minimum Wage Act. The law provides a framework for minimum wage determination: the presidential office establishing a tripartite minimum wage committee shall decide minimum wage with industrial variation based on a survey on living costs of workers possibly every two years. This also stipulates equal payment.
Public Health Law (1972)	**Chapter 2; Prevention of Public Health**
Objectives	To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. This law focuses as follows The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law. The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law. The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	4. When a Principal Epidemic Disease of a Notifiable Disease occurs; Immunization and other necessary measures shall be undertaken by the Department of Health, in order to control the spread there of; The public shall abide by measures undertaken by the Department of Health under sub-section (a).

Chapter 4 Environmental Sanitation	For prevention of the outbreak of Communicable Disease and effective control of Communicable Disease when it occurs, the public shall under the supervision and guidance of the Health Officer of the relevant area, undertake the responsibility of carrying out the following environmental sanitation measures; - Indoor, outdoor sanitation or inside the fence outside the fence sanitation; Well, ponds and drainage sanitation; Proper disposal refuse and destruction there of by fire; Construction and use of sanitary latrines; Other necessary environmental sanitation measures.
Occupational Safety and Health Law (2019)	
Purpose:	To effectively implement measures related to safety and health in every industry and to set occupational safety and health standards;
Section-26 Sub-section (e)	The project proponent has to provide adequate and relevant personal protective equipment to workers free of charge and make them wear it during work so as not to expose workers to any serious occupational diseases or hazards.
Section-26 Sub-section (1)	The project proponent has to arrange and display occupational safety and health instructions, warning signs, notices, posters, and signboards.
Section-30 Sub-section (a)	The worker shall wear or use at all times any protective clothes, equipment and tools provided by the employer for the purpose of safety and health.
Section-30 Sub-section (d)	The worker shall proper and systematic use any equipment and tools, machines, any parts of the machines, vehicles, electricity and other substances being used at the workplace.
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	The Objectives of this Law are as follows: to enable to determine Myanmar Standard to enable to support export promotion by enhancing quality of production organizations and their product, production processes and services to enable to protect the consumers and user by guaranteeing imports and products are not lower than prescribed standard, and safe from health hazards to enable to support protection of environment related to products, production process and services from impact, and conservation of natural resources to enable to protect manufacturing, distributing and importing the disqualified goods which do not meet the prescribed standard and those which are not safe and endangered to the environment to support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade to facilitate technological transfer and innovation by using the standards for the development of national economic and social activities in accordance with the national development programme.
Chapter 7 Taking Action by Committee No. 19	The committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative order: warning

	suspending the certificate of certification for limited period cancelling the certificate of certification
လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သောဝတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ (၂၀၁၈)	
ရည်ရွယ်ချက်	လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများကို စနစ်တကျပြုလုပ်ခြင်း၊ တင်သွင်းခြင်း၊ သယ်ယူခြင်း၊ သိုလှောင်ခြင်းနှင်း သုံးစွဲခြင်းတို့ပြုနိုင်ရန်၊ ယမ်းဘီလူးနှင့် ဆက်စပ်သုံးပစ္စည်းများ အသုံးပြုသည့် လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်း၍ လုံခြုံမှုရှိစေရန်၊ လုပ်ငန်းခွင်သုံး ပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများ ပြုလုပ်သုံးစွဲမှုများကို စနစ်တကျ ကြီးကြပ်နိုင်ရန်။
အခန်း ၇ တားမြစ်ချက်များ အမှတ် ၁၈	လိုင်စင်ရရှိသူနှင့် ခွင့်ပြုချက်ရရှိသူ မည်သူမျှ စစ်ဆေးရေးအရာရှိချုပ် သို့မဟုတ် စစ်ဆေးရေးအရာရှိ၏ စစ်ဆေးခြင်းကို ခံယူရန် ငြင်းပယ်ခြင်းမပြုရ။
အမှတ် ၁၉ (ခ)	ပုဒ်မ ၈ အရ ကာကွယ်ရေးဌာနကောင်စီ အမှုဆောင်အဖွဲ့၏ အတည်ပြုချက်မရရှိဘဲ လုပ်ငန်းခွင် ပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများကို 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 • 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: to conserve and protect the water resources and rivers system for beneficial utilization by the public; to smooth and safety waterways navigation along rivers and creeks; to contribute to the development of State economy through improving water resources and river system; to protect environmental impact.
Chapter 5 Prohibitions No. 8	No person shall: (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 intimidation on the commencement of the operation as such to the relevant Township Revenue Officer as stipulated by regulations.
Chapter 6 Monthly Payment of Tax and Sending of Three-Monthly Return 12 (a)	Any person who has taxable proceed of sale or receipt from service within a year, shall pay due monthly tax within ten days after the end of the relevant month. Moreover, a three-monthly return shall be furnished to the relevant Township Revenue Officer within one month after the end of relevant three-month.
12 (b)	The Township Revenue Officer may intimate any person to pay due monthly tax and send three-monthly return if there is cause to consider that he has taxable proceed of sale or receipt from service within a year.
12 (c)	If it is failed to pay tax under sub-section (a) or (b), or if there is cause to consider that the tax paid is less than the tax payable, the Township Revenue Officer may, based on the information received, estimate and claim the tax payable or the additional tax payable.
12 (d)	The tax paid under sub-section (a), (b) or (c) shall be set-off from the tax due in the assessment.
12 (e)	The tax payable on goods imported under sub-section (c) of section 4 of the Law shall be collected together with the customs duties by the Customs Department in accord with the manner of collecting customs duties.

2.2. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUILDLINES

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

According to the Environmental Conservation Law, MOECAF shall set standards of environmental qualities as agreed by the Union Government and the Environmental Conservation Committee to provide the basis for regulation and control of noise and vibration, air emissions and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health.

2.2.1. General Guidelines

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

2.2.1.1. Air emission

Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that: (i) emissions do not result in concentrations that reach or exceed national ambient quality guidelines and standards, or in their absence current World Health Organization (WHO) Air Quality Guidelines1 for the most common pollutants as summarized below; and (ii) emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e. not exceeding 25 percent of the applicable air quality standards) to allow additional, future sustainable development in the same air shed. Industry-specific guidelines summarized hereinafter shall be applied by all projects to ensure that air emissions conform to good industry practice. Reference should be made to WHO's Air Quality Guidelines for Europe2 for air pollutants not included in the following Table 2-2.

Table 2-2 WHO's Air Quality Guideline

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

[a] Particulate matter 10 micrometers or less in diameter
[b] Particulate matter 2.5 micrometers or less in diameter

2.2.1.2. Wastewater

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

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

Table 2-3 Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges

Parameter	Unit	Guideline Values
5-day Biochemical oxygen demand	mg/l	50

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

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

2.2.1.3. 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 2-4 Noise Levels of National Environmental Quality (Emission) Guideline

Receptor	One Hour LAeq (dBA)[a]

	Daytime **07:00 – 22:00** **(10:00 – 22:00 for public holidays)**	**Nighttime** **22:00 – 07:00** **(22:00 – 10:00 for public holidays)**
Residential, institutional, education	55	45
Industrial, commercial	70	70

[a] Equivalent continuous sound level in decibels

2.2.2. **IFC EHS Guidelines**

The EHS Guidelines[1] 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

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

2.3. INSTITUTIONAL ARRANGEMENT

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

2.4. COMMITMENT OF MYANMAR XIANG RUI FASHION CO., LTD.

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

a) The accuracy and completeness of the EMP,

b) That the EMP has been prepared in strict compliance with applicable laws including this Procedure

c) That the Project will at all times comply fully with the commitments, mitigation measures, and plans in the EMP Report.

Xiang Rui shall be responsible for the environmental assessment of factory development as follows:

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

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

3. PROJECT DESCRIPTION

3.1. LOCATION

Myanmar Xiang Rui Fashion Co., Ltd. is located at Plot No. 152, Myay Taing Block No. 51, Thardukan Industrial Zone, Shwe Pyi Thar Township, Yangon region. The location point of proposed project is between latitude of 16°59'27.89"N and 16°59'32.15"N, longitude of 96° 4'43.07"E and 96° 4'44.37"E. Location map is shown in Figure 3-1.

3.1.1. Project Implementation

Construction phase; The project identification of construction phase is machinery and equipment installation period. Project proponent was leased the project area from previous owner; this area already constructed the warehouse building. The installation of machinery and equipment started in June 2017. The Installation project is completed as scheduled on the first week of July 2018.

The operation period started in July 2018. The designed area includes production building (one story), utilities of transformer room, boiler room, guardhouse and general utility room, firefighting pump room and water tank, car parking shelter, offices and canteen facilities etc. Number of people 100 employees working at Myanmar Xiang Rui factory. Most are local people, who manage the company by their dynamic, enthusiastic, experienced, and cooperative skills. The estimated production rate is 2,400,000 pieces per annually of production rate.

Decommissioning phase; The proposed project investment duration is 50 years and they will close and return to land owner.

3.1.2. Adjacent Condition of Project Site

Industrial road (Padamyar Street) was situated at the front of the factory and Thamin Tat Yoe Chaung was situated the west of factory compound. List and map of adjacent condition of project site is shown in Figure 3-2.

3.1.3. Site Description

The project utilizes 49,500 ft^2 of land and consist of main factory and warehouse of which total area is 23,100 ft^2. The project is separated into two buildings. The project layout plan can be seen in Figure 3-3 and Figure 3-4. Main structure was designed into fabric warehouse, HR office room, cutting line, sewing line, ironing section, needle checking room, final inspection room and clinic room. Admin office and accommodation building are separated by main factory building structure. Other facilities were composed of nearby main building included boiler room, generator room, air compressor room, fuel storage room, chemical storage room and canteen.

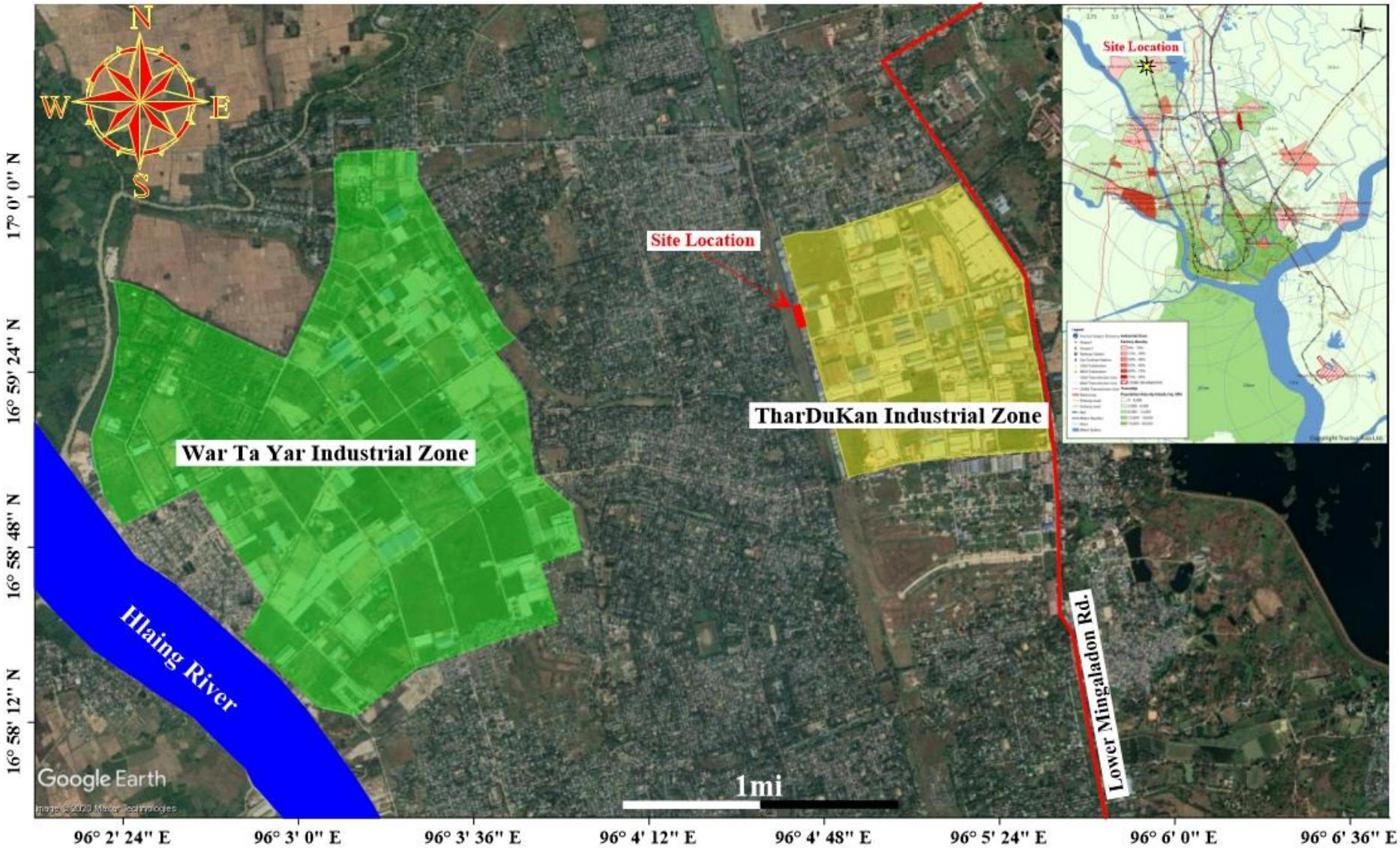


Figure 3-1 Location Map of Myanmar Xiang Rui factory

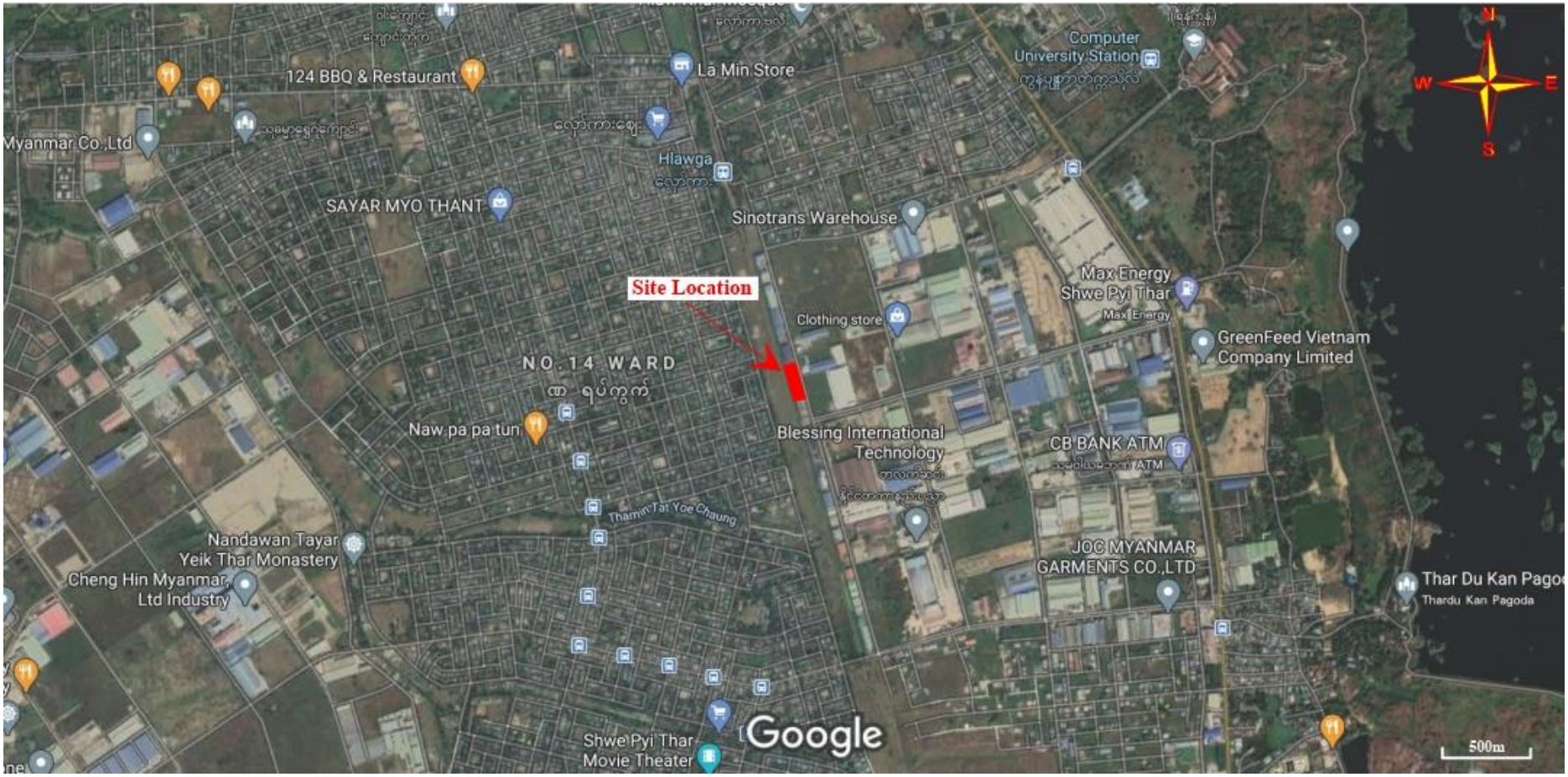


Figure 3-2 Adjacent Condition Map of Xiang Rui Factory

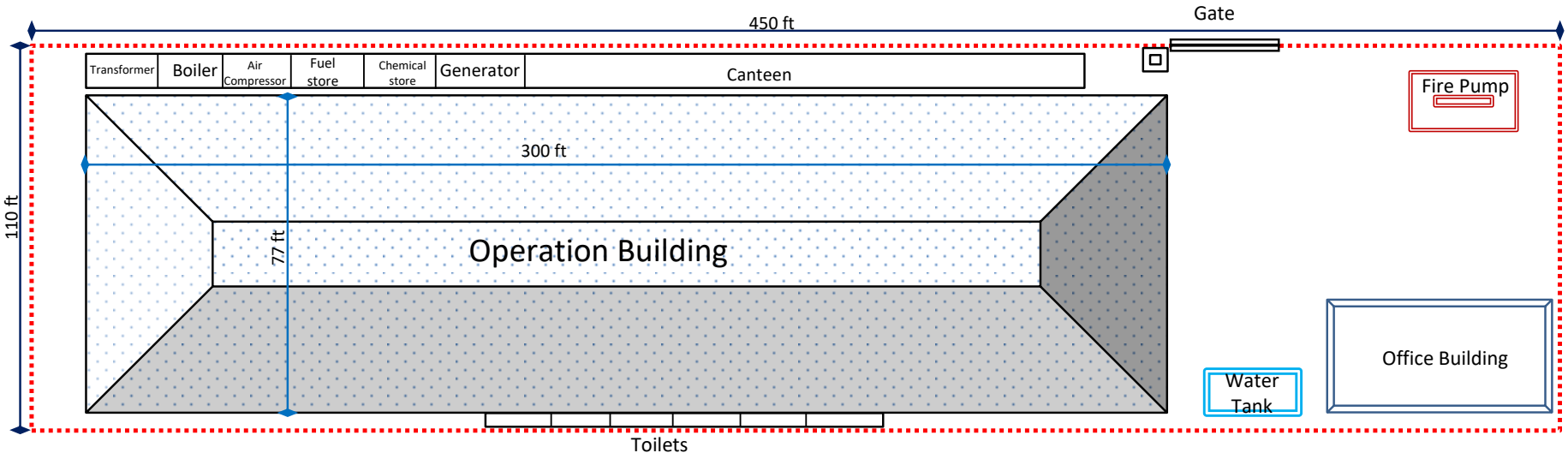


Figure 3-3 Project Site Map

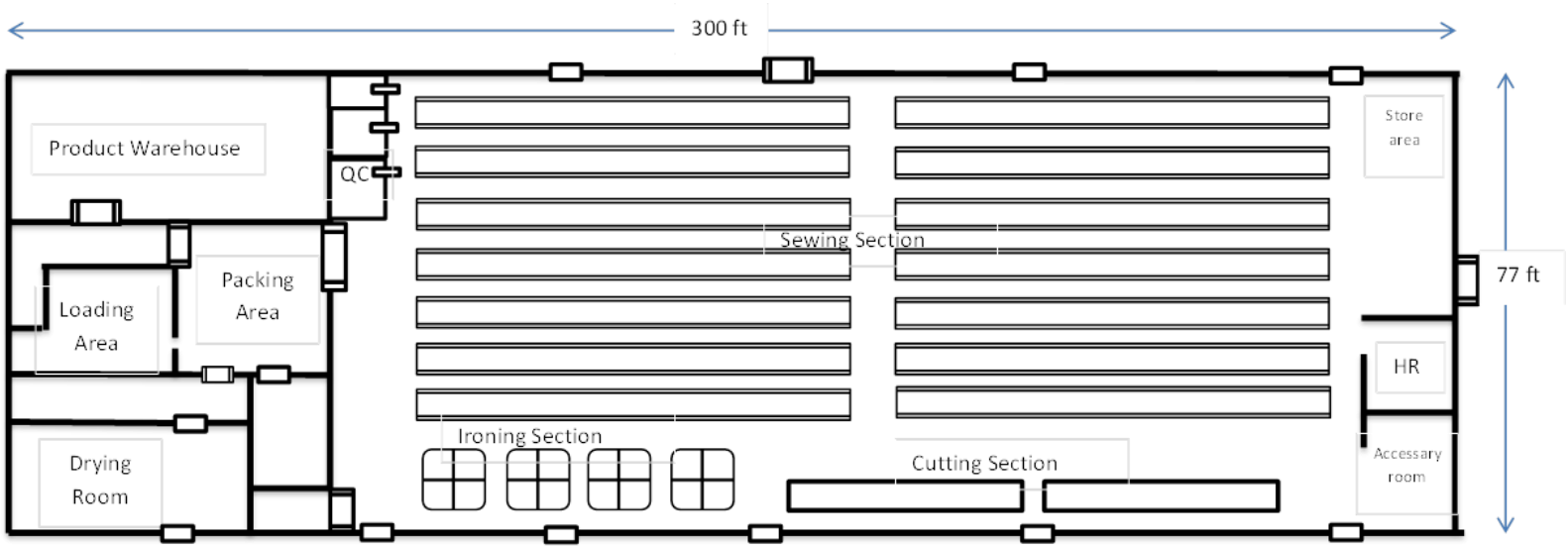


Figure 3-4 Factory Layout Plan

3.2. PRODUCTION PROCESS

Cutting-Making-Packaging (CMP) is a production system in which raw materials including fixtures and chemicals are imported and then processed into finished product, packaged and exported. The CMP system is a form of production on consignment in which the main raw materials (fabrics, ancillary materials, etc.) are provided by overseas buyers and imported free of charge, then cut, sewn and packed in the domestic factories, after which all of the finished products are exported". The operation of garment factories with CMP system includes production costs covering wages, electricity and diesel, transportation, communication, factory and office rental, maintenance and repair of sewing machines, and administrative expenses. Steps of production process of proposed bag factory are described in Figure 3-5.

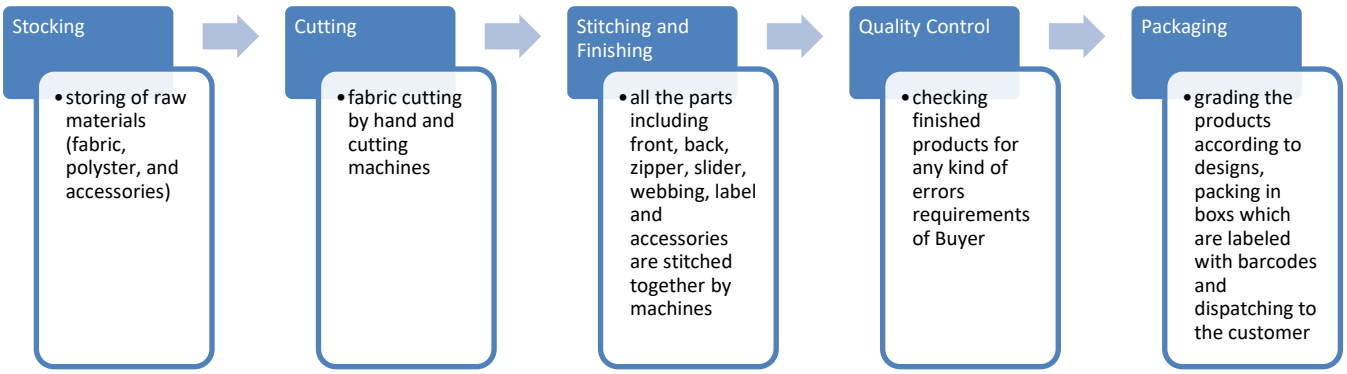


Figure 3-5 Process Flow Diagram

3.2.1. Description of Production Process

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

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

Ironing is a sheet metal forming process that uniformly thins the workplace in a specific area.

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

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

Warehouse section

Cutting section

Sewing section

Ironing section

Hanging room

Quality Control room

Figure 3-6 Production Process Photo

3.2.2. Products

The products of the factory are pants, jackets, T-shirt, vest, polo shirt and sportswear. Annual production rate is presented in Table 3-1.

Table 3-1 Annual Production at Xiang Rui Factory

Description	A/U	Year 1	Year 2	Year 3	Year 4-5	Year 6-30
T-shirt	PCS	720,000	1,770,000	2,790,000	3,600,000	3,600,000
Vest	PCS	480,000	1,180,000	1,860,000	2,400,000	2,400,000
Polo	PCS	240,000	590,000	930,000	1,200,000	1,200,000
Sportswear	PCS	168,000	413,000	651,000	840,000	840,000
Dress	PCS	120,000	295,000	465,000	600,000	600,000
Pants	PCS	480,000	1,180,000	1,860,000	2,400,000	2,400,000
Jacket	PCS	192,000	472,000	744,000	960,000	960,000
Total	PCS	2,400,000	5,900,000	9,300,000	12,000,000	13,380,000


Figure 3-7 Products Photo

3.3. UTILITIES

3.3.1. Raw Material

Raw Materials, which include silk, fabric, threads and ornamental fabrics, are imported from China and carried to the Xiang Rui's Factory by the containers. After quantity verification, these raw materials are stored properly in specified area as per their varieties i.e. cotton and polyester are stored on the shelves; zipper, label and accessories are stored in open cabinets with labels. Annual raw material requires for production process are provided in Table 3-2. Moreover, lubricants, paint and glue are also imported and they are stored in designated area called as chemical room.

Table 3-2 List of Annual Raw Material

No	Particular	A/U	Year 1	Year 2	Year 3-30
1	**Fabric**				
	Knitting fabric	Kg	856,800	1,353,744	2,355,515

No	Particular	A/U	Year 1	Year 2	Year 3-30
	Woven fabric	Yd	275,760	435,701	758,119
	lace	Yd	30,000	47,400	82,476
2	**Accessories**				
	Main label	Pcs	2,568,000	4,057,440	7,059,546
	Care label	Pcs	3,120,000	4,929,600	8,577,504
	Size label	Pcs	2,400,000	3,792,000	6,598,080
	Hang tag	Pcs	4,968,000	7,849,440	13,658,026
	Zipper	Pcs	288,000	455,040	791,770
	Elastic belt	Yd	252,000	398,160	692,798
	Velcro	Yd	24,000	37,920	65,981
	Button	Pcs	1,200,000	1,896,000	3,299,040
	Snap	Sets	168,000	265,440	461,866
	Drawing string	Yd	1,176,000	1,858,080	3,233,059
	Sewing threads	Cones	107,280	169,502	294,934
	Tape	Yd	2,776,800	4,387,344	7,633,979
	Eyelet	Sets	1,512,000	1,820,160	3,167,078
	Badge	Pcs	1,272,000	2,009,760	3,496,982
	Tissue paper	Dz	200,000	316,000	549,840
	Hanger	Pcs	2,040,000	3,223,200	5,608,368
	Size ring	Dz	170,000	268,600	467,364
	Carton stripe	Pcs	255,286	403,353	701,833
	Transfer	Pcs	360,000	568,800	989,712
	Stopper	Pcs	240,000	379,200	659,808
	Hot fix	Doz	12,960,000	20,476,800	35,629,632
	Fusible	Yd	21,600	34,128	59,383
	Flat knitting	Pcs	720,000	1,137,600	1,979,424
	Polybag	Pcs	2,400,000	3,792,000	6,598,080
	Carton	Pcs	38,880	61,430	106,889
	Gun pin	Pcs	2,400,000	3,792,000	6,598,080

Figure 3-8 Raw Material and Chemical Storage

3.3.2. Machinery and equipment

They are imported from China and 224 days running annually. The detail use of machinery for production process is listed in Table 3-3.

Table 3-3 List of machinery of Xiang Rui factory

Stage	Machinery Name	Asset	Quantity
Pre-preparation	Fabric inspection machine	set	4
	Preshrinking machine	set	2
	CAD switch	set	2
	Computer cutting machine	set	2
	Shrinkage test machine	set	1
	Air floating spreading table	set	9
Cutting	Taping machine	set	4
	Band knife cutting machine	set	12

Stage	Machinery Name	Asset	Quantity
	End cutter	set	8
	Fabric cutting machine	set	12
	Pressing machine	set	10
	Gerber automatic cutting system	set	3
Stitching	One needle sewing machine	set	510
	Four needle overlocking machine	set	360
	Three needle interlocking machine	set	165
	Elastic machine	set	16
	Button holding machine	set	16
	Button sewing machine	set	16
	Bartacking machine	set	16
	Snap button machine	set	30
	Other color machine	set	18
	Wash the stains machine	set	4
Finishing and Inspection	Drying machine	set	1
	Washing fastness machine	set	1
	Button strength tester	set	1
	Rubbing color fastness machine	set	1
	Standard light source box	set	1
	Automatic spreading machine	set	9
	Needle inspection machine	set	12
	Electronic iron	set	105

3.3.3. **Work force**

Human resource required by foreign experts/technicians and local persons for administrative and production process. Proposed project's operation running days are 265 days in a year. Working hour starts from 8:30 am to 5:00 pm. The lunch time is from 12:00 pm to 1:00 pm. Ferries are provided to all staff and employees by the company.

Table 3-4 Annual Human Resource Requirement

Employee	Number of persons		
	Year 1	Year 2	Year 3-30
Manager	1	1	1
Section Manager	2	2	2
Accountant	1	1	1

Supervisor	5	5	15
Office staff	15	20	50
Operation section Manager	2	2	4
Operation Leader	10	15	20
Operator	60	150	500
Driver	2	2	3
Security	2	2	4
Total	**100**	**200**	**600**

3.3.4. **Water requirement**

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 provides by outsource of drinking water suppliers. Main source of water supply will be provided by tube well water (ground water 50ft deep) in which ground water is pumped by 4 inches PVC pipe and treated by oxidation tower, chlorine dosing system, de-iron filter (FRP), carbon filter, and cartridge filter (see in photo). The tube well and filtration tower are located at between the office building and operation factory building. There are 3 water tanks (raw water tank, treated water tank and firefighting water tank. According to the MIC proposal, annual water consumption for the whole factory is 4,100 m^3. The factory uses water about 1,003,854 gallons annually and 8,354.6 gallons per month for domestic and boiler water.

Water filtration

Overhead and ground water tank

3.3.5. **Electricity and fuel requirement**

The proposed project is intended to get required electricity supply form Yangon City Electricity Supply Board (YESB) and distributed by 500 kVA Asia General Transformer (AGT). Another source of energy 550 kVA generator (ENGGA) will also be kept as the emergency generator if normal electricity supply could not provide for the proposed project. Estimate electricity usage is 2.5 Mega Watt hour per month (MW.hr/day) (six working days per week). According to the MIC proposal, an annual fuel requirement for proposed Xiang Rui Factory is 22,680 litters and annual electricity consumption is 675,600 kWh.

Transformer (500 kVA)

Generator (550 kVA)

Diesel Stroage Room

3.3.6. **Electronic Stream boiler**

40 kg per hour of two electric steam boilers are a type of boiler where the steam is generated using electricity for garment ironing (Figure 3-9). General information of proposed boiler information is mentioned in below Table 3-5. The Boilers uses 9809.28 gallon of water annually. Very little amount of blowdown water is about 1886.4 kg of boiler blowdown water annually.

Table 3-5 Specification of electric steam boiler

Product Model	LDZ-12		Rated steam pressure	0.4/0.7MPa
Rated Evaporation Capacity	40kg/h		Water Capacity	24kg
Saturated Steam Temperature	151/170 °C		Thermal Power	12KW
Outlet Diameter	DN15		Boiler Host Size	800*575*970

Figure 3-9 Electronic Steam Boiler at Xiang Rui Factory

3.4. FACILITIES

3.4.1. Fire hazards protect facility

Fire extinguishers, fire hose reels and fire hydrants are installed in 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 12,000 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 3-10.

Figure 3-10 Firefighting System

3.4.2. Liquid Waste Control Facility

Water discharge from the factory site will be treated by silts track tank before discharging. The factory plan has kitchen, canteen and toilet facilities attached in various buildings of the factory. In the kitchen, separated drainage lines are provided 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 3-11. Besides, the factory plans to use separate wastewater channels, septic type toilet system. Liquid waste 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 3-11 Drainage and Toilet facility

3.4.3. Solid Waste Management Facility

The factory 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 bin: non-hazardous waste, hazardous waste, re-usable waste and final wastes will be disposed by using YCDC's service.

Plastic container for garment waste

Plastic container for packing waste

Temporary garment waste storage area

Temporary Domestic waste storage area

Figure 3-12 Waste Storage Photo

3.4.4. Medical and Health facility for Employments

The factory has a clinic and full-time nurse-aid has been employed to treat employees for minor injuries, sickness and emergency medical care. 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 relevant department. To prevent electric shock hazards, electrical maintenance staff (handyman) is to be assigned to do regular inspections and take preventive measures.

Figure 3-13 First Aids and Medical Room Photo

3.4.5. Ventilation System

The factory ventilation systems consist of natural ventilation system and mechanical ventilation system. The mechanical ventilation system is provided in office room, production area, toilet, kitchen and dormitory.

3.4.6. Dormitory facility

Housing/accommodation is providing for the foreign technicians in the factory compound that lives in the 10 persons.

Figure 3-14 Canteen and Dormitory

3.5. WASTE GENERATION

The project will be generated solid waste, liquid waste and hazardous waste from the operation of the Xiang Rui's factory. Detail description of waste generation and waste amount are shown in Table 3-6.

Table 3-6 Waste Generation and Waste Amount

Waste	Type of wastes	Estimated	Source of generation

			waste amount	
Solid waste	Re-usable	Residual pieces of fabric scraps	10% a roll of fabric (kg)	Production line and cutting line
		Raw material cutting wastes	1000 kg / month	
		Disposed packaging materials, paper or plastic wrapping	100 kg / month	Materials store and supply packaging
	Non re-usable	Food residues, domestic waste	223 kg / day*	Canteen, Kitchens, dormitory
Liquid waste		Sanitary discharge water	57 m^3 /day*	Toilet facility, kitchen and canteen
Hazardous waste		Residual chemicals, use chemical container		Chemical usage and store area
		Oil leakage and spills	-	Operation of generator and movements of vehicles

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

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

3.6. STATUS OF THE FACTORY

Myanmar Xiang Rui Fashion Company Limited., are using ground water for both industrial and household (drinking and sanitation) purpose, which is supplied by deep tube well. The factory also has generators for electricity generation. The fuel used in the industry is Diesel and Purchased electricity. The sanitary liquid waste of the factory is stored in septic tank. There is no chemical used in the factory because the project is the simple process of garment manufacturing.

The major pollution caused by the factory's operation are water pollution by discharging liquid waste generated from domestic use, air pollution by generator's effluent gas emission, noise pollution created during the operation of boiler, generator and other machines.

Solid waste such as sludge, broken machine parts is hand over to local waste buyer or YCDC. Although the factory causes some pollution but also has a positive side and that is the factory has created employment for many people, due to this factory local community has built up daily.

4. BRIEF DESCRIPTION OF SURROUNDING ENVIRONMENT

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

4.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

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

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

4.2. ENVIRONMENTAL BASELINE STUDY

The field observation for determining the environmental baseline of the proposed project area was undertaken during operation period. The survey team consists of the senior consultant and environmental quality team. The baseline data collected regarding the environmental condition of the project area was conducted in the following section.

4.2.1. Site survey and Environmental Monitoring

The baseline environmental quality at the Project Site and its immediate surroundings was established by groundwater, wastewater, ambient air quality samples, noise and indoor temperature and humidity measurements at immediate surrounding areas. To determine the existing baseline environmental quality within the project site on November 2018.

The overall conditions of air quality, water quality, soil quality, and noise levels are quoted from the project. The summary of the field survey for overall conditions is shown in Table 4-1.

Table 4-1 Summary of Environmental Survey

Item	Parameter
Air quality	(1) Sulfur dioxide (SO2), (2) Carbon monoxide (CO), (3) Nitrogen dioxide (NO2), (4) PM10 and PM2.5
Noise level	Indoor sound level (LAeq)
Light Level	Industry light condition (Lux)

4.2.2. Air Quality

To determine the existing baseline ambient air quality status within the cutting section on 3rd September 2018, 8-hours of working period air pollutants level, which include dust (PM_{10} and $PM_{2.5}$)

and gases (CO, SO_2, NO_2) were measured at the selected site (packing section) using the HAZSCANNER air monitoring station. To reveal the existing status of baseline air quality, the average ambient air qualities measured were compared with National Environmental Quality (Emission) Guideline and international ambient air quality standard (NAAQS, ACGIH) guidelines. The measurement location point is situated at latitude 16°59'28.66"N and longitude 96° 4'43.48"E.

The indoor temperature and humidity condition during 3rd September 2018 shows the average temperature of 30.11 °C while the average humidity is 36.56 %.

Table 4-2 Observed Air Quality Results

Parameters	Observed value	Averaging Period	Guideline value	Unit	Organization
CO	0.12	-	35	ppm	ACGIH
NO_2	33.16	1 hour	200	µg/m^3	NEQG
SO_2	1.52	24 hrs	20	µg/m^3	NEQG
PM_{10}	17.07	24 hrs	50	µg/m^3	NEQG
$PM_{2.5}$	9.67	24 hrs	25	µg/m^3	NEQG

NEQ = National Environmental Quality (Emission) Guideline

NAAQS = National Ambient Air Quality Standards were developed by the U.S. EPA

ACGIH = the American Council of Governmental Industrial Hygienists recommends

Figure 4-1 Indoor Air Quality Measurement of the Project

4.2.2.1. Summary of air quality result

It was observed that the air quality of CO, CO_2 and SO_2 concentration level are within the limit of NEQ (emission) guideline but particulate matter (PM_{10}, $PM_{2.5}$) and gases level of Nitrogen Dioxide (NO_2) are also within the National Environmental Quality (Emission) Guideline. Air quality monitoring result is presented in **Appendix C**.

4.2.3. **Noise**

The Noise level was measured by using Digital Sound Level Meter for working hours on 3rd September, 2013. The average noise level in the project site area is 69.72 dB (Table 4-3). Receptor (nearby production area at project site) noise level of measurement are within the comfortable range of 40-60 decibel.


Figure 4-2 Indoor Noise Measurement of the project

Table 4-3 Noise level measurement in the factory

Area	GPS Value	Average Noise Level (dB)	NEQ Guideline
Project Site (Operation area)	16°59'30.32"N 96° 4'43.01"E	73.04 dB	70 dB
Project site (Within factory area)	16°59'28.28"N 96° 4'43.78"E	69.72 dB	70 dB

4.2.3.1. Summary of noise result

However, found to be the Noise source monitoring at the operation area (inside the production sector), overall level of noise in the workshop area is acceptable when compared with National Environmental Quality (Emission) Guideline. Therefore, no obvious influence can be caused occupational health and safety of employees during operation. Moreover, Personal Protective Equipment (PPE) to decrease adverse impact of noise will be provided for employees when necessary. Noise measurement result and graph are presented in **Appendix D**.

4.2.4. **Light**

Activities of the workers in the garment factory are highly dependent on the quality of light. Therefore, the consultant conducted the light measurement in the garment factory is presented in Figure 4-3. The illustrates the recommended illumination and limiting glare index applicable to typical works (fairly severe to very severe tasks) in garments factory is provided in Table 4-4.

Table 4-4 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

Light measure at sewing line

Light measure at cutting line

Figure 4-3 Light Quality Measurement in Xiang Rui Factory

Table 4-5 Light Measurement in Garment factory

No.	Location	Measure value (Lux)	Standard*
1	Cutting	1470	1000
2	Sewing Line 1	1250	400
3	Sewing Line 2	1260	400
4	Sewing Line 3	1280	400
5	Sewing Line 4	1250	400
6	Sewing Line 5	1220	400
7	Sewing Line 6	1300	400
8	Sewing Line 7	1310	400
9	Ironing section	1360	600
10	Packing Section	1430	600
11	Final Inspection room	1740	900 (except 1500 at audit tables)

* 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).

4.2.4.1. Summary of Light result

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 garment factory, like the inspection points (on-floor and in stores), sampling, and the finishing section, as these areas are crucial to the quality of the production. The tasks involved in these areas require high levels of worker focus and accurate lighting ensures 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 good condition to the acceptable level of standard. Light measurement result is presented in **Appendix E**.

4.2.5. Water Quality

Domestic wastewater and Underground water from the project area were collected on 29 January 2024, and the analyzed results are compared with National Environmental Quality (Emission) Guidelines (General Guideline). Laboratory analysis results can be seen in Table 4-7 and **Table 4-8**.. The Water quality samples were tested at ALARM Ecological Laboratory.

Table 4-6 Coordinated Point of Water and Wastewater Collection Point

Water Parameter	GPS Value	Location
Ground Water	16°59'28.46"N 96° 4'43.28"E	Within proposed site of Ground water tank
Domestic Waste Water	16°59'27.54"N 96° 4'43.42"E	Factory drainage

Table 4-7 Domestic Waste Water Results

Parameters	Results	Units	NEQEG Standard	Remarks
PH	7.6	S.U	6-9	Normal
Temperature	28.1	℃	≤3	-
Total Suspended Solids (TSS)	8	mg/L	50	Normal
Biochemical Oxygen Demand (BOD)	40	mg/L	50	Normal
Chemical Oxygen Demand (COD)	210	mg/L	250	Normal
Cyanide	0.01	mg/L	0.1	Normal
Copper	ND	mg/L	0.5	LOD=0.02 mg/L
Iron	0.32	mg/L	3.5	Normal
Nickel	ND	mg/L	0.5	LOD=0.2 mg/L
Sulfide	0.04	mg/L	1	Normal
Phenol	0.1	mg/L	0.5	Normal
Oil & Grease	9	mg/L	10	Normal
Chromium (Hexavalent)	0.06	mg/L	0.1	Normal

NEQEG-=National Environmental Quality Emission Guidelines
ND=Not Detected
LOD= Lower Limit of detection

Table 4-8 Ground Water Quality Laboratory Results

No	Parameter	Unit	Water result	Drinking standard	Remarks
1	pH	S.U	7.7	6.5-8.5	Normal
2	Colour	HU	12	≤15	Normal

3	Total Dissolved Solids (TDS)	mg/L	356	≤1000	Normal
4	Total Suspended Solids (TSS)	mg/L	2	-	-
5	Conductivity	mS/cm	0.584	≤2.5	Normal
6	Total Hardness	mg/L	28	≤500	Normal
7	Chloride	mg/L	5	-≤250	Normal
8	Iron	mg/L	0.32	≤1	Normal
9	Total Alkalinity	mg/L	6	-	-

NG= No guideline

4.3. PHYSICAL COMPONENT

4.3.1. **Topography**

Yangon area is the largest; most populated and urbanized area in Myanmar. There are thirty-three townships in Yangon City where located at the convergenceon the Yangon and Bago River region about 34km away from the Gulf of Martaban. The proposed project area is situated at Shwe Pyi Thar Township, and its topographic condition is flat. The proposed project site is primarily agricultural land, but now is initiated into the industrial zone area.

4.3.2. **Geology**

In Yangon area mainly composed of Pegu Group, Irrawaddy Formation and Alluvium. Alluvial deposits (Pliestocene to Recent), the non-marine fluvialtile sediments of Irrawady formation (Pliocene), and hard, massive sandstone of Pegu series (early-late Miocene) underlie the Yangon area. 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 4-4.

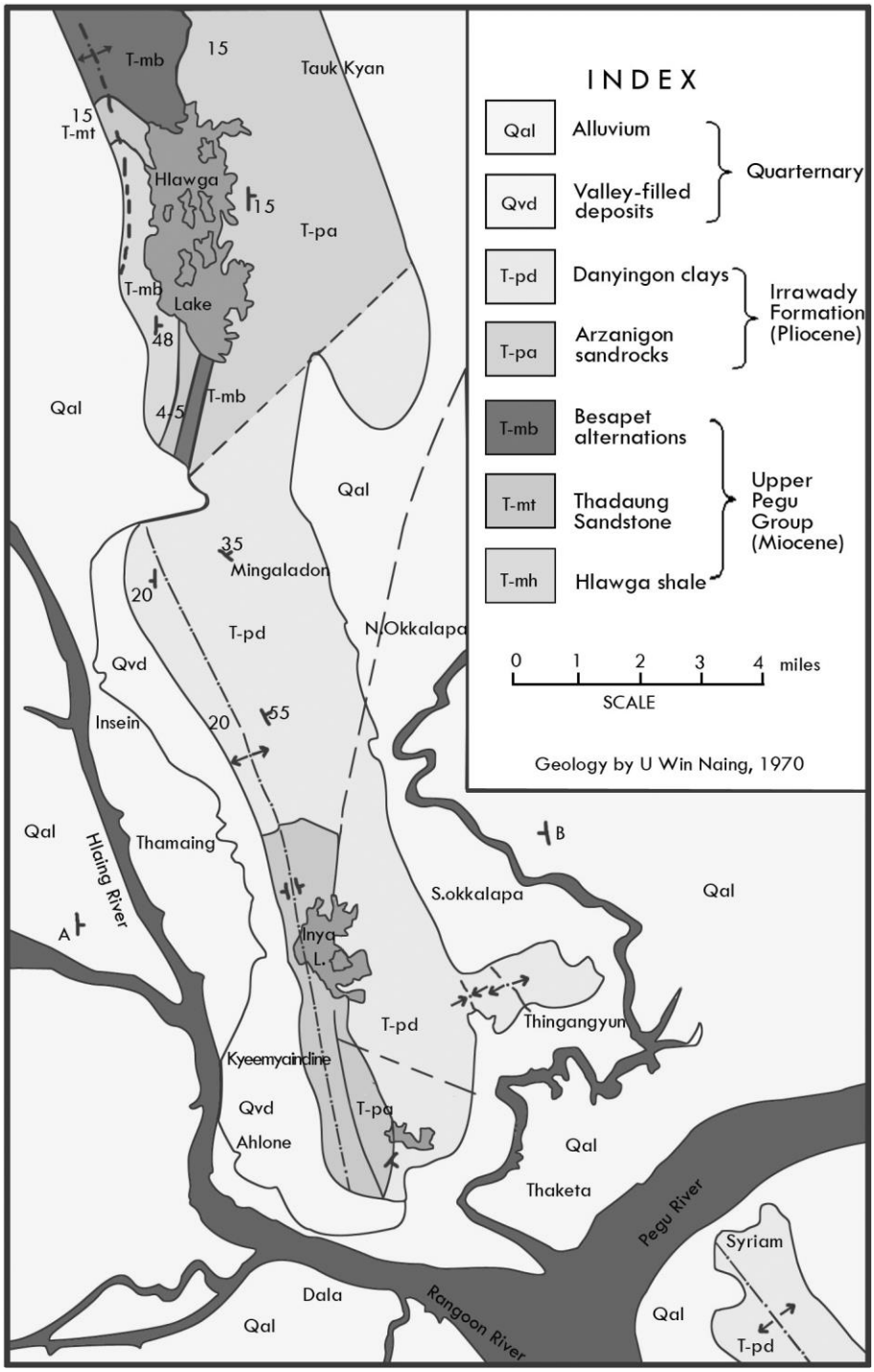


Figure 4-4 Geological Map of Yangon Region

4.3.1. Tectonics

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

4.3.2. **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 salty 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 could accommodate the construction of the Project.

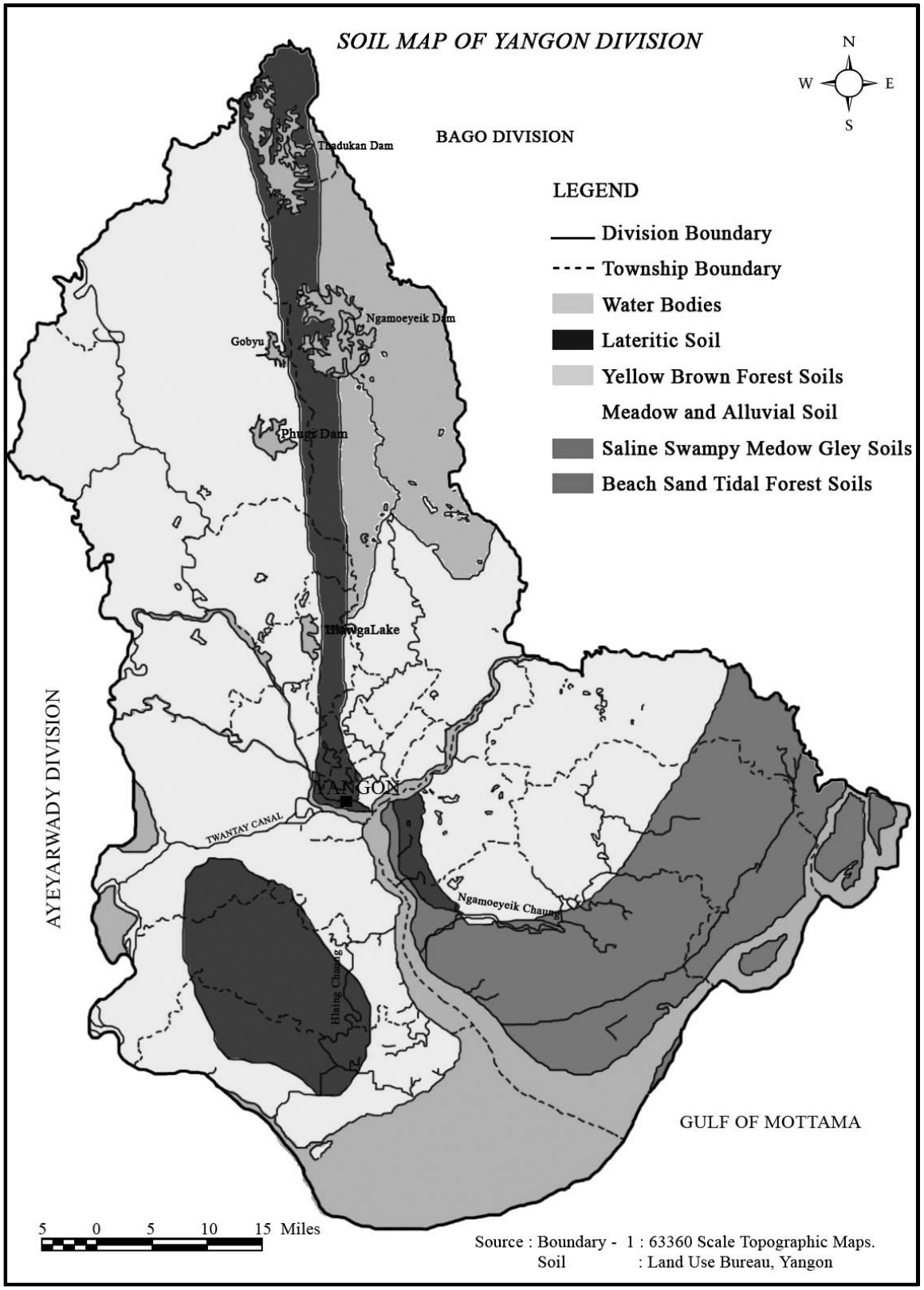


Figure 4-5 Soil Map of Yangon (Source: Land use of Bureau of Yangon)

4.3.3. **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 Hlaing River which flows north to south. The Yangon River (also known as the Rangoon River or Hlaing River) is formed by the confluence of the Pegu and Myitmaka rivers and flows into the Gulf of Martaban which is part of the larger Andaman Sea. The river flows along a 40 km stretch flowing from southern Myanmar as an outlet of the Ayeyarwady River into the Ayeyarwady delta. A small portion of the Bago River (the estuary) lies within the Yangon Division. The Pazundaung Creek and Bago River joins the Yangon River and from there, flow towards the Southwestern direction into Andaman Sea.

4.3.4. **Climate and Meteorology**

4.3.4.1. Average Weather in Yangon

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

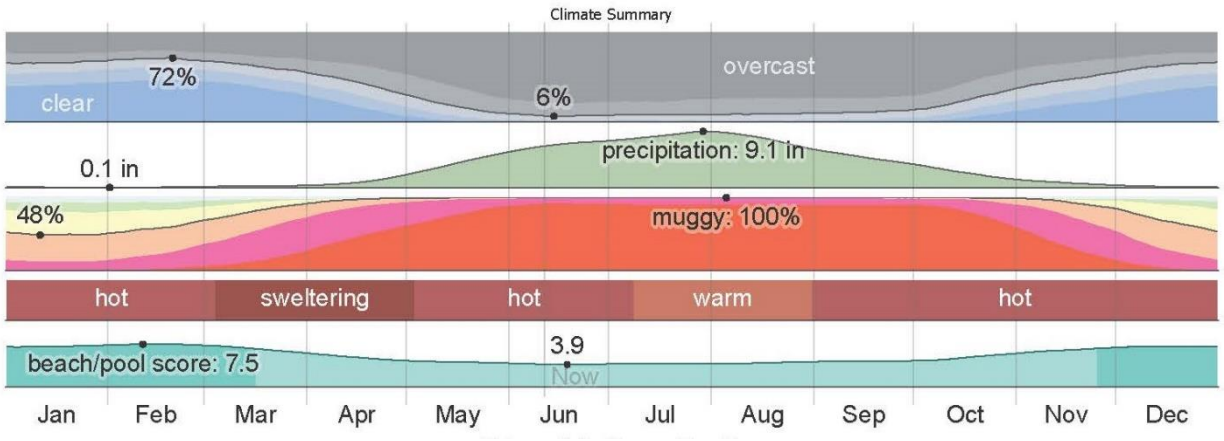


Figure 4-6 Climate Summary of Yangon Region

4.3.4.2. Temperature

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

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

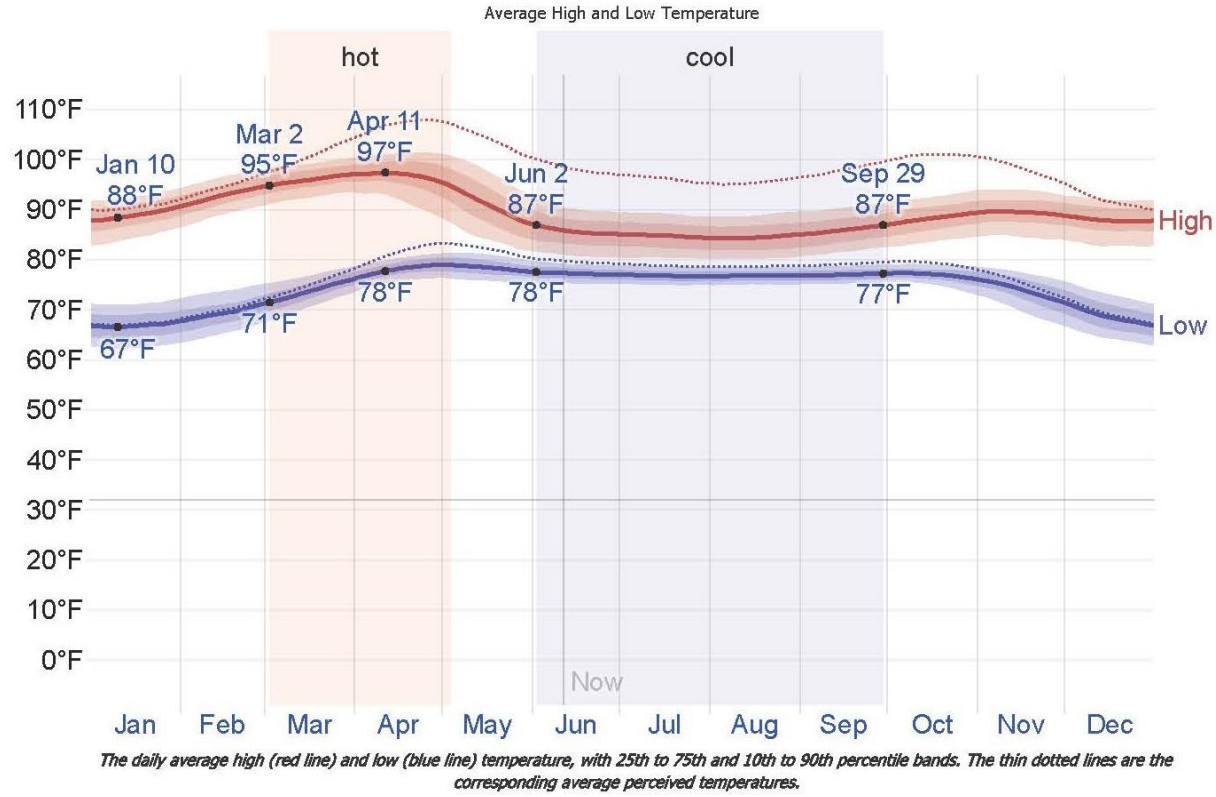


Figure 4-7 Average Temperature of Yangon Region

4.3.4.3. Clouds

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

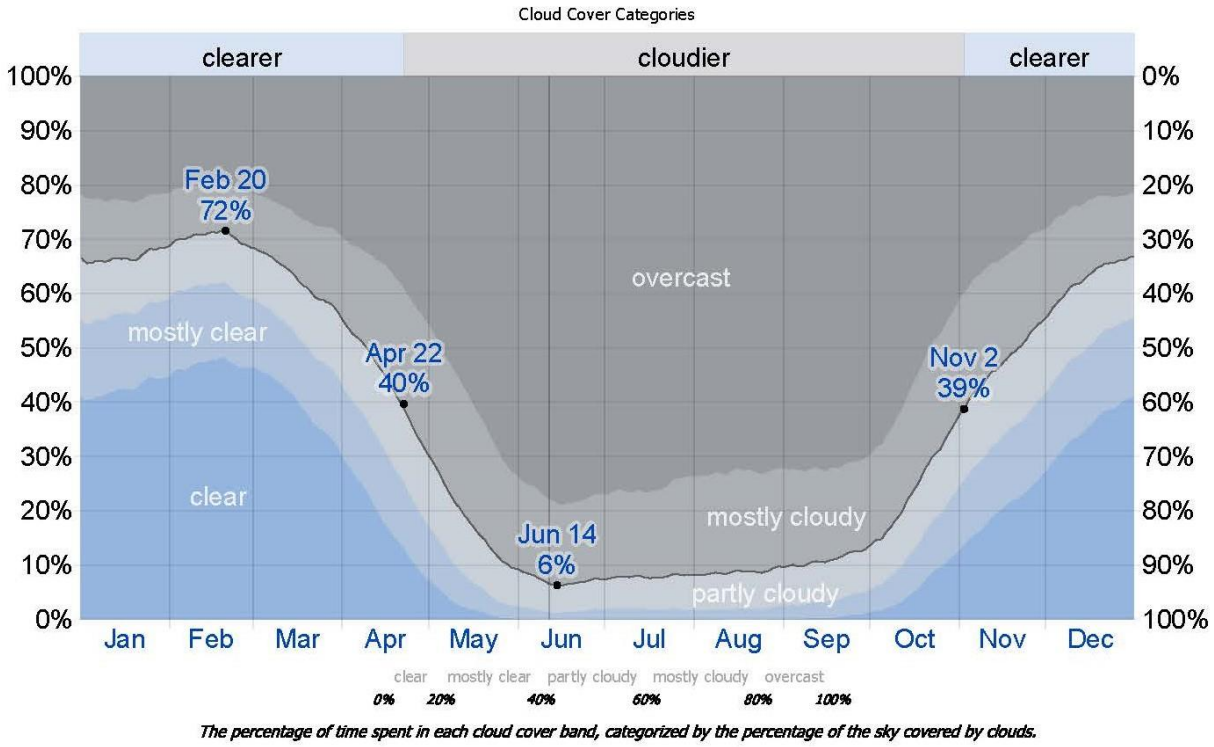


Figure 4-8 Cloud Cover Categories

4.3.4.4. Rainfall

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

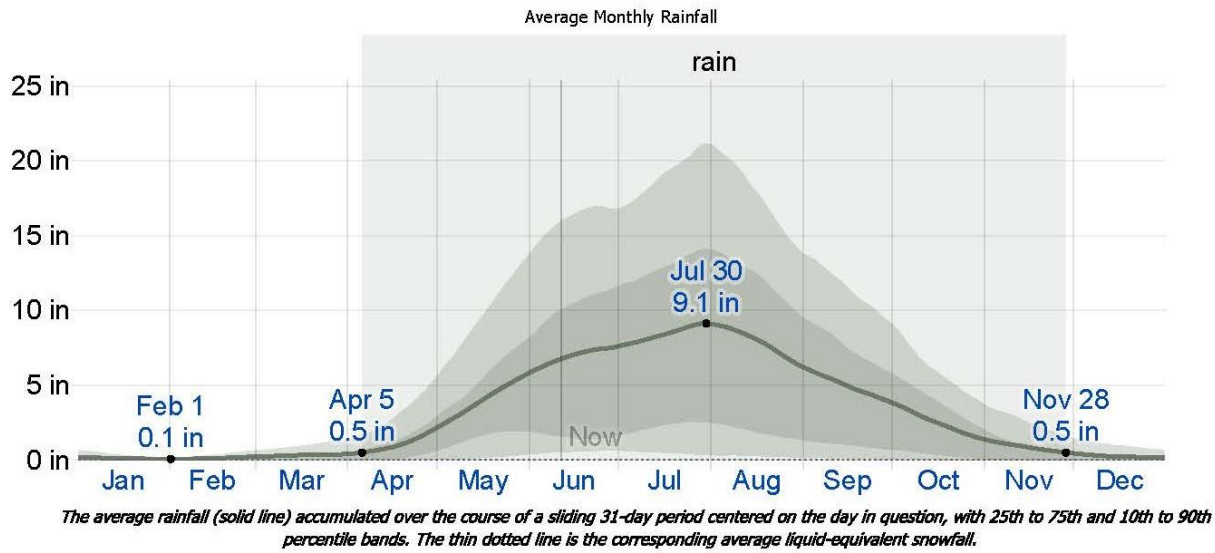


Figure 4-9 Average Monthly Rainfall at Yangon Region

Table 4-9 Annual rainfall and temperature

Year	Rainfall		Temperature	
	Raining day	Rainfall value (Inches)	Summer season Max (°C)	Winter season Min (°C)
2015-2016	105	84.91	34	30
2016-2017	116	85.89	34	30
2017-2018	97	86.70	38	30
2018-2019	69	1320	41	30

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

4.3.4.5. Humidity

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

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

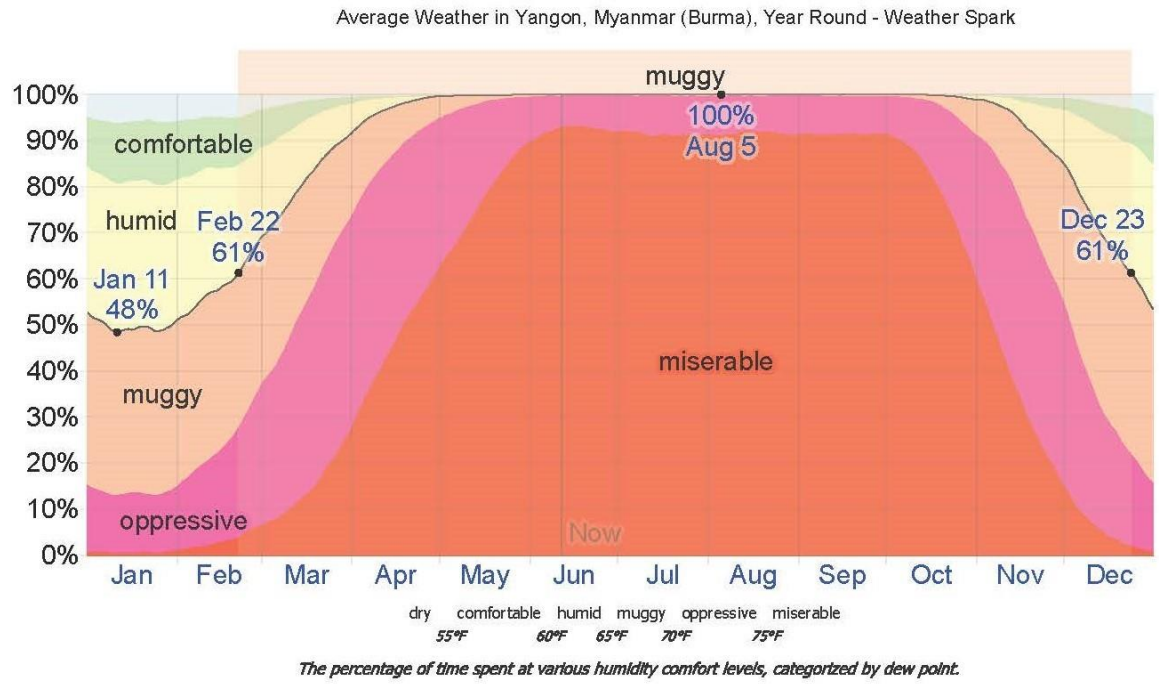


Figure 4-10Humidity of Yangon

4.3.4.6. Wind

This section discusses the wide-area hourly average wind vector (speed and direction) at 10 meters above the ground. The wind experienced at any given location is highly depended on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages. The average hourly wind speed in Yangon experiences significant seasonal variation over the course of the year. The winder part of the year lasts for 4.1 months, from May 1 to September 4, with average wind speeds of more than 8.2 miles per hour. The windiest day of the year is June 24, with an average hourly wind speed of 10.6 miles per hour. The calmer time of year lasts for 7.9 months, from September 4 to May 1. The calmest day of the year is January 9, with an average hourly wind speed of 5.8 miles per hour.

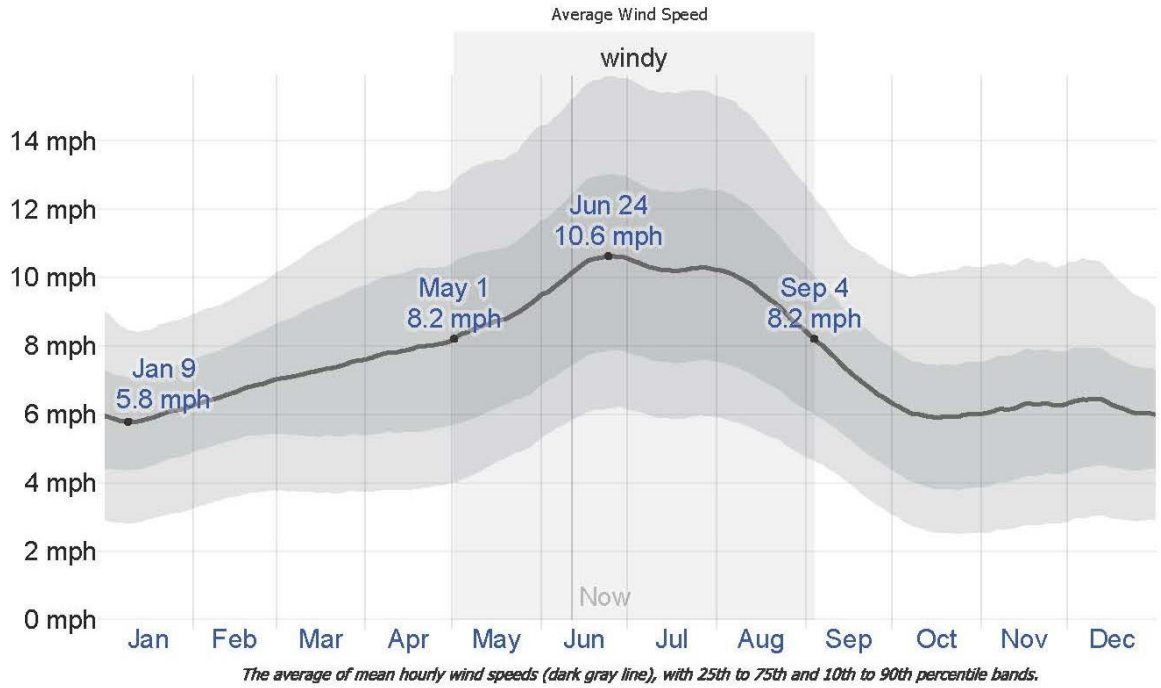


Figure 4-11 Average Wind Speed in Yangon

4.4. BIOLOGICAL COMPONENT (SECONDERY DATA)

As the proposed project area is located in the industrial zone, the information of ecological resources is very unlikely. In addition, within the proposed project area, there are no forests, protected areas and coastal resources. The proposed project site is not located in or near a sensitive ecosystem as the proposed project area is situated in the Shwe Pyi Thar Township. The Project Site is a built-environment and the species of flora surveyed at the site are native species uncommon to the Yangon area.

Ecological Resources	Existing condition
Fisheries, aquatic biology	The nearest river is Hlaing river. Fresh water fish species are residing in the river
Wildlife	Non existence
Forests	Non existence
Rare or endangered species	Non existence
Protected areas	The nearest protected areas is Hlaw Gar Park which is located in the northeastern part of the project site
Coastal resources	A few mangrove species observed at the river bank of Hlaing river

4.5. SOCIO-ECONOMIC COMPONENT

4.5.1. Population

In 2019, the population of Shwe Pyi Thar Township is about 284,922 people as present in Table 4-10. [1]

Table 4-10 Population of Males and Females at Shwe Pyi Thar Township (2019)

Item	Over 18 year			Under 18 year			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Urban	80,330	93,866	174,196	32,429	33,876	66,305	112,759	127,742	240,501
Rural	15,444	18,964	34,408	4,960	5,053	10,013	20,404	24,017	44,421
Total	95,774	112,830	208,604	37,389	38,929	76,318	133,163	151,759	284,922

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

4.5.2. Religion

The different kinds of religion present in Shwe Pyi Thar Township are shown in Table 4-11. More than 90% of the people living in the township are Buddhists. [1]

Table 4-11 Religion in Shwe Pyi Thar Township (2019)

Township	Buddhist	Christian	Hindu	Muslim	Total
Shwe Pyi Thar	269,764	7,476	2,601	4,882	199

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

4.5.3. Local Economy

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

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

4.5.4. Public Infrastructure and Access

4.5.4.1. Communication and Transportation

Major transportation route in Shwe Pyi Thar Township are railway, port, and car road as presented in Table 4-12. [1]

Table 4-12 Transportation Route

Categories	Township		Miles
	From	To	
Railway (Yangon-Pyay railway)	Hlwaga	1 ward	4.2
Inland water way	18 ward	Hlwaga	4.2
Bus line (39, 40, 42, 44, 65, 69, 72, 73, 74, 77)	Hlwaga	Downtown area	
Car (No 4. Main road)	1 ward	Hlwaga	5.1

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

4.5.4.2. Electricity

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

4.5.4.3. 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 Computer University, in the Shwe Pyi Thar Township. The name and the located village tract/ ward of schools are described in Table 4-10. [1]

Table 4-13 List of major school in Shwe Pyi Thar Township

No.	Name of School	Location
1	Computer University Yangon	Kyaung Gone Village Tract
2	BEHS (1)	No 6. Ward
3	BEHS (2)	Hlawga Village Tract
4	BEHS (3)	No 8. Ward
5	BEHS (4)	Zee Gone Village Tract
6	BEMS (Branch) (2)	No 19. Ward
7	BEMS (Branch) (3)	No 5. Ward
8	BEMS (Branch) (4)	No 9. Ward
9	BEMS (Branch) (8)	No 23. Ward
10	BEMS (Branch) (11)	No 8. Ward
11	BEMS (1)	Hlawga Village
12	BEMS (5)	No 15. Ward
13	BEMS (6)	No 17. Ward

No.	Name of School	Location
14	BEMS (7)	No 9. Ward
15	BEMS (9)	No 11. Ward
16	BEMS (10)	No 14. Ward
17	BEMS (12)	No 10. Ward
18	BEMS (13)	No 20. Ward
19	BEPS (1-43)	Shwe Pyi Thar Township

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

4.5.4.4. Health Status

The diseases of high prevalence reported in 2019 are Tuberculosis (TB), followed by hypertension, diarrhea, dysentery and hepatitis. With reference to the Township Health Profile 2019 of Shwe Pyi Thar Township, no accidental work injuries reported to the township hospital in 2013. The common diseases are shown in Table 4-14.

Table 4-14 Common Diseases in the Shwe Pyi Thar Township

Diseases	Shwe Pyi Thar Township	
	Morbidity	Mortality
Hypertension	921	13
Diarrhea (Per 100000P)	76	-
TB (Sputum+)(Per 10000P)	192	-
Dysentery	6	-
Hepatitis	392	-
HIV/AIDS	12	-

Table 4-15 Lists of hospital in the Shwe Pyi Thar Township

Hospital Name	Beds/Services	Responsible
Township Hospital	35	Government

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

4.6. CULTURAL AND VISUAL COMPONEMTS

Shwe Pyi Thar 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.

5. ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

5.1. IMPACT IDENTIFICATION

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

5.1.1. Positive Impact

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

5.1.2. 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.

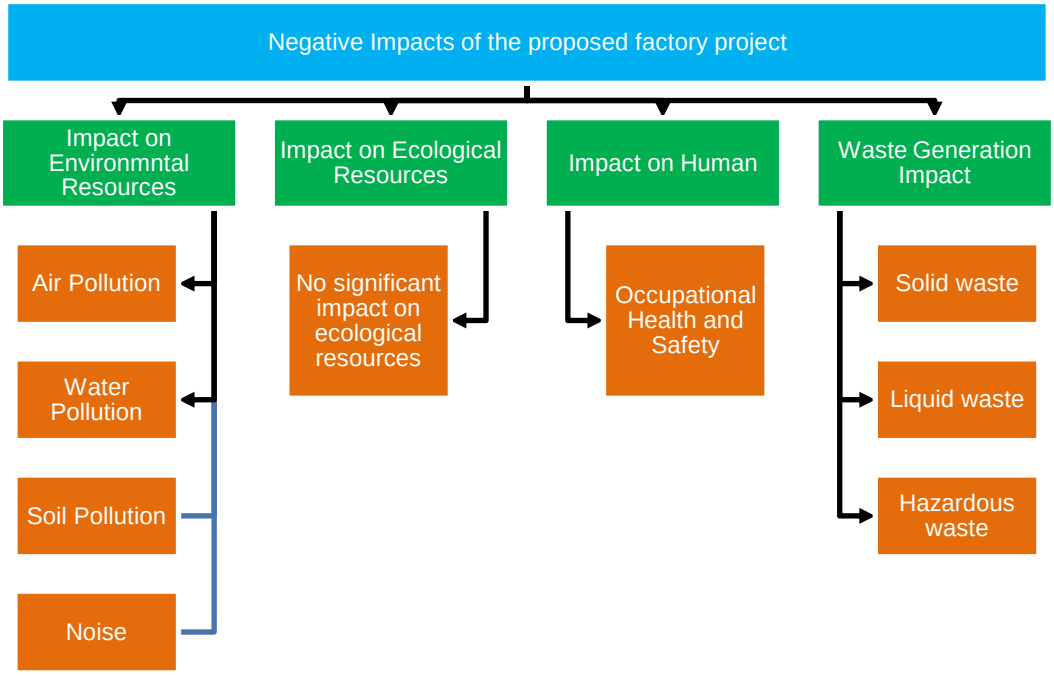


Figure 5-1 Potential Negative Impact Affect from Proposed Factory Project

5.2. METHODOLOGY FOR THE ASSESSMENTS

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

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

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

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

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

5.3. POTENTIAL ENVIRONMENTAL IMPACT DURING CONSTRUCTION AND DECOMMISSIONING PHASE

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

Decommissioning phase: The proposed duration of the investment shall be 50 years. The term of the Lease shall be initial 60 years commencing from the date of signing of the Lease Agreement between Local owner and Myanmar Xinag Rui Fashion Co., Ltd. for proposed project site for 49,500 ft^2 of land and extendable for ten years in 2 times. The project of land and building will be restitution to land owner after close the operation. Therefore, the assessment study cannot be need for environmental impact assessment during decommission phase.

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

5.4. SIGNIFICANT IMPACTS OF PROJECT ACTIVITY AND MITIGATION MEASURE

The project activities, their impacts and significance of impact are provided in Table 5-2.

Table 5-2 Evaluation and Perdition of Significant Impacts and Mitigation Measures on Operation phase

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
Impact on Environmental Resource									
Air	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Emission from emergency diesel generator and vehicle movement	3	4	2	4	36	Moderate	• Air pollution in atmosphere. • Inhaling them can increase the chance you'll have health problems. • People with heart or lung disease, older adults and children are at greater risk from air pollution.	• To control air pollution, the vehicles, generators and machineries have to check and maintain regularly. • The factory uses chimney for generator through which the flue gases are emitted for reducing the impact of stack emission on environment. • Ensuring vehicles, compressor and generator are well maintained.
Water	• Production process	1	4	1	1	6	Insignificant	• The factory not generated wastewater from production process on CMP basic	• No Mitigation Measure
Soil	• Engine oil leaks, spills at diesel storage and during fuel refueling.	1	4	1	1	6	Insignificant	• The factory compound area was paved with concrete and hence, contamination due to	• No Mitigation Measure

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
								the oil spillage at this area is insignificant.	
Noise and Vibration	• Generating noise from the production machinery	1	4	1	1	6	Insignificant	• The factory not operate heavy machinery • the major noise source of CMP basic operation activities such as cutting, stitching/finishing and packaging by respective machines. There is insignificant impact on surrounding environment	No Mitigation Measure
Impact on Ecological Resources									
Flora and fauna on terrestrial and aquatic life	Operation of the garment factory	1	4	1	1	6	Insignificant	• Not Significant Impact on Ecological Resources	• No Mitigation Measure
Impact on Human									
Fire	• Poor electrical installations • Waste disposed area raw materials and chemical	3	5	2	4	40	Moderate	• Serious damage to property and even injury and death	• To provide fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases. • Regular inspection for existing

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
	storage								firefighting equipment must be done. In case of fire emergency, water storage tank for fire frightening. • The emergency fire alarms are installed at the factory for alerting the workers in case of fire. • The main entrances and route for emergency cases of the factory must not be blocked with materials or machines for fire emergency cases.
Occupational Safety	• Accidental cases cause by operating machines. • Unloading, mixing, cutting, pressing and packaging activities. • Accidental cases of thermic fluid heater	3	4	1	4	32	Moderate	• Accident in workplace (physical injuries or even death) can occur during operation.	• First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers. • 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

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
									staff (handyman) is to be assigned to do regular inspections and take preventive measures.
Health	• Influx of people • Noise from the generating of the emergency generators	2	4	1	2	14	Very Low	• Change in demographic structure, new diseases form immigrant workers • To cause a range of health problems ranging from stress, poor concentration, productivity losses in the workplace, and communication difficulties and fatigue from lack of sleep, to more serious issues	• 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 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
Waste Generation Impact									
Solid Waste	• Residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory	3	4	1	4	32	Moderate	• Surrounding environmental pollution and soil contamination	• 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

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
	and office.								by using YCDC's service.
Liquid Waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	2	16	Low	• Contamination of soil, surface water, ground water	• Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.
Hazardous Waste	• Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	2	14	Very Low	• Reduce the risk of contamination from fuels, oils and hazardous wastes • Response effectively to incident and accident	• Proper inspection and maintenance in storage of hazardous waste. • Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. • The empty chemical containers will hand over to suppliers for recycle or appropriate disposal • The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (eg., DOWA and YCDC)

6. ENVIRONMENTAL MANAGEMENT PLAN

6.1. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN

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

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

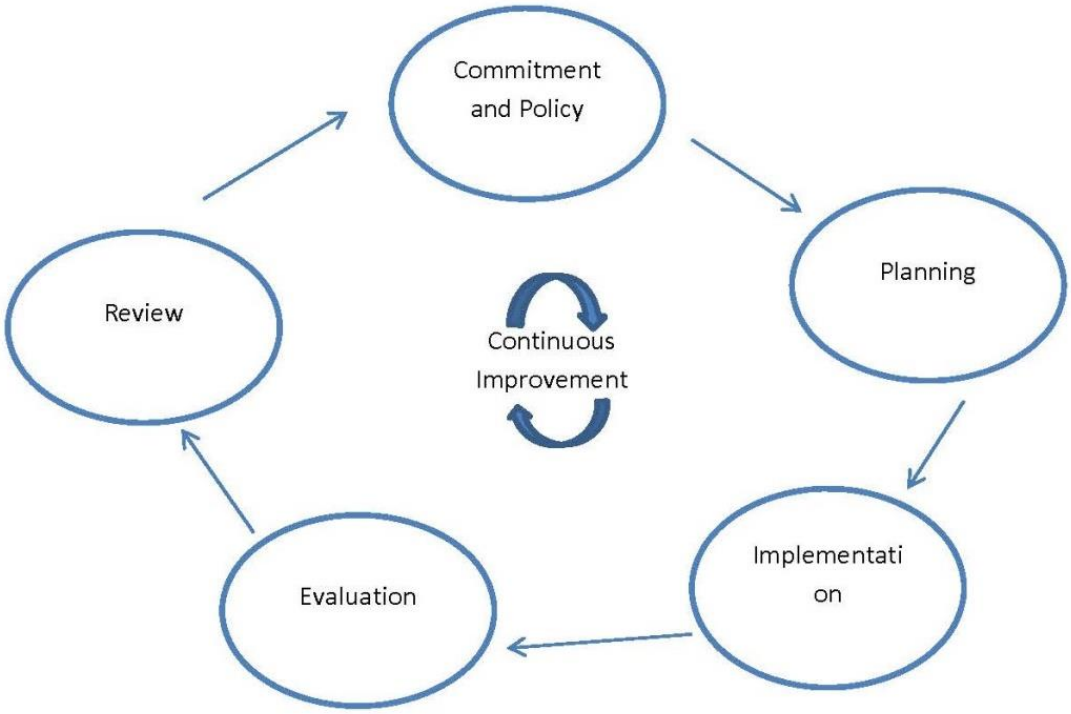


Figure 6-1 Continuous Improvement Circle

- **Commitment and Policy** – Top management commits to environmental improvement and establishes the organization’s environmental policy. The policy is the foundation of the EMS.

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

6.1.1. Institutional Requirement

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

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:

Myanmar Xiang Rui Fashion Co., Ltd.: 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 Myanmar Xiang Rui Fashion Co., Ltd. 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.

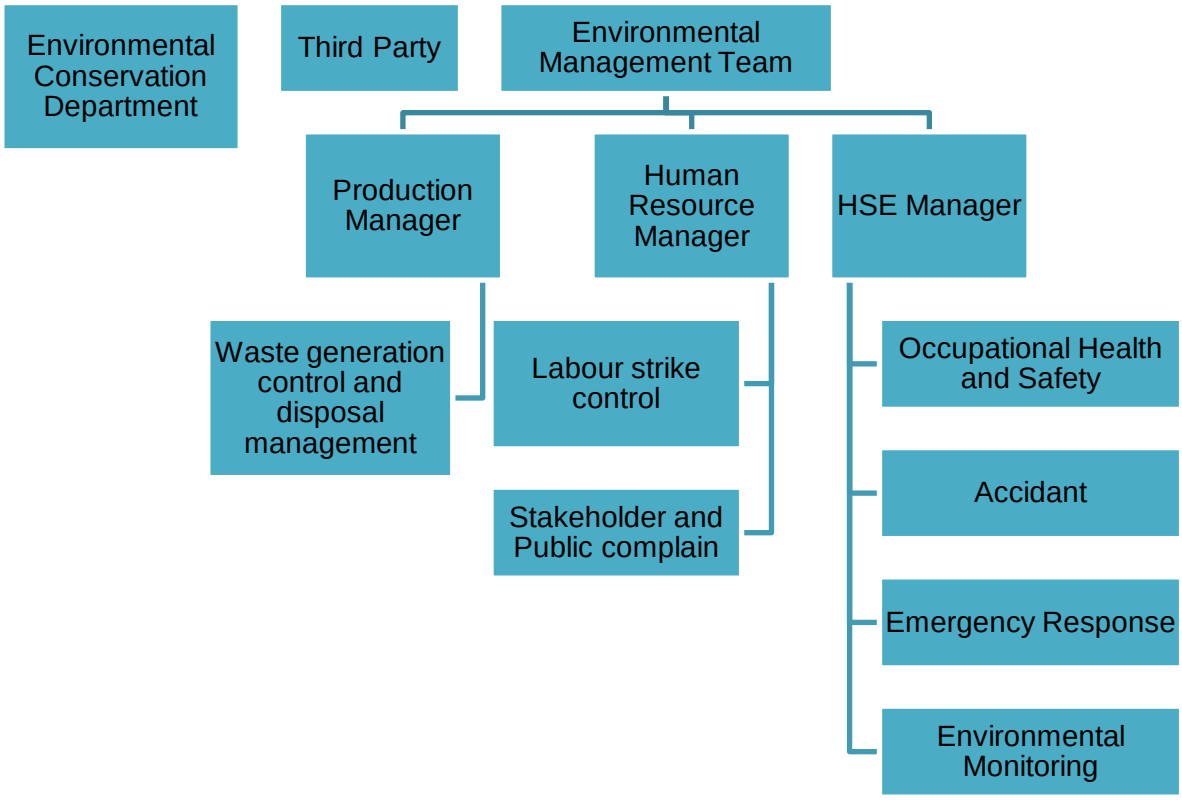


Figure 6-2 Organization Structure of Environmental Management Plan

6.2. ENVIRONMENTAL MANAGEMENT ACTION

The EMP for Myanmar Xiang Rui Fashion Co., Ltd has been prepared to added potential issues based upon discussion with factory management, workers, local community view, stakeholder consultation and the site visit. The EMP is additional to and compliments the factory's safety management system. The following environmental impact issues which require environmental management plans based upon the potential impacts activities of Myanmar Xiang Rui Fashion Company Limited are as follows:

6.3. AIR POLLUTION/ DUST MANAGEMENT PLAN

Objective	➢ To minimize the adverse impact to air quality caused by stack gas emission from generator and also dust management generated from vehicular movement. ➢ To comply with relevant government rules	
Relevant Government Law and Rule	➢ National Environmental Quality (Emission) Guideline 2015, ➢ Motor Vehicles Act (2015), ➢ Boiler Law (2015)	
Time Frame	➢ Entire life spans of proposed project operation	
Management Action	➢ Must be plant around the proposed project to reduce carbon emission ➢ Must be educate employees about the importance of reducing carbon emissions and train them on energy-efficient practices. ➢ Should be Install effective air filtration systems to capture particles and pollutants generated during manufacturing processes ➢ 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 and Reporting	Frequency	Biannually
	Monitoring Point	Indoor and Outdoor of proposed project
	Parameters	$PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, CO
Estimated Cost	700,000 Kyats per year	
Responsible Person	Management of the proposed factory;	

	▪ Head of maintenance: Total implementation of above of air pollution management plan ▪ Production manager: Air quality in the production area is good enough ▪ Manager: To hire organization/ independent third-party testing air quality ▪ EHS officer: Monitor the hygiene of ambient air quality in surrounding of the factory

6.4. NOISE MANAGEMENT PLAN

Objective	➢ To maintain low noise exposures, such that human health and well-being are protected. The specific objectives of noise management are to develop criteria for the maximum safe noise exposure levels, and to promote noise assessment and control as part of environmental health programmes.	
Relevant Government Law and Rule	➢ National Environmental Quality (Emission) Guideline 2015	
Time Frame	➢ Throughout the project life	
Management Action	➢ 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. ➢ Implement engineering controls to reduce noise at the source and involve upgrading or modifying machinery in the factory. ➢ Implement a routine maintenance schedule for machinery and equipment to ensure they operate at optimal levels and produce less noise.	
Monitoring and Reporting	Frequency	Biannually
	Monitoring Point	Two points in operation area (especially cutting and sewing)
	Parameters	Sound Decibel
Estimated Cost	500,000 Kyats per year	
Responsible Person	HSE Manager or Environmental Management Team of Myanmar Xiang Rui	

	Fashion Co., Ltd

6.5. FIRE MANAGEMENT PLAN

Objective	➢ 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 Action	➢ 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 frightening. ➢ 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. ➢ Conduct regular fire safety training for all employees. Include practical drills to reinforce proper evacuation procedures and the use of firefighting equipment. ➢ Implement electrical safety measures, including regular inspections of wiring and equipment.
Monitoring and Reporting	To check monthly Visual inspection, Firefighting equipment (fire extinguish, firefighting hose, portable fire pumps, fire hose reels, fire monitor and firefighting nozzles)
Estimated Cost	1,200,000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of Myanmar Xiang Rui Fashion Co., Ltd

6.6. OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT PLAN

Objective	➢ To provide a broad framework for improving standards of workplace health and safety to reduce work-related injury and illness.
Relevant Government Law and Rule	➢ Public Health Law (1972), Prevention and Control of Communicable Diseases Law 1995 (Amendment 2011), Occupational Safety and Health Law (2019)

Time Frame	➢ Entire life spans of proposed project
Management Action	➢ First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers. ➢ According to the observed light intensity values, the proponent provides sufficient lighting for workers for safe working and reducing optical problems of the workers. ➢ Personal Protective Equipment (PPE) like earmuffs, safety gloves, helmets and goggles are provided for each department. ➢ To prevent electric shock hazards, electrical maintenance staff (handyman) is to be assigned to do regular inspections and take preventive measures. ➢ Manage the drainage systems of the factory to prevent health risk of the workers. ➢ The maximum allowable noise level for workers is 90dB(A) for 8hours exposure a day. Thus, adequate protective noise impact measures in the form of ear muffs/ear plugs to the workers working in high noise areas. ➢ Regularly inspect and maintain machinery to ensure it meets safety standards. Provide training on safe operation, and implement lockout during maintenance.
Monitoring and Reporting	➢ Weekly check fire extinguishers and water hydrant in position ➢ Daily inspect that all fire exist are open ➢ Servicing fire extinguisher and records accidents
Estimated Cost	1,000,000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of Myanmar Xiang Rui Fashion Co., Ltd

6.7. SOLID WASTE MANAGEMENT PLAN

Objective	➢ To assess the activities involved for the proposed and determine the type, nature and estimated volumes of waste to be generated ➢ To identify any potential environmental impacts from the generation of waste at the site
Relevant Government Law and Rule	➢ Environmental Impact Assessment Procedure (December 2015) ➢ National Waste Management Strategy and Master Plan (2018-2030)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ 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 municipal service. ➢ Emphasize source reduction by encouraging practices that reduce waste at the point of generation. It can include optimizing cutting patterns to minimize fabric waste and reducing packaging materials. ➢ Train employees on the importance of waste reduction, proper sorting and disposal practices.
Monitoring and Reporting	➢ Daily waste has to be collected and handover to municipal 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
Responsible Person	Manager (HR) ▪ Responsible for overall site cleanliness and waste management ▪ Regular waste collection to minimize excessive waste storage

6.8. LIQUID WASTE MANAGEMENT PLAN (WASTEWATER)

Objective	➢ To implementation plan for the management of liquid waste from collection, through treatment and resource recovery, to residual disposal	
Relevant Government Law and Rule	➢ Environmental Impact Assessment Procedure (December 2015) ➢ National Environmental Quality (Emission) Guidelines (2015), ➢ Underground Water Act	
Time Frame	➢ Entire life spans of proposed project	
Management Action	➢ Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations. ➢ Implement practices to minimize the generation of liquid waste such as optimizing production processes, reducing water usage, and adopting water-efficient technologies. ➢ Train employees on proper liquid waste management practices.	
Monitoring and Reporting	Frequency	Biannually
	Parameters	pH, Turbidity, Conductivity, Iron, Sulpahte, TSS, TDS, Manganese, COD, BOD, Cyanide, Copper, Zinc, Carbonate

	Proper maintenance of drainage and sewerage system will be conducted periodically
Estimated Cost	500,000 Kyats per year
Responsible Person	Manager: To hire organization/ Independent third-party testing wastewater quality EHS officer: Monitor the condition of factory's drainage and sewerage system

6.9. HAZARDOUS WASTE MANAGEMENT PLAN

Objective	➢ To avoid environmental pollution and adverse health effects due to its improper handing & disposal.
Relevant Government Law and Rule	➢ National Environmental Quality (Emission) Guidelines (2015), ➢ Explosive Ordnance Disposal Law (2018)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ Proper inspection and maintenance in storage of hazardous waste. ➢ Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. ➢ The empty chemical containers will hand over to suppliers for recycle or appropriate disposal ➢ The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty. ➢ Clearly label all containers holding materials with information such as the type of waste, date of accumulation, and any hazards associated with the materials. Use proper packaging to prevent leaks or spills.
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
Responsible Person	HSE Manager or Environmental Management Team of Myanmar Xiang Rui Fashion Co., Ltd

6.10. ENERGY MANAGEMENT PLAN

Objectives:	➢ To improve energy efficiency, reduce cost, optimize capital investment, reduce environmental and greenhouse gas emissions, and conserve natural resources

Relevant government law and rule	➢ National Energy Management Committee (Myanmar Energy Master Plan 2015)
Time Frame	Once in a year throughout the factory life
Management Action	➢ 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 ➢ Educate employees about the importance of energy conservation and involve them in the energy management process.
Monitoring & Reporting	Conduct annual energy efficiency of adult to find out the scope for energy saving
Estimated cost	Approximately 1,000,000 Kyats per year
Responsibility	Manager ➢ To arrange energy, audit technical personnel ➢ To monitor and record electricity consumption, other related energy issues and take necessary actions if any problem arises

6.11. EMERGENCY RESPONSE AND DISASTER MANAGEMENT PLAN

Objectives:	➢ To reduce the harmful effects of all hazards, including disasters. The World Health Organization defines an emergency as the state in which normal procedures are interrupted, and immediate measures (management) need to be taken to prevent it from becoming a disaster, which is even harder to recover from.
Relevant government law and rule	➢ The Employment and Skill Development Law (August 2013), ILO guide to Myanmar Labour Law (2017)
Time Frame	➢ Entire life spans of the factory operation
Management Action	➢ The factory management has taken proper measures to handle any emergency situation like fire, earthquake, flood and storm ➢ Provision and inspection of firefighting equipment and fire hydrant system in all the sections ➢ A detail evaluation plan (fire exist, emergency exit door, etc.) is established and communicated with workers ➢ Periodic inspection of safety relief valve provided with pressure vessels and equipment, preventive maintenance; aware the workers about electric shock by necessary training. ➢ Regular fire drill operation is conducted ➢ Workers are informed about what to do in earthquake like stay in a safe place such as under table of desk, not to try move outside during earthquake, workers who will be outside during earthquake shall remain stay out of the building, trees, lump post, etc. Other relevant safety instruction of emergency situation it informed to workers by training ➢ Workers are aware of dangers from physical hazards such as obstacles

	covered by floodwater (storm debris, drainage opening, ground erosion) and from displaced reptiles (Snake) or other animals. ➢ A medical team has been prepared for primary treatment (First Aid) ➢ Prepare an emergency contact directory consisting contact numbers of nearest fire service, local police station, hospitals, etc. and display it in a place that everybody can see it easy. ➢ Build a safety committee which from firefighting team, rescue team. The committee arrange a meeting every month to discuss about safety management ➢ Ensure proper training of the employees about the disaster management, fire safety as well as occupational health and safety
Monitoring & Reporting	Weekly check fire extinguishers and water hydrant in position Daily inspect that all fire exist are open Servicing fire extinguisher and records accidents,
Estimated cost	Approximately 1,500,000 Kyats per year
Responsibility	Manager and EHS officer ➢ Arrange firefighting training after every 3 months ➢ Responsible for fire control and response ➢ Monitoring daily danger warning and bans

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 Myanmar Xiang Rui Fashion Co., Ltd. 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 Process

Issues	Parameter	Frequency	Area to be monitored	Monitoring coast	Responsible Organization
Operation Phase					
Air quality	SO2, NO2, CO, CO2, PM2.5, PM10	Biannually monitoring and reporting to ECD	16°59'28.66"N 96° 4'43.48"E.	700,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Solid Waste Generation	Fabric scrab, Kitchen waste and ofiice waste	Weekly	Recycle house and waste house and at the factory office	50,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Liquid Waste Generation	pH	Weekly	Factory Drainage	50,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Hazardous Waste Generation	Hazard Waste	Weekly	Recycle house and waste house and at the factory office	50,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	500,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Noise	dBA	Biannually monitoring and reporting to ECD	16°59'28.28"N 96°4'43.78"E (Operation Area)	500,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Water Quality	pH, Turbidity, Conductivity, Iron, Sulpahte, TSS, TDS, Manganese, COD, BOD, Cyanide, Copper, Zinc, Carbonate	Biannually	16°59'27.54"N 96°4'43.42"E (Final discharge point to zone drainage)	500,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Light intensity	Illuminance	Monthly	At the production line (especially	500,000 Kyats	Environmental Management

Issues	Parameter	Frequency	Area to be monitored	Monitoring coast	Responsible Organization
			cutting and QC)		Team's Myanmar Xiang Rui Fashion Co., Ltd
Occupational Safety and Health	Visual Inspection Provide HSE trainings, sufficient PPE to workers	Monthly	At the factory	100,000 Kyats	Environmental Management Team's Myanmar Xiang Rui Fashion Co., Ltd
Decommissioning Phase					
Air quality	SO2, NO2, CO, CO2, PM2.5, PM10	One time during this phase	One point in the demolishing area	1,000,000 Kyats	Land Owner
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	500,000 Kyats	Land Owner
Rehabilitation	Recovering and Revegetation		All decommissioning area		Land Owner

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.

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 spared of fire and end the fire.

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

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

- First aid
- Removal of debris to an appropriate waste site
- Equipment and facility repair

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

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	

No.	Parameters	Proposed Capacity	Remark
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 train Toiled 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)

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.

6.13.9. Health and Safety Training Plan for Worker

Health and Safety Training plan currently used and provided in Myanmar Xinag Rui Fashion Co., Ltd. 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 Myanmar Xiang Rui Fashion Co., Ltd.

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 though Grievance Committee, which includes the responsible persons of Myanmar Xiang Rui Fashion Co., Ltd. representative from Thardukan Industrial Zone and representative from General Administration Department (Shwe Pyi Thar 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 (Figure 6-3) show steps of Grievance Redress Mechanism of Proposed Factory Project.

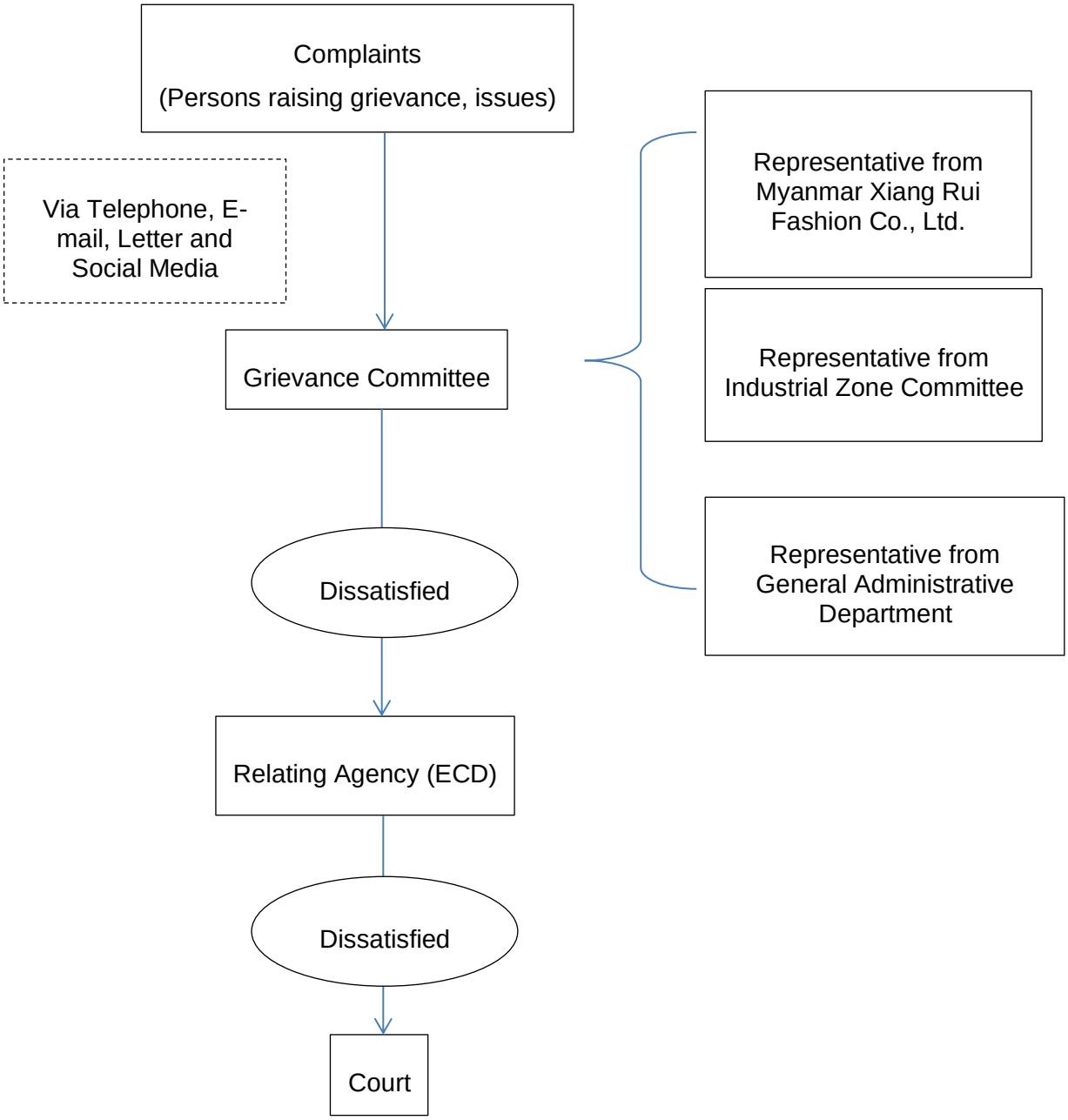


Figure 6-3 Grievance Redress Mechanism Flow Diagram

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 Myanmar Xiang Rui factory consists of three main sectors; Health, Education and Communities Development Sector. CSR activities are conducted in compliance with MIC's guideline for implementation of CSR program.

Myanmar Xiang Rui has a plan to implement and donate 2 percent of the profit per year for Corporate Social Responsibility (CSR) and Employee Welfare Arrangement (Table 6-4).

Table 6-4 CSR plan at Myanmar Xiang Rui Fashion Co., Ltd.

Area	Priority item	Contribution (%)	Estimated Cost (Kyats)	Detail targets

Health	Healthcare for employees and their family	0.5 %	750,000	One of our main concerns is the well-being of our employees. We will contribute 0.6 % 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%	750,000	We will contribute 0.6 % 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%	1,500,000	• Donate to local charities with a worthy cause • Actively participate in community events • Encourage staff to participate, and to form a community engagement team to actively support community events • Embedding understanding and consciousness about human rights issues among the employees • Development of sexual harassment and power harassmentǁ (workplace bullying & harassment) prevention efforts

7. PUBLIC CONSULTATION

7.1. PUBLIC CONSULTATION PROCESS

Public participation can be considered as the required element of the EMP process. In this study various stakeholder's participation were made.

On 24, September 2018, a public consultation and disclosure ceremony was held at the proposed project site of Myanmar Xiang Rui Factory, Thar Du Kan industrial zone, Shwe Pyi Thar Township, Yangon Region in order to disclose the summary of EMP process to the General Administrative Department, Medical Center, ECD and affected persons at proposed factory site.

It is aimed at disclosing the findings of environmental and social studies and the likely impacts upon them as well as mitigation and monitoring schemes to remediate the impacts caused by the project activities. It is also aimed at receiving recommendations, feedbacks upon the studies. Presentation activity photos of public hearing and consultation, ceremony is mentioned in the **Appendix E**. Figure 7-1 Is shown the consultation meeting photo.

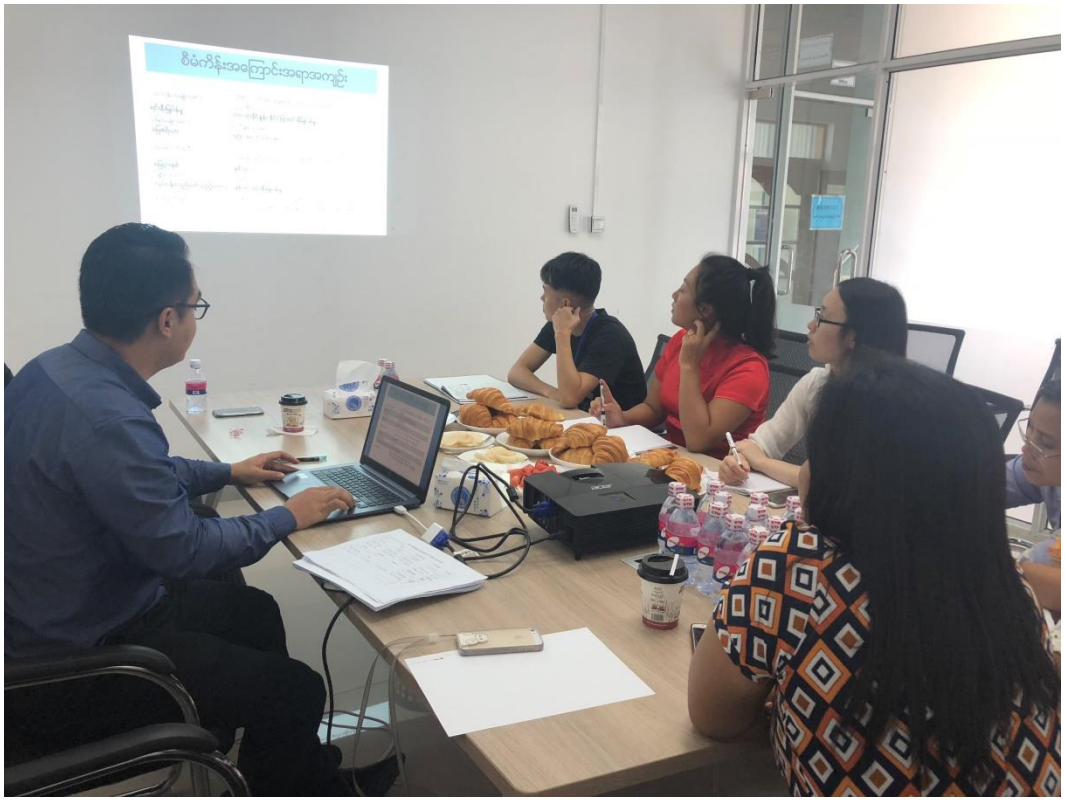


Figure 7-1 Consultation meeting photo

The project is located in Thardukan Industrial Zone, Shwe Pyi Thar Township and there are no local people affected by project. The project information and this EMP will be accessible to public and stakeholders via.

Myanwei website www.myanweiconsulting.com

https://www.facebook.com/Myanwei-Environmental-Solutions-Company-Limited.

8. CONCLUSION AND RECOMMENDATION

Environmental Management Plan (EMP) has been prepared for Myanamr Xiang Rui factory which is located at Plot No. 152, Myay Taing Block No. 51, Thar Du Kan Industrial Zone, Shwe Pyi Thar 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 garments 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 hand, the factory has a positive impact in terms of environmental management 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.

It is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to be disposed according to Yangon City Development Committee (YCDC) rules and regulations
- Workers should be provided proper training and it should be ensured that workers use PPE during factory operation area.
- Daily, monthly and annual action plans shall be formulated based on this EMP and practiced at operation level.
- Keep full records of environmental management activities
- Abide environmental policies, laws, rules and instructions of the Republic of the Union of Myanmar.

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

9. REFERENCE

[1] General Administrative Department (Shwe Pyi Thar Township), Shwe Pyi Thar Township Data (2019).

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

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

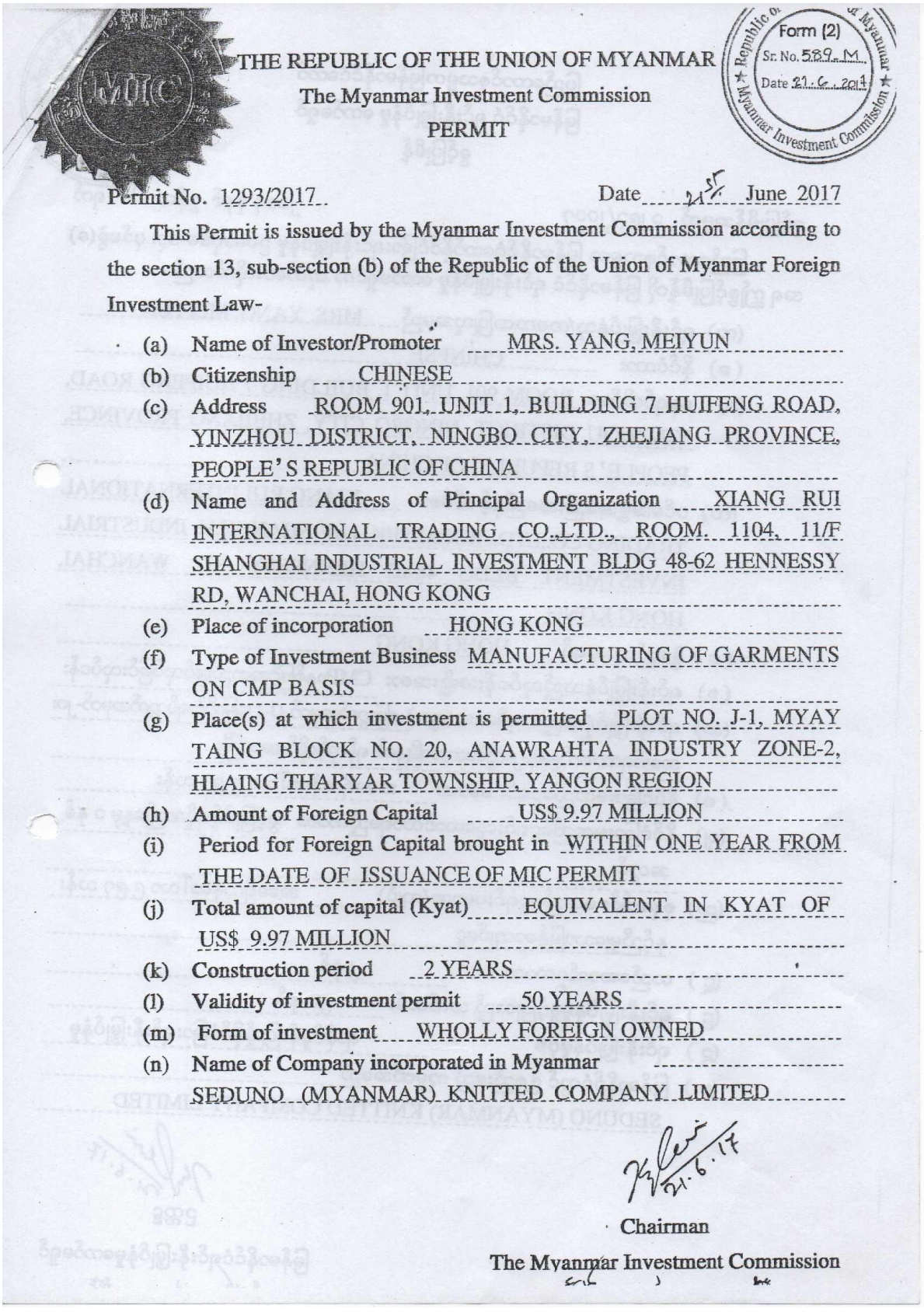
[4] Ministry of Natural Resources and Environmental Conversation (MONREC), “National Environmental Quality (Emission) Guidelines” December 2015.

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

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

APPENDIX A
Myanmar Xiang Rui Fashion Co., Ltd.

Myanmar Investment Committee Permit



THE REPUBLIC OF THE UNION OF MYANMAR
The Myanmar Investment Commission
PERMIT

Form (2)
Sr. No. 589. M
Date 21.6.2017

Permit No. 1293/2017 Date 21st June 2017

This Permit is issued by the Myanmar Investment Commission according to the section 13, sub-section (b) of the Republic of the Union of Myanmar Foreign Investment Law-

(a) Name of Investor/Promoter MRS. YANG, MEIYUN
(b) Citizenship CHINESE
(c) Address ROOM 901, UNIT 1, BUILDING 7 HUIFENG ROAD, YINZHOU DISTRICT, NINGBO CITY, ZHEJIANG PROVINCE, PEOPLE'S REPUBLIC OF CHINA
(d) Name and Address of Principal Organization XIANG RUI INTERNATIONAL TRADING CO.,LTD., ROOM. 1104, 11/F SHANGHAI INDUSTRIAL INVESTMENT BLDG 48-62 HENNESSY RD, WANCHAI, HONG KONG
(e) Place of incorporation HONG KONG
(f) Type of Investment Business MANUFACTURING OF GARMENTS ON CMP BASIS
(g) Place(s) at which investment is permitted PLOT NO. J-1, MYAY TAING BLOCK NO. 20, ANAWRAHTA INDUSTRY ZONE-2, HLAING THARYAR TOWNSHIP, YANGON REGION
(h) Amount of Foreign Capital US$ 9.97 MILLION
(i) Period for Foreign Capital brought in WITHIN ONE YEAR FROM THE DATE OF ISSUANCE OF MIC PERMIT
(j) Total amount of capital (Kyat) EQUIVALENT IN KYAT OF US$ 9.97 MILLION
(k) Construction period 2 YEARS
(l) Validity of investment permit 50 YEARS
(m) Form of investment WHOLLY FOREIGN OWNED
(n) Name of Company incorporated in Myanmar SEDUNO (MYANMAR) KNITTED COMPANY LIMITED

21.6.17

Chairman
The Myanmar Investment Commission

Amendment for Permit Change

Form (2)
Annexe-1

Republic of the Union of Myanmar
Myanmar Investment Commission
Sr. No. 393
Date 13.8.2018

REPUBLIC OF THE UNION OF MYANMAR
MYANMAR INVESTMENT COMMISSION

Amendment on Permit No. 1293/2017 dated 21st June, 2017

The Myanmar Investment Commission, at its meetings 12/2018 held on 10th August 2018, approved the name of investor/promoter and address of Myanmar Xiang Rui Fashion Company Limited be changed from Mrs. Yang, Meiyun, Room 901, Unit 1, Building 7 Huifeng Road, Yinzhou District, Ningbo City, Zhejiang Province, People's Republic of China to Mrs. Ye, Fanghong, Nan Feng Village, Xiao Zhi Township, Lin Hai City, Zhejiang Province, People's Republic of China.

(a) **Name of Investor/Promoter** MRS. YE, FANGHONG

(b) **Citizenship** CHINESE

(c) **Address** NAN FENG VILLAGE, XIAO ZHI TOWNSHIP, LIN HAI CITY, ZHEJIANG PROVINCE, PEOPLE'S REPUBLIC OF CHINA

for Chairman
(Aung Naing Oo, Secretary)

Date: 13 August 2018
Location: Yangon

Amendment for Company Name Change

Republic of the Union of Myanmar
Myanmar Investment Commission
Sr. No. 243
Date 15-5-18

Form (2)
Annexe-1

REPUBLIC OF THE UNION OF MYANMAR
MYANMAR INVESTMENT COMMISSION

Amendment on Permit No. 1293/2017 dated 21st June 2017

The Myanmar Investment Commission, at its meeting 6/2018 held on 12th May 2018, approved that the name of company incorporated in Myanmar be changed from Seduno (Myanmar) Knitted Company Limited to Myanmar Xiang Rui Fashion Company Limited.

(n) **Name of Company incorporated in Myanmar** MYANMAR XIANG RUI FASHION COMPANY LIMITED

for Chairman

(Mya Thuza, Joint Secretary)

Date: 15th May 2018

Location: Yangon

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. 00068 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. Facilitation of meeting,
2. Land use,
3. Legal analysis,
4. Geology and soil,
5. Occupational Safety and Health,
6. Public Health

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး
ဦးစီးဌာန

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။
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။
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။
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။
25.3.2022
For Director General
(Soe Naing, Director)
Environmental Conservation Department

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

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

REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10048 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.

(ပတ်ဝန်းကျင်တိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယ်ဇာတနှင့် 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

EXTENSION
သက်တမ်းတိုးခြင်း၊
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်သက်တမ်းသည် (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ တိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

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

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉)
ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

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

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

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

APPENDIX C
Air Quality Result

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
10:00:00	140	0	31	6	2	34	1	28
10:01:00	140	0	20	6	2	34	1	28
10:02:00	140	0	28	6	2	34	1	28
10:03:00	140	0	28	6	2	34	1	28
10:04:00	140	0	28	6	2	34	1	28
10:05:00	140	0	28	6	2	34	1	28
10:06:00	140	0	28	6	2	34	1	28
10:07:00	140	0	28	6	2	34	1	28
10:08:00	140	0	28	6	2	34	1	28
10:09:00	140	0	28	6	2	34	1	28
10:10:00	80	0	51	33	22	34	1	29
10:11:00	103	0	51	26	26	34	1	29
10:12:00	124	0	53	26	20	33	1	29
10:13:00	128	0	47	26	19	34	1	29
10:14:00	128	0	47	26	19	34	1	29
10:15:00	128	0	47	26	19	34	1	29
10:16:00	128	0	47	26	19	34	1	29
10:17:00	128	0	47	26	19	34	1	29
10:18:00	128	0	47	26	19	34	1	29
10:19:00	128	0	47	26	19	34	1	29
10:20:00	128	0	47	26	19	34	1	29
10:21:00	128	0	47	26	19	34	1	29
10:22:00	102	0	55	13	6	34	1	29
10:23:00	102	0	59	13	8	34	1	29
10:24:00	102	0	59	13	8	34	1	29
10:25:00	102	0	59	13	8	34	1	29
10:26:00	102	0	59	13	8	34	1	29
10:27:00	102	0	59	13	8	34	1	29
10:28:00	102	0	59	13	8	34	1	29
10:29:00	102	0	59	13	8	34	1	29
10:30:00	102	0	59	13	8	34	1	29
10:31:00	102	0	59	13	8	34	1	29
10:32:00	124	0	53	17	8	27	1	29
10:33:00	124	0	53	16	7	34	1	30
10:34:00	124	0	53	16	7	34	1	30
10:35:00	124	0	53	16	7	34	1	30
10:36:00	124	0	53	16	7	34	1	30
10:37:00	124	0	53	16	7	34	1	30
10:38:00	124	0	53	16	7	34	1	30
10:39:00	124	0	53	16	7	34	1	30
10:40:00	124	0	53	16	7	34	1	30
10:41:00	124	0	53	16	7	34	1	30

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
10:42:00	147	0	56	12	9	34	1	30
10:43:00	146	0	44	11	9	35	1	30
10:44:00	146	0	50	13	8	35	1	33
10:45:00	146	0	50	13	8	35	1	33
10:46:00	146	0	50	13	8	35	1	33
10:47:00	146	0	50	13	8	35	1	33
10:48:00	146	0	50	13	8	35	1	33
10:49:00	146	0	50	13	8	35	1	33
10:50:00	146	0	50	13	8	35	1	33
10:51:00	146	0	50	13	8	35	1	33
10:52:00	146	0	50	13	8	35	1	33
10:53:00	157	0	52	13	5	35	1	30
10:54:00	157	0	46	13	9	33	1	30
10:55:00	157	0	46	13	9	33	1	30
10:56:00	157	0	46	13	9	33	1	30
10:57:00	157	0	46	13	9	33	1	30
10:58:00	157	0	46	13	9	33	1	30
10:59:00	157	0	46	13	9	33	1	30
11:00:00	157	0	46	13	9	33	1	30
11:01:00	157	0	46	13	9	33	1	30
11:02:00	157	0	46	13	9	33	1	30
11:03:00	157	0	40	12	5	36	1	30
11:04:00	158	0	38	10	1	36	1	30
11:05:00	158	0	27	10	3	35	1	30
11:06:00	158	0	27	10	3	35	1	30
11:07:00	158	0	27	10	3	35	1	30
11:08:00	158	0	27	10	3	35	1	30
11:09:00	158	0	27	10	3	35	1	30
11:10:00	158	0	27	10	3	35	1	30
11:11:00	158	0	27	10	3	35	1	30
11:12:00	158	0	27	10	3	35	1	30
11:13:00	158	0	27	10	3	35	1	30
11:14:00	180	0	56	37	12	35	1	30
11:15:00	180	0	53	37	11	35	1	30
11:16:00	180	0	53	37	11	35	1	30
11:17:00	180	0	53	37	11	35	1	30
11:18:00	180	0	53	37	11	35	1	30
11:19:00	180	0	53	37	11	35	1	30
11:20:00	180	0	53	37	11	35	1	30
11:21:00	180	0	53	37	11	35	1	30
11:22:00	180	0	53	37	11	35	1	30
11:23:00	180	0	53	37	11	35	1	30
11:24:00	191	0	30	17	10	36	1	32
11:25:00	180	0	43	16	4	36	1	32
11:26:00	191	0	31	18	6	36	1	31

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
11:27:00	191	0	31	18	6	36	1	31
11:28:00	191	0	31	18	6	36	1	31
11:29:00	191	0	31	18	6	36	1	31
11:30:00	191	0	31	18	6	36	1	31
11:31:00	191	0	31	18	6	36	1	31
11:32:00	191	0	31	18	6	36	1	31
11:33:00	191	0	31	18	6	36	1	31
11:34:00	191	0	31	18	6	36	1	31
11:35:00	224	0	38	28	14	37	1	31
11:36:00	224	0	52	28	14	37	1	31
11:37:00	224	0	52	28	14	37	1	31
11:38:00	224	0	52	28	14	37	1	31
11:39:00	224	0	52	28	14	37	1	31
11:40:00	224	0	52	28	14	37	1	31
11:41:00	224	0	52	28	14	37	1	31
11:42:00	224	0	52	28	14	37	1	31
11:43:00	224	0	52	28	14	37	1	31
11:44:00	224	0	52	28	14	37	1	31
11:45:00	234	0	50	9	7	35	1	27
11:46:00	212	0	48	14	4	38	1	26
11:47:00	212	0	48	14	4	38	1	26
11:48:00	212	0	48	14	4	38	1	26
11:49:00	212	0	48	14	4	38	1	26
11:50:00	212	0	48	14	4	38	1	26
11:51:00	212	0	48	14	4	38	1	26
11:52:00	212	0	48	14	4	38	1	26
11:53:00	212	0	48	14	4	38	1	26
11:54:00	212	0	48	14	4	38	1	26
11:55:00	223	0	29	9	1	39	1	26
11:56:00	224	0	39	10	1	38	1	26
11:57:00	224	0	39	10	1	38	1	26
11:58:00	224	0	39	10	1	38	1	26
11:59:00	224	0	39	10	1	38	1	26
12:00:00	224	0	39	10	1	38	1	26
12:01:00	224	0	39	10	1	38	1	26
12:02:00	224	0	39	10	1	38	1	26
12:03:00	224	0	39	10	1	38	1	26
12:04:00	224	0	39	10	1	38	1	26
12:05:00	212	14	33	2	1	37	1	26
12:06:00	212	0	27	2	1	37	1	30
12:07:00	212	0	27	2	1	37	1	30
12:08:00	212	0	27	2	1	37	1	30
12:09:00	212	0	27	2	1	37	1	30
12:10:00	212	0	27	2	1	37	1	30
12:11:00	212	0	27	2	1	37	1	30

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
12:12:00	212	0	27	2	1	37	1	30
12:13:00	212	0	27	2	1	37	1	30
12:14:00	212	0	27	2	1	37	1	30
12:15:00	212	0	36	9	1	22	1	28
12:16:00	190	0	33	5	1	35	1	29
12:17:00	190	0	46	10	1	35	1	29
12:18:00	168	0	39	9	1	34	1	29
12:19:00	168	0	38	4	1	35	1	29
12:20:00	169	0	39	8	1	22	1	30
12:21:00	168	0	39	8	1	35	1	29
12:22:00	157	0	47	5	1	29	1	29
12:23:00	168	0	37	3	1	35	1	33
12:24:00	168	0	37	3	1	35	1	33
12:25:00	168	0	37	3	1	35	1	33
12:26:00	168	0	37	3	1	35	1	33
12:27:00	168	0	37	3	1	35	1	33
12:28:00	168	0	37	3	1	35	1	33
12:29:00	168	0	37	3	1	35	1	33
12:30:00	168	0	37	3	1	35	1	33
12:31:00	168	0	37	3	1	35	1	33
12:32:00	202	0	34	16	8	36	1	33
12:33:00	202	0	20	13	8	36	1	30
12:34:00	202	0	20	13	8	36	1	30
12:35:00	202	0	20	13	8	36	1	30
12:36:00	202	0	20	13	8	36	1	30
12:37:00	202	0	20	13	8	36	1	30
12:38:00	202	0	20	13	8	36	1	30
12:39:00	202	0	20	13	8	36	1	30
12:40:00	202	0	20	13	8	36	1	30
12:41:00	202	0	20	13	8	36	1	30
12:42:00	213	0	33	17	13	36	1	29
12:43:00	191	0	45	24	13	36	1	29
12:44:00	179	0	28	17	18	35	1	30
12:45:00	168	0	45	17	20	34	1	30
12:46:00	168	0	39	19	19	36	1	30
12:47:00	168	0	39	19	19	36	1	30
12:48:00	168	0	39	19	19	36	1	30
12:49:00	168	0	39	19	19	36	1	30
12:50:00	168	0	39	19	19	36	1	30
12:51:00	168	0	39	19	19	36	1	30
12:52:00	168	0	39	19	19	36	1	30
12:53:00	168	0	39	19	19	36	1	30
12:54:00	168	0	39	19	19	36	1	30
12:55:00	213	16	41	14	7	34	1	30
12:56:00	213	0	49	15	7	35	1	31

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
12:57:00	213	0	49	15	7	35	1	31
12:58:00	213	0	49	15	7	35	1	31
12:59:00	213	0	49	15	7	35	1	31
13:00:00	213	0	49	15	7	35	1	31
13:01:00	213	0	49	15	7	35	1	31
13:02:00	213	0	49	15	7	35	1	31
13:03:00	213	0	49	15	7	35	1	31
13:04:00	213	0	49	15	7	35	1	31
13:05:00	202	0	38	16	7	36	1	31
13:06:00	201	0	25	20	9	36	1	29
13:07:00	201	0	25	20	9	36	1	29
13:08:00	201	0	25	20	9	36	1	29
13:09:00	201	0	25	20	9	36	1	29
13:10:00	201	0	25	20	9	36	1	29
13:11:00	201	0	25	20	9	36	1	29
13:12:00	201	0	25	20	9	36	1	29
13:13:00	201	0	25	20	9	36	1	29
13:14:00	201	0	25	20	9	36	1	29
13:15:00	212	0	25	16	7	36	1	29
13:16:00	213	0	25	16	8	36	1	29
13:17:00	213	0	25	16	8	36	1	29
13:18:00	213	0	25	16	8	36	1	29
13:19:00	213	0	25	16	8	36	1	29
13:20:00	213	0	25	16	8	36	1	29
13:21:00	213	0	25	16	8	36	1	29
13:22:00	213	0	25	16	8	36	1	29
13:23:00	213	0	25	16	8	36	1	29
13:24:00	213	0	25	16	8	36	1	29
13:25:00	235	0	26	13	12	32	1	33
13:26:00	213	0	35	12	12	36	1	32
13:27:00	213	0	35	12	12	36	1	32
13:28:00	213	0	35	12	12	36	1	32
13:29:00	213	0	35	12	12	36	1	32
13:30:00	213	0	35	12	12	36	1	32
13:31:00	213	0	35	12	12	36	1	32
13:32:00	213	0	35	12	12	36	1	32
13:33:00	213	0	35	12	12	36	1	32
13:34:00	213	0	35	12	12	36	1	32
13:35:00	213	0	27	16	8	36	1	32
13:36:00	213	0	33	15	8	36	1	29
13:37:00	213	0	33	15	8	36	1	29
13:38:00	213	0	33	15	8	36	1	29
13:39:00	213	0	33	15	8	36	1	29
13:40:00	213	0	33	15	8	36	1	29
13:41:00	213	0	33	15	8	36	1	29

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
13:42:00	213	0	33	15	8	36	1	29
13:43:00	213	0	33	15	8	36	1	29
13:44:00	213	0	33	15	8	36	1	29
13:45:00	252	0	38	22	9	35	1	29
13:46:00	202	0	44	18	9	35	1	30
13:47:00	191	0	31	16	4	34	1	30
13:48:00	169	0	46	15	4	37	1	30
13:49:00	169	0	46	15	4	37	1	30
13:50:00	169	0	46	15	4	37	1	30
13:51:00	169	0	46	15	4	37	1	30
13:52:00	169	0	46	15	4	37	1	30
13:53:00	169	0	46	15	4	37	1	30
13:54:00	169	0	46	15	4	37	1	30
13:55:00	169	0	46	15	4	37	1	30
13:56:00	169	0	46	15	4	37	1	30
13:57:00	235	0	36	17	11	37	1	30
13:58:00	213	0	26	18	9	37	1	30
13:59:00	191	0	30	24	13	37	1	30
14:00:00	191	0	48	22	11	37	1	30
14:01:00	191	0	48	22	11	37	1	30
14:02:00	191	0	48	22	11	37	1	30
14:03:00	191	0	48	22	11	37	1	30
14:04:00	191	0	48	22	11	37	1	30
14:05:00	191	0	48	22	11	37	1	30
14:06:00	191	0	48	22	11	37	1	30
14:07:00	191	0	48	22	11	37	1	30
14:08:00	191	0	48	22	11	37	1	30
14:09:00	246	0	29	54	29	37	24	30
14:10:00	213	0	31	47	31	38	24	30
14:11:00	213	0	31	47	31	38	24	30
14:12:00	213	0	31	47	31	38	24	30
14:13:00	213	0	31	47	31	38	24	30
14:14:00	213	0	31	47	31	38	24	30
14:15:00	213	0	31	47	31	38	24	30
14:16:00	213	0	31	47	31	38	24	30
14:17:00	213	0	31	47	31	38	24	30
14:18:00	213	0	31	47	31	38	24	30
14:19:00	246	0	43	22	13	38	1	32
14:20:00	235	0	32	22	12	38	1	32
14:21:00	235	0	32	22	12	38	1	32
14:22:00	235	0	32	22	12	38	1	32
14:23:00	235	0	32	22	12	38	1	32
14:24:00	235	0	32	22	12	38	1	32
14:25:00	235	0	32	22	12	38	1	32
14:26:00	235	0	32	22	12	38	1	32

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
14:27:00	235	0	32	22	12	38	1	32
14:28:00	235	0	32	22	12	38	1	32
14:29:00	245	0	29	37	24	36	1	32
14:30:00	202	0	30	37	23	38	1	32
14:31:00	202	0	23	32	17	38	1	32
14:32:00	202	0	23	32	17	38	1	32
14:33:00	202	0	23	32	17	38	1	32
14:34:00	202	0	23	32	17	38	1	32
14:35:00	202	0	23	32	17	38	1	32
14:36:00	202	0	23	32	17	38	1	32
14:37:00	202	0	23	32	17	38	1	32
14:38:00	202	0	23	32	17	38	1	32
14:39:00	202	0	23	32	17	38	1	32
14:40:00	257	0	29	34	24	38	1	30
14:41:00	223	0	27	36	25	37	1	30
14:42:00	223	0	27	36	25	37	1	30
14:43:00	223	0	27	36	25	37	1	30
14:44:00	223	0	27	36	25	37	1	30
14:45:00	223	0	27	36	25	37	1	30
14:46:00	223	0	27	36	25	37	1	30
14:47:00	223	0	27	36	25	37	1	30
14:48:00	223	0	27	36	25	37	1	30
14:49:00	223	0	27	36	25	37	1	30
14:50:00	234	0	28	30	14	38	1	30
14:51:00	234	0	39	31	13	38	1	35
14:52:00	234	0	39	31	13	38	1	35
14:53:00	234	0	39	31	13	38	1	35
14:54:00	234	0	39	31	13	38	1	35
14:55:00	234	0	39	31	13	38	1	35
14:56:00	234	0	39	31	13	38	1	35
14:57:00	234	0	39	31	13	38	1	35
14:58:00	234	0	39	31	13	38	1	35
14:59:00	234	0	39	31	13	38	1	35
15:00:00	246	0	8	25	22	39	1	35
15:01:00	246	0	18	26	22	39	1	35
15:02:00	246	0	18	26	22	39	1	35
15:03:00	246	0	18	26	22	39	1	35
15:04:00	246	0	18	26	22	39	1	35
15:05:00	246	0	18	26	22	39	1	35
15:06:00	246	0	18	26	22	39	1	35
15:07:00	246	0	18	26	22	39	1	33
15:08:00	246	0	18	26	22	39	1	33
15:09:00	246	0	18	26	22	39	1	33
15:10:00	246	0	27	15	15	38	1	33
15:11:00	212	0	20	21	18	38	1	33

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
15:12:00	190	0	25	18	22	38	1	33
15:13:00	190	0	25	19	23	38	1	33
15:14:00	190	0	25	19	23	38	1	33
15:15:00	190	0	25	19	23	38	1	27
15:16:00	190	0	25	19	23	38	1	27
15:17:00	190	0	25	19	23	38	1	27
15:18:00	190	0	25	19	23	38	1	27
15:19:00	190	0	25	19	23	38	1	27
15:20:00	190	0	25	19	23	38	1	27
15:21:00	190	0	25	19	23	38	1	27
15:22:00	223	0	8	17	12	40	1	27
15:23:00	201	0	16	24	13	40	1	27
15:24:00	174	0	15	2	1	40	1	27
15:25:00	174	0	15	2	1	40	1	27
15:26:00	174	0	15	2	1	40	1	27
15:27:00	174	0	15	2	1	40	1	27
15:28:00	174	0	15	2	1	40	1	27
15:29:00	174	0	15	2	1	40	1	27
15:30:00	174	0	15	2	1	40	1	27
15:31:00	174	0	15	2	1	40	1	27
15:32:00	174	0	15	2	1	40	1	27
15:33:00	192	0	41	17	10	39	1	27
15:34:00	193	0	33	27	13	37	1	27
15:35:00	193	0	33	27	13	37	1	27
15:36:00	193	0	33	27	13	37	1	27
15:37:00	193	0	33	27	13	37	1	27
15:38:00	193	0	33	27	13	37	1	27
15:39:00	193	0	33	27	13	37	1	27
15:40:00	193	0	33	27	13	37	1	27
15:41:00	193	0	33	27	13	37	1	27
15:42:00	193	0	33	27	13	37	1	27
15:43:00	159	0	26	4	1	39	1	26
15:44:00	158	0	10	7	2	30	1	26
15:45:00	158	0	10	7	2	30	1	26
15:46:00	158	0	10	7	2	30	1	26
15:47:00	158	0	10	7	2	30	1	26
15:48:00	158	0	10	7	2	30	1	26
15:49:00	158	0	10	7	2	30	1	26
15:50:00	158	0	10	7	2	30	1	26
15:51:00	158	0	10	7	2	30	1	26
15:52:00	158	0	10	7	2	30	1	26
15:53:00	160	25	17	7	2	38	1	26
15:54:00	162	0	13	5	2	38	1	30
15:55:00	162	0	13	5	2	38	1	30
15:56:00	162	0	13	5	2	38	1	30

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
15:57:00	162	0	13	5	2	38	1	30
15:58:00	162	0	13	5	2	38	1	30
15:59:00	162	0	13	5	2	38	1	30
16:00:00	162	0	13	5	2	38	1	30
16:01:00	162	0	13	5	2	38	1	30
16:02:00	162	0	13	5	2	38	1	30
16:03:00	160	0	22	7	1	39	1	31
16:04:00	149	0	20	5	1	39	1	30
16:05:00	149	0	20	5	1	39	1	30
16:06:00	149	0	20	5	1	39	1	30
16:07:00	149	0	20	5	1	39	1	30
16:08:00	149	0	20	5	1	39	1	30
16:09:00	149	0	20	5	1	39	1	30
16:10:00	149	0	20	5	1	39	1	30
16:11:00	149	0	20	5	1	39	1	30
16:12:00	149	0	20	5	1	39	1	30
16:13:00	127	0	27	9	1	38	1	31
16:14:00	126	0	35	7	8	39	1	30
16:15:00	138	0	21	8	6	39	1	30
16:16:00	127	0	17	9	4	39	1	30
16:17:00	127	0	17	9	4	39	1	30
16:18:00	127	0	17	9	4	39	1	30
16:19:00	127	0	17	9	4	39	1	30
16:20:00	127	0	17	9	4	39	1	30
16:21:00	127	0	17	9	4	39	1	30
16:22:00	127	0	17	9	4	39	1	30
16:23:00	127	0	17	9	4	39	1	30
16:24:00	127	0	17	9	4	39	1	30
16:25:00	116	0	29	12	8	38	1	31
16:26:00	137	0	26	15	7	38	1	29
16:27:00	138	0	20	19	9	38	1	32
16:28:00	137	0	32	18	12	38	1	32
16:29:00	137	0	19	18	11	37	1	28
16:30:00	137	0	27	18	13	38	1	29
16:31:00	137	0	13	18	15	38	1	32
16:32:00	137	0	23	16	15	37	1	28
16:33:00	137	0	25	14	13	38	1	34
16:34:00	137	0	27	14	11	38	1	32
16:35:00	137	0	27	14	11	38	1	32
16:36:00	137	0	27	14	11	38	1	32
16:37:00	137	0	27	14	11	38	1	32
16:38:00	137	0	27	14	11	38	1	32
16:39:00	137	0	27	14	11	38	1	32
16:40:00	137	0	27	14	11	38	1	32
16:41:00	137	0	27	14	11	38	1	32

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
16:42:00	137	0	27	14	11	38	1	32
16:43:00	115	0	21	13	8	38	1	29
16:44:00	126	0	17	11	6	38	1	31
16:45:00	149	0	24	14	8	38	1	28
16:46:00	149	0	26	12	6	38	1	29
16:47:00	149	0	26	12	6	38	1	29
16:48:00	149	0	26	12	6	38	1	29
16:49:00	149	0	26	12	6	38	1	29
16:50:00	149	0	26	12	6	38	1	29
16:51:00	149	0	26	12	6	38	1	29
16:52:00	149	0	26	12	6	38	1	29
16:53:00	149	0	26	12	6	38	1	29
16:54:00	149	0	26	12	6	38	1	29
16:55:00	104	0	30	12	12	39	1	30
16:56:00	115	0	26	14	11	39	1	32
16:57:00	115	0	29	14	11	40	1	32
16:58:00	115	0	29	14	11	40	1	32
16:59:00	115	0	29	14	11	40	1	32
17:00:00	115	0	29	14	11	40	1	32
17:01:00	115	0	29	14	11	40	1	32
17:02:00	115	0	29	14	11	40	1	32
17:03:00	115	0	29	14	11	40	1	32
17:04:00	115	0	29	14	11	40	1	32
17:05:00	115	0	29	14	11	40	1	32
17:06:00	104	0	34	20	13	40	1	32
17:07:00	126	0	25	20	7	40	1	30
17:08:00	137	0	19	18	8	40	1	32
17:09:00	137	0	29	16	12	40	1	32
17:10:00	137	0	31	21	9	40	1	32
17:11:00	137	0	31	21	9	40	1	32
17:12:00	137	0	31	21	9	40	1	32
17:13:00	137	0	31	21	9	40	1	32
17:14:00	137	0	31	21	9	40	1	32
17:15:00	137	0	31	21	9	40	1	32
17:16:00	137	0	31	21	9	40	1	32
17:17:00	137	0	31	21	9	40	1	32
17:18:00	137	0	31	21	9	40	1	32
17:19:00	103	0	33	16	15	37	1	32
17:20:00	137	0	28	22	13	37	1	31
17:21:00	137	0	27	24	12	37	1	31
17:22:00	148	0	28	22	12	37	1	31
	178.36	0.12	33.16	17.07	9.67	36.56	1.52	30.11

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
10:00:00	140	0	31	6	2	34	1	28
10:01:00	140	0	20	6	2	34	1	28
10:02:00	140	0	28	6	2	34	1	28
10:03:00	140	0	28	6	2	34	1	28
10:04:00	140	0	28	6	2	34	1	28
10:05:00	140	0	28	6	2	34	1	28
10:06:00	140	0	28	6	2	34	1	28
10:07:00	140	0	28	6	2	34	1	28
10:08:00	140	0	28	6	2	34	1	28
10:09:00	140	0	28	6	2	34	1	28
10:10:00	80	0	51	33	22	34	1	29
10:11:00	103	0	51	26	26	34	1	29
10:12:00	124	0	53	26	20	33	1	29
10:13:00	128	0	47	26	19	34	1	29
10:14:00	128	0	47	26	19	34	1	29
10:15:00	128	0	47	26	19	34	1	29
10:16:00	128	0	47	26	19	34	1	29
10:17:00	128	0	47	26	19	34	1	29
10:18:00	128	0	47	26	19	34	1	29
10:19:00	128	0	47	26	19	34	1	29
10:20:00	128	0	47	26	19	34	1	29
10:21:00	128	0	47	26	19	34	1	29
10:22:00	102	0	55	13	6	34	1	29
10:23:00	102	0	59	13	8	34	1	29
10:24:00	102	0	59	13	8	34	1	29
10:25:00	102	0	59	13	8	34	1	29
10:26:00	102	0	59	13	8	34	1	29
10:27:00	102	0	59	13	8	34	1	29
10:28:00	102	0	59	13	8	34	1	29
10:29:00	102	0	59	13	8	34	1	29
10:30:00	102	0	59	13	8	34	1	29
10:31:00	102	0	59	13	8	34	1	29
10:32:00	124	0	53	17	8	27	1	29
10:33:00	124	0	53	16	7	34	1	30
10:34:00	124	0	53	16	7	34	1	30
10:35:00	124	0	53	16	7	34	1	30
10:36:00	124	0	53	16	7	34	1	30
10:37:00	124	0	53	16	7	34	1	30
10:38:00	124	0	53	16	7	34	1	30
10:39:00	124	0	53	16	7	34	1	30
10:40:00	124	0	53	16	7	34	1	30
10:41:00	124	0	53	16	7	34	1	30
10:42:00	147	0	56	12	9	34	1	30
10:43:00	146	0	44	11	9	35	1	30

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
10:44:00	146	0	50	13	8	35	1	33
10:45:00	146	0	50	13	8	35	1	33
10:46:00	146	0	50	13	8	35	1	33
10:47:00	146	0	50	13	8	35	1	33
10:48:00	146	0	50	13	8	35	1	33
10:49:00	146	0	50	13	8	35	1	33
10:50:00	146	0	50	13	8	35	1	33
10:51:00	146	0	50	13	8	35	1	33
10:52:00	146	0	50	13	8	35	1	33
10:53:00	157	0	52	13	5	35	1	30
10:54:00	157	0	46	13	9	33	1	30
10:55:00	157	0	46	13	9	33	1	30
10:56:00	157	0	46	13	9	33	1	30
10:57:00	157	0	46	13	9	33	1	30
10:58:00	157	0	46	13	9	33	1	30
10:59:00	157	0	46	13	9	33	1	30
11:00:00	157	0	46	13	9	33	1	30
11:01:00	157	0	46	13	9	33	1	30
11:02:00	157	0	46	13	9	33	1	30
11:03:00	157	0	40	12	5	36	1	30
11:04:00	158	0	38	10	1	36	1	30
11:05:00	158	0	27	10	3	35	1	30
11:06:00	158	0	27	10	3	35	1	30
11:07:00	158	0	27	10	3	35	1	30
11:08:00	158	0	27	10	3	35	1	30
11:09:00	158	0	27	10	3	35	1	30
11:10:00	158	0	27	10	3	35	1	30
11:11:00	158	0	27	10	3	35	1	30
11:12:00	158	0	27	10	3	35	1	30
11:13:00	158	0	27	10	3	35	1	30
11:14:00	180	0	56	37	12	35	1	30
11:15:00	180	0	53	37	11	35	1	30
11:16:00	180	0	53	37	11	35	1	30
11:17:00	180	0	53	37	11	35	1	30
11:18:00	180	0	53	37	11	35	1	30
11:19:00	180	0	53	37	11	35	1	30
11:20:00	180	0	53	37	11	35	1	30
11:21:00	180	0	53	37	11	35	1	30
11:22:00	180	0	53	37	11	35	1	30
11:23:00	180	0	53	37	11	35	1	30
11:24:00	191	0	30	17	10	36	1	32
11:25:00	180	0	43	16	4	36	1	32
11:26:00	191	0	31	18	6	36	1	31
11:27:00	191	0	31	18	6	36	1	31
11:28:00	191	0	31	18	6	36	1	31

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
11:29:00	191	0	31	18	6	36	1	31
11:30:00	191	0	31	18	6	36	1	31
11:31:00	191	0	31	18	6	36	1	31
11:32:00	191	0	31	18	6	36	1	31
11:33:00	191	0	31	18	6	36	1	31
11:34:00	191	0	31	18	6	36	1	31
11:35:00	224	0	38	28	14	37	1	31
11:36:00	224	0	52	28	14	37	1	31
11:37:00	224	0	52	28	14	37	1	31
11:38:00	224	0	52	28	14	37	1	31
11:39:00	224	0	52	28	14	37	1	31
11:40:00	224	0	52	28	14	37	1	31
11:41:00	224	0	52	28	14	37	1	31
11:42:00	224	0	52	28	14	37	1	31
11:43:00	224	0	52	28	14	37	1	31
11:44:00	224	0	52	28	14	37	1	31
11:45:00	234	0	50	9	7	35	1	27
11:46:00	212	0	48	14	4	38	1	26
11:47:00	212	0	48	14	4	38	1	26
11:48:00	212	0	48	14	4	38	1	26
11:49:00	212	0	48	14	4	38	1	26
11:50:00	212	0	48	14	4	38	1	26
11:51:00	212	0	48	14	4	38	1	26
11:52:00	212	0	48	14	4	38	1	26
11:53:00	212	0	48	14	4	38	1	26
11:54:00	212	0	48	14	4	38	1	26
11:55:00	223	0	29	9	1	39	1	26
11:56:00	224	0	39	10	1	38	1	26
11:57:00	224	0	39	10	1	38	1	26
11:58:00	224	0	39	10	1	38	1	26
11:59:00	224	0	39	10	1	38	1	26
12:00:00	224	0	39	10	1	38	1	26
12:01:00	224	0	39	10	1	38	1	26
12:02:00	224	0	39	10	1	38	1	26
12:03:00	224	0	39	10	1	38	1	26
12:04:00	224	0	39	10	1	38	1	26
12:05:00	212	14	33	2	1	37	1	26
12:06:00	212	0	27	2	1	37	1	30
12:07:00	212	0	27	2	1	37	1	30
12:08:00	212	0	27	2	1	37	1	30
12:09:00	212	0	27	2	1	37	1	30
12:10:00	212	0	27	2	1	37	1	30
12:11:00	212	0	27	2	1	37	1	30
12:12:00	212	0	27	2	1	37	1	30
12:13:00	212	0	27	2	1	37	1	30

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
12:14:00	212	0	27	2	1	37	1	30
12:15:00	212	0	36	9	1	22	1	28
12:16:00	190	0	33	5	1	35	1	29
12:17:00	190	0	46	10	1	35	1	29
12:18:00	168	0	39	9	1	34	1	29
12:19:00	168	0	38	4	1	35	1	29
12:20:00	169	0	39	8	1	22	1	30
12:21:00	168	0	39	8	1	35	1	29
12:22:00	157	0	47	5	1	29	1	29
12:23:00	168	0	37	3	1	35	1	33
12:24:00	168	0	37	3	1	35	1	33
12:25:00	168	0	37	3	1	35	1	33
12:26:00	168	0	37	3	1	35	1	33
12:27:00	168	0	37	3	1	35	1	33
12:28:00	168	0	37	3	1	35	1	33
12:29:00	168	0	37	3	1	35	1	33
12:30:00	168	0	37	3	1	35	1	33
12:31:00	168	0	37	3	1	35	1	33
12:32:00	202	0	34	16	8	36	1	33
12:33:00	202	0	20	13	8	36	1	30
12:34:00	202	0	20	13	8	36	1	30
12:35:00	202	0	20	13	8	36	1	30
12:36:00	202	0	20	13	8	36	1	30
12:37:00	202	0	20	13	8	36	1	30
12:38:00	202	0	20	13	8	36	1	30
12:39:00	202	0	20	13	8	36	1	30
12:40:00	202	0	20	13	8	36	1	30
12:41:00	202	0	20	13	8	36	1	30
12:42:00	213	0	33	17	13	36	1	29
12:43:00	191	0	45	24	13	36	1	29
12:44:00	179	0	28	17	18	35	1	30
12:45:00	168	0	45	17	20	34	1	30
12:46:00	168	0	39	19	19	36	1	30
12:47:00	168	0	39	19	19	36	1	30
12:48:00	168	0	39	19	19	36	1	30
12:49:00	168	0	39	19	19	36	1	30
12:50:00	168	0	39	19	19	36	1	30
12:51:00	168	0	39	19	19	36	1	30
12:52:00	168	0	39	19	19	36	1	30
12:53:00	168	0	39	19	19	36	1	30
12:54:00	168	0	39	19	19	36	1	30
12:55:00	213	16	41	14	7	34	1	30
12:56:00	213	0	49	15	7	35	1	31
12:57:00	213	0	49	15	7	35	1	31
12:58:00	213	0	49	15	7	35	1	31

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
12:59:00	213	0	49	15	7	35	1	31
13:00:00	213	0	49	15	7	35	1	31
13:01:00	213	0	49	15	7	35	1	31
13:02:00	213	0	49	15	7	35	1	31
13:03:00	213	0	49	15	7	35	1	31
13:04:00	213	0	49	15	7	35	1	31
13:05:00	202	0	38	16	7	36	1	31
13:06:00	201	0	25	20	9	36	1	29
13:07:00	201	0	25	20	9	36	1	29
13:08:00	201	0	25	20	9	36	1	29
13:09:00	201	0	25	20	9	36	1	29
13:10:00	201	0	25	20	9	36	1	29
13:11:00	201	0	25	20	9	36	1	29
13:12:00	201	0	25	20	9	36	1	29
13:13:00	201	0	25	20	9	36	1	29
13:14:00	201	0	25	20	9	36	1	29
13:15:00	212	0	25	16	7	36	1	29
13:16:00	213	0	25	16	8	36	1	29
13:17:00	213	0	25	16	8	36	1	29
13:18:00	213	0	25	16	8	36	1	29
13:19:00	213	0	25	16	8	36	1	29
13:20:00	213	0	25	16	8	36	1	29
13:21:00	213	0	25	16	8	36	1	29
13:22:00	213	0	25	16	8	36	1	29
13:23:00	213	0	25	16	8	36	1	29
13:24:00	213	0	25	16	8	36	1	29
13:25:00	235	0	26	13	12	32	1	33
13:26:00	213	0	35	12	12	36	1	32
13:27:00	213	0	35	12	12	36	1	32
13:28:00	213	0	35	12	12	36	1	32
13:29:00	213	0	35	12	12	36	1	32
13:30:00	213	0	35	12	12	36	1	32
13:31:00	213	0	35	12	12	36	1	32
13:32:00	213	0	35	12	12	36	1	32
13:33:00	213	0	35	12	12	36	1	32
13:34:00	213	0	35	12	12	36	1	32
13:35:00	213	0	27	16	8	36	1	32
13:36:00	213	0	33	15	8	36	1	29
13:37:00	213	0	33	15	8	36	1	29
13:38:00	213	0	33	15	8	36	1	29
13:39:00	213	0	33	15	8	36	1	29
13:40:00	213	0	33	15	8	36	1	29
13:41:00	213	0	33	15	8	36	1	29
13:42:00	213	0	33	15	8	36	1	29
13:43:00	213	0	33	15	8	36	1	29

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
13:44:00	213	0	33	15	8	36	1	29
13:45:00	252	0	38	22	9	35	1	29
13:46:00	202	0	44	18	9	35	1	30
13:47:00	191	0	31	16	4	34	1	30
13:48:00	169	0	46	15	4	37	1	30
13:49:00	169	0	46	15	4	37	1	30
13:50:00	169	0	46	15	4	37	1	30
13:51:00	169	0	46	15	4	37	1	30
13:52:00	169	0	46	15	4	37	1	30
13:53:00	169	0	46	15	4	37	1	30
13:54:00	169	0	46	15	4	37	1	30
13:55:00	169	0	46	15	4	37	1	30
13:56:00	169	0	46	15	4	37	1	30
13:57:00	235	0	36	17	11	37	1	30
13:58:00	213	0	26	18	9	37	1	30
13:59:00	191	0	30	24	13	37	1	30
14:00:00	191	0	48	22	11	37	1	30
14:01:00	191	0	48	22	11	37	1	30
14:02:00	191	0	48	22	11	37	1	30
14:03:00	191	0	48	22	11	37	1	30
14:04:00	191	0	48	22	11	37	1	30
14:05:00	191	0	48	22	11	37	1	30
14:06:00	191	0	48	22	11	37	1	30
14:07:00	191	0	48	22	11	37	1	30
14:08:00	191	0	48	22	11	37	1	30
14:09:00	246	0	29	54	29	37	24	30
14:10:00	213	0	31	47	31	38	24	30
14:11:00	213	0	31	47	31	38	24	30
14:12:00	213	0	31	47	31	38	24	30
14:13:00	213	0	31	47	31	38	24	30
14:14:00	213	0	31	47	31	38	24	30
14:15:00	213	0	31	47	31	38	24	30
14:16:00	213	0	31	47	31	38	24	30
14:17:00	213	0	31	47	31	38	24	30
14:18:00	213	0	31	47	31	38	24	30
14:19:00	246	0	43	22	13	38	1	32
14:20:00	235	0	32	22	12	38	1	32
14:21:00	235	0	32	22	12	38	1	32
14:22:00	235	0	32	22	12	38	1	32
14:23:00	235	0	32	22	12	38	1	32
14:24:00	235	0	32	22	12	38	1	32
14:25:00	235	0	32	22	12	38	1	32
14:26:00	235	0	32	22	12	38	1	32
14:27:00	235	0	32	22	12	38	1	32
14:28:00	235	0	32	22	12	38	1	32

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
14:29:00	245	0	29	37	24	36	1	32
14:30:00	202	0	30	37	23	38	1	32
14:31:00	202	0	23	32	17	38	1	32
14:32:00	202	0	23	32	17	38	1	32
14:33:00	202	0	23	32	17	38	1	32
14:34:00	202	0	23	32	17	38	1	32
14:35:00	202	0	23	32	17	38	1	32
14:36:00	202	0	23	32	17	38	1	32
14:37:00	202	0	23	32	17	38	1	32
14:38:00	202	0	23	32	17	38	1	32
14:39:00	202	0	23	32	17	38	1	32
14:40:00	257	0	29	34	24	38	1	30
14:41:00	223	0	27	36	25	37	1	30
14:42:00	223	0	27	36	25	37	1	30
14:43:00	223	0	27	36	25	37	1	30
14:44:00	223	0	27	36	25	37	1	30
14:45:00	223	0	27	36	25	37	1	30
14:46:00	223	0	27	36	25	37	1	30
14:47:00	223	0	27	36	25	37	1	30
14:48:00	223	0	27	36	25	37	1	30
14:49:00	223	0	27	36	25	37	1	30
14:50:00	234	0	28	30	14	38	1	30
14:51:00	234	0	39	31	13	38	1	35
14:52:00	234	0	39	31	13	38	1	35
14:53:00	234	0	39	31	13	38	1	35
14:54:00	234	0	39	31	13	38	1	35
14:55:00	234	0	39	31	13	38	1	35
14:56:00	234	0	39	31	13	38	1	35
14:57:00	234	0	39	31	13	38	1	35
14:58:00	234	0	39	31	13	38	1	35
14:59:00	234	0	39	31	13	38	1	35
15:00:00	246	0	8	25	22	39	1	35
15:01:00	246	0	18	26	22	39	1	35
15:02:00	246	0	18	26	22	39	1	35
15:03:00	246	0	18	26	22	39	1	35
15:04:00	246	0	18	26	22	39	1	35
15:05:00	246	0	18	26	22	39	1	35
15:06:00	246	0	18	26	22	39	1	35
15:07:00	246	0	18	26	22	39	1	33
15:08:00	246	0	18	26	22	39	1	33
15:09:00	246	0	18	26	22	39	1	33
15:10:00	246	0	27	15	15	38	1	33
15:11:00	212	0	20	21	18	38	1	33
15:12:00	190	0	25	18	22	38	1	33
15:13:00	190	0	25	19	23	38	1	33

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
15:14:00	190	0	25	19	23	38	1	33
15:15:00	190	0	25	19	23	38	1	27
15:16:00	190	0	25	19	23	38	1	27
15:17:00	190	0	25	19	23	38	1	27
15:18:00	190	0	25	19	23	38	1	27
15:19:00	190	0	25	19	23	38	1	27
15:20:00	190	0	25	19	23	38	1	27
15:21:00	190	0	25	19	23	38	1	27
15:22:00	223	0	8	17	12	40	1	27
15:23:00	201	0	16	24	13	40	1	27
15:24:00	174	0	15	2	1	40	1	27
15:25:00	174	0	15	2	1	40	1	27
15:26:00	174	0	15	2	1	40	1	27
15:27:00	174	0	15	2	1	40	1	27
15:28:00	174	0	15	2	1	40	1	27
15:29:00	174	0	15	2	1	40	1	27
15:30:00	174	0	15	2	1	40	1	27
15:31:00	174	0	15	2	1	40	1	27
15:32:00	174	0	15	2	1	40	1	27
15:33:00	192	0	41	17	10	39	1	27
15:34:00	193	0	33	27	13	37	1	27
15:35:00	193	0	33	27	13	37	1	27
15:36:00	193	0	33	27	13	37	1	27
15:37:00	193	0	33	27	13	37	1	27
15:38:00	193	0	33	27	13	37	1	27
15:39:00	193	0	33	27	13	37	1	27
15:40:00	193	0	33	27	13	37	1	27
15:41:00	193	0	33	27	13	37	1	27
15:42:00	193	0	33	27	13	37	1	27
15:43:00	159	0	26	4	1	39	1	26
15:44:00	158	0	10	7	2	30	1	26
15:45:00	158	0	10	7	2	30	1	26
15:46:00	158	0	10	7	2	30	1	26
15:47:00	158	0	10	7	2	30	1	26
15:48:00	158	0	10	7	2	30	1	26
15:49:00	158	0	10	7	2	30	1	26
15:50:00	158	0	10	7	2	30	1	26
15:51:00	158	0	10	7	2	30	1	26
15:52:00	158	0	10	7	2	30	1	26
15:53:00	160	25	17	7	2	38	1	26
15:54:00	162	0	13	5	2	38	1	30
15:55:00	162	0	13	5	2	38	1	30
15:56:00	162	0	13	5	2	38	1	30
15:57:00	162	0	13	5	2	38	1	30
15:58:00	162	0	13	5	2	38	1	30

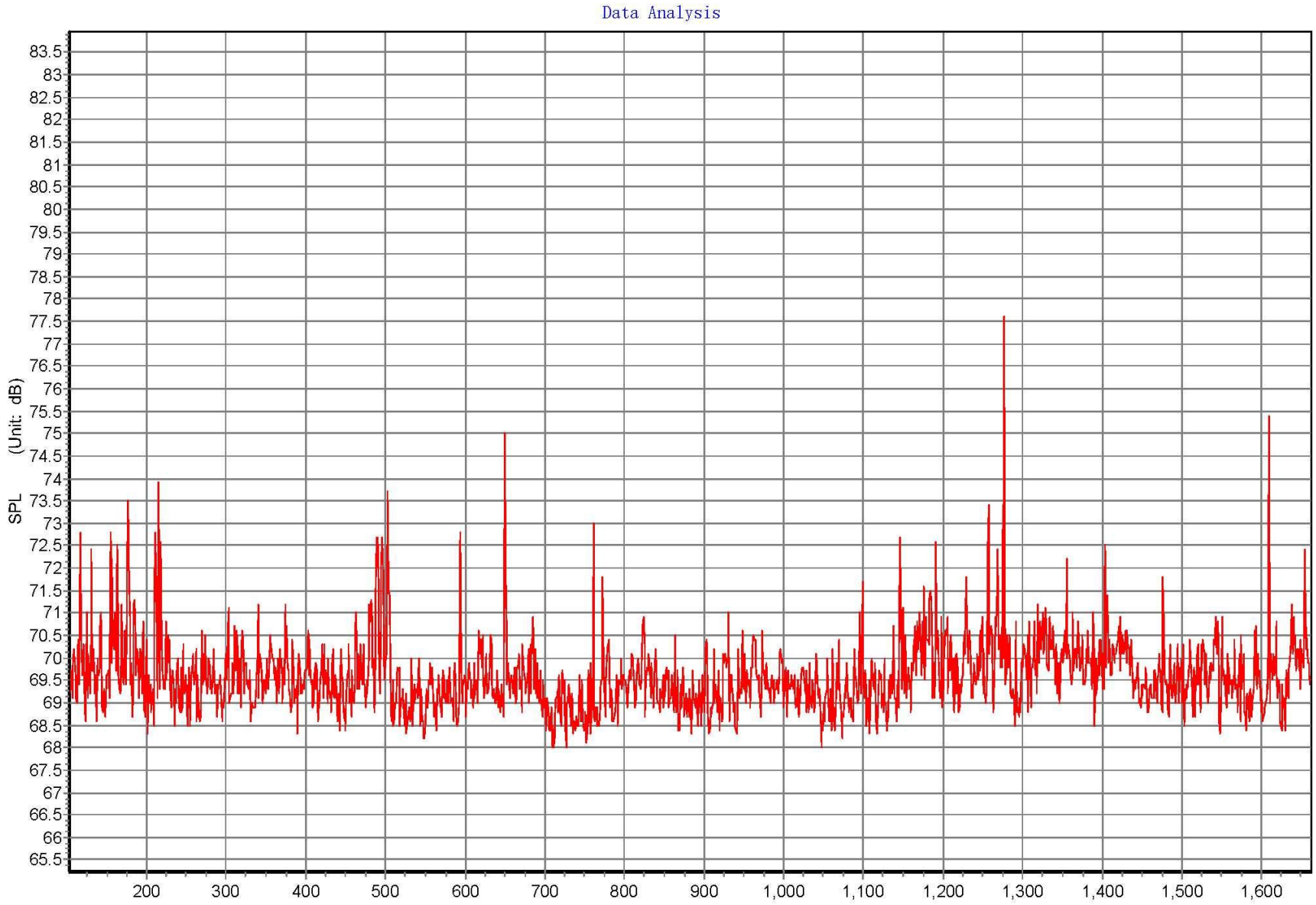
Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
15:59:00	162	0	13	5	2	38	1	30
16:00:00	162	0	13	5	2	38	1	30
16:01:00	162	0	13	5	2	38	1	30
16:02:00	162	0	13	5	2	38	1	30
16:03:00	160	0	22	7	1	39	1	31
16:04:00	149	0	20	5	1	39	1	30
16:05:00	149	0	20	5	1	39	1	30
16:06:00	149	0	20	5	1	39	1	30
16:07:00	149	0	20	5	1	39	1	30
16:08:00	149	0	20	5	1	39	1	30
16:09:00	149	0	20	5	1	39	1	30
16:10:00	149	0	20	5	1	39	1	30
16:11:00	149	0	20	5	1	39	1	30
16:12:00	149	0	20	5	1	39	1	30
16:13:00	127	0	27	9	1	38	1	31
16:14:00	126	0	35	7	8	39	1	30
16:15:00	138	0	21	8	6	39	1	30
16:16:00	127	0	17	9	4	39	1	30
16:17:00	127	0	17	9	4	39	1	30
16:18:00	127	0	17	9	4	39	1	30
16:19:00	127	0	17	9	4	39	1	30
16:20:00	127	0	17	9	4	39	1	30
16:21:00	127	0	17	9	4	39	1	30
16:22:00	127	0	17	9	4	39	1	30
16:23:00	127	0	17	9	4	39	1	30
16:24:00	127	0	17	9	4	39	1	30
16:25:00	116	0	29	12	8	38	1	31
16:26:00	137	0	26	15	7	38	1	29
16:27:00	138	0	20	19	9	38	1	32
16:28:00	137	0	32	18	12	38	1	32
16:29:00	137	0	19	18	11	37	1	28
16:30:00	137	0	27	18	13	38	1	29
16:31:00	137	0	13	18	15	38	1	32
16:32:00	137	0	23	16	15	37	1	28
16:33:00	137	0	25	14	13	38	1	34
16:34:00	137	0	27	14	11	38	1	32
16:35:00	137	0	27	14	11	38	1	32
16:36:00	137	0	27	14	11	38	1	32
16:37:00	137	0	27	14	11	38	1	32
16:38:00	137	0	27	14	11	38	1	32
16:39:00	137	0	27	14	11	38	1	32
16:40:00	137	0	27	14	11	38	1	32
16:41:00	137	0	27	14	11	38	1	32
16:42:00	137	0	27	14	11	38	1	32
16:43:00	115	0	21	13	8	38	1	29

Time	CO_2 (ppm)	CO (ppb)	NO_2 (PPb)	PM 10 µg/M^3	PM 2.5 µg/M3	RH %	SO_2 (PPb)	Tem
16:44:00	126	0	17	11	6	38	1	31
16:45:00	149	0	24	14	8	38	1	28
16:46:00	149	0	26	12	6	38	1	29
16:47:00	149	0	26	12	6	38	1	29
16:48:00	149	0	26	12	6	38	1	29
16:49:00	149	0	26	12	6	38	1	29
16:50:00	149	0	26	12	6	38	1	29
16:51:00	149	0	26	12	6	38	1	29
16:52:00	149	0	26	12	6	38	1	29
16:53:00	149	0	26	12	6	38	1	29
16:54:00	149	0	26	12	6	38	1	29
16:55:00	104	0	30	12	12	39	1	30
16:56:00	115	0	26	14	11	39	1	32
16:57:00	115	0	29	14	11	40	1	32
16:58:00	115	0	29	14	11	40	1	32
16:59:00	115	0	29	14	11	40	1	32
17:00:00	115	0	29	14	11	40	1	32
17:01:00	115	0	29	14	11	40	1	32
17:02:00	115	0	29	14	11	40	1	32
17:03:00	115	0	29	14	11	40	1	32
17:04:00	115	0	29	14	11	40	1	32
17:05:00	115	0	29	14	11	40	1	32
17:06:00	104	0	34	20	13	40	1	32
17:07:00	126	0	25	20	7	40	1	30
17:08:00	137	0	19	18	8	40	1	32
17:09:00	137	0	29	16	12	40	1	32
17:10:00	137	0	31	21	9	40	1	32
17:11:00	137	0	31	21	9	40	1	32
17:12:00	137	0	31	21	9	40	1	32
17:13:00	137	0	31	21	9	40	1	32
17:14:00	137	0	31	21	9	40	1	32
17:15:00	137	0	31	21	9	40	1	32
17:16:00	137	0	31	21	9	40	1	32
17:17:00	137	0	31	21	9	40	1	32
17:18:00	137	0	31	21	9	40	1	32
17:19:00	103	0	33	16	15	37	1	32
17:20:00	137	0	28	22	13	37	1	31
17:21:00	137	0	27	24	12	37	1	31
17:22:00	148	0	28	22	12	37	1	31
	178.36	0.12	33.16	17.07	9.67	36.56	1.52	30.11

APPENDIX D
Noise Level Result

Rec No	Mean Value	Weight	Time	Date	Data Group Index
1	74.8	A	13:35:5	03-09-18	0
2	74.9	A	13:36:0	03-09-18	0
2	72.5	A	13:37:1	03-09-18	0
3	78.5	A	13:38:2	03-09-18	0
3	74.4	A	13:39:3	03-09-18	0
4	73.8	A	13:40:4	03-09-18	0
4	72.2	A	13:41:5	03-09-18	0
5	72.9	A	13:48:10	03-09-18	0
5	71.2	A	13:49:12	03-09-18	0
6	74	A	13:50:14	03-09-18	0
6	69	A	13:51:18	03-09-18	0
7	69.5	A	13:52:20	03-09-18	0
7	70.6	A	13:53:22	03-09-18	0
8	72.2	A	13:54:24	03-09-18	0
8	69.4	A	13:55:26	03-09-18	0
9	70.6	A	13:56:0	03-09-18	0
9	73.7	A	14:0:30	03-09-18	0
10	72.9	A	14:0:33	03-09-18	0
10	75.1	A	14:0:36	03-09-18	0
11	73.4	A	14:0:39	03-09-18	0
11	73.5	A	14:0:42	03-09-18	0
12	73.8	A	14:0:45	03-09-18	0
12	74.8	A	14:0:48	03-09-18	0
13	73.7	A	14:0:51	03-09-18	0
13	74.8	A	14:0:54	03-09-18	0
14	74.6	A	14:0:57	03-09-18	0
14	74.3	A	14:1:0	03-09-18	0
15	75.1	A	14:2:3	03-09-18	0
15	73.6	A	14:3:6	03-09-18	0
16	74.1	A	14:3:9	03-09-18	0
16	75.3	A	14:4:12	03-09-18	0
17	73.4	A	14:5:18	03-09-18	0
17	73.9	A	14:6:21	03-09-18	0
18	73.9	A	14:7:24	03-09-18	0
18	75.7	A	14:8:27	03-09-18	0
19	56.9	A	14:13:33	03-09-18	0
19	60.1	A	14:14:38	03-09-18	0
20	61.4	A	14:15:43	03-09-18	0
20	58.1	A	14:15:48	03-09-18	0
21	58.3	A	14:16:53	03-09-18	0
21	58.3	A	14:17:58	03-09-18	0
22	59.4	A	14:18:3	03-09-18	0
22	68.3	A	14:19:8	03-09-18	0
23	62.2	A	14:25:41	03-09-18	0
23	67.6	A	14:26:47	03-09-18	0
24	64.8	A	14:27:53	03-09-18	0

Rec No	Mean Value	Weight	Time	Date	Data Group Index
24	64.6	A	14:28:59	03-09-18	0
25	65.5	A	14:29:5	03-09-18	0
25	60.9	A	14:30:11	03-09-18	0
26	61.1	A	14:30:17	03-09-18	0
27	58.1	A	14:30:23	03-09-18	0


Data Analysis
SPL (Unit: dB)
83.5
83
82.5
82
81.5
81
80.5
80
79.5
79
78.5
78
77.5
77
76.5
76
75.5
75
74.5
74
73.5
73
72.5
72
71.5
71
70.5
70
69.5
69
68.5
68
67.5
67
66.5
66
65.5
200
300
400
500
600
700
800
900
1,000
1,100
1,200
1,300
1,400
1,500
1,600

APPENDIX E
Light Result

MYANWEI CONSULTING GROUP

No.28, Myay Nu Street, Myay Ni Gone Block, Sanchaung Township, Yangon Region, Republic of the Union of Myanmar.
Office: (+95) 1 526574 , Mobile: (+95)-9775405118, 9792526877, 9449251888

Project Overview

A. General

Project Name:	Environmental Management Plan Report of Myanmar Xiang Rui Fashion Co., Ltd.
Project Location:	Plot No. 152, Myay Taing Block No. 51, Thardukan Industrial Zone, Shwe Pyi Thar
Person in Charge:	Mr. Lin Htet Sein
Sampling Source:	Operation area
Sampling Date:	3. 9.2018
Sampling Time:	From 10:00 to 13:00 (GMT +6:30)
Sampling Condition:	Good
Sampling By:	Environmental Team Represented By Myanmar Consulting Group Co.,Ltd.

B. Equipment

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

C. Raw Data

Area	Time of Activity	Luminance (LUX)	Standard
Cutting	Operation period	1470	500-750-1000
Sewing 1		1250	750-1000-1500
Sewing 2		1260	
Sewing 3		1280	
Sewing 4		1250	
Sewing 5		1220	
Sewing 6		1300	
Sewing 7		1310	
Ironing		1360	500-750-1000
Packing		1430	200-300-500
Final Inspection		1740	1000-1500-2000

D. Personnel

	Name	Designation	Signature
Recorded By	Mr. Zin Min Aung	Operations Assistant	
Recorded By	Ms. Shwe Zin Tun	Operations Assistant	
Checked By	Mr. Lin Htet Sein	Environmental Consultant	

Approved & Checked By

Mr. Lin Htet Sein
Environmental Consultant

Dr. Hein Lynn Aung
Director

APPENDIX F
Public Consultation

Invitation Letter

MYANWEI CONSULTING GROUP
No.28, Myay Nu Street, Myay Ni Gone Block, Sanchaung Township, Yangon Region, Republic of the Union of Myanmar.
Office: (+95) 1 526574 , Mobile: (+95)-9775405118, 9792526877, 9449251888

သို့/

နေ့စွဲ။ ၂၀၁၈ ခုနှစ်၊ စက်တင်ဘာလ၊ ( )ရက်

အကြောင်းအရာ။ Myanmar Xiang Rui Fashion Co., Ltd. (CMP)စနစ် အထည်ချုပ်စက်ရုံ အတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (မူကြမ်း) အတွက် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးပွဲ ဖိတ်ကြားခြင်း။

ရည် ညွှန်း ချက်။ သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးပွဲ အခမ်းအနားအစီအစဉ်

Myanmar Xiang Rui Fashion Co., Ltd. စက်ရုံအတွက်၊ ၂၀၁၅ ခုနှစ် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်းများအရ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် Environmental Management Plan (EMP) ပြုလုပ်ရန် လိုအပ်ကြောင်း ညွှန်ကြားခဲ့ပါသည်။ ထို့ကြောင့် EMP အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်းဖြစ်သော မြန်ဝေကွန်ဆော့တင်း ကုမ္ပဏီလီမိတက် (Myanwei Consulting Co., Ltd.)မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။ ယခုအချိန်တွင် EMP မူကြမ်းကို ရေးဆွဲပြီး ဖြစ်ပါသဖြင့် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးပြီး အကြံပြုချက်၊ သဘောထားမှတ်ချက်များကို ရယူရန်အတွက် တွေ့ဆုံဆွေးနွေးပွဲကို ပြုလုပ်ခြင်းဖြစ်ပါသည်။ ထို့ကြောင့် တွေ့ဆုံဆွေးနွေးပွဲကို ၂၀၁၈ ခုနှစ်၊ စက်တင်ဘာလ၊ ၂၄ ရက်နေ့တွင် အမှတ် (၁၅၂)၊ ဥဿဘုရားလမ်း၊ သာဓုကန်စက်မှုဇုန်၊ ရွှေပြည်သာမြို့နယ်ရှိ စက်ရုံအစည်းအဝေးခန်းမတွင် နေ့လည် ၁ နာရီ ၃၀ မိနစ်မှ၊ ၃ နာရီ အချိန်ထိ ပြုလုပ်မည်ဖြစ်ပါသဖြင့် လူကြီးမင်းတို့အား တက်ရောက်အကြံပေးနိုင်ပါရန် လေးစားစွာဖြင့် ဖိတ်ကြားအပ်ပါသည်။

လေးစားစွာဖြင့်

ပတ်ဝန်းကျင်ထိခိုက်မှုဆိုင်ရာ အကြံပေးပုဂ္ဂိုလ်
ဦးလင်းထက်စိန် (Myanwei Consulting Co., Ltd.)
ရုံးဖုန်း - ၀၁ ၅၂၆၅၇၄၊ လက်ကိုင်ဖုန်း - ၀၉ ၄၂၁၁၃၇ ၅၆၉

Attendant List

တွေ့ဆုံဆွေးနွေးပွဲ အခမ်းအနားသို့ တက်ရောက်သူစာရင်း

နေ့စွဲ - ၂၄ ရက်၊ စက်တင်ဘာလ၊ ၂၀၁၈ ခုနှစ်

စဉ်	အမည်	ရာထူး	ဌာန / အဖွဲ့အစည်း	ဆက်သွယ်ရန်	လက်မှတ်
၁။	ဦးဇော်ဝင်းမြ။	ဌာနခွဲမှူး။	စက်မှုကြီးကြပ်	0973086170	
	Bran Gong	Administrator	Administration	0978181?635	
	Mya Myat Moe	Administrator.	Adimistration	0944166683	
	Zu Dan	Alloundant	allount	0978078877	
	Ma San San Aye	P.M		09786519027	
	Ma Su Mon Kyaw	Nurse		09 795646956	
	Ma Htike Htike Htun	H. R Manager	H.R. Department	09-253038693	

တွေ့ဆုံဆွေးနွေးပွဲ အခမ်းအနားသို့ တက်ရောက်သူစာရင်း

နေ့စွဲ - ၂၄ ရက်၊ စက်တင်ဘာလ၊ ၂၀၁၈ ခုနှစ်

စဉ်	အမည်	ရာထူး	ဌာန / အဖွဲ့အစည်း	ဆက်သွယ်ရန်	လက်မှတ်
1.	Dr Zaw Zaw Aung.	Director.	Myanwei Consulting Co., Ltd.	09792526579.	
2.	Thida Lwin	Consultant	Myanwei Consulting Co., Ltd	09-777914466	
3.	Lin Htet Soin	Env. consultant	Myanmei Consulting Co., Ltd.	09-421137569.	

Presentation slide

Myanmar Xiang Rui Fashion Co., Ltd. (CMP) စနစ်ဖြင့် အထည်ချုပ်လုပ်ငန်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာ (မူကြမ်း) အတွက် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးပွဲ

Myanwei Consulting Co., Ltd.

၂၄ ရက်၊ စက်တင်ဘာလ၊ ၂၀၁၈ ခုနှစ်

အစည်းအဝေး အကြောင်းအရာ

၁။ Myanmar Xiang Rui Fashion Co., Ltd. အား မိတ်ဆက်ခြင်း

၂။ စက်ရုံအကြောင်းအရာ ဖော်ပြချက်

၃။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အား မိတ်ဆက်ခြင်း

၄။ သက်ရောက်မှုဆန်းစစ်ခြင်း ရလဒ်များနှင့် ထိခိုက်မှုအဆင့် သတ်မှတ်ချက်များ

၅။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်

၁) Myanmar Xiang Rui Fashion Co., Ltd.အား မိတ်ဆက်ခြင်း

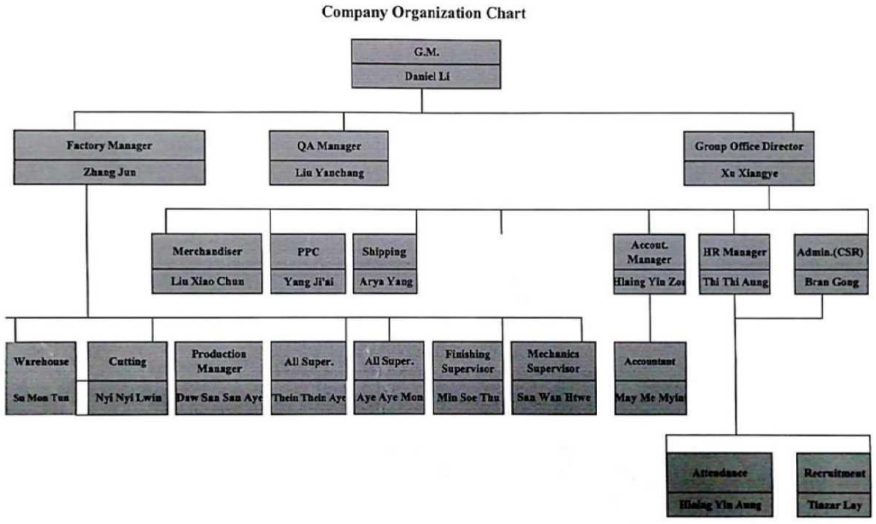
Myanmar Xiang Rui Fashion Co., Ltd.

- Myanmar Xiang Rui Fashion Co., Ltd. သည် တရုတ်ပြည်ရှိ Xiang Rui Internation Trading Co., Ltd. မှ လက်ခစား (CMP) စနစ်ဖြင့် အထည်အမျိုးမျိုးချုပ်လုပ်ခြင်း လုပ်ငန်းအတွက် မြန်မာနိုင်ငံတွင် ရင်နှီးမြှုပ်နှံသော ကုမ္ပဏီအသစ်ဖြစ်ပါသည်။
- ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီမှ ခွင့်ပြုချက်ကို ၁၈ ရက်၊ ဩဂုတ်လ၊ ၂၀၁၈ ခုနှစ်တွင် ရရှိခဲ့ပြီးဖြစ်ပါသည်။

စီမံကိန်းအကြောင်းအရာအကျဉ်း

လုပ်ငန်းအမျိုးအစား	(CMP) လက်ခစားစနစ်ဖြင့် အထည်အမျိုးမျိုး ထုတ်လုပ်သည့် လုပ်ငန်း
ရင်းနှီးမြှုပ်နှံမှု	၁၀၀ ရာခိုင်နှုန်း နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု
မြေအမျိုးအစား	စက်မှုနယ်မြေ
မြေဧရိယာ	၄၅၀ ပေ × ၁၁၀ ပေ
အဆောက်အဦ	၃၀၀ ပေ × ၇၇ ပေ (စက်ရုံတစ်ထပ်အဆောက်အဦ) (ရုံးခန်း နှစ်ထပ်အဆောက်အဦ သီးသန့်ပါရှိသည်)
မြေငှားနှစ်	နှစ် ၅၀
ပြုပြင်ရေးကာလ	၂ နှစ်
လုပ်ငန်းလည်ပတ်သည့်ကာလ	နှစ် ၅၀ ရင်းနှီးမြှုပ်နှံမှု
စက်ရုံလိပ်စာ	မြေကွက်အမှတ် (၁၅၂)၊ မြေတိုင်းအမှတ် (၅၁)၊ သာဓုကန်စက်မှုနယ်မြေ၊ ရွှေပြည်သာမြို့နယ်၊ ရန်ကုန်မြို့။

Myanmar Xiang Rui Fashion Co., Ltd. ၏ ဖွဲ့စည်းပုံ



၂) စက်ရုံအကြောင်းအရာ ဖော်ပြချက်

စက်ရုံတည်နေရာ

စက်ရုံတည်ရှိမှုပုံစံ

စုစုပေါင်းမြေဧရိယာ ၄၅၀'×၁၁၀'
ပင်မအဆောက်အအုံ အကျယ်အဝန်း ၃၀၀'×၇၇'
လူဦးရေ ၁၀၀ (ပထမနှစ်)၊ ၆၀၀ (အများဆုံး)
ထုတ်လုပ်မှု ပမာဏ ၂ ၄၀၀ ၀၀၀ (ပထမနှစ်)၊ ၁၃ ၃၈၀ ၀၀၀(အများဆုံး)

စက်ရုံအတွက်အသုံးပြုမှု

ဧရိယာသုံးပြုမှု	ရေသန့်စက်နှင့် ဧရိယာ
လျှပ်စစ်အသုံးပြုမှု	၅၀၀ KVA Transformer ၅၅၀ KVA မီးစက်
ဘွိုင်လာ	တစ်နာရီ ၄၀ Kg ရေနွေးငွေ့ထုတ်နိုင်သော လျှပ်စစ် ဘွိုင်လာ နှစ်လုံး

ထုတ်လုပ်မှုအဆင့်ဆင့်

ပိတ်ဖြတ်လိုင်း → စက်ချုပ်လိုင်း → စစ်ဆေးခြင်းနှင့် ပြင်ဆင်ခြင်း → အဆုံးသတ်ခြင်း (မီးပူတိုက်၊ တံဆိပ်ကပ်၊စသည်ဖြင့်) → ထုတ်ပိုးခြင်း → အဆုံးသတ်စစ်ဆေးခြင်း နှင့် နိုင်ငံခြားပို့ခြင်း






စွန့်ပစ်ပစ္စည်းထုတ်လွှတ်မှု

- စက်ရုံမှထွက်သော စွန့်ပစ်ပစ္စည်း
  - ပိတ်ဖြတ်စ ပျမ်းမျှ ၂၀ kg (တစ်ရက်)
  - ဘွိုင်လာစွန့်ထုတ်ရေ ၀.၀၂ m³ (တစ်ရက်)
- လုပ်သားမှထွက်သော စွန့်ပစ်ပစ္စည်း
  - အမှိုက်၊ ၀.၁၆ × ၆၀၀ = ၉၆ kg (တစ်ရက် ၁၀ နာရီအလုပ်ချိန်)
  - စွန့်ပစ်ရေ၊ ၀.၀၄၁၇ × ၆၀၀ = ၂၅ m³ (တစ်ရက် ၁၀ နာရီအလုပ်ချိန်)

ကုန်ကြမ်း အထည်အလိပ်
လျှပ်စစ်စွမ်းအင်
ဘွိုင်လာမှ အပူနှင့်ရေခွေးငွေ့
မီးစက်မှ ယာယီစွမ်းအင်
မြေအောက်ရေ

→ Myanmar Xiang Rui Fashion Co., Ltd., Garment Manufacturing →

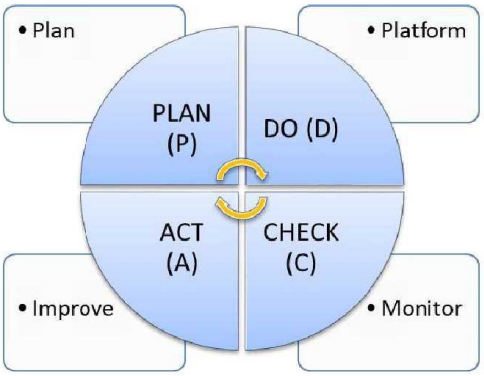
ယာယီအသုံးပြုသောမီးစက်မှ အခိုးအငွေ့ထွက်ရှိမှု
ဘွိုင်လာမှ စွန့်ထုတ်ရေ
စွန့်ပစ်ပစ္စည်း
အဝတ်အထည်အမျိုးမျိုး

၃) ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အားမိတ်ဆက်ခြင်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်ပြုလုပ်ခြင်း

- ၂၀၁၅ ခုနှစ် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်းများအရ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် ပြုလုပ်ရန် လိုအပ်ကြောင်း ညွှန်ကြားခဲ့ပါသည်။
- ထို့ကြောင့် EMP အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်းဖြစ်သော မြန်ဝေ ကွန်ဆော့တင်း ကုမ္ပဏီလီမိတက် (Myanwei Consulting Co., Ltd.)မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။
- EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် Myanmar Xiang Rui Fashion Co., Ltd. သည် စက်ရုံတွင် ကျန်းမားရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် လျော့ချရေး၊ ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုတို့အတွက် အဖွဲ့အစည်းတစ်ခုထားရှိပြီး စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော် ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

စီမံခန့်ခွဲမှုပုံစံ



(P) အစီအစဉ်ရေးဆွဲခြင်း

စီမံကိန်းဆောင်ရွက်သည့်ကာလတလျှောက် EMP အစီအစဉ်ကို စံချိန်စံညွှန်းများနှင့်အညီ စနစ်တကျရေးဆွဲခြင်း

(D) အကောင်အထည်ဖော်ခြင်း

စီမံကိန်းမှ EMP အစီအစဉ်များကို အကောင်အထည်ဖော် ဆောင်ရွက်ခြင်း

(C) စောင့်ကြပ်ကြည့်ရှုခြင်း

သက်ဆိုင်ရာပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုသူများမှ စစ်ဆေးမှတ်တမ်းရယူခြင်း၊

(A) စစ်ဆေးခြင်း

စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးပြီးရလဒ်များကို ပိုမိုကောင်းမွန်သော အခြေအနေသို့ရောက်ရှိရန် ပြုပြင်မွမ်းမံခြင်း ။

၄) သက်ရောက်မှုဆန်းစစ်ခြင်း ရလဒ်များနှင့် ထိရိုက်မှုအဆင့် သတ်မှတ်ချက်များ

လေအရည်အသွေးတိုင်းတာခြင်း

- စက်ရုံအတွင်းတိုင်းတာမှု= ၃၊ ၉၂၂၀၈
- CO, CO2, SO2, NO2, PM, Temp, HR

Parameters	Observed value	Guideline value	Unit	Organization	Averaging period
CO_2	178.36	5000	ppm	NAAQS	8 hrs
CO	0.12	35	ppm	ACGIH	8 hrs
NO_2	33.16	200	µg/m^3	NEQG	8 hrs
SO_2	1.52	20	µg/m^3	NEQG	8 hrs
PM_{10}	17.07	50	µg/m^3	NEQG	8 hrs
$PM_{2.5}$	9.67	25	µg/m^3	NEQG	8 hrs

NEQG= National Environmental Quality (Emission) Guideline
NAAQS = National Ambient Air Quality Standards were developed by the U.S. EPA
ACGIH = the American Council of Governmental Industrial Hygienists recommends

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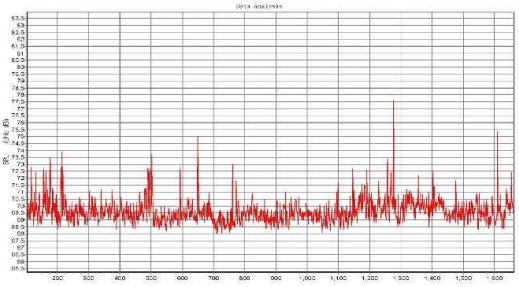
ဆူညံသံတိုင်းတာမှု

- စက်ရုံအတွင်းတိုင်းတာမှုကို ၃၊ ၉၂၂၀၈ တွင်ပြုလုပ်ခဲ့ပါသည်
- တိုင်းတာမှုရလဒ်=၆၉.၇၂ dBA



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အလင်းရောင်တိုင်းတာမှု

- စက်ရုံအတွင်းတိုင်းတာမှုကို ၃၊ ၉၊၂၀၁၈ တွင်ပြုလုပ်ခဲ့ပါသည်

No	Location	Measure value(Lux)	Standard*
1	Cutting	1470	1000
2	Sewing Line 1	1250	400
3	Sewing Line 2	1260	400
4	Sewing Line 3	1280	400
5	Sewing Line 4	1250	400
6	Sewing Line 5	1220	400
7	Sewing Line 6	1300	400
8	Sewing Line 7	1310	400
9	Ironing section	1360	600
10	Packing Section	1430	600
11	Final Inspection room	1740	900 (except 1500 at audit tables)

သက်ရောက်မှုအဆင့်သတ်မှတ်ပုံ

စီမံကိန်းကာလတွင် ဖြစ်နိုင်ခြေရှိသော ထိခိုက်မှုများကို အဆင့်သတ်မှတ်ချက် (၄) ခုဖြင့် ခွဲခြားသတ်မှတ်ထားပါသည်။ ၄င်းတို့မှာ-

၁။ က-: သိသာသော ဆိုးကျိုးသက်ရောက်မှု

က+: သိသာသော ကောင်းကျိုးသက်ရောက်မှု

၂။ ခ-: ဆိုးကျိုးသက်ရောက်မှု အချို့ရှိခြင်း

ခ+: ကောင်းကျိုးသက်ရောက်မှု အချို့ရှိခြင်း

၃။ ဂ: အကျိုးသက်ရောက်မှု မရှင်းလင်းသဖြင့် ထပ်မံလေ့လာသင့်သည်

၄။ ဃ: အကျိုးသက်ရောက်မှု မရှိသလောက်ဖြစ်သည်

ညစ်ညမ်းမှု

လေထုအရည်အသွေး	ဂ	• မီးစက်နှင့် စက်ရုံသုံးယာဉ်များကြောင့် ပတ်ဝန်းကျင်လေထုကို ထိခိုက်စေပါသည် • မီးစက်မှထွက်သော အခိုးအငွေ့တွင် SO, NO, CO, VOC and PM များပါဝင်ခြင်းကြောင့် ပတ်ဝန်းကျင်ကို ထိခိုက်မှုဖြစ်စေပါသည်။ • စက်ရုံတွင် မီးစက်အသုံးပြုချိန်မှာ ပင်မလျှပ်စစ်မီးပျက်တောက်ချိန် သာဖြစ်ပါသည်။
ပတ်ဝန်းကျင်ရေထုအရည်အသွေး	ဂ	• စက်ရုံ၏ ကုန်ပစ္စည်းထုတ်လုပ်မှုမှ ရေဆိုးထွက်ရှိခြင်းမရှိပါ။ • ဝန်ထမ်းများအသုံးပြုပြီးသော ရေသာထွက်ခြင်းရှိပါသည်။
ဆူညံမှု	ဂ	• စက်ရုံအတွင်းဆူညံသံတိုင်းတာမှုရလဒ်များအရ အနည်းငယ်ဆူညံမှုရှိကြောင်း • ထိုဆူညံမှုမှာလည်း စက်ရုံအတွင်း လုပ်ငန်းခွင်အတွင်းသာဖြစ်ပြီး စက်ရုံပြင်ပ ပတ်ဝန်းကျင်ကို မထိခိုက်နိုင်ပါ။
အန္တရာယ်	ဃ	• စက်ရုံတွင် အန္တရာယ်ထွက်ရှိမှု လုံးဝမရှိပါ။
စွန့်ပစ်အမှိုက်	ခ	• စက်ရုံမှထွက်ရှိသောအမှိုက်မှာ ပိတ်ဖြတ်စများ၊ ပိတ်လိပ်ရာတွင်အသုံးပြုသော စက္ကူလိပ်များ၊ အထည်ထုတ်ပိုးရာတွင် အသုံးပြုသော ပလတ်စတစ်အိတ်၊ စက္ကူဖာ၊ အစရှိသည်တို့ဖြစ်ပါသည်။ • ဝန်ထမ်းများမှ ထွက်ရှိသော ရေသန့်ဘူးခွန်၊ ပလက်စတစ်အိတ်၊ စက္ကူ၊ tissue၊ စားကြွင်းစားကျန်၊ အစရှိသော လူသုံးအမှိုက်များ ဖြစ်ပါသည်။

ဝန်ထမ်းကျန်းမာရေးနှင့် အန္တရာယ်ကင်းရှင်းရေး

ကူးစက်ရောဂါ။ ဥပမာ ARI, Flu, etc.	ဂ	• ဖြစ်နိုင်ခြေနည်းပါးသော်လည်း လုပ်သားအင်အားဖြင့် လည်ပတ်သော စက်ရုံအမျိုးအစား ဖြစ်သောကြောင့် စက်ရုံတွင် ကျန်းမာရေး အသိပညာပေးမှုနှင့် ကျန်းမာရေး စောင့်ရှောက်မှုရှိရန် လိုအပ်ကြောင်း တွေ့ရှိခဲ့ပါသည်။
လုပ်ငန်းခွင်အန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေး	ဂ	• ထိခိုက်မှုနည်းသော လုပ်ငန်းအမျိုးအစားဖြစ်သော်လည်း လူမှုဖူလုံရေးမှ ညွှန်ကြားထားသော စည်းမျဉ်း၊ စည်းကမ်းများကို လိုက်နာရမည်ဖြစ်ပါသည်။
အနီးနားဝန်းကျင် အန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေး	ဃ	ထိခိုက်မှုတစ်စုံတရာမတွေ့ရပါ။

လူမှုဘဝ အခြေအနေ

စားဝတ်နေရေးနှင့် စီပွားရေး	က+	• လုပ်သားပြည်သူ အလုပ်အကိုင်အခွင့်အလမ်းများ တိုးပွားလာခြင်း၊ • သာမန်လုပ်သားဘဝမှ ကျွမ်းကျင်ဝန်ထမ်းဘဝသို့ တက်လှမ်းနိုင်ခြင်း အစရှိသည့်ကောင်းကျိုးများရှိစေနိုင်သည်။
ကလေးလုပ်သား	ယ	• စက်ရုံတွင် ကလေးလုပ်သားအသုံးပြုမှု လုံးဝမရှိပါ • မြန်မာနိုင်ငံ၏ အလုပ်သမား ဥပဒေအရ ၁၈ နှစ် အထက်သာလုပ်သား ခန့်အပ်ခွင့်ရှိကြောင်းကိုလည်း သိရှိပြီးဖြစ်သည်။ • ထို့ကြောင့် စက်ရုံတွင် ကလေးလုပ်သား ခန့်ထားခွင့်ကို တားမြစ်ထားပါသည်
ယဉ်ကျေးမှုနှင့် ရှေးဟောင်းနယ်မြေ	ယ	• စက်ရုံသည် ရှေးပြည်သာမြို့နယ်ရှိ သာဓုကန်စက်မှုနယ်မြေတွင် တည်ရှိသောကြောင့် ထိခိုက်မှုတစ်စုံတရာ မတွေ့ရပါ။
သဘာဝ ပတ်ဝန်းကျင် အခြေအနေ	ယ	• ကန့်သတ်ကြိုးဝိုင်းမရှိပါ၊ • အနီးအနားတွင် သဘာဝမြစ်ချောင်းအင်းအိုင် မတွေ့ရပါ • အစိုးရ၏ ကန့်သတ်စက်မှုနယ်မြေအတွင်းတွင် စက်ရုံတည်ရှိခြင်းဖြစ်သည်

အရေးပေါ် အခြေအနေ

မီးဘေးအန္တရာယ်	ခ-	• မတော်တဆမှု၊ ပေါ့ဆမှု၊ လျှပ်စစ်၊ အစရှိသည်တို့မှ ဖြစ်ပေါ် စေနိုင်ပါသည်။
ရေကြီးရေလျှံမှု	ဂ	• မိုးကြီးခြင်း၊ မုန်တိုင်းတိုက်ခြင်း စသည်ဖြင့်ဖြစ်ပေါ် စေနိုင်ပါသည်။
ငလျင်	ဂ	• ငလျင်ဒဏ်မခံနိုင်သော အဆောက်အဦ တည်ဆောက်မှု ပုံစံကြောင့် ထိခိုက်ပျက်စီးမှုဖြစ်စေနိုင်ပါသည်။
တခြားကလွဲ		
ကမ္ဘာကြီးပူနွေးလာမှု	ခ-	• စက်ရုံသုံးယာဉ်များ၊ မီးစက် အစရှိသော စွမ်းအင် လောင်ကျွမ်းခြင်း တို့ကြောင့် ဖန်လုံအိမ်ခါတ်ငွေ့ ထုတ်လွှတ်မှုဖြစ်စေပြီး ကမ္ဘာကြီးပူနွေးမှု ဖြစ်စေသည်။

၅) ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်

ပတ်ဝန်းကျင်ဆိုင်ရာ ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေရန် စီမံခန့်ခွဲမှုအစီအစဉ်များ

၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၂။ ဆူညံမှုထိန်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၃။ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၄။ အန္တရာယ်ရှိသည့်ပစ္စည်းများ ထိန်းသိမ်းရေးဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၅။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၆။ အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်

၇။ လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ် CSR Plan

၈။ စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်

၉။ EMP အတွက် ငွေကြေးမျှဝေသုံးစွဲမှု အစီအစဉ်

လေထုညစ်ညမ်းမှုလျော့ချရေးနှင့် စီမံခန့်ခွဲမှု အစီအစဉ်

- စက်ရုံတွင် မီးစက်အတွက် သင့်တင့်သော မီးခိုးခေါင်းတိုင်ထားရှိခြင်း၊
- ခေါင်းတိုင်အား အမြင်ကောင်းမွန်သော အခြေအနေတွင် ပြုပြင်ထားရှိခြင်း၊
- NOx ထွက်ရှိမှု နှုန်းနည်းသော နည်းပညာဖြင့် မီးစက်ကို အသုံးပြုခြင်း၊
- စက်ရုံတွင် (open burning) မီးရှို့ခြင်းမပြုလုပ်ရန် တားမြစ်ထားခြင်း၊
- ဖုံထွက်သောနေရာတွင် အလုပ်လုပ်သော လုပ်သားများအတွက် နာခေါင်းစီးများ ဝတ်ဆင်စေခြင်း၊
- စက်ရုံအတွင်းနှင့် အနီးအနားတွင် သစ်ပင်စိုက်ပျိုးခြင်းဖြင့် Carbon ထွက်ရှိမှုကို လျော့ချစေပြီး လေထုညစ်ညမ်းမှုကို လျော့ချစေပါသည်။

ဆူညံမှုလျော့ချရေးနှင့် စီမံခန့်ခွဲမှု

- ဆူညံသံများသော မီးစက်ခန်းနှင့် လေမှုတ်စက်ခန်း အစရှိသည်တို့ကို သီးသန့်ခန်းထားရှိခြင်း။
- လုံလောက်သော တစ်ကိုယ်ရေသုံး ကာကွယ်ရေးပစ္စည်းများ ထောက်ပံ့ပေးခြင်း။
- လုပ်သားများကို သင့်တင့်သော သင်တန်းများပို့ချပေးခြင်း

အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲခြင်း

- စက်ရုံမှ မည်သည့်အမှိုက်ကိုမဆို အနီးအနားရှိ ရေမြောင်း၊ ရေကန်၊ ချောင်း၊ မြစ် အစရှိသည့်နေရာများတွင် မစွန့်ပစ်ရန် တားမြစ်ထားသည်။
- စက်ရုံတွင် စနစ်တကျ အမှိုက်စွန့်ပစ်ရန် အမှိုက်ပုံးများထားရှိပေးသည့်အပြင် စနစ်တကျစွန့်ပစ်ရန် တိုက်တွန်းထားခြင်း။
- စက်လိုင်းများတွင်လည်း ပိတ်စများပစ်ရန် ပုံးများထားရှိခြင်း။
- အမှိုက်ပုံးများကိုလဲ အလွယ်တကူစွန့်ပစ်နိုင်ရန် သင့်တင့်သောနေရာများတွင် ထားပေးခြင်း။
- အမှိုက်များကို စည်ပင်သာယာရေးကော်မတီသို့ အကြောင်းကြားပြီး တစ်ပတ်လျှင် တစ်ကြိမ်စွန့်ပစ်ပါသည်။



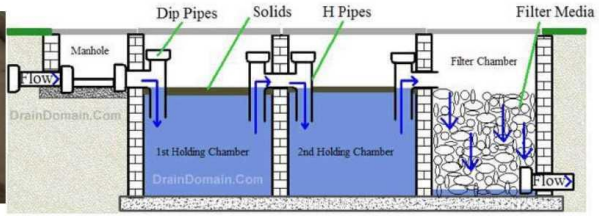
အန္တရာယ်ရှိပစ္စည်း ထိန်းသိမ်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု

- စက်ရုံတွင် ဓာတုပစ္စည်းနှင့် လောင်စာဆီများကို သင့်တော်သည့်အခန်း ဖွဲ့စည်းပြီး သိုလှောင်ထားခြင်း။
- အသုံးပြုပြီးဘူးခွန်များကိုလည်း စနစ်တကျထိန်းသိမ်းပြီး ပြန်လည်အသုံးပြုသူများသို့ ရောင်းချခြင်း။
- လုံလောက်သော တစ်ကိုယ်ရေသုံး ကာကွယ်ရေးပစ္စည်းများ ထောက်ပံ့ပေးခြင်း။

ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု

- မိလ္လာကန်နှင့် စွန့်ပစ်ရေမြောင်းများကို အဖုံးအကာများဖြင့် ထားရှိခြင်း။
- စက်ရုံရေမြောင်းများကို အမှိုက်စွန့်ပစ်မှု မရှိစေရန်တားမြစ်ခြင်းနှင့် ရေစီးရေလာကောင်းမွန်ရန် စီစဉ်ထားခြင်း။





အရေးပေါ်တုံ့ပြန်ရေး အစီအစဉ်

- အရေးပေါ်တုံ့ပြန်ရေး အစီအစဉ်အတွက် စက်ရုံတွင် ကောင်းမွန်စွာစီမံထားပြီးဖြစ်သည်။
- မီးဘေးကာကွယ်ရေးအတွက် မီးသတ်ဆေးဘူး၊ မီးသတ်ပိုက်၊ အရေးပေါ်အချက်ပေးစနစ်၊ အရေးပေါ်ဆက်သွယ်နိုင်သည့် လိပ်စာများကို နေရာတိုင်းတွင် တပ်ဆင်ထားပြီးဖြစ်သည်
- အရေးပေါ်အခြေအနေတွင်လည်း စနစ်တကျပြုလုပ်နိုင်ရန် သင်တန်းများလည်း ပို့ချပေးမည်ဖြစ်သည်။
- စက်ရုံတွင် အရေးပေါ်ကာကွယ်ရေးအဖွဲ့၊ မီးသတ်အဖွဲ့ စသည့်ဖြင့် ဖွဲ့စည်းခြင်း ဆွေးနွေးခြင်း၊ အသိပညာပေးခြင်း၊ စသည်ဖြင့် ပြုလုပ်ရန် ဖြစ်သည်။



အရေးပေါ် ထွက်ပေါက်လမ်းညွှန်မြေပုံ

လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု (CSR) အစီအစဉ်

Myanmar Xiang Rui Fashion Co., Ltd. တွင် CSR အတွက် အမြတ်ငွေ၏ ၂ % နှုန်းကို ကျန်းမာရေး၊ ပညာရေး၊ နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေး၊ ပတ်ဝန်းကျင် ကာကွယ်စောင့်ကြည့်ခြင်း တို့အတွက် အသုံးပြုသွားမည် ဖြစ်သည်။

ကျန်းမာရေး	ဝန်ထမ်းများ ကျန်းမာရေး စောင့်ရှောက်မှု	၀.၆ %
ပညာရေး	ပညာရေးကဏ္ဍ မြှင့်တင်ရေးနှင့် လူ့အခွင့်အရေး အသိပညာပေးခြင်း	၀.၆ %
နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေး	ဒေသတွင်း လိုအပ်သကဲ့သို့ လှူဒါန်းခြင်း	၀.၄ %
ပတ်ဝန်းကျင် ကာကွယ် စောင့်ကြည့်ရေး	ပတ်ဝန်းကျင် အရည်အသွေးများ ထိန်းသိမ်းရန်	၀.၄ %

စောင့်ကြပ်ကြည့်ရှုရေး

ကဏ္ဍ	အမျိုးအစား	နေရာ	ကြိမ်နှုန်း	တာဝန်ရှိသူ
လေအရည်အသွေး	SO_2, NO_x, CO_2, CO and PM	မီးစက်ခေါင်းတိုင်အနီး	တစ်နှစ် တစ်ကြိမ်	ပတ်ဝန်းကျင်ဆိုင်ရာအကြံပေးနှင့် ပူးပေါင်း၍ (စက်ရုံတာဝန်ရှိသူ)
ဆူညံမှု	ဆူညံမှု ပမာဏ	စက်ရုံလုပ်ငန်းခွင်အတွင်း	တစ်နှစ် နှစ်ကြိမ်	ပတ်ဝန်းကျင်ဆိုင်ရာအကြံပေးနှင့် ပူးပေါင်း၍ (စက်ရုံတာဝန်ရှိသူ)
စွန့်ပစ်ပစ္စည်း	စက်ရုံမှထွက်သည့် အမှိုက် ဝန်ထမ်းစွန့်ပစ်အမှိုက်	စက်ရုံတွင် ယာယီစွန့်ပစ်သည့် နေရာနှင့် ပြင်ပသို့စွန့်ပစ်သည့် စစ်တမ်း	တစ်ပတ် တစ်ကြိမ်	စက်ရုံတာဝန်ရှိသူ
အန္တရာယ်ရှိသောပစ္စည်း	ဓာတုပစ္စည်း အမျိုးအစား	သိုလှောင်သည့်နေရာ	လစဉ်	စက်ရုံတာဝန်ရှိသူ
လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေး	မှတ်တမ်းဇကာက်ယူမှု	စက်ရုံအတွင်း	လစဉ်	စက်ရုံတာဝန်ရှိသူ
စွမ်းအင်	လျှပ်စစ်စွမ်းအင်၊ ရေအသုံးပြုမှု၊ လောင်စာ အသုံးပြုမှု မှတ်တမ်း	စက်ရုံအတွင်း	နေ့စဉ်	စက်ရုံတာဝန်ရှိသူ

EMP အတွက် ငွေကြေးမျှဝေသုံးစွဲမှု

အမျိုးအစား	နှုန်း	သုံးစွဲငွေ (USD)
လျော့ချရေးအစီအစဉ်		
စက်ရုံတွင်းလေဝင်လေထွက်စနစ်	တစ်နှစ်တစ်ကြိမ်	၂၀၀ တစ်နှစ်
သစ်ပင်ပန်းမန်စိုက်ပျိုးခြင်း	သုံးလ တစ်ကြိမ်	၇၀ တစ်ကြိမ်
အမှိုက်စွန့်ပစ်မှု	တစ်လတစ်ကြိမ်	၁၀၀၀ တစ်နှစ်
တစ်ကိုယ်ရေကာကွယ်ရေးပစ္စည်း (PPE)	တစ်နှစ်နှစ်ကြိမ်	၁၅၀ တစ်ကြိမ်
လုပ်သားကျန်းမာရေးဆေးစစ်ခြင်းနှင့် ကျန်းမာရေးစောင့်ရှောက်မှု	တစ်နှစ်တစ်ကြိမ်	၅၀၀ တစ်နှစ်
အရေးပေါ်အစီအစဉ်		
မီးသတ်ဆေးဘူး	တစ်လတစ်ကြိမ်	၃၀၀ တစ်လ
မီးသတ်ပေးစနစ်	တစ်လတစ်ကြိမ်	
ရေးဦးပြုစုဆေးသေတ္တာ	တစ်လတစ်ကြိမ်	
စောင့်ကြည့်ရေးအစီအစဉ်		
လေအရည်အသွေး တိုင်းတာမှု	တစ်ကြိမ်	၅၀၀ တစ်နှစ်
ဆူညံသံ တိုင်းတာမှု	နှစ်ကြိမ်	၃၀၀ တစ်နှစ်
EMP လိုက်နာမှုစစ်တမ်း အစီအရင်ခံစာ	တစ်ကြိမ်	၁၀၀၀

ကျေးဇူးအထူးတင်ပါသည်