3R Non-Woven Manufacture Company Limited

Environmental Management Plan

Manufacturing of Bags on (CMP basic)

Prepared by

Myanwei Environmental Solutions Company Limited

20-Dec-21

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Date:

Attention: Dear Director

Environmental Conservation Department

Subject: Environmental Management Plan (EMP) Report in respect of the Manufacturing of Bags by 3R Non-Woven Manufacture 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.

Date:

Dear: Director

Environmental Conservation Department

Nay Pyi Taw

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

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.

3R Non Woven Manufacture Co., Ltd. will at all times comply fully with all commitment and obligations in the EMP report.

We acknowledge and understand that

Sincerely Yours,

Mr. Li Fuyun
Promoter
3R NON WOVEN MANUFACTURE COMPANY LIMITED

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Abbreviation

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

အစီရင်ခံစာအကျဉ်းချုပ်

နိဒါန်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်ရေရည်ဖွံ့ဖြိုးတိုးတက်ရန် သေချာဖို့လိုအပ်ပါသည်။ အဆိုပြုလုပ်ငန်းသည် CMP စနစ်ဖြင့် အိတ်အမျိုးမျိုး ထုတ်လုပ်ခြင်းလုပ်ငန်း ရင်နှီးမြှုပ်နှံသော ကုမ္ပဏီဖြစ်ပါသည်။ ရင်းနှီးမြှုပ်နှံမှုလိုင်စင်ကို ၂၀၂၀ပြည့်နှစ်၊ သြဂုတ်လ၊ ၂၈ ရက်နေ့တွင် (ထောက်ခံချက်အမှတ်ရကတ-၄၁၁/၂၀၂၀)ဖြင့် ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှု ကော်မတီမှ ရရှိပြီးဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန်အတွက် မြန်မာနိုင်ငံ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ၏ အတည်ပြုချက်ရယူရန် လိုအပ်ကြောင်း ကော်မရှင်မှ မှာကြားခဲ့ပါသည်။

ထို့ကြောင့် မြန်မာနိုင်ငံ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)အရ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) ပြုလုပ်ရန်လိုအပ်ကြောင်း ၂၀၂၀ ပြည့်နှစ်၊ အောက်တိုဘာလ၊ ၂ ရက်နေ့တွင် (စာအမှတ်၊ ရက-၁/၃/၄ (အီးအိုင်အေ) (၂၂၂၈/၂၀၂၀) ဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ရန်ကုန်တိုင်းဒေသကြီးမှ သဘောထားမှတ်ချက် ရရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် EMP အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်းဖြစ်သော Myanwei Environmental Solutions Company Limited မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။

EMP အစီအစဉ်တွင် 3R Non-Woven Manufacture Company Limited ၏ CMP စနစ်ဖြင့် အိတ်အမျိုးမျိုး ထုတ်လုပ်ခြင်းစီမံကိန်းအတွက် Myanwei Environmental Solutions Company Limited မှ ရေးသားပြုစုထားသော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာဖြစ်သည်။ အဆိုပါ လေ့လာဆန်းစစ်ခြင်း၏ ရည်ရွယ်ချက်များမှာ-

- ✓ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားပတ်ဝန်းကျင်အပေါ် စီမံကိန်းဆောင်ရွက်ချက်များကြောင့် ထိခိုက်မှုများကိုလေ့လာရန်။
- ✓ ထိုထိခိုက်မှုများကို လျော့ချနိုင်ရန် လျော့နည်းစေမည့်နည်းလမ်းများကို ဖော်ပြရန်။
- ✓ စီမံကိန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ပြင်ဆင်ရန်နှင့် အကောင်အထည်ဖော်ရန်။
- ✓ စီမံကိန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အစီရင်ခံစာ လုပ်ဆောင်ရာတွင် လုံလောက်မှုရှိစေရန်။
- ✓ ဒေသခံများ၏ လူမှုရေးသက်သာချောင်ချိမှုများ တိုးမြှင့်ရန်နှင့် ဒေသတွင်း ဖွံ့ဖြိုးတိုးတက်မှုများအတွက် မရှိမဖြစ်အရေးပါသော လူမှုစီးပွားတာဝန်ယူမှုအစီအစဉ်အား အကောင်အထည်ဖော်ရန်တို့ဖြစ်ပါတယ်။

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

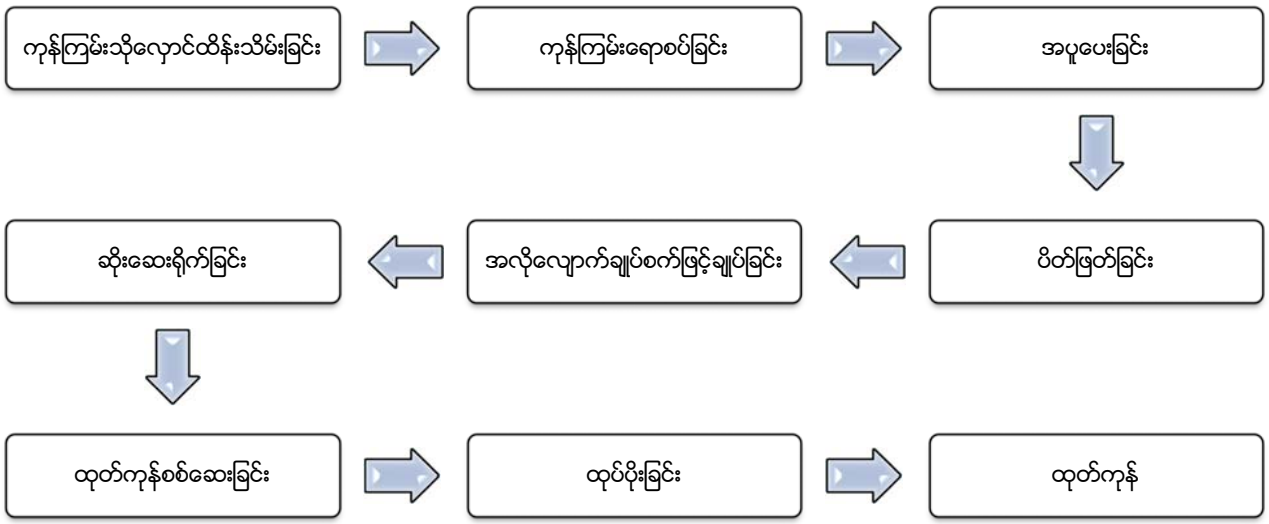
ဥပဒေနှင့် မူဝါဒဆိုင်ရာ အချက်အလက်များ

EMP ရေးဆွဲရခြင်း၏ ရည်ရွယ်ချက်မှာ နိုင်ငံတော်နှင့် နိုင်ငံတကာမှ ချမှတ်ထားသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအစီအစဉ်များ၊ စည်းမျဉ်းစည်းကမ်းများ၊ ဥပဒေနှင့် နည်းဥပဒေများကို လိုက်နာပြီး ပတ်ဝန်းကျင်နှင့်လိုက်ရောညီထွေရှိသော ထိခိုက်မှုလျော့ချရေး အစီအစဉ်များပြုလုပ်ရန်ဖြစ်ပါသည်။ ပတ်ဂန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အစီရင်ခံစာရေးသားပြုစုသူများ၏ ကျွမ်းကျင်မှုနယ်ပယ်ဆိုင်ရာ ဖော်ပြချက်များကို ရေးသားဖော်ပြထားပါသည်။ ဥပဒေနှင့် နည်းဥပဒေ အခန်းတွင် MONREC မှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များအပြင် စက်ရုံနှင့်ဆက်စပ်သက်ဆိုင်နေပြီး လိုက်နာရမည့် ဥပဒေနှင့် နည်းဥပဒေများ၊ ဒေသတွင်း သို့မဟုတ် အပြည်ပြည်ဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒများ၊ ဆက်စပ်နေသည့် နိုင်ငံတကာသဘောတူချက်များကို အကျဉ်းချုပ်ရေးသားဖော်ပြထားပါသည်။ စက်ရုံအတွင်းလိုက်နာဆောင်ရွက်ရမည့် စည်းမျဉ်းစည်းကမ်းများ၊ လုပ်ငန်းခွင် အန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ အခြေခံစည်းမျဉ်းစည်း ကမ်းများလည်း ထည့်သွင်းဖော်ပြထားပါသည်။ 3R Non-Woven Manufacture Company Limited ၏ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ ကတိကဝတ်များအပြင် ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေး မူဝါဒများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

စီမံကိန်းဆိုင်ရာအချက်အလက်

အဆိုပြုထားသော စီမံကိန်း	CMP စနစ်ဖြင့် အိတ်အမျိုးမျိုးထုတ်လုပ်ခြင်းလုပ်ငန်း
ရင်းနှီးမြှုပ်နှံမှုပုံစံ	၁၀၀ % နိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှု
ကုမ္ပဏီအမည်	3R Non-Woven Manufacture Company Limited
အဆိုပြုရင်းနှီးမြှုပ်နှံမှုကာလ	နှစ် ၂၅
စုစုပေါင်းမြေကွပ်ဧရိယာ	၂.၁၉၇ ဧက အနက်မှ ၁.၀၉၈၅ ဧက
မြေနေရာပုံစံ	စက်မှုဇုန်မြေ
တည်ဆောက်မှုကာလ	၁ နှစ်
စီမံကိန်း တည်နေရာ	မြေကွက်အမှတ်-၄၀၊ မြေတိုင်းရပ်ကွက်အမှတ်-၁၄၄၊ ဒဂုံမြို့သစ်တောင်ပိုင်းစက်မှုဇုန်၊ ဒဂုံမြို့သစ်တောင်ပိုင်းမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။
ဆက်သွယ်ရန် ဖုန်းနံပါတ်	မဇူးဇူး ၀၉-၇၇၇၇၇၉၆၆၃ RRR09777779665@gmail.com

အဆိုပြုလုပ်ငန်းအတွက် တည်နေရာနှင့် စက်ရုံအတွင်းပါရှိသည့် အဆောင်များ၊ စားသောက်ဆောင်၊ စတို၊ ပြုပြင်ထိန်းသိမ်းရေးအခန်း၊ မီးဖိုချောင် အစရှိသည်တို့ကိုသီးခြားဖော်ပြထားပါသည်။ထို့အပြင် ထုတ်လုပ်မှုနည်းလမ်းများ၊ လိုအပ်သည့်ကုန်ကြမ်းများ၊ နှစ်စဉ်ထွက်ကုန်များနှင့် စက်ပစ္စည်းများအား ဖော်ပြထားပါသည်။ အဆိုပြုလုပ်ငန်းအတွက်လိုအပ်သည် စွမ်းအင်နှင့် အသုံးပြုသည့်ပမာဏများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။ ကျန်လုပ်ငန်းသုံးယာဉ်နှင့် ရုံးသုံးပစ္စည်းများကို ပြည်တွင်းမှ ဝယ်ယူအသုံးပြုပါသည်။ ကုန်ထုတ်လုပ်ခြင်းလုပ်ငန်းမှာ automatic machine နှင့် လူစွမ်းအားကို အသုံးပြုသော လုပ်ငန်းမျိုးဖြစ်ပါသည်။ ထုတ်လုပ်ပုံအဆင့်ဆင့်ကို အောက်ဖော်ပြပါ ပုံပြဇယားဖြင့် ဖော်ပြထားပါသည်။



လုပ်ငန်းမှ ပထမနှစ်မှ ၁၈ နှစ်အတွင်း အထည်ရေ (၅၈,၃၀၀) မှ (၆၄,၁၃၀)အထိ တိုးမြှင့်ထုတ်လုပ်သွားမည်ဖြစ်သည်။ နိုင်ငံခြားသားလုပ်သား (၈) ဦး နှင့် နိုင်ငံသား (ပြည်တွင်း)လုပ်သား (၈၀) ဦးဖြင့် ဆောင်ရွက်သွားမည်ဖြစ်သည်။

အနီးပတ်ဝန်းကျင် အခြေအနေ

ကနဦးစစ်တမ်းကောက်ယူခြင်းနှင့် ဒေသဆိုင်ရာမှအချက်အလက်များရယူခြင်းသည် အလွန်အရေးကြီးပါသည်။ ပတ်ဂန်းကျင်အရည်အသွေး တိုင်းတာခြင်းကဲ့သို့သော ကနဦးစစ်တမ်းကောက်ယူခြင်းသည် ပတ်ဂန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာတွင် အရေးပါသောအခန်းအဖြစ် တည်ရှိနေသည်။ ထို့အတွက် စီမံကိန်းဒေသသို့ ကွင်းဆင်းလေ့လာမှုများကို ၁၈ ရက်၊ နိဝင်ဘာလ၊ ၂၀၂၁ တွင်လက်တွေ့ကွင်းဆင်းလေ့လာခဲ့ပီးလိုအပ်သည့် လေအရည်အသွေး၊ ဆူညံမှု၊ အလင်း၊ အပူချိန်နှင့် စိုထိုင်းမှု အစရှိသည့် အချက်အလက်များကို ရယူခဲ့ပါသည်။ ကွင်းဆင်းလေ့လာထားသည် အချက်အလက်များကို သက်ဆိုင်ရာခေါင်းစဉ်အလိုက် အမျိုးသားပတ်ဂန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့် နှိုင်းယှဉ်၍ ဖော်ပြထားပါသည်။ ထိုနည်းတူ လျှော့ချရမည့်နည်းလမ်းများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။ စီမံကိန်းတည်ရှိရာဒေသရှိ ရာသီဥတု၊ မိုးရေချိန်၊ လူမှုစီးပွားရေးဆိုင်ရာ အချက်အလက်များကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

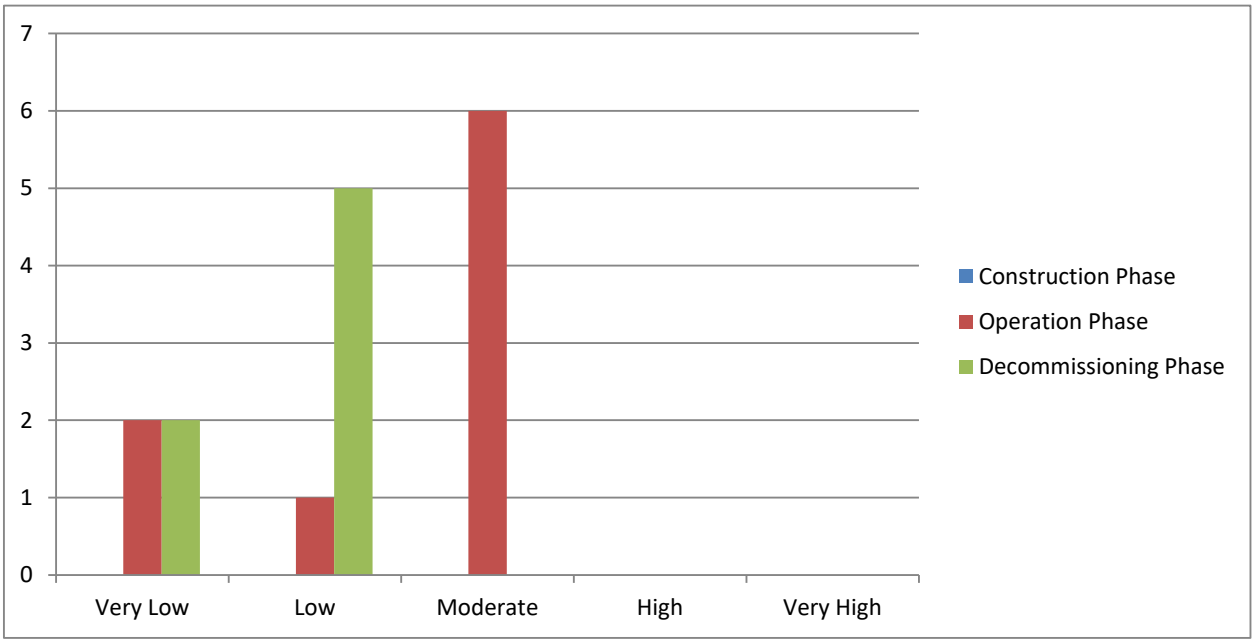
ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေး အစီအစဉ်

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

ပတ်ဝန်းကျင် လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
တည်ဆောက်ရေးကာလ။ ။ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာချိန်တွင် စက်ရုံတည်ဆောက်ပြီး လုပ်ငန်းလည်ပတ်နေချိန်ဖြစ်သော်ကြောင့် ဤကာလကိုထည့်သွင်း မစဉ်းစားတော့ပါ။			
လုပ်ငန်းလည်ပတ်ခြင်းကာလ			
လေထုညစ်ညမ်းမှု	• သယ်ယူပို့ဆောင်ရေးသုံး မော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့်နှင့် ဖန်လုံအိမ်ဓါတ်ငွေ့ထွက်ခြင်း • လုပ်ငန်းခွင်အတွင်း ဖုန်မှုထွက်ခြင်း • မီးဖိုနှင့် ရေနွေးငွေ့ဘွိုင်လာတို့မှ မီးခိုးထွက်ခြင်း • အရေးပေါ်သုံးမီးစက်မှာ စွန့်ထုတ်အခိုးအငွေ့ ထွက်ခြင်း	အသင့်တင့်	• စက်ရုံအတွင်းနှင့် အနီး အနားတွင် သစ်ပင်ပန်းမံ စိုက်ပျိုးခြင်းဖြင့် carbon ထွက်ရှိမှုကို လျော့ချပေးခြင်း၊ • NOx ထွက်ရှိမှုနည်းသော နည်းပညာမြင့် စက်ပစ္စည်း များသုံးခြင်း၊ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	• မိလ္လာစွန့်ထုတ်ရေ • စက်ပစ္စည်း၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း	အနည်းငယ်	• လက်ရှိရေဆိုးစွန့်ပစ်မှုပုံစံဖြစ်သော မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပေးခြင်း၊ • မိလ္လာကန်နှင့် မိလ္လာ စနစ်ကို လူဦးရေနှင့် သင့်တင့်သည့် ပမာဏ ရှိရန် စီစဉ်ထားခြင်း၊ • ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	• မတော်တဆ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း	အလွန်နည်း	• စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင် ထိန်းသိမ်းပေးခြင်း။ • မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
ဆူညံသံ	• မီးစက်၊ လေမှုတ်စက် နှင့် မော်တော် ယာဉ် အသုံးပြုမှုကြောင့် ပတ်ဝန်းကျင် ဆူညံမှု	အသင့်တင့်	• ဆူညံသံထွက်သောနေရာများကို အကာအကွယ် ဖြင့်ထားရှိခြင်း • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ပေးခြင်း
မီးဘေးအန္တရာယ်	• ကုန်ကြမ်းသိုလှောင်မှု နှင့် လျပ်စစ်သုံးစွဲ ပေါ့လျော့မှု	အသင့်တင့်	• ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း • လျပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	• ထုတ်လုပ်ရာတွင် ကျန်ရှိသော ပိတ်စ အပိုင်းအစများ။ မီးဖိုချောင်နှင့် ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ	အသင့်တင့်	• စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
စွန့်ပစ်အရည်	• နေအိမ်၊ စားသောက်ဆောင် တို့မှစွန့်ထုပ်ရေ။ မိလ္လာကန်စနစ်	အသင့်တင့်	• စွန့်ပစ်အရည်များအား ပြန်လည်သုံးစွဲရန်(ရေသန့်စင်ခြင်း) နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	• စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များပြုပြင်ထိမ်းသိမ်းမှုက ထွက်ရှိသည့်အမှိုက်များ	အလွန်နည်း	• စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း
လူမှုစီးပွားဘဝ	• ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ရရှိစေခြင်း	အသင့်တင့်	
လုပ်ငန်းပိတ်သိမ်းခြင်းကာလ			
လေထုညစ်ညမ်းမှု	• အဆောက်အဦးများ ဖြိုချမှုများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• NOx ထွက်ရှိမှုနည်းသော နည်းပညာမြင့် စက်ပစ္စည်း များသုံးခြင်း၊ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	• ဖြိုချပစ္စည်းများနှင့် မိလ္လာဖျက်ဆီးမှုများ	အနည်းငယ်	• ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	• အဆောက်အဦးနှင့် ဆက်စပ်ပစ္စည်းများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• မတော်တစမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
အမှိုက်စွန့်ပစ်မှု	• အဆောက်အဦးများ	အလွန်နည်း	• စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန်

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
	• ဖြိုချပစ္စည်းများ သယ်ယူမှုများ		အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	• စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များပြုပြုထိမ်း သိမ်းမှုက ထွက်ရှိသည့်အမှိုက်များ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အလွန်နည်း	• စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း
မတော်တဆ ထိခိုက်မှုများ	• အဆောက်အဦးများ ဖြိုချမှုများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• မတော်တစမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
လူမှုစီးပွားဘဝ	• ဒေသခံပြည်သူများအတွက်အ လုပ်အကိုင် ခေတ္တရရှိခြင်း		



ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်

အဆိုပြုလုပ်ငန်း၏ ပတ်ဂန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် Continuous Improvement Circle စက်ဝိုင်းဖြင့် အစီစဉ်တကျ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင် စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များ ပါဝင်ပါသည်။ ၄င်း EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် သည် စက်ရုံတွင် ကျန်းမားရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ အဆိုပါစက်ရုံ၏

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ရေရှည်ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်သော ပတ်ဝန်းကျင် အဖြစ် အကောင်အထည်ဖော်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ဆိုင်ရာ ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေရန် စီမံခန့်ခွဲမှုအစီအစဉ်များနှင့် စောင့်ကြပ်ကြည့်ရှုရမည့်အစီအစဉ်များကို အောက်ပါအတိုင်းပတ်ဝန်းကျင်ဆိုင်ရာ အကြောင်းအရာတစ်ခုချင်းစီအလိုက် ခွဲခြားမှု ပြုလုပ်ထားပါသည်။

၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၂။ ရေသုံးစွဲမှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၃။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၄။ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၅။ ဆူညံမှုထိန်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၆။ အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်

၇။ စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်

၈။ လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ် CSR Plan

၉။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် ငွေကြေးလျာထားမှု

၁၀။ မကြေနပ်မှု ဖြေရှင်းခြင်း နည်းလမ်း

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

နိဂုံး

နိဂုံးချုပ်အားဖြင့် ယခုစီမံကိန်းသည် ဆောက်လုပ်ရေးကာလ၊ လုပ်ငန်းလည်ပတ်သည့်ကာလနှင့် လုပ်ငန်းဖျက်သိမ်းသည့် ကာလသုံးခုလုံးတွင် ဒေသခံပြည်သူများကိုအလုပ်အကိုင် အခွင့်အလမ်းများ ဖန်တီးပေးနိုင်သည်။ ကာလသုံးခုလုံးတွင် ဖြစ်ပေါ်လာနိုင်သော ထိခိုက်မှုများကို လျော့ချနိုင်မည့် နည်းလမ်းများနှင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အား အကောင်အထည်ဖော်ခြင်းဖြင့် လျော့ချနိုင်သည်။ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှု အစီအစဉ်အား စီမံကိန်း၏ ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေးကို စောင့်ကြပ်ကြည့်ရှုရန် မဖြစ်မနေ အကောင်အထည်ဖော်ပေးရမည်။ စီမံကိန်းကောင်အထည်ဖော်သူသည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ ယခုအစီရင်ခံစာအား စစ်ဆေးပီးနောက် ပြန်လည်ပေးပို့လာသော သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်များကိုလိုက်နာရမည်။ ထို့ပြင် စီမံကိန်းအကောင်အထည်ဖော်သူသည်

မြန်မာနိုင်ငံ၏ ပတ်ဝန်းကျင်နှင့် သက်ဆိုင်သောမူဝါဒများ၊ ဥပဒေများ၊ နည်းဥပဒေများ၊ သတ်မှတ်ချက်များကို လိုက်နာရန်လိုအပ်ပါသည်။

EXECUTIVE SUMMARY

Introduction

Environment Management Plan is required for ensuring sustainable development. It should not affect the surrounding environment adversely. The management plan presented in this chapter needs to be implemented by the proposed expansion of 3R Non-Woven Manufacture 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.

The project is new investment for manufacturing by Contract Manufacturing Process (CMP) basic company from China. The project is issued by the Yangon Region Investment Committee (YRIC) on 28 November 2020 with the Endorsement No. (YGN- 411/2020). YRIC notified for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in Manufacturing of Bags on CMP basis under the name of 3R Non-Woven Manufacture Company Limited as a solely owned foreign investment from the China.

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka- 1/3/4 (EIA) (2228/2020) on 2 October 2020. Therefore, 3R Non-Woven Manufacture Company Limited commissioned Myanwei Environmental Solutions Company Limited for EMP report study. The specific objectives of this study are

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

The proposed project aims to manufacturing sort of bags under CMP system and 100% export to foreign country.

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

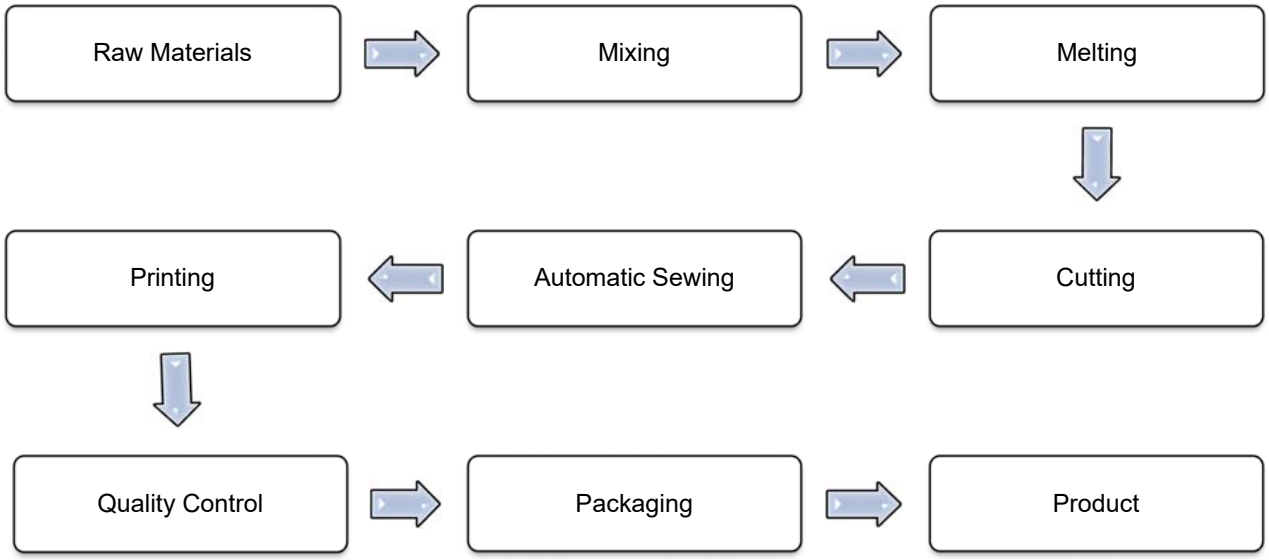
Policy, Legal and Institutional Framework

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

Project Description

Type of Proposed Business	Manufacturing of Bags on CMP Basis
Type of investment	100% Foreign Investment
Name of Company	3R Non-Woven Manufacture Company Limited
Land lease year	25 years
Total land area	2.197 acres out of 1.0985 acres
Type of land	Industrial Land
Construction Period	1 years
Address of Proposed Project	Plot No. 40, Myay Taing Block No.144, Industrial Zone, Dagon Myo Thit (Southern) Township, Yangon Region
Contact Person	Ma Zu Zue 09-777779663 RRR09777779665@gmail.com

The proposed project is located at Yangon region. The total area of project site is 2.197 acres. Main structure is designed into production area for one building. Transformer room, generator room and water treatment plant are separated by main factory building structure. The factory layout plan which is also can be seen in this report. The main product of the 3R Non-Woven Manufacture Company Limited factory is Bags. The Utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for domestic use.



Production Process of 3R Non-Woven Manufacture Factory

Production rate of 3R Non-Woven Manufacture factory is produced between first year of operation and ten years' operation as 58,300 to 64,103 pieces annually. It is requiring of work force (8) foreigner's technician and (80) local employees for first year operation to 10 years' operation.

Brief Description of Surrounding Environment

Primary data and secondary data collections are very imported to assess environmental impacts. Primary data collections (environmental quality measurements and monitoring) play an

important role for conducting EMP. Therefore. Myanwei Environmental Solutions Company Limited conducted air quality, temperature and humidity, noise level measurement and light pollution measurement on 10 November 2021 and compared with the National Environmental Quality (Emission) Guidelines and also described how to reduce the impact and how to maintain the pollutions. Also described the weather conditions, rainfalls and socio-economic component of the proposed project.

Potential Environmental Impact and Mitigation Measure

Possible effects, such as impacts on environmental resources, ecological resources, human and waste disposal due to construction, operation and decommissioning processes. Potential impacts for the proposed projects are normally differentiated into three main categories, viz, Construction phase, Operation phase and Decommissioning phase.

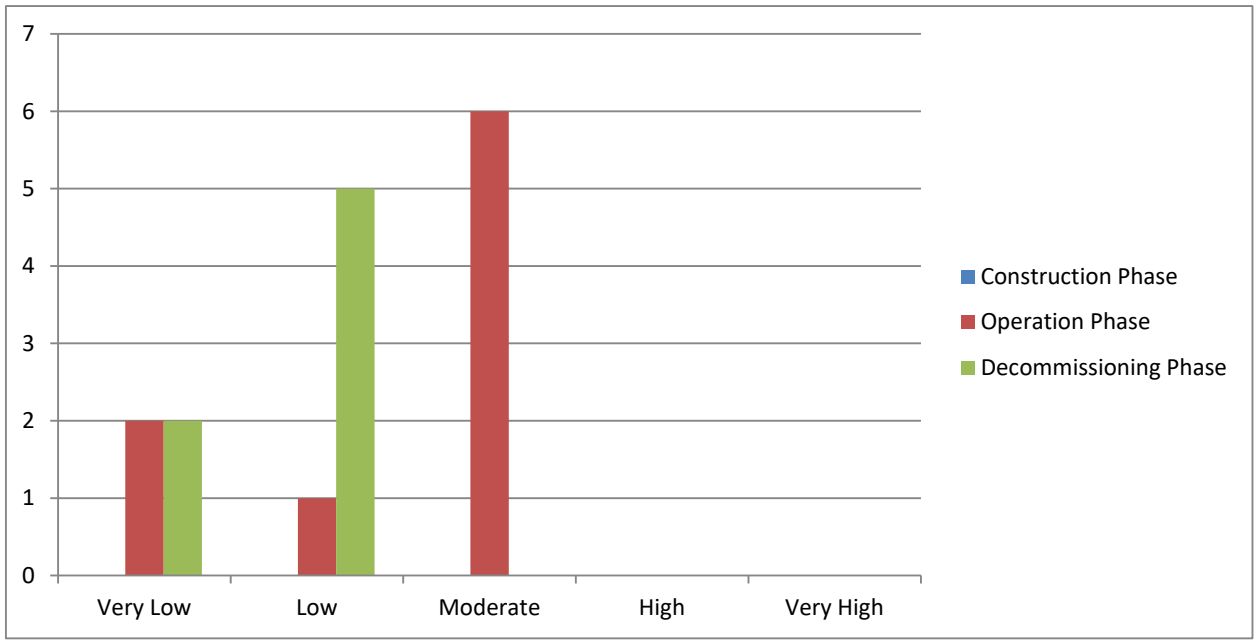
The relative importance of each impact is assessed based on the understanding that general mitigation measures will be integrated into the baseline project. Therefore, when the general mitigation measures reduce impacts to the point of rendering them negligible they are excluded from further analysis.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

Evaluation and Perdition of Significant Impacts

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase; It is not assessed in this phase, because of construction is already completed during EMP preparation.							
Operation Phase							
Air pollution	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Particulate matters emission from the activities of production process • Emission from emergency diesel generator	3	4	2	4	36	Moderate
Water pollution	• Sewage disposed of from the toilets • Oil spill and grease leaks from transporting vehicles and machinery equipment used in operation phase	2	4	2	3	24	Low
Soil Contamination	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very Low
Noise Pollution	• Generating noise from the production machinery • Noise from the generating of the emergency generators	3	4	1	4	32	Moderate
Fire Hazard	• Poor electrical installations • waste disposed area • Raw materials storage	3	4	2	3	27	Moderate
Solid waste	• residual pieces of fabric scraps from the production lines • Waste from packaging materials	3	4	1	4	32	Moderate

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
	• Waste from kitchen, dormitory and office.						
Liquid waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous waste	• Engine oil leaks, spills at diesel storage and during fuel refueling. • Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	2	14	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Accidental cases cause by operating machines. • Electricity and emergency diesel generators. • Unloading, mixing, cutting, pressing and packaging activities. • Accidental cases of thermic fluid heater	3	4	1	4	32	Moderate
Social-economic Condition	• Job opportunities for local people	-	-	-	-	-	Positive Impact
Decommissioning Phase							
Air pollution	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	4	20	Low
Water pollution	• Sewage form decommissioning workers • Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	3	15	Low
Noise Pollution	• Decommission activities • Transportation of demolished materials	3	1	1	3	15	Low
Waste disposal	• Sewage system • Demolished debris such as bricks, concrete materials	2	1	1	3	12	Very Low
Hazardous waste	• Used lubricants from decommissioning vehicles and machines	2	1	1	3	12	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Decommissioning activities • Transportation of demolished materials	3	1	2	3	18	Low
Social-economic Condition	• Temporary job opportunities for local people	-	-	-	-	-	Positive Impact

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



Impact significance of the proposed factory project

Environment Management Program

The proposed project of environmental management plan, which need to made especially Continuous Improvement Circle. In that plan, it includes not only reducing to the environmental and social-economic impact but also includes the environmental management plan and the monitoring plan. In this EMP to implement the health, safety and occupational for the industry, they need to create a team and to must be implemented that. The EMP for 3R Non-Woven Manufacture Company Limited has been prepared to address potential issues based upon discussion with factory management, workers, local community's view, stakeholder consultation and from the site visit of experts. The EMP is additional to and compliments the factory's safety management system. The following environmental issues that require environmental management plans based upon the potential impacts of activities by for 3R Non-Woven Manufacture factory are as follows:

1. Air pollution/Dust Management plan
2. Water Consumption Management Plan
3. Wastewater Management Plan
4. Solid Waste Management plan
5. Noise Management
6. Emergency Response plan
7. Environmental Monitoring and Reporting
8. Corporate Social Responsible (CSR) Plan

9. Budget Plan
10. Grievance Redress Mechanism

Conclusion & Recommendation

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

This is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to dispose according to YCDC rules and regulation
- Workers should be provided proper training and it should be ensured that workers use PPE during factory operation area.
- Daily, monthly and annual action plan shall be formulated based on this EMP and practiced at operation level.
- Keep full records of environmental management activities and present to annual independent third-party environment audit.
- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

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

1. INTRODUCTION

Everyone wants to live in a place that's clean and healthy. That is why one of the world's primary concerns is the environment. As sad as it is, the world today is dying. The environment is slowly decaying, and it's all because of human negligence Environment Management Plan is required for ensuring sustainable development. It should not affect the surrounding environment adversely. The management plan presented. Which needs to be implemented by the proposed expansion of 3R Non-Woven Manufacture 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. AIM OF ENVIRONMENTAL MANAGEMENT PLAN

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

1.2. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN

An 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.

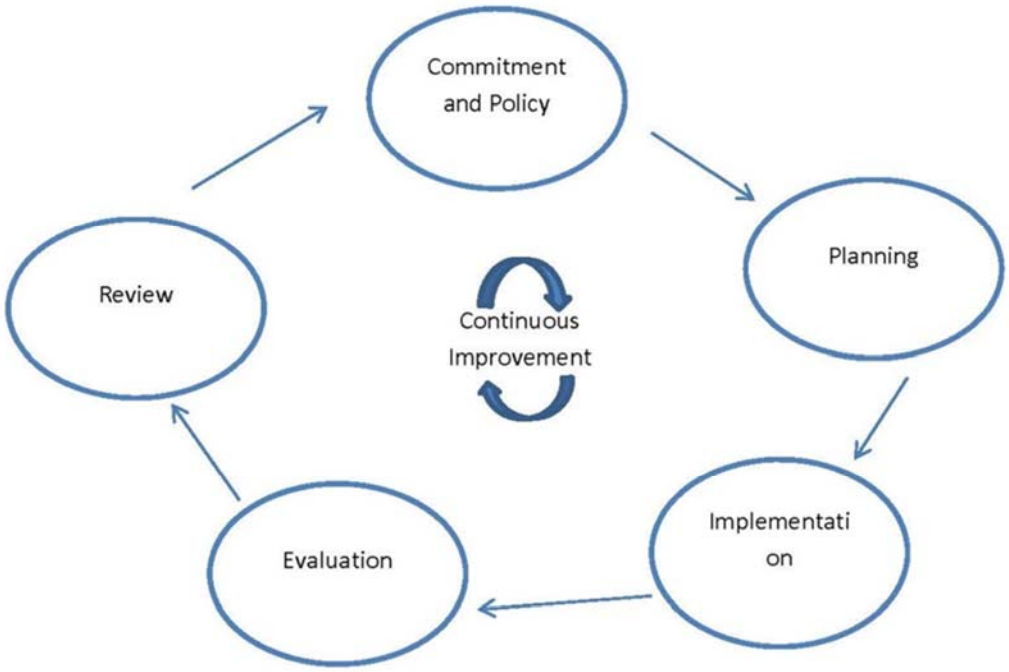


Figure 1-1 Continuous Improvement Circle

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

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

1.2.1. Institutional Requirement

3R Non-Woven Manufacture 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.

1.2.2. 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:

3R Non-Woven Manufacture Company Limited: The proponent will be charged with the responsibility for ensuring that the proposed development has been accomplished in an environmentally sound manner. This can be achieved by inclusion of environmental specifications in the tender specifications, selection of environmentally conscious contractors, and supervision to ensure that the objectives of this EMP are met. The implementation of Environmental Management Plan (EMP) process will prepare and follow up by appointed persons for health, safety, and environmental management under the instruction of management team of 3R Non-Woven Manufacture Company Limited for EMP implementation facilities.

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

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

1.2.3. 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.

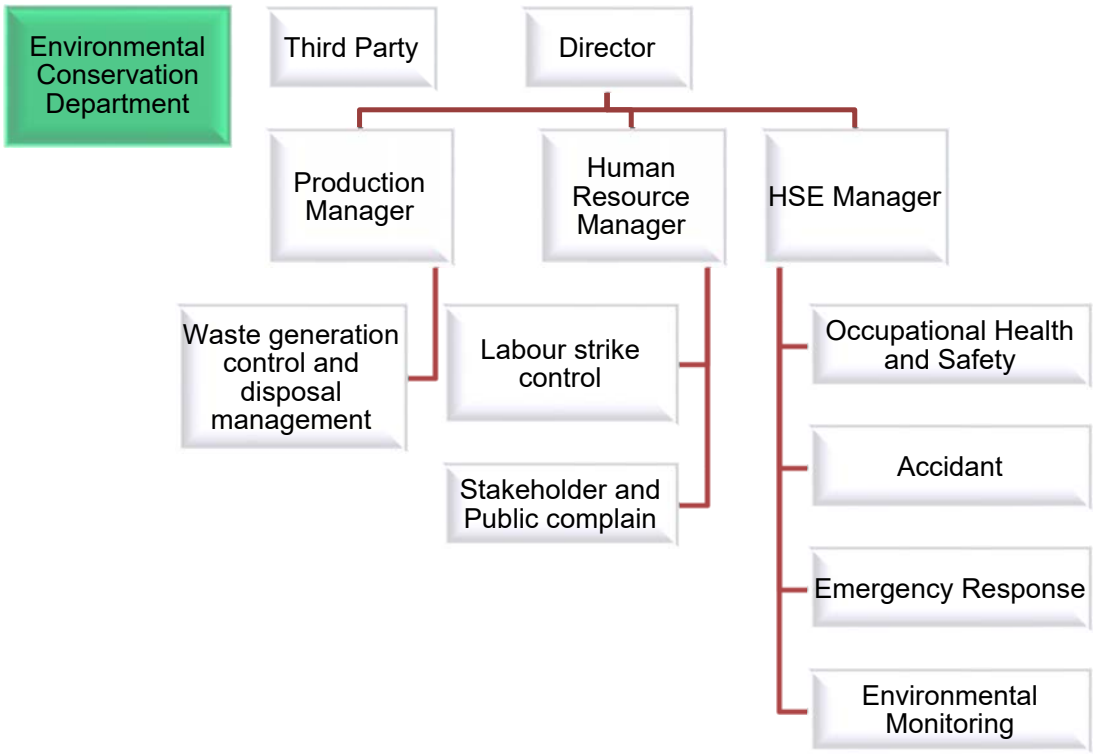


Figure 1-2 Organization Structure of Environmental Management Plan

Table 1-1 Responsibilities of HSE Members

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

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

1.3. PROJECT BACKGROUND

The project is new investment for manufacturing of High-quality Clothes Product by Using High Quality Bags on Contract Manufacturing Process (CMP) basic company from China. The Yangon Region Investment Committee (YRIC) issues the project on 28 March 2019 with the Endorsement No. (YGN-184/2019). YRIC notified for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing of Bags on CMP basis under the name of 3R Non-Woven Manufacture Company Limited.

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka- 1/3/4 (EIA) (765/2019) on 14 May 2019. Therefore, 3R Non-Woven Manufacture Company Limited commissioned Myanwei Environmental Solutions Company Limited for EMP report study.

1.3.1. Project Proponent Profile

This is the information of project proponent from the MIC's registration that is describing in below Table 1-2 and Table 1-3.

Table 1-2 Information of Investor

Investor Name:	Mr. Jin Ye
ID No.:	E16819375
Citizenship:	Chinese

Address of Registration office:	Jiang Su Sheng, Yan Yuan 2 Dong, 101 Shi, Nan Tong Shi, Chong Chuan Qu, China.

1.3.2. Investment Plan and Salient Features of the Project

The estimated authorized capital investment is 0.637 million US Dollar (Table 1-3). Organization chart of 3R Non-Woven Manufacture Company Limited is presented in Figure 1-3.

Table 1-3 Salient features of the project

Type of Proposed Business	Manufacturing of Bags on CMP Basis
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	2.197 acres out of 1.0985 acres
Total building area	One Building One Storey Factory Buildings (4,445,472 Sqft)
Land lease year	25 years
Construction period	1 years
Operation starting date	25 years investment permit
Address	Plot No. 40, Myay Taing Block No. 144, Dagon Myothit (South) Industrial Zone, Dagon Myothit (South) Township, Yangon Region
Contact person	Ma Zu Zue 09-777779663 RRR09777779665@gmail.com

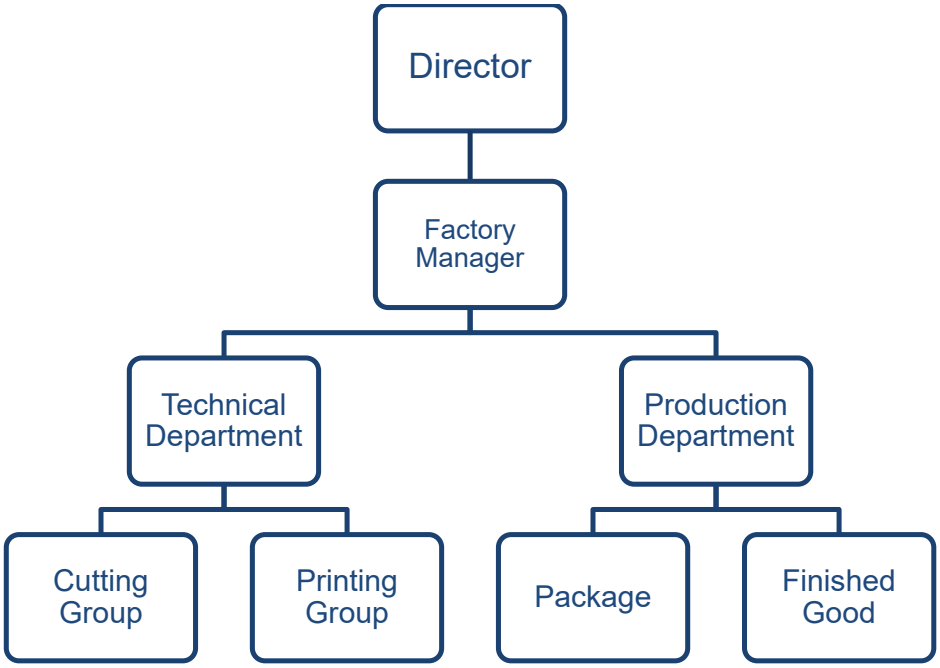


Figure 1-3 Organization chart of 3R Non Woven Manufacture Company Limited

1.3.3. Director List

Name of Shareholder	Citizenship	Percentage
Mr. Zhou Xin	Chinese	100
Mr. Jin Ye	Chinese	

1.4. ENVIRONMENTAL CONSULT PROFILE

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

Table 1-4 Member of EMP Study Team

Name	Qualification	Responsibility
MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY Limited	**Transition Consultant Registration Certificate No. 0069**	**EIA Organisation**
Dr. Win Aung	M.B, B.S (Yangon), M.P.H (Mahidol University, Thailand)	Public Health and Health Management Expert,
Dr. Hein Lynn Aung	M.B, B.S (Yangon), Business Management (International Collage of Management Sydney, Australia)	Project Director, Public health consultant, project management
Mr. Lin Htet Sein	MSc (Regional Geology) BSc (Hons) Geology Dip in Environmental Science Certificate in Environmental & Social Assessment **TCR No. 0048**	Project Director, Environmental consultant, project management
Ms. Wah Wah Zaw	B.E Material and Metallurgy Engineering Diploma in Environmental Planning and Management M.S Environmental Planning and Management	Senior Environmental Consultant, Social and Environmental Research, Quality control, Environmental planning and Management
Ms. Khin Thu Zar Myint	B.E(Materials and Metallurgy) Dip in Environmental Planning and Management	Senior Environmental Consultant, Social Research, Public consultation, social economic investigation

Ms. Su Myat Hlaing	B.E Civil Engineering B. Tech Civil Engineering	Environmental Engineer
Mr. Aung Kyaw Moe	B.E. Chemical Engineering B. Tech Chemical Engineering	Junior Environmental Consultant, monitoring measure, document administration
Mr. Saw Yan Naung	B.E. Chemical Engineering B. Tech Chemical Engineering	Junior Environmental Consultant, monitoring measure, document administration
Mr. Myat Ko Ko	B.Sc (Hons) Geology M.Sc. Geology (Economic and Mining) Certificate of Environment Management	Junior Environmental Consultant, monitoring measure, document administration
Mr. Htoo Nanda Aung	B.Sc (Forestry)	Junior Environmental Consultant, monitoring measure, document administration
Mr. Si Yan Hein	B.Sc (Geology)	Junior Environmental Consultant, monitoring measure, document administration
Mr. Kaung Sett Lwin	B.Sc (Hons) Geology	Junior Environmental Consultant, monitoring measure, document administration

MYANWEI
ENVIRONMENTAL SOLUTIONS

No. 36-38, 9th floor (A), Grand Myay Nu Condo, Myay Nu Street, Sanchaung Township, Yangon, Myanmar.

www.myanwweiconsulting.com.01-501221

2. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

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

2.1. MYANMAR REGULATORY FRAMWORK

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

2.1.1. Laws and Regulations Related to Environmental and Social Considerations

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

Table 2-1 List of Myanmar's Law relating to environmental management

Law and Regulation	Description
National Environmental Policy of Myanmar, (Notification No. 26/94 dated 5 December 1994)	To achieve harmony and balance between socioeconomic, natural resources and environment through the integration of environmental considerations into the development process enhancing the quality of the life of all its citizens.
Constitution 2008	
Section 37, (a)	The Union is the ultimate owner of all lands and all-natural resources above and below the ground, above and beneath the water and in atmosphere in the Union.
Section 37, (b)	The Union shall permit citizens rights of private property, right of inheritance, right of private initiative and patent in accord with the laws.
Section 372	The Union guarantees the right to ownership, the use of property and the right to private invention and patent in the conducting of business if it is not contrary to the provisions of this Constitution and the existing laws.
Section 45	The Union shall protect and conserve natural environment.
Section 390, (a), (b), (c), (d)	Every citizen has the duty to assist the Union in preserving and safeguarding the cultural heritage, conserving the environment, striving for the development of human resources, and protecting and preserving the public property.
Environmental Conservation Law, 30 March 2012	
Objectives	to contract a healthy and clean environmental and to conserve natural and cultural heritage for the benefit of present and future generations; to maintain the sustainable development through effective management of natural resources and to enable to promote international, regional and bilateral cooperation in the matters of environmental conversation.
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 user's 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 o IEE or EMP with the guidance of the Committee.
Sub-rule (a) of rule 68	The project proponent has to avoid emit, discharge or dispose the materials which can pollute to environment, or hazardous waste or hazardous material prescribed by notification in the place where directly or indirectly injure to public.
Sub-rule (b) of rule 68	The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem.
Environmental Impact Assessment Procedure (December 2015)	
Objectives	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.
Foreign Investment Law, 2012	
Section 8	(a) To support the primary objectives of the national economic development plan, and for businesses that cannot yet be run by the State and citizens or businesses that have insufficient funds and technology. (b) Development of employment activities (l) Protection and conservation of the environment. (q) Appearing the required modern services for the Union and citizens.

Section 17	(a) To abide by the existing laws of the Republic of the Union of Myanmar. (b) To carry out the business by forming a company under the existing laws of Myanmar by the investor. (h) To carry out not to cause environmental pollution or damage in accord with existing laws in respect of investment business. (k) To carry out the systematic transfer of high technology relating to the business which are carried out by the investor to the relevant enterprises, departments or organizations in accord with the contract.
Foreign Investment Rule, 2013	
Rule 54	The promoter or investor shall: (a) comply with Environmental Protection Law in dealing with environmental protection matters related to the business; (b) shall carry out socially responsible investment in the interest of the Union and its people; (c) shall co-operate with authorities for occasional or mandatory inspection; (d) shall exercise due diligence to be in conformity and harmony with norms and standards prescribed by relevant Union Ministry in conducting construction of factories, workshops, buildings, and other activities; (e) shall enforce Safety and Health
Myanmar Investment Rules, 2017	
Rule 202	The project proponent has to comply with the conditions of the permit issued by the MIC and applicable laws when making the investment
Rule 203	The project proponent has to fully assist while negotiating with the authority for settling the grievance of the local community which has been affected due to investment
Rule 206.	The project proponent has to submit the passport, expert evidence or document of degree and profile to the MIC office for approval if decide to appoint a foreigner as senior management, technician expert or consultant according to subsection (a) of section 51 of Myanmar Investment Law
Myanmar Insurance Law (1993)	Section 15 - If the project proponent uses the owned vehicles the project owner has to ensure the insurance for the injured person. Section 16 - The project proponent has to ensure insurance to compensate for general damages because the project may cause damages to the environment and injury to the public.
Payment of Wages Law (2016)	
Section 3 & 4	The project proponent has to pay the wages in accord with section 3 and 4 of said law,
Section 5	The project proponent has to submit with the agreements of employees & reasonable ground to the department if it is difficult to pay because of force majeure included in a natural disaster
Section 7-13	The project proponent has to abide by the provisions of section 7 to 13 in the chapter (3) in respect of deduction from wages.
Section 14	The project proponent has to pay the overtime fees, prescribed by law, to the employees who work over working hours
Yangon City Development Committee Law (2018)	
Section (317)	The proponent shall not block the natural river channel, change the course, and disrupt the water channel, filling with soil within the city boundaries without the consent of the Committee
Section (318)	The project proponent shall not construct buildings, factories, and industries without sewage, toilet, septic tanks, and wastewater treatment system

Section (322)	The project proponent is not allowed to make activities that will produce noise pollution, water pollution, air pollution, and soil pollution to impact the environment within the city's boundaries
The Amended Law for Factories Act, 1951 (2016)	
Hygiene in Working Environment: Section 3	Mentions responsibilities of employer and manager regarding waste disposal, ventilation, extreme temperature, dust and gas generation, minimum space for each worker, lighting, portable drinking water and toilets for employees.
Safety in Working Environment: Section 4	States responsibilities of employer and manager concerning with machine guarding, personal protective equipment, housekeeping, aisles and exits, chemical storage and fire protection system to avoid accident.
The Private Industrial Enterprise Law, 1990	
Basic Principles: Section 3	Private Industrial Enterprises shall be conducted in accordance with the following basic principles:- (a) to enhance the higher proportion of the manufacturing value added in the gross national product and value of services, and to increase the production of the respective economic enterprises which are related to the industrial enterprise; (b) to acquire modern technical know-how for raising the efficiency of industrial enterprises and to establish the sale of finished goods produced by the industrial enterprise not only in the local market, but also in the foreign market; (d) to cause narrowing down of the gap between rural development and urban development by causing the development and improvement of industrial enterprises; (e) to cause opening up of more employment opportunities; (f) to cause avoidance of or reduction of the use of technical know-how which cause environmental pollution; (g) to cause the use of energy in the most economical manner.
The Export and Import Law (2012)	
Objectives	The objectives of this law are as follows: a) To enable to implement the economic principles of the State successfully. b) To enable to lay down the policies relating to export and import that supports the development of the State. c) To cause the policies relating to export and import of the State and activities are to be in conformity with the international trade standards. d) To cause to be streamlined and speedy in carrying out the matters relating to export and import.
Prohibitions: Section 5	No persons shall export or import restricted, prohibited and banned goods.
Prohibitions: Section 6	Without obtaining license, no person shall export or import the specified goods which are to obtain permission.
Prohibitions: Section 5	A person who obtained any license shall not violate the conditions contained in 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.

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)	
Objectives	To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. This law focuses as follows The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law. The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law. The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	4. When a Principal Epidemic Disease of a Notifiable Disease occurs; Immunization and other necessary measures shall be undertaken by the Department of Health, in order to control the spread thereof; The public shall abide by measures undertaken by the Department of Health under sub-section (a).
Chapter 4 Environmental Sanitation	For prevention of the outbreak of Communicable Disease and effective control of Communicable Disease when it occurs, the public shall under the supervision and guidance of the Health Officer of the relevant area, undertake the responsibility of carrying out the following environmental sanitation measures;- Indoor, outdoor sanitation or inside the fence outside the fence sanitation; Well, ponds and drainage sanitation; Proper disposal o refuse and destruction thereof by fire; Construction and use of sanitary latrines; Other necessary environmental sanitation measures.
Occupational Safety and Health Law (2019)	
Purpose:	To effectively implement measures related to safety and health in every industry and to set occupational safety and health standards;

Section-26 Sub-section (e)	The project proponent has to provide adequate and relevant personal protective equipment to workers free of charge and make them wear it during work so as not to expose workers to any serious occupational diseases or hazards.
Section-26 Sub-section (1)	The project proponent has to arrange and display occupational safety and health instructions, warning signs, notices, posters, and signboards.
Section-30 Sub-section (a)	The worker shall wear or use at all times any protective clothes, equipment and tools provided by the employer for the purpose of safety and health.
Section-30 Sub-section (d)	The worker shall proper and systematic use any equipment and tools, machines, any parts of the machines, vehicles, electricity and other substances being used at the workplace.
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
လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သောဟတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ (၂၀၁၀)	
ရည်ရွယ်ချက်	လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သောဟတ္ထုပစ္စည်းများကိုစနစ်တကျပြုလုပ်ခြင်း၊တင်သွင်းခြင်း၊သယ်ယူခြင်း၊သိုလှောင်ခြင်းနှင်းသုံးစွဲခြင်းတို့ပြုနိုင်ရန်၊ ယမ်းဘီလူးနှင့်ဆက်စပ်သုံးပစ္စည်းများအသုံးပြုသည့်လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်း၍လုံခြုံမှုရှိစေရန်၊ လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သောဟတ္ထုပစ္စည်းများပြုလုပ်သုံးစွဲမှုများကိုစနစ်တကျကြီးကြပ်နိုင်ရန်။
အခန်း၇ တားမြစ်ချက်များ အမှတ်၁၈	လိုင်စင်ရရှိသူနှင့်ခွင့်ပြုချက်ရရှိသူမည်သူမျှစစ်ဆေးရေးအရာရှိချုပ်သို့မဟုတ်စစ်ဆေးရေးအရာရှိ၏စစ်ဆေးခြင်းကိုခံယူရန်ငြင်းပယ်ခြင်းမပြုရ။

အမှတ်၁၉ (ခ)	ပုဒ်မဓအရကာကွယ်ရေးဌာနကောင်စီအမှုဆောင်အဖွဲ့၏အတည်ပြုချက်မရရှိဘဲလုပ်ငန်းခွင်ပေါက်ကွဲစေတက်သောပတ္တုပစ္စည်းများကိုဖျက်ဆီးခြင်းမပြုရ။
အမှတ်၁၉ (ဂ)	ဤဥပဒေအရထုတ်ပြန်သည့်နည်းဥပဒေ၊စည်းမျဉ်း၊စည်းကမ်း၊အမိန့်ကြော်ငြာစာ၊အမိန့်နှင့်ညွှန်ကြားချက်များနှင့်အညီဆောင်ရွက်ရန်ပျက်ကွက်ခြင်းမရှိစေရ။
Myanmar Insurance Law (1993)	
Chapter VI Effecting Insurance and Granting of Benefits Section 15	Owners of motor vehicles shall effect compulsory Third Party Liability Insurance with the Myanmar Insurance.
Section 16	An entrepreneur or an organization operating an enterprise which may cause loss to State-owned property or which may cause damage to the life and property of the public or which may cause pollution to the environment shall affect compulsory General Liability Insurance with the Myanmar insurance.
The Conservation of Water Resources and River Law (2006)	
Aims	The aims of this Law are as follow: 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 V Prohibition Section 9	No person shall destroy, cause damage or cause collision of vessel with the river training structure either wholly or partly.
Section 11	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. Catch aquatic creatures within river-creek boundary, bank boundary or waterfront boundary with poisonous materials or explosives. Dispose of disposal soil and other materials from panning for gold, gold mineral dredging or resource production in the river and creek, into the water outlet gully which can flow into the river and creek.
Section 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.

2.2. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUIDELINES

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

projects subject to the EIA Procedure, it is the prerogative of the Ministry to decide how the Guidelines should be applied to existing projects as referred to in the EIA Procedure.

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

2.2.1. General Guidelines

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

2.2.1.1. 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 **Error! Reference source not found.**.

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

2.2.2. Bags Products Manufacturing

This guideline applies to bags manufacturing using natural fibers, synthetic fibers (made entirely from chemicals), and regenerated fibers (made from natural materials by processing these materials to form a fiber structure). It does not include polymer synthesis and natural raw material production.

2.2.2.1. Effluent levels

Parameter	Unit	Guideline Value
5-day Biochemical oxygen demand	mg/l	30
Absorbable organic halogens	mg/l	1
Ammonia	mg/l	10
Cadmium	mg/l	0.02
Chemical oxygen demand	mg/l	160
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Cobalt		0.5
Color		7 (436 nm[a], yellow) 5 (525 nm, red) 3 (620 nm, blue)
Copper	mg/l	0.5
Nickel	mg/l	0.5
Oil and grease	mg/l	10
Pesticides		0.05-010[b]
pH	S.U. [c]	6-9
Phenol	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	°C	<3 [d]
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

a Nanometers
b 0-05 mg/l for total pesticides (organ phosphorus pesticides excluded); 0.10 mg/l for organo phosphorus pesticides
c Standard Unit
b at the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge

2.2.2.2. Air emission levels

Parameter	Unit	Guideline Value
Ammonia	mg/Nm^{3a}	30
Carbon disulfide	mg/Nm^3	150
Chlorine	mg/Nm^3	5
Formaldehyde	mg/Nm^3	20
Hydrogen sulfide	mg/Nm^3	5
Particulates	mg/Nm^3	50[b]

Volatile organic compounds	mg/Nm^3	2/20/50/75/100/1 150 [c, d]

a Milligrams per normal cubic meter at specified temperature and pressure
b as the 30-minute mean for stack emissions
c Calculate as Total carbon
d As the 30-minute mean for stack emissions; 2 mg/Nm^3 for volatile organic compounds classified as carcinogenic or mutagenic with mass flow greater than or equal to 10 g/hr; 20 mg/Nm^3 for discharges of halogenated volatile organic compounds with a mass flow equal or greater than 100 g/hr; 50 mg/ Nm^3 for waste gases from drying of large installations (solvent consumption > 15 tons/year); 75 mg/Nm^3 for coating application processes for large installations (solvent consumption > 15 tons/year); 100 mg/Nm^3 for small installations (solvent consumption < 15 tons/year); if solvent is recovered from emissions and reused, the guideline value is 150 mg/Nm^3

2.2.3. 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. **Error! Reference source not found.**shows the contents of the section of Community Health and Safety.

Table 2-3 Community health and safety contents

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

Contents	Brief Description
	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.

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

2.3. INSTITUTIONAL ARRANGEMENT

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

2.4. COMMITMENT OF 3R NON-WOVEN MANUFACTURE COMPANY LIMITED

3R Non-Woven Manufacture Company Limited has made the commitments and responsible for the preservation of the environment at and around the area of project site. In addition to this, it shall carry out as per instructions made by Ministry of MONREC in which to conduct an EMP which describe the measure to be taken for preventing, mitigation and monitoring significant environment impacts resulting from the implementation and operation of proposed project or business or activity has to be prepared and submitted and to perform activities in accordance with this EMP and be abided by the environment policy, Environmental Conservation Law and other environmental related rules and procedures.

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.

3R Non-Woven Manufacture Co., Ltd. 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 service
- To carry out fire safety assessment and ensure adequate and appropriate fire safety measures for employees.

3. PROJECT DISCRIPTION

3.1. LOCATION OF PROPOSED PROJECT

The proposed project is located at Latitude 16°53'40.21"N and Longitude 96°15'11.19", Plot No. 40, Myay Taing Block No. 144, Dagon Myothit (South) Industrial Zone, Dagon Myothit (South) Township, Yangon Region. The location map of the proposed project size is shown in Figure 3-1.

3.2. OBJECTIVES OF PROPOSED PROJECT

The proposed project intends to manufacture bags on CMP basic and to export 100% of the finished products. Winstar International Group Company Limited agrees to supply to ready make products and pay CMP charges to 3R Non-Woven Manufacture Company Limited.

3.2.1. Site Description of Proposed project site

The total land area is 2.197 acres out of 1.0985 acres and build main factory buildings, warehouse, kitchen, canteen, maintenance house, etc. which were built on its land area. Also, factory layout drawing is able to seen in Figure 3-2 and Figure 3-3.

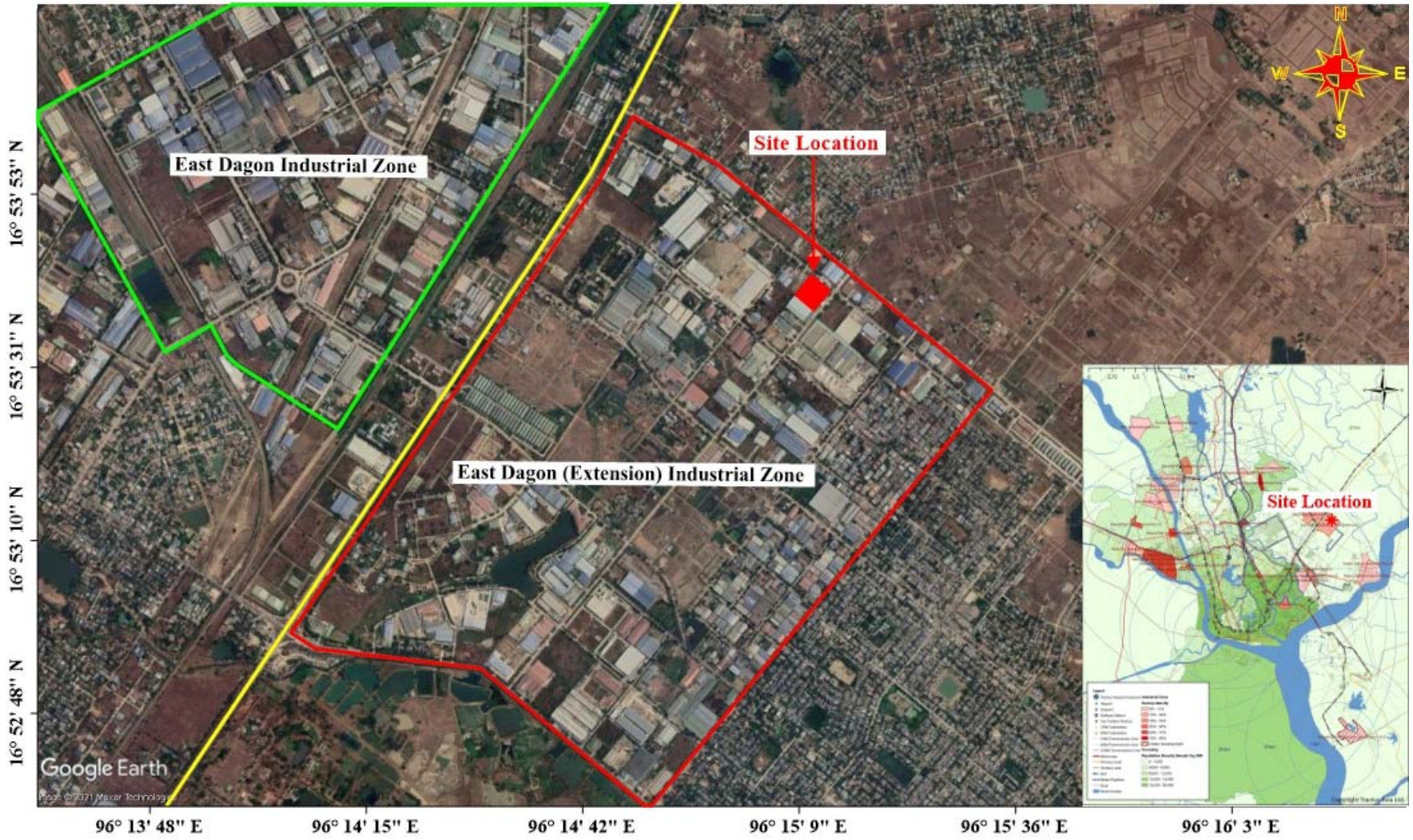


Figure 3-1 Location Map

1.Dormitory 2.Security Gate 3.Generator Room 4.Transformer 5.Overhead Tank and Tube Well
6.Water Tank(Cooling System) 7.Raw Materials Storage Area 8.Toilets 9.Office 10.Production Area

Figure 3-2 Factory Layout Map

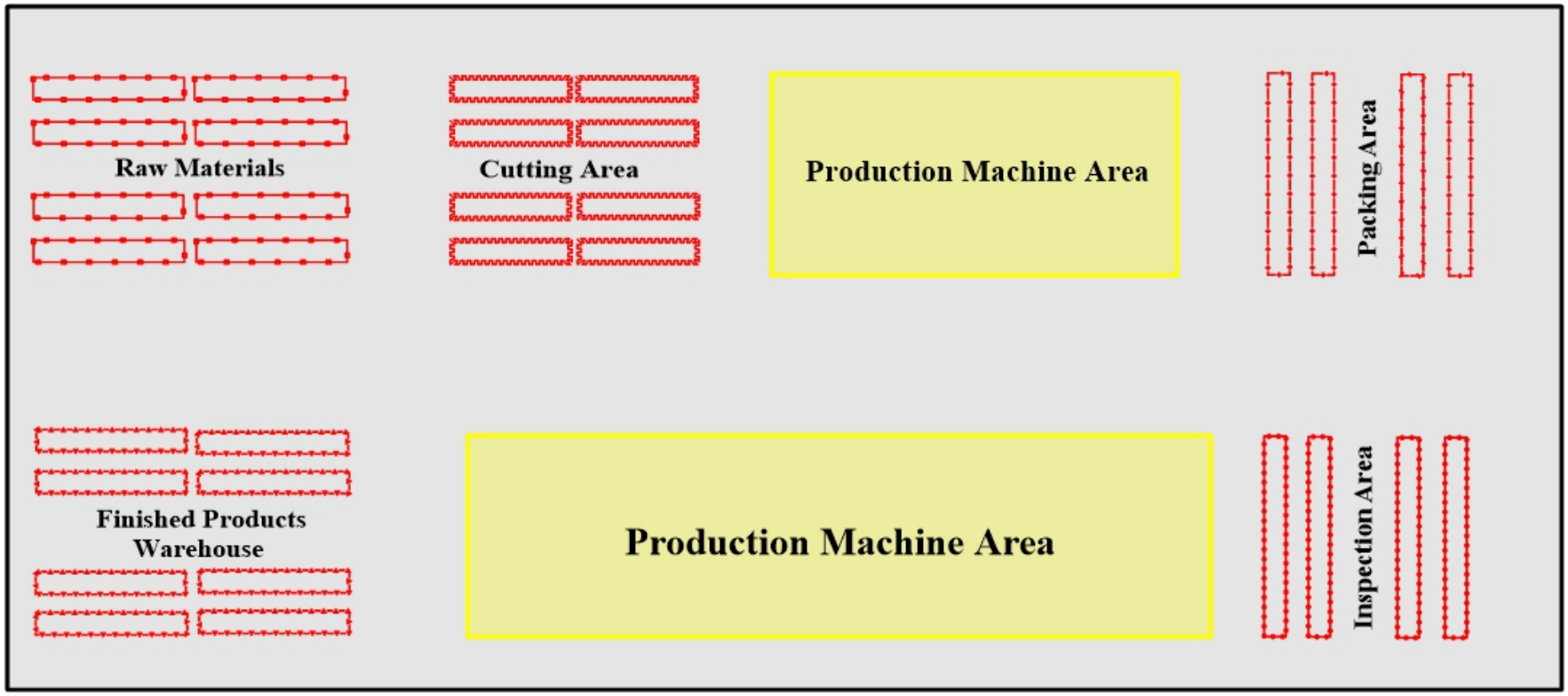


Figure 3-3 Factory Layout Drawing

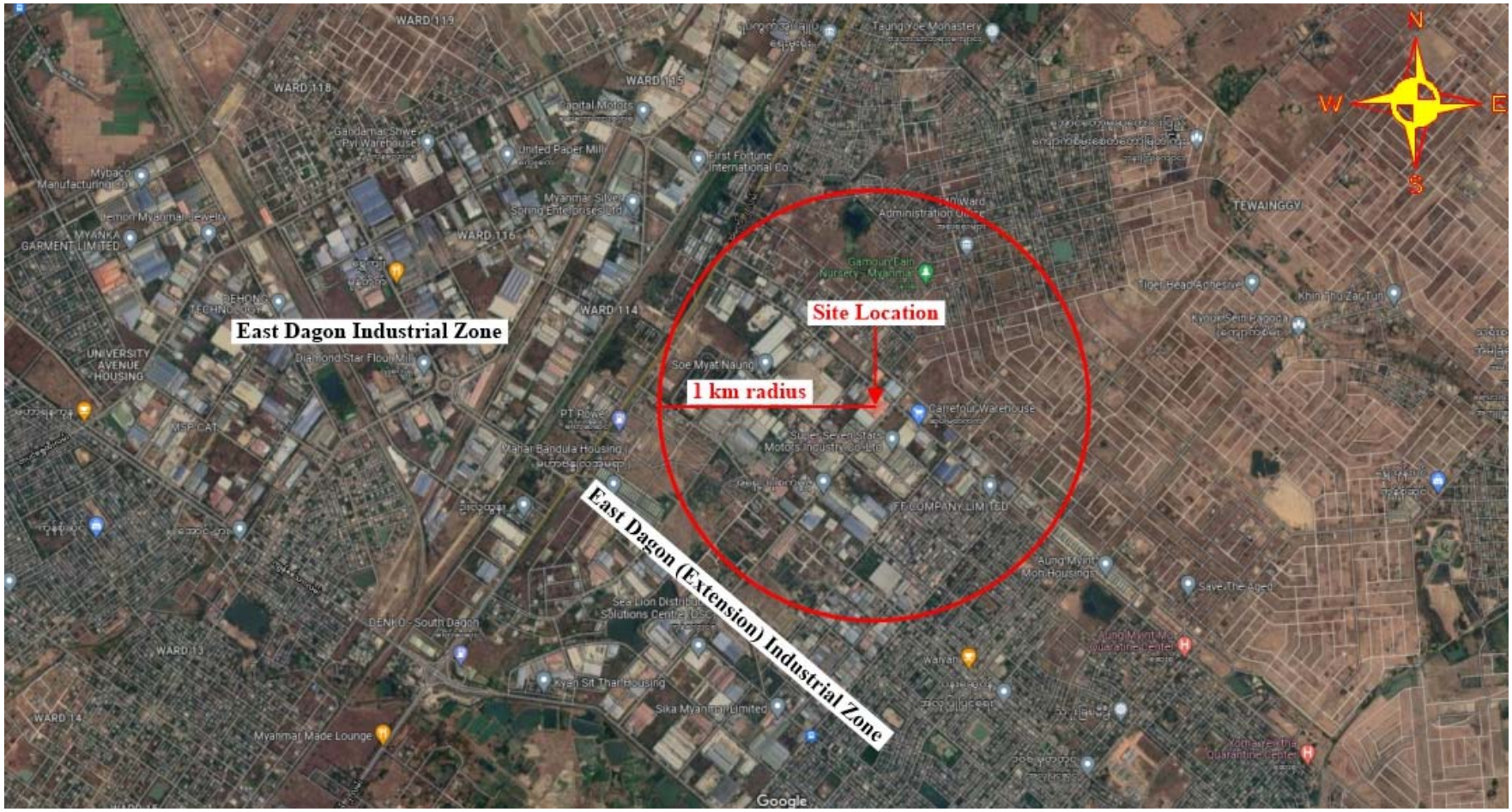


Figure 3-4 1km radius of proposed project

3.2.2. Production Process

The production process is based on CMP system in which the production on consignment in which the main raw materials (fabrics and ancillary materials) 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. There are different machines which will do the maximum of the manufacturing work. There are two ways of selling these bags. First the bags are sold to the customer and then the customer gets the printing done. Secondly both the bag printing and cutting is done and then sold to the customer. Non-woven bag manufacture is completed in a few steps and it is largely automated. Manpower required in a factory is also less. The process flow diagram for bags manufacturing is illustrated in Figure 3-5. Below are the different required machines:-

- Non-woven bag making machine: - The function of this bag making machine is to cut the fabric is the desired size after passing through the rollers.
- Auto handle sealing machine: - This machine is required to attach handles to the main body of the bags.
- Printing Machine: - This is required to print designs on the fabric roll. It can be general prints or as per the demand of the customer. For manufacturing plain bags, this machine is not required.
- Printing machine roller: - This helps to straighten the fabric of the bag.

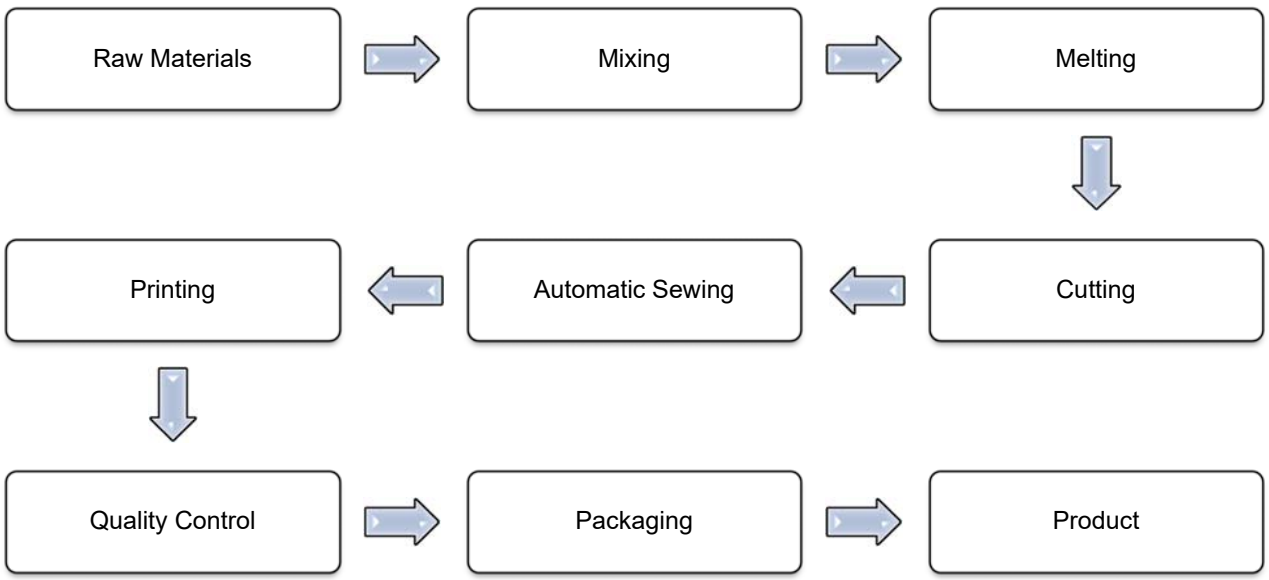


Figure 3-5 Production flow diagram

Raw Storage

Mixing

Melting

Cutting

Automatic sewing machine

Printing Machine

Quality Control

Packaging

Figure 3-6 Production Photos

During operation, the proposed factory is expected to produce bags products as per Table 3-1.

Table 3-1 Annual Production Rate

No	Particular	Unit	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6-10
Production (Pcs)		Pcs	58,300	58,300	58,300	64,130	64,130	64,130
1.	Shopping Bag #1	Pcs	20,000	20,000	20,000	22,000	22,000	22,000
2.	Shopping Bag #2	Pcs	20,000	20,000	20,000	22,000	22,000	22,000
3.	Shopping Bag #3	Pcs	8,000	8,000	8,000	8,800	8,800	8,800
4.	Shopping Bag #4	Pcs	5,000	5,000	5,000	5,500	5,500	5,500
5.	Carrying Bag	Pcs	800	800	800	880	880	880
6.	Non-Woven Storage Box	Pcs	2,000	2,000	2,000	2,200	2,200	2,200

No	Particular	Unit	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6-10
7.	Non-Woven Suit Bag	Pcs	1,000	1,000	1,000	1,100	1,100	1,100
8.	Handbag	Pcs	100	100	100	110	110	110
9.	School Bag	Pcs	50	50	50	55	55	55
10.	Luggage	Pcs	50	50	50	55	55	55
11.	Insulation Bags	Pcs	500	500	500	550	550	550
12.	Felt Bag	Pcs	800	800	800	880	880	880

Figure 3-7 Products Photos

3.3. UTILITIES

3.3.1. Raw Material

The main Raw Materials are Polypropylene, masterbatch, caton, ink, yarn, zipper, ribbon and velcro which imported from China. List of Raw materials are described in Table 3-2.

Table 3-2 List of Raw Materials Requirement

No	Particular	Unit	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6
1	Polypropylene	Kg	4,794	4,794	4,794	5,273	5,273	5,273
2	Masterbatch	G	296,020	296,020	296,020	325,622	325,622	325,622
3	Carton	Pcs	1,845	1,845	1,845	2,030	2,030	2,030
4	Ink	Kg	569	569	569	626	626	626
5	PE Packaging Film	Kg	569	569	569	626	626	626
6	Paper Tube	M	2,856	2,856	2,856	3,142	3,142	3,142
7	BOPP Film	Kg	1,158	1,158	1,158	1,274	1,274	1,274
8	Cardboard Box	Sqm	2,275	2,275	2,275	2,503	2,503	2,503
9	Grey Board	Kg	44,810	44,810	44,810	49,291	49,291	49,291
10	Polyethylene	Kg	1,138	1,138	1,138	1,252	1,252	1,252
11	With Adhesive Film	Kg	2,330	2,330	2,330	2,563	2,563	2,563
12	Yarn	Kg	1,717	1,717	1,717	1,889	1,889	1,889
13	Printed Version	Pcs	449	449	449	494	494	494
14	Zipper	M	34,117	34,117	34,117	37,529	37,529	37,529
15	Ribbon	M	67,295	67,295	67,295	74,025	74,025	74,025
16	Buckle	Pcs	229,200	229,200	229,200	252,120	252,120	252,120
17	Velcro	M	18,060	18,060	18,060	19,866	19,866	19,866
18	Packing Bag	Pcs	58,300	58,300	58,300	64,130	64,130	64,130
19	SMS Non-Woven	Kg	642	642	642	706	706	706
20	Pet Non-Woven	Kg	1,675	1,675	1,675	1,843	1,843	1,843
21	Felt Cloth	Ton	290	290	290	319	319	319
22	Aluminum Flame	Pcs	159	159	159	175	175	175
23	Silk Printing Handle	M	106	106	106	117	117	117
24	Silk Screen Mesh	M	2,650	2,650	2,650	2,915	2,915	2,915
25	Metal Button	Pcs	121,850	121,850	121,850	134,035	134,035	134,035
26	Plastic Buckle	Pcs	127,800	127,800	127,800	140,580	140,580	140,580
27	Polyester Cloth	M	57,970	57,970	57,970	63,767	63,767	63,767
28	Leather (Synthetic)	M	56,475	56,475	56,475	62,123	62,123	62,123
29	Knitted Cloth	M	84,405	84,405	84,405	92,846	92,846	92,846

No	Particular	Unit	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6
30	Woven Cloth	M	55,800	55,800	55,800	61,380	61,380	61,380
31	Grid Cloth	M	57,175	57,175	57,175	62,893	62,893	62,893
32	Plastic Film	Kg	1,724	1,724	1,724	1,896	1,896	1,896
33	Label	Pcs	116,600	116,600	116,600	128,260	128,260	128,260
34	Weaving Wheat	Pcs	118,000	118,000	118,000	129,800	129,800	129,800

Figure 3-8 Raw Storage

3.3.2. Machinery and Equipment

List of machinery and equipment required for 3R Non-Woven Manufacture Bags (Myanmar) factory is following in Table 3-3.

Table 3-3 List of Machinery

No.	Particular	Model	Unit	Quantity
1.	Non-Woven Bags Making Machine	E700	Set	2
2.	Silk Screen Printing Machine	A1200	Set	2
3.	Cutting Machine	B1200	Pcs	1
4.	Cutting Machine	A1700	Pcs	1
5.	Cutting Machine	C1700	Pcs	1
6.	Non Woven Fabric Making Machine	M2400	Set	1
7.	Non Woven Bag Making Machine	ONL5110	Set	1
8.	Non Woven Bag Making Machine	ZXLD700	Set	1
9.	Screen Printing Machine	ZXHA1200	Set	1
10.	Non-Woven Slitting Machine	ZXCA1700	Set	1
11.	Non-Woven Bag Exposure Machine	ZX-E1600	Set	1
12.	Non-Woven Bag Ultrasonic Welding Machine	ZX-55	Set	1

No.	Particular	Model	Unit	Quantity
13.	Ultrasonic Lace Machine	ZX-80	Set	1
14.	Hydraulic Pressure Punching Machine	ZX-625	Set	1
15.	Pneumatic Net Stretching Machine		Set	20

3.3.3. Human Resource

Human resource required by foreign experts/technicians and local persons for administrative and production process are about 88 persons which are also described in Table 3-4. The working day of the factory is at least 262 days per year.

Table 3-4 Employment Schedule

No	Position	Local Person	Foreign Technicians
1	Production Manager		2
2	Patterning Technicians		1
3	Mechanic Technician		2
4	Sampling Technicians		1
5	Quality Control	2	2
6	HR Manager	1	
7	Factory Manager	2	
8	Fire Safety Officer	1	
9	Financial Manager	1	
10	Purchasing Manager	1	
11	Secretary	1	
12	Store Supervisor	2	
13	Shipping Manager	2	
14	Store Keeper	2	
15	Driver	2	
16	Skill and Semiskill Workers	40	
17	Unskilled Workers	18	
18	Cleaner	2	
19	Security Staff	3	
Total		80	8
		88	

3.3.4. Water Requirement

Dagon Myothit (South) industrial zone has no centralized water supply system and the factory gets water from the tube wells installed inside the factory compound. Groundwater from this tube well is pumped in the storage tanks for the factory and domestic use. The main water use in the proposed project is for domestic usage such as for personal washing, food preparation, and washing of utensils. Drinking water will be provided by outsource suppliers. Estimated water consumption for the whole factory is 400 gallons per day, 8,800 gallons per month and 105,600 gallons per year Figure 3-9 is described by water storage tank and drinking water supply for 3R Non-Woven Manufacture factory.

Figure 3-9 Water storage tank and drinking water supply

3.3.5. Electricity and Fuel Requirement

The proposed project intended to get required electricity supply form Yangon City Electricity Supply Board (YESB) and distributed by 120 KVA of Transformer and another sources of energy 320 kVA generator which also be kept as the emergency generator if normal electricity supply could not provide for the proposed project. Estimated electricity usage is about 112,200 units per month.

Required petrol and diesel for vehicles and generator are purchased from the nearest petrol station. Fuel requirement is about 1250 gallons per month. The fuel at the factory is carefully stocked with drums.


Figure 3-10 Electricity Facilities

3.4. FACILITY

3.4.1. Liquid waste management facility

Water discharge from the factory site will be treated by silts track tank before discharging. Water effluent levels should be within acceptable limit of the National Environmental Quality (Emissions) Guidelines values. The factory plan has kitchen, canteen and toilet facilities attached in various buildings of the factory. In the kitchen, separated drainage lines 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. Wastewater from the dining room, canteens and toilet facilities are collected in septic tanks which are attached with sewer treatment plant and the proponent will connect and cooperate with YCDC to be carried out for disposing of these septic tank wastes. To mitigate the impact on water, the drainages around the compound area of the factory have to maintain and clean regularly. Spillage and leakages of oil and grease should also be minimized.


Figure 3-11 Drainage and Septic tank in project area

3.4.2. Fire Safety facility

The project proponent has provided fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases. Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire frightening is also constructed with the capacity of 97,00 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 3-12.

Figure 3-12 Firefighting plan and Escape plan

3.4.3. Solid Waste 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.

Figure 3-13 Waste Management

3.5. GENERATION OF WASTE, EMISSION AND DISTURBANCES

Solid waste (recycle waste) such as broken machine parts, paper box, fabric scraps, etc., are hand over to local waste buyer. Although the factory causes some pollution but also has a positive side and that is the factory has created employment for many people, due to this factory local community has built up daily. Total amount of solid waste discharge from factory is maximum 750 kg daily and handover to YCDC two-time per month. Wastes generated from the bags factory are cloth scraps of 50% from cutting section, 35% from sewing section and 15% from packing section. In addition, packing waste of plastic sheet, carton box and fabric paper tube are generated from cutting line and packing section. Total amount of waste about maximum 50 kg per day are generated from operation process. And others solid waste from the whole factory (such as from human, kitchen, packing).

3.5.1. Waste Generation

The project will be generated solid waste, liquid waste and hazardous waste from the operation of the 3R Non-Woven Manufacture Co., Ltd. Detail description of waste generation and waste amount are shown in below.

Table 3-5 Waste Generation & Waste Amount

Waste		Type of wastes	Estimated waste amount	Source of generation
Solid waste	Re-usable	Residual pieces of fabric scraps	10% a roll of fabric (kg)	Production line and cutting line
		Raw material cutting wastes	1,100 kg / month	
		Disposed packaging materials, paper or plastic wrapping	13,200 kg / month	Materials store and supply packaging
	Non re-usable	Food residues, domestic waste	320 kg / day*	Canteen, Kitchens, dormitory
Liquid waste		Sanitary discharge water	90.3 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

4. BRIEF DESCRIPTION OF SURROUNDING ENVIRONMENT

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

4.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

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

- Onsite Measurements and Analysis – Baseline parameters such as Indoor temperature, humidity, operation light conditions, noise and water quality of the project site during operation phase were measured onsite. The analyzed results are mentioned in this chapter.
- Secondary data collection of proposed project site area – Social economic condition, physical/biological environment, and weather data are collected from official township data of Dagon Myothit (South) Township, Yangon Region.

4.2. PHYSICAL COMPONENT IN PROJECT AREA

4.2.1. Topography

The proposed project area is situated in Dagon Myothit (South) Industrial Zone, Dagon Myothit (South) Township, and its topographic condition is flat. The proposed project site is primarily agricultural land, but now is initiated into the industrial zone area.

4.2.2. Geology

The Yangon area is underlain by alluvial deposits (Pliestocene to Recent), the non-marine fluvialtile sediments of Irrawady formation (Pliocene), and hard, massive sandstone of Pegu series (early-late Miocene). Alluvial deposits are composed of gravel, clay, silts, sands and laterite which lie upon the eroded surface of the Irrawaddy formation at 3-4.6 m above mean sea level (MSL). The rock type in Yangon is mainly soft rocks, which consist of sandstone, shale, limestones and conglomerate. Geological map of Yangon Regional area is shown in Figure 4-1. [2]

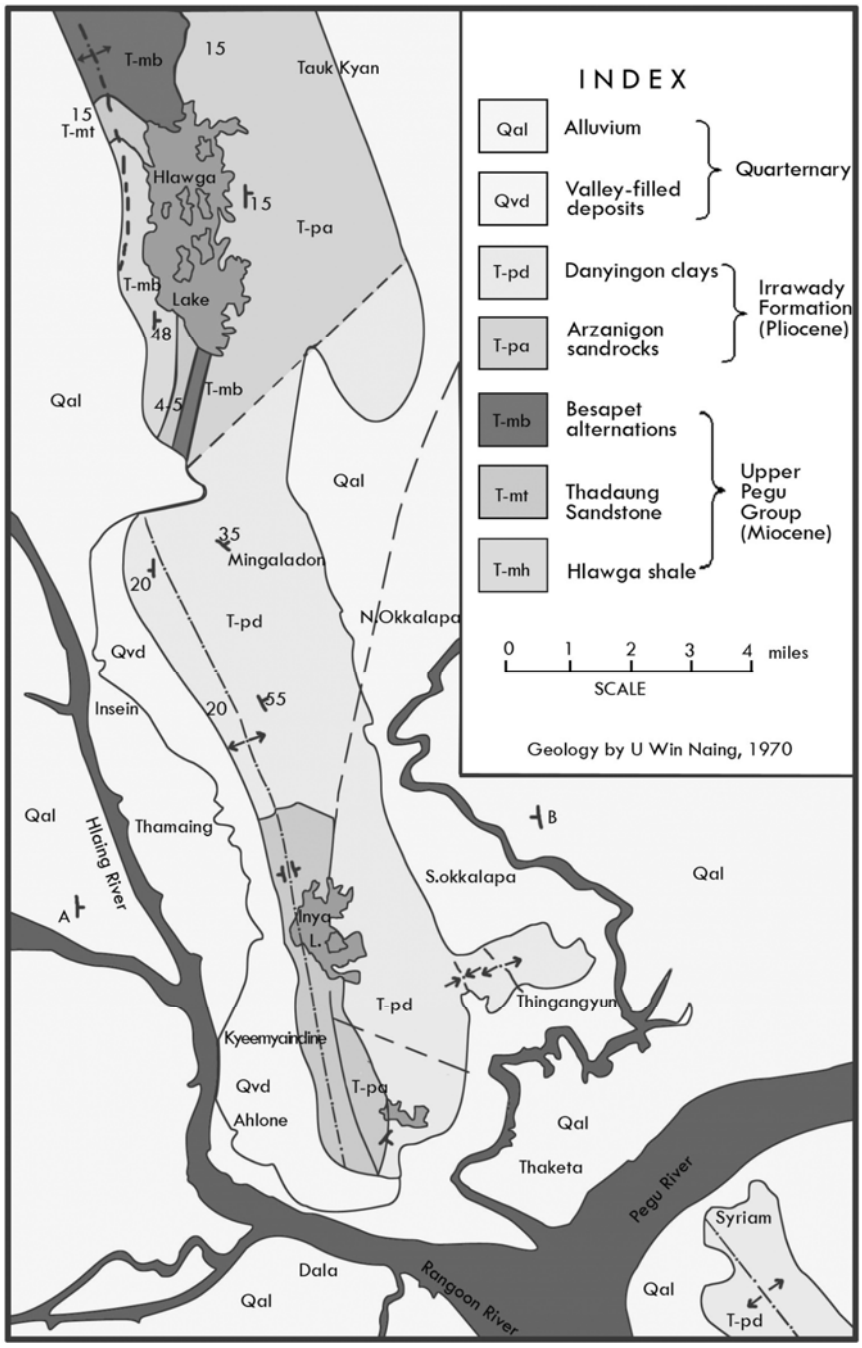


Figure 4-1 Geological Map of Yangon Region

4.2.3. Tectonics

Yangon is situated in the southern part of the Central Lowland which is one of the three major tectonic provinces of Myanmar. The Taungnio Range of the Gyophyu catchments area of Taikkyi District, north of Yangon, through the Thanlyin Ridge, south of Yangon forming a series of isolated hills probably resulted from the progressive deformation of the Upper Miocene rocks as the eastern continuation of the subduction or stretching and compression along the southern part of the Central Basin and regional uplifting of the Pegu Yoma (Aung Lwin 2012). [2]

4.2.4. Soil

The underlying soil type at the Project Site and its surroundings is characterized as the Meadow and Meadow Alluvial Soil. Meadow Soil is soil which occurs near the river plains exposed to occasional tidal floods, is non-carbonate and usually contains a large amount of salt. Both materials mainly comprise silty clay loam and neutral soil rich in plant nutrient. The upper layers (approximately 0 to 7 m) of the soil at the Project Site comprise largely of cohesive layers with traces of sand and gravel, followed by sand layers with low silt content and trace gravel from 7 to 35 m. The lower layers comprise denser silt layer with traces of sand and gravel from approximately 57 to 70 m. Standard Penetration Test (SPT) results obtained from testing at the Project Site indicate that the soil strength generally increases with depth. The STP results showed that the current soil quality can accommodate the construction of the Project. [2]

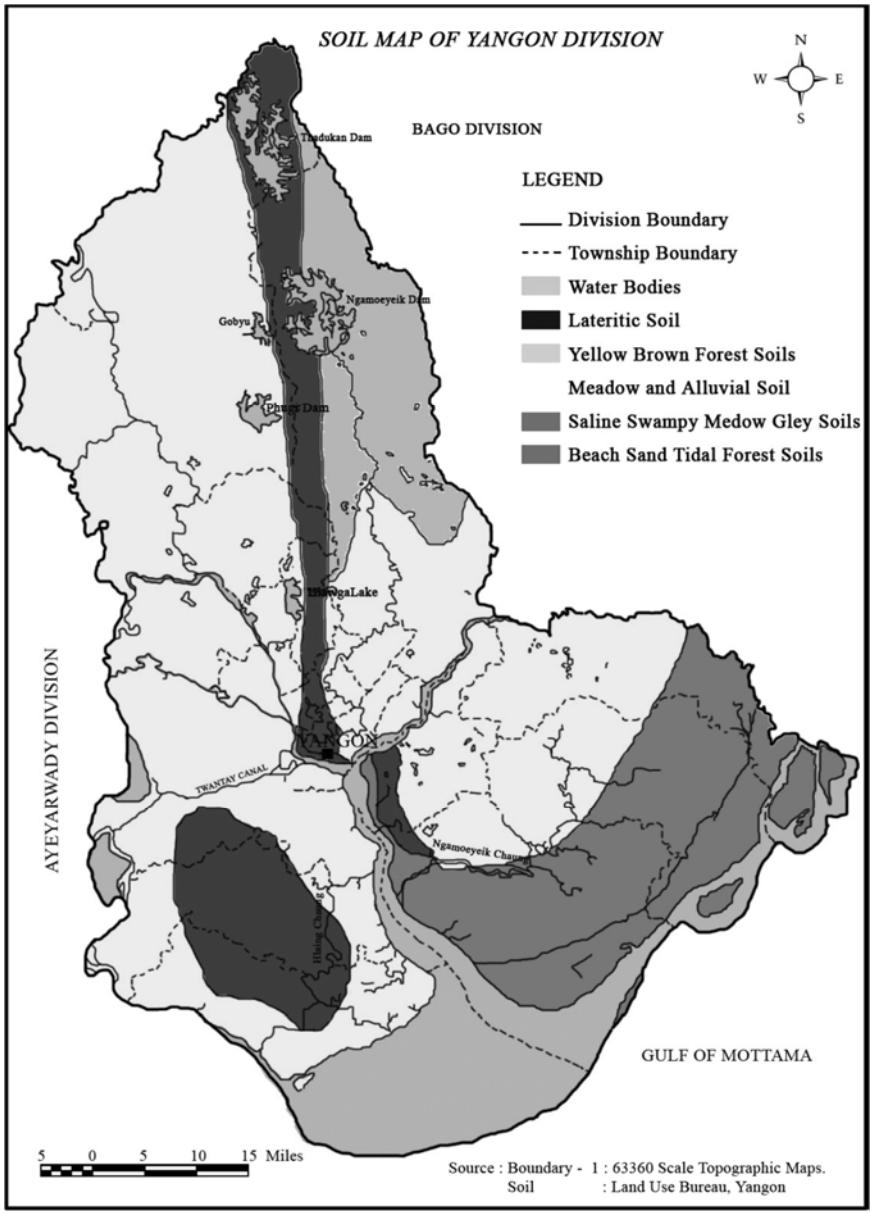


Figure 4-2 Soil map of Yangon (Source: Land use of Bureau of Yangon)

4.2.5. Hydrogeology

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

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

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

Hydrology: The Project Site lies along the catchment of the Pazundaung River which flows east of the site in a southerly direction to converge into the Yangon River. The Yangon River (also known as the Rangoon River or Hlaing River) is formed by the confluence of the Pegu and Myitmaka rivers and flows into the Gulf of Martaban which is part of the larger Andaman Sea. The river flows along a 40 km stretch flowing from southern Myanmar as an outlet of the Ayeyarwady River into the Ayeyarwady delta. A small portion of the Bago River (the estuary) lies within the Yangon Division. The Pazundaung Creek and Bago River joins the Yangon River and from there, flow towards the southwestern direction into Andaman Sea. [2]

4.2.6. Climate and Meteorology

4.2.6.1. Average Weather in Yangon

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

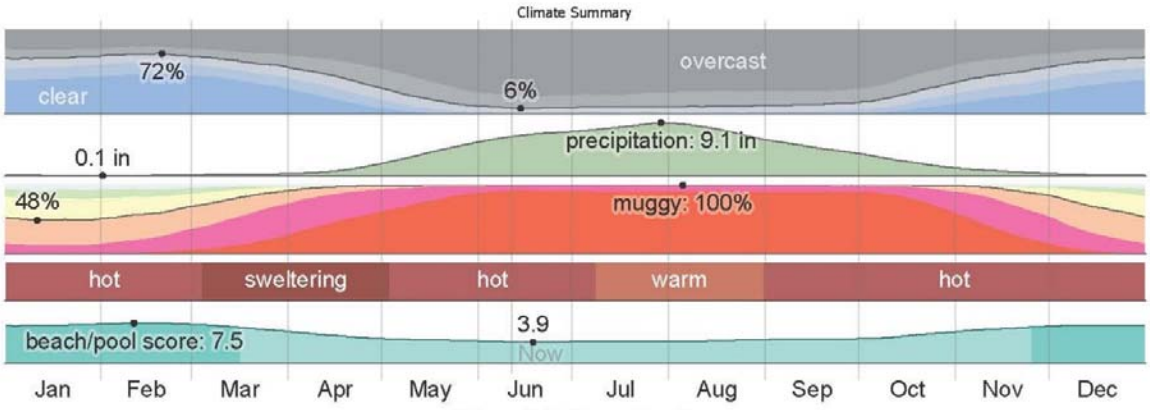


Figure 4-3 Climate Summary of Yangon Region

4.2.6.2. Temperature

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

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

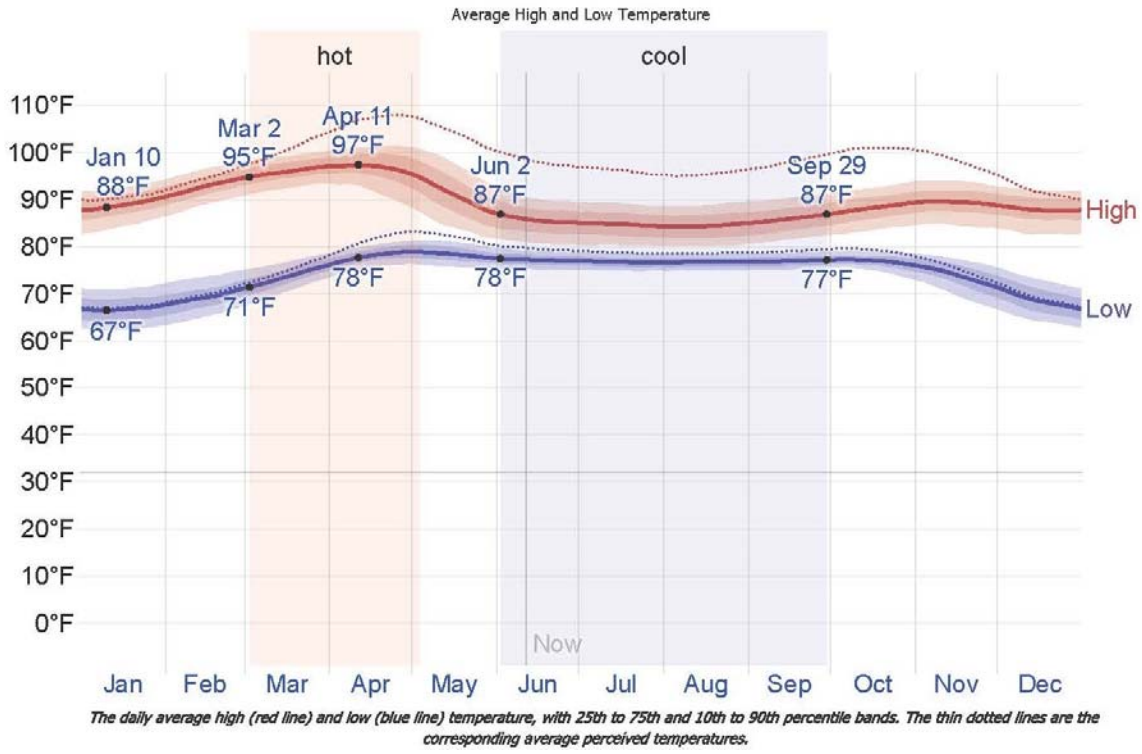


Figure 4-4 Average Temperature of Yangon Region

4.2.6.3. Clouds

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

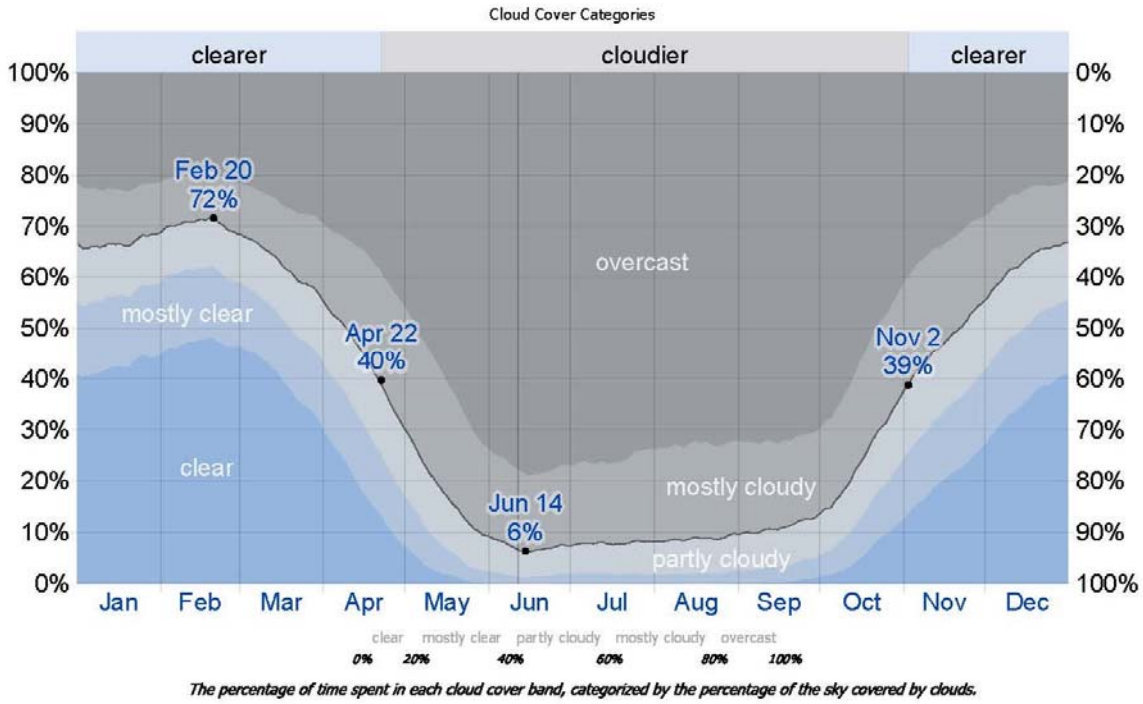


Figure 4-5 Cloud Cover Categories

4.2.6.4. Rainfall

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

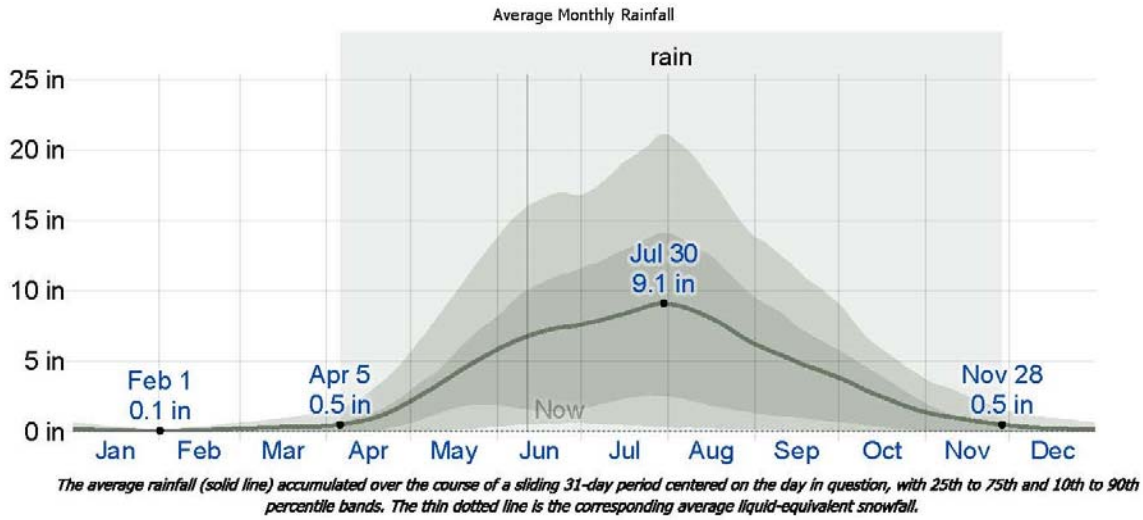


Figure 4-6 Average Monthly Rainfall at Yangon Region

Table 4-1 Annual rainfall and temperature

Year	Rainfall		Temperature	
	Raining day	Rainfall value	Summer season Max (°C)	Winter season Min (°C)
2016	102	79.20	45°C	15°C
2017	101	138.85	42°C	18°C
2018	113	134.53	40°C	12.5°C
2019	112	122.35	45°C	15°C

4.2.6.5. Humidity

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

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

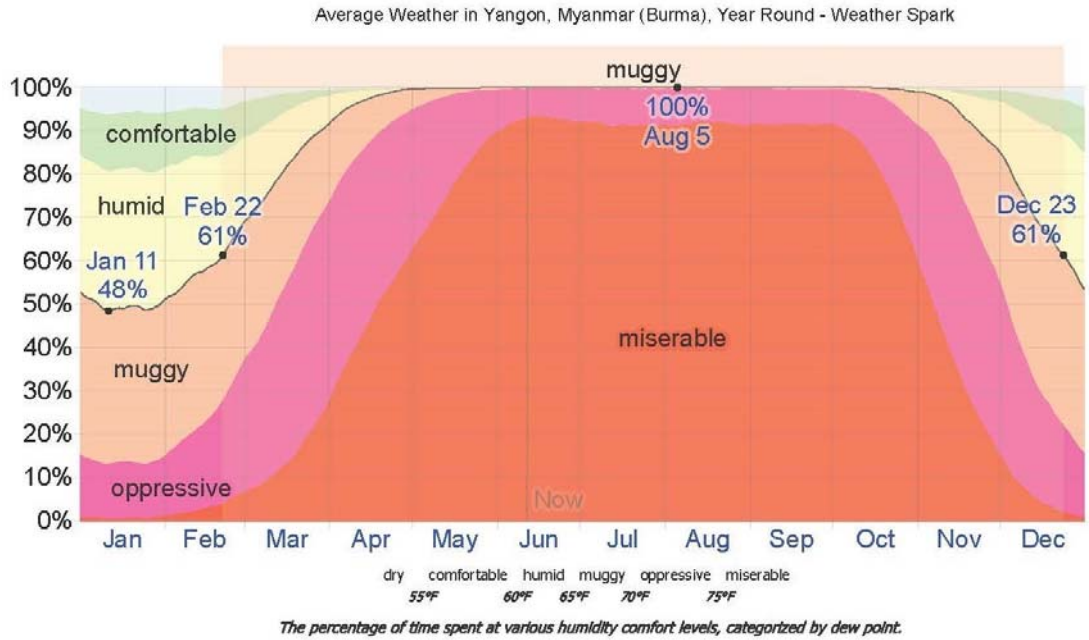


Figure 4-7 Humidity of Yangon

4.2.6.6. Wind

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

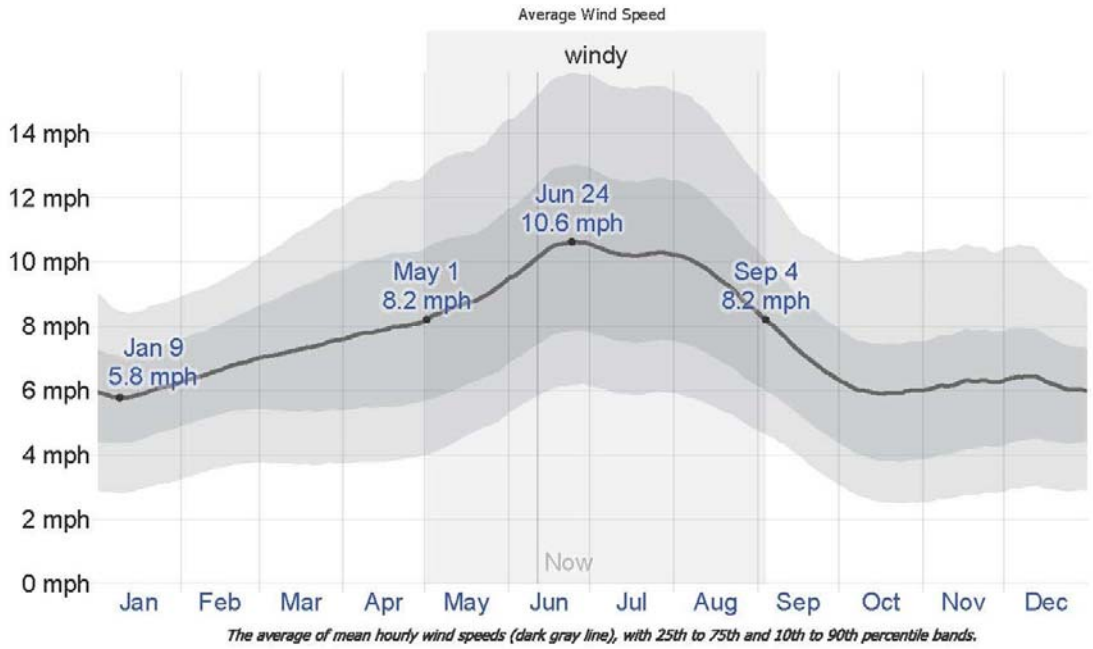


Figure 4-8 Average Wind Speed in Yangon

4.3. BASELINE ENVIRONMENTAL MONITORING

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

4.3.1. Indoor temperature and humidity

In November 10, 2021, the weather condition of proposed project is 33.53˚C average temperature and 59% average humidity.

Table 4-2 Relative humidity and temperature measure at factory

Date and Time	Description	Result value	Environmental parameter air station guideline
10 November 2021 (11:00 am to 3:00 pm)	Relative Humidity RH %	59 (%)	Present condition
	Temperature	33.53 °C	Present condition

4.3.2. Air Quality

To determine the existing baseline ambient air quality status within the project site on 10, November 2021, 8-hours of working period air pollutants level, which include dust (PM_{10} and $PM_{2.5}$) and gases (CO, O_3, SO_2, NO_2) were measured at the selected site using the OCEANUS AQM-09 air monitoring station. To reveal the existing status of baseline air quality, the average ambient air qualities measured were compared with National Environmental Quality (Emission) Guideline and international ambient air quality standard (NAAQS, ACGIH) guidelines. The measurement location point is situated at latitude 16°53'40.95"N and longitude 96°15'12.24"E.

It was observed that the air quality of CO, NO_2 and particulate matter (PM_{10}, $PM_{2.5}$) concentration level are within the limit of NEQ (emission) guideline but gases level of Sulfur Dioxide (SO_2) are also within the National Environmental Quality (Emission) Guideline. [4]

Table 4-3 Observed air quality results

Parameters	Observed value	Guideline value	Unit	Organization	Period
PM_{10}	20.13	50	$\mu g/m^3$	NEQG	24 hrs
$PM_{2.5}$	15.31	25	$\mu g/m^3$	NEQG	24 hrs
CO	0.3	10	$\mu g/m^3$	NEQG	8 hrs
SO_2	666.1	500	$\mu g/m^3$	NEQG	10 min
NO_2	20.7	200	$\mu g/m^3$	NEQG	1 hrs

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 4-9 Indoor & Outdoor Air Quality Measurement Photos

4.3.3. Noise

The Noise level was measured by using Digital Sound Level Meter for working hours on 10 November 2021. The average noise level in the project site area is presented in Table 4-4 compared with NEQ guideline. However, according to the Noise source monitoring at operation area (inside the production sector) of noise level is exceeding the acceptable level of National Environmental Quality (Emission) Guideline. [4]

Table 4-4 Noise level measurement result

Date and Time	Location	GPS value	Result value	NEQ Guideline
10.11.2021 (11:00 am to 1:00 pm)	Operation area NL-1	16°53'39.77"N 96°15'11.69"E	62.75	70 dBA
10.11.2021 (1:00 pm to 3:00 pm)	Operation area NL-2	16°53'40.64"N 96°15'10.56"E	73.96	70 dBA

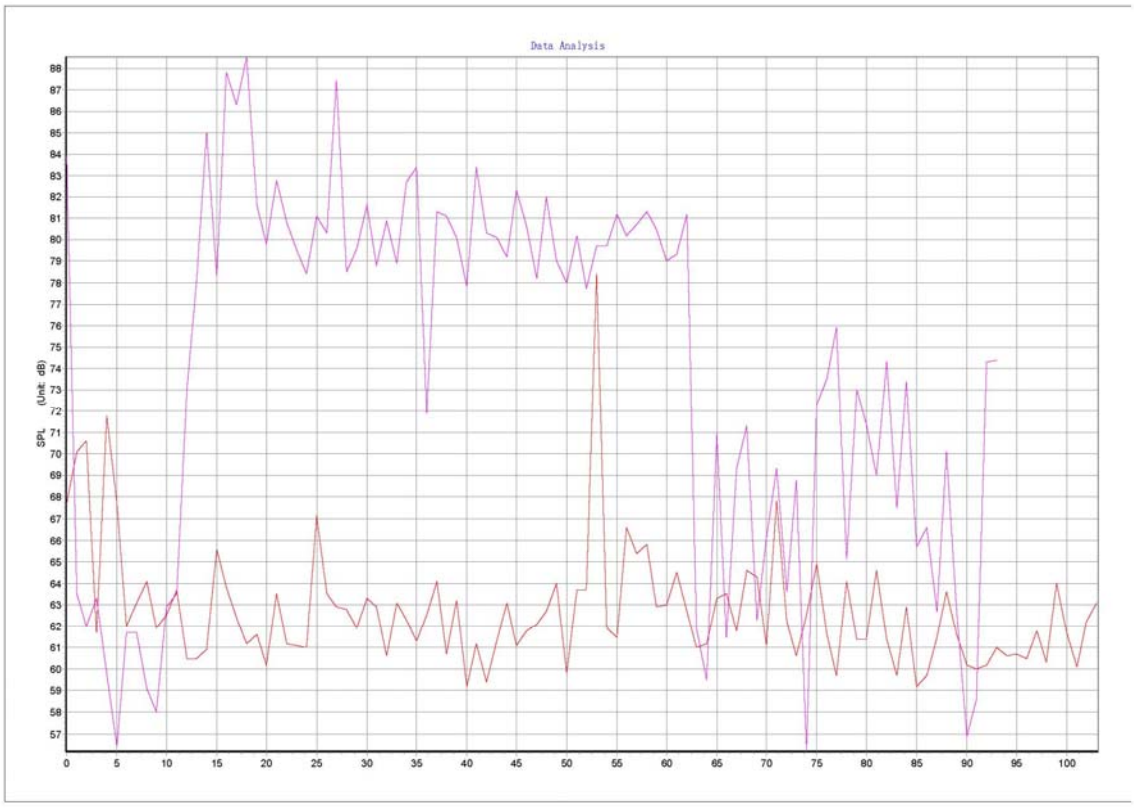


Figure 4-10 Noise level result at production area

Figure 4-11 Sound level measurement photo

According to the monitoring results, 3R Non Woven Manufacture factory the noise level is higher a bit than the NEQ guideline. Therefore, in that factory ought to use the ear protection to all labors. In this way can reduce the noise level.

4.3.4. Light

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

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

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

Table 4-5 Recommended illumination and limiting glare index based on IES Code, 1968

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

Source: Koenigsberger, et al. 1975

Figure 4-12 Light quality measurement

Table 4-6 Result of light measurement in 3R Non Woven Manufacture Factory

No	Location	Measure value (Lux)	Standard*
1	Operation area	1913	1000

No	Location	Measure value (Lux)	Standard*
2	Sewing area	485	400
3	Printing area	438	600
4	Quality control	390	600
5	Packing area	395	600

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

According to the monitoring results, 3R Non Woven Manufacture factory light level is a little bit higher than the NEQ guideline that's why some places need to reduce the light level and ought to put on the electricity bulb more over the higher places. On the other hand, some places are a bit lower than the NEQ guideline that is why which need to change like a more powerful light bulb in that light level lower places. In this ways are able to adjust the light pollution of this factory.

4.4. BIOLOGICAL COMPONENT

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

4.5. SOCIO-ECONOMIC COMPONENT

4.5.1. Population

3R Non Woven Manufacture factory is located across Dagon Myothit (South) Township in Yangon Region. In 2017, the population of Dagon Myothit (South) Township is about 187,891 people as present in Table 4-7. [1]

Table 4-7 Population of Males and Females at Dagon Myothit (South) Township (2017)

Item	Older 18 year			Younger 18 year			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Urban	**57,999**	**65,988**	**123,987**	**23,627**	**23,611**	**47,238**	**81,626**	**89,599**	**171,225**
Rural	**5,424**	**5,632**	**11,056**	**2,734**	**2,876**	**5,610**	**8,158**	**8,508**	**16,666**
Total	**63,423**	**71,620**	**135,043**	**26,361**	**26,487**	**52,848**	**89,784**	**98,107**	**187,891**

Source: Department of Administrative Dagon Myothit (South) Township, Regional data (www.gad.gov.mm.com)

4.5.2. Religion

The different kinds of religion present in Dagon Myothit (South) Township are shown in Table 4-8. More than 90% of the people living in the township are Buddhists. [1]

Table 4-8 Religion in Dagon Myothit (South) Township (2017)

Township	Buddhist	Christian	Hindu	Muslim	other	Total
Dagon Myothit (South)	**181,085**	**3,938**	**1,403**	**1,465**	**-**	**187,891**

Source: Department of Administrative Dagon Myothit (South) Township, Regional data (www.gad.gov.mm.com)

4.5.3. Local Economy

Among regional towns, Dagon Myothit (South) 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 Dago Myothit (South) Township are railway, port, and car road as presented in Table 4-9. [1]

Table 4-9 Transportation route

Categories	Township		Miles
	From	to	
Bus Line (2,3,4,5,6,8,8,71,60,80,99,100,83) City Bus	YuZaNa	Downtown area	
Bago River Road	Dagon Bridge	Ayawun Road	2.4 miles
Ayawun Road	TharKayTa	Bago River Road	2.5 miles

Source: Department of Administrative Dagon Myothit (South) Township, Regional data (www.gad.gov.mm.com)

4.5.4.2. Electricity

The electricity demand of Dagon Myothit (South) 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 university, in the Dagon

Myothit (South) Township. The name and the located village tract/ ward of schools are described in Table 4-10. [1]

Table 4-10 List of major school in Dagon Myothit (South) Township

No.	Name of School	Location
1	Nationalities Youth Resource Development Degree Collage	No. (3383), Sittaung Road, (61) Ward
2	BEHS (1)	(88) Ward
3	BEHS (2)	(94) Ward
4	BEHS (3)	(168) Ward
5	BEHS (4)	(93) Ward
6	BEHS (5)	(89) Ward
7	BEHS (Branch) Thayetpinchong	Thayetpinchong Village
8	BEHS (Branch) Nyaungpin	Nyaungpin Village
9	BEMS (Branch) KyiSu YwarThit	KyiSu YwarThit
10	BEMS (Branch) KyiSu East	KyiSu East
11	BEPS (Total)-9	

Source: Department of Administrative Dagon Myothit (South) Township, Regional data (www.gad.gov.mm.com)

4.5.4.4. Health Status

The diseases of high prevalence reported in 2013 are Tuberculosis (TB), followed by Acute Respiratory Infection (ARI), Diarrhea, TB and snakebites. With reference to the Township Health Profile 2014 of Dagon Myothit (South) Township, no accidental work injuries reported to the township hospital in 2013. The common diseases are shown in Table 4-11.

Table 4-11 Common Diseases in the Dagon Myothit (South) Township

Disease	Dagon Myothit (South) Township	
	Morbidity	Mortality
Malaria (Per 100000P)	-	-
Dysentery	21	-
Diarrhea (Per 100000P)	37	
TB (Sputum+)(Per 10000P)	67	-
Hepatitis	5	-

Table 4-12 Lists of hospital in the Dagon Myothit (South) Township

Hospital Name	Beds/Services	Responsible
Township Hospital	25	Government

Source: Department of Administrative Dagon Myothit (South), Regional data (www.gad.gov.mm.com)

4.6. CULTURAL AND VISUAL COMPONENTS

Dagon Myothit (South) Township is growing into a busy and vibrant community. The population fluctuates; however, there has been steady growth over the last decade. It tends to be a stopover on a

journey rather than a destination. It has a number of sites that are interesting; however, there is no main attraction. Visitors to the town are generally visiting for work, investment or family reasons. [1]

5. ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

5.1. METHODOLOGY FOR THE ASSESSMENTS

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

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

Table 5-1 Impact assessment parameters and its scale

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

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

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

5.2. IMPACT IDENTIFICATION

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

5.2.1. Positive Impact

During the project implementation, local people can get job opportunities in administrative sectors, office works, transportation sectors, skill and unskilled workers, etc. Due to the implementation of the project, there will be employment opportunities especially for workers from the local community. Employees will also improve more in their professional knowledge and skills. The net effect of job creation is the improvement of the livelihoods and living standards of the beneficiaries and poverty reduction, development of local people's livelihood. Cause of the proposed project is located in Dagon Myothit (South) 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.

5.2.2. Negative Impact

The following Figure 5-1 briefly described the potential negative impacts of the proposed project. There are four main types of impacts; impact on environmental resources, impact on ecological resource, impact on human and impact of waste generation.

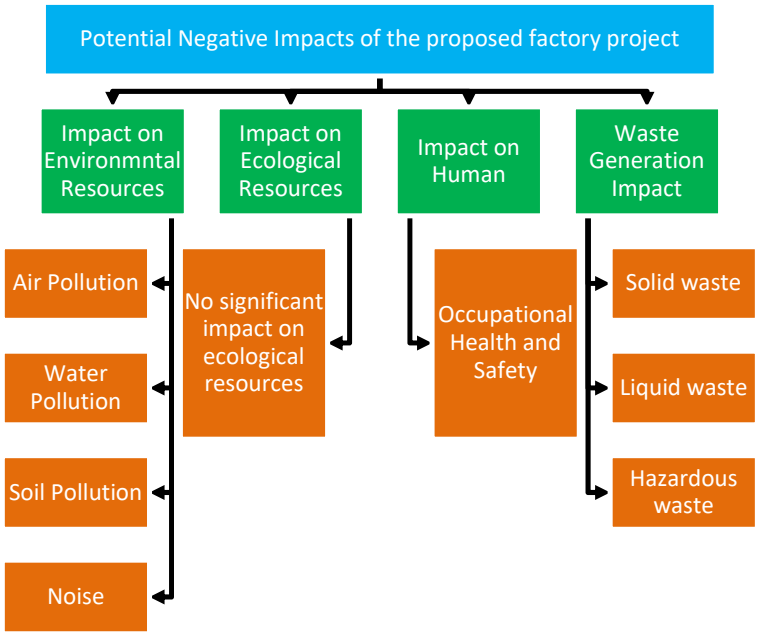


Figure 5-1 Potential negative impact affect from proposed factory project

5.1. POTENTIAL ENVIRONMENTAL IMPACT DURING CONSTRUCTION & 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 25 years. The term of the Lease shall be initial 25 years commencing from the date of signing of the Lease Agreement between Local owner and 3R Non-Woven Manufacture Company Limited. for proposed project site for 2.197 acres out of 1.0985 acres of land. 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.

5.2. PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS

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

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 of smoke from emergency diesel generator and vehicle movement	2	4	1	3	21	Low	• Air pollution in atmosphere. • Inhaling them can increase the chance you'll have health problems. • People with heart or lung disease, older adults and children are at greater risk from air pollution.	• To control air pollution, the vehicles, generators and machineries have to check and maintain regularly. • Ensuring vehicles, compressor and generator are well maintained.
Soil	• Engine oil leaks, spills at diesel storage and during fuel refueling.	1	4	1	1	6	Very Low (Insignificant)	• The factory compound area was paved with concrete and hence, contamination due to the oil spillage at this area is insignificant.	• No Mitigation Measure
Noise and Vibration	• Generating noise from the production machinery	2	4	2	2	16	Low	• The factory not operate heavy machinery • the major noise source of CMP basic operation activities	➢ Should be build individual room like as generator room, ➢ Low noise equipment should be used

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
								such as cutting, stitching/finishing and packaging by respective machines. • There is insignificant impact on surrounding environment.	➢ Should be provide the noise covering equipment or personal protective equipment (PPE)
Impact on Ecological Resources									
Flora and fauna on terrestrial and aquatic life	Operation of the garment factory	1	4	1	1	6	Very Low Insignificant	• Not Significant Impact on Ecological Resources	• No Mitigation Measure
Impact on Human									
Fire	• Poor electrical installations • Waste disposed area raw materials and chemical storage	4	4	1	4	36	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 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.

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
									• 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 staff (handyman) is to be assigned to do regular inspections and take preventive measures.
Health	• Influx of people	2	4	1	2	14	Very Low Insignificance	• Change in demographic structure, new	• Manage the drainage systems of the factory to prevent health risk of the workers.

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
	• Noise from the generating of the emergency generators							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	• The maximum allowable noise level for workers is 90dB(A) for 8hours exposure a day. Thus, adequate protective noise impact measures in the form of ear muffs/ear plugs to the workers working in high noise areas.
Waste Generation Impact									
Solid Waste	• Residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	3	4	1	4	32	Moderate	• 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 by using YCDC's service.
Liquid Waste	• Septic system and sewage. • Domestic liquid waste disposal	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.

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Reason	Mitigation Measure
		M	D	E	P	SP			
	from office, kitchen and dormitory.								
Hazardous Waste	• Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	2	14	Very Low Insignificance	• 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)

The assessment of each impact is based on consideration of the magnitude, duration, extent and probability of activities, which are going to be carried out during operation phases. In operation phase, there are 3 moderate significance impact on environment and human (Fire, occupational health and safety and hazardous waste). 2 low significant impacts on environment and human (air and liquid waste). 4 very low significant impact on environment and human (water pollution, noise and vibration, health and hazardous waste). In decommissioning phase 2 very low significant impact on environment and human (waste disposal and hazardous waste). 5 low significant impacts on environmental and human (air, water pollution, soil contamination, noise and vibration and occupational health and safety). Significance impacts on environmental and human and detail impact assessment for operation phases and decommissioning can be seen in above tables. All of the impacts during operation phases and decommissioning phase can be minimized by using mitigation measures and implementing Environmental Management Plan.

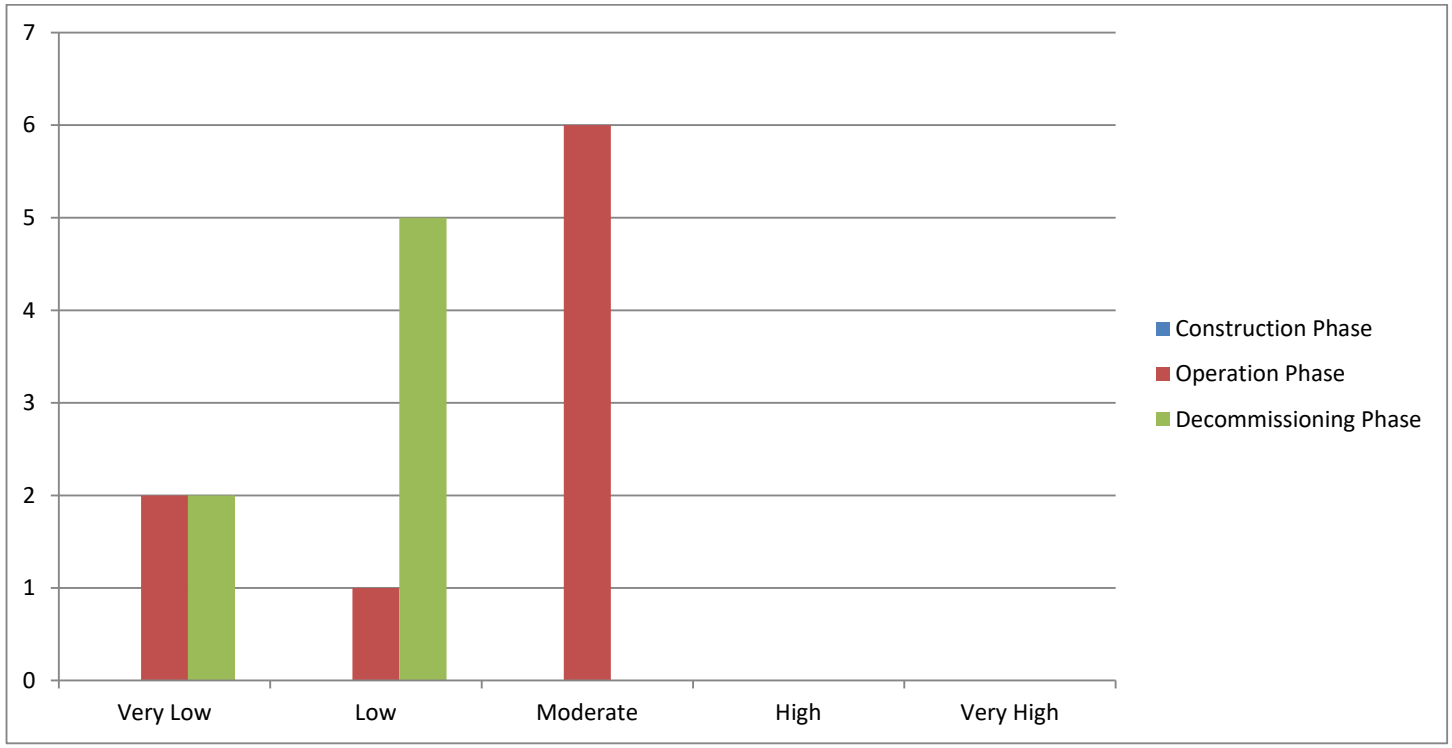


Figure 5-2 Impact significance of the proposed factory project

6. ENVIRONMENTAL MANAGEMENT ACTION

The EMP for 3R Non-Woven Manufacture Company Limited has been prepared to added potential issues based upon discussion with factory management, workers, local community view, stakeholder consultation and the site visit. The following environmental impact issues which require environmental management plans based upon the potential impact's activities of 3R Non-Woven Manufacture Company Limited are as follows:

6.1. 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 ➢ 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, CO
Estimated Cost	1000000 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

6.2. 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.	
Monitoring and Reporting	Frequency	Biannually
	Monitoring Point	Two points in operation area (especially cutting and sewing)
	Parameters	Sound Decibel
Estimated Cost	500000 Kyats per year	
Responsible Person	HSE Manager or Environmental Management Team of 3R Non-Woven Manufacture Co., Ltd.	

6.3. 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.
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	1200000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of 3R Non-Woven Manufacture Co., Ltd.

6.4. OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT PLAN

Objective	➢ To provide a broad framework for improving standards of workplace health and safety to reduce work-related injury and illness.
Relevant Government Law and Rule	➢ Public Health Law (1972), Prevention and Control of Communicable Diseases Law 1995 (Amendment 2011), Occupational Safety and Health Law (2019)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers. ➢ According to the observed light intensity values, the proponent provides sufficient lighting for workers for safe working and reducing optical problems of the workers. ➢ Personal Protective Equipment (PPE) like earmuffs, safety gloves, helmets and goggles are provided for each department. ➢ To prevent electric shock hazards, electrical maintenance staff (handyman) is to be assigned to do regular inspections and take preventive measures. ➢ Manage the drainage systems of the factory to prevent health risk of the workers. ➢ The maximum allowable noise level for workers is 90dB(A) for 8hours exposure a day. Thus, adequate protective noise impact measures in the form of ear muffs/ear plugs to the workers working in high noise areas.

Monitoring and Reporting	➢ Weekly check fire extinguishers and water hydrant in position ➢ Daily inspect that all fire exist are open ➢ Servicing fire extinguisher and records accidents
Estimated Cost	1000000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of 3R Non-Woven Manufacture Co., Ltd.

6.5. 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	➢ Yangon City Development Committee Law (2018), National Waste Management Strategy and Action Plan (Draft 2018)
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 YCDC's service.
Monitoring and Reporting	➢ Daily waste has to be collected and handover to YCDC waste collector ➢ The inventory record of waste disposal will be maintained as proof for proper management as designed
Estimated Cost	50000 Kyats per month
Responsible Person	Manager (HR) ▪ Responsible for overall site cleanliness and waste management ▪ Regular waste collection to minimize excessive waste storage

6.6. HAZARDOUS WASTE MANAGEMENT PLAN

Objective	➢ To avoid environmental pollution and adverse health effects due to its improper handing & disposal.
Relevant Government Law and Rule	➢ Yangon City Development Committee Law (2018), Explosive Ordnance Disposal Law (2018)
Time Frame	➢ Entire life spans of proposed project

Management Action	➢ Proper inspection and maintenance in storage of hazardous waste. ➢ Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. ➢ The empty chemical containers will hand over to suppliers for recycle or appropriate disposal ➢ The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (e.g. DOWA and YCDC)
Monitoring and Reporting	Any hazardous materials purchased should include a Material Safety Data Sheet (MSDS), otherwise known as a Safety Data Sheet (SDS) or Product Safety Data Sheet (PSDS). By mandate of the World Health Organization's Inter-Organization Programme for the Sound Management of Chemicals (IOMC), all manufacturers of hazardous materials are required to provide a MSDS so that end users can treat the materials properly.
Estimated Cost	1000000 Kyats per year
Responsible Person	HSE Manager or Environmental Management Team of 3R Non-Woven Manufacture Co., Ltd.

6.7. 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
Monitoring & Reporting	Conduct annual energy efficiency of adult to find out the scope for energy saving
Estimated cost	Approximately 1000000 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

6.8. 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 1500000 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

6.9. ENVIRONMENTAL MONITORING SCHEDULE AND REPORTING

The EMoP cell members responsible may conduct daily, weekly or monthly general inspections of the project are and facilities. The objective is to identify non-compliance to EMoP is provided the environmental monitoring schedule for 3R Non-Woven Manufacture Co., Ltd. The proposed 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					
Common	Monitoring of mitigation measures	Yearly (3 years after operation)	The project	2500000 Kyats	Environmental Management Team's 3R Non-Woven Manufacture Co., Ltd.
Air quality	SO2, NO2, CO, PM2.5, PM10	Biannually monitoring and reporting to ECD (first 3 years after operation)	Outdoor and Indoor of proposed project	500000 Kyats	Environmental Management Team's 3R Non-Woven Manufacture Co., Ltd.
Waste Generation	Solid waste, Liquid waste and Hazardous waste	weekly	Recycle house and waste house and at the factory office	100000 Kyats	Environmental Management Team's 3R Non-Woven Manufacture Co., Ltd.
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	500000 Kyats	Environmental Management Team's 3R Non-Woven Manufacture Co., Ltd.
Light intensity	Illuminance	Monthly	At the production line (especially cutting and QC)	50000 Kyats	Environmental Management Team's 3R Non-Woven Manufacture Co., Ltd.
Decommissioning Phase					
Air quality	SO2, NO2, CO, PM2.5, PM10	One time during this phase	One point in the production area	1000000 Kyats	Land Owner
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	1000000 Kyats	Land Owner
Rehabilitation	Recovering and Revegetation		All decommissioning area		Land Owner

6.10. 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;

6.10.1. 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.

6.10.2. 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

6.10.3. 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

6.10.4. 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

6.10.5. 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.

6.10.6. 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	
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.

6.10.7. Employee Information and Training

Employees must be informed about any operations in their work area where hazardous chemicals or materials are present. They must also be informed about the locations and availability of

the hazard communication program, list of chemicals and SDSs. Employees must receive training on the following:

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

6.10.8. Health and Safety Training Plan for Worker

Health and Safety Training plan currently used and provided in 3R Non-Woven Manufacture 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

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

6.11. 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 3R Non-Woven Manufacture Co., Ltd. representative from Dagon Myothit (South) Industrial Zone and representative from General Administration Department (Dagon Myothit (South) Township). Small issues will be solved at the Grievance Committee stage and other unsolved problems will be submitted to higher responsible authorities and finally the responsible person decided by the court

in legal terms. The following diagram show steps of Grievance Redress Mechanism of Proposed Factory Project.

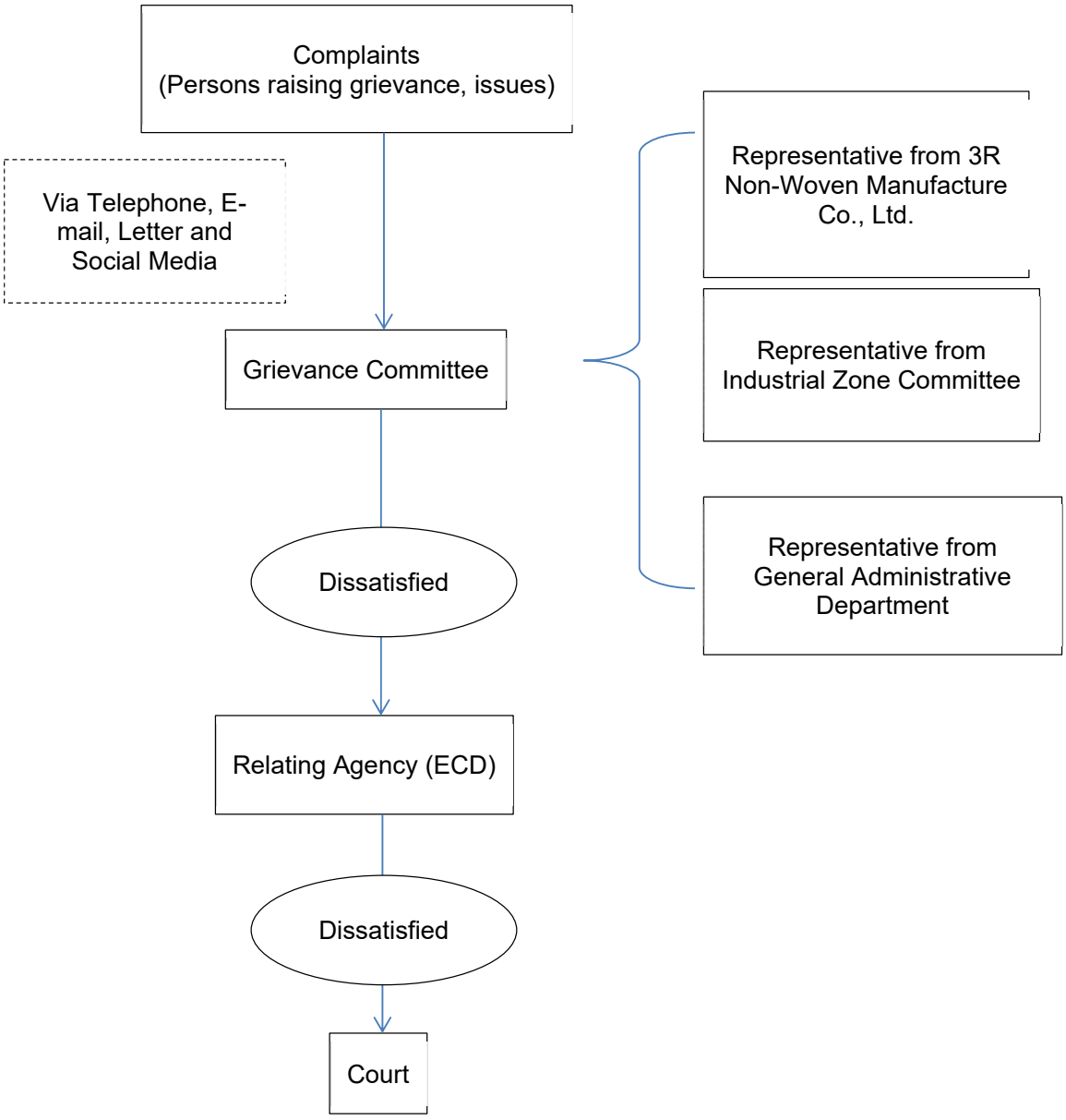


Figure 6-1 Grievance Redress Mechanism Flow Diagram

6.12. 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 3R Non-Woven Manufacture Co., Ltd. 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.

3R Non-Woven Manufacture Co., Ltd. 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 CSR plan at 3R Non-Woven Manufacture Co., Ltd.

Area	Priority item	Contribution (%)	Detail Targets
Health	Healthcare for employees and their family	0.5 %	One of our main concerns is the well-being of our employees. We will contribute 0.5 % of our net profit for the healthcare which includes medical checkup for the employees and providing health education to our workers.
Education	Raising awareness education level and human right	0.5%	We will contribute 0.5 % of our net profit to the public school near the factory to be a part of creating the better community. We will also work together with the school to understand more about the needs and we will also ensure that our contributions will be used in the most effective and efficient way for the society.
Community development	Donation to local community	1 %	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 harassmentll (workplace bullying & harassment) prevention efforts

7. PUBLIC CONSULTATION

7.1. PUBLIC CONSULTATION PROCESS

This chapter presents public consultation and information disclosures during the remaining period of the Environmental Management Plan (EMP). Public consultation is the activities for gathering opinions and suggestions from related stakeholders. It will help to improve the implementation of the project, set the scope for the environmental impact assessment and development mitigation measures, which will be reported in the project's EMP report.

Public consultation conducted as part of this EMP project has three purpose:

1) Information the stakeholders about the Project, environmental and social issues related to project construction and operation, and mitigation measures to minimize environmental and social impacts;

2) Considering the views, concerns, and perceptions of stakeholders, communities and individuals that could be affected by the project or who otherwise have an interest in the project;

3) Participation and partnership where issues and needs are jointly discussed and assessed.

Although the public consultation is the effective way to achieve the information purpose, to seek views of the participation and partnership purpose, it cannot hold due to the current condition of Covid-19 diseases which started spreading in Myanmar since April, 2020.

During the preparation of this report, the second wave of Covid-19 disease becomes serious in Yangon. The Ministry of Health and Support declared to avoid gathering more than 5 people to avoid close contact and to prevent spreading of disease. Thus, the project condition, the present environmental condition and the management plan are through the social media of Myanwei Environmental Solution Company Limited Facebook page (https://drive.google.com/file/d/1xzuvmjp7w_1ilqynABYcW8Y37JsU0j3e/view?usp=drivesdk) declared om 20th December 2021. The suggestion, complain and comments from the public, organization and stakeholder are warmly welcome and accept via mailing, comment, telephoning and messengers.

Details of project information disclosure in the public consultation PowerPoint presentation (Appendix E) which is prepared in Myanmar language includes as follows;

- Objective of EMP
- Project Description
- Existing Environment and Monitoring
- Potential Impact and Mitigation measures
- Cooperative Social Responsibility (CSR)

Figure 7-1 Announcement Post of Proposed Project at Social Media

8. CONCLUSION & RECOMMENTATION

8.1. CONCLUSION

Environmental Management Plan (EMP) has been prepared for 3R Non-Woven Manufacture Company Limited factory is located at Plot No. 40, Myay Taing Block No.144, Dagon Myothit (South) Industrial zone, Dagon Myothit (South) 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 bags product manufacturing factory.

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

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

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

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

8.2. RECOMMENTATION

This is recommended that;

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

- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

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

9. REFERENCE

[1] General Administrative Department (Dagon Myothit (South) Township), Dagon Myothit (South) Township Data (2017).

[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.

APPENDIX A
Company Document's 3R Non-Woven Manufacture Company Limited

ပုံစံ (၅-ခ)

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

ရန်ကုန်တိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ

အတည်ပြုမိန့်

အတည်ပြုမိန့်အမှတ် ရကတ-၄၁၁/၂၀၂၀ ၂၀၂၀ ပြည့်နှစ် သြဂုတ်လ ၂၀ ရက်

ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှု ကော်မတီသည် မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ဥပဒေ ပုဒ်မ-၂၅(ဃ) အရ ဤအတည်ပြုမိန့်ကိုထုတ်ပေးလိုက်သည် -

(၁) **ရင်းနှီးမြှုပ်နှံသူ/ကမကထပြုသူအမည်** MR.LI FUYUN

(၂) **နိုင်ငံသား** CHINESE

(၃) **နေရပ်လိပ်စာ** NO.292, XICHENG ROAD, LONGGANG CITY, ZHEJIANG PROVINCE, THE PEOPLE'S REPUBLIC OF CHINA

(၄) **ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ** 3R NON WOVEN MANUFACTURE COMPANY LIMITED, မြေကွက်အမှတ်-၄၀၊ မြေတိုင်းရပ်ကွက်အမှတ် -၁၄၄၊ ဒဂုံမြို့သစ် တောင်ပိုင်းစက်မှုဇုန်၊ ဒဂုံမြို့သစ်တောင်ပိုင်း မြို့နယ်၊ ရန်ကုန်မြို့

(၅) **ဖွဲ့စည်းရာအရပ်** MYANMAR

(၆) **ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား** CMP စနစ်ဖြင့် အိတ်အမျိုးမျိုး ထုတ်လုပ်ခြင်း လုပ်ငန်း

(၇) **ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ)** မြေကွက်အမှတ်-၄၀၊ မြေတိုင်းရပ်ကွက် အမှတ်-၁၄၄၊ ဒဂုံမြို့သစ် တောင်ပိုင်းစက်မှုဇုန်၊ ဒဂုံမြို့သစ်တောင်ပိုင်း မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး

(၈) **နိုင်ငံခြားမတည်ငွေရင်း ပမာဏ** အမေရိကန်ဒေါ်လာ ၁.၀၀၀ သန်း

(၉) **နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ** အတည်ပြုမိန့် ရရှိသည့် နေ့မှ ၁ နှစ်အတွင်း

(၁၀) **စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်)** အမေရိကန်ဒေါ်လာ ၁.၀၀၀ သန်း နှင့် ညီမျှသော မြန်မာကျပ်ငွေ

(၁၁) **တည်ဆောက်မှုကာလ** ၁ နှစ်

(၁၂) **ရင်းနှီးမြှုပ်နှံမှုခွင့်ပြုသည့်သက်တမ်း** ၂၅ နှစ်

(၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ရာခိုင်နှုန်းပြည့်နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု

(၁၄) **မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည်** 3R NON WOVEN MANUFACTURE COMPANY LIMITED

YRIC 411/2020

(ဖြိုးမင်းသိန်း)

ဥက္ကဋ္ဌ

Form (5-B)

THE REPUBLIC OF THE UNION OF MYANMAR

Yangon Region Investment Committee

ENDORSEMENT

ENDORSEMENT NO. YGN – 411/2020 DATE 28 AUGUST 2020

THIS ENDORSEMENT IS ISSUED BY YANGON REGION INVESTMENT COMMITTEE IN ACCORDANCE WITH SECTION 25(D) OF THE MYANMAR INVESTMENT LAW–

(1) **NAME OF INVESTOR** MR.LI FUYUN

(2) **CITIZENSHIP** CHINESE

(3) **RESIDENCE ADDRESS** NO.292, XICHENG ROAD, LONGGANG CITY, ZHEJIANG PROVINCE, THE PEOPLE'S REPUBLIC OF CHINA

(4) **NAME AND ADDRESS OF PRINCIPAL ORGANIZATION** 3R NON WOVEN MANUFACTURE COMPANY LIMITED, PLOT NO.40 , MYAY TAING BLOCK NO.144, DAGON MYOTHIT (SOUTH) INDUSTRIAL ZONE, DAGON MYOTHIT (SOUTH) TOWNSHIP, YANGON

(5) **PLACE OF INCORPORATION**

(6) TYPE OF BUSINESS MANUFACTURING OF VARIOUS KINDS OF BAGS ON CMP BASIS

(7) **PLACE(S) OF INVESTMENT PROJECT** PLOT NO.40 , MYAY TAING BLOCK NO. 144 , DAGON MYOTHIT (SOUTH) NDUSTRIAL ZONE, DAGON MYOTHIT (SOUTH) TOWNSHIP, YANGON REGION

(8) **FOREIGN CAPITAL AMOUNT** US$ 1.000 MILLION

(9) **PERIOD FOR FOREIGN CAPITAL TO BE BROUGHT IN** WITHIN 1 YEAR FROM THE DATE OF ISSUANCE OF ENDORSEMENT

(10) **TOTAL AMOUNT OF CAPITAL (KYAT)** EQUIVALENT IN KYAT OF US$ 1.000 MILLION

(11) **CONSTRUCTION/ PREPARATION PERIOD** 1 YEAR

(12) **VALIDITY OF ENDORSEMENT** 25 YEARS

(13) **FORM OF INVESTMENT** WHOLLY FOREIGN OWNED

(14) **NAME OF COMPANY INCORPORATED IN MYANMAR** 3R NON WOVEN MANUFACTURE COMPANY LIMITED

YRIC 4112020

29/8/2020

(PHYO MIN THEIN)

CHAIRMAN

Confidential

THE REPUBLIC OF THE UNION OF MYANMAR

YANGON REGION INVESTMENT COMMITTEE

Plot No. 49, Seinlae May Street,

Kabar Aye Pagoda Road, Yankin Township, Yangon

Republic of the Union of Myanmar Yangon Region Investment Committee No. 2145.E Date 28.8.2020

Tel : 01- 658263

Fax: 01- 658264

Our ref : YRIC -1 /E-411 / 2020(2145.E)

Date : 28 August 2020

Subject: **Decision of the Yangon Region Investment Committee regarding an Endorsement for Manufacturing of various kinds of bags on CMP Basis under the name of 3R Non Woven Manufacture Company Limited**

Reference: 3R Non Woven Manufacture Company Limited's letter dated 15-8-2020

1. The Yangon Region Investment Committee, at its (14/2020) meeting held on 26/8/2020, approved the Endorsement for investment for Manufacturing of various kinds of bags on CMP Basis under the name of Mr.Li Fuyun (51%) and Ms.Yang Saisai (49%) from the People's Republic of China as a Wholly Foreign Owned investment in accordance with the Myanmar Investment Law and Rules.

2. The terms and conditions of the Endorsement are as follows:

(a) The term of an Endorsed project shall be twenty-five (25) years commencing from the date of the issuance of the Endorsement by the Yangon Region Investment Committee.

(b) The term of the land and building Lease Agreement shall be an initial five (5) years shall be extendable for a period of ten (10) years, and a further consecutive period of ten (10) years commencing from the date of the agreement between U Tun San and 3R Non Woven Manufacture Company Limited (Lessee) by

Confidential

mutual agreement between the Lessor and the Lessee subject to the approval of the Yangon Region Investment Committee.

(c) The annual rent for land and building shall be Kyat 10 million (Kyat ten million only) for the total area of the land measuring 1.0985 acres out of 2.197 acres.

(d) 3R Non Woven Manufacture Company Limited may submit an application form for the right to use land under Chapter XII and exemptions and reliefs under Sections 75, 77 and 78 of the Chapter XVIII of Myanmar Investment Law.

(e) 3R Non Woven Manufacture Company Limited shall use its best efforts to achieve a timely realization of the work stated in the Endorsement application.

(f) 3R Non Woven Manufacture Company Limited shall obey and respect the responsibilities of investors under Section 65 of Myanmar Investment Law and Chapter XX of Myanmar Investment Rules.

(g) 3R Non Woven Manufacture Company Limited shall carry out of prevention, mitigation and monitoring of significant environmental impacts according to the type of investment activities in accordance with the relevant laws, rules, regulations and procedures.

(h) 3R Non Woven Manufacture Company Limited shall abide by the Fire Services Department's rules, regulations, directives and instructions. Moreover, 3R Non Woven Manufacture Company Limited shall undertake fire prevention measure such as the

appropriate placement of water storage tank, fire hooks, sand bags, and fire extinguishers , and training will be provided to all employees regarding the use of fire fighting equipment. Hi 3R Non Woven Manufacture Company Limited shall also appoint a specific individual who shall be called the fire Safety Officer (FSO) who shall be designated responsible for on-site safety and coordination within the organization.

(i) 3R Non Woven Manufacture Company Limited shall submit to the Myanmar Investment Commission any sublease, mortgage, transfer of shares or transfer of the business to any person during the investment period in accordance with Section 72 of Myanmar Investment Law and Rule 191 of Myanmar Investment Rules.

(j) 3R Non Woven Manufacture Company Limited shall submit an annual report in the prescribed form to the Myanmar Investment Commission within three months of the end of the financial year in accordance with Rule 196 of Myanmar Investment Rules and shall disclose a summary of the report on its website or the Myanmar Investment Commission's website.

(k) 3R Non Woven Manufacture Company Limited must, during the operation period under the Endorsement of the Yangon Region Investment Committee, submit its operating report quarterly in the prescribed form in accordance with Rule 197 of Myanmar Investment Rules.

3. 3R Non Woven Manufacture Company Limited shall carry out in accordance with the laws, regulations and stipulations of relevant Union Ministries,

governmental department and governmental organizations the obtaining of any licence, permit or registration as per Section 65(d) of Myanmar Investment Law.

4. 3R Non Woven Manufacture Company Limited shall submit five (5) copies of all approvals, licences, permits and similar authorizations relevant to the initial implementation of the investment and Lease Agreement to the Yangon Region Investment Committee.

28/8/2020

(Phyo Min Thein)

Chairman

3R Non Woven Manufacture Company Limited

cc: 1. The Office of the Union Government

2. Ministry of office of the Union Government

3. Ministry of Home Affairs

4. Ministry of Planning, Finance and Industry

5. Ministry of Investment, Foreign Economic Relations

6. Ministry of Natural Resources and Environmental Conservation

7. Ministry of Labour, Immigration and Population

8. Ministry of Commerce

9. Central Bank of Myanmar

10. Office of the Myanmar Investment Commission

11. Chairman, CMP Enterprises Supervision Committee

12. Director General, National Archives Department

13. Director General, Customs Department

14. Director General, Internal Revenue Department

15. Director General, Directorate of Industrial Supervision and Inspection

16. Director General, Directorate of Investment and Company Administration

17. Director General, Department of Environmental Conservation

18. Director General, Directorate of Labour

19. Director General, Department of Immigration

20. Director General, Department of Trade

21. Monitoring and Supervision Division, Directorate of Investment and Company Administration

APPENDIX B
Transitional Consultant Registration Certificate

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

No. 10048 Date 07 JUL 2017

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

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

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

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

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Geology and Soil

EXTENSION
သက်တမ်းတိုးပြုခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁.၁၂.၂၀၁၉) ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
Soe Naing 10.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department

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

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန

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

APPENDIX C
Mornitoring Result

Light Result

MYANWEI
ENVIRONMENTAL SOLUTIONS
Plot No. (36,38), Room No.9A, 9th floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95)9775405118, 9792528677, 9448251888; Website: www.myanweiconsulting.com

Project Name:	3R Non Woven Manufacture Company Limited.
Project Location:	Plot No. 40, Myay Taing Block No.144, Dagon Myothit (South) Industrial Zone, Dagon Myo Thit (South), Yangon Region.
Sampling Date:	10 November, 2021
Sampling Time:	11:30 am to 12:30pm
Sampling Condition:	-
Sampling By:	Myanwei Environmental Solution Company Limited.

Instrument	Type	Sampling Rate	Location
Uni-T (Luminometer)	UT380 Series	100 times/second	16°53'40.64"N 96°15'10.56"E

No	Measure area	Unit	Result	Standard	Remark
1	Mixing & Melting area	Lux	1913	1000	Above
2	Sewing area	Lux	485	400	Above
3	Printing area	Lux	438	600	Below
4	Quality Control	Lux	390	600	Below
5	Packing area	Lux	395	600	Below

IESNA Lighting Handbook

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

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

Noise result

MYANWEI
ENVIRONMENTAL SOLUTIONS
Plot No. (36,38), RoomNo.9A, 9th floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar. Office: (+95)9775485118, 9792528677, 9449251888; Website: www.myanweiconsulting.com

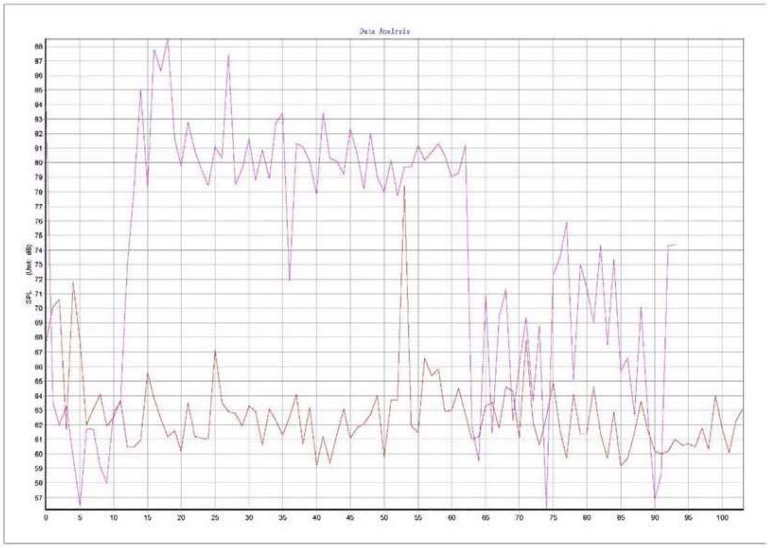
Project Name:	3R Non Woven Manufacture Company Limited.
Project Location:	Plot No. 40, Myay Taing Block No.144, Dagon Myothit (South), Dagon Myo Thit (South), Yangon Region.
Sampling Date:	10 November, 2021
Sampling Time:	11:00 pm To 4:00 pm
Sampling Condition:	-
Sampling By:	Myanwei Environmental Solution Company Limited.

Instrument	Type	Sampling Rate	Location
Digital Sound Level Meter	GM 1356 USB	30 -130 dB	16°53'39.77"N 96°15'11.69"E

No	Place	Unit	Result	Standard	Remark
1	Operation area NL-1	dBA	62.75	70 dBA	Normal
2	Operation area NL-2	dBA	73.96	70 dBA	Slightly Above

National Environmental Quality (Emission) Guideline

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



Air result

MYANWEI
ENVIRONMENTAL SOLUTIONS
Plot No. (36,38), Room No.9A, 9th floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95)9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting.com

Project Name:	3R Non-Woven Manufacture Company Limited.
Project Location:	Plot No. 40, Myay Taing Block No. 144, Dagon Myothit (South) Industrial Zone, Dagon Myo Thit (South), Yangon Region.
Sampling Date:	10 November, 2021
Sampling Time:	11:00 am to 3:00 pm
Sampling Condition:	-
Sampling By:	Myanwei Environmental Solution Company Limited.

Instrument	Type	Sampling Rate	Location
OCEANUS-AQM-09	PM, NO_2, SO_2, CO Detector	0-999.9 ($\mu g/M^3$)	Operation Area (Outdoor)

National Environmental Quality (Emission) Guideline

Parameter	Averaging period	Guideline value	Unit
PM 10[a]	1-year 24-hour	20 50	($\mu g/M^3$)
PM 2.5[a]	1-year 24-hour	10 25	($\mu g/M^3$)
O_3[a]	8-hour	100	($\mu g/M^3$)
NO_2[a]	1-year 1-hour	40 200	($\mu g/M^3$)
SO_2[a]	24-hour 10-min	20 500	($\mu g/M^3$)
CO[b]	15-min 30-min 1-hour 8-hour	100 60 30 10	($\mu g/M^3$)

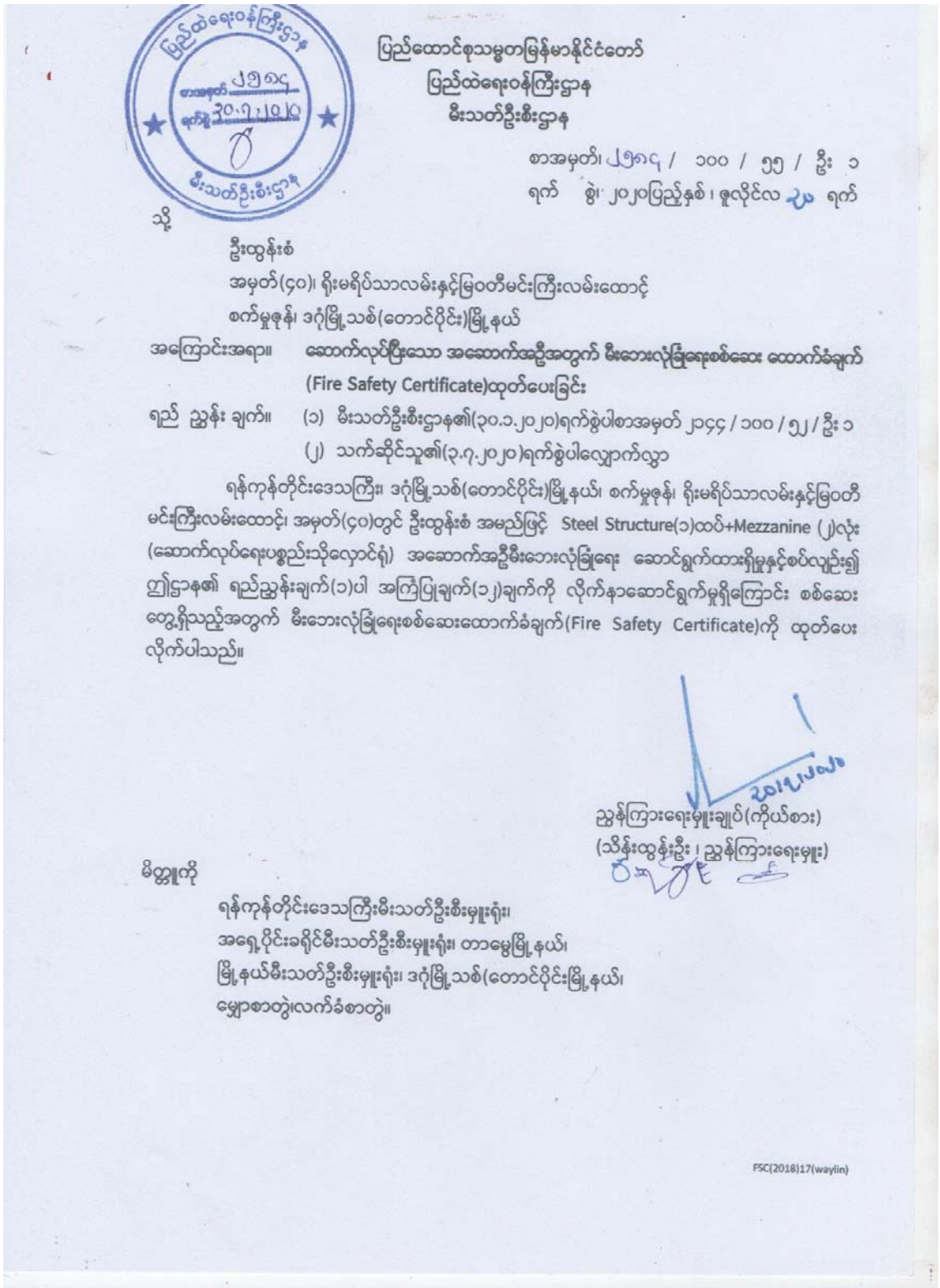
a. Values from air quality guidelines-global update 2005: particulate matter, ozone, nitrogen dioxide and sulfur dioxide.
b. Values from air quality guidelines for Europe, 2nd edition.

Monitoring Result

Location	GPS Value	Parameters	Observed Value	Unit	Guideline Value
Production Area	16°53'40.95"N 96°15'12.24"E	PM10	20.13	µg/m3	50
		PM2.5	15.31	µg/m3	25
		CO	0.3	µg/m3	10
		SO_2	666.1	µg/m3	500

Location	GPS Value	Parameters	Observed Value	Unit	Guideline Value
		NO_2	20.7	µg/m3	200

APPENDIX D
Fire Safety Training



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
ပြည်ထဲရေးဝန်ကြီးဌာန
မီးသတ်ဦးစီးဌာန

စာအမှတ်၊ ၂၅၈၄ / ၁၀၀ / ၅၅ / ဦး ၁
ရက် စွဲ၊ ၂၀၂၀ပြည့်နှစ်၊ ဇူလိုင်လ ၂၃ ရက်

သို့

ဦးထွန်းစံ
အမှတ်(၄၀)၊ ရိုးမရိပ်သာလမ်းနှင့်မြဝတီမင်းကြီးလမ်းထောင့်
စက်မှုဇုန်၊ ဒဂုံမြို့သစ်(တောင်ပိုင်း)မြို့နယ်

အကြောင်းအရာ။ ဆောက်လုပ်ပြီးသော အဆောက်အဦအတွက် မီးဘေးလုံခြုံရေးစစ်ဆေး ထောက်ခံချက် (Fire Safety Certificate)ထုတ်ပေးခြင်း

ရည် ညွှန်း ချက်။ (၁) မီးသတ်ဦးစီးဌာန၏(၃၀.၁.၂၀၂၀)ရက်စွဲပါစာအမှတ် ၂၁၄၄ / ၁၀၀ / ၅၂ / ဦး ၁
(၂) သက်ဆိုင်သူ၏(၃.၇.၂၀၂၀)ရက်စွဲပါလျှောက်လွှာ

ရန်ကုန်တိုင်းဒေသကြီး၊ ဒဂုံမြို့သစ်(တောင်ပိုင်း)မြို့နယ်၊ စက်မှုဇုန်၊ ရိုးမရိပ်သာလမ်းနှင့်မြဝတီမင်းကြီးလမ်းထောင့်၊ အမှတ်(၄၀)တွင် ဦးထွန်းစံ အမည်ဖြင့် Steel Structure(၁)ထပ်+Mezzanine (၂)လုံး (ဆောက်လုပ်ရေးပစ္စည်းသိုလှောင်ရုံ) အဆောက်အဦမီးဘေးလုံခြုံရေး ဆောင်ရွက်ထားရှိမှုနှင့်စပ်လျဉ်း၍ ဤဌာန၏ ရည်ညွှန်းချက်(၁)ပါ အကြံပြုချက်(၁၂)ချက်ကို လိုက်နာဆောင်ရွက်မှုရှိကြောင်း စစ်ဆေးတွေ့ရှိသည့်အတွက် မီးဘေးလုံခြုံရေးစစ်ဆေးထောက်ခံချက်(Fire Safety Certificate)ကို ထုတ်ပေးလိုက်ပါသည်။

ညွှန်ကြားရေးမှူးချုပ်(ကိုယ်စား)
(သိန်းထွန်းဦး ၊ ညွှန်ကြားရေးမှူး)

မိတ္တူကို
ရန်ကုန်တိုင်းဒေသကြီးမီးသတ်ဦးစီးမှူးရုံး၊
အရှေ့ပိုင်းခရိုင်မီးသတ်ဦးစီးမှူးရုံး၊ တာမွေမြို့နယ်၊
မြို့နယ်မီးသတ်ဦးစီးမှူးရုံး၊ ဒဂုံမြို့သစ်(တောင်ပိုင်းမြို့နယ်၊
မျှောစာတွဲ၊လက်ခံစာတွဲ။

FSC(2018)17(waylin)

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

ပြည်ထဲရေးဝန်ကြီးဌာန

မီးသတ်ဦးစီးဌာန

မီးဘေးလုံခြုံရေးစစ်ဆေးထောက်ခံချက်

အမှတ်စဉ်(၂၆၉၄)

၁။ ရန်ကုန် တိုင်းဒေသကြီး/ပြည်နယ်၊ ဒဂုံမြို့သစ်(တောင်ပိုင်း) မြို့နယ်၊ စက်မှုဇုန် ရပ်ကွက်/ကျေးရွာ၊ ရိုးမရိပ်သာလမ်းနှင့်မြဝတီမင်းကြီးလမ်းထောင့် လမ်း၊ အမှတ် (၄၀) ရှိပိုင်ရှင် ဦး/ဒေါ် ဦးထွန်းစံ ၏ Steel Structure(၁)ထပ်+Mezzanine(၂)လုံး(ဆောက်လုပ်ရေးပစ္စည်းသိုလှောင်ခြံ) အဆောက်အဦအတွက် ဤဌာန၏ (၃၀-၁-၂၀၂၀) ရက်စွဲပါစာအမှတ်၊ ၂၁၄၄ / ၁၀၀ / ၅၂ / ဦး ၁ ဖြင့်သတ်မှတ်ပေးထားသည့် မီးဘေးလုံခြုံရေးဆိုင်ရာ ပြဋ္ဌာန်းချက်များအား(၂၀-၎-၂၀၂၀)ရက်နေ့တွင် စစ်ဆေးသည့်အခါ ပြည့်စုံစွာဆောင်ရွက်ထားကြောင်း စစ်ဆေးတွေ့ရှိရသည်။

၂။ ဤထောက်ခံချက်သည် စစ်ဆေးသည့်နေ့မှစ၍ (၃)နှစ်အထိသာ အကျုံးဝင်သည်။

၃။ ထို့ပြင် မီးသတ်ဦးစီးဌာနမှ အခါအားလျော်စွာ ထပ်မံစစ်ဆေးချိန်တွင် မီးဘေးလုံခြုံရေးဆိုင်ရာ ပြဋ္ဌာန်းချက်များကို လိုက်နာဆောင်ရွက်ခြင်းမရှိပါက ဤထောက်ခံချက်ကို ပြန်လည်ရုတ်သိမ်းသွားမည်ဖြစ်ပြီး အဆောက်အဦအား အသုံးပြုသူ(သို့မဟုတ်)ပိုင်ရှင်သည် မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ဥပဒေအရအရေးယူခြင်းခံရမည်။

မှတ်ချက်။ ဤထောက်ခံချက်အား လွှဲပြောင်းသုံးစွဲခြင်းမပြုရ။ အဆောက်အဦအား မူလရည်ရွယ်ချက်မှ ပြောင်းလဲအသုံးပြုပါက ထောက်ခံချက်အသစ် ထပ်မံလျှောက်ထားရမည်။

ညွှန်ကြားရေးမှူးချုပ်(ကိုယ်စား)

(သိန်းထွန်းဦး၊ ညွှန်ကြားရေးမှူး)

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စနစ်ဖြင့်အိတ်အမျိုးမျိုးချုပ်လုပ်ခြင်းလုပ်ငန်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အစီရင်ခံစာ (မူကြမ်း) အတွက် ဒေသခံပြည်သူများအားဆိုရှယ်မီဒီယာမှတဆင့်တင်ပြခြင်း

၂၉ရက် ဒီဇင်ဘာလ ၂၀၂၁ ခုနှစ်၊

Prepared By

Myanmei Environmental Solutions Co., Ltd.

အစည်းအဝေး အကြောင်းအရာ

၁။ 3R NON WOVEN MANUFACTURE CO., LTD အား မိတ်ဆက်ခြင်း

၂။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား မိတ်ဆက်ခြင်း

၃။ သက်ရောက်မှုဆန်းစစ်ခြင်း ရလဒ်များနှင့် ထိခိုက်မှုအဆင့်သတ်မှတ်ချက်များ

၄။ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများနှင့် ဖြေလျော့ရေးနည်းလမ်းများ

၅။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် နှင့်

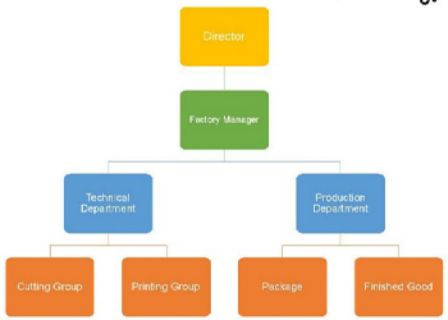
၆။ စက်ရုံ၏ဆောင်ရွက်ချက်များ

3R NON WOVEN MANUFACTURE CO., LTD

APPENDIX E

Power Point Presentation Slides

3R NON WOVEN MANUFACTURE CO., LTD ၏ ဖွဲ့စည်းပုံ



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လုပ်ငန်းအမျိုးအစား	CMP စနစ်ဖြင့်အိတ်အမျိုးမျိုးချုပ်လုပ်ခြင်းလုပ်ငန်း
ခွင့်ပြုမိန့်အမှတ်	(ခွင့်ပြုမိန့်အမှတ်- ၄၁၁/၂၀၂၀)၂၀၂၀ ပြည့်နှစ်၊ ဩဂုတ်လ ၂၈ ရက်
ရင်းနှီးမြှုပ်နှံမှု	၁၀၀ ရာခိုင်နှုန်း နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု
မြေဧရိယာ	မြေဧရိယာစုစုပေါင်း = ၂.၁၃၇ ဧက အနက်မှ ၁.၀၉၈၅ ဧက(၄,၄၄၅.၄၇၂ စတုရန်းမီတာ)
အဆောက်အုံ	(၁)ထပ်တိုက်အဆောက်အုံ(၁)လုံး (၂၉၂၆ စတုရန်းပေ)
ရင်းနှီးမြှုပ်နှံသည့်ကာလ	နှစ် ၂၅ ရင်းနှီးမြှုပ်နှံမှု
စက်ရုံလိပ်စာ	မြေတွင်အမှတ်-၄၀၊ မြေဝိုင်းရပ်ကွက်အမှတ်-၁၄၄၊ ဒဂုံမြို့သစ်တောင်ပိုင်းစက်မှုဇုန်၊ ဒဂုံမြို့သစ်တောင်ပိုင်းမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး၊

လုပ်ငန်းလည်ပတ်ရန်အခြေခံလိုအပ်ချက်များ

ရေအသုံးပြုမှုအခြေအနေ	
ရေအရင်းအမြစ်	အဝိစိတွင်းရေ (၁ တွင်း)
အဓိကလိုအပ်ချက်	
လက်ရှိလူဦးရေ	ပြည်တွင်းဝန်ထမ်း (၈၀) ဦး နိုင်ငံခြားသားဝန်ထမ်း (၈)
အဓိကကုန်ကြမ်း	ချည်မျှင်နှင့်လိုအပ်သောဆက်စပ်ပစ္စည်များ
နှစ်စဉ်ထွက်ကုန်ပစ္စည်းပမာဏ	နှစ်စဉ် ပျမ်းမျှအထည်အရေအတွက် ပထမနှစ်မှ ၁၀နှစ်အတွင်း (၈၀,၀၀၀,၀၀၀) မှ (၈၈,၀၀၀,၀၀၀) အထိ။

3R NON WOVEN MANUFACTURE CO., LTD ၏ စက်ရုံတည်နေရာ

3R NON WOVEN MANUFACTURE CO., LTD ၏ထုတ်လုပ်မှုအလိုက် နေရာပြမြေပုံ

1.Dormitory 2.Security Gate 3.Generator Room 4.Transformer 5.Overhead Tank and Tube Well
6.Water Tank(Cooling System) 7.Raw Materials Storage Area 8.Toilets 9.Office 10.Production Area

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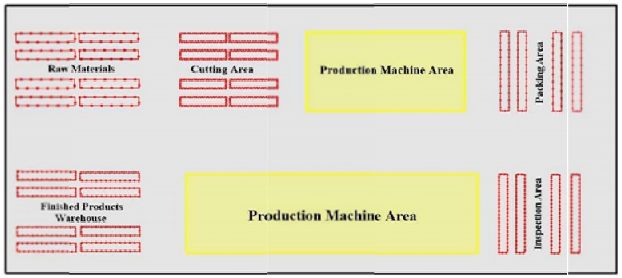
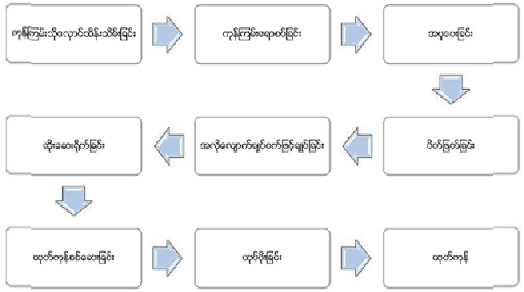
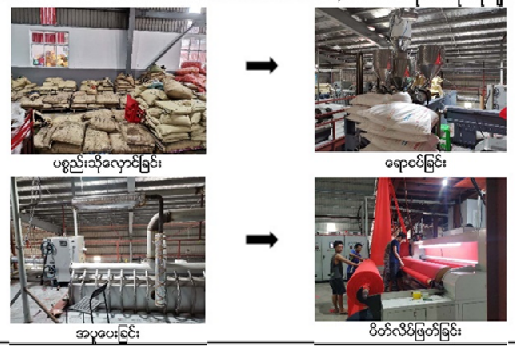


3R NON WOVEN MANUFACTURE CO.,LTD ၏ထုတ်လုပ်ပုံအဆင့်ဆင့်



3R NON WOVEN MANUFACTURE CO.,LTD ၏ထုတ်လုပ်ပုံများ



ပစ္စည်းသိုလှောင်ခြင်း

ရောင်းခြင်း

အပူပေးခြင်း

ပိတ်လိမ်ဖြတ်ခြင်း

3R NON WOVEN MANUFACTURE CO., LTD ၏ထုတ်လုပ်ပုံများ


အလိုလျောက်စက်ဖြင့်ချုပ်ခြင်း


ဆိုးဆေးရိုက်ခြင်း

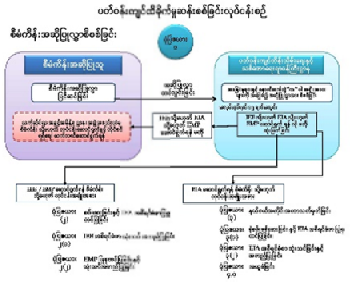

ထုတ်ကုန်စစ်ဆေးခြင်း

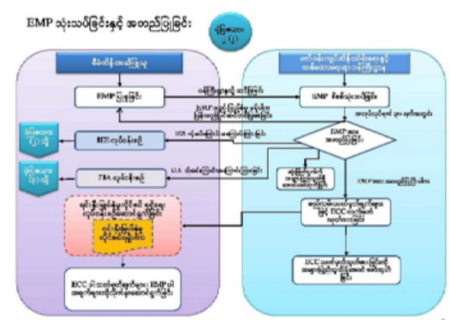

ထုပ်ပိုးခြင်း

3R NON WOVEN MANUFACTURE CO.,LTD ၏ထုတ်ကုန်ပစ္စည်းများ

ပတ်ပန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား မိတ်ဆက်ခြင်း

ပတ်ပန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ပြုလုပ်ခြင်း





သဘောထားမှတ်ချက်

သက်ရောက်မှုဆန်းစစ်ခြင်းရလဒ်များနှင့် ထိခိုက်မှုအဆင့်သတ်မှတ်ချက်များ

စီမံကိန်းပတ်ဝန်းကျင်အနေအထား

စဉ်	အကြောင်းအရာ	ဖော်ပြချက်
၁။	ကိုဩဒိနိတ်အမှတ်	မြောက်လတ္တီကျူ ၁၆°၅၃'၃၀.၂၁"နှင့် အရှေ့လောင်ဂျီကျူ ၉၆° ၁၅'၁၁.၁၉"
၂။	ရာသီဥတုအခြေအနေ	ဒဂုံမြို့သစ် (ဆိပ်ကမ်း)မြို့နယ် နှစ်စဉ်ပျမ်းမျှအမြင့်ဆုံးအပူချိန် ၃၅°C၊ အနိမ့်ဆုံးအပူအချိန် ၁၈°C စုစုပေါင်း မိုးရေချိန်လက်မ ၁၂၂.၃၅ လက်မ
၃။	စက်ရုံနေရာတွင်မြေအသုံးချမှု	စက်မှုလုပ်ငန်းနှင့်သက်ဆိုင်သောမြေအသုံးချမှုပုံစံ (စက်မှုဇုန်)
၄။	လမ်းပန်းဆက်သွယ်ရေး	တနောင်မင်းသားကြီးလမ်း၊ ဂရုဏာလမ်း၊ ရိုးမရိပ်သာလမ်း၊ မင်းနံခေါင်ပုံလမ်း၊
၅။	အနီးဆုံးရေအရင်းအမြစ်	ပဲခူးမြစ်။
၆။	သစ်တောနယ်ပယ်	မရှိ
၇။	ကာကွယ်ထားသောနယ်ပယ်	မရှိ
၈။	တိုင်းတာမှုရလဒ်	❑ ဆူညံသံ တိုင်းတာခြင်း ❑ အလင်းရောင် တိုင်းတာခြင်း ❑ လေထုအရည်အသွေး တိုင်းတာခြင်း ❑ အပူချိန် နှင့် စိုထိုင်းမှု အရည်အသွေး တိုင်းတာခြင်း

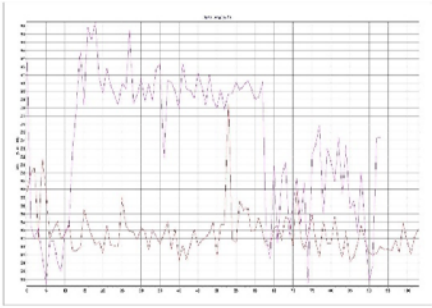
ဆူညံသံတိုင်းတာမှု

Date & Time	Location	GPS Value	Result Value	NEQ Guideline
10 November 2021 (11:00 AM to 1:00 PM)	Operation Area NL-1	16°53'39.77"N 96°15'11.69"E	62.75 dBA	70 dBA
	Operation Area NL-2	16°53'40.64"N 96°15'10.56"E	73.96 dBA	70 dBA

အထက်ဖော်ပြပါ ဆူညံသံတိုင်းတာမှုရလဒ်များအရ
3R NON WOVEN MANUFACTURE CO., LTD၏ဆူညံသံတိုင်းတာမှုအနက် Operation Area NL-2
တွင် National Emission Quality Guideline ထက်ကျော်လွန်မှုအနည်းငယ်ရှိနေသည်ကို
ဖော်ပြထားတွေ့ရှိရပါသည်။

3R NON WOVEN MANUFACTURE CO., LTD. ၏ စက်ရုံအတွင်းဆူညံအသံတိုင်းတာမှု

3R NON WOVEN MANUFACTURE CO., LTD ၏ဆူညံသံတိုင်းတာမှုပြ ဂရပ်



လုပ်ငန်းခွင်အလင်းရောင်တိုင်းတာမှု

Date/ Time	Measurement Area	Measurement Result	Standard Value	Remark
10 November 2021	Operation Area	1913	1000	Above
	Sewing Area	485	400	Above
	Printing Area	438	600	Below
	Quality Control	390	600	Below
	Packing Area	395	600	Below

လုပ်ငန်းခွင်အတွင်းအလင်းရောင်တိုင်းတာမှု

လေထုတိုင်းတာမှု

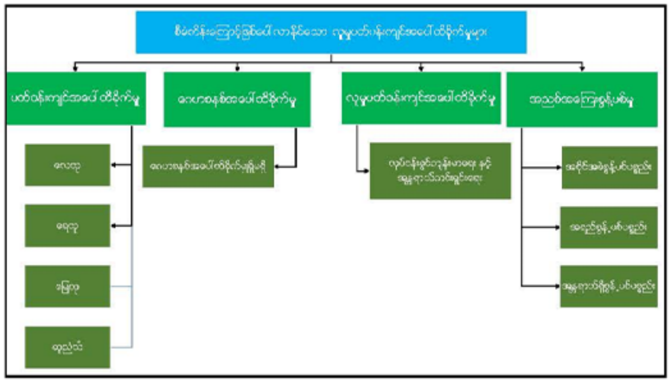
Date/Time	Parameter	Measurement Area	Result	Guideline Value	Unit	Organization	Period
10 November 2021	PM_{10}	Project Area	45.7	50	µg/m3	NEQG	24 hours
	$PM_{2.5}$		26.4	25	µg/m3	NEQG	24 hours

စက်ရုံတွင်း
လေထုတိုင်းတာခြင်း

အပူချိန်တိုင်းတာမှု

3R NON WOVEN MANUFACTURE CO.,LTD. ၏ လုပ်ငန်းခွင်ပျမ်းမျှတိုင်းမှုမှာ ၈၄.၁၂% နှင့် အပူချိန်တိုင်းတာမှုမှာ ၃၃.၄၈ °C ရှိပါသည်။

ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများနှင့် ဖြေလျှော့ရေးနည်းလမ်းများ



သက်ရောက်မှု	စီမံကိန်းဆောင်ရွက်ချက်	လျော့နည်းစေရန် အရေးယူဆောင်ရွက်မှု
ဆူညံသံ	▪ မီးစက်၊ ချည်ယက်စက်နှင့် မော်တော်ယာဉ် အသုံးပြုမှုတို့ကြောင့် ပတ်ဝန်းကျင်အပေါ် ဆူညံမှု	▪ ဆူညံသံထွက်သောနေရာများကို အကာအကွယ်ဖြင့် ထားရှိခြင်း ▪ စက်ရုံဝန်ထမ်းများကို PPE အပြည့်အစုံအထောက်ပံ့ပေးခြင်း
မီးဘေးအန္တရာယ်	▪ ကုန်ကြမ်းသိုလှောင်မှု နှင့် လျှပ်စစ်သုံးစွဲ ပေါ့လျော့မှု	▪ ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း ▪ လျှပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	▪ ထုတ်လုပ်ရာတွင်ကျန်ရှိသော ချည်မျှင်အပိုင်းအစများ၊ ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများနှင့် အမှိုက်များ၊	▪ စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပြီး သီးခြားစွန့်ပစ်စေခြင်း
စွန့်ပစ်အရည်	▪ နေအိမ်၊ စားသောက်ဆောင် တို့မှစွန့်ထုတ်ရေ၊ မိလ္လာကန်စနစ်	▪ စွန့်ပစ်အရည်များအားသီးခြားရေနုတ်မြောင်းတွေဖြင့် စွန့်ပစ်ခြင်း။
အန္တရာယ်ရှိအမှိုက်	▪ စက်များမှဆီယိုစိမ့်မှုများ၊ နိုင်လွန်ပိတ်စများ၊ တစ်ခြားမီးလောင်လွယ်သောအမှိုက်များ	▪ စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်

လေထုညစ်ညမ်းမှုလျော့ချရေး

ရည်ရွယ်ချက်	စီမံကိန်းကြောင့် စက်ရုံမှ ထွက်သော ဓာတ်ငွေ့များနှင့် မီးစက်များမှ ထွက်ရှိသော ဓာတ်ငွေ့များကြောင့် လေထုညစ်ညမ်းမှုကို လျော့ချရန်
လိုက်နာရမည့် စည်းကမ်း	အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှု အစီအစဉ်	▪ စက်ရုံအတွင်းနှင့် အနားဝန်းကျင်တွင် သစ်ပင်ပန်းမန်စိုက်ပျိုးခြင်း ▪ စက်ရုံအတွင်း၊ မည်သည့်စွန့်ပစ်ပစ္စည်းများအား မီးရှို့ဖျက်စီးခြင်း မပြုလုပ်ခြင်း ▪ လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ်သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် လေကာ/နေကာမျက်မှန်များ၊ နှာခေါင်းစည်း၊ Helmets စသည်တို့အားထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း
တာဝန်ယူရမည့် ပုဂ္ဂိုလ်	▪ ပြုပြင်ထိန်းသိမ်းရေးအရာရှိ - လေထုညစ်ညမ်းမှုလျော့ချရေးနည်းလမ်းများ ▪ ထုတ်လုပ်ရေးမန်နေဂျာ- လုပ်ငန်းခွင်လေထုသန့်ရှင်းရေး ▪ မန်နေဂျာ - ပတ်ဝန်းကျင်လေအရည်အသွေးတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

ဆူညံသံလျှော့ချရေး

ရည်ရွယ်ချက်	ဘေးပတ်ဝန်းကျင်ဆူညံမှုမဖြစ်ပေါ်စေရန် နှင့် စက်ရုံရှိ မီးစက်နှင့် အခြားစက်ပစ္စည်းများ ကြောင့် လုပ်သားများအပေါ် ထိခိုက်မှု လျှော့ချရန်
လိုက်နာရမည့် စည်းကမ်း	▪ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) ▪ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှုအစီအစဉ်	▪ မီးစက်၊လေမှုတ်စက်တို့ကို ဆူညံသံထိန်းချုပ်နိုင်သော ခန်းဖွဲ့စည်းမှုပုံစံ တည်ဆောက်ထားခြင်း ▪ လုပ်ငန်းသုံးယာဉ်များကိုဆူညံသံလျှော့ချရန်သတ်မှတ်အရှိန်ထက်ကျော်လွန်မမောင်းစေ[illegible]ခင်း ▪ လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ်သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် Safety Ear Plug၊ နားခေါင်းစည်း၊ Helmets စသည်တို့အား ထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ - ဆူညံသံတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

အစိုင်အခဲစွန့်ပစ်မှု ထိန်းသိမ်းရေး

ရည်ရွယ်ချက်	စွန့်ပစ်အမှိုက်ထွက်ရှိမှုလျှော့ချရေးနှင့် စွန့်ပစ်အမှိုက်ကြောင့် ပတ်ဝန်းကျင်ညစ်ညမ်းမှုကို လျှော့ချရန်
လိုက်နာရမည့်စည်းကမ်း	▪ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) ▪ National Waste Management Strategy and Action Plan (Draft 2018)
စီမံခန့်ခွဲမှုအစီအစဉ်	▪ စက်ရုံမှ မည်သည့်စွန့်ပစ်ပစ္စည်းမှ မြစ်၊ ချောင်း၊ အင်း၊ အိုင် အတွင်းသို့ မစွန့်ပစ်ရ ▪ စက်ရုံတွင် စွန့်ပစ်ပစ္စည်းများကို ပြန်လည်အသုံးပြုနိုင်သောပစ္စည်း(ဆိုဒေား၊ စက္ကူဘူး၊ ပလက်စတစ်၊ သည်ကြိုး) များကို ပြည်တွင်းဝယ်ယူသူများထံ ပြန်လည်ရောင်းချခြင်း ▪ စွန့်ပစ်ရန်ပစ္စည်း(လုပ်သားများမှစွန့်ပစ်ပစ္စည်းနှင့်မီးဖိုချောင်ထွက်ပစ္စည်းများ)ကို မြို့တော်စည်ပင်သာယာရေးအဖွဲ့အစည်း ကို နေ့စဉ်ခေါ်ယူပြီး သိမ်းဆည်းစေခြင်း ▪ အန္တရာယ်ရှိပစ္စည်း (စက်ဆီအဟောင်းများ၊ လျှပ်စစ်ပစ္စည်းအပျက်များ၊ သံထည်ပစ္စည်း) များကို ဝယ်ယူသူထံမှပြန်လည် သိမ်းဆည်းစေခြင်း ▪ စက်ရုံတွင် အမှိုက်စွန့်ပစ်ရန် အတွက် အမှိုက်ပုံးများကို စီမံထားခြင်း ▪ စက်ရုံနယ်မြေအားလုံးကို စနစ်တကျ အမှိုက်စွန့်ပစ်ရန် ဆိုင်းဘုတ်များ ရေးထားခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	▪ မန်နေဂျာ - စက်ရုံအတွင်းသန့်ရှင်းရေးအတွက်စီမံခန့်ခွဲရန်တာဝန်ရှိသည် ▪ အမှိုက်စွန့်ပစ်မှု ပုံမှန်ပြုလုပ်ရန်နှင့် စွန့်ပစ်ပစ္စည်းဝယ်ယူသူများကို ပုံမှန်ပြုလုပ်ရန် တာဝန်ယူဆောက်ရွက်ရန်

စွန့်ပစ်အရည် ထိန်းသိမ်းရေး

ရည်ရွယ်ချက်	မြေပေါ်ရေနှင့် မြေအောက်ရေ ညစ်ညမ်းမှုမဖြစ်စေရေး
လိုက်နာရမည့်စည်းကမ်း	▪ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) ▪ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှုအစီအစဉ်	▪ စက်ရုံရေမြောင်းများနှင့်မိလ္လာစနစ်ကို စနစ်တကျ သန့်ရှင်းအောင်ထားရှိခြင်း လိုလောက်သည့်အတိုင်းအတာ ပမာဏရှိခြင်း ▪ မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပြီး လိုအပ်သကဲ့သို့ ထိန်းသိမ်းပြုပြင်ခြင်း ▪ စက်ရုံရေမြောင်းအတွင်းတွင် ပိတ်ဆို့မှုမရှိစေရန်နှင့် အနံ့ဆိုးများမထွက်စေရန်စီမံခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ - စွန့်ထုတ်ရေအရည်အသွေးတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

စွမ်းအင်သုံးစွဲမှု ထိန်းသိမ်းရေး

ရည်ရွယ်ချက်	လျှပ်စစ်သုံးစွဲမှုလျှော့ချစေရန်နှင့် လုပ်ငန်းခွင်အတွင်း လျှပ်စစ်သုံးစွဲမှုကြောင့် အန္တရာယ်မရှိစေရန်
စီမံခန့်ခွဲမှုအစီအစဉ်	▪ စက်ရုံတွင်း လျှပ်စစ်သုံးစွဲမှုများအတွက် စွမ်းအင်လျှော့ချနိုင်သည့် စက်ကရိယာများတပ်ဆင်ခြင်း ▪ အသုံးမပြုလျှင် စက်ကရိယာများပိတ်ဆင်ထားခြင်း ▪ စွမ်းအင်အသုံးနည်းသော Lighting စနစ်တပ်ဆင်ခြင်း ▪ စက်ပစ္စည်းနှင့် Lighting အသုံးပြုမှုကို စောင့်ကြည့်ထိန်းသိမ်းရေးစနစ်ထားရှိခြင်း (ဥပမာ-အသုံးမပြုပဲမီးဖွင့်ထားခြင်း၊ စက်ဖွင့်ထားခြင်းမျိုး မရှိစေရန်)
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ

မြေအောက်ရေသုံးစွဲမှု

ရည်ရွယ်ချက်	စွမ်းအင်နှင့် ရေ သုံးစွဲမှုလျော့ချရေး
လိုက်နာရမည့်စည်းကမ်း	The Underground Water Act (1930)
စီမံခန့်ခွဲမှုအစီအစဉ်	▪ ရေအသုံးပြုမှု သိရှိနိုင်သော မီတာတပ်ဆင်ခြင်း ▪ ဝန်ထမ်းများအားအသိပညာပေးခြင်းနှင့် လိုက်နာဆောင်ရွက်ရန် တိုက်တွန်းခြင်း ▪ စက်ရုံရှိတာဝန်ရှိပုဂ္ဂိုလ်များအား (Third Party) နေဖြင့်မြေအောက်ရေအကျိုးရှိရှိအသုံးချရန်စည်းကမ်းချက်နဲ့အညီ လမ်းညွှန်ထားခြင်း။
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ ▪ ရေ အသုံးပြုမှုစာရင်း စစ်ဆေးခြင်း ▪ ဝန်ထမ်းများလိုက်နာဆောင်ရွက်မှု စစ်ဆေးခြင်း

အရေးပေါ်အခြေအနေတုန့်ပြန်မှု

ရည်ရွယ်ချက်	**စက်ရုံတွင်းမတော်တဆထိခိုက်မှု လျော့ချရေး**
လိုက်နာရမည့်စည်းကမ်း	**အလုပ်အကိုင်နှင့် ကျန်းမာဘေးအန္တရာယ်ကင်းရှင်းရေးဥပဒေ (၂၀၁၉),** ILO guide to Myanmar Labour Law (2017)
စီမံခန့်ခွဲမှုအစီအစဉ်	▪ အရေးပေါ်အခြေအနေဖြစ်သော (မီး၊ လျှပ်၊ ငလျင်၊ ရေကြီးရေလျှံမှု) တို့အတွက် စက်ရုံတွင် စီမံခန့်ခွဲမှုရှိခြင်း ▪ စက်ရုံ၏မီးသတ်စနစ်များကို ပုံမှန်စစ်ဆေးခြင်း ▪ ရေးဆွဲထားသော အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်များကို ဝန်ထမ်းများ အကျွမ်းတဝင်ဖြစ်စေရန် စီမံထားခြင်း ▪ လောင်စာသိုလှောင်နေရာများ၊ လျှပ်စစ်ဖြန့်ဖြူးရေးနေရာများကို အထူးကြပ်မတ်စောင့်ကြည့်စစ်ဆေးခြင်း၊ ပြုပြင်မှုပြုလုပ်ခြင်း ▪ ပုံမှန်မီးဘေးကာကွယ်ရေး လေ့ကျင့်ခန်းများ ပြုလုပ်ရမည့်ပုံစံများ၊ ရေကြီးရေလျှံမှု အခြေအနေထိန်းသိမ်းရေး အစီအစဉ်များ၊ ရှေးဦးပြုစုခြင်းသင်တန်းများကို ပုံမှန်လေ့ကျင့်မှုများ သင်ကြားမှုများ ပြုလုပ်ခြင်း ▪ အရေးပေါ်ဆက်သွယ်ရန် ဖုန်းနံပါတ်၊ လိပ်စာများ၊ အများသူငါမြင်သာစေသောနေရာများတွင် ကပ်ထားခြင်း ▪ စက်ရုံတွင်း မီးသတ်အဖွဲ့ ငယ်၊ အန္တရာယ်ကင်းရှင်းရေး စောင့်ကြည့်ရေးအဖွဲ့ငယ်များထားရှိပြီး လစဉ် ဆွေးနွေးတိုင်ပင်ခြင်း၊ လေ့ကျင့်ခြင်းများ ပြုလုပ်ခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	▪ Manager and EHS officer ▪ မီးသတ်သင်တန်းများ ၃ လတစ်ကြိမ်ပြုလုပ်ရန်စီမံပေးခြင်း ▪ အရေးပေါ်အခြေအနေနှင့် မတော်တဆထိခိုက်မှုမရှိစေရေး စောင့်ကြည့်စစ်ဆေးခြင်း

ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်မှု

ကဏ္ဍ	အညွှန်းကိန်း	ကြိမ်နှုန်း	နေရာ	တာဝန်ရှိသူ
လုပ်ငန်းလည်ပတ်ချိန်				
လေထု	$PM_{2.5}$, PM_{10}	တစ်နှစ် ၂ကြိမ်	ထုတ်လုပ်မှု ဧရိယာအတွင်း	3R NON WOVEN MANUFACTURE Co., Ltd
ရေ	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	တစ်နှစ် ၂ကြိမ်	ရေဆိုးသန့်စင်ကန်မှ သန့်စင်ပြီးရေ	3R NON WOVEN MANUFACTURE Co., Ltd
ဆူညံသံ	ဆူညံသံ ပမာဏ	တစ်နှစ် ၂ကြိမ်	၂ နေရာ (ထုတ်လုပ်မှု ဧရိယာ အတွင်း)	3R NON WOVEN MANUFACTURE Co., Ltd
အမှိုက်စွန့်ပစ်မှု	အစိုင်အခဲ အရည် နှင့် အန္တရာယ်ရှိပစ္စည်း	ပုံမှန်	စက်ရုံအတွင်း ပြန်လည်အသုံးပြုရန်နှင့် စွန့်ပစ်ရန်ကျန်အမှိုက်ပုံများအား ခွဲခြားခြင်း	3R NON WOVEN MANUFACTURE Co., Ltd
မီးဘေးအန္တရာယ်	မီးသတ်ဆေးဘူးပစ္စည်းများနှင့် အရေးပေါ်ဖုန်းနံပါတ်များ	လစဉ်	စက်ရုံဧရိယာ အတွင်း	3R NON WOVEN MANUFACTURE Co., Ltd
အလင်းရောင်ဖြာထွက်မှု	အလင်းရောင်ပေးခြင်း	တစ်နှစ် ၂ကြိမ်	ထုတ်လုပ်မှု ဧရိယာအတွင်း [illegible]	3R NON WOVEN MANUFACTURE Co., Ltd
လုပ်ငန်းဖျက်သိမ်းချိန်ကာလ				
လေထု	PM2.5, PM10	ဖြတ်သိမ်းမှု ကာလအတွင်း ၁ကြိမ်	ထုတ်လုပ်မှု ဧရိယာအတွင်း	3R NON WOVEN MANUFACTURE Co., Ltd
ရေ	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	ထိုကာလအတွင်း ၁ကြိမ်	ရေဆိုးသန့်စင်ကန်မှ သန့်စင်ပြီးရေ	3R NON WOVEN MANUFACTURE Co., Ltd
ဆူညံသံ	ဆူညံသံ ပမာဏ	ထိုကာလအတွင်း ၁ကြိမ်	ဖြတ်သိမ်းမှု ဧရိယာ	3R NON WOVEN MANUFACTURE Co., Ltd
ပြန်လည်ပြုပြင်ခြင်း	သစ်ပင်များပြန်လည်စိုက်ပျိုးခြင်း		ဖြတ်သိမ်းမှု ဧရိယာအားလုံး	3R NON WOVEN MANUFACTURE

ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်မှု ခန့်မှန်းကုန်ကျစရိတ်

စဉ်	**အကြောင်းအရာ**	**အကြိမ်အရေအတွက်**	**ကုန်ကျစရိတ် (အမေရိကန်ဒေါ်လာ)**
လျော့ချခြင်းအစီအစဉ်			
၁.	စက်ရုံအတွင်းလေအဝင်အထွက်အစီအစဉ်	၁နှစ် ၁ကြိမ်	နှစ်စဉ် ဒေါ်လာ ၂၀၀
၂.	စက်ရုံဧရိယာအတွင်း သစ်ပင်များစိုက်ပျိုးခြင်း	၃လ တကြိမ်	၃လခြား ဒေါ်လာ ၇၀
၃.	အစိုင်အခဲအမှိုက်ပစ်ခြင်း၊	၁၂ ကြိမ်	နှစ်စဉ် ဒေါ်လာ ၁၀၀၀
၄.	တစ်ကိုယ်ရည်သုံး ကာကွယ်ရေးပစ္စည်းများဝယ်ယူခြင်း၊	၆ လ တကြိမ်	၆ လခြား ဒေါ်လာ ၁၅၀
၅.	ဆေးပစ္စည်းများနှင့် ကျန်းမာရေးစစ်ဆေးခြင်း၊	၁ နှစ် ၁ကြိမ်	နှစ်စဉ် ဒေါ်လာ ၅၀၀
အရေးပေါ် အစီအစဉ်			
၁.	မီးသတ်ဆေးဘူး	၁လ တကြိမ်	လစဉ် ဒေါ်လာ ၃၀၀
၂.	မီးသတ်အချက်ပြ စနစ်	၁လ တကြိမ်	
၃.	ရှေးဦးသူနာပြု ပစ္စည်းများ	၁လ တကြိမ်	
စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်			
၁.	ရေဆိုးရေညစ်	၂ ကြိမ်	၁နှစ် ဒေါ်လာ ၂၀၀
၂.	ဆူညံသံ	၂ ကြိမ်	၁နှစ် ဒေါ်လာ ၃၀၀
၃.	စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ	၁ ကြိမ်	ဒေါ်လာ ၁၀၀၀

လူမှုအကျိုးတူပူးပေါင်း ပါဝင်မှု

3R NON WOVEN MANUFACTURE Co., Ltd တွင် CSR အတွက် အခြေခံငွေ၏ ၂% ကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်ခြမ်းဖွံ့ဖြိုးတိုးတက်ရေးတို့ အတွက် အသုံးပြုသွားမည် ဖြစ်ပါသည်။

ကျန်းမာရေး	ဝန်ထမ်းများ ကျန်းမာရေး စောင့်ရှောက်မှု	၀.၅ %
ပညာရေး	ပညာရေးကဏ္ဍ ဖြင့်တင်ရေးနှင့် လူအခွင့်အရေး အသိပညာပေးခြင်း	၀.၅ %
နယ်ခြမ်းဖွံ့ဖြိုးတိုးတက်ရေး	ဒေသတွင်း လိုအပ်သကဲ့သို့ လှူဒါန်းခြင်း	၁ %

စက်ရုံ၏ဆောင်ရွက်ချက်များ

3R NON WOVEN MANUFACTURE Co., Ltd ဝန်ထမ်းများအတွက်သုံးရေပြေင်ဆင်ထားရှိမှု

3R NON WOVEN MANUFACTURE Co., Ltd ၏ လျှပ်စစ်သုံးစွဲမှုနှင့်ထားရှိရမှုများ

3R NON WOVEN MANUFACTURE Co., Ltd ၏ ရေဖြောင်းနှင့် အိမ်သာထားရှိမှုများ

3R NON WOVEN MANUFACTURE CO.,LTD ၏ မီးဘေးအန္တရာယ်အတွက် ထားရှိမှုများ

3R NON WOVEN MANUFACTURE Co., Ltd ၏
အမှိုက်ပွန့်ပစ်မှုအဖြေခန့်များ

Thank You for Your Patient Attention!