

**INITIAL ENVIRONMENTAL EXAMINATION - IEE**  
**And**  
**Environmental Management Plan - EMP**

**FOR**

**“ Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and  
Related Kind of Clinical Wears on CMP Basis ”**

**Plot No. (N1<sup>B</sup>), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9<sup>th</sup>) Quarter,  
Bago Township, Bago Region, Myanmar**



**Proponent:**



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**February 2022**

**INITIAL ENVIRONMENTAL EXAMINATION (IEE) REPORT**

**For**

**MANUFACTURING OF NON-STERILIZED DISPOSABLE  
SURGICAL-SCRUBS AND RELATED KIND OF CLINICAL  
WEARS ON CMP BASIS**

**(Cobes Industries (B II) Company Limited)**

## Report Review Form

**Report Title: Initial Environmental Examination (IEE) Report for Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis**

**Report Version: 00 Version**

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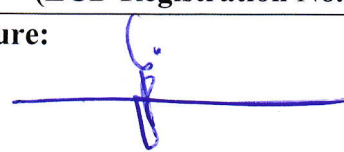
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<b>Summary: IEE Report</b> This document presents the initial environmental examination (IEE) report as required for Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis.	

## TABLE OF CONTENTS

TABLE OF CONTENTS.....	1
LIST OF TABLES.....	10
LIST OF FIGURES.....	13
LIST OF APPENDICES.....	16
DOCUMENT CERTIFICATION AND DECLARATION.....	18
COMMITMENT AND ACKNOWLEDGEMENT.....	19
ABBREVIATION.....	20
၁။ အကျဉ်းချုပ်အစီရင်ခံစာ.....	I
၁-၁။ နောက်ခံအကြောင်းအရာ.....	I
၁-၂။ လုပ်ငန်းလုပ်ကိုင်သူ၏ အချက်အလက်များ.....	I
၁-၃။ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ လေ့လာပြုစုသည့်အဖွဲ့အစည်း.....	VII
၁-၄။ မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်.....	VII
၁-၅။ စီမံကိန်းအကြောင်းအရာနှင့်အခြားနည်းလမ်းများ.....	X
၁-၅-၁။ ထုတ်လုပ်မှုနည်းစဉ်.....	X
၁-၅-၁-၁။ Non-woven Fabric ထုတ်လုပ်ခြင်း.....	XI
၁-၅-၁-၂။ ပိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ် အထည်များ ထုတ်လုပ်ခြင်း.....	XI
၁-၅-၂။ စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု.....	XII
၁-၅-၂-၁။ ထုတ်လုပ်မှုအစိုးအငွေ့နှင့်ဓာတ်ငွေ့များအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်.....	XIII
၁-၅-၂-၂။ အရည်စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်.....	XV
၁-၅-၂-၃။ အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်.....	XVII
၁-၅-၃။ အခြားရွေးချယ်မှုနည်းလမ်းများ.....	XIX
၁-၅-၃-၁။ စီမံကိန်း အခြားနည်းလမ်းများ.....	XIX
၁-၅-၃-၂။ စီမံကိန်းနေရာ အခြားနည်းလမ်းများ.....	XIX
၁-၆။ လက်ရှိလူမှုပတ်ဝန်းကျင်အခြေအနေဖော်ပြခြင်း.....	XIX
၁-၆-၁။ ပတ်ဝန်းကျင်အခြေခံအချက်အလက်များ (မူလအချက်အလက်များ).....	XIX
၁-၆-၁-၁။ လေထုအရည်အသွေး.....	XIX
၁-၆-၁-၂။ ဆူညံသံနှင့်တုန်ခါမှုများ.....	XXV

၁-၆-၁-၃။ အလင်းရောင်ပမာဏ .....	XXXI
၁-၆-၁-၄။ ရေနှင့်စွန့်ပစ်ရည်အရည်အသွေး.....	XXXII
၁-၆-၁-၅။ မြေအရည်အသွေး.....	XXXV
၁-၆-၂။ သဘာဝပတ်ဝန်းကျင်/ ရုပ်ပတ်ဝန်းကျင် (ဆင့်ပွားအချက်အလက်များ) .....	XXXVI
၁-၆-၂-၁။ ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင် .....	XXXVI
၁-၆-၂-၂။ ဇီဝဆိုင်ရာအချက်အလက်များ.....	XXXVII
၁-၆-၂-၃။ လူမှုစီးပွားအခြေအနေ .....	XXXVII
၁-၇။ ထိခိုက်မှုများဆန်းစစ်ခြင်းနှင့် လျော့နည်းရန်ဆောင်ရွက်ချက်များ.....	XXXVII
၁-၇-၁။ အကောင်းဆုံးစီမံခန့်ခွဲမှုအလေ့အကျင့်များ.....	XXXIX
၁-၇-၂။ လူမှုစီးပွားတာဝန်သိအစီအစဉ် .....	XXXIX
၁-၈။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်.....	XL
၁-၈-၁။ တည်ဆောက်ပုံစနစ် .....	XL
၁-၈-၂။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအဖွဲ့အစည်း.....	XL
၁-၈-၃။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်.....	XLII
၁-၈-၄။ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်.....	XLII
၁-၈-၅။ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုခြင်း ရန်ပုံငွေခန့်မှန်းချက်များ .....	XLII
၁-၈-၆။ မကျေနပ်ချက်များလျော့နည်းရန် ဆောင်ရွက်မည့်အစီအစဉ်.....	XLII
၁-၈-၇။ အရေးပေါ်အခြေအနေတွင် ဆောင်ရွက်မည့်အစီအစဉ်နှင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးအစီအစဉ် .....	XLIII
၁-၉။ အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးခြင်းနှင့် ထုတ်ဖော်ကြေညာခြင်း.....	XLIII
၁-၁၀။ နိဂုံးချုပ်နှင့်သုံးသပ်တင်ပြချက် .....	XLIII
1.0 EXECUTIVE SUMMARY .....	1-1
1.1 Background .....	1-1
1.2 Proponent Information .....	1-1
1.3 Initial Environmental Examination (IEE) Study Team .....	1-5
1.4 Policy, Legal and Institutional Framework .....	1-5
1.5 Description of the Project and Alternatives .....	1-7
1.5.1 Manufacturing Process .....	1-7
1.5.1.1 Process for Non-woven Fabric.....	1-7

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1.5.1.2	Process for Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears.....	1-8
1.5.2	Management of the Waste Materials .....	1-9
1.5.2.1	Emitted Gas or Vapour (Emission to Air) and Management Procedure .....	1-10
1.5.2.2	Liquid Wastes and Management Procedure .....	1-12
1.5.2.3	Solid Wastes and Management Procedure.....	1-14
1.5.3	Analysis of Alternatives .....	1-16
1.5.3.1	Project Alternatives.....	1-16
1.5.3.2	Site Alternatives.....	1-16
1.6	Description of the Surrounding Environmental Social Conditions.....	1-16
1.6.1	Environmental Baseline Situation (Primary Data) .....	1-16
1.6.1.1	Air Quality .....	1-17
1.6.1.2	Noise and Vibration .....	1-21
1.6.1.3	Light Intensity .....	1-26
1.6.1.4	Water and Wastewater Quality .....	1-27
1.6.1.5	Soil Quality .....	1-30
1.6.2	Natural Environment/ Physical Component (Secondary Data) .....	1-31
1.6.2.1	Physical Environment .....	1-31
1.6.2.2	Biological Component .....	1-31
1.6.2.3	Socio-economic Status.....	1-31
1.7	Impact Assessment and Mitigation Measures .....	1-32
1.7.1	Best Management Practices .....	1-33
1.7.2	Corporate Social Responsibility .....	1-33
1.8	Environmental Management Plan and Monitoring Plan .....	1-34
1.8.1	Structure.....	1-34
1.8.2	Environmental Management Committee (EMC).....	1-34
1.8.3	Environmental Management Plan.....	1-35
1.8.4	Environmental Monitoring Plan .....	1-36
1.8.5	Estimated Cost for Environmental Monitoring.....	1-36
1.8.6	Grievance Redress Mechanism (GRM) .....	1-36
1.8.7	Emergency Plan and OHS .....	1-36
1.9	Public Consultation and Disclosure .....	1-36
1.10	Conclusion and Recommendations .....	1-36
2.0	INTRODUCTION .....	2-1
2.1	Background .....	2-1
2.2	Type of EMP/IEE and EIA Requirement.....	2-1

2.3	Objectives of the IEE .....	2-1
2.4	Methodology Adopted.....	2-2
2.5	Identification of the Project Proponent .....	2-2
2.5.1	Proponent Information .....	2-2
2.5.2	List of Shareholders .....	2-2
2.5.3	List of Directors and Executives.....	2-3
2.5.4	Organization Chart.....	2-3
2.6	Initial Environmental Examination (IEE) Study Team .....	2-3
2.7	Structure of the Report .....	2-7
3.0	POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK.....	3-1
3.1	Background .....	3-1
3.2	Policy Framework .....	3-1
3.3	Myanmar Regulatory Framework in Environmental Assessment .....	3-1
3.3.1	National Environmental Policy of Myanmar (2019) .....	3-2
3.3.2	Myanmar Agenda 21 (1997).....	3-2
3.3.3	National Sustainable Development Strategy (2009).....	3-2
3.3.4	The Environmental Conservation Law (2012) .....	3-2
3.3.5	The Environmental Conservation Rules (2014) .....	3-5
3.3.6	Environmental Impact Assessment Procedure (2015).....	3-6
3.3.7	National Environmental Quality (Emission) Guidelines (2015) .....	3-8
3.4	Environmental -related Laws and Regulations in Myanmar.....	3-9
3.5	Myanmar Legislation Relevance to the Project .....	3-12
3.6	International Conventions, Treaties and Agreements .....	3-36
3.7	Standards and Guidelines for the Surrounding Environment of the Project .....	3-38
3.7.1	Air Quality .....	3-38
3.7.2	Water Quality.....	3-39
3.7.3	Noise Levels.....	3-41
3.7.4	Light Intensity .....	3-42
3.8	Institutional Arrangement for Environmental Management .....	3-43
3.8.1	Institutional Arrangement during Operation Phase .....	3-43
3.8.2	Institutional Arrangement during Decommissioning Phase .....	3-44
4.0	DESCRIPTION OF THE PROJECT AND ALTERNATIVES .....	4-1
4.1	Project Background .....	4-1
4.1.1	Company Profile .....	4-1
4.1.2	Company Scale .....	4-1

4.2 The History of Medical Scrubs (Surgical Scrubs) .....	4-1
4.2.1 Benefits of Using Medical Scrubs (Surgical Scrubs) .....	4-2
4.2.2 Reasons to Choose Disposable Scrubs over Washable Scrubs.....	4-2
4.3 Project Description.....	4-2
4.4 Objectives of the Project .....	4-3
4.5 Regional Information .....	4-3
4.6 Project Information .....	4-4
4.6.1 Project Location.....	4-4
4.6.2 Area and Land Ownership.....	4-5
4.6.3 Site Description .....	4-8
4.6.3.1 Site Accessibility .....	4-8
4.6.3.2 Site Boundaries and Surrounding Environment .....	4-8
4.6.4 Factory Layout and Infrastructure .....	4-8
4.6.4.1 Layout Plan .....	4-8
4.6.4.2 Structure of the Factory .....	4-9
4.6.5 Types of Products and Production Quantity.....	4-11
4.6.5.1 Types of Products .....	4-11
4.6.5.2 Production Quantity .....	4-14
4.6.6 Raw Materials.....	4-16
4.6.6.1 Raw Materials for Non-woven Fabric .....	4-16
4.6.6.2 Raw Materials for Non-sterilized Disposable Surgical-scrubs and Related Kind of Clinical Wears .....	4-16
4.6.7 Machinery and Equipment List .....	4-19
4.6.7.1 Machinery and Equipment for Non-woven Fabric Production.....	4-19
4.6.7.2 Machinery and Equipment for Non-sterilized Disposable Surgical-scrubs and Related Kind of Clinical Wears .....	4-22
4.6.7.3 Auxiliary Machinery on Local Purchase and Imported.....	4-23
4.6.8 Manufacturing Process .....	4-24
4.6.8.1 Process for Non-woven Fabric.....	4-24
4.6.8.2 Process for Non-sterilized Disposable Surgical-scrubs and Related Kind of Clinical Wears.....	4-26
4.6.9 Utilities .....	4-37
4.6.9.1 Electricity.....	4-37
4.6.9.2 Generator.....	4-37
4.6.9.3 Fuel Requirement.....	4-38
4.6.9.4 Water Requirement .....	4-39



4.6.10 Financial Information and Investment Plan.....	4-39
4.6.10.1 Financial Information.....	4-39
4.6.10.2 Investment Plan.....	4-40
4.6.11 Working Hour and Manpower Requirement .....	4-40
4.6.11.1 Working Hour .....	4-40
4.6.11.2 Manpower Requirement.....	4-41
4.6.12 Management of the Waste Materials .....	4-42
4.6.12.1 Emitted Gas or Vapour (Emission to Air) .....	4-42
4.6.12.2 Liquid Wastes .....	4-45
4.6.12.3 Solid Wastes.....	4-46
4.6.12.4 Management Plan for Wastes .....	4-48
4.6.13 Sanitation and Sewage Disposal.....	4-51
4.6.14 Storm Water and Drainage System .....	4-52
4.6.15 Water Distribution System .....	4-52
4.6.16 Storm Water Management Plan of CIC (B II).....	4-52
4.7 Analysis of Alternatives .....	4-54
4.7.4 Project Alternatives .....	4-55
4.7.5 Site Alternatives .....	4-55
5.0 DESCRIPTION OF THE SURROUNDING ENVIRONMENTAL SOCIAL CONDITIONS.....	5-1
5.1 Methodology for Data Collection and Analysis.....	5-1
5.1.1 Primary Data Collection and Analysis.....	5-1
5.1.2 Secondary Data Collection and Analysis.....	5-1
5.2 Environmental Baseline Situation (Primary Data).....	5-1
5.2.1 Air Quality .....	5-2
5.2.1.1 Ambient Air Quality .....	5-3
5.2.1.2 Workplace Air Quality.....	5-7
5.2.1.3 Stack Emission Measurement .....	5-9
5.2.2 Noise and Vibration .....	5-11
5.2.2.1 Boundary Noise Levels.....	5-12
5.2.2.2 Workplace (Indoor) Noise Levels.....	5-15
5.2.2.3 Vibration .....	5-18
5.2.3 Light Intensity .....	5-24
5.2.4 Water and Wastewater Quality .....	5-27
5.2.4.1 Water Quality.....	5-28
5.2.4.2 Wastewater Quality.....	5-29

5.2.5	Soil Quality .....	5-29
5.3	Natural Environment/ Physical Component (Secondary Data).....	5-31
5.3.1	Climate.....	5-31
5.3.2	Topography.....	5-32
5.3.3	Geology.....	5-32
5.3.4	Soil.....	5-34
5.3.5	Hydrology .....	5-35
5.4	Biological Component (Secondary Data).....	5-36
5.5	Socio-economic Status (Secondary Data) .....	5-36
5.5.1	Population .....	5-36
5.5.2	Ethnicity.....	5-36
5.5.3	Religion.....	5-37
5.5.4	Local Economy and Livelihood.....	5-37
5.5.5	Land Use .....	5-38
5.5.6	Social Infrastructure and Services .....	5-39
5.6	Cultural Components.....	5-40
6.0	IMPACT ASSESSMENT AND MITIGATION MEASURES.....	6-1
6.1	Impact Assessment .....	6-1
6.2	Methodology in Assessing Impacts.....	6-1
6.2.1	Spatial Classification .....	6-2
6.2.2	Temporal Classification.....	6-2
6.2.3	Severity Classification.....	6-2
6.2.4	Likelihood Classification.....	6-3
6.2.5	Significance Evaluation .....	6-3
6.3	Construction Phase .....	6-4
6.3.1	Construction Activities .....	6-4
6.3.2	Construction Inputs .....	6-4
6.3.3	Adverse Impacts and Mitigation Measures for Construction Phase.....	6-4
6.3.3.1	Impacts and Mitigation Measures on Air Quality during Construction Phase	6-4
6.3.3.2	Impacts and Mitigation Measures on Noise Levels during Construction Phase ..	6-6
6.3.3.3	Impacts and Mitigation Measures on Vibration during Construction Phase ..	6-6
6.3.3.4	Impacts and Mitigation Measures on Surface Water Quality during Construction Phase .....	6-7
6.3.3.5	Impacts and Mitigation Measures on Contamination of Soil and Ground Water during Construction Phase .....	6-7

6.3.3.6 Impacts and Mitigation Measures of Solid Wastes during Construction Phase ...	6-8
6.3.3.7 Impacts and Mitigation Measures on Occupational Health and Safety during Construction Phase.....	6-8
6.3.3.8 Impacts and Mitigation Measures on Community Health and Safety during Construction Phase.....	6-9
6.4 Operation Phase.....	6-9
6.4.1 Manufacturing the Non-woven Fabric, Impact and Mitigation of its Manufacturing.....	6-10
6.4.1.1 Manufacturing the Non-woven Fabric.....	6-10
6.4.1.2 Impacts during Manufacturing of Non-woven Fabric .....	6-11
6.4.1.3 Impacts and Mitigation Measures during Manufacturing of Non-woven Fabric .....	6-11
6.4.2 Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears .....	6-12
6.4.2.1 Impacts during Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears .....	6-14
6.4.2.2 Impacts and Mitigation Measures during Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears.....	6-15
6.4.3 Operational Phase Impact Evaluation and Mitigation Measures .....	6-16
6.4.3.1 Evaluation of Impacts before Mitigation Measures during Manufacturing..	6-16
6.4.3.2 Evaluation of Impacts after Mitigation Measures during Manufacturing ....	6-17
6.4.3.3 Comparison of Impact Significance before and after Mitigation Measures .	6-19
6.5 Potential Impacts during Decommissioning Phase .....	6-19
6.5.1 Impacts and Mitigation Measures during Decommissioning Phase.....	6-20
6.5.2 Evaluation of Impact Significance before and after Mitigation and Comparison during Decommissioning Phase.....	6-20
6.6 Best Management Practices.....	6-21
6.6.1 Energy Use.....	6-21
6.6.2 Water Use.....	6-22
6.6.3 Hazardous Chemical Use .....	6-23
6.6.4 Solid Waste Generation and Management.....	6-23
6.7 Prevention Methods for Fire Hazard .....	6-25
6.8 Residual Impacts .....	6-28
6.9 Cumulative Impacts.....	6-28
6.10 Corporate Social Responsibility .....	6-28
6.10.1 Plan for Health .....	6-28

6.10.2	Plan for the Employees of Factory with Welfare and Peace and Harmony....	6-29
7.0	ENVIRONMENTAL MANAGEMENT PLAN AND MONITORING PLAN.....	7-1
7.1	Objectives.....	7-1
7.2	Structure .....	7-1
7.3	Environmental Management Committee (EMC) .....	7-2
7.4	Environmental Management Plan (EMP) .....	7-4
7.5	Environmental Monitoring Plan (EMoP).....	7-10
7.6	Estimated Cost for Environmental Monitoring .....	7-16
7.7	Grievance Redress Mechanism (GRM) .....	7-18
7.7.1	Grievance Mechanisms for Human Rights Violations .....	7-18
7.7.2	Workplace Coordinating Committee (WCC) .....	7-18
7.8	Training .....	7-18
7.8.1	Environmental Training .....	7-18
7.8.2	Reporting and Recording .....	7-19
7.9	Emergency Plan.....	7-19
7.9.1	Evacuation Routes .....	7-19
7.9.2	Operating a Fire Extinguisher .....	7-20
7.10	Occupational Health and Safety Issues .....	7-22
7.10.1	Safety Issues.....	7-22
7.10.2	Medical Emergency .....	7-23
7.11	Green Belt Development .....	7-23
7.12	Social Environmental Aspect .....	7-24
8.0	PUBLIC CONSULTATION AND DISCLOSURE .....	8-1
8.1	Purpose .....	8-1
8.2	Methodology and Approach .....	8-1
8.3	Meeting with Factory Employees.....	8-1
8.4	Consultation Meeting with the Public and Neighbors of the Factory .....	8-5
9.0	CONCLUSION AND RECOMMENDATIONS .....	9-1
9.1	Findings .....	9-1
9.2	Recommendations .....	9-2
9.3	Conclusions .....	9-2
	Appendices.....	A-1

## LIST OF TABLES

Table 2-1 Proponent Information.....	2-2
Table 2-2 List of Shareholders.....	2-2
Table 2-3 List of Directors.....	2-3
Table 2-4 Organization in Charge of IEE Implementation.....	2-4
Table 2-5 Organization of the GMES’s IEE Study Team .....	2-4
Table 2-6 Structure of the Report .....	2-7
Table 3-1 Environmental-related Laws and Rules.....	3-9
Table 3-2 Laws and Rules Relevance to the Project.....	3-12
Table 3-3 International Treaties and Conventions.....	3-36
Table 3-4 Air Emission Guidelines.....	3-39
Table 3-5 Small Combustion Facilities Emission Guidelines .....	3-39
Table 3-6 WHO Drinking Water Standards (2011).....	3-40
Table 3-7 Effluent Water Standards for Operation Phase .....	3-40
Table 3-8 Ambient Noise Level Standards for Operation Phase.....	3-41
Table 3-9 OHS Noise Exposure Limits for the Work Environment (Noise Exposures in dBA) .....	3-42
Table 3-10 Typical Light Levels.....	3-42
Table 4-1 Area and Land Ownership of the Factory .....	4-6
Table 4-2 Lists of Buildings with Dimensions .....	4-9
Table 4-3 Annual Production Statement.....	4-15
Table 4-4 Norm for One Dozen .....	4-17
Table 4-5 List of Machinery and Equipment for Non-woven Fabric .....	4-19
Table 4-6 List of Machinery and Equipment (To be Imported) .....	4-22
Table 4-7 List of Electrical Materials (Local Purchase).....	4-23
Table 4-8 Furniture and Fixtures Requirement (Local Purchase) .....	4-24
Table 4-9 List of Vehicle (To Be Imported).....	4-24
Table 4-10 List of Vehicle (Local Purchase).....	4-24
Table 4-11 Annual Electricity Usage.....	4-37
Table 4-12 Financial Information .....	4-39
Table 4-13 Investment Plan (Amount of Capital - Foreign).....	4-40
Table 4-14 Working Hour.....	4-40
Table 4-15 Manpower Requirement .....	4-41
Table 5-1 Measured Parameters for Ambient Air Quality.....	5-3
Table 5-2 Location of Ambient Air Quality Measuring Point.....	5-4

Table 5-3 Measuring Results of Ambient Air Quality Baseline Data (AMP).....	5-5
Table 5-4 Locations of Workplace (Indoor) Air Quality Measuring Points.....	5-7
Table 5-5 Workplace Air Quality Measurement Results.....	5-9
Table 5-6 Location of Stack Emission Measuring Point .....	5-10
Table 5-7 Generator Stack Emission Measuring Result .....	5-10
Table 5-8 Location of Boundary Noise Levels Measuring Point .....	5-12
Table 5-9 Ambient Noise Level Measuring Results (Daytime) .....	5-13
Table 5-10 Ambient Noise Level Measuring Results (Nighttime).....	5-13
Table 5-11 Boundary Noise Measurement Graphs.....	5-14
Table 5-12 Locations of Workplace (Indoor) Noise Level Measuring Points.....	5-15
Table 5-13 Measuring Results of Indoor (Workplace) Noise Levels .....	5-17
Table 5-14 Location of Vibration Measuring Point.....	5-18
Table 5-15 Vibration Measurement Results .....	5-19
Table 5-16 Vibration Measurement Records.....	5-19
Table 5-17 Locations of Light Intensity Measuring Points .....	5-25
Table 5-18 Light Measurement Results.....	5-26
Table 5-19 Locations of Water and Wastewater Sampling Points .....	5-27
Table 5-20 Result of Water Quality (GMES Laboratory) .....	5-28
Table 5-21 Result of Wastewater Quality (GMES Laboratory) .....	5-29
Table 5-22 Locations of Soil Sampling (SS) .....	5-30
Table 5-23 Results of Soil Quality.....	5-31
Table 5-24 Climate of Bago Township (2016-2020).....	5-32
Table 5-25 Geological Succession of the Bago Region.....	5-33
Table 5-26 Total Populations of Bago Township (2020) .....	5-36
Table 5-27 Races in Bago Township (2020) .....	5-37
Table 5-28 Religion in Bago Township (2020) .....	5-37
Table 5-29 Existing Status of Local Livelihoods in Bago Township (2020) .....	5-38
Table 5-30 Land Use of Bago Township (2020) .....	5-38
Table 5-31 Economic Infrastructure .....	5-39
Table 6-1 Spatial Classification .....	6-2
Table 6-2 Temporal Classification.....	6-2
Table 6-3 Severity Classification.....	6-2
Table 6-4 Likelihood Classification.....	6-3
Table 6-5 Significance Evaluation.....	6-3
Table 6-6 Environmental Aspects of Manufacturing of Non-woven Fabric .....	6-11

Table 6-7 Impacts and Mitigation Measures during Manufacturing of Non-woven Fabric	6-12
Table 6-8 Environmental Aspects of Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears .....	6-14
Table 6-9 Impacts and Mitigation Measures during Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears .....	6-15
Table 6-10 Evaluation of Impacts before Mitigation Measures during Manufacturing .....	6-16
Table 6-11 Evaluation of Impacts after Mitigation Measures during Manufacturing .....	6-17
Table 6-12 Comparison of Impact Significance before and after Mitigation Measures.....	6-19
Table 6-13 Environmental Aspects of Decommissioning Phase.....	6-19
Table 6-14 Mitigation Measures during Decommissioning Phase .....	6-20
Table 6-15 Evaluation of Impact Significance before and after Mitigation and Comparison during Decommissioning Phase.....	6-20
Table 7-1 List of Environmental Management Committee (EMC).....	7-2
Table 7-2 Environmental Management Plan .....	7-4
Table 7-3 Environmental Monitoring Plan .....	7-11
Table 7-4 Estimated Cost for the Basic Environmental Monitoring during the Operation and Decommissioning Phases.....	7-16
Table 7-5 Workplace Coordinating Committee (WCC) Team.....	7-18
Table 7-6 Reporting and Recording.....	7-19
Table 8-1 Information on Meetings with Factory Employees .....	8-2
Table 8-2 Response Plan on the Opinions and Suggestions of the Factory Employees.....	8-3

## LIST OF FIGURES

Figure 2-1 Organization Chart of the Project Proponent .....	2-3
Figure 3-1 Institutional Arrangement during the Operation Phase.....	3-43
Figure 3-2 Institutional Arrangement during the Decommissioning Phase.....	3-44
Figure 4-1 Map of Bago Region by Districts and Townships .....	4-3
Figure 4-2 Factory Location Map (Google Earth).....	4-4
Figure 4-3 Factory Location Map (UTM Map) .....	4-4
Figure 4-4 Factory Location Map (Bago Township Regional Map).....	4-5
Figure 4-5 Factory Land Lease .....	4-6
Figure 4-6 Land Form 105.....	4-7
Figure 4-7 Land Form 106.....	4-8
Figure 4-8 Factory Layout Plan .....	4-9
Figure 4-9 Buildings within the Factory .....	4-11
Figure 4-10 Photos of Sample Products.....	4-13
Figure 4-11 Brief Description of SMS.....	4-14
Figure 4-12 Raw Materials for Non-woven Fabric.....	4-16
Figure 4-13 Photos of Machinery and Equipment for Non-woven Fabric .....	4-21
Figure 4-14 Photos of Some Machinery and Equipment for Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears.....	4-23
Figure 4-15 SMS Compound Line.....	4-25
Figure 4-16 Storing of Non-woven Fabric.....	4-27
Figure 4-17 Spreading the Rolls of Fabric.....	4-28
Figure 4-18 Large Size Cutting.....	4-28
Figure 4-19 Respective Patterns Cutting .....	4-29
Figure 4-20 Gluing & Heat Pressing, Drying .....	4-30
Figure 4-21 Stamping .....	4-30
Figure 4-22 Sewing and Linking .....	4-31
Figure 4-23 Dust Blowing .....	4-31
Figure 4-24 Checking and Label Tagging .....	4-32
Figure 4-25 Folding .....	4-32
Figure 4-26 Packaging with Plastic Bag.....	4-33
Figure 4-27 Packaging with Carton Boxes .....	4-33
Figure 4-28 Storing in Warehouse .....	4-34
Figure 4-29 Transport with Trucks .....	4-34
Figure 4-30 Process Flow Diagram for Non-woven Fabric.....	4-35



Figure 4-31 Process Flow Diagram for Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears .....	4-36
Figure 4-32 Transformer.....	4-37
Figure 4-33 Diesel Generators .....	4-38
Figure 4-34 Diesel Tank .....	4-39
Figure 4-35 Purified Water Bottles.....	4-39
Figure 4-36 Toilets and Septic Tanks .....	4-51
Figure 4-37 Storm Water and Drainage System .....	4-52
Figure 4-38 Elevation Profile Map of Proposed Site Figure 4-39 Contour Map of Proposed Site Figure 4-40 Flow of Tributary Streams in Study Area.....	4-53
Figure 4-41 Slope profile of Study Area.....	4-54
Figure 4-42 Watershed Map of Study Area.....	4-54
Figure 5-1 Location of Ambient Air Quality Measuring Point .....	5-4
Figure 5-2 Status of Ambient Air Quality Measurement.....	5-4
Figure 5-3 (a) Windrose Plot superimposed over the Project Site, (b) Windrose Plot, (c) Wind Class Frequency Distribution Chart.....	5-6
Figure 5-4 Status of Workplace Air Quality Measuring Points.....	5-9
Figure 5-5 Location Points for Stack Emission Measurement .....	5-10
Figure 5-6 Status of Generator Stack Emission Measurement .....	5-10
Figure 5-7 Locations of Boundary Noise Levels Measuring Points.....	5-12
Figure 5-8 Status of Boundary Noise Levels Measurement .....	5-13
Figure 5-9 Status of Workplace (Indoor) Noise Level Measurement.....	5-17
Figure 5-10 Location of Vibration Measuring Points.....	5-18
Figure 5-11 Status of Vibration Measurement.....	5-19
Figure 5-12 Light Measurement Activities.....	5-26
Figure 5-13 Location of Water and Wastewater Sampling Points .....	5-27
Figure 5-14 Status of Water Sampling.....	5-28
Figure 5-15 Status of Wastewater Sampling .....	5-29
Figure 5-16 Location of Soil Sampling Points .....	5-30
Figure 5-17 Status of Soil Sampling.....	5-31
Figure 5-18 Geological Map of Bago Region.....	5-34
Figure 5-19 Description of Soil Type Map.....	5-35
Figure 6-1 Glue Storage, Diesel Storage and Firefighting Equipment.....	6-23
Figure 6-2 Waste Bins and Solid Waste Storage .....	6-24
Figure 6-3 Disposal of Wastes to the City Development Committee (Bago).....	6-24
Figure 6-4 Placement of Firefighting Equipment and Escape Route .....	6-26

Figure 6-5 Installed Fire Extinguishers and Sprinkler, Water Hydrants, LPG and Fire Alarm System.....	6-27
Figure 6-6 Fire Drill and No Smoking and Betel Chewing Notice .....	6-27
Figure 6-7 Provided Ferries and their Routes .....	6-29
Figure 6-8 Hostels.....	6-30
Figure 6-9 Canteen.....	6-30
Figure 7-1 Basic Principle of Environmental Management Plan .....	7-2
Figure 7-2 Explanation of Fire Hose Reel .....	7-22
Figure 7-3 Provided First Aid Kits .....	7-23
Figure 8-1 Photos of Employee Discussion Program .....	8-2

## LIST OF APPENDICES

Appendix 1 Comment of ECD (Bago) on Factory Inspection.....	A-2
Appendix 2 Certificate for Transitional Consultant Registration of Organization.....	A-17
Appendix 3 Certificate for Transitional Consultant Registration of Personal.....	A-19
Appendix 4 Certificate of Incorporation.....	A-33
Appendix 5 Land Lease Agreement .....	A-34
Appendix 6 Submission for Increase of Investment by CIC (B II) and BRIC Permit.....	A-37
Appendix 7 Amendment for BRIC Permit (15.6.2021).....	A-47
Appendix 8 Amendment for BRIC Permit (23.7.2021).....	A-54
Appendix 9 Certificate of Exporter/Importer Registration.....	A-61
Appendix 10 Membership Certificate of UMFCCI.....	A-64
Appendix 11 Building Drawing Layout .....	A-66
Appendix 12 Construction Permit from Bago Township Development Committee.....	A-76
Appendix 13 EI Certificate .....	A-79
Appendix 14 Generator Certificate.....	A-81
Appendix 15 Water Analysis Report for ID-1 (GMES Laboratory) .....	A-84
Appendix 16 Water Analysis Report for ID-2 (GMES Laboratory) .....	A-85
Appendix 17 Wastewater Analysis Report for ID-3 (GMES Laboratory) .....	A-86
Appendix 18 Water Analysis Report for ID-1 (Ecological Laboratory) .....	A-87
Appendix 19 Water Analysis Report for ID-2 (Ecological Laboratory) .....	A-88
Appendix 20 Soil Analysis Report for SS-1 (GMES Laboratory) .....	A-89
Appendix 21 Fire Safety Certificate .....	A-90
Appendix 22 Layout Drawing of Fire Safety Equipment.....	A-91
Appendix 23 Emergency Training Photo Records .....	A-96
Appendix 24 Certificate of Pharmacist Aide Training Course.....	A-100
Appendix 25 Photo Records of Employee Development Training .....	A-101
Appendix 26 Social Welfare Registration Card.....	A-103
Appendix 27 Labour Inspection Recommendation Letter.....	A-104
Appendix 28 Safety Data Sheet (SDS) for HM-825.....	A-105
Appendix 29 Safety Data Sheet (SDS) for Valence .....	A-110
Appendix 30 Explanation for Taking of Responsibilities for Corporate Social Responsibility (CSR) .....	A-113
Appendix 31 Submission in Plan for the Employees of Factory With Welfare and Peace and Harmony .....	A-116
Appendix 32 Plan for Preventing of Environment .....	A-118

Appendix 33 Plan for Health .....	A-119
Appendix 34 Fire Precaution Plan .....	A-120
Appendix 35 Attendee List of Employee Discussion Program .....	A-122
Appendix 36 Suggestion Letters from Employees .....	A-124
Appendix 37 Requesting to Response Comments of Factory’s Employees.....	A-132
Appendix 38 Project Proponent’s Commitment on Suggestion form .....	A-134
Appendix 39 Storm Water Management Plan Report .....	A-137

## DOCUMENT CERTIFICATION AND DECLARATION

Green Myanmar Environmental Services Company Limited has prepared this Initial Environmental Examination (IEE) report for Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears (on CMP Basis) project.

I, the undersigned, (Managing Director of Cobes Industries (B II) Company Limited) as proponent of this project, certify that the particulars in this report are correct, true to the best of my knowledge and do hereby solemnly affirm to:

- Ensure the legal and other obligations are incorporated in designs, procedures and project controls,
- Communicate legal and other requirements to personnel and contractors accountable for compliance,
- Ensure all relevant legal and other requirements and associated documentation (e.g., licenses, permits, approval applications) are readily available on site to company personnel and consultants,
- Comply with all Myanmar laws, rules and regulations, including Clauses 14 and 15 of the Environmental Conservation Law (2012),
- Conduct a compliance audit at least annually and ensure there is a process in place to monitor on-going compliance with all legal and other requirements,
- Follow according to the Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP),
- Submit the monitoring report prescribed in the schedule of the Environmental Management Plan to the Ministry every (6) month,
- Follow company’s OHS policies,
- Implement CSR,
- Commit to minimize the impact of its activities on the environment during operation phase and decommissioning phase,
- Commit that the project will always comply fully with the commitments, mitigation measures, and plans in this IEE report.

Signature : -----

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-----

Designation : Managing Director  
-----

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Date: -----

## COMMITMENT AND ACKNOWLEDGEMENT

An Initial Environmental Examination (IEE) describes the environmental condition of a project, including potential impact, formulation of mitigation measures, and preparation of institutional requirements and environmental monitoring. This IEE report was prepared using information from the following sources:

- Review of selected literature, reports, and advisors;
- Meetings with several interested parties;
- The experience of the Environmental Team; and
- Other information solicited from baseline data and stakeholders.

We strongly commit

- the accuracy and completeness of the IEE; and
- that the IEE has been prepared in strict compliance with the applicable laws including this Procedure.

The IEE team is grateful to the project proponent – **Cobes Industries (B II) Company Limited** - for commissioning us to conduct this Initial Environmental Examination (IEE) Report in respect of the proposed project.

We further acknowledge the support, either direct or indirect, from the various parties who assisted the IEE team towards the successful completion of this report.

Signature : \_\_\_\_\_

Name : \_\_\_\_\_

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## ABBREVIATION

BRIC	Bago Region Investment Committee
Co., Ltd.	Company Limited
CSR	Corporate Social Responsibility
CMP	Cutting Making Packing
EIA	Environmental Impact Assessment
ECC	Environment Compliance Certificate
ECD	Environmental Conservation Department
EMP	Environmental Management Plan
EMoP	Environmental Monitoring Plan
E & S	Erosion and Sediment
ETO	Ethylene Oxide Sterilize
	ETO Sterilization is a low-temperature process (typically between 37 and 63°C) that uses Ethylene Oxide gas to reduce the level of infectious agents. It is mainly used for products that cannot withstand the heat of typical autoclave sterilization such as plastic.
GMES	Green Myanmar Environmental Services
IEE	Initial Environmental Examination
LED	Light-Emitting Diode
HCAI	Health Care Associated Infections
m.a.s.l	Metres Above Sea Level
MIC	Myanmar Investment Commission
MOECAF	Ministry of Environmental Conservation and Forestry
MOEE	Ministry of Electricity and Energy
MONREC	Ministry of Natural Resources and Environmental Conservation
NEQ(E)G	National Environmental Quality (Emission) Guidelines
OHS	Occupational Health and Safety
PP	Polypropylene
PPE	Personal Protective Equipment
PPMB	Polypropylene Melt Blown
PPSB	Polypropylene Spund Bond
PPV	Peak Particle Velocity
PVS	Peak Velocity Sum
QC	Quality Control
SDS	Safety Data Sheet
SMS	Spunbond Meltblown Spunbond (non-woven fabric)

TDS	Total Dissolved Solids
TSP	Total Suspended Particles
TVOC	Total Volatile Organic Compound
USA	United States of America
USD	United States Dollar
UTM	Universal Transverse Mercator
WHO	World Health Organization

**Units**

Al	Aluminum
As	Arsenic
dB (A)	weighted system (the decibel values of sounds at low frequencies)
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CN	Chloride Cyanide
m <sup>3</sup> /hr	Cubic Meter per hour
dB	Decibel
°C	Degree Celsius
°F	Degree Fahrenheit
gal	Gallons
gpm	Gallons Per Minute
hr	Hour
kVA	Kilo Volt Ampere
kg	Kilogram
l	Liter
l/s	Liter Per Second
Mn	Manganese
m	Meter
MMK	Myanmar kyats
NO	Nitrogen Oxide
NO <sub>2</sub>	Nitrogen Dioxide
O <sub>2</sub>	Oxygen
ppb	Part Per Billion
ppm	Part Per Million
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter 10 Micrometer or Less in Diameter



PM <sub>2.5</sub>	Particulate Matter 2.5 Micrometer or Less in Diameter
pH	Power of Hydrogen, Hydrogen Ion Concentration
Qty	Quantity
Sr. No.	Serial Number
SO <sub>2</sub>	Sulfur Dioxide
W	Watt

## ၁။ အကျဉ်းချုပ်အစီရင်ခံစာ

### ၁-၁။ နောက်ခံအကြောင်းအရာ

ဤကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (Initial Environmental Examination - IEE) အစီရင်ခံစာသည် **Cobes Industries (B II) Company Limited** အတွက် ပြင်ဆင်ခဲ့ခြင်းဖြစ်ပါသည်။ ယင်းကုမ္ပဏီလီမိတက်သည် အကွက်အမှတ် (N1<sup>B</sup>)၊ ကွင်းအမှတ် (၁၃၁၅)၊ လဖျော်ရိုးကွင်း၊ ဥဿာ (၉) ရပ်ကွက်၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီး၊ မြန်မာနိုင်ငံတွင် တည်ရှိပါသည်။ ကုမ္ပဏီလီမိတက်သည် ၁၀၀% နိုင်ငံခြားရင်းနှီးမြှုပ်နှံပြီး ပြည်ထောင်စုမြန်မာနိုင်ငံတော်၏ရင်းနှီးမြှုပ်နှံမှုဥပဒေအရ တည်ထောင်ထားပါသည်။ ကနဦးရင်းနှီးမြှုပ်နှံမှုမှာ အမေရိကန်ဒေါ်လာ ၁ သန်းဖြစ်ပြီး နောက်ပိုင်းတွင် အမေရိကန်ဒေါ်လာ ၅.၆၇၄ သန်းသို့ တိုးမြှင့်ရင်းနှီးမြှုပ်နှံခဲ့ပါသည်။

၂၀၂၁ ခုနှစ် စက်တင်ဘာလတွင် စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာဝန်ဆောင်မှုကုမ္ပဏီလီမိတက် (GMES - Green Myanmar Environmental Services Company Limited) သို့ **Cobes Industries (BII) Company Limited** က CMP စနစ်ဖြင့် ပိုးသတ်မထားသော တစ်ခါသုံးခွဲစိတ်ခန်းသုံးဝတ်စုံများနှင့် ဆေးရုံဆေးခန်းသုံး ဆက်စပ်အဝတ်အထည်များ ထုတ်လုပ်ခြင်း (Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis) ထုတ်လုပ်ခြင်းလုပ်ငန်းကို အကြံဉာဏ်ဝန်ဆောင်မှုပေးရန် ကမ်းလှမ်းခဲ့ပါသည်။

### ၁-၂။ လုပ်ငန်းလုပ်ကိုင်သူ၏ အချက်အလက်များ

၁။	စီမံကိန်းအမည်	CMP စနစ်ဖြင့် ပိုးသတ်မထားသော တစ်ခါသုံးခွဲစိတ်ခန်းသုံး ဝတ်စုံများနှင့် ဆေးရုံဆေးခန်းသုံး ဆက်စပ်အဝတ်အထည်များ ထုတ်လုပ်ဖြန့်ဖြူးခြင်းလုပ်ငန်း
၂။	စီမံကိန်းလုပ်ကိုင်သူ	Cobes Industries (B II) Company Limited
၃။	လုပ်ငန်းနှင့်ရုံးချုပ်နေရပ်လိပ်စာ	အကွက်အမှတ် (N1 <sup>B</sup> )၊ ကွင်းအမှတ် (၁၃၁၅)၊ လဖျော်ရိုးကွင်း၊ ဥဿာ (၉) ရပ်ကွက်၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီး၊ မြန်မာနိုင်ငံ
၄။	ကုမ္ပဏီမှတ်ပုံတင်အမှတ်	၁၂၁၄၉၇၃၇ (၂၇-၇-၂၀၁၉)
၅။	ပို့ကုန်/သွင်းကုန်မှတ်ပုံတင်အမှတ်	၅၈၉၃၁ (၁၄-၁၁-၂၀၁၉) ကုန်ဆုံးရက် ၁၃-၁၁-၂၀၂၄
၆။	အဆိုပြုလုပ်ငန်းအမျိုးအစား	ထုတ်လုပ်ဖြန့်ဖြူးခြင်း
၇။	ပထဝီဆိုင်ရာအချက်အလက်	မြောက်လတ္တီတွဒ် ၁၇°၁၆'၄၆.၈၀" အရှေ့လောင်ဂျီတွဒ် ၉၆°၂၇' ၂၆.၉၀"

၈။	မြေအမျိုးအစား	ငှားရမ်းမြေ
၉။	မြေရယူပုံ	မြေငှားရမ်းဆောင်ရွက်ခြင်း
၁၀။	မြေပိုင်ဆိုင်သူ	ဦးရဲမင်းထွန်း နိုင်ငံသားစိစစ်ရေးလက်မှတ်အမှတ် ၉/အမဇ(နိုင်)၀၀၃၁၅၈
၁၁။	မြေငှားရမ်းသူ	Cobes Industries (B II) Company Limited
၁၂။	မြေငှားရမ်းကာလ (မြေအသုံး ချခွင့် ခွင့်ပြုမိန့်ကျသည်မှစ၍)	နှစ် ၆၀
၁၃။	စက်ရုံအကျယ်အဝန်း	၁၆ ဧက စုစုပေါင်းပေါ်တွင် ၇.၁ ဧက (၂၈,၇၃၂.၇၀၆ စတုရန်းမီတာ)
၁၄။	ပတ်ဝန်းကျင်အခြေအနေ	အရှေ့ဘက်အရပ် - မြေကွက်လပ် အနောက်ဘက်အရပ် - မြေကွက်လပ် စက်ရုံလက်ဝဲဘက် - ဂျိတ်ဘလူးကုမ္ပဏီလီမိတက် စက်ရုံလက်ယာဘက် - နာရဏီသိမ်ဘုန်းကြီးကျောင်းလမ်း
၁၅။	အနီးဆုံးလူနေရပ်ကွက်	ဥဿာ (၉) ရပ်ကွက်
၁၆။	အနီးဆုံးရေထု	ပဲခူးမြစ်
၁၇။	မြေမျက်နှာသွင်ပြင်	တောင်ကုန်းဧရိယာ
၁၈။	ရေအရင်းအမြစ်	အချင်း ၄ လက်မရှိသော ရေတွင်း (၂) တွင်း
၁၉။	လျှပ်စစ်ဓာတ်အားရယူမှု	နိုင်ငံတော်ဓာတ်အားစနစ်
၂၀။	လျှပ်စစ်ဓာတ်အားဖြန့်ဖြူးမှု	ထရန်စဖော်မာ (၁၁/၀.၄ kV) ဓာတ်အားလိုင်း ၅၀၀ kVA တစ်လုံးနှင့် ၁,၀၀၀ kVA တစ်လုံး လျှပ်စစ်ထုတ်စက် ၂၀၀ kVA ဒီဇယ်အင်ဂျင် တစ်လုံး ၆၀၀ kVA ဒီဇယ်အင်ဂျင် တစ်လုံး ၁,၅၀၀ kVA ဒီဇယ်အင်ဂျင် သုံးလုံး
၂၁။	လုပ်ငန်းစတင်ချိန်	၇-၂-၂၀၁၉
၂၂။	စက်စမ်းသပ်ကာလ	၁-၄-၂၀၂၀
၂၃။	အဆောက်အဦနှင့် အသုံးပြု ပစ္စည်းများ	<ul style="list-style-type: none"> <li>▪ စက်ရုံ (A) နှစ်ထပ်အဆောက်အဦ</li> <li>▪ စက်ရုံ (B) နှစ်ထပ်အဆောက်အဦ</li> <li>▪ စက်ရုံ (C) နှစ်ထပ်အဆောက်အဦ</li> </ul>

		<ul style="list-style-type: none"> <li>▪ ကုန်ကြမ်း (non-woven fabric) ထုတ်လုပ်ရုံ တစ်ထပ်အဆောင်အညီ</li> <li>▪ ရုံးခန်းနှင့် အဆောင် သုံးထပ်အဆောက်အညီ</li> <li>▪ လုံခြုံရေးနှင့် အဆောင် နှစ်ထပ်အဆောက်အညီ</li> <li>▪ စားသောက်ခန်း တစ်ထပ်အဆောင်အညီ</li> <li>▪ ဓာတ်အားပေးရုံ တစ်ထပ်အဆောင်အညီ</li> <li>▪ ထရန်စဖော်မာ တစ်ထပ်အဆောင်အညီ</li> <li>▪ Panel ခန်း တစ်ထပ်အဆောင်အညီ</li> </ul>
၂၄။	ကုန်ကြမ်းပစ္စည်းများ	<ul style="list-style-type: none"> <li>❖ Non-woven Fabrics အတွက် ကုန်ကြမ်းပစ္စည်းများ                             <ul style="list-style-type: none"> <li>➢ Polypropylene Resin</li> <li>➢ Colour Master Batch</li> <li>➢ Anti-Static Solution</li> <li>➢ Anti-Static PP Resin</li> <li>➢ Soft PP Resin</li> </ul> </li> <li>❖ Non-Sterilized Disposable Surgical Scrubs and Related Kind of Clinical Wears အတွက် ကုန်ကြမ်းပစ္စည်းများ                             <ul style="list-style-type: none"> <li>➢ Fabric (Polypropylene Spunbond, Polypropylene SMS, Breathable Film)</li> <li>➢ Accessories (21 kinds)</li> </ul> </li> </ul>
၂၅။	ထုတ်ကုန်ပစ္စည်းများ	<ul style="list-style-type: none"> <li>❖ Non-woven Fabric (တပိုင်းတစကုန်ချော)</li> <li>❖ Non-sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears                             <ul style="list-style-type: none"> <li>➢ Common Scrub Suit</li> <li>➢ Coverall</li> <li>➢ Isolation Gown</li> <li>➢ Hardcover Surgical Gown</li> <li>➢ Bulk Surgical Gown</li> <li>➢ Headgear</li> </ul> </li> <li>❖ Experimental Clothes</li> </ul>

၂၆။	စက်ပစ္စည်းကိရိယာများ	<ul style="list-style-type: none"> <li>❖ Machinery and Equipment for Non-woven Fabric Production                             <ul style="list-style-type: none"> <li>➤ Main Extruder</li> <li>➤ Recycle Extruder 120 mm</li> <li>➤ Filter</li> <li>➤ Metering Pump 300 CC</li> <li>➤ Metering Pump 150 CC</li> <li>➤ Spinning Die Body</li> <li>➤ Spinneret Plate &amp; Distribution Plate</li> <li>➤ Quenching Chamber &amp; Diffuser</li> <li>➤ Web Former</li> <li>➤ Calendar (Kuster)</li> <li>➤ Winder</li> <li>➤ Slitter System</li> <li>➤ Raw Material Suction System and Feeding System</li> <li>➤ Hydrophilic Device</li> <li>➤ Cooling System</li> <li>➤ Air Heater</li> <li>➤ Meltblown Die Head Assembly</li> <li>➤ Electronic Control Panel</li> <li>➤ Ultrasonic Cleaning</li> <li>➤ Vacuum Heating Oven</li> <li>➤ Wrapper</li> <li>➤ Roots Fan</li> <li>➤ Diesel Generator Set</li> </ul> </li> <li>❖ Machinery and Equipment for Non-sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears                             <ul style="list-style-type: none"> <li>➤ Continuous Sealing Machine</li> <li>➤ Glue Machine (XY or Double Joint)</li> <li>➤ Leak Sealing Machine</li> </ul> </li> </ul>
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		<ul style="list-style-type: none"> <li>➤ Four Side Heat Sealing Machine</li> <li>➤ Lace Machine</li> <li>➤ Spot Welding</li> <li>➤ Exhaust Heat Sealing Machine</li> <li>➤ Automatic Buckle Machine</li> <li>➤ Automatic Belting Machine</li> <li>➤ Tape Cutting Machine</li> <li>➤ Slitting Machine</li> <li>➤ Hanging Crane</li> <li>➤ Strong Tensile Testing Equipment</li> <li>➤ Hydrostatic Test Equipment</li> <li>➤ Constant Temperature Incubator</li> <li>➤ Constant Temperature Drying Box</li> <li>➤ Electronic Balance</li> <li>➤ Water Bath Equipment</li> <li>➤ Autoclave</li> <li>➤ Martindale Equipment</li> <li>➤ Thin Edge Slitter</li> <li>➤ Double Color Print &amp; Grooving Machine</li> <li>➤ Single Color Printing Machine</li> <li>➤ Manual Grooving Machine</li> <li>➤ Bingding Machine</li> <li>➤ Belting Machine</li> <li>➤ Printing Machine</li> </ul>
၂၇။	<p>နေ့စဉ်ထုတ်လုပ်နိုင်မှု နှစ်စဉ်ထုတ်လုပ်ရန် မျှော်မှန်းချက်</p>	<p>၃၀,၀၀၀ Pcs</p> <p>SMS (Non-woven Fabric)</p> <p>Non-sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears</p> <p>၅,၈၀၀ ton/year 1 ၅,၉၁၆ ton/year 2 ၂၃,၉၅၀,၀၀၀ Pcs/year 1 ၂၄,၄၂၉,၀၀၀ Pcs/year 2</p>

၂၈။	ကုန်ချောပြည်ပပို့ရန်နိုင်ငံများ	အမေရိကန်၊ ဥရောပနှင့် ဂျပန်နိုင်ငံ
၂၉။	ရင်းနှီးမြှုပ်နှံမှုအမျိုးအစား Authorized Capital အစုရှယ်ယာအရေအတွက် ရှယ်ယာအမျိုးအစား လက်ရှိအဆိုပြု ရင်းနှီးမြှုပ်နှံမှု	၁၀၀% နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု အမေရိကန်ဒေါ်လာ ၁,၀၀၀,၀၀၀ ရှယ်ယာ ၁၀၀,၀၀၀ (တစ်စုလျှင် ၁၀ အမေရိကန်ဒေါ်လာတန်ဖိုး) ၁၀၀% Authorized Capital အမေရိကန်ဒေါ်လာ ၅,၆၇၄,၀၀၀
၃၀။	ဘေးထွက်ပစ္စည်း	non - woven အပိုင်းအစများနှင့် အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ (အများအားဖြင့် - ကုန်ကြမ်းပစ္စည်းများ၏ထုပ်ပိုးပစ္စည်းများ)
၃၁။	လုပ်သားအင်အား	နိုင်ငံခြားသား ၃ အနက် ၁၀ (လက်ရှိခန့်ထားနှင့် အဆိုပြု) ပြည်တွင်း ၄၄၃ အနက် ၁,၀၀၀ (လက်ရှိခန့်ထားနှင့် အဆိုပြု) စုစုပေါင်း ၄၄၆ အနက် ၁,၀၁၀ (လက်ရှိခန့်ထားနှင့် အဆိုပြု)
၃၂။	လုပ်ငန်းချိန် တစ်ပတ်အလုပ်လုပ်ရက် အချိန်	တစ်ရက်လျှင် အလုပ်လုပ်ချိန် ၈ နာရီ (ရုံးလုပ်ငန်းစီမံခန့်ခွဲမှုနှင့် အလုပ်ရုံ) ရက်သတ္တတစ်ပတ်လျှင် ၅.၅ ရက် ၇:၃၀ a.m. ~ ၄:၃၀ p.m. (တနင်္လာမှသောကြာ) နေ့လည်စာစားချိန် ၁၁:၃၀ a.m. ~ ၁၂:၃၀ p.m. ၇:၃၀ a.m. ~ ၁၁:၃၀ a.m. (စနေနေ့)
၃၃။	ရှယ်ယာရှင်နှင့်ဒါရိုက်တာ စာရင်း	အမည် - Mr. Guo, Chunwei လူမျိုး - တရုတ် နိုင်ငံကူးလက်မှတ်အမှတ် - E ၂၆၃၆၂၃၉၆ ရာထူး - ဒါရိုက်တာ နေရပ်လိပ်စာ - Hennessy Road, Flat/Rm 2503-2505, 25/F, C.C. Wu Building, 302-308, Wan Chai, Hong Kong. အမည် - Mr. Yongzhi, Li လူမျိုး - တရုတ် နိုင်ငံကူးလက်မှတ်အမှတ် - G ၄၄၆၃၇၁၂၈ ရာထူး - ဒါရိုက်တာ

		နေရပ်လိပ်စာ	- Hennessy Road, Flat/Rm 2503-2505, 25/F, C.C. Wu Building, 302-308, Wan Chai, Hong Kong.
၃၄။	ဆက်သွယ်ရန်အသေးစိတ်	စီမံကိန်းလိပ်စာ	အကွက်အမှတ် (N1 <sup>B</sup> )၊ ကွင်းအမှတ် (၁၃၁၅)၊ လဖျော်ရိုးကွင်း၊ ဥဿာ (၉) ရပ်ကွက်၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီး၊ မြန်မာနိုင်ငံ
		တယ်လီဖုန်းအမှတ်	၉၅၉- ၆၇၁ ၃၀၈ ၉၈၉
		အီးမေးလ်လိပ်စာ	<a href="mailto:david@cobeshk.com">david@cobeshk.com</a>
၃၅။	ဆက်သွယ်ရန်ပုဂ္ဂိုလ် (ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ)	အမည်	ဒေါ်ခင်မာအေး
		ရာထူး	HR မန်နေဂျာ
		တယ်လီဖုန်းအမှတ်	၉၅၉- ၄၀၄ ၅၄၄ ၄၄၇ ၉၅၉- ၇၇၄ ၉၂၇ ၂၁၇၁
		အီးမေးလ်လိပ်စာ	<a href="mailto:khinmaraye@cobeshk.com">khinmaraye@cobeshk.com</a>

**၁-၃။ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ လေ့လာပြုစုသည့်အဖွဲ့အစည်း**

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD) ၏ကြားကာလကုမ္ပဏီ အကြံပေးမှတ်ပုံတင် လက်မှတ်အမှတ်စဉ် ၀၀၀၆ ရရှိထားသော စီမံကိန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာ ဝန်ဆောင်မှုကုမ္ပဏီလီမိတက်သည် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ လေ့လာပြုစုသည့်အဖွဲ့အစည်း ဖြစ်ပါသည်။ အသေးစိတ်အချက်အလက်များကို ဇယား ၂-၄၊ ၂-၅ နှင့် နောက်ဆက်တွဲ (၃) တို့တွင် တင်ပြထားပါသည်။

**၁-၄။ မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်**

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ အခန်း (၃) သည် မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာ မူဘောင်ဖြစ်ပြီး ယင်းတွင်ပါဝင်မှုများမှာ

- နောက်ခံ
- မူဝါဒရေးရာ
- ပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအတွက် မြန်မာနိုင်ငံမူဘောင်များ
  - အသေးစိတ်မှာ
    - အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာမြန်မာမူဝါဒ (၂၀၁၉)
    - မြန်မာနိုင်ငံအစီအစဉ် ၂၁ (၁၉၉၇)
    - အမျိုးသားစဉ်ဆက်မပြတ်ဖွံ့ဖြိုးတိုးတက်ရေးဗျူဟာ (၂၀၀၉)



- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ (၂၀၁၄)
- ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ထုံးလုပ်နည်း (၂၀၁၅)
- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)

➤ **မြန်မာနိုင်ငံ၏ပတ်ဝန်းကျင်နှင့်သက်ဆိုင်သော ဥပဒေနှင့်နည်းဥပဒေများ**

ပတ်ဝန်းကျင်အဖွဲ့အစည်းနှင့်သက်ဆိုင်ခြင်း	၉ ခု
စီးပွားရေး/အဆောက်အအုံ/အုပ်ချုပ်ရေးနှင့်သက်ဆိုင်ခြင်း	၁၀ ခု
ရေနှင့်သက်ဆိုင်ခြင်း	၁၆ ခု
မြေအသုံးချမှုနှင့်သက်ဆိုင်ခြင်း	၆ ခု
ယဉ်ကျေးမှုအမွေအနှစ်နှင့်သက်ဆိုင်ခြင်း	၂ ခု
သစ်တော/ဇီဝမျိုးစုံ/စိုက်ပျိုးရေးနှင့်သက်ဆိုင်ခြင်း	၉ ခု
စက်မှုလုပ်ငန်းနှင့်သက်ဆိုင်ခြင်း	၁၈ ခု
အထူးစီးပွားဇုန်နှင့်သက်ဆိုင်ခြင်း	၄ ခု
အလုပ်ပတ်ဝန်းကျင်နှင့်သက်ဆိုင်ခြင်း	၁၄ ခု
ပြည်သူ့ကျန်းမာရေးနှင့်သက်ဆိုင်ခြင်း	၉ ခု
အရေးပေါ်/ဘေးအန္တရာယ်နှင့်သက်ဆိုင်ခြင်း	၂ ခု တို့ကို ဖော်ပြ

ထားပါသည်။

➤ **စီမံကိန်းနှင့်သက်ဆိုင်လျက်ရှိသည့်မြန်မာနိုင်ငံမူဝါဒများ**

**Cobes Industries (B II) Company Limited** က လိုက်နာဆောင်ရွက်ရမည့် ပြဌာန်းချက်များ၊ နည်းဥပဒေများကို အောက်ပါအတိုင်းတင်ပြထားပါသည်။

- မြန်မာနိုင်ငံအစီအစဉ် ၂၁
- အမျိုးသားစဉ်ဆက်မပြတ်ဖွံ့ဖြိုးတိုးတက်ရေးဗျူဟာ (၂၀၀၉)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ (၂၀၁၄)
- ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ထုံးလုပ်နည်း (၂၀၁၅)
- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)
- ပြည်ထောင်စုမြန်မာနိုင်ငံ၏ဖွဲ့စည်းပုံအခြေခံဥပဒေ (၂၀၀၈)
- မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ (၂၀၁၆)
- မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေ (၂၀၁၇)

- ရေအားစွမ်းအင်ပြဋ္ဌာန်းချက် (၁၉၂၇)
- ပင်လယ်ရေနယ်နိမိတ်နှင့်ဇုန်ဥပဒေ (၂၀၁၇)
- ရေအရင်းအမြစ်နှင့်မြစ်ချောင်းများထိန်းသိမ်းရေးဥပဒေ (၂၀၀၆)
- မြန်မာ့ဆိပ်ကမ်းအာဏာပိုင်အဖွဲ့ဥပဒေ (၂၀၁၅)
- ရှေးဟောင်းယဉ်ကျေးမှုနယ်မြေကာကွယ်ရေးနှင့်သဘာဝနယ်မြေထိန်းသိမ်းရေးဥပဒေ (၂၀၁၉)
- တောရိုင်းတိရစ္ဆာန်နှင့်အပင်များကာကွယ်ရေးနှင့် သဘာဝနယ်မြေထိန်းသိမ်းစောင့်ရှောက်ရေး ဥပဒေ (၂၀၁၉)
- ပေါက်ကွဲခြင်းဆိုင်ရာပြဋ္ဌာန်းချက် (၁၉၃၇)
- ပေါက်ကွဲစေသည့်ပစ္စည်းများပြဋ္ဌာန်းချက် (၁၉၀၈)
- ရေနံပြဋ္ဌာန်းချက် (၁၉၃၄)
- ရေနံနည်းဥပဒေ (၁၉၃၇)
- ရေနံနှင့်ရေနံထုတ်ကုန်ပစ္စည်းများဥပဒေ (၂၀၁၇)
- ပို့ကုန်သွင်းကုန်ဥပဒေ (၂၀၁၂)
- ဓာတုပစ္စည်းနှင့်ဆက်စပ်ပစ္စည်းများ၏ ဘေးအန္တရာယ်မှ ကာကွယ်တားဆီးရေးဥပဒေ (၂၀၁၃)
- ဓာတုပစ္စည်းနှင့်ဆက်စပ်ပစ္စည်းများ၏ ဘေးအန္တရာယ်မှ ကာကွယ်တားဆီးရေးနည်းဥပဒေ (၂၀၁၆)
- လျှပ်စစ်ဥပဒေ (၂၀၁၄)
- မော်တော်ယာဉ်ဥပဒေ (၂၀၁၅)
- အလုပ်သမားလျော်ကြေးပြဋ္ဌာန်းချက် (၁၉၂၃)
- ခွင့်ရက်နှင့်အလုပ်ပိတ်ရက်ပြဋ္ဌာန်းချက် (၁၉၅၁)
- အလုပ်သမားအဖွဲ့အစည်းဥပဒေ (၂၀၁၁)
- အလုပ်သမားအဖွဲ့အစည်းနည်းဥပဒေ (၂၀၁၂)
- အလုပ်သမားအငြင်းပွားမှုဖြေရှင်းရေးဥပဒေ (၂၀၁၂)
- လူမှုဖူလုံရေးဥပဒေ (၂၀၁၂)
- အလုပ်သမားနှင့်ကျွမ်းကျင်မှုဖွံ့ဖြိုးရေးဥပဒေ (၂၀၁၃)
- အနည်းဆုံးအခကြေးငွေ ဥပဒေ/နည်းဥပဒေ (၂၀၁၃)
- လူမှုဖူလုံရေးနည်းဥပဒေ (၂၀၁၄)
- လစာပေးချေခြင်းဥပဒေ (၂၀၁၆)
- မြန်မာလုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေးဥပဒေ (၂၀၁၉)

- ရာဇသတ်ကြီး (၁၉၆၁)
  - ပြည်သူ့ကျန်းမာရေးဥပဒေ (၁၉၇၂)
  - ကူးစက်ရောဂါကာကွယ်တားဆီးရေးဥပဒေ (၁၉၉၅)
  - သဘာဝဘေးအန္တရာယ်စီမံခန့်ခွဲမှုဥပဒေ (၂၀၁၃)
  - မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ဥပဒေ (၂၀၁၅)
- အပြည်ပြည်ဆိုင်ရာကွန်ဗင်းရှင်းများ၊ စာချုပ်များနှင့် သဘောတူညီချက်များ  
ကွန်ဗင်းရှင်းများ၊ စာချုပ်များနှင့် သဘောတူညီချက်များ စုစုပေါင်း (၃၆) ခုကို တင်ပြထားပါသည်။
- စီမံကိန်း၏ပတ်ဝန်းကျင်နှင့်သက်ဆိုင်သောစံနှုန်းများနှင့်လမ်းညွှန်ချက်များ
- လေထုအရည်အသွေး
  - ရေထုအရည်အသွေး
  - ဆူညံသံ
  - အလင်းရောင်

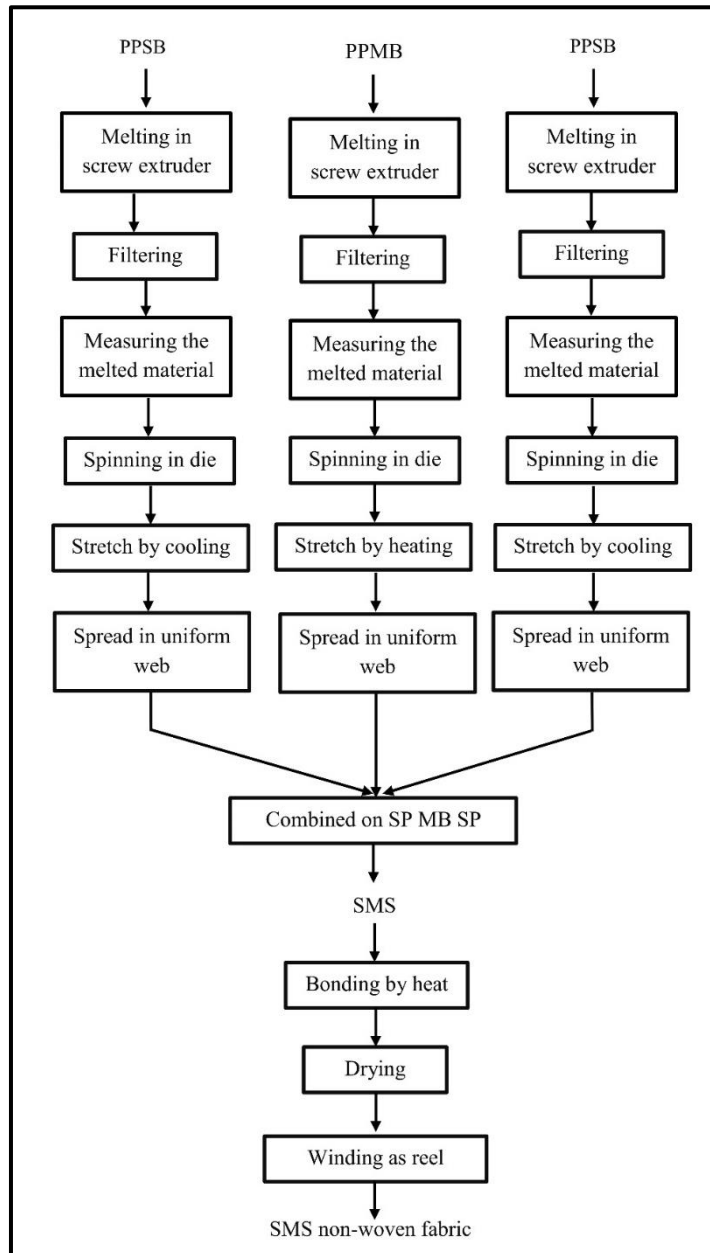
၁-၅။ စီမံကိန်းအကြောင်းအရာနှင့်အခြားနည်းလမ်းများ

၁-၅-၁။ ထုတ်လုပ်မှုနည်းစဉ်

ထုတ်လုပ်မှုနည်းစဉ် နှစ်ပိုင်းရှိပါသည်။ ပထမ- non-woven fabric ထုတ်လုပ်ခြင်းအပိုင်းနှင့် ဒုတိယ ပိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံးအဝတ်အထည်များ ထုတ်လုပ်ခြင်းဖြစ်ပါသည်။

၁-၅-၁-၁။ Non-woven Fabric ထုတ်လုပ်ခြင်း

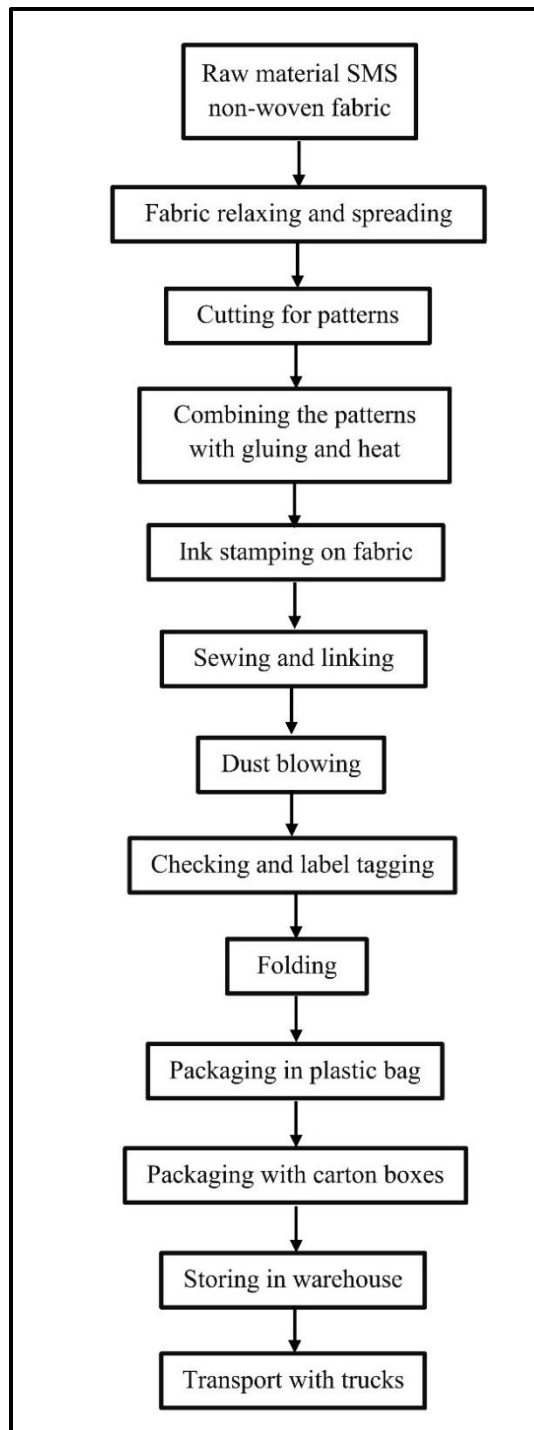
Non-woven Fabric ထုတ်လုပ်ခြင်းနည်းစဉ်မှာ အောက်ပါအတိုင်းဖြစ်သည်။



Non-woven Fabric ထုတ်လုပ်ခြင်းနည်းစဉ်အဆင့်ဆင့်

၁-၅-၁-၂။ ပိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ် အထည်များ ထုတ်လုပ်ခြင်း

ပိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ် အထည်များ ထုတ်လုပ်သည့် နည်းစဉ်မှာ အောက်ပါအတိုင်းဖြစ်သည်။



ပိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ်အထည်များ ထုတ်လုပ်ခြင်းနည်းစဉ်အဆင့်ဆင့်

၁-၅-၂။ စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု

Cobes Industries (B II) Company Limited တွင် စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုအစီအစဉ်များမှာ

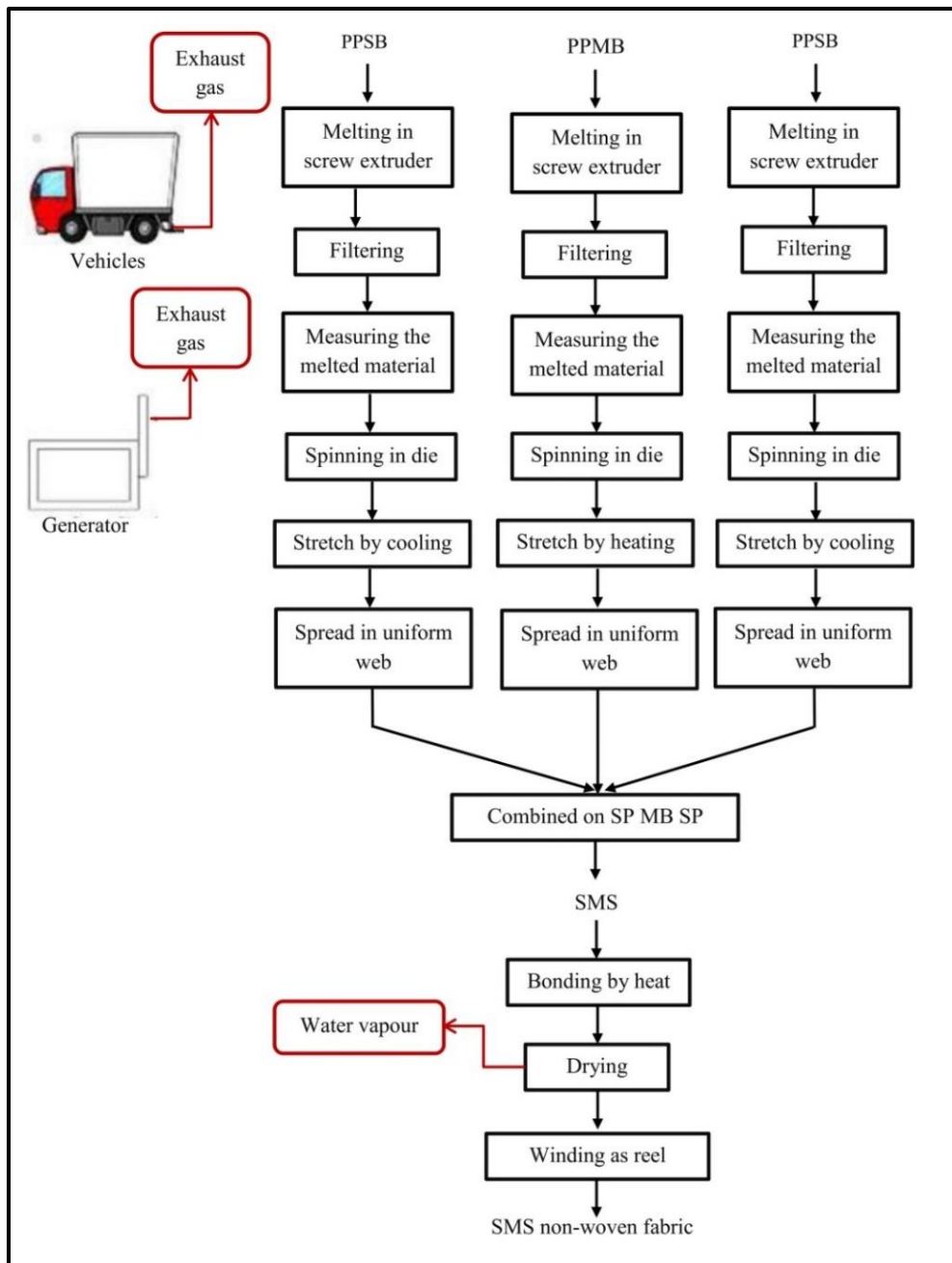
- ထုတ်လုပ်မှုအဆုံးအငွေ့နှင့်ဓာတ်ငွေ့များ လေထုအတွင်းသို့ ထုတ်လွှတ်မှု

- အရည်စွန့်ပစ်ပစ္စည်းများ
- အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ တို့အတွက်ဖြစ်ပါသည်။

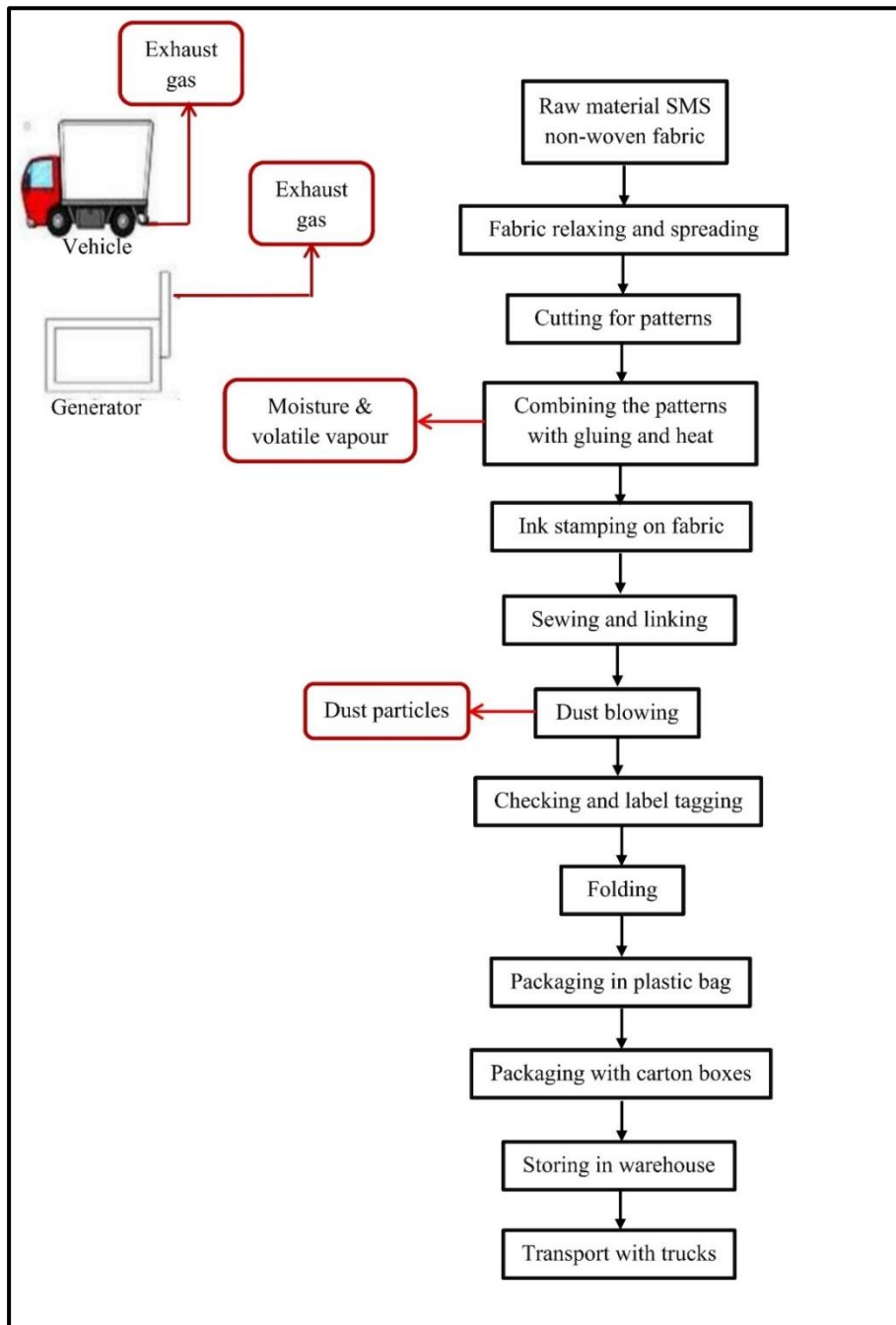
၁-၅-၂-၁။ ထုတ်လုပ်မှုအဆိုးအငွေနှင့်ဓာတ်ငွေ့များအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

ထုတ်လုပ်မှုအဆိုးအငွေ့နှင့်ဓာတ်ငွေ့များအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်ကို အောက်ပါအတိုင်း အကျဉ်းချုပ်တင်ပြအပ်ပါသည်။

**Non-woven Fabric ထုတ်လုပ်ခြင်း**



ပိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ်အထည်များ ထုတ်လုပ်ခြင်း



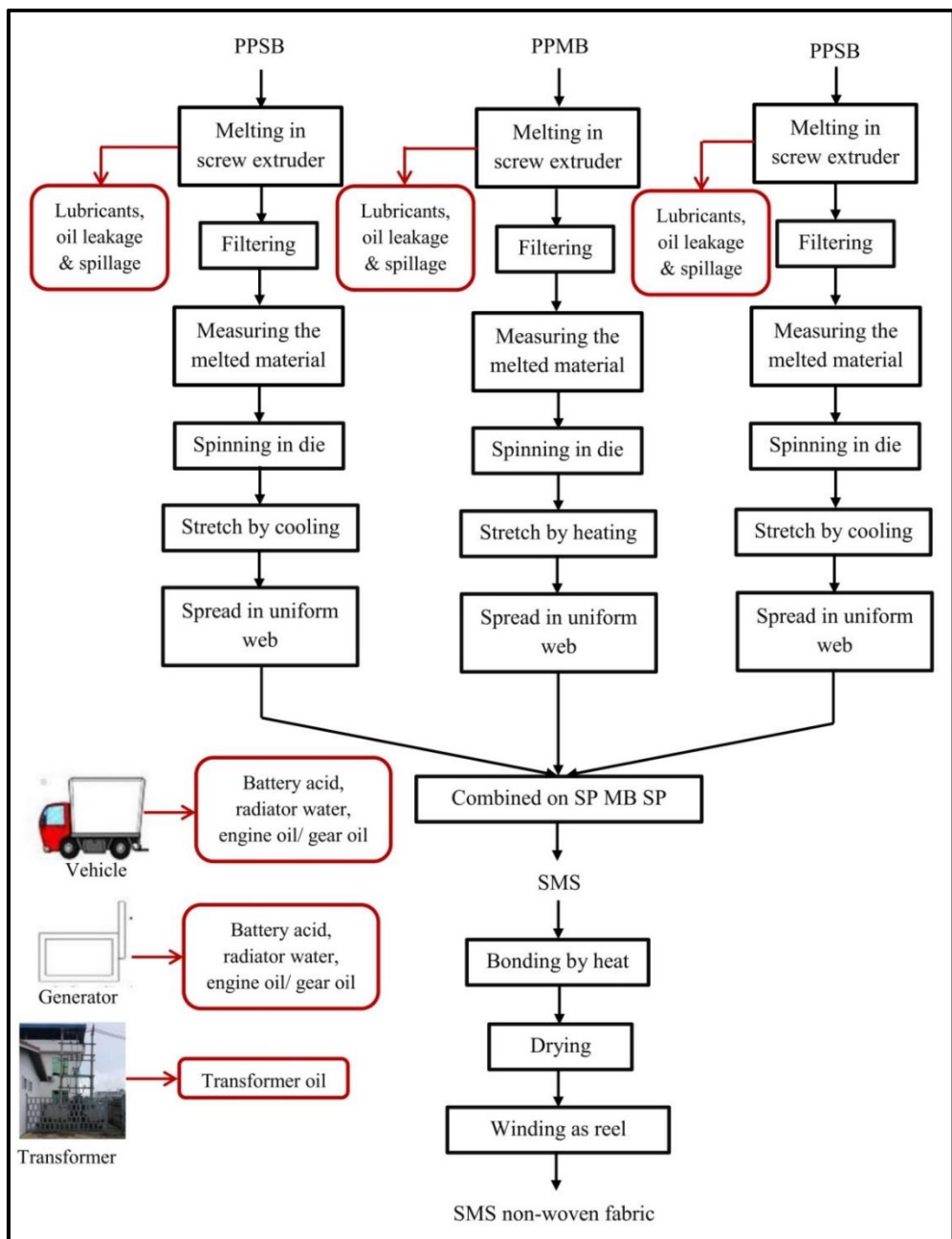
- ထုတ်လုပ်မှုအဆင့်နှင့်ဓာတ်ငွေ့များအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်
- မော်တော်ယာဉ်များ၊ လျှပ်စစ်ထုတ်စက်များကို ကောင်းစွာ ထိန်းသိမ်းပြုပြင် ထားရှိခြင်း
  - အရည်အသွေးကောင်းသောလောင်စာဆီများအသုံးပြုခြင်း
  - ကော်အခြောက်ခံရာတွင်အပူချိန်ကိုမလွန်စေခြင်း

- မလိုအပ်ဘဲ တံခါးများမဖွင့်ခြင်းဖြင့် အမှုန်အမွှားများဝင်ရောက်လာမှုကို ကာကွယ်တားဆီးခြင်း
- ကျွမ်းကျင်တာဝန်ရှိသူများဖြင့် ထရန်စဖော်မာများကို ကိုင်တွယ်ထိန်းသိမ်းခြင်း
- လေအေးပေးစက်များ၊ ရေခဲသေတ္တာများကို ကျွမ်းကျင်သူများဖြင့် ကိုင်တွယ်ထိန်းသိမ်းခြင်း

၁-၅-၂-၂။ အရည်စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်

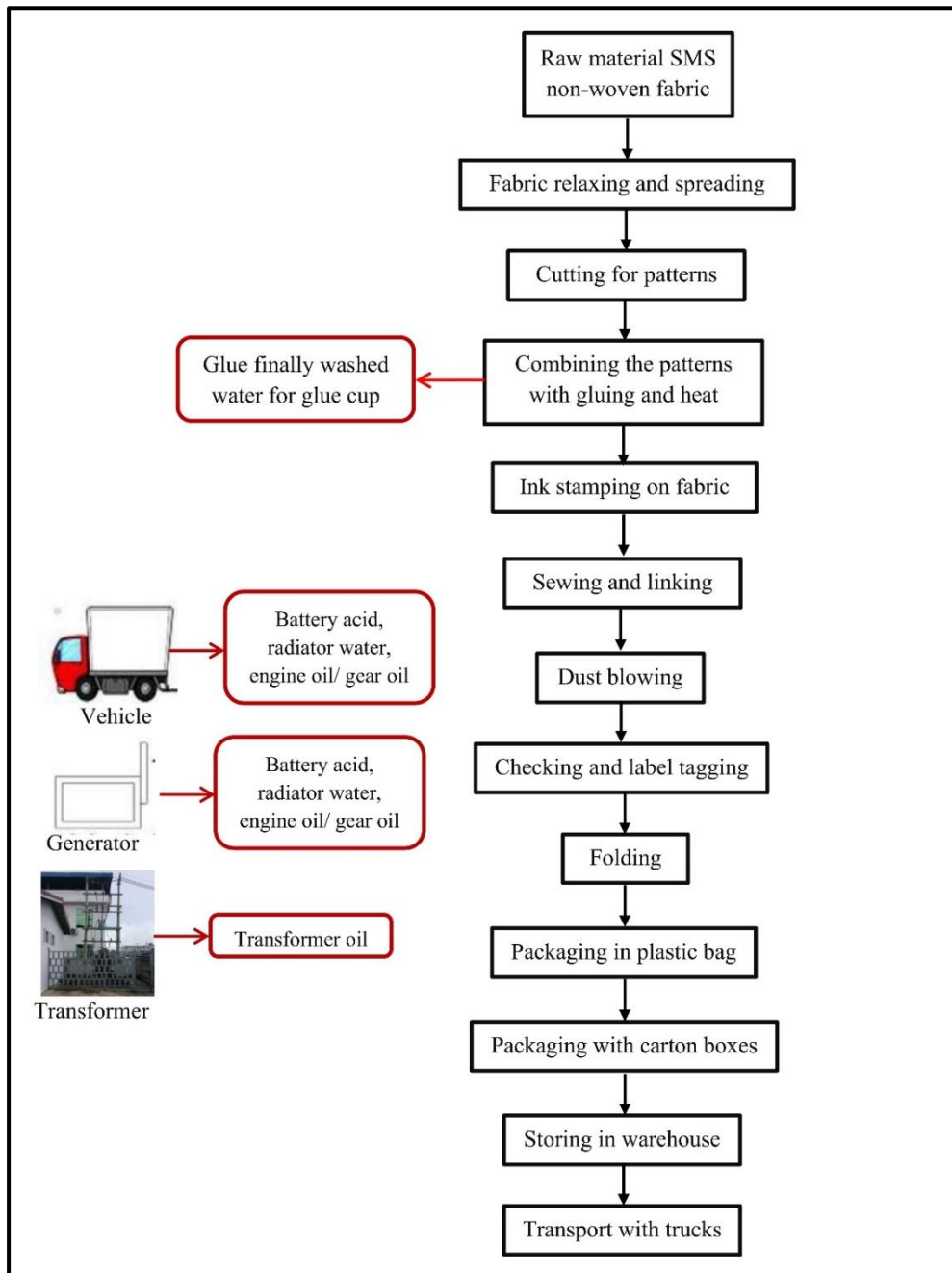
အရည်စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်ကို အောက်ပါအတိုင်း အကျဉ်းချုပ် တင်ပြအပ်ပါသည်။

Non-woven Fabric ထုတ်လုပ်ခြင်း





ပိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ်အထည်များ ထုတ်လုပ်ခြင်း



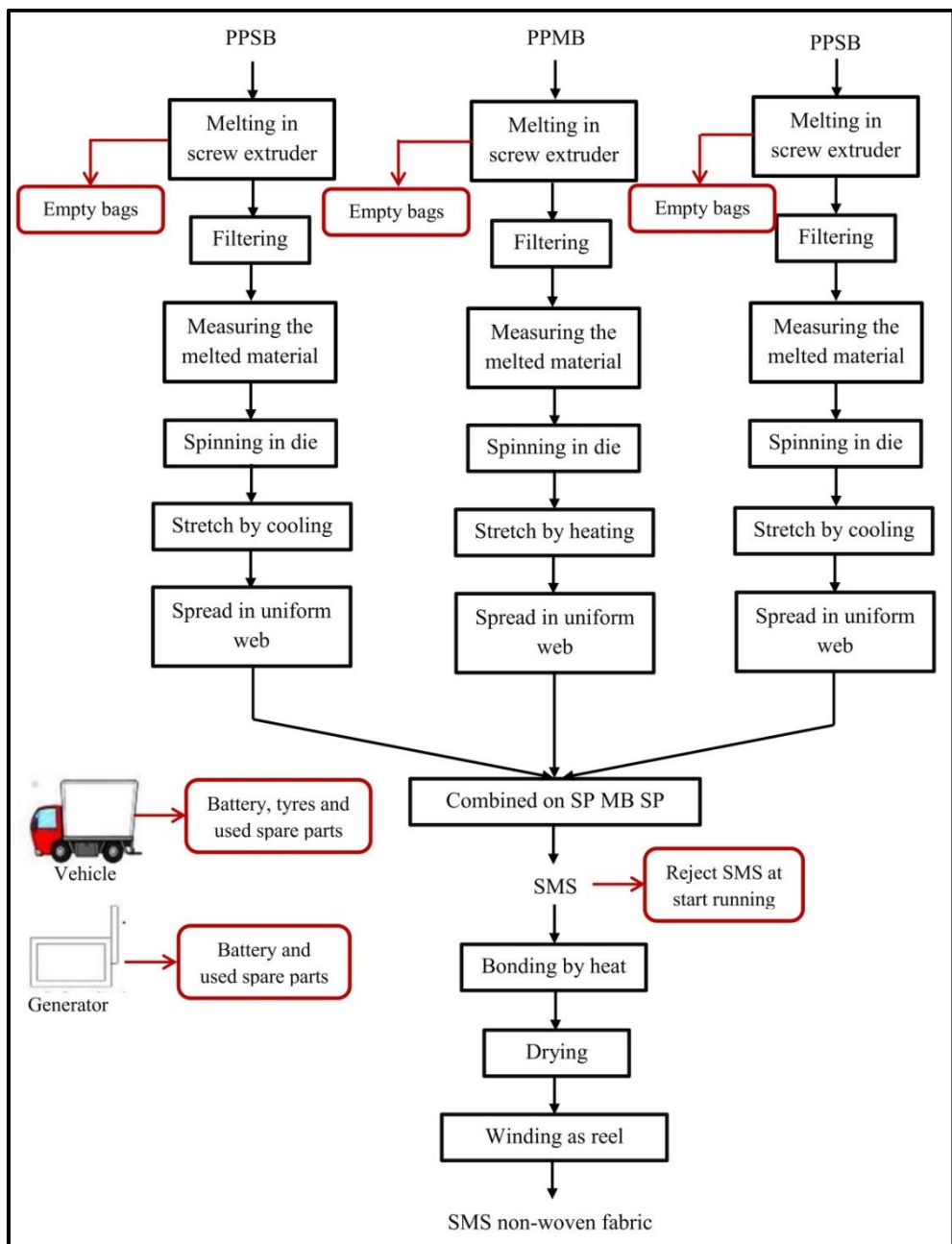
အရည်စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်	
<ul style="list-style-type: none"> <li>▪ မလိုအပ်ဘဲ သန့်ရှင်းရေးအသုံးပြုရေးများကို ပိုမိုအသုံးမပြုခြင်း</li> <li>▪ စနစ်တကျစွန့်ပစ်ခြင်း (Septic များကို ပုံမှန်စွန့်ထုတ်ခြင်း)</li> <li>▪ အသုံးပြုပြီးဆီများကို စနစ်တကျ သိမ်းဆည်းရောင်းချခြင်း၊ စွန့်ပစ်ရာတွင် စည်ပင်သာယာရေးကော်မတီ၏လမ်းညွှန်ချက်အတိုင်း ဆောင်ရွက်ခြင်း</li> </ul>	

- ဆီများ၊ လောင်စာဆီများ၊ ဘက်ထရီအက်ဆစ်များ သယ်ယူလဲလှယ်ရာတွင် ကျွမ်းကျင် ဝန်ထမ်းများကို တာဝန်ပေးခြင်း
- ကော်ဆေးရေများ၏ BOD, COD ကို စစ်ဆေးပြီး လျော့နည်းစေရန် ဆောင်ရွက်ခြင်း
- ထရန်စဖော်မာဆီများကို တာဝန်ရှိသူများနှင့် ကောင်းမွန်စွာထိန်းသိမ်းခြင်း

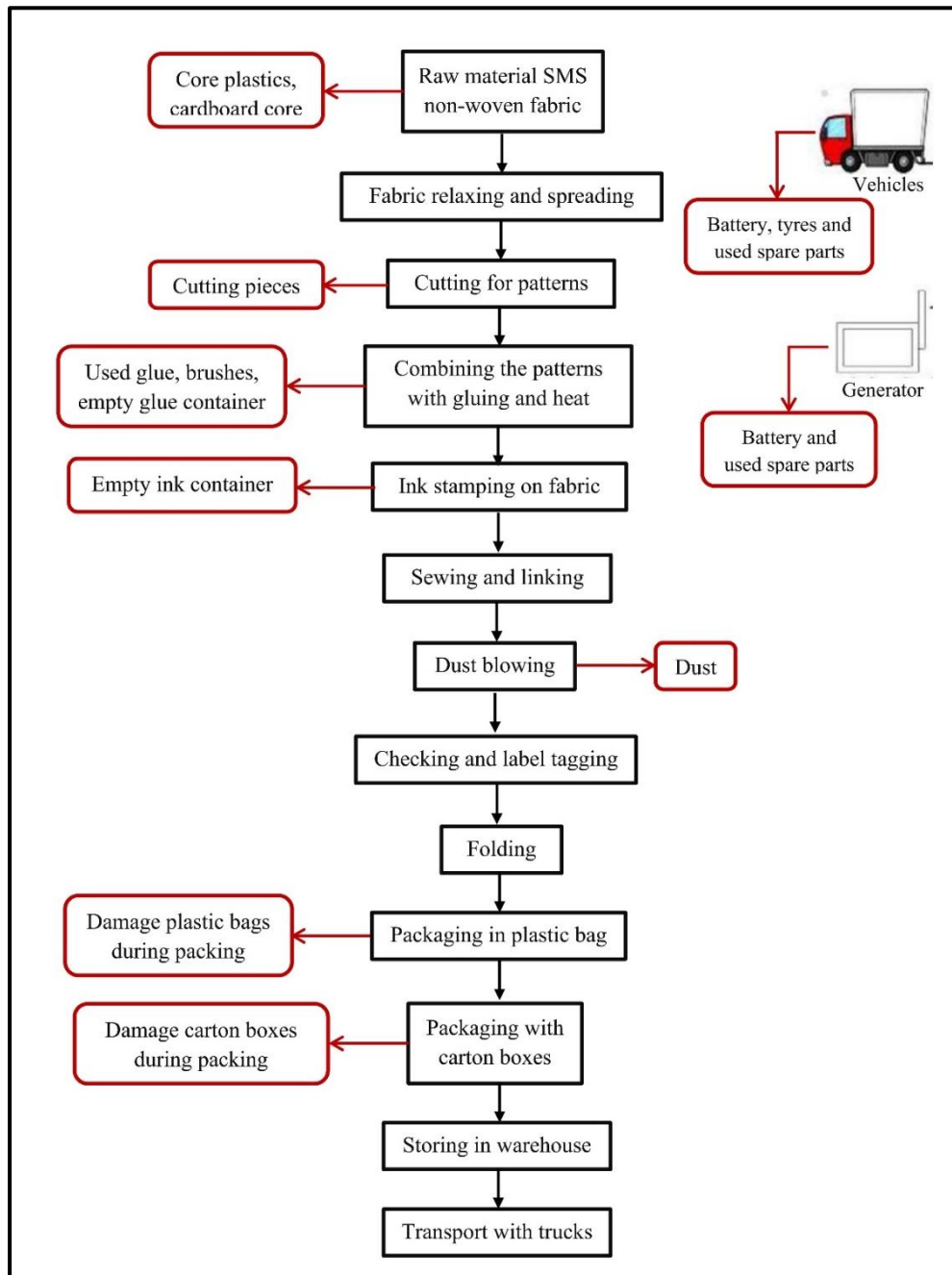
၁-၅-၂-၃။ အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်

အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်ကို အောက်ပါအတိုင်း အကျဉ်းချုပ် တင်ပြအပ်ပါသည်။

Non-woven Fabric ထုတ်လုပ်ခြင်း



ဝိုးသတ်မထားသောတစ်ခါသုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ်အထည်များ ထုတ်လုပ်ခြင်း



အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှုအစီအစဉ်

- စနစ်တကျစုစည်းသိမ်းဆည်း၍ ရောင်းချခြင်း၊ အခြားအသုံးပြု၍ရသောနေရာတွင် အသုံးပြုခြင်း
- စည်ပင်သာယာရေးကော်မတီ၏လမ်းညွှန်ချက်အတိုင်း စွန့်ပစ်ခြင်း

**၁-၅-၃။ အခြားရွေးချယ်မှုနည်းလမ်းများ**

**၁-၅-၃-၁။ စီမံကိန်း အခြားနည်းလမ်းများ**

အခြားစီမံကိန်းနည်းလမ်းမရှိပါ။

**၁-၅-၃-၂။ စီမံကိန်းနေရာ အခြားနည်းလမ်းများ**

**Cobes Industries (B II) Company Limited** သည် ပိုးသတ်မထားသော တစ်ခါ သုံး ခွဲစိတ်ခန်းသုံးနှင့် ဆေးရုံဆေးခန်းသုံး အဝတ်အထည်များ ထုတ်လုပ်ရန် ပဲခူးတိုင်းဒေသ ကြီးကို နေရာအဖြစ် ရွေးချယ်ခဲ့ပါသည်။ ယင်းနေရာဒေသ၏အောက်ပါအားသာချက်များ ကြောင့် အခြားနေရာဒေသရွေးချယ်ရန် မရှိပါ။

- ❖ . သယ်ယူပို့ဆောင်ရေးလွယ်ကူအဆင်ပြေခြင်း
- ❖ ယခင်ကဖွံ့ဖြိုးတိုးတက်ပြီးနေရာဒေသဖြစ်ခြင်း
- ❖ ရေနံအခြားအရင်းအမြစ်များ အလုံအလောက်ရှိခြင်း (စွမ်းအင်၊ စွန့်ပစ်ပစ္စည်း စွန့်ပစ်မှု၊ အလုပ်သမား)

**၁-၆။ လက်ရှိလူမှုပတ်ဝန်းကျင်အခြေအနေဖော်ပြခြင်း**

အခန်း (၅) တွင် ပတ်ဝန်းကျင်အခြေအနေ၊ အခြေခံအချက်အလက်များ (မူရင်းနှင့်ဆင့်ပွား) တို့ကို သဘာဝပတ်ဝန်းကျင်၊ ရုပ်ပတ်ဝန်းကျင်၊ ဇီဝပိုင်း၊ လူမှုရေးပိုင်းတို့ကို တင်ပြထားပါသည်။ ယင်းတို့ကို အသေးစိတ်ကွင်းဆင်းလေ့လာဆန်းစစ်ကောက်ယူခြင်းနှင့် ပျမ်းမျှတန်ဖိုးများကို အသုံးပြုခဲ့ပါသည်။

**၁-၆-၁။ ပတ်ဝန်းကျင်အခြေခံအချက်အလက်များ (မူလအချက်အလက်များ)**

စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာဝန်ဆောင်မှုကုမ္ပဏီလီမိတက်မှဝန်ထမ်းများသည် ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များဖြစ်သည့် ပတ်ဝန်းကျင်လေနှင့် လုပ်ငန်းခွင်လေထုအရည်အသွေး၊ ဆူညံသံနှင့်တုန်ခါမှုများ၊ ရေထုနှင့်မြေထုအရည်အသွေးများကို ၁၆-၉-၂၀၂၁ မှ ၁၇-၉-၂၀၂၁ အတွင်း ကောက်ယူဆန်းစစ်ခဲ့ပါသည်။ ရေနမူနာများ၊ စွန့်ပစ်ရည်နမူနာများ၊ မြေနမူနာများကို ကောက်ယူပြီး သက်ဆိုင်ရာဓာတ်ခွဲခန်းများတွင် ဓာတ်ခွဲစမ်းသပ်ခဲ့ပါသည်။

**၁-၆-၁-၁။ လေထုအရည်အသွေး**

လေထုအရည်အသွေးကို စီမံကိန်းဧရိယာတွင် အဓိကအဆုံးအဖြတ်ပေးနိုင်သော နေရာ ထိလွယ်ရှလွယ်သောနေရာများတွင် တိုင်းတာခဲ့ပါသည်။

- ၁) ပတ်ဝန်းကျင်လေထုကို နေရာတစ်နေရာတွင်လည်းကောင်း
- ၂) လုပ်ငန်းခွင်လေထုကို ခြောက်နေရာတွင်လည်းကောင်း
- ၃) လျှပ်စစ်ထုတ်စက်ခေါင်းတိုင်တွင်လည်းကောင်း တိုင်းတာခဲ့ပါသည်။

**ပတ်ဝန်းကျင်လေထုအရည်အသွေး**

ပတ်ဝန်းကျင်လေထုအရည်အသွေးကို အပိုင်းသုံးပိုင်းဖြင့် တင်ပြထားပါသည်။

▪ **တိုင်းတာသည့်ပါရာမီတာများ**

စဉ်	ပါရာမီတာများ	တိုင်းတာသည့်နည်းလမ်းများ
၁။	ဆာလဖာဒိုင်အောက်ဆိုဒ် ( $SO_2$ )	အီလက်ထရိုကင်မီကယ်ဆင်ဆာ
၂။	နိုက်ထြိုဂျင်ဒိုင်အောက်ဆိုဒ် ( $NO_2$ )	အီလက်ထရိုကင်မီကယ်ဆင်ဆာ
၃။	ကာဗွန်ဒိုင်အောက်ဆိုဒ် ( $CO_2$ )	NDIR (optional sensor)
၄။	ကာဗွန်မိုနောက်ဆိုဒ် ( $CO$ )	အီလက်ထရိုကင်မီကယ်ဆင်ဆာ
၅။	သေးငယ်သောအမှုန်အမွှား ( $PM_{2.5}$ )	Infrared Light Scattering
၆။	သေးငယ်သောအမှုန်အမွှား ( $PM_{10}$ )	Infrared Light Scattering

ပတ်ဝန်းကျင်လေထုအရည်အသွေးကို ၂၄ နာရီဆက်တိုက် တိုင်းတာခဲ့ပါသည်။

▪ **ပတ်ဝန်းကျင်လေထုအရည်အသွေးတိုင်းတာခဲ့သည့်နေရာဖော်ပြချက်**

စဉ်	တိုင်းတာသည့်နေရာ	ပထဝီဆိုင်ရာနေရာဖော်ပြချက်	တည်နေရာ
၁။	ပတ်ဝန်းကျင်လေထုအရည်အသွေး (AMP)	၁၇° ၁၆' ၄၆.၇၃" N ၉၆° ၂၇' ၂၄.၅၈" E	စက်ရုံအဝန်းအပိုင်းအတွင်း



ပတ်ဝန်းကျင်လေထုအရည်အသွေးတိုင်းတာသည့်နေရာဖော်ပြချက်ပုံ



ပတ်ဝန်းကျင်လေထုအရည်အသွေးတိုင်းတာနေပုံ

▪ ပတ်ဝန်းကျင်လေထုအရည်အသွေးတိုင်းတာမှုရလဒ်များ (AMP)

စဉ်	ပါရာမီတာ	ယူနစ်	Analysis Values		အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လုပ်မှု) လမ်းညွှန်ချက်		မှတ်ချက်
			ရလဒ် တန်ဖိုး	ပျမ်းမျှ ကြားချိန်	Guideline တန်ဖိုး	ပျမ်းမျှ ကြားချိန်	
၁။	နိုင်းတြိုဂျင်ဒိုင်အောက်ဆိုဒ်	μg/m <sup>3</sup>	၆၂.၈၅	၂၄ နာရီ	*200	၁ နာရီ	16/9/2021 3:45 - 4:44 (Peak Hour)
၂။	ဆာလဖာဒိုင်အောက်ဆိုဒ်	μg/m <sup>3</sup>	၀	၂၄ နာရီ	*20	၂၄ နာရီ	
၃။	သေးငယ်သော အမှုန် အမွှား (PM <sub>10</sub> )	μg/m <sup>3</sup>	၃၇.၃၇	၂၄ နာရီ	*50	၂၄ နာရီ	
၄။	သေးငယ်သော အမှုန် အမွှား (PM <sub>2.5</sub> )	μg/m <sup>3</sup>	၁၈.၉၆	၂၄ နာရီ	*25	၂၄ နာရီ	
၅။	အိုဇုန်း	μg/m <sup>3</sup>	၈၁.၉၀	၂၄ နာရီ	*100	8-hour daily Maximum	13:30 - 14:29 17/9/2021
၆။	အမိုးနီးယား	ppm	၈.၅၄	၂၄ နာရီ	NG	-	
၇။	ကာဗွန်ဒိုင်အောက်ဆိုဒ်	ppm	၂၃၆.၅၃	၂၄ နာရီ	NG	-	
၈။	ကာဗွန်ဒိုင်ဆိုနောက်ဆိုဒ်	ppm	၀	၂၄ နာရီ	NG	-	
၉။	Volatile Organic Compound	ppb	၀	၂၄ နာရီ	NG		
၁၀။	အောက်ဆီဂျင်	%	၂၀.၀၂	၂၄ နာရီ	NG	-	

စဉ်	ပါရာမီတာ	ယူနစ်	Analysis Values		အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လုပ်မှု) လမ်းညွှန်ချက်		မှတ်ချက်
			ရလဒ် တန်ဖိုး	ပျမ်းမျှ ကြားချိန်	Guideline တန်ဖိုး	ပျမ်းမျှ ကြားချိန်	
၁၁။	Wind Speed	mph	၀.၄	၂၄ နာရီ	NG	-	
၁၂။	Wind Direction	Deg	၂၁၀	၂၄ နာရီ	NG	-	

အထက်ပါဇယားပါရလဒ်များအရ တိုင်းတာရရှိသည့်ရလဒ်များသည် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး (ထုတ်လုပ်မှု) လမ်းညွှန်ချက်စံနှုန်းများအတွင်း ကျရောက်ကြောင်း တွေ့ရပါသည်။

**လုပ်ငန်းခွင်လေထုအရည်အသွေး**

လုပ်ငန်းခွင်လေထုအရည်အသွေးကို အပိုင်းနှစ်ပိုင်းဖြင့် တင်ပြထားပါသည်။

- လုပ်ငန်းခွင်လေထုအရည်အသွေးတိုင်းတာခွဲသည့်နေရာများဖော်ပြချက်

စဉ်	တိုင်းတာသည့်နေရာ	တည်နေရာ
၁။	WMP-1	Sewing 1
၂။	WMP-2	Sewing 2
၃။	WMP-3	Sewing 3
၄။	WMP-4	Sewing 4
၅။	WMP-5	Cutting
၆။	WMP-6	Warehouse 1
၇။	WMP-7	Warehouse 2
၈။	WMP-8	Packaging Material Warehouse
၉။	WMP-9	Raw Material Production Area 1
၁၀။	WMP-10	Raw Material Production Area 2
၁၁။	WMP-11	Glue Making Room
၁၂။	WMP-12	Sewing (Future)
၁၃။	WMP-13	Cutting (Future)

▪ လုပ်ငန်းခွင်လေထုအရည်အသွေးတိုင်းတာမှုရလဒ်များ

စဉ်	တိုင်းတာသည့်နေရာ	ပါရာမီတာ		
		PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	VOC (ppm)
၁။	WMP-1	၁၈	၇	၁၈.၇
၂။	WMP-2	၂၂	၇	၁၀.၂
၃။	WMP-3	၄၀	၂၆	၁၆.၂
၄။	WMP-4	၅၄	၃၅	၁၂.၂
၅။	WMP-5	၅၀	၂၁	၉.၆
၆။	WMP-6	၄၅	၂၁	၆
၇။	WMP-7	၄၀	၁၉.၂	၀.၄
၈။	WMP-8	၂၁	၈	၃.၈
၉။	WMP-9	၁၂	၆	၀
၁၀။	WMP-10	၈	၄	၀
၁၁။	WMP-11	၄၂.၈	၁၉.၅	၆၇.၆
၁၂။	WMP-12	၃၀	၁၂	၀
၁၃။	WMP-13	၂၅	၁၀	၀

လျှပ်စစ်ထုတ်စက်ခေါင်းတိုင်ထုတ်လွှတ်မှုတိုင်းတာခြင်း

လျှပ်စစ်ထုတ်စက်ခေါင်းတိုင်ထုတ်လွှတ်မှုကို အပိုင်းသုံးပိုင်းခွဲ၍ အောက်ပါအတိုင်း တင်ပြအပ်ပါသည်။

▪ လျှပ်စစ်ထုတ်စက်၏အချက်အလက်များ

အမျိုးအစား                      ဒီဇယ်အင်ဂျင်သုံးလျှပ်စစ်ထုတ်စက်  
 စွမ်းအား                              600 kVA  
 လောင်စာဆီ                          ဒီဇယ်ဆီ

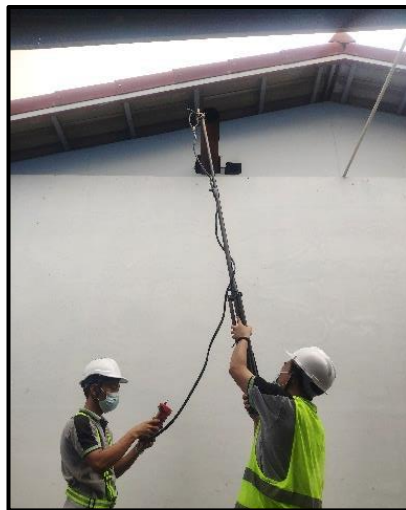
▪ လျှပ်စစ်ထုတ်စက်ခေါင်းတိုင်မှထုတ်လွှတ်မှုအနီးအငွေ့ တိုင်းတာသည့်နေရာ ဖော်ပြချက်

စဉ်	တိုင်းတာသည့်နေရာ	ပထဝီဆိုင်ရာနေရာ ဖော်ပြချက်
၁။	Generator	၁၇° ၁၆' ၄၄.၇၇" N ၉၆° ၂၇' ၂၅.၆၀" E





လျှပ်စစ်ထုတ်စက်ခေါင်းတိုင်မှထုတ်လွှတ်မှုအခိုးအငွေ့ တိုင်းတာသည့်နေရာဖော်ပြချက်ပုံ



လျှပ်စစ်ထုတ်စက်ခေါင်းတိုင်မှထုတ်လွှတ်မှုအခိုးအငွေ့ တိုင်းတာနေပုံ

■ ခေါင်းတိုင်ထုတ်လွှတ်မှု တိုင်းတာရရှိမှုရလဒ်များ

စဉ်	တိုင်းတာသည့် ပါရာမီတာ	ယူနစ်	ရလဒ် တန်ဖိုး	Small Combustion Facilities Emission Guidelines (NEQG)
၁။	ကာဗွန်ဒိုင်အောက်ဆိုဒ်	%	၂.၂၆	-
၂။	အောက်ဆီဂျင်	%	၁၇.၉	-
၃။	ကာဗွန်မိုနောက်ဆိုဒ်	mg/m <sup>3</sup>	၂၃၀	-
၄။	ဆာလဖာဒိုင်အောက်ဆိုဒ်	mg/m <sup>3</sup>	၀	၂,၀၀၀
၅။	နိုင်းတြိုဂျင်ဒိုင်အောက်ဆိုဒ်	mg/m <sup>3</sup>	၁၇၂	-

အထက်ပါဇယား၏တန်ဖိုးများအရ ဆာလဖာဒိုင်အောက်ဆိုဒ်ပါဝင်မှုမှာ NEQ(E) စံနှုန်းထက်လျော့နည်းလျက်ရှိကြောင်း တွေ့ရပါသည်။

၁-၆-၁-၂။ ဆူညံသံနှင့်တုန်ခါမှုများ

ပတ်ဝန်းကျင်ဆူညံသံ

ပတ်ဝန်းကျင်ဆူညံသံနှင့်စပ်လျဉ်း၍ အပိုင်းနှစ်ပိုင်းကို အောက်ပါအတိုင်း တင်ပြထားပါသည်။

- ပတ်ဝန်းကျင်ဆူညံသံတိုင်းတာခဲ့သည့်နေရာများဖော်ပြချက်

စဉ်	တိုင်းတာသည့်နေရာ	ပထဝီဆိုင်ရာနေရာ ဖော်ပြချက်
၁။	NMP-1	၁၇° ၁၆' ၄၇.၇၄" N ၉၆° ၂၇' ၂၄.၆၈" E
၂။	NMP-2	၁၇° ၁၆' ၄၈.၀၉" N ၉၆° ၂၇' ၂၈.၆၉" E
၃။	NMP-3	၁၇° ၁၆' ၄၈.၃၅" N ၉၆° ၂၇' ၃၃.၅၁" E
၄။	NMP-4	၁၇° ၁၆' ၄၅.၀၇" N ၉၆° ၂၇' ၃၃.၀၂" E
၅။	NMP-5	၁၇° ၁၆' ၄၄.၈၇" N ၉၆° ၂၇' ၂၈.၆၅" E
၆။	NMP-6	၁၇° ၁၆' ၄၄.၇၂" N ၉၆° ၂၇' ၂၄.၇၀" E



ပတ်ဝန်းကျင်ဆူညံသံတိုင်းတာခဲ့သည့်နေရာများဖော်ပြချက်ပုံ



ပတ်ဝန်းကျင်ဆူညံသံတိုင်းတာနေပုံ

▪ ပတ်ဝန်းကျင်ဆူညံသံတိုင်းတာမှုရလဒ်များ

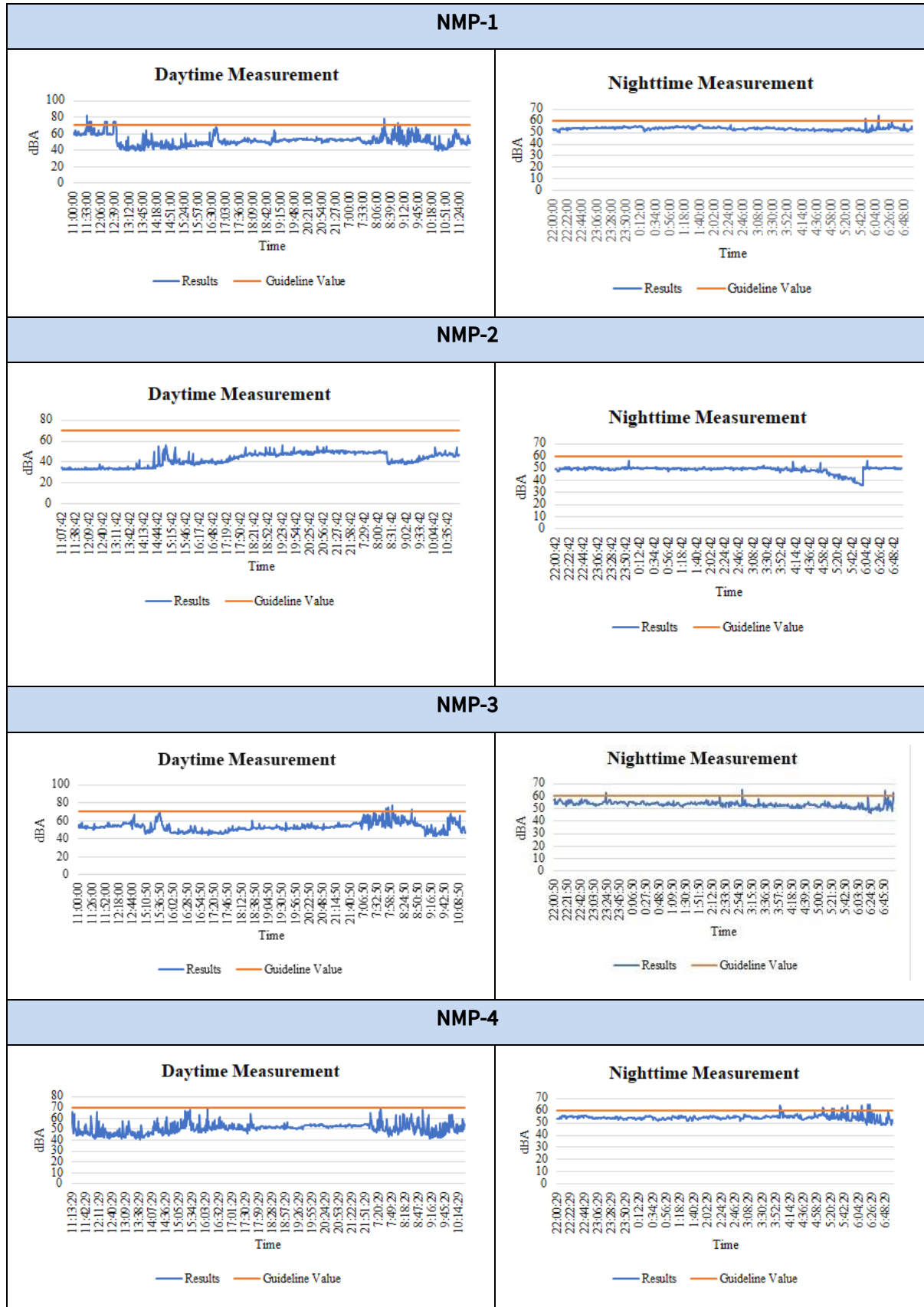
ပတ်ဝန်းကျင်ဆူညံသံတိုင်းတာမှုရလဒ်များ (နေ့အချိန်)

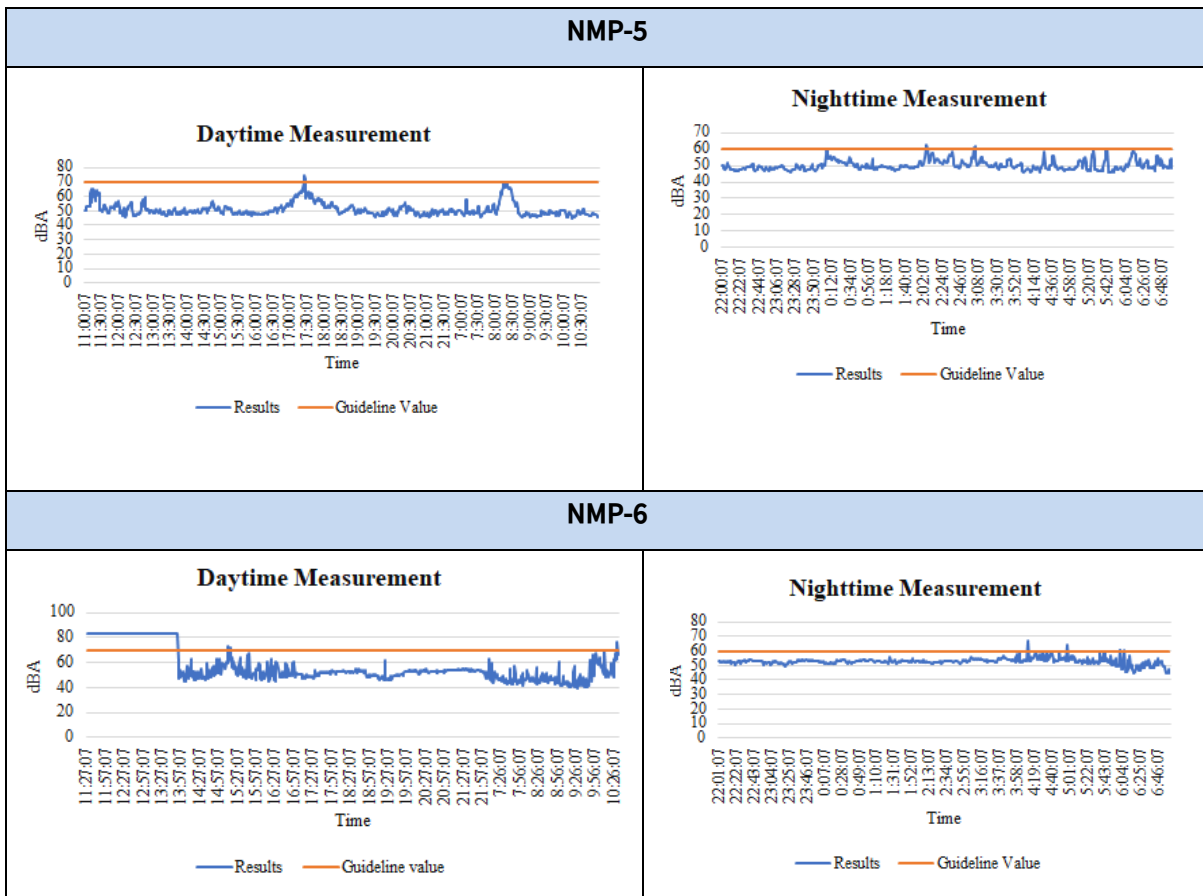
စဉ်	တိုင်းတာသည့် နေရာ	Daytime Measuring Results (dBA)			NEQG Guideline Value (dBA)
		Avg	Max	Min	
၁။	NMP-1	51.90	82.00	39.50	70
၂။	NMP-2	42.74	55.60	32.90	70
၃။	NMP-3	53.34	77.60	43.20	70
၄။	NMP-4	50.89	69.60	40.70	70
၅။	NMP-5	51.03	74.70	44.80	70
၆။	NMP-6	56.64	83.30	39.40	70

ပတ်ဝန်းကျင်ဆူညံသံတိုင်းတာမှုရလဒ်များ (ညအချိန်)

စဉ်	တိုင်းတာသည့် နေရာ	Nighttime Measuring Results (dBA)			NEQG Guideline Value (dBA)
		Avg	Max	Min	
၁။	NMP-1	53.50	64.30	50.40	70
၂။	NMP-2	48.65	55.80	35.50	70
၃။	NMP-3	53.39	64.80	46.60	70
၄။	NMP-4	54.42	65.40	48.00	70
၅။	NMP-5	50.14	62.30	45.60	70
၆။	NMP-6	52.81	66.80	44.50	70

ပတ်ဝန်းကျင်ဆူညံသံတိုင်းတာမှုဂရပ်များ





စက်ရုံစီမံကိန်းနေရာသည် စက်မှုဇုန်အတွင်းတွင်တည်ရှိပြီး နေ့အချိန်နှင့် ညအချိန် ဆူညံသံတိုင်းတာမှုတန်ဖိုးများသည် စံနှုန်းအတွင်း ကျရောက်ကြောင်း တွေ့ရပါသည်။ သို့ပါ၍ အလုပ်သမားများနှင့် ပတ်ဝန်းကျင်အပေါ် ဆူညံသံကြောင့် သက်ရောက်မှုမရှိနိုင်ပါ။

**လုပ်ငန်းခွင်ဆူညံသံများ**

လုပ်ငန်းခွင်ဆူညံသံများနှင့်စပ်လျဉ်း၍ အောက်ပါအတိုင်း အပိုင်းနှစ်ပိုင်း တင်ပြထားပါသည်။

- လုပ်ငန်းခွင်ဆူညံသံတိုင်းတာခွဲသည့်နေရာများဖော်ပြချက်

စဉ်	တိုင်းတာသည့် နေရာ	တည်နေရာ
၁။	NMP-1	Sewing 1
၂။	NMP-2	Sewing 2
၃။	NMP-3	Sewing 3
၄။	NMP-4	Sewing 4
၅။	NMP-5	Cutting
၆။	NMP-6	Warehouse 1
၇။	NMP-7	Warehouse 2

စဉ်	တိုင်းတာသည့် နေရာ	တည်နေရာ
၈။	NMP-8	Packaging Material Warehouse
၉။	NMP-9	Raw Material 1
၁၀။	NMP-10	Raw Material 2
၁၁။	NMP-11	Glue Making Room
၁၂။	NMP-12	Sewing (future)
၁၃။	NMP-13	Cutting (future)
၁၄။	NMP-14	Generator Room

▪ လုပ်ငန်းခွင်ဆူညံသံတိုင်းတာမှုရလဒ်များ

စဉ်	တိုင်းတာသည့်နေရာ	တည်နေရာ	Noise Level (L <sub>eq</sub> )			OHS Exposure Guideline (8 hr)
			Avg	Max	Min	
၁။	NMP-1	Sewing 1	76.62	79.10	74.00	90
၂။	NMP-2	Sewing 2	74.28	77.16	72.20	90
၃။	NMP-3	Sewing 3	72.71	75.90	68.30	90
၄။	NMP-4	Sewing 4	73.98	82.50	69.00	90
၅။	NMP-5	Cutting	79.00	82.00	76.00	90
၆။	NMP-6	Warehouse 1	59.26	59.10	52.50	90
၇။	NMP-7	Warehouse 2	57.10	60.28	50.45	90
၈။	NMP-8	Packaging Material Warehouse	56.83	69.40	54.60	90
၉။	NMP-9	Raw Material 1	69.98	78.50	60.00	90
၁၀။	NMP-10	Raw Material 2	70.71	76.90	67.30	90
၁၁။	NMP-11	Glue Making Room	73.62	80.10	67.50	90
၁၂။	NMP-12	Sewing (future)	39.26	42.10	37.50	90
၁၃။	NMP-13	Cutting (future)	38.10	45.31	36.45	90
၁၄။	NMP-14	Generator Room	100.53	127.90	55.30	90

လုပ်ငန်းခွင်ဆူညံသံတိုင်းတာမှုရရှိမှုရလဒ်တန်ဖိုးများအရ လျှပ်စစ်ထုတ်စက်ခန်းမှ လွဲ၍ ကျန်တန်ဖိုးများသည် စံနှုန်းအတွင်းကျရောက်ကြောင်း တွေ့ရပါသည်။ လျှပ်စစ်ထုတ်စက်ခန်းသည် လျှပ်စစ်ဓာတ်အားပြတ်တောက်သည့်အချိန်တွင်သာမောင်းနှင်ပြီး ယင်းအချိန်တွင်သာ ထိခိုက်မှုဖြစ်နိုင်ပါသည်။

**တုန်ခါမှု**

တုန်ခါမှုနှင့်စပ်လျဉ်း၍ အပိုင်းနှစ်ပိုင်းကို အောက်ပါအတိုင်း တင်ပြထားပါသည်။

- တုန်ခါမှုတိုင်းတာခဲ့သည့်နေရာဖော်ပြချက်

စဉ်	တိုင်းတာ သည့်နေရာ	ပထဝီဆိုင်ရာနေရာ ဖော်ပြချက်
1.	VMP	၁၇° ၁၆' ၄၆.၈၃" N ၉၆° ၂၇' ၂၄.၆၃" E



တုန်ခါမှုတိုင်းတာသည့်နေရာဖော်ပြချက်ပုံ



တုန်ခါမှုတိုင်းတာပုံ

▪ တုန်ခါမှုတိုင်းတာရရှိသည့်ရလဒ်များ

Summary of Vibration Monitoring Results					
Instrument ID	Date		Maximum Peak Vector Sum (mm/s)	Current Threshold (mm/s)	Remark
VMP	16/09/2021	17/09/2021	0.94	0.5	Max: PVS on 16.09.2021 5:45 PM

အမြင့်ဆုံး Peak Vector Sum တန်ဖိုးသည် ၀.၉၄ mm/s ဖြစ်ပြီး ၎င်းသည် DIN 4150 စံနှုန်းအရ Peak Particle Velocity 3 mm/s (ရှေးဟောင်းယဉ်ကျေးမှုအဆောက်အအုံများ) ထက်လျော့နည်းလျက်ရှိကြောင်း တွေ့ရပါသည်။

၁-၆-၁-၃။ အလင်းရောင်ပမာဏ

အလင်းရောင်ပမာဏနှင့်စပ်လျဉ်း၍ အပိုင်းနှစ်ပိုင်းခွဲခြား၍ အောက်ပါအတိုင်း တင်ပြထားပါသည်။

▪ အလင်းရောင်ပမာဏတိုင်းတာသည့်နေရာဖော်ပြချက်

စဉ်	တိုင်းတာ သည့်နေရာ	တည်နေရာ
၁။	LMP-1	Sewing 1
၂။	LMP-2	Sewing 2
၃။	LMP-3	Sewing 3
၄။	LMP-4	Sewing 4
၅။	LMP-5	Cutting Room
၆။	LMP-6	Glue Making Room

▪ အလင်းရောင်ပမာဏတိုင်းတာရရှိမှုတန်ဖိုးများ

စဉ်	တိုင်းတာ သည့်နေရာ	တည်နေရာ	Measure Values (Lux)	Guideline Values (Lux)
၁။	LMP-1	Sewing 1	487	Visual Work: Production Line (300-750)
၂။	LMP-2	Sewing 2	385	
၃။	LMP-3	Sewing 3	471	
၄။	LMP-4	Sewing 4	461	
၅။	LMP-5	Cutting Room	301	
၆။	LMP-6	Glue Making Room	338	



အထက်ဖော်ပြပါဇယားအရ အလင်းရောင်ပမာဏသည် စံနှုန်းအတွင်း ကျရောက်ကြောင်း တွေ့ရပါသည်။

**၁-၆-၁-၄။ ရေနှင့်စွန့်ပစ်ရည်အရည်အသွေး**

ရေနှင့်စွန့်ပစ်ရည်အရည်အသွေးနှင့်စပ်လျဉ်း၍ အောက်ပါအတိုင်း အပိုင်းနှစ်ပိုင်းဖြင့် တင်ပြအပ်ပါသည်။

▪ **ရေနှင့်စွန့်ပစ်ရည်နမူနာကောက်ယူသည့်နေရာဖော်ပြချက်**

စဉ်	ကောက်ယူသည့်အမှတ်	ပထဝီဆိုင်ရာနေရာဖော်ပြချက်	တည်နေရာ	မှတ်ချက်
၁။	ID-1	၁၇° ၁၆' ၄၈.၀၉" N ၉၆° ၂၇' ၂၄.၈၄" E	ရေတွင်း-၁	ရေ
၂။	ID-1	၁၇° ၁၆' ၄၇.၈၉" N ၉၆° ၂၇' ၂၈.၄၅" E	ရေတွင်း-၂	ရေ
၃။	ID-3	၁၇° ၁၆' ၄၈.၁၇" N ၉၆° ၂၇' ၂၄.၅၉" E	မြောင်းရေ	စွန့်ပစ်ရည်



ရေနှင့်စွန့်ပစ်ရည်နမူနာကောက်ယူသည့်နေရာဖော်ပြချက်ပုံ



ရေနမူနာကောက်ယူနေပုံ



စွန့်ပစ်ရည်နမူနာကောက်ယူနေပုံ

▪ ရေနနှင့်စွန့်ပစ်ရည်တို့၏ဓာတ်ခွဲရလဒ်များ

ရေနမူနာဓာတ်ခွဲရလဒ်များ (GMES Laboratory)

စဉ်	ပါရာမီတာ	ယူနစ်	Analysis Value		Minimum Measurement Range of Methods	Drinking Water Standards		
			ID-1 (ရေတွင်း- ဘ)	ID-2 (ရေတွင်း- ဂ)		WHO (2011)	EPA (Spring 2012)	Indian Specification (IS:10500, 2012)
၁။	Aluminum	mg/l	0.02	0.02	0.01	0.2	0.2	0.03
၂။	Arsenic	mg/l	0.01	0.02	0.005	0.01	0.01	0.01
၃။	Chloride	mg/l	17	22	5	250	250	250
၄။	Copper	mg/l	ND	ND	0.5	2	1	0.05
၅။	Cyanide	mg/l	ND	ND	0.01	0.07	0.2	0.05
၆။	Manganese	mg/l	ND	0.28	0.2	0.4	0.05	0.1
၇။	pH	-	6.32	6.38	0.1	6.5~8.5	6.5~8.5	6.5~8.5
၈။	Sulfate	mg/l	ND	ND	2	250	250	200

စဉ်	ပါရာမီတာ	ယူနစ်	Analysis Value		Minimum Measurement Range of Methods	Drinking Water Standards		
			ID-1 (ရေတွင်း-၁)	ID-2 (ရေတွင်း-၂)		WHO (2011)	EPA (Spring 2012)	Indian Specification (IS:10500, 2012)
၉။	Total Alkalinity as CaCO <sub>3</sub>	mg/l	85	112	5	-	-	200
၁၀။	Total Dissolved Solids	mg/l	140	160	1	600	500	500
၁၁။	Total Hardness as CaCO <sub>3</sub>	mg/l	38	25	5	500	-	200
၁၂။	Total Iron	mg/l	0.1	0.3	0.1	0.3	0.3	0.3
၁၃။	Turbidity	NTU	4.3	4.51	0.01	5	-	1

စွန့်ပစ်ရည်နမူနာခတ်ခွဲရလဒ်များ (GMES Laboratory)

စဉ်	ပါရာမီတာ	ယူနစ်	Analysis Value	Minimum Measurement Range of Method	National Environmental Quality (Emission) Guidelines (2015) General Application
			ID-3 (မြောင်းရေ)		
၁။	5-day Biochemical Oxygen Demand	mg/l	120	30	50
၂။	Arsenic	mg/l	0.025	0.005	0.1
၃။	Chemical Oxygen Demand	mg/l	400	30	250
၄။	Copper	mg/l	ND	0.5	0.5
၅။	Oil and Grease	mg/l	8	5	10
၆။	pH	-	7.08	0.1	6~9
၇။	Total Cyanide	mg/l	ND	0.01	0.1
၈။	Total Iron	mg/l	ND	0.1	3.5
၉။	Total Suspended Solids	mg/l	130	1	50

၁-၆-၁-၅။ မြေအရည်အသွေး

မြေအရည်အသွေးနှင့်စပ်လျဉ်း၍ အောက်ပါအတိုင်း အပိုင်းနှစ်ပိုင်း တင်ပြအပ်ပါသည်။

▪ မြေနမူနာကောက်ယူသည့်နေရာဖော်ပြချက်

စဉ်	နမူနာကောက်ယူသည့်နေရာ	ပထဝီဆိုင်ရာနေရာဖော်ပြချက်	တည်နေရာဖော်ပြချက်
၁။	SS-1	၁၇° ၁၆' ၄၈.၉၆" N ၉၆° ၂၇' ၃၃.၆၇" E	စက်ရုံဝင်းအတွင်း



မြေနမူနာကောက်ယူသည့်နေရာဖော်ပြချက်ပုံ



မြေနမူနာကောက်ယူနေပုံ

▪ မြေနမူနာဓာတ်ခွဲရလဒ်များ

Sr. No.	Parameter	Unit	Analysis Value	Minimum Measurement Range of Methods
			SS-1	
1.	Aluminum	mg/kg soil	0.3	0.05
2.	Arsenic	mg/kg soil	0.05	0.025
3.	Chloride	g/kg soil	0.055	0.025
4.	Copper	mg/kg soil	ND	2.5
5.	Cyanide	mg/kg soil	ND	0.05
6.	Extractable Acidity	cmol/kg soil	3.35	0.25
7.	Manganese	mg/kg soil	7.05	1
8.	P-Alkalinity	mmol/l extract	0	0.2
9.	pH	-	6.56	0.1
10.	Total Alkalinity	mmol/l extract	1.7	0.2
11.	Total Iron	g/kg soil	5	0.5

အထက်ဖော်ပြပါဓာတ်ခွဲရလဒ်များကို အခြေခံရလဒ်များအဖြစ် သတ်မှတ်ပြီး နောင်တိုင်းတာမှုတန်ဖိုးများဖြင့် နှိုင်းယှဉ်ရန်ဖြစ်ပါသည်။ ယင်းသို့နှိုင်းယှဉ်မှုအရ ပိုမို တိုးတက်လာသည်/ ဆုတ်ယုတ်လာသည်ကို သိနိုင်မည်ဖြစ်ပါသည်။

၁-၆-၂။ သဘာဝပတ်ဝန်းကျင်/ ရုပ်ပတ်ဝန်းကျင် (ဆင့်ပွားအချက်အလက်များ)

၁-၆-၂-၁။ ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင်

စီမံကိန်းဧရိယာရှိ ရာသီဥတု၊ မြေမျက်နှာသွင်ပြင်၊ ဘူမိအခြေအနေစသည့် အခြေခံအချက်အလက်များကို ရုပ်ပတ်ဝန်းကျင်အဖြစ် တင်ပြထားပါသည်။ ယင်းအချက်အလက်များကို ပဲခူးခရိုင် မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန၏ ၂၀၂၀ ဒေသဆိုင်ရာအချက်အလက်များမှ ရယူထားပါသည်။ ယင်းတို့ကို အောက်ပါအပိုင်း ၅ ပိုင်းဖြင့် တင်ပြထားပါသည်။

- ရာသီဥတု
- မြေမျက်နှာသွင်ပြင်
- ဘူမိအခြေအနေ
- မြေထု
- ရေဆင်း

**၁-၆-၂-၂။ ဇီဝဆိုင်ရာအချက်အလက်များ**

ဤခေါင်းစဉ်အောက်တွင် သဘာဝပေါက်ရောက်ပင်များနှင့် တောရိုင်းတိရစ္ဆာန်များ၏ အခြေအနေကို ကောက်နှုတ်တင်ပြထားပါသည်။

**၁-၆-၂-၃။ လူမှုစီးပွားအခြေအနေ**

ပဲခူးတိုင်းဒေသကြီး၏လူမှုစီးပွားအခြေအနေများကို အောက်ပါခေါင်းစဉ်များဖြင့် တင်ပြအပ်ပါသည်။

- လူဦးရေ (၂၀၂၀ စာရင်းအရ ၄၄၂,၀၂၂ ဦးရှိပါသည်)
- တိုင်းရင်းသားလူမျိုးများ
- ကိုးကွယ်မှု
- ဒေသတွင်းစီးပွားရေးနှင့် အသက်မွေးမှုလုပ်ငန်းများ
- မြေအသုံးချမှု
- ပညာရေးကဏ္ဍ
- လမ်းပန်းဆက်သွယ်ရေး
- ကျန်းမာရေးကဏ္ဍ
- စီးပွားရေးအဆောက်အအုံ

**၁-၇။ ထိခိုက်မှုများဆန်းစစ်ခြင်းနှင့် လျော့နည်းရန်ဆောင်ရွက်ချက်များ**

အဆိုပါစီမံကိန်းအနေဖြင့် ပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှု အပိုင်းနှစ်ပိုင်းဖြစ်ပေါ်စေနိုင်ပါသည်။ ယင်းတို့မှာ

- စီမံကိန်းတည်ဆောက်ချိန်နှင့် ပိတ်သိမ်းချိန်များတွင် အချိန်တိုကာလသက်ရောက်မှုများ
- စီမံကိန်းလည်ပတ်စဉ်ရှေ့ညသက်ရောက်မှုများ တို့ဖြစ်ကြပါသည်။

ထို့ပြင် ဤအခန်းတွင်

- ❖ သက်ရောက်မှုများဆန်းစစ်ခြင်း
- ❖ ဆန်းစစ်သည့်နည်းစနစ်များ
- ❖ စီမံကိန်းတည်ဆောက်ရေးကာလ (သက်ရောက်မှုများနှင့် လျော့ချမှုနည်းလမ်းများ)
- ❖ စီမံကိန်းလည်ပတ်စဉ်ကာလ
- ❖ စီမံကိန်းပိတ်သိမ်းချိန်ကာလ တို့ကို တင်ပြထားပါသည်။

အထက်ပါအချက်အလက်များအရ သက်ရောက်မှုအရေးပါမှုများကို လျော့ချခြင်းမပြုမီနှင့် ပြုလုပ်ပြီး အခြေအနေများကို စီမံကိန်းလည်ပတ်စဉ်ကာလနှင့် ပိတ်သိမ်းချိန်ကာလများတို့တွင် နှိုင်းယှဉ်ဖော်ပြခြင်းများကို အောက်ပါအတိုင်း တင်ပြထားပါသည်။

သက်ရောက်မှုအရေးပါမှုအပေါ် လျော့နည်းရန်ဆောင်ရွက်မပြုလုပ်မီနှင့် ပြုလုပ်ပြီး အခြေအနေ လည်ပတ်ရေးကာလတွင်နှိုင်းယှဉ်ဖော်ပြချက်များ

စဉ်	ပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက်မှုအချက်များ	Before Mitigation Measures		After Mitigation Measures		Less/More
		Rating	Significance	Rating	Significance	
၁။	လေထုအရည်အသွေး	၈၀	အသင့်အတင့်	၆၀	နည်းပါး	-၂၀
၂။	မြေအောက်ရေအရည်အသွေး	၆၀	နည်းပါး	၅၄	နည်းပါး	-၆
၃။	မြေပေါ်ရေအရည်အသွေး	၆၀	နည်းပါး	၅၄	နည်းပါး	-၆
၄။	စွန့်ပစ်ပစ္စည်းထွက်ရှိမှု	၈၀	အသင့်အတင့်	၅၄	နည်းပါး	-၂၆
၅။	မြေအရည်အသွေး	၈၀	အသင့်အတင့်	၅၄	နည်းပါး	-၂၆
၆။	ဆူညံသံ	၈၀	အသင့်အတင့်	၅၄	နည်းပါး	-၂၆
၇။	စွန့်ပစ်ပစ္စည်းအစိုင်အခဲထွက်ရှိမှု	၈၀	အသင့်အတင့်	၅၄	နည်းပါး	-၂၆
၈။	Traffic Jam	၈၀	အသင့်အတင့်	၅၄	နည်းပါး	-၂၆

သက်ရောက်မှုအရေးပါမှုအပေါ် လျော့နည်းရန်ဆောင်ရွက်မပြုလုပ်မီနှင့် ပြုလုပ်ပြီး အခြေအနေ ပိတ်သိမ်းရေးကာလတွင်နှိုင်းယှဉ်ဖော်ပြချက်များ

ပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက်မှု အချက်များ	Before Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						After Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						Less/ More
	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	
လေထုအရည်အသွေး	၃	၃	၄	၈	၈၀	အသင့်အတင့် (-)	၃	၃	၃	၆	၅၄	နည်းပါး (-)	-၂၆
ရေထုအရည်အသွေး	၃	၃	၄	၆	၆၀	နည်းပါး (-)	၃	၃	၃	၆	၅၄	နည်းပါး (-)	-၆
မြေအရည်အသွေး	၃	၃	၄	၆	၆၀	နည်းပါး (-)	၃	၃	၃	၆	၅၄	နည်းပါး (-)	-၆
ဆူညံသံ	၃	၃	၄	၆	၆၀	နည်းပါး (-)	၃	၃	၃	၆	၅၄	နည်းပါး (-)	-၆
စွန့်ပစ်ပစ္စည်း အစိုင် အခဲထွက်ရှိမှု	၃	၃	၅	၈	၈၈	အသင့်အတင့် (-)	၃	၃	၃	၆	၅၄	နည်းပါး (-)	-၃၄
စွန့်ပစ်ရည်ထွက်ရှိမှု	၃	၃	၄	၆	၆၀	နည်းပါး (-)	၃	၃	၃	၆	၅၄	နည်းပါး (-)	-၆
မီးဘေးအန္တရာယ်	၃	၃	၄	၆	၆၀	နည်းပါး (-)	၃	၃	၃	၆	၅၄	နည်းပါး (-)	-၆

၁-၇-၁။ အကောင်းဆုံးစီမံခန့်ခွဲမှုအလေ့အကျင့်များ

အထက်ပါခေါင်းစဉ်အောက်တွင် ကဏ္ဍ ၄ ရပ်အတွက် အောက်ပါအတိုင်း တင်ပြထားပါသည်။

- စွမ်းအင်အသုံးချမှု
- ရေအသုံးချမှု
- ဘေးအန္တရာယ်ရှိပစ္စည်းများအသုံးပြုမှု
- စွန့်ပစ်အစိုင်အခဲထွက်ရှိမှုနှင့် စီမံခန့်ခွဲမှုစနစ်တို့ဖြစ်ပါသည်။

၁-၇-၂။ လူမှုစီးပွားတာဝန်သိအစီအစဉ်

Cobes Industries (B II) Company Limited အနေဖြင့် စီမံကိန်းလုပ်ငန်းဆောင်ရွက်ခြင်းမှ ရရှိသည့် အမြတ်ငွေ၏ ၂ % ကို လူမှုစီးပွားတာဝန်သိအစီအစဉ်များတွင် အသုံးပြုရန် အစီအစဉ် ပြုလုပ်ထားပါသည်။

ယင်းတို့မှာ

- ❖ ဝန်ထမ်းသားသမီးများကို တက္ကသိုလ်အဆင့်ဆက်လက်ပညာသင်ကြားရန် စတိုင်ပင်များပေးခြင်း၊ ပညာရေးအထောက်အပံ့ပေးခြင်းအတွက် ၂၅%
- ❖ ဝန်ထမ်းမိသားစုများ ကျန်းမာမှုအတွက် အရေးပေါ်ကျန်းမာရေးစောင့်ရှောက်မှုပေးခြင်း၊ ဆေးရုံဆေးပေးခန်းဖွင့်ပေးခြင်းနှင့် အခြေခံကျန်းမာရေးစောင့်ရှောက်မှုအတွက် ၂၅%
- ❖ သက်ဆိုင်ရာလုပ်ငန်းခွင်ကဏ္ဍအလိုက် အလုပ်အကိုင်ကျွမ်းကျင်မှုသင်တန်းများပေးခြင်း၊ ထုတ်လုပ်မှုနှင့်ဈေးကွက်ဗဟုသုတများ တိုးမြှင့်ရရှိရန်ဆောင်ရွက်ခြင်းအတွက် ၂၅%
- ❖ ဝန်ထမ်းများနေထိုင်မှုအဆင့်အတန်းမြှင့်မားရေး၊ အလုပ်ခွင်တွင် သာယာချမ်းမြေ့ရေး၊ လေကောင်းလေသန့်ရရှိသည့် လုပ်ငန်းခွင်ဖြစ်စေရန် လိုအပ်သည့်အစီအစဉ်များ ဆောင်ရွက်ရန် ၂၅% တို့ဖြစ်ပါသည်။

ထို့ပြင်

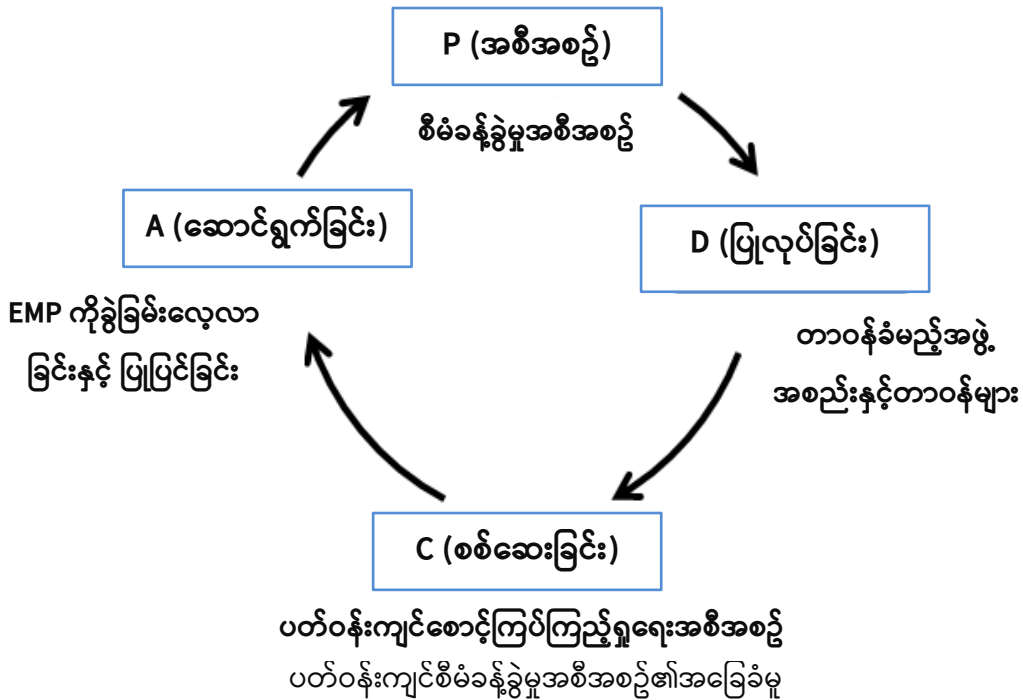
- ကျန်းမာရေးစောင့်ရှောက်မှုအစီအစဉ်
- လုပ်ငန်းခွင်သာယာအေးချမ်းရေးအစီအစဉ်  
(ရုံးလုပ်သားများအတွက် ဖယ်ရီစနစ်၊ ရက်မှန်ဆုကြေး၊ နေထိုင်စရာအစီအစဉ်၊ စားသောက်ခန်းများဖွင့်လှစ်ခြင်း၊ ထိခိုက်မှုကိုပြုစောင့်ရှောက်မှုအစီအစဉ်) တို့ကို ဆောင်ရွက်ထားပါသည်။



၁-၈။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်

၁-၈-၁။ တည်ဆောက်ပုံစနစ်

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်၏ တည်ဆောက်ပုံစနစ်မှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။



၁-၈-၂။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအဖွဲ့အစည်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအဖွဲ့အစည်းစာရင်း

စဉ်	အမည်	EMC ရှိ ရာထူး	မူလရာထူး/ ဌာန	EMC တွင်တာဝန်ယူမှု
၁။	Mr. Dong Shu Yin	ဥက္ကဋ္ဌ	အထွေထွေမန်နေဂျာ	<ul style="list-style-type: none"> <li>ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) နှင့် ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ် (EMoP) တို့ကို အကောင်အထည်ဖော်ရန် ပံ့ပိုးပေးခြင်း</li> <li>EMP နှင့် EMoP တို့ အကောင်အထည်ဖော်မှုကို စောင့်ကြည့်အကဲဖြတ်ခြင်း</li> <li>EMP ၏ရလဒ်များကိုအခြားသော EMC အဖွဲ့ဝင်များနှင့် ဆွေးနွေးခြင်း</li> </ul>
၂။	ဒေါ်ခင်မာအေး	အဖွဲ့ဝင်	HR မန်နေဂျာ	<ul style="list-style-type: none"> <li>EMP တွင်ဖော်ပြထားသော အချက်အလက်များကိုစောင့်ကြပ်ကြည့်ရှုခြင်း</li> <li>စောင့်ကြည့်အစီရင်ခံစာကိုပြင်ဆင်ခြင်း</li> </ul>

စဉ်	အမည်	EMC ရှိ ရာထူး	မူလရာထူး/ ဌာန	EMC တွင်တာဝန်ယူရမှု
				<ul style="list-style-type: none"> <li>▪ အနီးအနားရှိနေထိုင်သူများနှင့် ဆက်သွယ်ဆောင်ရွက်ခြင်း</li> <li>▪ ပတ်ဝန်းကျင်ဆိုင်ရာနှင့် အရေးပေါ်ဆိုင်ရာလှုပ်ရှားမှုများတွင် ပါဝင်ခြင်း</li> <li>▪ EMP တိုးတက်ရေးအတွက် အကြံပေးခြင်း</li> </ul>
၃။	ဒေါ်တင်ဇာဦး	အဖွဲ့ဝင်	Supervisor (စက်တန်း)	<ul style="list-style-type: none"> <li>▪ မီးဘေးအန္တရာယ်ဖြစ်သည့်နေရာကို အကြောင်းကြား ချက်ချင်းအကူအညီတောင်းခြင်း</li> <li>▪ ဝန်ထမ်းများနှင့်ရပ်ရွာနှစ်ခုလုံးအတွက် ကျန်းမာရေးစောင့်ရှောက်မှု လှုပ်ရှားမှုများတွင် ပါဝင်ခြင်း</li> <li>▪ EMP တိုးတက်ရေးအတွက် အကြံပေးခြင်း</li> </ul>
၄။	ဒေါ်ကြည်လဲ့လဲ့ဝင်း	အဖွဲ့ဝင်	Supervisor (စက်တန်း)	<ul style="list-style-type: none"> <li>▪ ပြဿနာတစ်ရပ်ရပ်တွေ့ရှိပါက EMC အဖွဲ့အား အကြောင်းကြားခြင်း</li> <li>▪ ပတ်ဝန်းကျင်ဆိုင်ရာသက်ရောက်မှုများကို သိရှိပြီး EMP ကို လိုက်နာခြင်း</li> <li>▪ ပတ်ဝန်းကျင်ဆိုင်ရာနှင့် အရေးပေါ်ဆိုင်ရာလှုပ်ရှားမှုများတွင် ပါဝင်ခြင်း</li> </ul>
၅။	ဦးသာအေး	အဖွဲ့ဝင်	EP	<ul style="list-style-type: none"> <li>▪ ဝန်ထမ်းများမှ မတော်တဆမှု၊ ထိခိုက်ဒဏ်ရာရရှိမှုနှင့် တိုင်ကြားမှုများကို တုံ့ပြန်ဆောင်ရွက်ခြင်း</li> <li>▪ လုပ်ငန်းခွင်အတွင်း ပတ်ဝန်းကျင်ဆိုင်ရာရှုထောင့်များကို စောင့်ကြည့်စစ်ဆေးခြင်း</li> <li>▪ အထွေထွေမန်နေဂျာသို့သတင်းပို့ခြင်း</li> </ul>

**၁-၈-၃။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်**

အဆိုပြုစီမံကိန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင် အောက်ပါအစီအစဉ်များ ပါဝင်ပါသည်။

- ❖ လေထုညစ်ညမ်းမှုနှင့်ပုန်အမှုန်အမွှားများစီမံခန့်ခွဲမှုအစီအစဉ်
- ❖ ဆူညံသံနှင့်တုန်ခါမှုစီမံခန့်ခွဲမှုအစီအစဉ်
- ❖ စွန့်ပစ်ပစ္စည်းအစိုင်အခဲစီမံခန့်ခွဲမှုအစီအစဉ်
- ❖ ဘေးအန္တရာယ်ရှိစာတုပစ္စည်းများနှင့် အခြားပစ္စည်းများ ကိုင်တွယ်ထားသည့်စွန့်ပစ်မှု စီမံခန့်ခွဲမှုအစီအစဉ်
- ❖ စွမ်းအင်နှင့်အရင်းအမြစ်များစီမံခန့်ခွဲမှုအစီအစဉ်
- ❖ စွန့်ပစ်မြောင်းအစီအစဉ်
- ❖ အရေးပေါ်အခြေအနေနှင့်သဘာဝဘေးအန္တရာယ်စီမံခန့်ခွဲမှုအစီအစဉ် တို့ဖြစ်ကြပြီး ယင်းတို့ကို ဇယား ၇-၂ တွင် ခန့်မှန်းရန်ပုံငွေများပါဝင်လျက် အသေးစိတ်တင်ပြထားပါသည်။

**၁-၈-၄။ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်**

အဆိုပြုစီမံကိန်း၏လုပ်ငန်းလည်ပတ်စဉ်နှင့်ပိတ်သိမ်းချိန် ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်ကို ဇယား ၇-၃ တွင် စောင့်ကြပ်ကြည့်ရှုမည့်နေရာ၊ စောင့်ကြပ်ကြည့်ရှုမည့်အကြိမ်အရေအတွက်နှင့် တာဝန်ယူဆောင်ရွက်မည့်အဖွဲ့အစည်းတို့ ပါဝင်လျက် တင်ပြထားပါသည်။

**၁-၈-၅။ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုခြင်း ရန်ပုံငွေခန့်မှန်းချက်များ**

အဆိုပြုစီမံကိန်း၏လုပ်ငန်းလည်ပတ်စဉ်နှင့်ပိတ်သိမ်းချိန်များတွင် ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးရန်ပုံငွေတို့ကို ၂၂,၃၆၀,၀၀၀ ကျပ်နှင့် ၃,၉၅၀,၀၀၀ ကျပ်အသီးသီးလျာထားပါကြောင်းနှင့် အသေးစိတ်အချက်အလက်များကို အပိုဒ် ၇-၈ တွင် တင်ပြထားပါသည်။

**၁-၈-၆။ မကျေနပ်ချက်များလျော့နည်းရန် ဆောင်ရွက်မည့်အစီအစဉ်**

အဆိုပြုစီမံကိန်းအတွက် မကျေနပ်ချက်များလျော့နည်းစေရေး ဆောင်ရွက်ရန်အတွက် ပူးပေါင်းဆောင်ရွက်မည့်အစီအစဉ်ကို အပိုဒ် ၇-၇ တွင် လုပ်ငန်းခွင်ပေါင်းစပ်ညှိနှိုင်းရေးကော်မတီအဖွဲ့ဝင်များပါဝင်လျက် တင်ပြထားပါသည်။

လုပ်ငန်းခွင်ပေါင်းစပ်ညှိနှိုင်းရေးကော်မတီအဖွဲ့

စဉ်	အမည်	ရာထူး	WCC ရှိ ရာထူး
၁။	Mr. Dong Shu Yin	အထွေထွေမန်နေဂျာ	အလုပ်ရှင်ကိုယ်စားလှယ်
၂။	ဒေါ်ခင်မာအေး	မန်နေဂျာ	အလုပ်ရှင်ကိုယ်စားလှယ်
၃။	ဒေါ်တင်ဇာဦး	Supervisor (စက်တန်း)	အလုပ်သမားကိုယ်စားလှယ်
၄။	ဒေါ်ကြည်လဲ့လဲ့ ဝင်း	Supervisor (စက်တန်း)	အလုပ်သမားကိုယ်စားလှယ်

စဉ်	အမည်	ရာထူး	WCC ရှိ ရာထူး
၅။	ဦးသာအေး	EP	အလုပ်သမားကိုယ်စားလှယ်

**၁-၈-၇။ အရေးပေါ်အခြေအနေတွင် ဆောင်ရွက်မည့်အစီအစဉ်နှင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးအစီအစဉ်**

အဆိုပြုစီမံကိန်းအတွက် အရေးပေါ်အခြေအနေတွင် ဆောင်ရွက်မည့်အစီအစဉ်နှင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးအစီအစဉ်ကို အပိုဒ် ၇-၉ နှင့် အပိုဒ် ၇-၁၀ တို့တွင် အရေးပေါ်ထွက်ပေါက်လမ်းကြောင်းများ၊ မီးသတ်ပစ္စည်းကိရိယာများ ကိုင်တွယ်အသုံးပြုခြင်းနည်းလမ်းများ၊ ဘေးကင်းလုံခြုံရေး လိုက်နာဆောင်ရွက်ခြင်းများ၊ ဆေးဝါးကုသမှုအစီအစဉ်တို့ ပါဝင်လျက် ရေးသားတင်ပြထားပါသည်။

**၁-၉။ အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးခြင်းနှင့် ထုတ်ဖော်ကြေညာခြင်း**

၂၀၂၁ ခုနှစ် စက်တင်ဘာလ ၁၆ ရက်နေ့တွင် စက်ရုံလုပ်သားဝန်ထမ်းများနှင့် စက်ရုံစားသောက်ဆောင်တွင် တွေ့ဆုံဆွေးနွေးမှုများ ဆောင်ရွက်ခဲ့ပါသည်။ တက်ရောက်သူဦးရေ ၃၀ ဦးစာရင်းရရှိခဲ့ပြီး အကြံပြုလွှာ ၃၁ စောင်ရရှိခဲ့ပါသည်။ ယင်းအကြံပြုလွှာများကို စက်ရုံကလက်ခံဆောင်ရွက်ပေးခဲ့ပါသည်။ အသေးစိတ်အချက်အလက်များကို အခန်း ၈-၃ တွင် အသေးစိတ်တင်ပြထားပါသည်။

စက်ရုံအနီးပတ်ဝန်းကျင်ပြည်သူလူထုနှင့်တွေ့ဆုံဆွေးနွေးမှုအစီအစဉ်ကို စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာဝန်ဆောင်မှုကုမ္ပဏီလီမိတက်နှင့် Cobes Industries (B II) Company Limited တို့ ပူးပေါင်းလုပ်ကိုင်ရန် စီစဉ်ဆောင်ရွက်ခဲ့သော်လည်း ကိုဗစ်-၁၉နှင့် နိုင်ငံ၏အခြေအနေအရပ်ရပ်ကြောင့် ဆောင်ရွက်နိုင်ခြင်း မရှိခဲ့ပါ။ အခြေအနေကောင်းများရရှိပါက တွေ့ဆုံဆွေးနွေးမှုကိုဆောင်ရွက်ပြီး ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနသို့ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းကို ဆက်လက်ဖြည့်စွက်တင်ပြသွားမည်ဖြစ်ပါသည်။

**၁-၁၀။ နိဂုံးချုပ်နှင့်သုံးသပ်တင်ပြချက်**

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာကို ပြင်ဆင်စဉ်ကာလအတွင်း ပတ်ဝန်းကျင်အပေါ် ဆိုးကျိုးသက်ရောက်မှုများသည် ဒေသတွင်းတွင် ဖြစ်ပေါ်နိုင်ကြောင်းနှင့် စက်လည်ပတ်စဉ်စွန့်ပစ်ပစ္စည်းများထုတ်လွှတ်မှု၊ မီးလောင်လွယ်သောစွန့်ပစ်ပစ္စည်းများထွက်ရှိနိုင်မှုများကို တွေ့ရှိခဲ့သော်လည်း ယင်းတို့ကိုလုံလောက်သော ထိန်းသိမ်းဆောင်ရွက်မှုများရှိကြောင်း တွေ့ရသဖြင့် ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ လက်ခံနိုင်သည့် အတိုင်းအတာအတွင်းရှိကြောင်း တွေ့ရပါသည်။

အဆိုပြုစီမံကိန်းသည် လေထုညစ်ညမ်းမှုနှင့်အမှန်အမှားထွက်ရှိခြင်းတို့အပေါ် ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် ထိခိုက်မှုများကို လျော့နည်းစေရန် ဆောင်ရွက်ခြင်းတို့ဖြင့် ဆိုးကျိုးတရားများကို လျော့နည်းစေပြီး လူမှုစီးပွားတိုးတက်စေမည့် စီမံကိန်းတစ်ခုဖြစ်ကြောင်း တင်ပြအပ်ပါသည်။

## 1.0 EXECUTIVE SUMMARY

### 1.1 Background

This Initial environmental examination (IEE) report was prepared for Cobes Industries (B II) Company Limited. It is located at Plot No. (N1<sup>B</sup>), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quarter, Bago Township, Bago Region, Myanmar. It is a 100% foreign investment company formed in accordance with the Republic of the Union of Myanmar Investment Law and the total capital of the investment business is USD 1 Million and later increased up to USD 5.674 Million.

On September 2021, Green Myanmar Environmental Services Company Limited (GMES) was requested by Cobes Industries (B II) Company Limited to provide professional consultation service to “Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis” Project.

### 1.2 Proponent Information

1.	Project Name	Manufacturing and Distribution of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis Project
2.	Project Proponent	Cobes Industries (B II) Company Limited
3.	Address of Company Head Office and Project	Plot No. (N1 <sup>B</sup> ), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quarter, Bago Township, Bago Region, Myanmar
4.	Company Registration Number	121497387 (27.7.2019)
5.	Exporter/Importer Registration Number	58931 (14.11.19) End Date - 13.11.2024
6.	Type of Proposed Business	Manufacturing and Distribution
7.	Geographical Information	North Latitude 17° 16' 46.80" East Longitude 96° 27' 26.90"
8.	Type of Land	Grant Land
9.	Land Acquisition	Lease Land
10.	Land Owner/Lessor	U YE MIN TUN 9/ Ah Ma Za (Naing) 003158
11.	Lessee	Cobes Industries (B II) Company Limited
12.	Validity of Land Grant (Initial Period Permitted to Use the Land)	60 years
13.	Factory Area	7.1 Acres (28,732.706 sq. meter) of 16 Total Acres
14.	Surrounding Environment	East Side - Free land West Side - Free land Left Side - Jade Blue Right Side - Narani Thein Monastery Road
15.	Nearest Residential Place	Oak Thar (9 <sup>th</sup> ) Quarter

16.	Nearest Water Body	Bago River
17.	Topography	Hill Area
18.	Water Source	Two tube wells having 4 inches in diameter
19.	Source of Electrical Power	From National Grid
20.	Power Supply	Transformer (11/0.4 kV) distribution transformer which capacity is 500 kVA and 1000 kVA  Generators 200 kVA Diesel engine (one unit) 600 kVA Diesel engine (one unit) 1,500 kVA Diesel engine (three units)
21.	Established Time	7.2.2019
22.	Date of Test Run	1.4.2020
23.	Building and Accessories	<ul style="list-style-type: none"> <li>▪ Factory A - Two storeyed</li> <li>▪ Factory B - Two storeyed</li> <li>▪ Factory C - Two storeyed</li> <li>▪ Raw Material (Non-woven Fabric) Production Plant - One storeyed</li> <li>▪ Office and Hostel - Three storeyed</li> <li>▪ Security House and Hostel - Two storeyed</li> <li>▪ Canteen - One storeyed</li> <li>▪ Generator House - One storeyed</li> <li>▪ Transformer - One storeyed</li> <li>▪ Panel Room - One storeyed</li> <li>- One storeyed</li> </ul>
24.	Raw Materials	<ul style="list-style-type: none"> <li>❖ Raw Materials for Non-woven Fabrics <ul style="list-style-type: none"> <li>➢ Polypropylene Resin</li> <li>➢ Colour Master Batch</li> <li>➢ Anti-Static Solution</li> <li>➢ Anti-Static PP Resin</li> <li>➢ Soft PP Resin</li> </ul> </li> <li>❖ Raw Materials for Non-Sterilized Disposable Surgical Scrubs and Related Kind of Clinical Wears <ul style="list-style-type: none"> <li>➢ Fabric (Polypropylene Spunbond, Polypropylene SMS, Breathable Film)</li> <li>➢ Accessories (21 kinds)</li> </ul> </li> </ul>
25.	Products	<ul style="list-style-type: none"> <li>❖ Non-woven Fabric (Semi-product)</li> <li>❖ Non-sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears <ul style="list-style-type: none"> <li>➢ Common Scrub Suit</li> <li>➢ Coverall</li> <li>➢ Isolation Gown</li> <li>➢ Hardcover Surgical Gown</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>➤ Bulk Surgical Gown</li> <li>➤ Headgear</li> <li>➤ Experimental Clothes</li> </ul>
26.	Machinery and Equipment List	<ul style="list-style-type: none"> <li>❖ Machinery and Equipment for Non-woven Fabric Production                             <ul style="list-style-type: none"> <li>➤ Main Extruder</li> <li>➤ Recycle Extruder 120 mm</li> <li>➤ Filter</li> <li>➤ Metering Pump 300 CC</li> <li>➤ Metering Pump 150 CC</li> <li>➤ Spinning Die Body</li> <li>➤ Spinneret Plate &amp; Distribution Plate</li> <li>➤ Quenching Chamber &amp; Diffuser</li> <li>➤ Web Former</li> <li>➤ Calendar (Kuster)</li> <li>➤ Winder</li> <li>➤ Slitter System</li> <li>➤ Raw Material Suction System and Feeding System</li> <li>➤ Hydrophilic Device</li> <li>➤ Cooling System</li> <li>➤ Air Heater</li> <li>➤ Meltblown Die Head Assembly</li> <li>➤ Electronic Control Panel</li> <li>➤ Ultrasonic Cleaning</li> <li>➤ Vacuum Heating Oven</li> <li>➤ Wrapper</li> <li>➤ Roots Fan</li> <li>➤ Diesel Generator Set</li> </ul> </li> <li>❖ Machinery and Equipment for Non-sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears                             <ul style="list-style-type: none"> <li>➤ Continuous Sealing Machine</li> <li>➤ Glue Machine (XY or Double Joint)</li> <li>➤ Leak Sealing Machine</li> <li>➤ Four Side Heat Sealing Machine</li> <li>➤ Lace Machine</li> <li>➤ Spot Welding</li> <li>➤ Exhaust Heat Sealing Machine</li> <li>➤ Automatic Buckle Machine</li> <li>➤ Automatic Belting Machine</li> <li>➤ Tape Cutting Machine</li> <li>➤ Slitting Machine</li> <li>➤ Hanging Crane</li> <li>➤ Strong Tensile Testing Equipment</li> <li>➤ Hydrostatic Test Equipment</li> <li>➤ Constant Temperature Incubator</li> <li>➤ Constant Temperature Drying Box</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>➤ Electronic Balance</li> <li>➤ Water Bath Equipment</li> <li>➤ Autoclave</li> <li>➤ Martindale Equipment</li> <li>➤ Thin Edge Slitter</li> <li>➤ Double Color Print &amp; Grooving Machine</li> <li>➤ Single Color Printing Machine</li> <li>➤ Manual Grooving Machine</li> <li>➤ Bingding Machine</li> <li>➤ Belting Machine</li> <li>➤ Printing Machine</li> </ul>
27.	Daily Production Capacity Annual Production Expected	30,000 Pcs  SMS Non-woven Fabric Non-sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears 5,800 ton/year 1 5,916 ton/year 2 23,950,000 Pcs/year 1 24,429,000 Pcs/year 2
28.	Products Exported to	America, Europe and Japan
29.	Type of Investment Authorized Capital  Number of Sharers  Type of Share  Final Proposed Investment	100% Foreign Investment USD 1,000,000  100,000 Ordinary Shares of USD 10 each  100% of Authorized Capital  5,674,000 USD
30.	By Product	Fabric scraps and other solid wastes (Mainly packing materials of raw materials)
31.	Work Force	Oversea Employees - 3 of 10 (current of proposal) Local Employees - 443 of 1,000 (current of proposal) Total - 446 of 1,010 (current of proposal)
32.	Working Hours  Working Days  Working Time	8 hours per day (Management Office and Factory)  5.5 days per week  7:30 a.m. ~ 4:30 p.m. Monday to Friday (Lunch Break: 11:30 a.m. ~ 12:30 p.m.) 7:30 a.m. ~ 11:30 a.m. Saturday
33.	List of Shareholders and Directors	Name - Mr. Guo, Chunwei Citizenship - Chinese Passport No. - E 26362396 Designation - Director



		Address	- Hennessy Road, Flat/Rm 2503-2505, 25/F, C.C. Wu Building, 302-308, Wan Chai, Hong Kong.
		Name	- Mr. Yongzhi, Li
		Citizenship	- Chinese
		Passport No.	- G 44637128
		Designation	- Director
		Address	- Hennessy Road, Flat/Rm 2503-2505, 25/F, C.C. Wu Building, 302-308, Wan Chai, Hong Kong.
34.	Contact Details	Project Address	Plot No. (N1 <sup>B</sup> ), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9 <sup>th</sup> ) Quarter, Bago Township, Bago Region, Myanmar. 959- 671 308 989
		Telephone Email	<a href="mailto:david@cobeshk.com">david@cobeshk.com</a>
35.	Contact Person for IEE Report Preparation	Name Designation Telephone Email	Daw Khin Mar Aye HR Manager 959- 404 544 447, 959- 774 927 2171 <a href="mailto:khinmaraye@cobeshk.com">khinmaraye@cobeshk.com</a>

### 1.3 Initial Environmental Examination (IEE) Study Team

Green Myanmar Environmental Services Company Limited (GMES) is Initial Environmental Examination (IEE) study team, registered in ECD having Transitional Consultant Registration Number of Organization No.0006. The details of information are described at Table 2-4, 2-5 and Appendix 2 and 3.

### 1.4 Policy, Legal and Institutional Framework

Chapter 3 of IEE report is policy, legal and institutional framework and it contains

- **Background**
- **Policy Framework**
- **Myanmar Regulatory Framework in Environmental Assessment**  
[details in National Environmental Policy of Myanmar (2019); Myanmar Agenda 21 (1997); National Sustainable Development Strategy (2009); The Environmental Conservation Law (2012); The Environmental Conservation Rules (2014); Environmental Impact Assessment Procedure (2015) and National Environmental Quality (Emission) NEQ(E)G Guidelines (2015)]
- **Environmental -related Laws and Regulations in Myanmar**  
[**9** numbers of Environmental Framework; **10** numbers of Infrastructure/ Economic Development/ Administration; **16** numbers of Water Environment; **6** numbers of Land Use; **2** numbers of Cultural Heritage; **9** numbers of Forestry/Biodiversity/Agriculture; **18** numbers of Industrial Sector; **4** numbers

of Special Economic Zone (SEZ); **14** numbers of Working Environment; **9** numbers of Public Health and **2** numbers of Emergency/Disaster are shown]

➤ **Myanmar Legislation Relevance to the Project**

Myanmar Acts and Rules which are conducted by **Cobes Industries (B II) Company Limited** shown as follows.

- Myanmar Agenda 21
- National Sustainable Development Strategy (2009)
- The Environmental Conservation Law (2012)
- The Environmental Conservation Rules (2014)
- EIA Procedure (2015)
- National Environmental Quality (Emission) Guidelines (2015)
- The Constitution of the Union of Myanmar (2008)
- Myanmar Investment Law (2016)
- Myanmar Investment Rules (2017)
- The Water Power Act (1927)
- The Territorial Sea and Maritime Zone Law (2017)
- The Conservation of Water Resources and Rivers Law (2006)
- The Myanma Port Authority Law (2015)
- The Protection of Preservation of Cultural Heritage Regions Law (2019)
- The Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law (1994)
- The Explosives Act (1884)
- The Explosive Substances Act (1908)
- The Petroleum Act (1934)
- The Petroleum Rules (1937)
- The Petroleum and Petroleum Product Law (2017)
- The Export and Import Law (2012)
- The Prevention of Hazard from Chemicals and Related Substances Law (2013)
- The Prevention of Hazard from Chemicals and Related Substances Rules (2016)
- The Electricity Law (2014)
- The Automobile Law (2015)
- The Workmen’s Compensation Act (1923)
- The Leave and Holiday Act (1951)
- The Labor Organization Law (2011)
- The Labor Organization Rules (2012)
- The Labor Dispute Settlement Law (2012)
- The Social Security Law (2012)
- The Employment and Skill Development Law (2013)
- The Minimum Wage Law/Rules (2013)
- The Social Security Rules (2014)

- The Payment of Wages Law (2016)
  - The Myanmar Occupational Health and Safety Law (2019)
  - The Penal Code of Offences Affecting the Public Health, Safety Convenience, Decency and Morals (1961)
  - The Public Health Law (1972)
  - The Prevention and Control of Communicable Diseases Law (1995)
  - The Natural Disaster Management Law (2013)
  - The Myanmar Fire-brigade Law (2015)
- **International Conventions, Treaties and Agreements**  
There are 36 numbers of conventions, treaties and agreements in above HEADING.
- **Standards and Guidelines for the Surrounding Environment of the Project**
- Air Quality
  - Water Quality
  - Noise Levels
  - Light Intensity

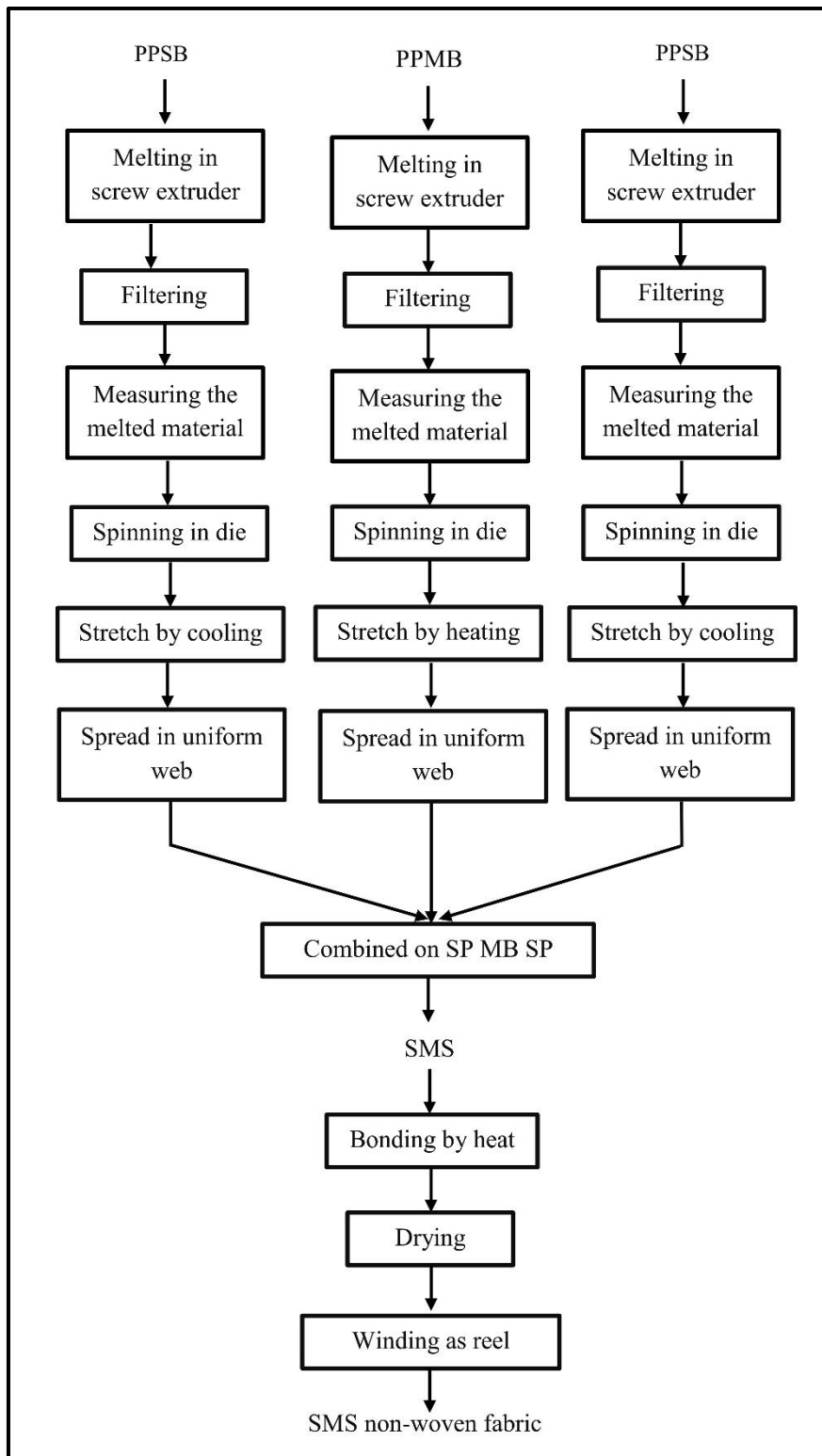
## **1.5 Description of the Project and Alternatives**

### **1.5.1 Manufacturing Process**

There are two manufacturing processes; first for manufacturing of non-woven fabric and second for non-sterilized disposable surgical-scrubs and related kind of clinical wears.

#### **1.5.1.1 Process for Non-woven Fabric**

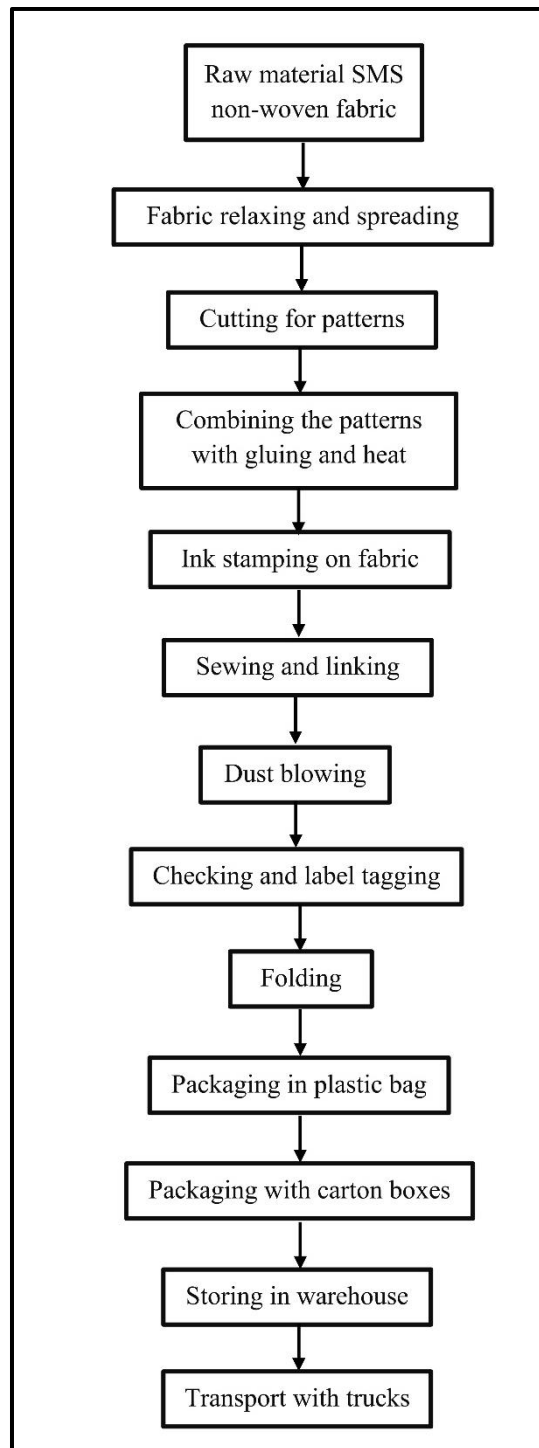
The process flow diagram for non-woven fabric is as follows.



Process Flow Diagram for Non-woven Fabric

### 1.5.1.2 Process for Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

The process flow diagram for non-sterilized disposable surgical-scrubs and related kind of clinical wears is as follows.



Process Flow Diagram for Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

### 1.5.2 Management of the Waste Materials

At **Cobes Industries (B II) Company Limited**, the procedures of management for waste materials are as following.

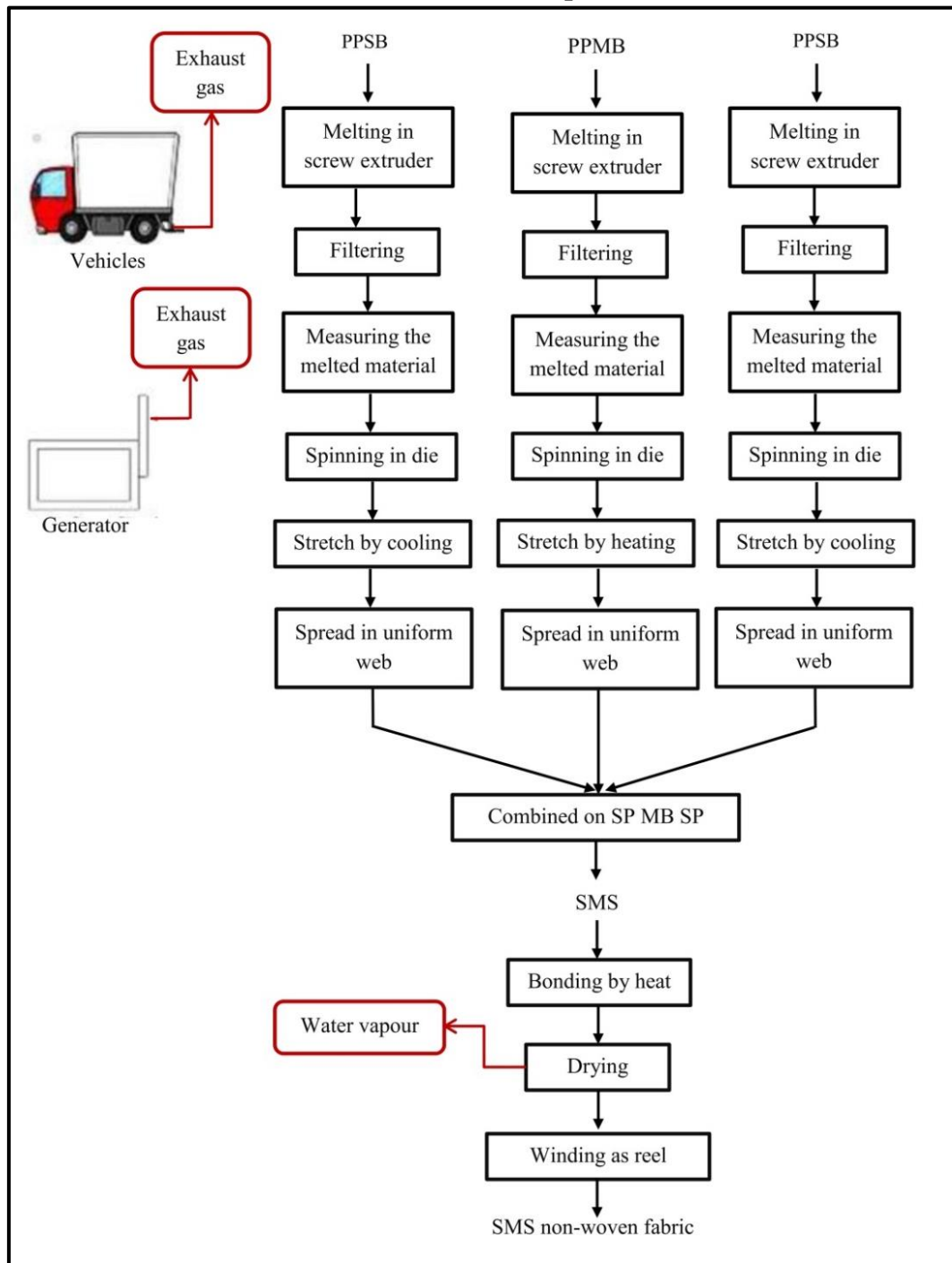
- Emitted gas or vapour (Emission to air)
- Liquid wastes

➤ Solid wastes

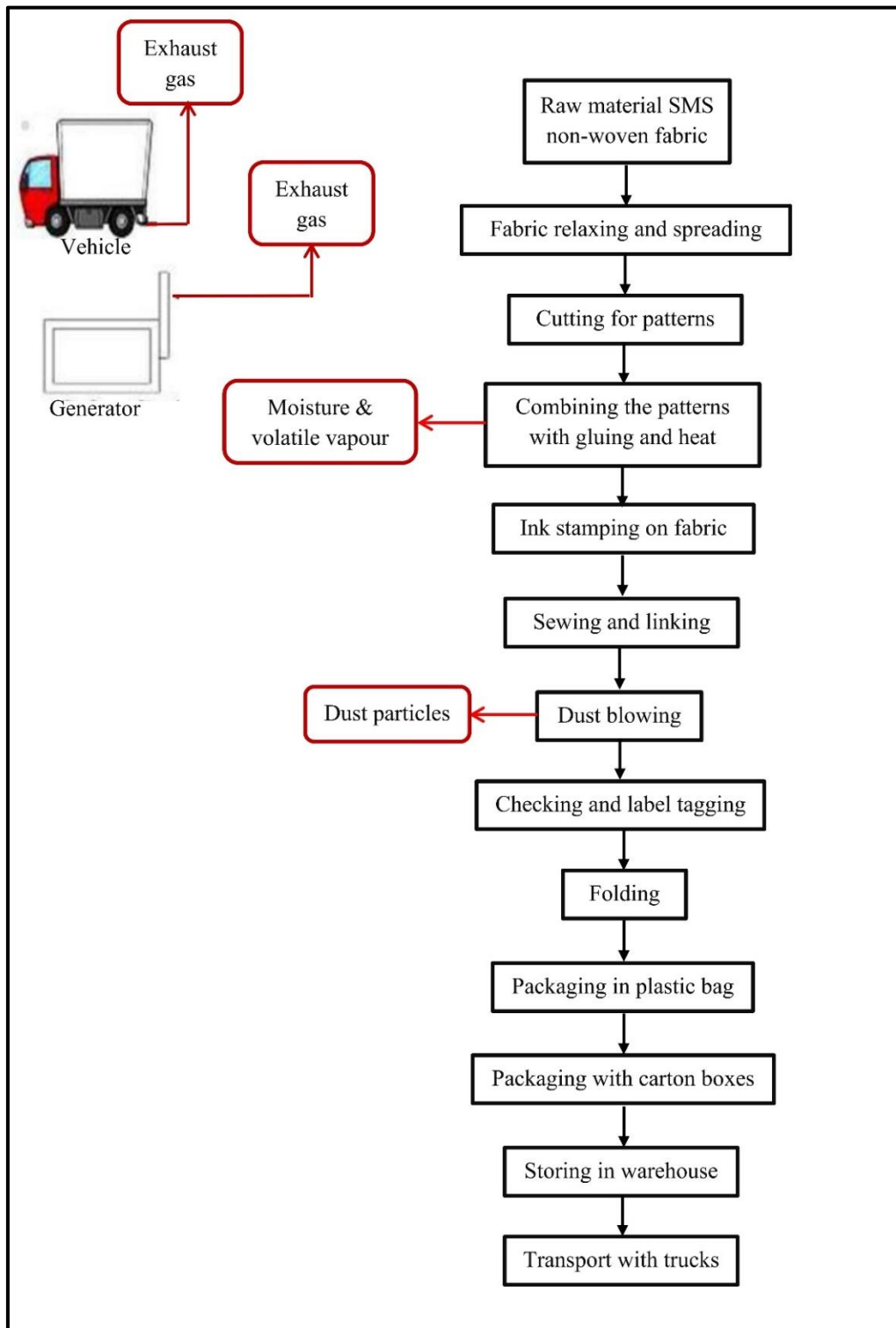
**1.5.2.1 Emitted Gas or Vapour (Emission to Air) and Management Procedure**

Emitted gases or vapour is shown in brief as follows.

**From non-woven fabric production**



**From non-sterilized disposable surgical-scrubs and related kind of clinical wears production**



Management of emitted gases or vapour is shown in brief as follows.

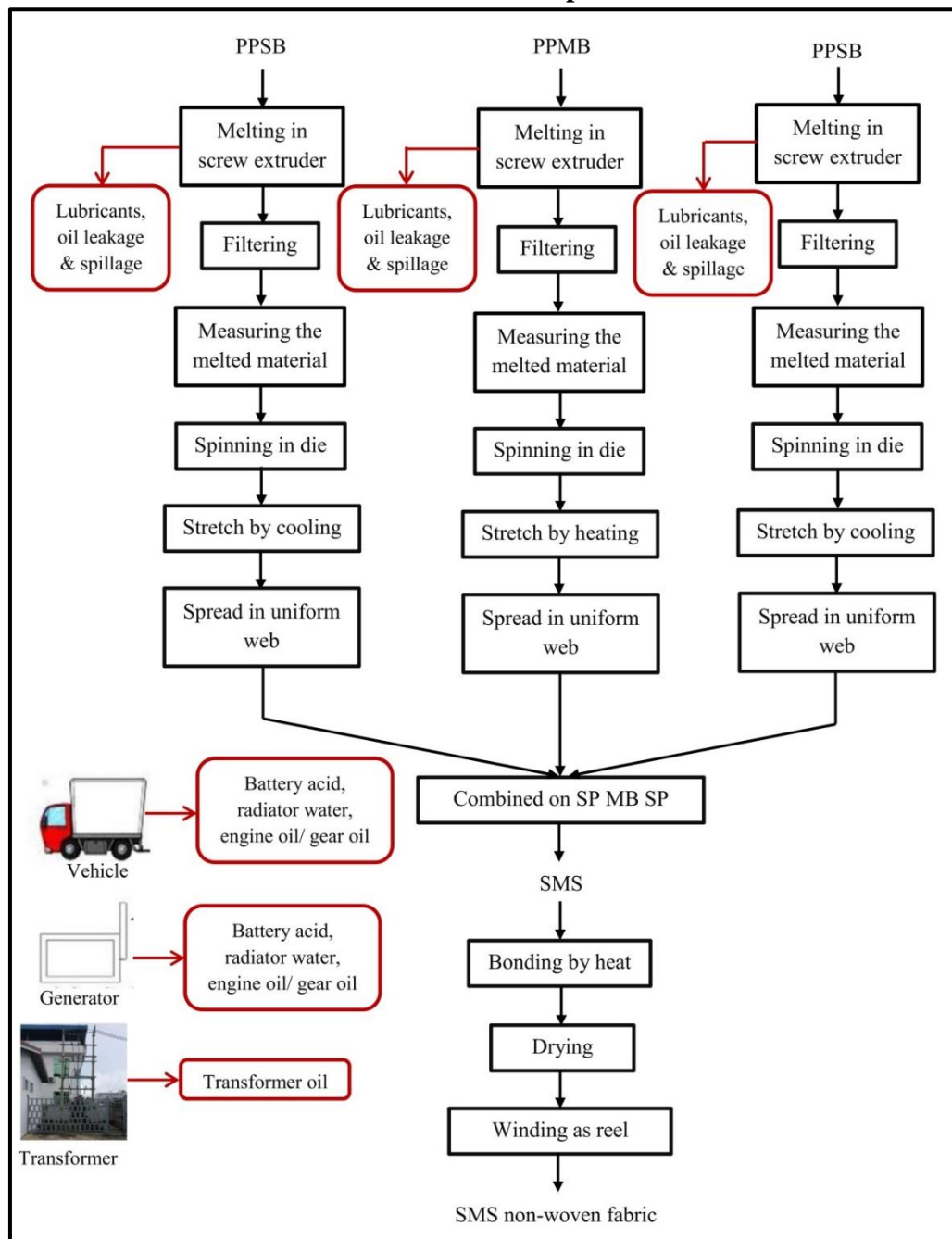
Management Procedure for Emitted Gas or Vapour
<ul style="list-style-type: none"> <li>▪ Good maintenance of motor vehicles and generator</li> </ul>

- Using good quality fuels
- Glue drying temperature not exceed the normal
- Preventing the dust entering to warehouse, production room i.e. not opening the doors if unnecessary conditions
- Good maintenance the transformer by authorized person
- Good maintenance the air conditioners and refrigerators by skilled person

### 1.5.2.2 Liquid Wastes and Management Procedure

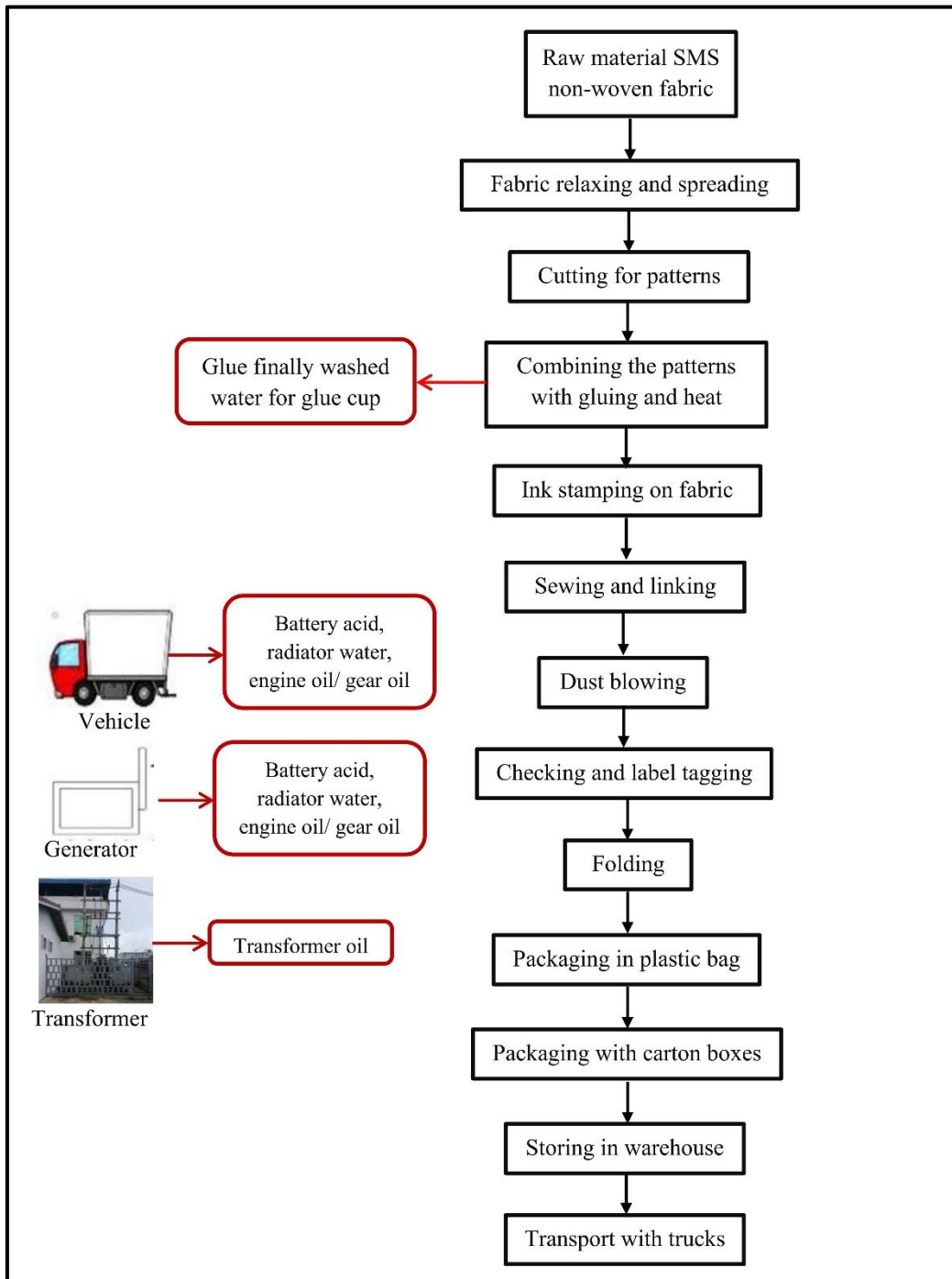
Liquid wastes are shown in brief as follows.

#### From non-woven fabric production





**From non-sterilized disposable surgical-scrubs and related kind of clinical wears production**



Management of liquid wastes is shown in brief as follows.

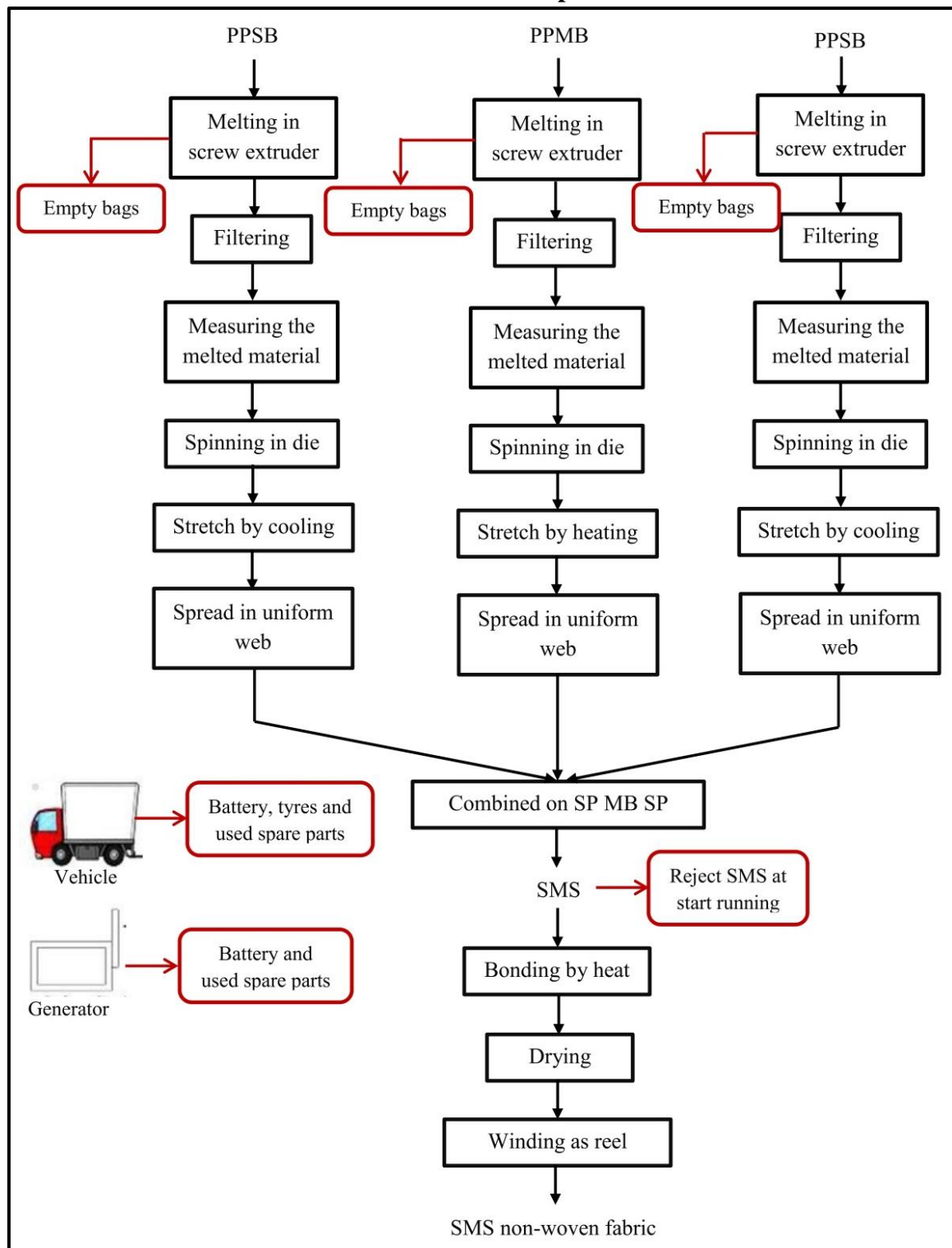
Management Procedure for Liquid Wastes
<ul style="list-style-type: none"> <li>▪ Not excess using the cleaning water if not necessary</li> <li>▪ Systematic disposal (regular septic tank cleaning)</li> <li>▪ Used oil are kept in systematically and selling, dispose by Development Committee’s guidelines.</li> <li>▪ When renewing and transportation of fuel, oil, battery acid, skilled person must be dutied.</li> </ul>

- To make and manage not to excess glue washed water to check BOD, COD and make reduce if necessary
- Good maintenance the transformer by authorized person

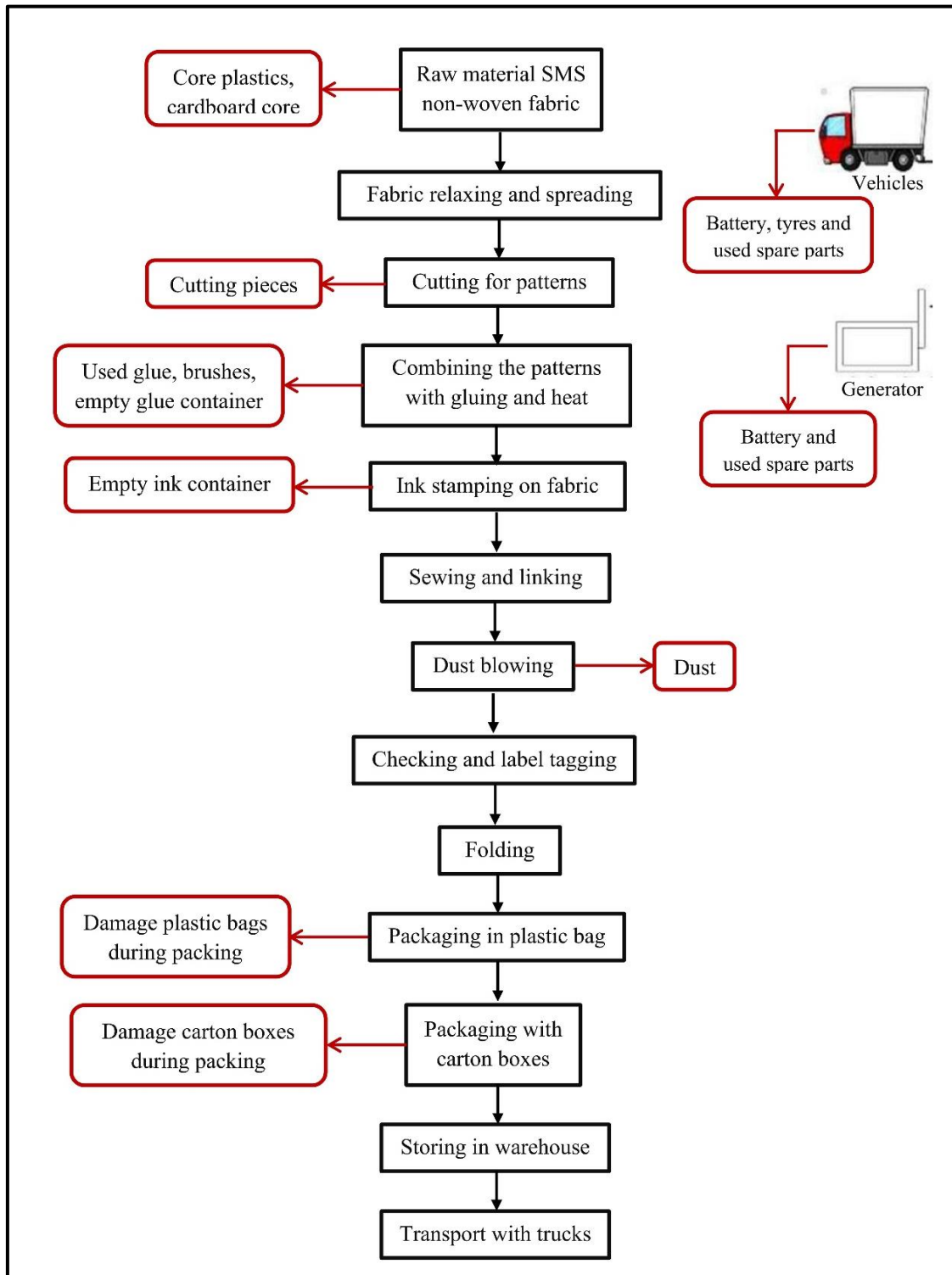
### 1.5.2.3 Solid Wastes and Management Procedure

Solid wastes are shown in brief as follows.

#### From non-woven fabric production



**From non-sterilized disposable surgical-scrubs and related kind of clinical wears production**



Management of solid wastes is shown in brief as follows.

Management Procedure for Solid Wastes
<ul style="list-style-type: none"> <li>▪ Systematic keeping and selling, reuse in other purposes</li> <li>▪ Dispose in the specific area guided by the Development Committee</li> </ul>

### **1.5.3 Analysis of Alternatives**

#### **1.5.3.1 Project Alternatives**

The alternative consideration is “no project option”.

This alternative means forfeiting the proposed development avoiding all its impact both positive and negative. Pros and Cons for this option are discussed. The Pro identified is below:

- ❖ There will be no environment and social impact arising from the implementation of the project.

The Cons identified are below:

- ❖ Possible revenue for the proponent after the project is lost
- ❖ A piece of land would be left un-utilized which could collect waste overtime and become environmental and social hazard in the long term.
- ❖ The real estate price for the land would drop if the land were left un-used.

#### **1.5.3.2 Site Alternatives**

Bago Township has been selected to construct Manufacturing and Distribution Various Kinds of Disposable Surgical Scrubs Plant by Cobes Industries (B II) Company Limited. The advantages of the specific site are as follows.

- ❖ Sites need to be accessible for easy logistics
- ❖ Build on previously developed, degraded, or urban land whenever feasible
- ❖ Ensure there are sufficient fresh water and other resources

## **1.6 Description of the Surrounding Environmental Social Conditions**

In Chapter 5, the environmental profile, the existing environment baseline situation (primary data), and secondary information such as natural environment/ physical components, biological components and socio-economic status for the proposed project are described. For the purpose of characterization and quantification of various pollutants, visits were made and detailed field studies were conducted in each category. Based on the measured values, the averages values have been taken as basis to characterize the typical pollution streams.

### **1.6.1 Environmental Baseline Situation (Primary Data)**

Green Myanmar Environmental Services Company Limited (GMES) had done measuring primary data or baseline environmental parameters such as ambient and workplace (indoor) air quality, noise & vibration, water quality and soil quality from 16.9.2021 to 17.9.2021. The materials and methods of instruments used for surveying the environmental baseline data and the results are mentioned in the following section.

The water samples, wastewaters and soil samples were collected and analyzed the results in the respective laboratories.

### 1.6.1.1 Air Quality

Air quality measurement was taken at the project site. The sampling points were selected based on their locations relative to key community receptors, as well as their current or potential for impairments.

- 1) Ambient air quality at the project site was measured at only one sampling point
- 2) Workplace (indoor) air quality was measured at six points and
- 3) Stack emission from diesel generator.

#### Ambient Air Quality

There are three descriptions about the ambient air quality as follows.

#### ■ Measured Parameters for Ambient Air Quality

No.	Parameters	Analysis Methods
1.	Sulfur Dioxide (SO <sub>2</sub> )	Electrochemical sensors
2.	Nitrogen Dioxide (NO <sub>2</sub> )	Electrochemical sensors
3.	Carbon Dioxide (CO <sub>2</sub> )	NDIR (optional sensor)
4.	Carbon Monoxide (CO)	Electrochemical sensors
5.	Particulate Matter 2.5 (PM <sub>2.5</sub> )	Infrared Light Scattering
6.	Particulate Matter 10 (PM <sub>10</sub> )	Infrared Light Scattering

Ambient air quality at the project site was measured continuously at only one sampling point for 24 hours.

#### ■ Location of Ambient Air Quality Measuring Point

Sr. No.	Measuring Points	Geographic Information	Description
1.	AMP	17° 16' 46.73" N 96° 27' 24.58" E	Inside the Factory Premise



Location of Ambient Air Quality Measuring Point



Status of Ambient Air Quality Measurement

▪ **Measuring Results of Ambient Air Quality Baseline Data (AMP)**

No.	Parameters	Unit	Analysis Values		National Environmental (Emission) Quality Guidelines		Remarks
			Result Value	Average Period	Guideline Value	Average Period	
1.	Nitrogen Dioxide	µg/m <sup>3</sup>	62.85	24 hours	*200	1 hour	16/9/2021 3:45 - 4:44 (Peak Hour)
2.	Sulfur Dioxide	µg/m <sup>3</sup>	0	24 hours	*20	24 hours	
3.	Particulate Matter PM <sub>10</sub>	µg/m <sup>3</sup>	37.37	24 hours	*50	24 hours	
4.	Particulate Matter PM <sub>2.5</sub>	µg/m <sup>3</sup>	18.96	24 hours	*25	24 hours	
5.	Ozone	µg/m <sup>3</sup>	81.90	24 hours	*100	8-hour daily Maximum	13:30 - 14:29 17/9/2021
6.	Ammonia	ppm	8.54	24 hours	NG	-	
7.	Carbon Dioxide	ppm	236.53	24 hours	NG	-	
8.	Carbon Monoxide	ppm	0	24 hours	NG	-	
9.	Volatile Organic Compound	ppb	0	24 hours	NG		
10.	Oxygen	%	20.02	24 hours	NG	-	
11.	Wind Speed	mph	0.4	24 hours	NG	-	
12.	Wind Direction	Deg	210	24 hours	NG	-	

According to the above table, all the parameters were within the recommended air quality guidelines established by National Environmental Quality (Emission) Guidelines.

**Workplace Air Quality**

There are two descriptions about the workplace air quality as follows.

▪ **Locations of Workplace (Indoor) Air Quality Measuring Points**

Sr. No.	Measuring Points	Description
1.	WMP-1	Sewing 1
2.	WMP-2	Sewing 2
3.	WMP-3	Sewing 3
4.	WMP-4	Sewing 4
5.	WMP-5	Cutting
6.	WMP-6	Warehouse 1
7.	WMP-7	Warehouse 2
8.	WMP-8	Packaging Material Warehouse
9.	WMP-9	Raw Material Production Area 1
10.	WMP-10	Raw Material Production Area 2
11.	WMP-11	Glue Making Room
12.	WMP-12	Sewing (Future)
13.	WMP-13	Cutting (Future)

▪ **Workplace Air Quality Measurement Results**

Sr. No.	Measuring Points	Parameter		
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	VOC (ppm)
1.	WMP-1	18	7	18.7
2.	WMP-2	22	7	10.2
3.	WMP-3	40	26	16.2
4.	WMP-4	54	35	12.2
5.	WMP-5	50	21	9.6
6.	WMP-6	45	21	6
7.	WMP-7	40	19.2	0.4
8.	WMP-8	21	8	3.8
9.	WMP-9	12	6	0
10.	WMP-10	8	4	0
11.	WMP-11	42.8	19.5	67.6
12.	WMP-12	30	12	0
13.	WMP-13	25	10	0

The workplace (indoor) air quality does not have the specific guidelines.

**Stack Emission Measurement**

There are three descriptions about the stack emission measurement.

▪ **Information of Generator**

Type: Diesel Generator  
Capacity: 600 kVA

Fuel Type: Diesel

▪ **Location of Stack Emission Measuring Point**

Sr. No.	Measuring Points	Geographic Information
1.	Generator	17° 16' 44.77" N 96° 27' 25.60" E



Location Points for Stack Emission Measurement



Status of Generator Stack Emission Measurement

▪ **Generator Stack Emission Measuring Result**

Sr. No.	Parameter	Unit	Result Value	Small Combustion Facilities Emission Guidelines (NEQG)
1.	CO <sub>2</sub>	%	2.26	-
2.	O <sub>2</sub>	%	17.9	-



Sr. No.	Parameter	Unit	Result Value	Small Combustion Facilities Emission Guidelines (NEQG)
3.	CO	mg/m <sup>3</sup>	230	-
4.	SO <sub>2</sub>	mg/m <sup>3</sup>	0	<b>2000</b>
5.	NO <sub>2</sub>	mg/m <sup>3</sup>	172	-

According to the above table, the result of SO<sub>2</sub> was within acceptable limits and the other parameters do not have the specific guidelines.

### 1.6.1.2 Noise and Vibration

#### Boundary Noise Levels

There are two descriptions about the noise as follows.

- **Location of Boundary Noise Levels Measuring Point**

Sr. No.	Measuring Points	Geographic Information
1.	NMP-1	17° 16' 47.74" N 96° 27' 24.68" E
2.	NMP-2	17° 16' 48.09" N 96° 27' 28.69" E
3.	NMP-3	17° 16' 48.35" N 96° 27' 33.51" E
4.	NMP-4	17° 16' 45.07" N 96° 27' 33.02" E
5.	NMP-5	17° 16' 44.87" N 96° 27' 28.65" E
6.	NMP-6	17° 16' 44.72" N 96° 27' 24.70" E



Locations of Boundary Noise Levels Measuring Points



Status of Boundary Noise Levels Measurement

▪ **Ambient Noise Level Measuring Results**

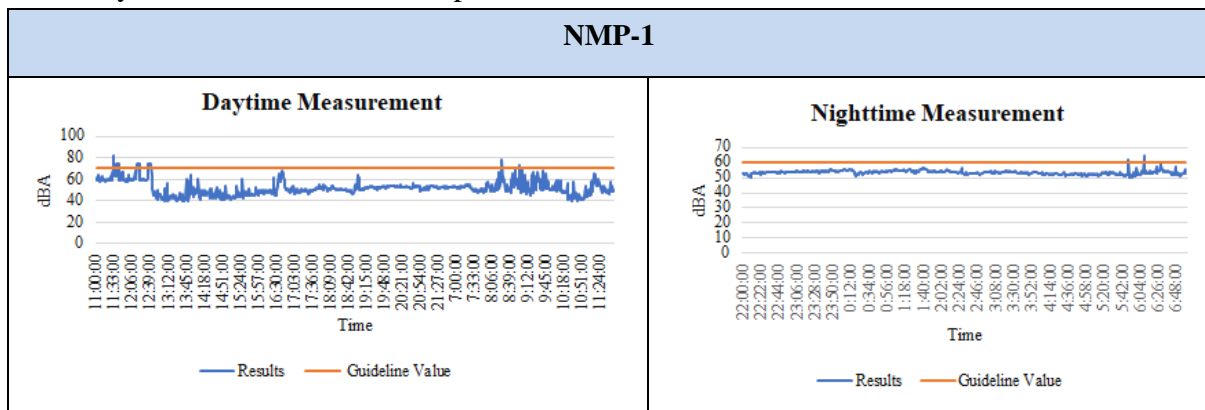
Ambient Noise Level Measuring Results (Daytime)

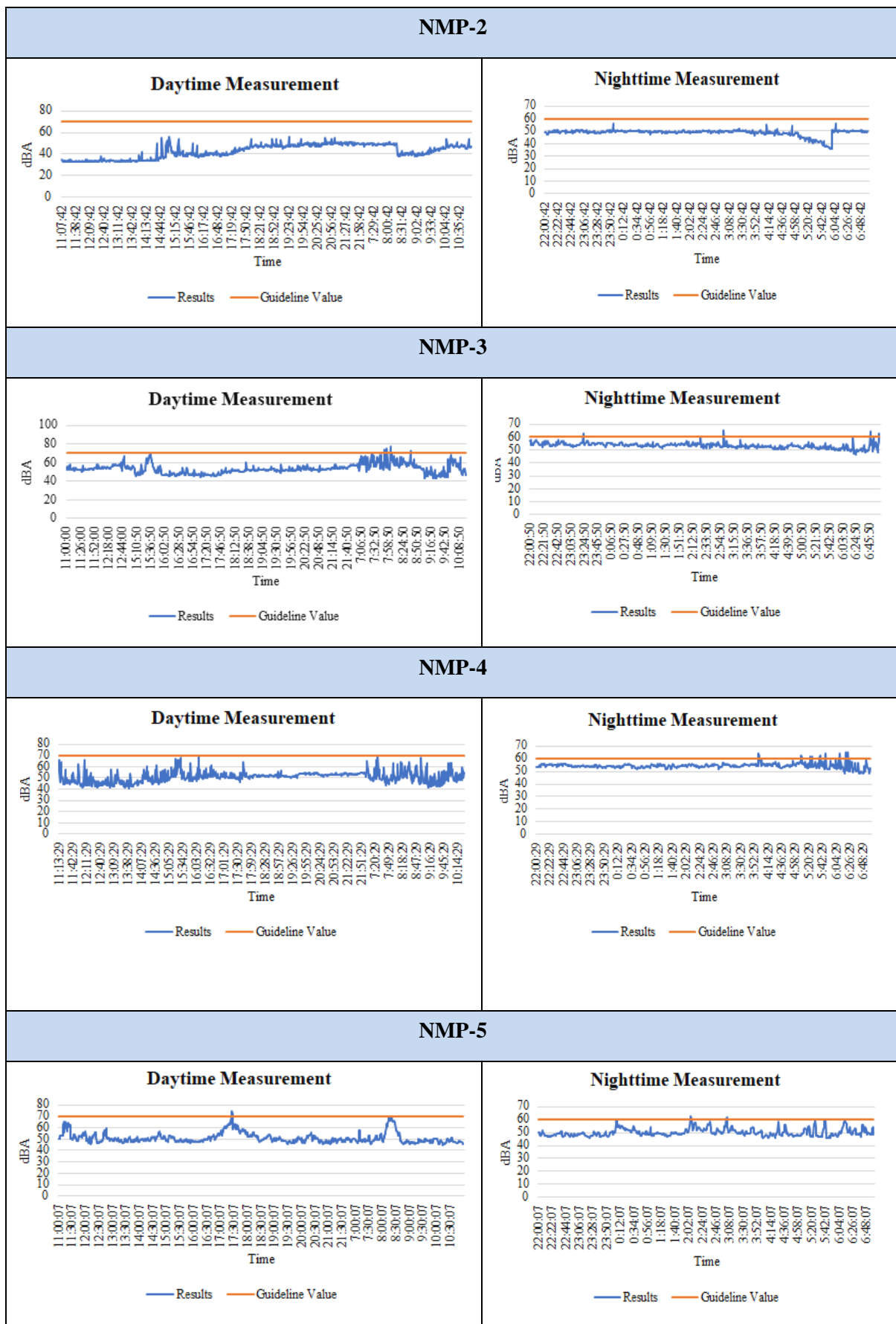
Sr. No.	Measuring Points	Daytime Measuring Results (dBA)			NEQG Guideline Value (dBA)
		Avg	Max	Min	
1.	NMP-1	51.90	82.00	39.50	70
2.	NMP-2	42.74	55.60	32.90	70
3.	NMP-3	53.34	77.60	43.20	70
4.	NMP-4	50.89	69.60	40.70	70
5.	NMP-5	51.03	74.70	44.80	70
6.	NMP-6	56.64	83.30	39.40	70

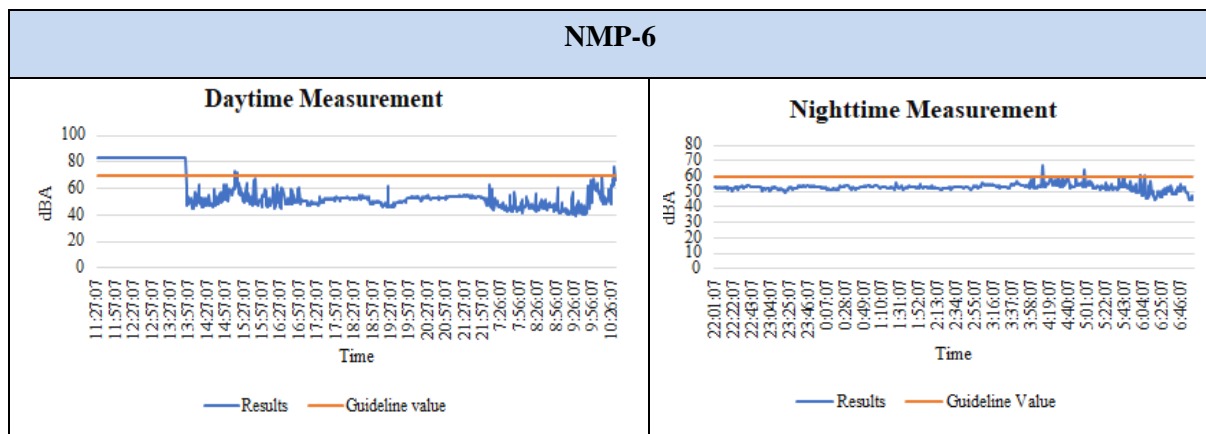
Ambient Noise Level Measuring Results (Nighttime)

Sr. No.	Measuring Points	Nighttime Measuring Results (dBA)			NEQG Guideline Value (dBA)
		Avg	Max	Min	
1.	NMP-1	53.50	64.30	50.40	70
2.	NMP-2	48.65	55.80	35.50	70
3.	NMP-3	53.39	64.80	46.60	70
4.	NMP-4	54.42	65.40	48.00	70
5.	NMP-5	50.14	62.30	45.60	70
6.	NMP-6	52.81	66.80	44.50	70

Boundary Noise Measurement Graphs







The project is located in the industrial land. The observed values of the noise level (ambient) for daytime and night time are within the limit of Guideline. Therefore, the noise values cannot affect the workers and the environment.

#### Workplace (Indoor) Noise Levels

There are two descriptions about the workplace (indoor) noise levels as follows.

##### Locations of Workplace (Indoor) Noise Level Measuring Points

Sr. No.	Measuring Points	Description
1.	NMP-1	Sewing 1
2.	NMP-2	Sewing 2
3.	NMP-3	Sewing 3
4.	NMP-4	Sewing 4
5.	NMP-5	Cutting
6.	NMP-6	Warehouse 1
7.	NMP-7	Warehouse 2
8.	NMP-8	Packaging Material Warehouse
9.	NMP-9	Raw Material 1
10.	NMP-10	Raw Material 2
11.	NMP-11	Glue Making Room
12.	NMP-12	Sewing (future)
13.	NMP-13	Cutting (future)
14.	NMP-14	Generator Room

##### Measuring Results of Indoor (Workplace) Noise Levels

Sr. No.	Measuring Points	Description	Noise Level ( $L_{eq}$ )			OHS Exposure Guideline (8 hr)
			Avg	Max	Min	
1.	NMP-1	Sewing 1	76.62	79.10	74.00	90
2.	NMP-2	Sewing 2	74.28	77.16	72.20	90

Sr. No.	Measuring Points	Description	Noise Level ( $L_{eq}$ )			OHS Exposure Guideline (8 hr)
			Avg	Max	Min	
3.	NMP-3	Sewing 3	72.71	75.90	68.30	90
4.	NMP-4	Sewing 4	73.98	82.50	69.00	90
5.	NMP-5	Cutting	79.00	82.00	76.00	90
6.	NMP-6	Warehouse 1	59.26	59.10	52.50	90
7.	NMP-7	Warehouse 2	57.10	60.28	50.45	90
8.	NMP-8	Packaging Material Warehouse	56.83	69.40	54.60	90
9.	NMP-9	Raw Material 1	69.98	78.50	60.00	90
10.	NMP-10	Raw Material 2	70.71	76.90	67.30	90
11.	NMP-11	Glue Making Room	73.62	80.10	67.50	90
12.	NMP-12	Sewing (future)	39.26	42.10	37.50	90
13.	NMP-13	Cutting (future)	38.10	45.31	36.45	90
14.	NMP-14	Generator Room	100.53	127.90	55.30	90

According to the measuring results of average noise levels at workplace, the noise levels except generator rooms were within the acceptable conditions. The major noise pollution source inside the factory may be happened due to operation of generators and they are used in case of emergency only when the electricity goes out.

### Vibration

There are two descriptions about the vibration measurement as follows.

#### ▪ Location of Vibration Measuring Point

Sr. No.	Measuring Points	Geographic Information
1.	VMP	17° 16' 46.83" N 96° 27' 24.63" E

VMP = Vibration Measuring Point



Location of Vibration Measuring Points



Status of Vibration Measurement

▪ **Vibration Measurement Results**

Summary of Vibration Monitoring Results					
Instrument ID	Date		Maximum Peak Vector Sum (mm/s)	Current Threshold (mm/s)	Remark
VMP	16/09/2021	17/09/2021	0.94	0.5	Max: PVS on 16.09.2021 5:45 PM

Maximum Peak Vector Sum is 0.94 mm/s and it is less than the Peak Particle Velocity 3 mm/s in DIN 4150. i.e. Ancient and Historic Buildings (Type-3)

**1.6.1.3 Light Intensity**

There are two descriptions about the light intensity measurement as follows.

▪ **Locations of Light Intensity Measuring Points**

Sr. No.	Measuring Points	Description
1.	LMP-1	Sewing 1
2.	LMP-2	Sewing 2
3.	LMP-3	Sewing 3
4.	LMP-4	Sewing 4
5.	LMP-5	Cutting Room
6.	LMP-6	Glue Making Room

▪ **Light Measurement Results**

Sr. No.	Measuring Points	Location	Measure Values (Lux)	Guideline Values (Lux)
1.	LMP-1	Sewing 1	487	<b>Visual Work: Production Line (300-750)</b>
2.	LMP-2	Sewing 2	385	
3.	LMP-3	Sewing 3	471	
4.	LMP-4	Sewing 4	461	
5.	LMP-5	Cutting Room	301	
6.	LMP-6	Glue Making Room	338	

According to the above table, all of the light levels were within the limits.

**1.6.1.4 Water and Wastewater Quality**

There are two descriptions about the water and wastewater quality measurement as follows.

▪ **Locations of Water and Wastewater Sampling Points**

Sr. No.	Sampling Points	Geographic Information	Description	Remarks
1.	ID-1	17° 16' 48.09" N 96° 27' 24.84" E	Tube Well-1	Water
2.	ID-1	17° 16' 47.89" N 96° 27' 28.45" E	Tube Well-2	Water
3.	ID-3	17° 16' 48.17" N 96° 27' 24.59" E	Drainage Water	Wastewater



Location of Water and Wastewater Sampling Points



Status of Water Sampling



Status of Wastewater Sampling



▪ **Result of Water Quality**

Result of Water Quality (GMES Laboratory)

Sr. No.	Parameters	Unit	Analysis Value		Minimum Measurement Range of Methods	Drinking Water Standards		
			ID-1 (Tube Well 1)	ID-2 (Tube Well 2)		WHO (2011)	EPA (Spring 2012)	Indian Specification (IS:10500, 2012)
1.	Aluminum	mg/l	0.02	0.02	<b>0.01</b>	<b>0.2</b>	<b>0.2</b>	<b>0.03</b>
2.	Arsenic	mg/l	0.01	0.02	<b>0.005</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
3.	Chloride	mg/l	17	22	<b>5</b>	<b>250</b>	<b>250</b>	<b>250</b>
4.	Copper	mg/l	ND	ND	<b>0.5</b>	<b>2</b>	<b>1</b>	<b>0.05</b>
5.	Cyanide	mg/l	ND	ND	<b>0.01</b>	<b>0.07</b>	<b>0.2</b>	<b>0.05</b>
6.	Manganese	mg/l	ND	0.28	<b>0.2</b>	<b>0.4</b>	<b>0.05</b>	<b>0.1</b>
7.	pH	-	6.32	6.38	<b>0.1</b>	<b>6.5~8.5</b>	<b>6.5~8.5</b>	<b>6.5~8.5</b>
8.	Sulfate	mg/l	ND	ND	<b>2</b>	<b>250</b>	<b>250</b>	<b>200</b>
9.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	85	112	<b>5</b>	-	-	<b>200</b>
10.	Total Dissolved Solids	mg/l	140	160	<b>1</b>	<b>600</b>	<b>500</b>	<b>500</b>
11.	Total Hardness as CaCO <sub>3</sub>	mg/l	38	25	<b>5</b>	<b>500</b>	-	<b>200</b>
12.	Total Iron	mg/l	0.1	0.3	<b>0.1</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>
13.	Turbidity	NTU	4.3	4.51	<b>0.01</b>	<b>5</b>	-	<b>1</b>

Result of Wastewater Quality (GMES Laboratory)

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Method	National Environmental Quality (Emission) Guidelines (2015) General Application
			ID-3 (Drainage Water)		
1.	5-day Biochemical Oxygen Demand	mg/l	120	<b>30</b>	<b>50</b>
2.	Arsenic	mg/l	0.025	<b>0.005</b>	<b>0.1</b>
3.	Chemical Oxygen Demand	mg/l	400	<b>30</b>	<b>250</b>
4.	Copper	mg/l	ND	<b>0.5</b>	<b>0.5</b>
5.	Oil and Grease	mg/l	8	<b>5</b>	<b>10</b>
6.	pH	-	7.08	<b>0.1</b>	<b>6~9</b>
7.	Total Cyanide	mg/l	ND	<b>0.01</b>	<b>0.1</b>
8.	Total Iron	mg/l	ND	<b>0.1</b>	<b>3.5</b>
9.	Total Suspended Solids	mg/l	130	<b>1</b>	<b>50</b>

### 1.6.1.5 Soil Quality

There are two descriptions about the soil quality measurement as follows.

- **Location of Soil Sampling**

Sr. No.	Sampling Points	Geographic Information	Description
1.	SS-1	17° 16' 48.96" N 96° 27' 33.67" E	Inside the factory compound

SS = Soil Sampling



Location of Soil Sampling Points



Status of Soil Sampling

▪ **Results of Soil Quality**

Sr. No.	Parameter	Unit	Analysis Value	Minimum Measurement Range of Methods
			SS-1	
1.	Aluminum	mg/kg soil	0.3	0.05
2.	Arsenic	mg/kg soil	0.05	0.025
3.	Chloride	g/kg soil	0.055	0.025
4.	Copper	mg/kg soil	ND	2.5
5.	Cyanide	mg/kg soil	ND	0.05
6.	Extractable Acidity	cmol/kg soil	3.35	0.25
7.	Manganese	mg/kg soil	7.05	1
8.	P-Alkalinity	mmol/l extract	0	0.2
9.	pH	-	6.56	0.1
10.	Total Alkalinity	mmol/l extract	1.7	0.2
11.	Total Iron	g/kg soil	5	0.5

The above results are noted as baseline data and it will compare with the future results. Comparison will show better or worse.

**1.6.2 Natural Environment/ Physical Component (Secondary Data)**

**1.6.2.1 Physical Environment**

Physical environment essentially illustrates baseline conditions of climate, topography, geology, soils and hydrology of the project area, where necessary, of proposed project regardless of an assessment study. These data are extracted from the regional facts about Bago District, Bago Township prepared by the Administrative Department of Township (2020) and study area is an area of that township.

There are 5 categories as follows.

- Climate
- Topography
- Geology
- Soil
- Hydrology

**1.6.2.2 Biological Component**

At this heading, the natural vegetation and animals are shown, extracted from secondary data.

**1.6.2.3 Socio-economic Status**

Socio-economic status of Bago Township is summarized as

- Population (442,022 people in 2020)
- Ethnicity
- Religion
- Local Economy and Livelihood

- Land Use
- Education Attainment
- Connectivity
- Health Facility
- Economic Infrastructure

## 1.7 Impact Assessment and Mitigation Measures

**Cobes Industries (B II) Company Limited** project could create an impact on the environment in two distinct phases.

- Temporary on short-term effects during the construction phase and decommissioning phase and
- Long-term effects during the operation phase.

These are also shown as

- ❖ Impact Assessment
- ❖ Methodology in Assessing Impacts
- ❖ Construction Phase (impact, adverse impacts and mitigation measures)
- ❖ Operation Phase
- ❖ Potential Impacts during Decommissioning Phase

From the above facts, comparison of impact significance before and after mitigation measures for operation phase and decommissioning phases are extracted as follows.

### Comparison of Impact Significance before and after Mitigation Measures during Operation Phase

Sr. No.	Environmental Component	Before Mitigation Measures		After Mitigation Measures		Less/More
		Rating	Significance	Rating	Significance	
1.	Air Quality	80	Moderate	60	Minor	-20
2.	Ground Water Quality	60	Minor	54	Minor	-6
3.	Surface Water Quality	60	Minor	54	Minor	-6
4.	Wastewater Generation	80	Moderate	54	Minor	-26
5.	Soil Quality	80	Moderate	54	Minor	-26
6.	Noise	80	Moderate	54	Minor	-26
7.	Solid Waste Generation	80	Moderate	54	Minor	-26
8.	Traffic Jam	80	Moderate	54	Minor	-26

### Evaluation of Impact Significance before and after Mitigation and Comparison during Decommissioning Phase

Environmental Component	Before Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						After Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						Less/More
	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	
Air Quality	3	3	4	8	80	Mod (-)	3	3	3	6	54	Minor (-)	-26
Water Quality	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6

Environmental Component	Before Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						After Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						Less/ More
	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	
Soil Quality	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6
Noise	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6
Solid Waste Generation	3	3	5	8	88	Mod (-)	3	3	3	6	54	Minor (-)	-34
Liquid Waste Generation	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6
Fire Hazard	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6

### 1.7.1 Best Management Practices

Under the above heading, there are categories are summarized as follows.

- Energy Use
- Water Use
- Hazardous Chemical Use
- Solid Waste Generation and Management

### 1.7.2 Corporate Social Responsibility

Cobes Industries (B II) Company Limited has a plan to allocate 2 % of gross profit earned from the business for a CSR Fund.

- ❖ 25% for supporting scholarship to education of employees from workshop, institution for school age children of the employees, to grant stipend for continuing the study of higher education (College University) level etc.
- ❖ 25% for basic health care of the employees by opening medical clinics within the factory compound, perfection of medical equipments in clinic, preparing the medicines and first-aid treatment for emergency healthcare program and providing allowances when any of the employee families suffer from illness.
- ❖ 25% for increasing knowledge with respect to Manufacturing and Marketing to improve working skills of the employee of factory, for undertaking systematic training course per rank, hierarchy to become skillful workers of higher productivity along with proficiency in particular field of works.
- ❖ 25% for creating necessary recreations of factory employees peace and harmony, having good air ventilation in works to become convenience while working and to allow easy access in other communication programs and for higher living standards.

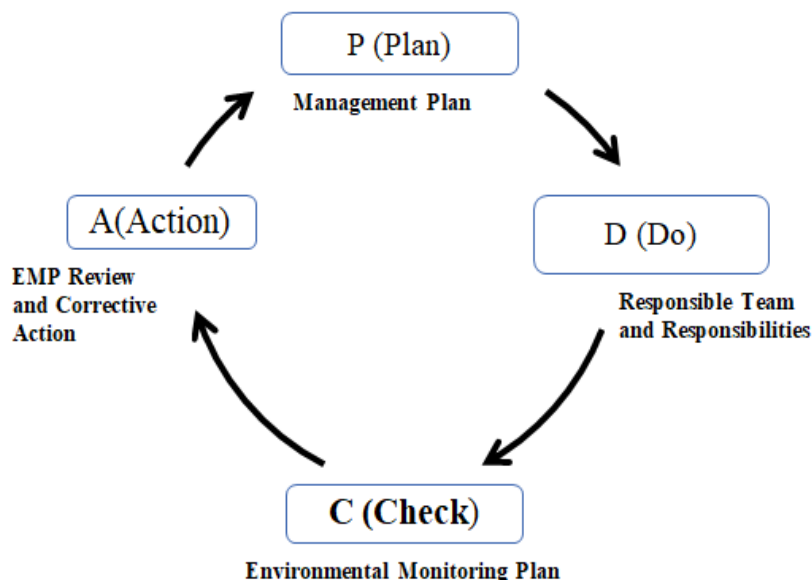
There are also

- Plan for health
- Plan for the employees of factory with welfare and peace and harmony (Transportation for office staffs; providing awards in punctually of work; housing plan for employees; opening canteen for employees

welfare; providing peace and harmony of the compound of work and a plan for injury)

## 1.8 Environmental Management Plan and Monitoring Plan

### 1.8.1 Structure



Basic Principle of Environmental Management Plan

### 1.8.2 Environmental Management Committee (EMC)

List of Environmental Management Committee (EMC)

Sr. No.	Name	Position/ Duty in EMC	Name of Affiliated Department / Title	Responsibilities in EMC
1.	Mr. Dong Shu Yin	Chairman	General Manager	<ul style="list-style-type: none"> <li>▪ To support the implementation of the environmental management plan (EMP) and environmental monitoring plan (EMoP)</li> <li>▪ To monitor and assess the implementation of EMP and EMoP</li> <li>▪ To discuss the results of EMP with the other EMC members</li> </ul>
2.	Daw Khin Mar Aye	Member	HR Manager	<ul style="list-style-type: none"> <li>▪ To monitor the parameters described in EMP</li> <li>▪ To prepare the monitoring report</li> <li>▪ To communicate with residents</li> </ul>

Sr. No.	Name	Position/ Duty in EMC	Name of Affiliated Department / Title	Responsibilities in EMC
				<ul style="list-style-type: none"> <li>▪ To participate in any environmental and emergency activities</li> <li>▪ To give suggestions for improving EMP</li> </ul>
3.	Daw Tin Zar Oo	Member	Supervisor (Sewing)	<ul style="list-style-type: none"> <li>▪ To notify about the location of fire leakage immediately proceed to the help</li> <li>▪ To participate in any health-care activities for both employees and communities</li> <li>▪ To give suggestions for improving EMP</li> </ul>
4.	Daw Kyi Lae Lae Win	Member	Supervisor (Sewing)	<ul style="list-style-type: none"> <li>▪ To inform the environmental team at one when find out some problems to occur</li> <li>▪ To follow the EMP and aware of environmental impacts</li> <li>▪ To participate in any environmental and emergency activities</li> </ul>
5.	U Thar Aye	Member	EP	<ul style="list-style-type: none"> <li>▪ To response the accident, incident, injuries and complaints from employees</li> <li>▪ To monitor environmental aspects in workplace</li> <li>▪ To report to General Manager</li> </ul>

### 1.8.3 Environmental Management Plan

The following plans were prepared for the project.

- ❖ Air Pollution and Dust Management Plan
- ❖ Noise and Vibration Management Plan
- ❖ Solid Waste Management Plan
- ❖ Hazardous Chemicals or Other Substance Handling, Storage and Disposal Management Plan
- ❖ Energy and Resource Management Plan
- ❖ Drainage Management Plan
- ❖ Emergency Response and Disaster Management Plan

The above plans are shown at Table7-2 in detailed statements including estimated budgets.

#### 1.8.4 Environmental Monitoring Plan

Environmental Monitoring Plan for operation phase and decommissioning phase is stated at Table 7-3 including location, monitoring frequency and responsibility.

#### 1.8.5 Estimated Cost for Environmental Monitoring

Estimated Cost for Environmental Monitoring for operation phase and decommissioning phase are 22,360,000 MMK and 3,950,000 MMK respectively and information are shown at section 7.8.

#### 1.8.6 Grievance Redress Mechanism (GRM)

Grievance Redress Mechanism (GRM) is shown at section 7.7 including workplace coordinating committee as the following table.

Workplace Coordinating Committee (WCC) Team

No.	Name	Designation	Position of WCC
1.	Mr. Dong Shu Yin	General Manager	Employer Representative
2.	Daw Khin Mar Aye	HR Manager	Employer Representative
3.	Daw Tin Zar Oo	Supervisor (Sewing)	Employee Representative
4.	Daw Kyi Lae Lae Win	Supervisor (Sewing)	Employee Representative
5.	U Thar Aye	EP	Employee Representative

#### 1.8.7 Emergency Plan and OHS

Emergency Plan and OHS are shown section 7.9 and 7.10 including evacuation routes; operating a fire extinguisher; safety issues and medical emergency.

### 1.9 Public Consultation and Disclosure

On 16<sup>th</sup> September 2021, the consultation meeting for factory employees was held in factory canteen of **Cobes Industries (B II) Company Limited**. There are 30 employees attended and 31 suggested letters were collected. The opinions and suggestions are fulfilled by project side. Details are shown at section 8.3.

The Public Consultation Meeting (PCM) for IEE will be planned in order to collect opinions and feedback of the public and to disseminate information on the IEE study of the project. Cobes Industries (B II) Company Limited will plan to take the public consultation meeting collaborated with GMES. However, the public consultation meeting program is not carried out due to the COVID-19 situation and National Security situation. If the possible situation reaches, it will be carried out with the instruction of the Environmental Conservation Department (ECD) to be complied and then resubmit PCM included version of the IEE report.

### 1.10 Conclusion and Recommendations

During the preparation of IEE report, it was observed that most of the negative impacts on the environment are largely localized. The negative environment impacts that will result from the project include waste generation, emissions and fire hazards during operation which, however, can be mitigated if adequate control measures are taken into account. Based on this



environmental study, environmental management and mitigation measures are proposed to ensure that there are no environmental impacts that exceed acceptable levels.

In conclusion, the project will have overall beneficial impacts in reducing air pollution, dust, and improving socioeconomic conditions along the project corridor, and will have insignificant negative impacts, which will be carefully monitored and adequately mitigated.

## 2.0 INTRODUCTION

### 2.1 Background

An Initial environmental examination (IEE) report was prepared for Cobes Industries (B II) Company Limited. It is located at Plot No. (N1<sup>B</sup>), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9<sup>th</sup>) Quarter, Bago Township, Bago Region, Myanmar.

It is a 100% foreign investment company formed in accordance with the Republic of the Union of Myanmar Investment Law and the total capital of the investment business is USD 1 Million and later increased up to USD 5.674 Million.

On September 2021, Green Myanmar Environmental Services Company Limited (GMES) was requested by Cobes Industries (B II) Company Limited to provide professional consultation service to “Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis” Project and assist the submission of the Initial Environmental Examination (IEE) Report to the Environmental Conservation Department (ECD), Ministry of Natural Resources and Environmental Conservation (MONREC).

This report is prepared for assessing the environmental impact due to the construction, operation and decommissioning of the factory. Thus, it is prepared in accordance with the existing policy, laws, rules, and instructions and submitted as a requirement to receive the Environmental Compliance Certificate (ECC) from the Ministry of Natural Resources and Environmental Conservation (MONREC).

### 2.2 Type of EMP/IEE and EIA Requirement

Type of Project: Manufacturing of Non-Sterilized Disposable Surgical Scrubs and Related Kind of Clinical Wears on CMP Basis

Daily Production Capacity: about 30,000 Pcs

Total Project Area: Lease 7.1 Acres of Total Land Area 16 Acres

In accordance with the Article (116) in Annex A, Project Categorization for Assessment Purposes of EIA Procedures (2015) stipulated by the Ministry of Natural Resources and Environmental Conservation (MONREC), this project cannot be categorized in this Annex A.

On 14<sup>th</sup> July 2021, Environmental Conservation Department (ECD), Bago Region issued the Letter No. Baho/EIA (1364/2021) to Cobes Industries (B II) Company Limited to undertake Initial Environmental Examination (IEE) report and submit this IEE report to ECD, MONREC. This document is shown as **Appendix 1**.

### 2.3 Objectives of the IEE

The main objective of IEE study is to prepare an IEE report in order to implement the proposed project in an environmentally sound manner. The specific objectives of the IEE study include:

- ❖ To identify the impacts of physical, biological, socioeconomic and cultural environment of the project area,
- ❖ To identify the major issues that may arise as a result of proposed works on physical, biological, socioeconomic and cultural environment of the project area,
- ❖ To recommend environmental mitigation and enhancement measures for the impacts,
- ❖ To prepare and implement an Environmental Monitoring Plan (EMoP) for the project,
- ❖ To confirm that the IEE is sufficient for the proposed project.

## 2.4 Methodology Adopted

Most of the environmental and social data for the study area were obtained from field investigation, stakeholder participation, publications and national statistics information. Field investigations were done in September 16, 2021 and September 17, 2021. Necessary information was also collected through relevant stakeholder consultations, field investigation, literature review and experiences from previous projects of a similar nature.

## 2.5 Identification of the Project Proponent

### 2.5.1 Proponent Information

The proposed project is operated with 100% foreign investment as per MIC permit.

Table 2-1 Proponent Information

Company Registration Number	121497387 (27.7.2019)
Established Time	7.2.2019
Date of Test Run	1.4.2020
Date of Commercial Run	-
<b>Contact Person for IEE Report Preparation</b>	
Name	Daw Khin Mar Aye
Designation	HR Manager
Telephone	959- 404 544 447, 959- 774 927 2171
Email	<a href="mailto:khinmaraye@cobeshk.com">khinmaraye@cobeshk.com</a>
<b>Contact Details</b>	
Project Address	Plot No. (N1 <sup>B</sup> ), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9 <sup>th</sup> ) Quarter, Bago Township, Bago Region, Myanmar.
Telephone	959- 671 308 989
Email	<a href="mailto:david@cobeshk.com">david@cobeshk.com</a>

### 2.5.2 List of Shareholders

Cobes Industries (B-II) Company Limited (CIC) has significant experience in finance, accountancy and management. Type of business organization to be performed is one hundred percent foreign investment.

Table 2-2 List of Shareholders

Sr. No.	Name of Shareholders	Citizenship	Share Percentage
(A)	Cobes Industries Co., Ltd. Represented by its Directors:  (1) Mr. Guo, Chunwei (2) Mr. Yongzhi, Li	Incorporated in Republic of China Registration No. 977470 Chinese Chinese	100%

### 2.5.3 List of Directors and Executives

The directors of CIC are listed in **Table 2-3**.

Table 2-3 List of Directors

Sr. No.	Name	Gender	Citizenship	Passport No.	Date of Birth	Designation
1.	Mr. Guo, Chunwei	Male	Chinese	E 26362396	20.8.1983	Managing Director
2.	Mr. Yongzhi, Li	Male	Chinese	G 44637128	18.2.1965	Director

### 2.5.4 Organization Chart

The organization is structured to provide flexibility, a high level of personal accountability and responsibility while also motivating cross training and sharing of responsibilities, the need arises and circumstances permit. The following figure describes the organization chart of the project proponent. The following figure shows the organization chart of CIC.

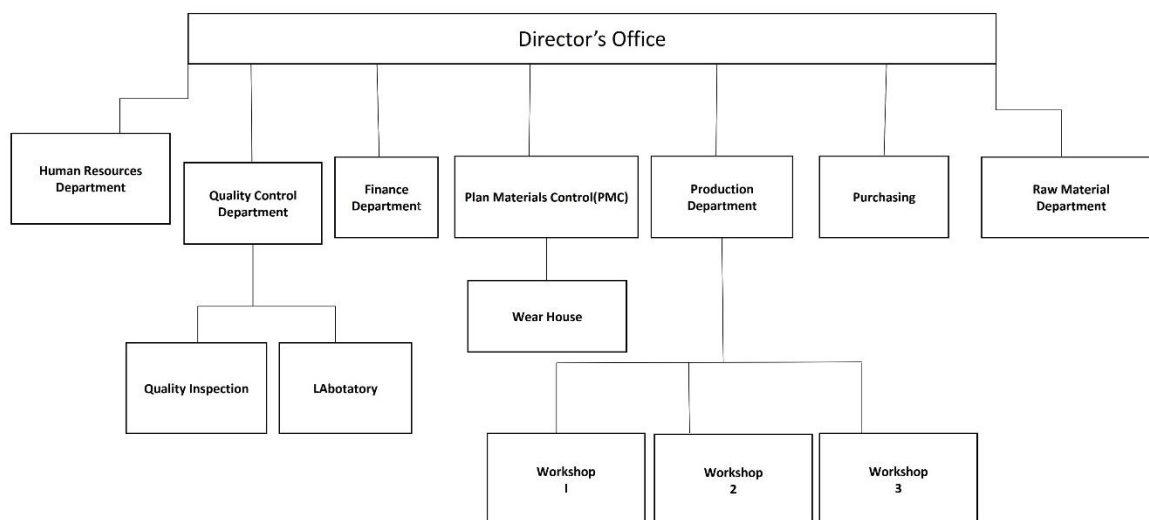


Figure 2-1 Organization Chart of the Project Proponent

## 2.6 Initial Environmental Examination (IEE) Study Team

The planning and conduct of the IEE report of the proposed project was carried out by a team of Green Myanmar Environmental Services Company Limited (GMES) which is registered in ECD having with Transitional Consultant Registration Number of Organization

No.0006, together with the support of Daw Khin Mar Aye, HR manager from Cobes Industries (B-II) Company Limited (CIC).

The details of Information of the study team are described in **Table 2-4** and **Table 2-5**.

The transitional consultant registration certificates for organization and personal are attached in **Appendix 2** and **Appendix 3**.

Table 2-4 Organization in Charge of IEE Implementation

<b>Organization Name</b>	Green Myanmar Environmental Services Co., Ltd. (GMES)
<b>Transitional Consultant Registration Number</b>	0006
<b>Company Registration Number</b>	110299931
<b>Office Address</b>	No. 115, Kanaung Min Thar Gyi Road, Hlaing Thar Yar Industrial City, Industrial Zone (1), Hlaing Thar Yar Township, Yangon Region, Myanmar.
<b>Telephone</b>	+95-9-897 978 296
<b>Email</b>	<a href="mailto:info@gmes-mm.com">info@gmes-mm.com</a> , <a href="mailto:gmescompany@gmail.com">gmescompany@gmail.com</a>

Table 2-5 Organization of the GMES’s IEE Study Team

<b>Sr. No.</b>	<b>Title of Post</b>	<b>Terms of Reference</b>	<b>Nominee, Organization &amp; Transitional Consultant Registration Number</b>
1.	Team Leader	<ul style="list-style-type: none"> <li>▪ Overall management of IEE operation</li> <li>▪ Work plan</li> <li>▪ Technical meeting &amp; workshop</li> <li>▪ Document reviewing and process flow studying</li> <li>▪ Lead and facilitation of public consultation</li> <li>▪ Data compilation &amp; analysis</li> <li>▪ Coordination with stakeholders</li> </ul>	Engr. U Kyaw Soe Win Managing Director Green Myanmar Environmental Services Co., Ltd.  Experience in IEE processing  No.0019
2.	Technical Advisor	<ul style="list-style-type: none"> <li>▪ Design of IEE</li> <li>▪ Technical meeting and workshop</li> <li>▪ Monitoring of IEE process</li> <li>▪ Public consultation meeting</li> <li>▪ Quality control and check</li> <li>▪ Data compilation and analysis</li> </ul>	Daw Kyaw Kyaw Win Retired Director Myanmar Petrochemical Enterprise, Ministry of Electricity and Energy
3.	Environmental Consultant	<ul style="list-style-type: none"> <li>▪ Advise on the design of IEE</li> <li>▪ Develop term of reference for duty and responsibility among IEE team</li> <li>▪ Advise on the environmental baseline</li> <li>▪ Advise on the field survey</li> <li>▪ Facilitate technical analysis</li> </ul>	Engr. Daw Khin Swe Aye Former Lecturer, Chemical Engineering Dept., Yangon Technological University  No.0021

Sr. No.	Title of Post	Terms of Reference	Nominee, Organization & Transitional Consultant Registration Number
		<ul style="list-style-type: none"> <li>▪ Streamline the Initial Environmental Examination (IEE)</li> </ul>	
4.	Consultant (Air Quality Management)	<ul style="list-style-type: none"> <li>▪ Give advice on collecting field data for air quality</li> <li>▪ Assist on air quality control system</li> <li>▪ Give advice on air pollution evaluate and mitigation</li> <li>▪ Give advice for data processing, computing, projection, modeling and analysis</li> <li>▪ Give advice in report preparation</li> </ul>	Engr. U Sein Thaung Oo Chairman Green Myanmar Environmental Services Co., Ltd.  No.0023
5.	Consultant (Wastewater Management)	<ul style="list-style-type: none"> <li>▪ Collecting field data for project activities and municipal waste</li> <li>▪ Assist in laboratory testing</li> <li>▪ Data processing, computing, projection, modeling and analysis</li> <li>▪ Assist in report preparation</li> </ul>	Engr. Daw Tin May Soe Retired Professor & Head, Chemical Engineering Dept., Mandalay Technological University  Experience in environmental toxicology and pollution control  No.0028
6.	Consultant (Laboratory Analysis)	<ul style="list-style-type: none"> <li>▪ Advise on data processing and laboratory testing</li> <li>▪ Prepare instruction for laboratory testing</li> <li>▪ Check the result of environmental laboratory testing</li> <li>▪ Compare the laboratory result and verification</li> </ul>	U Myo Myint Retired Factory Manager Ministry of Industry (1)  No.0026
7.	Consultant (Environmental Quality Management)	<ul style="list-style-type: none"> <li>▪ Assist in preparation of guideline for environmental sampling of air and water quality</li> <li>▪ Monitor the sample collection</li> <li>▪ Register and inspect the sample collected</li> <li>▪ Assist in report preparation for environmental baseline</li> </ul>	Daw Khin Shwe Htay Former Lecturer, Chemical Engineering Dept., Yangon Technological University  Environmental Engineer  No.0022
8.	Social Operation and Field Coordinator	<ul style="list-style-type: none"> <li>▪ Facilitate the technical meeting and record keeping</li> <li>▪ Assist in data mining and secondary data collection</li> </ul>	U Khin Aung Social Specialist Green Myanmar Environmental Services Co., Ltd.

Sr. No.	Title of Post	Terms of Reference	Nominee, Organization & Transitional Consultant Registration Number
		<ul style="list-style-type: none"> <li>▪ Coordinate with local authority and communities</li> </ul>	No.0025
9.	Field Supervisor	<ul style="list-style-type: none"> <li>▪ Develop operational checklist for environmental study</li> <li>▪ In charge for preliminary field visit</li> <li>▪ Supervise field survey</li> <li>▪ Finalize checking for report and report formatting</li> </ul>	U Kyi Han Bo B.E (Aerospace Fuel and Propellant Engineer)
10.	Environmental Experts	<ul style="list-style-type: none"> <li>▪ Data collection</li> <li>▪ Document reviewing</li> <li>▪ Process studying</li> <li>▪ Preparation of impact evaluation and assessment, and management plan</li> <li>▪ Report preparing and formatting</li> </ul>	Daw Aye Thuzar Hein B.E (Chemical)  Daw Hnin Htet Htet Hlaing B.E (Port and Harbor)  Daw Wai Wai Mon B.E (Port and Harbor)  Daw No No Hnin Nu Nway B.E (Port and Harbor)
11.	Environmental Monitoring Team	<ul style="list-style-type: none"> <li>▪ Environmental baseline measuring</li> <li>▪ Data analysis</li> <li>▪ Environmental baseline mapping</li> <li>▪ Environmental baseline report preparing and formatting</li> </ul>	U Pyae Phyoo Kyaw B.Sc (Forestry) (Monitoring Team Leader)  U Myo Thet Naung B.E (Aerospace Fuel and Propellant Engineer) (Assistant Team Leader)  U Aung Ko Min B.E (Chemical) (Monitoring Technician)  U Thiha Zaw (Assistant Monitoring Technician)
12.	Public Coordinator	<ul style="list-style-type: none"> <li>▪ Assist in stakeholder meeting</li> <li>▪ Document preparation and invitation</li> <li>▪ Preparation of document for public consultation meeting</li> <li>▪ Taking suggestion from public consultation meeting</li> </ul>	U Aung Kyaw Than B.E (Chemical)

Sr. No.	Title of Post	Terms of Reference	Nominee, Organization & Transitional Consultant Registration Number
13.	Laboratory Experts	<ul style="list-style-type: none"> <li>▪ Preparation for water and wastewater sampling</li> <li>▪ Preparation for laboratory testing</li> <li>▪ Laboratory testing</li> <li>▪ Reporting for laboratory results</li> </ul>	<p>Daw Wint Phyu Htway B.E (Chemical)</p> <p>U Thet Min Paing B.E (Chemical)</p> <p>Daw Tun Eaindra Soe B.E (Chemical)</p>

## 2.7 Structure of the Report

This report was compiled and presented in (9) chapters including executive summary. An Executive Summary is also prepared and presented in both Myanmar and English Languages in the report. The report structure is as shown below.

Table 2-6 Structure of the Report

Sr. No.	Chapter	Content
1.	Chapter 1	<b>Executive Summary</b> Provides an overview of the main findings of the study. (Both in Myanmar and English Languages)
2.	Chapter 2	<b>Introduction</b> Provides the details of the project proponent and the IEE study team, the methodology and scope of work.
3.	Chapter 3	<b>Policy, Legal and Institutional Framework</b> In accordance with the IEE Regulations, all legislation and guidelines that have been considered in this Chapter.
4.	Chapter 4	<b>Description of the Project</b> Provides an overview of the proposed project, project location, project activities (technical design specifications), and the details of the project, waste management alternatives.
5.	Chapter 5	<b>Description of the Current Environmental and Social Conditions</b> This Chapter provides a description of the current environmental and social conditions of the proposed project site and its surrounding environment.
6.	Chapter 6	<b>Impact Assessment and Mitigation Measures</b> The Chapter describes key Environmental issues associated with the proposed project and mitigation measures relevant to the operation and were subjected to the impact assessment.
7.	Chapter 7	<b>Environmental Management Plan and Monitoring Plan</b> Management plan for the impacts due to the project activities, roles and responsibilities of stakeholders involved in the implementation of the environmental plan during operation are described.



<b>Sr. No.</b>	<b>Chapter</b>	<b>Content</b>
<b>8.</b>	<b>Chapter 8</b>	<b>Public Consultation and Disclosure</b> This chapter describes the employee discussion program with workers/employees and public consultation meeting with local residents.
<b>9.</b>	<b>Chapter 9</b>	<b>Findings, Conclusions and Recommendations</b> This chapter presents the main findings, conclusions of the report and recommendations for future action to be taken.

A number of appendices contain additional information and details referred to in the main text.

## **3.0 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK**

### **3.1 Background**

The emerging environmental scenario calls for attention on conservation and judicious use of natural resources. There is a need to integrate the environmental consequences of the development activities and for planning suitable measures in order to ensure sustainable development. The environmental considerations in any developmental process have become necessary for achieving sustainable development. To achieve such goals, the basic principles to be adopted are:

- To enhance the quality of environment in and around the project area by adopting proper measures for conservation of natural resources;
- To prevent adverse environmental and social impact to the maximum possible extent;
- To mitigate the possible adverse environmental and socio-economic impact on the project-affected areas.

Policy, legal and institutional framework of the proposed project relating to the environmental, social, health and economic conditions are discussed in this section.

### **3.2 Policy Framework**

This section highlights the relevant environmental policies established by the Government of Myanmar for purposes of environmental protection towards the process of sustainable development. The Government, through the Ministry of Natural Resources and Environmental Conservation (MONREC), has established environmental policies which broadly aim at:

- Encouraging respect for the environment by all and being mindful and taking care of the environment;
- Ensuring environmental issues are integrated with economic matters to attain sustainable development;
- Reviewing and evaluating development plans to ensure they follow the set environmental guidelines/policies;
- Encouraging the public to take part in environmental matters so as to enlighten them on the same hence improve on environmental performance.

### **3.3 Myanmar Regulatory Framework in Environmental Assessment**

Myanmar Government issued:

- National Environmental Policy in 2019,
- Myanmar Agenda 21 in 1997,
- National Sustainable Development Strategy in 2009,
- The Environmental Conservation Law in 2012,
- The Environmental Conservation Rules in 2014,

- Environmental Impact Assessment Procedure and National Environmental Quality (Emission) Guidelines in 2015.

### **3.3.1 National Environmental Policy of Myanmar (2019)**

Myanmar National Environmental Policy, which already included for social policy, subsequently gazette on 10th June 2019 is as follows:

To establish sound environment policies in the utilization of water, land, forests, marine resources and other natural resources in order to conserve the environment and prevent its degradation, the Government of the Union of Myanmar hereby adopts the following policy:

*“The wealth of a nation is its people, its cultural heritage, its environment and its natural resources.”*

The objective of Myanmar’s environment policy is aimed at achieving harmony and balance between these through the integration of environmental considerations into the development process to enhance the quality of the life of all citizens.

Every nation has the sovereign right to utilize its natural resources in accordance with its environmental policies, but great care must be taken not to exceed its jurisdiction or infringe upon the interests of other nations. It is the responsibility of the state and citizen to preserve its natural resources in the interest of present and future generations. Environmental protection should always be the primary objective in seeking development.”

### **3.3.2 Myanmar Agenda 21 (1997)**

The commission also formulated a blueprint, the Myanmar Agenda 21, in 1997 as a follow up of national environmental policy in response to the call of the Earth Summit to develop national strategies to implement the Global Agenda 21. Myanmar Agenda 21 serves as a framework for integrating environmental considerations in future national development plans as well as sectorial and regional development plans in Myanmar and recognizes the need of environmental impact assessment, integrated economic development and sustainable social development respectively.

### **3.3.3 National Sustainable Development Strategy (2009)**

National Sustainable Development Strategy was formulated to implement the National Environmental Policy in 2009 by Ministry of Forestry with the vision of wellbeing and happiness of Myanmar people. Three overarching goals identified are sustainable management of natural resources; integrated economic development and sustainable social development. In order to achieve these goals, a series of objectives are set along with activities. In addition, leading institution and collaboration institutions are identified to perform the activities.

### **3.3.4 The Environmental Conservation Law (2012)**

The principle law governing environmental management in Myanmar is the Environmental Conservation Law, which was issued in March, 2012 (The Pyidaungsu

Hluttaw Law No.9/2012). The law stipulates that government bodies are in charge of environmental conservation as well as their relevant roles and responsibilities. It touches on water, noise, vibration and solid waste qualities but does not provide specific standards to be met.

It also mentions that any new development project must perform a system of Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) in order to find out 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 or not. In the context of project development, it is important to note that the law adopts the notion of ‘Polluter Pays Principle’ as it implies that the project proponents are responsible for covering all environmental and social costs generated by the project.

The law serves as the basic for founding of Environmental Conservation Department (ECD) under the Ministry of Natural Resources and Environmental Conservation (MONREC), both of which will be explained later. Following the Environmental Conservation Law are two legal instruments: Environmental Conservation Rules (2014) and EIA Procedures (2015).

The main objectives of Environmental Conservation Law related to this Project are abstracted from **Section 3** as follows.

1. 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;
2. To reclaim ecosystems as may be possible which are starting to generate and disappear;
3. To enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially;

As the important reference, the following sections are excerpted: Section 7 for provisions of duties and powers of MONREC, Section 10 for Environmental Quality Standards, Section 13 for monitoring as well as Section 14 and Section for polluter’s responsible.

***Section 7: Duties and Powers relating to the Environmental Conservation of the Ministry***

- (g) 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;
- (h) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment;
- (i) 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.

### ***Section 10: Environmental Quality Standards***

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 13: Monitoring***

The Ministry shall, under the guidance of the Committee, maintain a comprehensive monitoring system and implement by itself or in co- ordination with relevant Government departments and organizations in the following matters:

- (a) The use of agro- chemicals which cause to impact on the environment significantly;
- (b) Transport, storage, use, treatment and disposal of pollutants and hazardous substances in industries;
- (c) Disposal of wastes come out from exploration, production and treatment of minerals, industrial mineral raw materials and gems;
- (d) Carrying out waste disposal and sanitation works;
- (e) Carrying out development and constructions;
- (f) Carrying out other necessary matters relating to environmental pollution.

**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 special economic zone or category of business stipulated by the Ministry:

- (a) is responsible to carry out by contributing the stipulated cash or kind in the relevant combined scheme for the environmental conservation including the management and treatment of waste;
- (b) shall contribute the stipulated users charges or management fees for the environmental conservation according to the relevant industrial estate, special economic zone and business organization;
- (c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, special economic zone or business.

**Section 24:** The Ministry may, in issuing the prior permission, stipulate terms and conditions relating to environmental conservation. It may conduct inspection whether or not it is performed in conformity with such terms and conditions or inform the relevant Government departments, Government organizations to carry out inspections.

**Section 29:** No one shall violate any prohibition contained in the rules, notifications, orders, directives and procedures issued under this Law.

### **3.3.5 The Environmental Conservation Rules (2014)**

Environmental Conservation Rules provide a platform to bridge the Environmental Conservation Law with more specific and practical rules and guidelines including EIA Procedures and environmental quality standards, the rules stipulate that the Ministry of Environmental Conservation and Forestry will adopt and carry out the environmental impact assessment system which includes determination of categories of plans, business or activity that requires Environmental Impact Assessment (EIA).

**Rule 55:** The Government department, organization or person which carry out the plan, business service or activity which are responsible to carry out the environmental impact assessment or initial environmental examination which is established before the issue of these rules;

- (a) shall submit to the Ministry, after drawing environment management plan in accord with the procedure relating to the environmental impact assessment.

(b) shall implement and carry out the environment management plan which approved and scrutinized by the Ministry and matters stipulated by the Ministry within the time stipulated by the Ministry.

**Rule 61:** The Ministry may approve and reply on the EIA report or IEE or EMP with the guidance of the Committee.

**Rule 66: Prohibitions**

(a) Any person shall not emit, cause to emit, dispose, cause to dispose, pile and cause to pile, by any means, the pollutants to environment and the hazardous waste or hazardous material stipulated by notification under the Law and any of these rules at any place which may affect the public directly or indirectly.

(b) Any person shall not carry out the actions which can be damaged to natural environment which is changing due to ecosystem and such system, except the permission of the relevant Ministry in order to the interest of the public.

**3.3.6 Environmental Impact Assessment Procedure (2015)**

The objectives of the EIA procedures are to provide a common framework for EIA reporting and to ensure that EIA reporting is in line with legal requirements, good practices and professional standards.

**Section 76:** For Project types which require EMP according to the Article 55 (a) of the Rules or Article 24 of the Procedure, the Project Proponent may prepare an EMP by itself or may appoint a person or organization who/which is registered according to the Article 18.

**Section 77:** The Project Proponent shall issue a letter of endorsement in a format prescribed by the Ministry according to the Article 63. Such letter shall be submitted to the Department prepared either in the Myanmar language, or in the English language or both. The Project Proponent shall submit the EMP to the Department in both digital form and complete paper copies, together with the required service fee as prescribed by the Department, and confirming that:

- (d) the accuracy and completeness of the EMP;
- (e) the EMP has been prepared in strict compliance with applicable laws including this Procedure; and
- (f) the Project will at all times comply fully with the commitments, mitigation measures, and plans in the EMP.

**Section 78:** Upon Receipt of the EMP from the Project Proponent, the Department shall review and submit to the Ministry to enable it to make a final decision on approval of the EMP.

**Section 79:** If it is determined by the Ministry that the EMP does not satisfy requirements, then the Project Proponent shall be called upon by the Department to undertake necessary amendments and/or to provide supplementary information as directed by the Ministry.

**Section 80:** Upon completion of its review of the EMP, the Ministry shall;

- (a) approve the EMP, subject to any conditions it may prescribe, and issue an ECC; or
- (b) require that the Project carry out an IEE or EIA, citing the reasons for this decision and informing the Project Proponent of its decision; and, in either case
- (c) publicly disclose its decision.

**Section 81:** The Department shall deliver the final decision of the Ministry within thirty (30) working days of receipt of an EMP. If the Ministry requires an EMP to be amended, then the due date for delivery of the Ministry's decision shall be extended accordingly.

**Section 102:** The Project Proponent shall bear full legal and financial responsibility for:

- (a) all of the Project Proponent's actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the Project acting for or on behalf of the Project, in carrying out work on the Project; and
- (b) PAPs until they have achieved socio-economic stability at a level not lower than that in effect prior to the commencement of the Project, and shall support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts.

**Section 103:** The Project Proponent shall fully implement the EMP, all Project commitments, and conditions, and is liable to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project.

**Section 104:** The Project Proponent shall be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.

**Section 105:** The Project Proponent shall timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.

**Section 106:** The Project Proponent shall, during all phases of the Project (pre-construction, construction, operation, decommissioning, closure and post-closure), engage in continuous, proactive and comprehensive self-monitoring of the Project and activities related thereto, all Adverse Impacts, and compliance with applicable laws, the Rules, this Procedure, standards, the ECC, and the EMP.

**Section 107:** The Project Proponent shall notify and identify in writing to the Ministry any breaches of its obligations or other performance failures or violations of the ECC and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of the Ministry is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of the Project Proponent becoming aware of such incident.



**Section 108:** The Project Proponent shall submit monitoring reports to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP, or periodically as prescribed by the Ministry.

**Section 109:** The monitoring reports shall include:

- (a) documentation of compliance with all conditions;
- (b) progress made to date on implementation of the EMP against the submitted implementation schedule;
- (c) difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties;
- (d) number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation;
- (e) accidents or incidents relating to the occupational and community health and safety, and the environment; and
- (f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required.

**Section 113:** For purposes of monitoring and inspection, the Project Proponent:

- (a) shall grant to the Ministry and/or its representatives, at any time during normal working hours, access to the Project’s offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed; and
- (b) from time to time as and when the Ministry may reasonably require, shall grant the Ministry access to the Project’s offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed.

**Section 115:** In the event of an emergency, or where, in the opinion of the Ministry, there is or may exist a violation or risk of violation of the compliance by the Project with all applicable environmental and social requirements, the Project shall grant full and immediate access to the Ministry at any time as may be required by the Ministry.

**Section 117:** The Project Proponent shall further ensure that the Ministry’s rights of access hereunder shall extend to access by the Ministry to the Project’s contractors and subcontractors.

### **3.3.7 National Environmental Quality (Emission) Guidelines (2015)**

The objective of these national guidelines is to provide the basis for regulation and control of noise and vibration, air emissions, liquid discharges from various sources. According to these guidelines, all projects subject to EIA procedure have to comply with and refer to applicable national guidelines standards or international standards adopted by the Ministry. In addition, a project proponent shall be responsible for the monitoring of their compliance with general and applicable industry- specific guidelines as specified in the EMP and ECC (Environmental Compliance Certificate).

In addition, the Project Proponent is responsible to monitor the environmental quality based on the developed EMP as specified in the following sections.

**Section 12:** As specified in the EIA Procedure, projects shall engage in continuous, proactive and comprehensive self- monitoring of the project and comply with applicable guidelines and standards. For purposes of these Guidelines, projects shall be responsible for the monitoring of their compliance with general and applicable industry-specific Guidelines as specified in the IEE and ECC.

**Section 13:** Air emissions, noise, odor, and liquid/ effluent discharges will be sampled and measured at points of compliance as specified in the project IEE and ECC.

### 3.4 Environmental -related Laws and Regulations in Myanmar

There are several laws and regulations relating to the environmental matters administered by various relevant ministries in Myanmar. The environmental-related laws and regulations are tabulated in following table.

Table 3-1 Environmental-related Laws and Rules

Sr. No.	Laws and Regulation	Year
<b>I.</b>	<b>Environmental Framework</b>	
1.1	Myanmar Agenda 21	1997
1.2	National Sustainable Development Strategy	2009
1.3	The Environmental Conservation Law	2012
1.4	The Environmental Conservation Rules	2014
1.5	EIA Procedures	December 2015
1.6	National Environmental Quality (Emission) Guidelines	December 2015
1.7	Draft Guideline on Public Participation in Myanmar’s EIA Processes	2017
1.8	National Environmental Policy of Myanmar	June 2019
1.9	Myanmar Climate Change Policy	June 2019
<b>II.</b>	<b>Infrastructure/Economic Development/ Administration</b>	
2.1	The Towns Act	1907
2.2	The Village Act	1907
2.3	The Income Tax Law	1974 Amendment in 2011
2.4	The Commercial Tax Law	1990 Amendment in 2014
2.5	The Myanmar Insurance Law	1993
2.6	The Myanmar Hotel and Tourism Law	1993
2.7	The Constitution of the Union of Myanmar	2008
2.8	The Ward or Village Tracts Administration Law	2012 Amendment in 2019
2.9	Myanmar Investment Law	2016
2.10	Myanmar Investment Rules	2017
<b>III.</b>	<b>Water Environment</b>	

<b>Sr. No.</b>	<b>Laws and Regulation</b>	<b>Year</b>
3.1	The Canal Act	1905
3.2	The Ports Act	1908
3.3	The Embankment Act	1909
3.4	The Water Power Act	1927
3.5	The Underground Water Act	1930
3.6	The Myanmar Lighthouse Act	1937 Amendment in 2016
3.7	The Territorial Sea and Maritime Zone Law	2017
3.8	The Law on Aquaculture	1989
3.9	The Law relating to the Fishing Rights of Foreign Fishing Vessels	1989 Amendment in 1993
3.10	The Marine Fisheries Law	1990 Amendment in 1993
3.11	The Freshwater Fisheries Law	1991
3.12	The Conservation of Water Resources and Rivers Law	2006
3.13	The Conservation of Water Resources and Improvement of River Systems Rules	2013
3.14	The National Water Policy (NWP) of Myanmar	2014
3.15	The Myanma Port Authority Law	2015
3.16	The Myanma Port Authority Rules	2016
<b>IV.</b>	<b>Land Use</b>	
4.1	The Farmland Law	2012
4.2	The Farmland Rules	2012
4.3	The Vacant, Fallow and Virgin Lands Management Law	2012
4.4	The Vacant, Fallow and Virgin Lands Management Rules	2012
4.5	The National Land Use Policy	2016
4.6	The Land Acquisition, Resettlement and Rehabilitation Act	2019
<b>V.</b>	<b>Cultural Heritage</b>	
5.1	The Heritage Goods Protection Law (or) The Protection and Preservation of Ancient Monuments Law	2015
5.2	The Protection and Preservation of Cultural Heritage Regions Law	2019
<b>VI.</b>	<b>Forestry/Biodiversity/Agriculture</b>	
6.1	The Pesticide Law	1990
6.2	The Forest Law	1992
6.3	The Plant Pest Quarantine Law	1993
6.4	The Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law	1994
6.5	The Animal Health and Development Law	1994
6.6	The Forest Rules	1995
6.7	The Fertilizer Law	2002

<b>Sr. No.</b>	<b>Laws and Regulation</b>	<b>Year</b>
6.8	The Protection of Wildlife and Wild Plants and Conservation of Natural Areas Rules	2002
6.9	The Protection of Biodiversity and Protected Area Law	2018
<b>VII.</b>	<b>Industrial Sector</b>	
7.1	The Explosives Act	1884
7.2	The Explosive Substances Act	1908 Amendment in 2001
7.3	The Petroleum Act	1934
7.4	The Petroleum Rules	1937
7.5	The Petroleum and Petroleum Product Law	1st August, 2017
7.6	The Factories Act	1951 Amendment in 2016
7.7	The Private Industrial Enterprise Law	1990
7.8	The Salt Enterprise Law	1992
7.9	The Science and Technology Development Law	1994
7.10	The Myanmar Mines Law	1994
7.11	The Myanmar Pearl Law	1995 Amendment in 2014
7.12	The Myanmar Gemstone Law	1996
7.13	The Export and Import Law	2012
7.14	The Prevention of Hazard from Chemicals and Related Substances Law	2013
7.15	The Electricity Law	2014
7.16	The Boiler Law	2015
7.17	The Automobile Law	2015
7.18	The Prevention of Hazard from Chemicals and Related Substances Rules	2016
<b>VIII.</b>	<b>Special Economic Zone (SEZ)</b>	
8.1	The Myanmar Special Economic Zone Law	2014
8.2	The Special Economic Zone Rules	2015
8.3	TSEZMC Notice to Ensure the Responsible Investment in the Thilawa SEZ	August 2015
8.4	Standard Operation Procedures for Investors in Thilawa SEZ	December 2015
<b>IX.</b>	<b>Working Environment</b>	
9.1	The Workmen’s Compensation Act	1923 Amendment in 2011
9.2	The Shops and Establishment Act	1951
9.3	The Leave and Holiday Act	1951 Partially Amendment in 2014
9.4	The Labor Organization Law	2011
9.5	The Labor Organization Rule	2012
9.6	The Labor Dispute Settlement Law	2012

Sr. No.	Laws and Regulation	Year
		Amendment in 2019
9.7	The Social Security Law	2012
9.8	The Employment and Skill Development Law	2013
9.9	The Minimum Wage Law/Rules	2013
9.10	The Social Security Rules	2014
9.11	The Law Protecting Ethnic Right	2015
9.12	The Payment of Wages Law	2016
9.13	The Myanmar Occupational Health and Safety Law	2019
9.14	Child Rights Law	2019
<b>X.</b>	<b>Public Health</b>	
10.1	The Penal Code of Offences Affecting the Public Health, Safety Convenience, Decency and Morals	1961
10.2	The Public Health Law	1972
10.3	The National Drug Law	1992
10.4	The Narcotic Drugs and Psychotropic Substances Law	1993
10.5	The Prevention and Control of Communicable Diseases Law	1995 Amendment in 2011
10.6	The Traditional Drug Law	1996
10.7	The National Food Law	1997
10.8	The Control of Smoking and Consumption of Tobacco Product Law	2006
10.9	The Law related to Private Health Care Services	2007 Amendment in 2013
<b>XI.</b>	<b>Emergency/Disaster</b>	
11.1	The Natural Disaster Management Law	2013
11.2	The Myanmar Fire-brigade Law	2015

### 3.5 Myanmar Legislation Relevance to the Project

Legal and approval requirements applicable to the project related to the environmental and social will be identified by Cobes Industries (B-II) Company Limited (CIC).

CIC must comply with the following Myanmar Acts and Rules related to the project.

Table 3-2 Laws and Rules Relevance to the Project

Sr. No.	Laws/Rules/Regulation	Description
<b>I.</b>	<b>Environmental Framework</b>	
1.1	Myanmar Agenda 21 (1991)	See <b>3.3.2</b>
1.2	National Sustainable Development Strategy (2009)	See <b>3.3.1</b>
1.3	The Environmental Conservation Law (2012)	See <b>3.3.4</b>

Sr. No.	Laws/Rules/Regulation	Description
1.4	The Environmental Conservation Rules (2014)	See <b>3.3.5</b>
1.5	EIA Procedures (2015)	See <b>3.3.6</b>
1.6	National Environmental Quality (Emission) Guidelines (2015)	See <b>3.3.7</b>
<b>II. Infrastructure/Economic Development/ Administration</b>		
2.1	The Constitution of the Union of Myanmar (2008)	<p><b>Section 45:</b> The Union shall protect and conserve natural environment.</p> <p><b>Section 390 (b):</b> Every citizen has the duty to assist the Union in carrying out the environmental conservation:</p>
2.2	Myanmar Investment Law (2016)	<p><b>Section 3:</b> The objectives are:</p> <ul style="list-style-type: none"> <li>(g) to develop responsible investment businesses which do not cause harm to the natural environment and the social environment for the interest of the Union and its citizens;</li> <li>(h) to protect the investors and their investment businesses in accordance with the law;</li> <li>(i) to create job opportunities for the people;</li> </ul> <p><b>Section 50 (b):</b> Foreign investor may lease land or building either from the government or government organizations or from owners of private land or building from commencing on the date of receipt of the permit or endorsement of the Commission up to an initial period of (50) years in accordance with the stipulation.</p> <p><b>Section 52:</b> The Government guarantees not to nationalize any investment carrying out in accordance with the law. Except under the following conditions, the Government guarantees not to take any measures which expropriate or indirectly expropriate or is likely to effect a result in the termination of an investment :</p> <ul style="list-style-type: none"> <li>(a) actually necessary for the interest of the Union or its citizen;</li> <li>(b) non-discriminatory manner;</li> <li>(c) measures in accordance with the applicable Laws;</li> <li>(d) prompt, fair and adequate payment of compensation;</li> </ul> <p><b>Section 65 (g):</b> The Investor shall abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social</p>

Sr. No.	Laws/Rules/Regulation	Description
		environment and not to cause damage to cultural heritage;
2.3	Myanmar Investment Rules (2017)	<b>Section 189:</b> After obtaining the permit, the investor who requires environmental and social impact assessments shall submit the required performances on environmental and social impact assessments to the Commission along the course of operating business.
<b>III. Water Environment</b>		
3.1	The Water Power Act (1927)	Prohibitions on the pollution of public water; and provisions for the use of water in the pursuit of energy production and mining in a manner which does not harm land, watersheds or “localities”
3.2	The Territorial Sea and Maritime Zone Law (2017)	<p><b>Section 3:</b> The objectives of this Law are as follows:</p> <ul style="list-style-type: none"> <li>(a) to have security, rule of law and tranquility for the interests of the State in the territorial sea, contiguous zone, exclusive economic zone and continental shelf;</li> <li>(b) to protect and conserve, and excavate natural resources systematically for long term in the territorial sea and maritime zones of the State and to do marine scientific researches;</li> <li>(c) protect and conserve from the pollutions on the sea, airspace and impact on marine environment through the territorial sea and maritime zones of the State.</li> </ul> <p><b>Section 8:</b> If a foreign ship engages in any of the following activities while innocent passage through the territorial sea, it shall be considered to be prejudicial to the peace, rule of law and stability or security of the State:</p> <ul style="list-style-type: none"> <li>(h) act to pollute and affect the sea, airspace and impact on marine environment;</li> <li>(i) catching aquatic animals including fishes, by any way, fishing, supporting and preparing for these businesses, and making to damage the natural resources.</li> </ul> <p><b>Section 9:</b> The Foreign ship shall observe the relevant existing laws and international rules for protection of collision at the sea in the innocent passage through the territorial sea.</p> <p><b>Section 20:</b> The State has the following rights and jurisdiction to exercise within exclusive economic zone:</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(d) rights and jurisdiction to protect and conserve the marine environment sustainability and to prevent and control marine pollution.</p> <p><b>Section 25:</b> The State has the right to exercise the following rights and jurisdiction in the continental shelf:</p> <p>(d) conservation and protection of marine environment, and reduction, prevention and control of marine pollution due to submarine cables, pipelines and its related facilities;</p>
3.3	The Conservation of Water Resources and Rivers Law (2006)	<p><b>Section 3:</b> The aims of this Law are as follows:</p> <p>(a) to conserve and protect the water resources and rivers system for beneficial utilization by the public;</p> <p>(b) to smooth and safety waterways navigation along rivers and creeks;</p> <p>(c) to contribute to the development of State economy through improving water resources and river system;</p> <p>(d) to protect environmental impact.</p> <p><b>Section 11 (a):</b> 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.</p>
3.5	The Myanmar Port Authority Law (2015)	<p><b>Section 8 (a):</b> The Ministry, with the approval of the Union Government may permit the local and foreign investors to operate the works of exploration of new places for port and building, upgrade, extension and maintenance by any means for the development of ports by concluding the contract with the Myanmar Port Authority and by stipulating the terms and conditions.</p> <p><b>Section 19 (a):</b> The Myanmar Port Authority may claim damages from the relevant organization and person if the water pollutions, destructions and losses to environmental resources occur within a port limit, because of leakage of petroleum, oil or chemical from the tanker of petroleum, oil or chemical navigated within a port limit or from oil test wells, oil wells and oil pipelines; or from collision or grounding of vessels, or for any other causes; because of discharge and disposal of pollutants and wastes from vessels and natural resource</p>



Sr. No.	Laws/Rules/Regulation	Description
		<p>exploration rigs and structures from above and under water.</p> <p><b>Section 23:</b> The Myanmar Port Authority, relating to the environmental conservation,</p> <ul style="list-style-type: none"> <li>(a) shall carry out, after adopting the plans, the protection and prevention for non-existence of wastes flowed from foreshore and land, seabed wastes and wastes disposed by any means, of air pollution and water pollution, of discharge and disposal of dangerous materials, toxic materials, garbage, dirty things and wastes into water from vessels, wharf and above-water and sub-water natural resource exploration rigs and structures within a port limit, distribution of information and technology;</li> <li>(b) shall carry out the distribution of information and technology, taking precautionary measures not to cause oil spills from vessels which carry petroleum, oil and chemical navigating within a port limit, or from oil test wells, oil wells and oil pipelines, or from collision and grounding of vessels;</li> <li>(c) if oil and chemical spill occurs, mentioned in sub-section shall arrange in coordination with the experts, not for causing water pollution, clearing and sanitation. In doing so, the cost may be claimed from the responsible person in accord with the stipulations.</li> </ul> <p><b>Section 59:</b> The Myanmar Port Authority shall carry out the following functions and duties relating to the prevention of the infectious diseases and health of the sick within a port limit where sea-going vessels berth by itself or by delegating to the health officer appointed and assigned duty under section 58:</p> <ul style="list-style-type: none"> <li>(a) taking measures for prevention, inspection, treatment and emergency response to infectious diseases occurred from vessels within a port limit;</li> <li>(b) raising of signal flag, determining place for the anchorage and emergency announcement on the spread of such infectious diseases for the vessels on which an infectious diseases is spreading or is suspicious of spreading or for the vessels that left from a port which is believed or actually</li> </ul>

Sr. No.	Laws/Rules/Regulation	Description
		<p>happened the spread of infectious diseases at or near that port;</p> <ul style="list-style-type: none"> <li>(c) examining the health of persons on board the vessel which carries the diseased persons ;</li> <li>(d) determining questions to be answered and information to be reported relating to the occurrence infectious diseases of by the masters of a vessel, pilots and other persons on board the vessels which carries the diseased persons;</li> <li>(e) determining the duties to be carried out by the masters and pilots of such vessel, and other persons onboard the vessel when the occurrence of an infectious disease;</li> <li>(f) taking treatment to any person onboard the vessel on which an infectious disease is occurring or is suspicious of occurring after taking him to any hospital or clinic that is agreed by the health officer and retaining such vessel;</li> <li>(g) sanitizing, ventilating, sterilization, and eradicating rats or other infectious insects on board the vessel or any part of the vessel or any material or equipment on board the vessel of occurring infectious disease;</li> <li>(h) carrying out the necessary precaution and treatments relating to the occurrence of infectious disease from the persons and cargo on board the vessel;</li> <li>(i) informing to the Ministry of Health and World Health Organization for enabling to carry out necessary measures not for spreading of infectious disease;</li> <li>(j) arranging for the persons died due to the infectious disease on board the vessel.</li> </ul> <p><b>Section 60:</b> The master of a vessel entering from abroad:</p> <ul style="list-style-type: none"> <li>(a) shall inform in advance to the Myanma Port Authority that it is free from infectious disease on board the vessel before berthing at any port in the state.</li> <li>(b) shall provide the declaration of free from infectious disease in the prescribed form to the health officer, by himself or through the health officer of the vessel when it berths at any port of the State.</li> </ul>

Sr. No.	Laws/Rules/Regulation	Description
		<p><b>Section 61:</b> The health officer shall obtain the following powers, within the port limit assigned duty to him , under the supervision of the Myanma Port Authority;</p> <ul style="list-style-type: none"> <li>(a) the right to inspect on board the vessel whether or not the water supply, medicines and medical equipment, food and accommodations for the seamen are in conformity with the stipulations;</li> <li>(b) the right to examine the health of all or some seamen or apprentices on board the vessel by boarding on any vessel;</li> <li>(c) the right to claim to produce the logbook and other books, papers and documents that are necessary to inspect the situation of health and medical treatment of the persons on board the vessel and if they refused, the right to enforce;</li> <li>(d) the right to call and examine any relevant person and the right to claim to answer the questions correctly in carrying out under subsections (a), (b) and (c);</li> <li>(e) the right to claim to write and sign on the admission by the person is asked that he has answered correctly.</li> </ul> <p><b>Section 62:</b> The health officer shall issue the certificate to the relevant master of the vessel and responsible persons that infectious disease has been prevented and it is free from infectious disease on such vessel after boarding and inspecting, in conformity with the powers of section 61, the sea-going vessels entering into and berthing at the port limit for which he is assigned duty.</p> <p><b>Section 80:</b> Any person, so as to cause water pollution or destruction to the environmental resources:</p> <ul style="list-style-type: none"> <li>(a) shall not cause oil spill or discharge of sludge from the petroleum tanker, oil tanker and chemical tanker navigated within a port limit, or from oil test wells, oil wells and oil pipelines or from collision or grounding of vessels;</li> <li>(b) shall not discharge, dispose or cause to fall dangerous materials, toxic materials, garbage, sludge and waste from the vessels, above and underwater natural resource exploration rigs and structures within a port limit;</li> </ul>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(c) shall not discharge, dispose or cause to fall other materials which cause obstacle to the navigation, from the vessels, into a port;</p> <p>(d) shall not dispose or drop the materials that may slide into the port because of tide, storm or flood on land.</p>
<b>IV. Cultural Heritage</b>		
4.1	The Protection of Preservation of Cultural Heritage Regions Law (2019)	<p><b>Section (3):</b> The objectives of this law are:</p> <p>(b) to protect and preserve the cultural heritage regions and the cultural heritage therein so as not to deteriorate due to natural disaster or man-made destruction;</p> <p>(e) to protect the cultural heritage regions from destruction.</p>
<b>V. Forestry/Biodiversity/Agriculture</b>		
5.1	The Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law (1994)	<p><b>Section 3:</b> The objectives of this law are:</p> <p>(a) to implement the policy of protecting wildlife of the State;</p> <p>(b) to implement the policy if conserving the protected area of the State;</p> <p>(c) to carry out in accordance with International Conventions agreed by the State in respect of the protection of wild species of both flora and fauna and representative ecosystems occurring in the country;</p> <p>(d) to protect endangered species of wild flora and fauna and other habitats;</p> <p>(e) to contribute for the development of research on natural sciences;</p> <p>(f) to establish zoological gardens and botanical gardens for the protection of flora and fauna.</p>
<b>VI. Industrial Sector</b>		
6.1	The Explosives Act (1884)	This Act stipulates the prohibitions on production, possession and use of explosives without permission.
6.2	The Explosive Substances Act (1908)	This Act stipulates the prohibitions on production, possession and use of explosives without permission.
6.3	The Petroleum Act (1934)	<p><b>Section 3:</b> Import, transport and storage of petroleum:</p> <p>(1) No one shall import, transport or store any petroleum save in accordance with the Rules made under section 4.</p> <p>(2) Save in accordance with the conditions of any license for the purpose which he may be required to obtain by rules made under section</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>4, no one shall import any dangerous petroleum, and no one shall transport or store any petroleum.</p> <p><b>Section 4:</b> Rules for the import, transport and storage of petroleum.-</p> <p>The President of the Union may make rules-</p> <ul style="list-style-type: none"> <li>(a) prescribing places where petroleum may be imported and prohibiting its import elsewhere;</li> <li>(b) regulating the import of petroleum;</li> <li>(c) prescribing the periods within which licenses for the import of dangerous petroleum shall be applied for, and providing for the disposal, by confiscation or otherwise, of any dangerous petroleum in respect of which a license has not been applied for within the prescribed period or has been refused and which has not been exported;</li> <li>(d) regulating the transport of petroleum;</li> <li>(e) specifying the nature and conditions of all receptacles and pipe-lines in which petroleum may be transported;</li> <li>(f) regulating the places at which and prescribing the conditions subject to which petroleum may be stored;</li> <li>(g) specifying the nature, situation and condition of all receptacles in which petroleum may be stored;</li> <li>(h) prescribing the form and conditions of licenses for the import of dangerous petroleum, and for the transport or storage of any petroleum, the manner in which applications for such licenses shall be made, the authorities which may grant such licenses and the fees which may be charged for such licenses;</li> <li>(i) determining in any class of cases whether a license for the transport of petroleum shall be obtained by the consignor, consignee or carrier;</li> <li>(j) providing for the granting of combined licenses for the import, transport and storage of petroleum, or for any two of such purposes;</li> <li>(k) prescribing the proportion in which any specified poisonous substance may be added to petroleum, and prohibiting the import, transport or storage of petroleum in which the proportion</li> </ul>

Sr. No.	Laws/Rules/Regulation	Description
		<p>of any specified poisonous substance exceeds the prescribed proportion; and</p> <p>(l) generally, providing for any matter which in his opinion is expending for proper control over the import, transport and storage of petroleum.</p> <p><b>Section 6:</b> Receptacles of dangerous petroleum to show a warning.- All receptacles containing dangerous petroleum shall have a stamped, embossed, painted or printed warning, either on the receptacle itself or, where that is impracticable, displayed near the receptacle, exhibiting in conspicuous characters the words “Petrol” or “Motor Spirit”, or an equivalent warning of the dangerous nature of the petroleum: Provided that this section shall not apply to-</p> <p>(a) any securely stoppered glass, stoneware or metal receptacle of less than two gallons capacity containing dangerous petroleum which is not for sale, or</p> <p>(b) a tank incorporated in a motor conveyance, or attached to an internal combustion engine, and containing petroleum intended to be used to generate motive power for the motor conveyance or engine, or</p> <p>(c) a pipe-line for the transport of petroleum, or</p> <p>(d) any tank which is wholly underground, or</p> <p>(e) any class of receptacles which the President of the Union may, by notification in the Gazette, exempt from the operation of this section.</p>
6.4	The Petroleum Rules (1937)	Provisions to regulate production, storage, and transport of oil so as not to cause pollution or the outbreak of fires.
6.5	The Petroleum and Petroleum Product Law (2017)	<p><b>Section 3:</b> The objectives of this law are as follows:</p> <p>(a) To operate systematic petroleum and petroleum products businesses in accordance with the law, specified standards, procedures and regulations;</p> <p>(b) to safely operate petroleum and petroleum products businesses without affecting the environment;</p> <p>(c) to create an independent and fair market competition with regard to the operation of petroleum and petroleum products businesses;</p> <p>(d) to guarantee the Union’s energy requirements and security;</p>

Sr. No.	Laws/Rules/Regulation	Description
		(e) to obtain taxes payable to the Union.
6.6	The Export and Import Law (2012)	<p><b>Section 5:</b> No person shall export or import restricted, prohibited and banned goods.</p> <p><b>Section 6:</b> Without obtaining license, no person shall export or import the specified goods which is to obtain permission.</p>
6.7	The Prevention of Hazard from Chemicals and Related Substances Law (2013)	<p><b>Section 3:</b> The aims of this Law are as follows:</p> <ul style="list-style-type: none"> <li>(a) to protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances;</li> <li>(b) to supervise systematically in performing the chemical and related substances business with permission for being safety;</li> <li>(c) to perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically;</li> <li>(d) to perform the sustainable development for the occupational safety, health and environmental conservation.</li> </ul> <p><b>Section 17:</b> A person who has obtained a license, shall put the insurance in accordance with the prescriptive stipulations to be able to pay the compensation, if the impact and damage is occurred on the Human Being and Animals or the environment in respect of the chemical and related substances businesses.</p> <p><b>Section 20:</b> A person who has obtained a license shall apply the related chemical and related substances that will be used in his chemical and related substances business in accordance with the stipulations to the Central Supervisory Board.</p> <p><b>Section 33:</b> No one shall produce, treat and formulate, use, possess, store, distribute, sell, transport, import or export the chemical or related substances prohibited by the Central Leading Board.</p> <p><b>Section 34:</b> No one shall operate the chemical and related substances business without license.</p> <p><b>Section 35:</b> No one shall use the chemical or the related substances which are unregistered or annulled from the registered list or not met to the quality and norm in the chemical and related substance business.</p>

Sr. No.	Laws/Rules/Regulation	Description
6.8	The Prevention of Hazard from Chemicals and Related Substances Rules (2016)	<p><b>Section 47:</b> If the relevant Board of Inspection finds the violation on any prohibition in the law and rules, the Board of Inspection shall submit to the respective Supervisory Board for taking action under the law.</p> <p><b>Section 48:</b> The relevant Board of Inspection shall carry out the regular inspection, surprise check and inspection due to information to chemical and related substances businesses.</p>
6.9	The Electricity Law (2014)	<p><b>Section 45:</b> No permit holder shall operate any other electrical business except the business contained in the permit.</p> <p><b>Section 47:</b> No person shall operate the generation, transmission, connection of electric power without obtaining the electrical safety certificate.</p> <p><b>Section 52:</b> No person shall connect, waste, utilize the electric power without the permission of the permit holder.</p> <p><b>Section 53:</b> No person shall divert the electric current, cut-off the electric power line, destroy any equipment being used in any electrical business.</p>
6.10	The Automobile Law (2015)	<p><b>Section 3:</b> The main objectives of this law are as follows:</p> <ul style="list-style-type: none"> <li>(c) For the easy flow of road users and for the protection against road risks and vehicle perils.</li> <li>(d) To avoid traffic congestion and to use high technology transportation systems efficiently in order to implement protection against road risks and vehicle perils.</li> <li>(e) To reduce environmental pollution caused by motor vehicles.</li> </ul>
<b>VII. Working Environment</b>		
7.1	The Workmen’s Compensation Act (1923)	Required 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.
7.2	The Leave and Holiday Act (1951)	To allow worker for leave and holiday allowances, religious or social activities with earn allowance, and benefits for Health allowances. Concerned workers: Daily wage workers/temporary workers/permanent workers.



Sr. No.	Laws/Rules/Regulation	Description
7.3	The Labor Organization Law (2011)	<p><b>Section 17:</b> The labour organizations shall have the right to carry out freely in drawing up their constitution and rules, in electing their representatives, in organizing their administration and activities or in formulating their programs. The labour organizations have the right to negotiate and settle with the employer if the workers are unable to obtain and enjoy the rights of the workers contained in the labour laws and to submit demands to the employer and claim in accord with the relevant law if the agreement cannot be reached.</p> <p><b>Section 18:</b> The labour organization has the right to demand the relevant employer to re-appoint a worker if such worker is dismissed by the employer and if there is cause to believe that the reasons of such dismissal were based on labour organization membership or activities, or were not in conformity with the labour laws.</p> <p><b>Section 19:</b> The labour organizations have the right to send representatives to the Conciliation Body in settling a dispute between the employer and the worker. Similarly, they have the right to send representatives to the Conciliation Tribunals formed with the representatives from the various levels of labour organizations.</p> <p><b>Section 20:</b> In discussing with the Government, the employer and the complaining workers in respect of worker's rights or interests contained in the labour laws, the representatives of the labour organization also have the right to participate and discuss.</p>
7.4	The Labor Organization Rules (2012)	<p><b>Section 34:</b> The labour organizations and Executive Committee members may hold meetings outside of working hours. However, meetings may be held during working hours with the agreement of the employer.</p> <p><b>Section 35:</b> The labour organizations and Executive Committee members shall obtain the permission of the employer if it is desired to hold meetings in the factory, mill or work centre.</p> <p><b>Section 36:</b> The management should make available to workers' representatives, under the conditions and to the extent, which may be determined by agreement, such material facilities and information as may be necessary for the exercise of their functions.</p>

Sr. No.	Laws/Rules/Regulation	Description
7.5	The Labor Dispute Settlement Law (2012)	<p><b>Section 38:</b> No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause.</p> <p><b>Section 39:</b> 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.</p> <p><b>Section 40:</b> No party shall proceed to lock-out or strike without accepting negotiation, conciliation and arbitration by Arbitration Body in accord with this law in respect of a dispute.</p> <p><b>Section 51:</b> If any employer, in the course of settlement of dispute, commits any act or omission, without sufficient cause, which by causing a reduction in production resulting so as to reduce the workers' benefits shall be liable to pay full compensation in the amount determined by the Arbitration Body or Tribunal. Such money shall be recovered as the arrear of land revenue.</p>
7.6	The Social Security Law (2012)	<p><b>Section 3 (e):</b> The objective is causing to obtain the right to continued medical treatment, family assistance benefit, invalidity benefit, superannuation benefit, survivors' benefit, unemployment benefit, the right to residency and ownership of housing after retirement in addition to health care and pecuniary benefit for sickness, maternity, decease and employment injury of the workers.</p> <p><b>Section 11(a):</b> The following establishments shall be applied with the provisions for compulsory registration for social security system and benefits contained in this Law if they employ minimum number of workers and above determined by the Ministry of Labour in co-ordination with the Social Security Board:</p> <p>(i) industries which carry out business whether or not they utilize mechanical power or a certain kind of power, businesses of manufacturing, repairing and servicing, or engineering businesses, factories, warehouses and establishments;</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(ii) Government departments, Government organizations and regional administrative organizations which carry out business;</p> <p>(iii) development organizations;</p> <p>(iv) financial organizations;</p> <p>(v) companies, associations, organizations, and their subordinate departments and branch offices which carry out business;</p> <p>(vi) shops, commercial establishments, public entertaining establishments;</p> <p>(vii) Government departments and Government organizations which carry out business or transport businesses owned by regional administrative body, and transport businesses carried out with the permission of such department, body or in joint venture with such department or body;</p> <p>(viii) constructions carried out for a period of one year and above under employment agreement;</p> <p>(ix) businesses carried out with foreign investment or citizen investment or joint ventured businesses;</p> <p>(x) businesses relating to mining and gem contained in any existing law;</p> <p>(xi) businesses relating to petroleum and natural gas contained in any existing law;</p> <p>(xii) ports and out-ports contained in any existing law;</p> <p>(xiii) businesses and organizations carried out with freight handling workers;</p> <p>(xiv) Ministry of Labour and its subordinate departments and organizations;</p> <p>(xv) establishments determined by the Ministry of Labour, from time to time, that they shall be applied with the provisions of compulsory registration for Social Security System and benefits contained in this Law in co-ordination with the Social Security Board and with the approval of the Union Government.</p> <p><b>Section 15 (a):</b> The following funds are included in the Social Security Fund:</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(a) The following funds are included in the Social Security Fund:</p> <ul style="list-style-type: none"> <li>(i) health and social care fund;</li> <li>(ii) family assistance fund;</li> <li>(iii) invalidity benefit, superannuation benefit, and survivors’ benefit fund;</li> <li>(iv) unemployment benefit fund;</li> <li>(v) other social security fund for social security system of compulsory registration and contribution stipulated by the Ministry of Labour, in co-ordination with the Social Security Board, under clause (ii) of sub-section (e) of section 13;</li> <li>(vi) other social security fund stipulated that contribution may be paid after voluntary registration under clause (ii) of sub-section (e) of section 13;</li> <li>(vii) Social Security Housing Plan fund.</li> </ul> <p><b>Section 18 (b):</b> The employer shall deduct contributions to be paid by worker from his wages together with contribution to be paid by him and pay to the social security fund. The employer shall also incur the expense for such contribution.</p> <p><b>Section 48 (b):</b> The employers may effect insurance by registering voluntarily for the workers who are not applied to provisions of compulsory registration for employment injury benefit insurance system and by paying stipulated contribution to employment injury benefit insurance fund.</p> <p><b>Section 75:</b> The employers of establishments applied by this Law:</p> <ul style="list-style-type: none"> <li>(a) shall prepare and keep the following records and lists correctly and submit to the relevant township social security office in accord with the stipulations: <ul style="list-style-type: none"> <li>(i) records and lists of workers’ daily attendance;</li> <li>(ii) records on appointment of new workers, employing worker by changing of work, termination, dismissal and resignation;</li> <li>(iii) records on promotion and paying remuneration;</li> </ul> </li> </ul>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(iv) records and lists of employer, manager, and administrator and records on change of them;</p> <p>(b) shall inform the relevant township social security office if the following matters arise:</p> <p>(i) changes in number of workers and address of establishment;</p> <p>(ii) change of employer, change of business, suspension of work, and close-down of work;</p> <p>(iii) employment injury, decease and contracting diseases;</p> <p>(c) shall submit records of work and lists if requested by inspectorate or official assigned by the Social Security Head Office and various levels of Regional Social Security Office under this Law.</p>
7.7	The Employment and Skill Development Law (2013)	<p><b>Section 5 (a) :</b></p> <p>(1) If the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days. But it shall not be related with government department and organization for a permanent employment.</p> <p>(2) If pre training period and probation period are stipulated before the appointment the said trainee shall not be related with the stipulation of sub-section (1).</p> <p><b>Section 5(b):</b> The following particulars shall be included in the employment agreement:</p> <p>(1) the type of employment;</p> <p>(2) the probation period;</p> <p>(3) wage, salary;</p> <p>(4) location of the employment;</p> <p>(5) the term of the agreement;</p> <p>(6) working hour;</p> <p>(7) day off, holiday and leave;</p> <p>(8) overtime;</p> <p>(9) meal arrangement during the work hour;</p> <p>(10) accommodation;</p> <p>(11) medical treatment;</p> <p>(12) ferry arrangement to worksite and travelling;</p> <p>(13) regulations to be followed by the employees;</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(14) if the employee is sent to attend the training, the limited time agreed by the employee to continue to work after attending the training;</p> <p>(15) resigning and termination of service;</p> <p>(16) termination of agreement;</p> <p>(17) the obligations in accord with the stipulation of the agreement;</p> <p>(18) the cancellation of employment agreement mutually made between employer and employee;</p> <p>(19) other matters;</p> <p>(20) specifying the regulation of the agreement, amending and supplementing;</p> <p>(21) miscellaneous.</p> <p><b>Section 14:</b> The employer shall carry out the training program in accord with the work requirement in line with the policy of the skill development team to develop the skill relating to the employment for the workers who are proposed to appoint and working at present.</p> <p><b>Section 30:</b></p> <p>(a) The employer of the industry and service business shall put in to the fund monthly as put in fees without fail for the total wages of the subordinates and the supervisors' salary for not less than 0.5%;</p> <p>(b) Put in money paid under sub-section (a) shall not be deducted from the wage and salary of the employees.</p> <p><b>Section 34:</b> If anyone is convicted of committing the imitation on skill recognized certificate, he shall be punished with imprisonment for not more than 7 years and with a fine.</p>
7.8	The Minimum Wage Law/Rules (2013)	<p><b>Section 7:</b> The following particulars shall be based and considered in suggesting by the Union Committee, Region and State Committees after making study, scrutiny and calculation or, in determining the minimum wage by the National Committee, relating to the determination of minimum wage:</p> <p>(a) the needs of workers and their families;</p> <p>(b) existing salaries;</p> <p>(c) social security benefits;</p> <p>(d) living cost and changes of such living costs;</p> <p>(e) compatible living standard;</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(f) employment opportunities in conformity with the needs for State’s economy and development of production;</p> <p>(g) gross domestic production value of the State and per capita income;</p> <p>(h) hazardous to health and harmful to work, nature of the work;</p> <p>(i) Other facts stipulated by the Ministry with the approval of the Union Government.</p> <p><b>Section 12:</b> The employer:</p> <p>(a) shall not pay wage to the worker less than the minimum wage stipulated under this Law;</p> <p>(b) may pay more than the minimum wage stipulated under this law;</p> <p>(c) shall not have the right to deduct any other wage except the wage for which it has the right to deduct as stipulated in the notification issued under this law;</p> <p>(d) shall pay the minimum wage to the workers working in the commercial, production and service business in cash. Moreover, if the specific benefits, interests or opportunities are to be paid, it may be paid in cash or partly in property, with prevailing regional price, jointly according to the desire of the worker;</p> <p>(e) in paying minimum wage to the workers working in the agricultural and livestock business, some cash and some property at prevailing regional price may be paid jointly according to local custom or desire of the majority of workers or collective agreement. Such payment shall be for any personal use and benefit of the worker and his family and the value shall also be considerable and fair.</p> <p><b>Section 13:</b> The employer:</p> <p>(a) shall inform the workers the rates of minimum wage relating to the business among the rates of minimum wage stipulated under this Law and advertise it at the workplace to enable to be seen by the relevant workers;</p> <p>(b) shall prepare and maintain the lists, schedules, documents and wages of the workers correctly;</p> <p>(c) shall report the lists, schedules and documents prepared and maintained under subsection(b) to</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>the relevant department in accord with the stipulations;</p> <p>(d) shall accept the inspection when summoned by the inspection officer. Moreover, he shall produce the said lists and documents upon asking to submit;</p> <p>(e) shall allow the entry and inspection of the inspection officer to the commercial, production and service businesses, agricultural and livestock breeding workplaces and give necessary assistances;</p> <p>(f) if the workers cannot work due to sickness, shall give them holiday for medical treatment in accord with the stipulations;</p> <p>(g) if the funeral matter of the member of the family of worker or his parent occurs, shall give holiday without deducting from the minimum wage, in accord with the stipulations.</p> <p><b>Section 18:</b> The inspection officer:</p> <p>(a) has the right to enter and inspect the relevant commercial, production and service workplaces, agricultural and livestock breeding workplaces and inspect whether or not they comply with and carry out in accord with the rules, notifications, orders, directives and procedures under this Law, whether or not the lists, schedules and documents, wages relating to the workers are prepared correctly, and whether or not such lists, schedules and documents are reported to the Department in accord with the stipulations;</p> <p>(b) may summon, inspect the relevant persons under the assignment of duty by the Department, asking and copying for the relevant lists, schedules and documents.</p> <p>(c) if there are outside workers at employer, has the right to inspect information relating to such outside workers, their names and addresses and the right to ask for and copy their lists and documents and lists relating to minimum wage;</p> <p>(d) in carrying out under sub-section (a), (b) and (c) relating to inspection, if required by the employer to produce the document, shall show the civil service identify card issued by the relevant department;</p>



Sr. No.	Laws/Rules/Regulation	Description
		(e) report to the Department in accord with the stipulations relating to the finding under sub-sections (a), (b) and (c), and documents and papers called for.
7.9	The Social Security Rules (2014)	<p><b>Section 24:</b></p> <p>(a) The account of the Social Security Board includes two main funds: the Social Security Fund and Employment Injury Benefit Fund, and three accounts shall be opened and maintained as follows according to the requirement in the implementation of work:</p> <p>(i) Social Security Fund Accounts;</p> <p>(ii) Employment Injury Benefit Fund Accounts;</p> <p>(iii) Administrative Accounts.</p> <p>(b) The Administration expenditure of the Social Security Board shall not be over 25 per cent of the total receipt of the contributions within a financial year.</p>
7.10	The Payment of Wages Law (2016)	<p><b>Section 4:</b> An employer must pay for:</p> <p>(a) Part-time, daily, weekly or other part-time job, temporary or piecework when the work is done OR at the agreed time.</p> <p>(b) According to the Article (a), the time frame shall not exceed one month.</p> <p>(c) Wages for the permanent work must pay per monthly basis. If so</p> <p>(i) Must pay at the end of the payment period when there are not more than 100 workers.</p> <p>(ii) If there are 100 workers and above, pay must not be administered later than 5 days after the end of the payment period.</p> <p>(e) If a resignation letter is submitted, wages must be paid at the ending day of the payment period.</p>
7.11	The Myanmar Occupational Health and Safety Law (2019)	<p><b>Section 3:</b> The objectives of this law are:</p> <p>(a) to implement Occupational Safety and Health matters effectively in the respective Industries/Businesses;</p> <p>(b) to determine the duties of relevant persons applicable under this Law including Employers and Workers to lessen and mitigate occurrence of Occupational Diseases and Occupational Accidents;</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(c) to cause relevant persons applicable under this Law, Employers and Workers to take precaution and prevention against occupational hazards and Occupational Diseases;</p> <p>(d) to improve the productivity and health of Workers by preventing the occurrence of Occupational Accidents and Occupational Diseases for their safety;</p> <p>(e) to create Workplaces that are safe and good for health by prescribing the Occupational Safety and Health standards relevant to the Union’s status after considering international and regional standards; and</p> <p>(f) to support and help research activities carried out for the development of Occupational safety and Health matters.</p>
<b>VIII. Public Health</b>		
8.1	The Penal Code of Offences Affecting the Public Health, Safety Convenience, Decency and Morals (1961)	Provisions related to prohibitions against contaminating public springs or reservoir and “making atmosphere noxious to health”
8.2	The Public Health Law (1972)	<p>This law is concerned with protection of people’s health by controlling the quality and cleanliness of food, drugs, environmental sanitation, epidemic diseases and regulation of private clinics.</p> <p><b>Section 3</b> prescribed that advising the health problems, medical checkup, supervising, prohibition, etc. would be carried out to improve and protect the public health. According to <b>Section 5</b>: the organization which is developed by this law or the government organizations could check and instruct about the health-related cases to the factories, shops, places and buildings etc. at any time.</p>
8.3	The Prevention and Control of Communicable Diseases Law (1995)	<p><b>Section 3 (a)</b>: In order to prevent the outbreak of communicable diseases, the Department of Health shall implement the following activities systematically under the guidance of the Ministry of Health:</p> <p>(i) immunization of children by injection or orally.</p> <p><b>Section 4</b>: The public shall comply with the measures undertaken by the Ministry of Health and the Department of Health under section 3 in respect of prevention of the occurrence and spread of communicable disease and control thereof.</p>

Sr. No.	Laws/Rules/Regulation	Description
		<p><b>Section 8:</b> 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 carrying out the following environmental sanitation measures:-</p> <ul style="list-style-type: none"> <li>(a) in-door, out-door sanitation or inside the fence, outside the fence sanitation;</li> <li>(b) well, ponds and drainage sanitation;</li> <li>(c) proper disposal of refuse and destruction thereof by fire;</li> <li>(d) construction and use of sanitary latrines;</li> <li>(e) other necessary environmental sanitation measures.</li> </ul> <p><b>Section 9:</b> When the head of the household, any member of the household or any entrepreneur knows the occurrence of any of the following matters, he shall report immediately to the nearest health department or hospital:</p> <ul style="list-style-type: none"> <li>(a) en masse death of animals including chicken and birds;</li> <li>(b) rat fall;</li> <li>(c) suspicion or occurrence of epidemic disease;</li> <li>(d) occurrence of notifiable disease.</li> </ul> <p><b>Section 11:</b> In order to prevent and control the spread of an Epidemic Disease, the Health Officer may undertake the following measures: -</p> <ul style="list-style-type: none"> <li>(a) investigation of a patient or any other person required;</li> <li>(b) medical examination;</li> <li>(c) causing laboratory investigation of stool, urine, sputum and blood samples to be carried out;</li> <li>(d) other necessary investigation;</li> <li>(e) prohibition of the right of movement of the vehicle carrying animal or animal product suspected of having epidemic disease.</li> </ul>
<b>IX.</b>	<b>Emergency/Disaster</b>	
9.1	The Natural Disaster Management Law (2013)	<p><b>Section 3:</b> The objectives of this law are:</p> <ul style="list-style-type: none"> <li>(a) to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks;</li> <li>(d) to conserve and restore the environment affected by natural disasters;</li> </ul>

Sr. No.	Laws/Rules/Regulation	Description
		<p>(e) to provide health, education, social and livelihood programmes in order to bring about better living conditions for victims.</p> <p><b>Section 13 (a):</b> The department, organization or person that has been assigned responsibility under this Law:</p> <p>(a) shall undertake the following functions after laying down the plan in accord with the natural disaster management plans in order to reduce damage and losses that are likely to be caused by natural disaster;</p> <p>(i) preparatory and preventive measures for natural disaster risk reduction in pre-disaster period;</p> <p>(ii) emergency responses including search and rescue during natural disaster;</p> <p>(iii) rehabilitation and reconstruction activities for improving better living standard in post disaster period and conservation of the environment that has been affected by natural disaster.</p> <p><b>Section 17:</b> When the natural disaster strikes, emergency responses including search and rescue include the following:</p> <p>(h) conducting emergency responses including search and rescue according to the type of natural disaster;</p> <p>(i) performing other duties assigned by this Law in respect of emergency responses including search and rescue.</p> <p><b>Section 18:</b> Rehabilitation and reconstruction activities to be carried out after disaster include:</p> <p>(a) data collection and confirmation of damage and losses due to natural disaster.</p> <p><b>Section 37:</b> Aggrieved person who has been directly affected in any of the private own properties and has been loss of life or has been affected to the member due to any of the disaster risk reduction activities is entitled to compensation in accord with the stipulations.</p>
9.2	The Myanmar Fire-brigade Law (2015)	<p><b>Section 3:</b> The objectives of this Law are as follows:</p> <p>(a) to prevent destruction of State-owned property, private property, cultural heritage and the lives and property of the public by fire and other natural disaster;</p>

Sr. No.	Laws/Rules/Regulation	Description
		(b) to organize the Fire brigade systematically and to train members of the fire brigade; (c) to carry out extinguishing fire, prevention and search and rescue when fire, other natural disaster, epidemic disease or any kind of sudden disaster occurs; (d) to educate, organize and incite extensively so as to achieve public cooperation when any disaster occurs; <b>Section 25:</b> The owner or manager of the factory, workshop, bus terminal, airport, port, hotel, motel, lodgings, condominium, market, department, organization or business exposed to fire hazard shall, in accord with the directive of the Department of Fire Services: (a) not fail to form the Reserve Fire Brigade; (b) not fail to provide fire safety equipment.

### 3.6 International Conventions, Treaties and Agreements

Myanmar has signed several international treaties related to the environment. The **Table 3-3** presents a list of the conventions signed by Myanmar.

Table 3-3 International Treaties and Conventions

Sr. No.	International Convention, Treaties and Agreements	Remarks
1.	Relevant ILO Conventions in force in Myanmar C1 Hours of Work (Industry) C14 Weekly Rest (Industry) C17 Workmen’s Compensation (Accidents) C19 Equality of Treatment (Accident Compensation) C26 Minimum Wage Fixing Machinery C29 Forced Labour Convention C42 Workmen’s Compensation (Occupational Diseases) Revised 1934 C52 Holidays with Pay C87 Freedom of Association and Protection of the Right to Organize	Ratified: 1921 1923 1956 1927 1954 1955 1957 1954 1955
2.	Plant Protection Agreement for the Southeast Asia and Pacific Region, Rome	1959 (Ratification)
3.	Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and Ocean Floor and in the Subsoil there of, London, Moscow, Washington, 1971	1971 (Signatory)
4.	MARPOL: International Convention for the prevention of pollution from ships. November 2, 1973	1988 (Accession)

Sr. No.	International Convention, Treaties and Agreements	Remarks
5.	MARPOL: Protocol of 1978	1988 (Accession)
6.	Convention for the prevention of marine pollution from Land-Based Sources June 4, 1974	-
7.	ICAO: ANNEX 16 to the Convention on International Civil Aviation Environmental Protection Vol. I and II, Aircraft Noise and Aircraft Engine Emission	Accession
8.	Agreement on the Networks of Aquaculture Centers in Asia and the Pacific, Bangkok 1988	1990 (Accession)
9.	Convention on the Rights of the Child	1991 (Accession)
10.	Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction, Paris, 1993	1993 (Signatory)
11.	Vienna Convention for the Protection of the Ozone Layer, Vienna 1985	24-11-1993 (Ratification)
12.	Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal 1987	24-11-1993 (Ratification)
13.	London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London, 1990	24-11-1993 (Ratification)
14.	Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, Rome, 1973	1994 (Acceptance)
15.	The Convention for the Protection of the World Culture and Natural Heritage, Paris, 1972	29-4-1994 (Acceptance)
16.	United Nations Framework Convention on Climate Change, New York, 1992 (UNFCCC)	25-11-1994 (Ratification)
17.	Convention on Biological Diversity, Rio de Janeiro, 1992	25-11-1994 (Ratification)
18.	International Tropical Timber Agreement (ITTA), Geneva 1994	1996 (Ratification)
19.	Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of Sea of 10 December 1982, New York, 1994	21-5-1996 (Accession)
20.	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington DC 1973; and as amended in Bonn, Germany 1979	1997 (Accession)
21.	United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought, Paris 1994	1997 (Accession)
22.	Convention on Elimination of All Forms of Discrimination against Women (CEDAW)	1997 (Accession)
23.	Cartagena Protocol on Biosafety, Cartagena, 2000	2001 (Signatory)
24.	ICAO: ANNEX 16 to the Convention on International Civil Aviation Environmental Protection Vol. I and II, Aircraft Noise and Aircraft Engine Emission	Accession

Sr. No.	International Convention, Treaties and Agreements	Remarks
25.	Kyoto Protocol to the Convention on Climate Change, Kyoto 1997	2003 (Accession)
26.	Declaration on ASEAN Heritage Parks	2003 (Signatory)
27.	International Treaty on Plant Genetic Resources for Food and Agriculture, 2001	2004 (Ratification)
28.	Stockholm Convention on Persistent Organic Pollutants (POPs)	2004 (Accession)
29.	Ramsar Convention on Wetlands of International Importance	2005 (Accession)
30.	Establishment of ASEAN Regional Centre for Biodiversity	2005 (Signatory)
31.	Universal Declaration of Human Rights (UNDHR)	Signatory
32.	Convention for the protection of marine environment of the North-East Atlantic September 9, 1992	-
33.	Convention on the protection of the Marine Environment of the Baltic Sea Area April 9, 1992	-
34.	United Nations convention of the law of the sea December 10, 1982	-
35.	The Convention on the prevention of marine pollution by Dumping Waste and Other matter December 29, 1972	-
36.	Protocol to the convention on the prevention of marine pollution by Dumping of Waste and Other matter 1996	-

### 3.7 Standards and Guidelines for the Surrounding Environment of the Project

According to Article 10 of the Environmental Conservation Law (2012), (now MONREC set up some environmental quality standards, with the approval of the Union Government and the Committee. (See section 2.3.4)

As of 29 December 2015, emission guideline and target values of ambient air quality, air emission, wastewater, and noise levels were set in NEQG, while other standards have not been set yet by MONREC.

In this Project, the Project Proponent, Cobes Industries (B II) Company Limited basically apply the NEQG and in case of no quantitative target values in NEQG, the quantitative target values of other country and international organizations will be referred. Each quantitative target value to be applied is described below sections.

#### 3.7.1 Air Quality

Since there is no ambient air quality standard in Myanmar and only air emission guideline values in National Environmental Quality Emission Guidelines (NEQG) (2015) referred from WHO’s air quality guidelines, these guideline values shown in below table will be set as target values for both ambient and emission air quality for operation and closing phases.

Table 3-4 Air Emission Guidelines

Sr. No.	Parameter	Averaging Period	Guideline Value ( $\mu\text{g}/\text{m}^3$ )
1.	Nitrogen dioxide ( $\text{NO}_2$ )	1-year	40
		1-hour	200
2.	Ozone ( $\text{O}_3$ )	8-hour daily maximum	100
3.	$\text{PM}_{10}$	1-year	20
		24-hour	50
4.	$\text{PM}_{2.5}$	1-year	10
		24-hour	25
5.	Sulfur dioxide ( $\text{SO}_2$ )	24-hour	20
		10-minutes	500

Source: National Environmental Quality (Emission) Guidelines (NEQG) (29 Dec 2015)

Since there are any combustion facilities designed to deliver electrical or mechanical power, steam, heat or any combination of these, it is necessary to set the target value for air emission level from combustion facilities in this project.

Table 3-5 Small Combustion Facilities Emission Guidelines

Sr. No.	Combustion Technology /Fuel	Particulate Matter $\text{PM}_{10}^{\text{a}}$	Sulfur Dioxide	Nitrogen Oxides
1.	Gas	-	-	200 <sup>b</sup> mg/Nm <sup>3c</sup> 400 <sup>d</sup> mg/Nm <sup>3</sup> 1,600 <sup>e</sup> mg/Nm <sup>3</sup>
2.	Liquid	100	3	1,600-1,850 <sup>f</sup> mg/Nm <sup>3</sup>
3.	Natural gas (3-<15 MW <sup>g</sup> )	-	-	90 <sup>h</sup> mg/Nm <sup>3</sup> 210 <sup>i</sup> mg/Nm <sup>3</sup>
4.	Natural gas (15-<50 MW)	-	-	50 mg/Nm <sup>3</sup>
5.	Fuels other than natural gas (3-<15 MW)	-	0.5 % sulfur	200 <sup>h</sup> mg/Nm <sup>3</sup> 310 <sup>j</sup> mg/Nm <sup>3</sup>
6.	Fuels other than natural gas (15-<50 MW)	-	0.5 % sulfur	150 mg/Nm <sup>3</sup>
7.	Gas	-	-	320 mg/Nm <sup>3</sup>
8.	Liquid	150 mg/Nm <sup>3</sup>	2,000 mg/Nm <sup>3</sup>	460 mg/Nm <sup>3</sup>
9.	Solid <sup>j</sup>	150 mg/Nm <sup>3</sup>	2,000 mg/Nm <sup>3</sup>	650 mg/Nm <sup>3</sup>

<sup>a</sup> Particulate matter 10 micrometers or less in diameter, <sup>b</sup> Spark ignition, <sup>c</sup> Milligrams per normal cubic meter at specified temperature and pressure, <sup>d</sup> dual fuel, <sup>e</sup> compression ignition, <sup>f</sup> higher value applies if bore size > 400 m, <sup>g</sup> Megawatt, <sup>h</sup> Electric generation, <sup>i</sup> mechanical drive, <sup>j</sup> Includes biomass

Source: National Environmental Quality (Emission) Guidelines (NEQG) (29 Dec 2015)

### 3.7.2 Water Quality

According to International Water Quality Guidelines Study report published by United Nation Environment Program, there are various water quality standards and they are:



- a) Water Quality Standards
  - ❖ Water Quality Standards for Conservation of the living Environment (Rivers)
  - ❖ Water Quality Standards for Conservation of the living Environment (Lakes)
  - ❖ Water Quality Standards for Protecting Human Health (Rivers and Lakes)
- b) Ground Water Quality Standards
- c) Coastal Water Quality Standards
  - ❖ Coastal Water Quality Standards for Conservation of the Living Environment
  - ❖ Coastal Water Quality Standards for the Protection of Human Health
- d) Drinking Water Quality Standards

Although the water quality standards are widespread, for this IEE, Study GMES IEE Team selected WHO Drinking Water Standards - 2011 and also selected National Environmental Quality (Emission) Guidelines (2015) as effluent water standards for general effluent runoff.

Table 3-6 WHO Drinking Water Standards (2011)

Sr. No.	Parameter	Guideline Values	Unit
1.	Aluminum	0.2	mg/l
2.	Arsenic	10	µg/l
3.	Chloride	250	mg/l
4.	Copper	2	mg/l
5.	Cyanide	0.07	mg/l
6.	Manganese	0.4	mg/l
7.	pH	6.5~8.5	-
8.	Sulfate	250	mg/l
9.	Total Alkalinity	-	mg/l
10.	Total Dissolved Solids	600	mg/l
11.	Total Hardness	500	mg/l
12.	Total Iron	0.3	mg/l
13.	Turbidity	5	NTU

The guideline values for effluent water quality are referred to general application standards of NEQG (2015) and tabulated in **Table 3-7**.

Table 3-7 Effluent Water Standards for Operation Phase

Sr. No.	Parameter	Guideline Values	Unit
1.	5-day Biological oxygen demand (BOD)	50	mg/l
2.	Ammonia	10	mg/l
3.	Arsenic	0.1	mg/l
4.	Cadmium	0.1	mg/l
5.	Chemical oxygen demand (COD)	125	mg/l
6.	Chlorine (total residual)	0.2	mg/l
7.	Chromium (Hexavalent)	0.1	mg/l
8.	Chromium (total)	0.5	mg/l

Sr. No.	Parameter	Guideline Values	Unit
9.	Copper (Cu)	0.5	mg/l
10.	Cyanide (free)	0.1	mg/l
11.	Cyanide (total)	1	mg/l
12.	Fluoride	20	mg/l
13.	Heavy metals (total)	10	mg/l
14.	Iron	3.5	mg/l
15.	Lead	0.1	mg/l
16.	Mercury	0.01	mg/l
17.	Nickel	0.5	mg/l
18.	Oil and grease	10	mg/l
19.	pH	6-9	S.U. <sup>a</sup>
20.	Phenols	0.5	mg/l
21.	Selenium	0.1	mg/l
22.	Silver	0.5	mg/l
23.	Sulfide	1	mg/l
24.	Temperature increase	<3	°C
25.	Total coliform bacteria	400	100 ml
26.	Total phosphorus	2	mg/l
27.	Total suspended solids	50	mg/l
28.	Zinc	2	mg/l

<sup>a</sup> Standard unit

### 3.7.3 Noise Levels

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

Since the project is located in Bago Industrial Zone and surrounding receptors are industrial and commercial areas, the target noise level targeted to industrial and commercial receptors will be applied during the operation phase of the project.

Table 3-8 Ambient Noise Level Standards for Operation Phase

Receptor	One Hour L <sub>Aeq</sub> , dB (A)	
	Day time 07:00-22:00 (10:00-22:00 for Public holidays)	Night time 22:00-07:00 (22:00-10:00 for Public holidays)
Resident, Institutional, Educational	55	45
Industrial Commercial	70	70

Source: National Environmental Quality (Emission) Guidelines (NEQG) (29 Dec 2015)

Table 3-9 OHS Noise Exposure Limits for the Work Environment (Noise Exposures in dBA)

Noise (dBA)	Permissible exposure Noise (hours and minutes)
85	16 hrs
87	12 hrs 6 min
90	8 hrs
93	5 hrs 18 min
96	3 hrs 30 min
99	2 hrs 18 min
102	1 hrs 30 min
105	1 hr
108	40 min
111	26 min
114	17 min
115	15 min
118	10 min
121	6.6 min
124	4 min
127	3 min
130	1 min

Note: Exposures above or below the 90 dB limit have been "time weighted" to give what OSHA believes are equivalent risks to a 90 dB eight-hour exposure. [Source: Marsh (9)]

### 3.7.4 Light Intensity

Work area light intensity should be adequate for the general purpose of the location and type of activity, and should be supplemented with dedicated work station illumination, as needed.

The typical light levels are described in **Table 3-10**.

Table 3-10 Typical Light Levels

Lux Level	Factories	Lux Level	Home
20-75	Emergency Stairs, Warehouse	100-150	Washing
75-150	Exit/Entrance Passages	150-300	Recreational Activities
150-300	Packing Work	200-300	Drawing Room, Table
300-750	Visual Work: Production Line	300-500	Makeup
750-1,500	Typesetting: Inspection Work	500-1,500	Reading, Study
1,500-3,000	Electronic Assembly, Drafting	1,000-2000	Sewing
Lux Level	Office	Lux Level	Restaurant
75-150	Indoor Emergency Stairs	75-150	Corridor Stairs
100-200	Corridor Stairs	150-300	Entrance, Wash Room
200-750	Conference, Reception Room	300-750	Cooking Room, Dining Table

750-1,500	Clerical Work	750-1,500	Show Window
1,500-2,000	Typing, Drafting		
<b>Lux Level</b>	<b>Store</b>	<b>Lux Level</b>	<b>Hospital</b>
75-150	Indoors	30-75	Emergency Stairs
150-200	Corridor/Stairs	75-100	Stairs
200-300	Reception	100-150	10-15 Sick Room, Warehouse
300-500	Display Stand	150-200	15-20 Waiting Room
500-750	Elevator	200-750	20-75 Medical Exam Room
750-1,500	Show Window, Packing Table	750-1,500	75-150 Operating Room
1,500-3,000	Storefront, Show Window	5,000-10,000	500-1000 Eye Inspection

### 3.8 Institutional Arrangement for Environmental Management

#### 3.8.1 Institutional Arrangement during Operation Phase

During the operation phase, the project proponent, Cobes Industries (B II) Co., Ltd. is fully responsible for implementation of environmental management, mitigation and monitoring activities and submission of environmental monitoring report to Environmental Conservation Department (ECD), Bago Region under MONREC. Operations Department under project proponent is in-charged department for environment, security and safety concerned issues throughout the operation stage. The proposed institutional arrangement to implement IEE during the operation phase is shown in **Figure 3-1**.

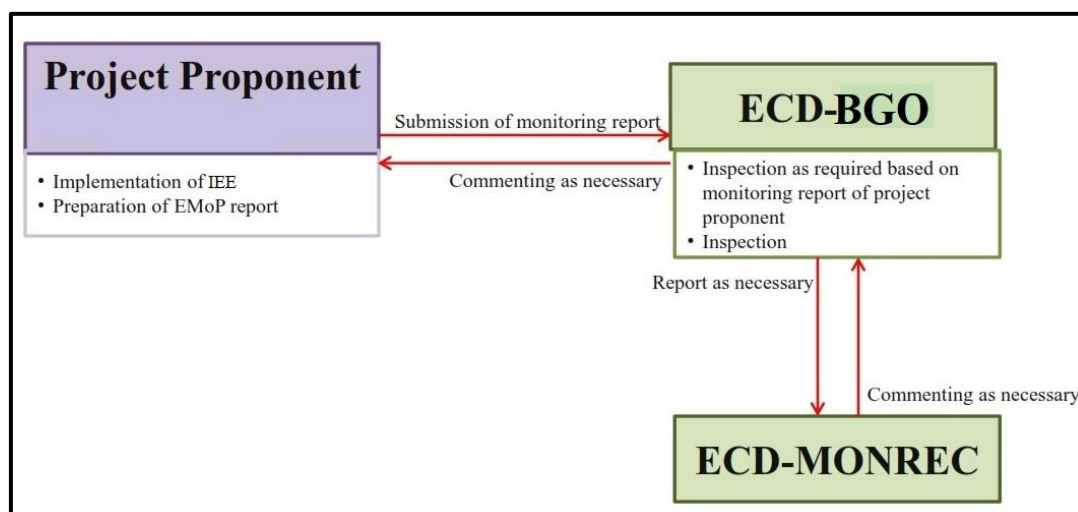


Figure 3-1 Institutional Arrangement during the Operation Phase

### 3.8.2 Institutional Arrangement during Decommissioning Phase

During the decommissioning phase, the demolition contractor will establish temporary project office to implement demolition works. The contractor is responsible to implement environmental management, mitigation and monitoring activities and submission of environmental monitoring report to the project proponent, Cobes Industries (B II) Company Limited. The project proponent is responsible for the supervision of overall environmental management activities done by construction contractor, and for the submission of environmental monitoring report to Environmental Conservation Department (ECD), Bago Region under MONREC. The proposed institutional arrangement to implement IEE during the closure phase is shown in **Figure 3-2**

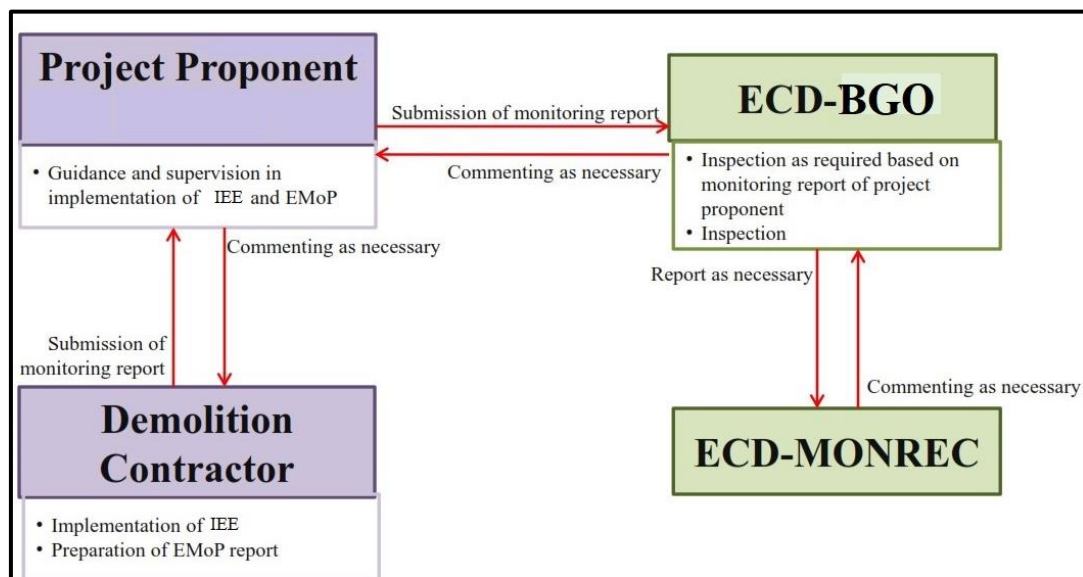


Figure 3-2 Institutional Arrangement during the Decommissioning Phase

## **4.0 DESCRIPTION OF THE PROJECT AND ALTERNATIVES**

### **4.1 Project Background**

#### **4.1.1 Company Profile**

Cobes Industries (B II) Company Limited is one of the new productions base founded in Yangon, Myanmar in order to support growing business. Customers who import directly from factories in Myanmar can enjoy tariff reduction and exemption; Cobes Industries Co., Ltd. (CIC), based in Hong Kong, was founded in 2005.

There are four manufacturing bases in China, which locate Hefei and Lu’an city in Anhui Province, Yutai in Shandong Province and Puyang in He’nan Province. In Hefei, there is amn ETO sterilization station (Ethylene Oxide Sterilizer).

CIC positions itself as a professional converter of nonwoven-related disposable items including surgical gowns, surgical drapes/ packs and protective apparels for medical as well as industrial applications.

#### **4.1.2 Company Scale**

**Quality System: ‘Quality first, Customers’ satisfaction, Continuous improvement”** has been regarded as the management principle since established . Company was certified by TUV on ISO 13485 & MDD 93/42 EEC standard and obtained the Medical Device Manufacturing License & Medical Device (surgical gowns, surgical packs) Registration Certificate (510 K) from FDA in USA.

### **4.2 The History of Medical Scrubs (Surgical Scrubs)**

Medical Scrubs began to be used in the twentieth century when the medical profession began to see the importance of a clean environment for surgery and medical care. Before medical scrubs began to be used regularly surgeons performed surgeries in their street clothes with a cover or apron to keep their clothes clean. During the flu pandemic of 1918 doctors began to wear masks but it was more for their protection than their patient's protection from infection. In the 1940s awareness of wound infection and the need to have a sanitary operating room prompted the first use of medical scrubs. The first medical scrubs were gowns or drapes that covered the surgeon and medical staff while operating.

Medical scrubs began to be used regularly in operating rooms in the 1950s and 1960s they were made with white fabric to demonstrate cleanliness. The bright white fabric of the medical scrubs in the white operating rooms began to strain the medical staff's eyes and eventually medical scrubs began to be made in colors like blue, green, pink and yellow. Now the majority of medical staffs are required to wear medical scrubs whenever in a clean environment. Today medical scrubs are usually short-sleeved, V-neck shirts with drawstring pants. Medical scrubs also include jackets and gowns. Medical scrubs come in various colors and bright prints. Medical scrubs with bright prints are great for medical personnel who work with children.

Medical scrubs also come in various durable fabrics that can be easily cleaned. This uniform was originally known as "surgical greens" because of its color, but came to be called "scrubs" because it was worn in a "scrubbed" environment.

#### **4.2.1 Benefits of Using Medical Scrubs (Surgical Scrubs)**

Preventing the spread of bacteria, viruses, and fungi is a top priority within the healthcare industry, since the transmission of such microbes leads to healthcare associated infections (HCAI). The risk and rate of such infections can be minimized, if not completely eliminated, through adherence to infection control policies. These policies are essential in order to protect patients, staff members, and the community-at-large.

One consideration for any adequate infection control policy is when and if to utilize disposable vs. laundered personal protective equipment (PPE), including scrubs and gowns. While economic and environmental costs should be considered, organizations must also assess which method has a greater overall effectiveness at preventing the spread of infection—the ultimate aim of PPE. (<https://int-enviroguard.com/blog/benefits-of-disposable-scrubs>)

#### **4.2.2 Reasons to Choose Disposable Scrubs over Washable Scrubs**

Studies generally indicate that disposable scrubs are at least an equal (and in some cases more effective) option for infection control compared to reusable apparel. Commonly cited reasons include reliability, effectiveness, cost, and comfort.

The optimum design and systematic implementation can meet the objectives of sustainable development for environmental protection and conservation.

### **4.3 Project Description**

This Initial Environmental Examination (IEE) report is for the “Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis” Project proposed by Cobes Industries (B II) Company Limited.

Cobes Industries (B II) Company Limited is certified by Directorate of Investment and Company Administration (DICA) as a Private Company Limited by Shares with Company Registration No. 121497387 on 27<sup>th</sup> July 2019 under the Myanmar Company Law 2017. This Certificate of Incorporation is shown as **Appendix 4**.

The proponent has submitted a Proposal of the Promoter to make Foreign Investment in Republic of the Union of Myanmar to the Chairman, Bago Region Investment Committee (BRIC) dated 6<sup>th</sup> September 2019. The proponent has also submitted to the Environmental Conservation Department (ECD) of Bago District to get recommendation dated 26<sup>th</sup> August 2020 for the purpose of Private Industries Registration Certificate.

The person of Environmental Conservation Department (ECD) of Bago District managed and reported to ECD of Bago Region. Referring this report, ECD of Bago Region directed the proponent to prepare and submit the Initial Environmental Examination (IEE) report by the letter no. Bago/EIA (1364/2021) dated 14<sup>th</sup> July 2021. This document is shown as **Appendix 1**. According to the comments from ECD, this project requires IEE to meet the environmental assessment requirement of the Environmental Policy, Environmental Conservation Law and other environmental related rules and procedure. Therefore, Cobes

Industries (B II) Company Limited was consulted with Green Myanmar Environmental Services Company Limited for conducting the environmental studies.

#### 4.4 Objectives of the Project

The overall objectives of the project are towards the socio-economic improvement. The IEE can identify and highlight what concerns are represented for the environmental sustainability and to manufacture the “Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears” by using modern non-woven technology and distribute to America, Europe and Japan.

#### 4.5 Regional Information

The project is situated in Plot No. (N1<sup>B</sup>), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9<sup>th</sup>) Quarter, Bago Township, Bago District, Bago Region. Bago, formerly known as Hanthawaddy, is a city and the capital of the Bago Region in Myanmar. It is located 91 kilometers north-east of Yangon. Its elevation is average 31 ft above sea level and its topographic condition is mountainous. This town shares borders with

- ❖ Waw Township and Thanatpin Township of Bago Region in the east,
- ❖ Hlegu Township, Taikkyi Twnship of Yangon Region, Thayarwady Township of Bago Region in the west,
- ❖ Kawa Township of Bago Region in the south, and
- ❖ Daek-U Township and Letpadan Township of Bago Region in the north.

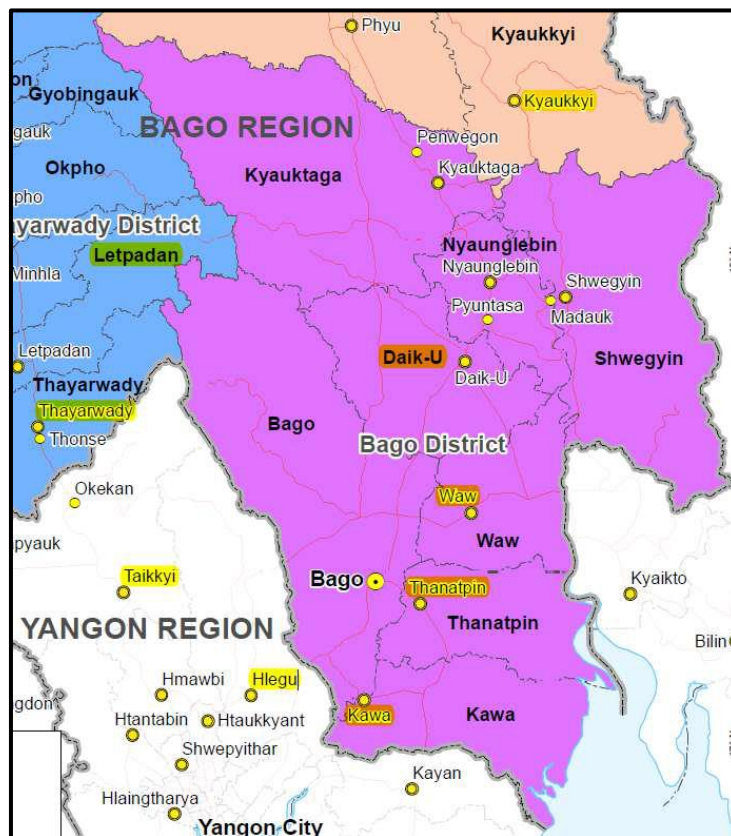


Figure 4-1 Map of Bago Region by Districts and Townships



## 4.6 Project Information

### 4.6.1 Project Location

Cobes Industries (B II) Company Limited is located at Plot No. (N1<sup>B</sup>), Kwin No. (1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quarter, Bago Township, Bago Region, Myanmar. Its coordinate point is at north latitude 17° 16' 46.80" and east longitude 96° 27' 26.90".



Figure 4-2 Factory Location Map (Google Earth)

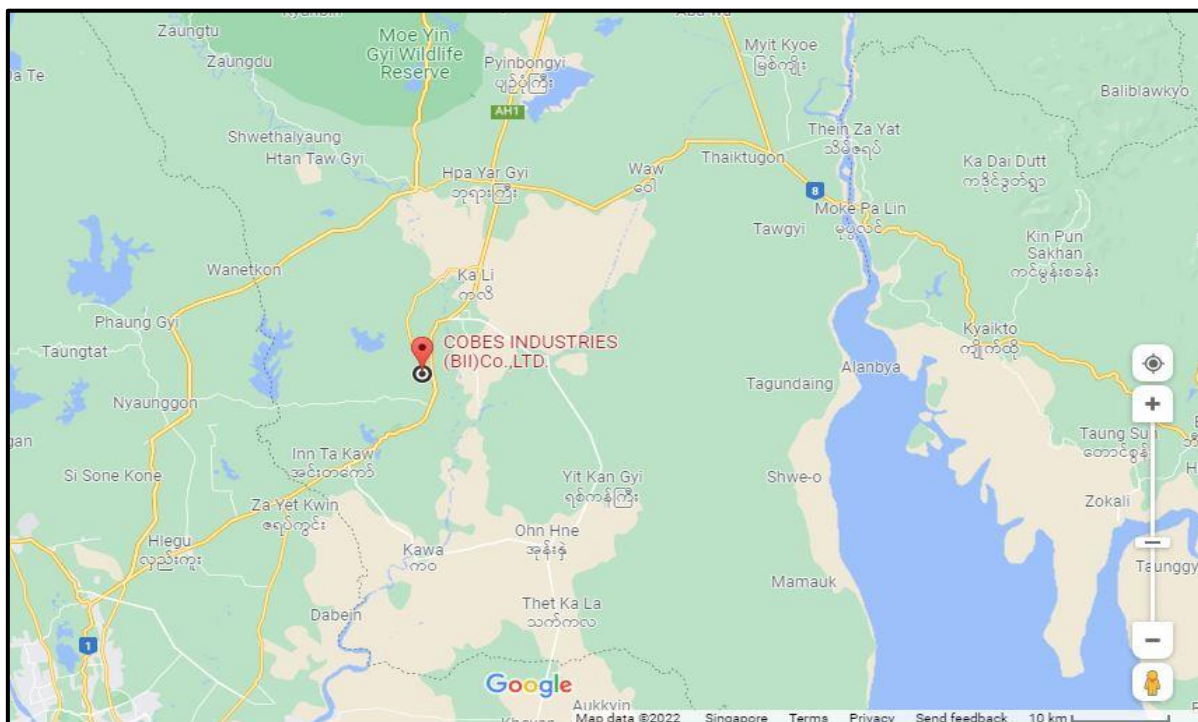


Figure 4-3 Factory Location Map (UTM Map)

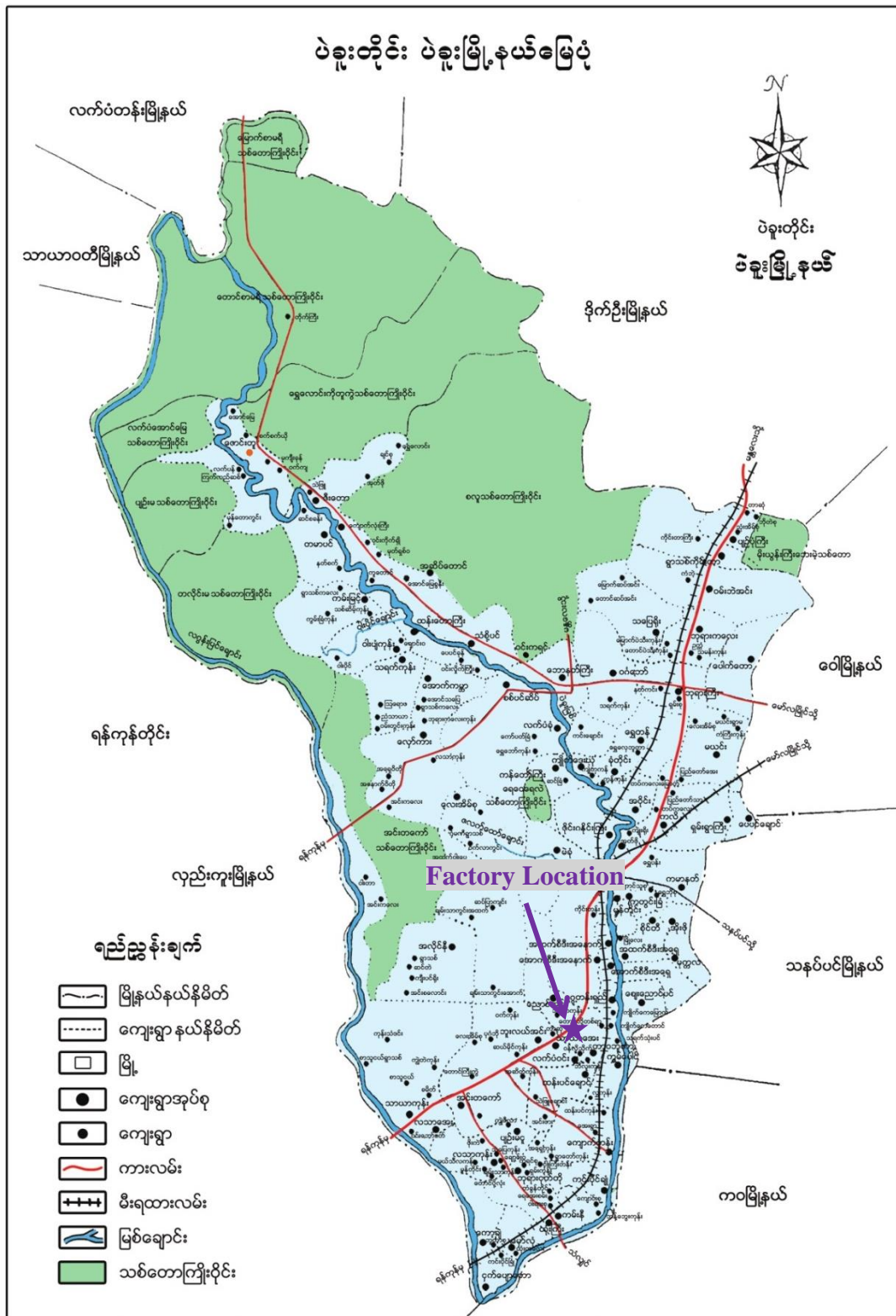


Figure 4-4 Factory Location Map (Bago Township Regional Map)

#### 4.6.2 Area and Land Ownership

The area and land ownership of Cobes Industries (B II) Company Limited’s factory are as follow.

Table 4-1 Area and Land Ownership of the Factory

Sr. No.	Description	CIC (B II)
1.	Land Area (Possession of Owner)	16 Acres
2.	Factory Area (Leased)	7.1 Acres (28,732.706 sq. meter)
3.	Type of Land	Grant Land
4.	Validity of Land Grant (Initial period permitted to use the land)	60 years
5.	Proposed Land or Building Use/ Lease Period	Initially (10) years + Extendable to two times of (5) years
6.	Land Acquisition	Lease Land
7.	Land Owner/ Lessor	U Ye Min Tun
8.	Lessee	Cobes Industries (B II) Company Limited

About the land utilization, the application form land rights authorization by Cobes Industries (B II) Company Limited, and lease agreement for land and building are shown at **Appendix 5**.

The map of factory location and land form 105 & 106 are as follow.

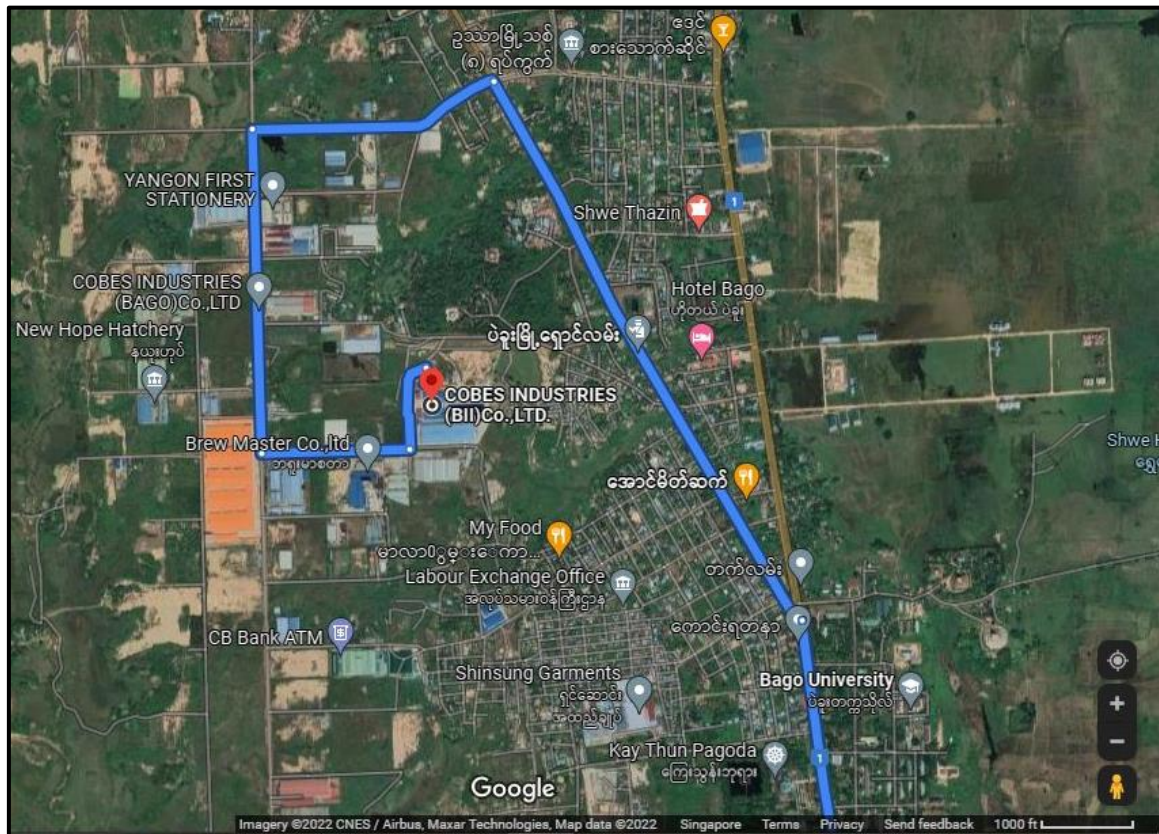
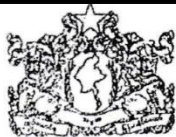


Figure 4-5 Factory Land Lease



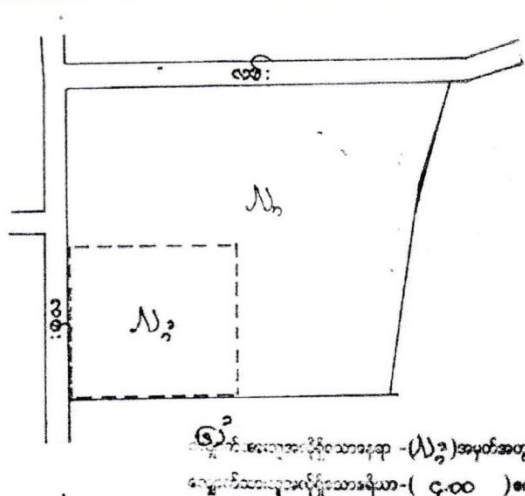
မြေစာရင်းပုံစံ - ၁၀၅ 2018 - 023200

မှန်ကန်ကြောင်း သက်သေခံ သောလက်ရှိမြေပုံကွပ် ယခုနှစ်အသုံးပြုသော ဦးပိုင်မြေပုံ

သက်သေပေးခံ လက်ခံရေးကူးရန်ပုံစံ

DALMS

ရုံးခွန်တံဆိပ်ခေါင်းကပ်ရန်

တိုင်းဒေသကြီး/ပြည်နယ် မြောက်ဧရာဝတီတိုင်းဒေသကြီး	
ခရိုင် မန္တလေးခရိုင်	
မြို့နယ်/မြို့နယ်ခွဲ မြောက်ဧရာဝတီမြို့နယ်	
ရပ်ကွက်/ကျေးရွာအုပ်စု ဒုတိယ (၉)	
ကွင်း/အကွက်အမှတ်နှင့်အမည် က ၃၁၄, လင်းလျှော်လှိုင် ကွင်း	
ဦးပိုင်အမှတ်/မြေကွက်အမှတ် ( N <sub>၁</sub> )	

ဦးပိုင်အမှတ်	အစွန်စည်းကြမ်းရသည့်ရိုင်ရှင်/ဂရန်ရှင်/အငှားဂရန်ရှင်အမည်	ပိုင်ဆိုင်ခွင့်	မြေမျိုးနှင့်အတန်း	ဧရိယာ (ဧက)	မှတ်ချက်
(မြေကွက်) N <sub>၁</sub>		-	0A	၁၆.၀၀	ဦးပိုင် (တ.ဝ.က ၈-၂-၁၉၉၀) ရှိသော မှတ်ပုံတင်/၂-၁၀.၀၂ အမှတ်ပိုင်ရှင်ဖြစ်ပါသည်။

ရေးကူးပေးသည့်အကြောင်းအရာ ဦးပိုင်အမှတ်

(အထက်ဖော်ပြပါအကြောင်းအရာအတွက်သာ အသုံးပြုခွင့်ရှိသည်)

လျှောက်ထားသူအမည် ဦးရဲမင်းထွန်း

လျှောက်လွှာလက်မှတ်ရက်စွဲ ၅.၁၀.၂၀၁၈

လျှောက်ထားသူထုတ်ပေးသည့်နေ့စွဲ

ယခုအထက်တွင်ပြဆိုသောမြေပုံမှာ မှန်ကန်သောစာရွက်ပေးထားသော (၂၀၁၈) ခုနှစ် အတွက် အောက်အောက်တွဲတိုင်းဖြင့် မြေပုံဖြစ်ကြောင်း သက်သေခံလက်မှတ် ရေးထိုးပါသည်။


အမှုတွဲထိန်းမြေတိုင်းစာရေးလက်မှတ် - ၂၄/၁၀/၁၉

၄၄၅

ထိုက်ဆိုင်စစ်ဆေးပြီးမှန်ကန်ပါသည်။

လက်ထောက်ကြီးစုမှူးလက်မှတ် - ၂၄/၁၀/၁၉

၄၄၅



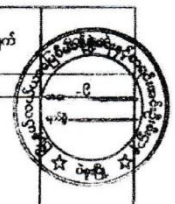
စီမံအဖွဲ့ညွှန်ကြားရေးဦးစီးဌာန

မြန်မာ့သယံဇာတနှင့်ထိုက်ဆိုင်ရေးဦးစီးဌာန

Figure 4-6 Land Form 105

မြေစာရင်းပုံစံ-၁၀၆ ဦးပိုင်တစ်ခု၏ ရာစခံ

ခရိုင် ----- ဝါဒူး ----- ဗြိတိသျှ ----- ဝါဒူး ----- မြေတိုင်းစာရေးအုပ်စု ----- ၉၁၁၁ (၉) ----- ကွင်း/အကွက်အမှတ်နှင့်အမည် ၁၃၁၅၂.၀၀၆၂၅၇၇ ဂွင်း

မှန်	နိုးပိုင်	အမှန်စည်းကြပ်ခံရသူ/ ပိုင်ရှင်အမည်(ရခပ်မှတ်/ အငွားကရပ်ရှင်)	ပိုင်ဆိုင်ခွင့်	မြေမျိုးနှင့်အတန်း	ဧရိယာ(ဧက)	အမှန်တော်သင့်ငွေ (နိုင်ငံကြေးအပေါ်အပင်) (ကျပ်)	မည်ကဲ့သို့မြေတိုင်းလွှဲသည့်အခြေအနေ
၁	၂	၃	၄	၅	၆	၇	၈
၂၀၁၈	(မြေပုံအရ) N <sub>၅</sub>	-	-	OA	၁၆.၀၀		 <p>မြေတိုင်း (အ.ဝ.က) (၈-၂-၁၉၉၅) နှင့် (၁) အမှတ် (၁) မြေတိုင်း (၁၀.၀.၈) အရင်းအမြစ် ဖြစ်ပြီး</p> <p>မြေပိုင်လက်လွှဲအပ်ခြင်းနှင့် တောင်းအပ်ပေးပါသည့်အခါ</p> <p>၂၀၁၈ OCT ၂၀၁၆</p>

အထက်ဖော်ပြပါအချက်အလက်များကို ၂၀၁၈ခုနှစ်အတွက် နှစ်စဉ် မျှော်မှတ်တွဲတိုင်းတာခြင်း မြေပုံနှင့်မှတ်ပုံတင်စာရင်းများတွင် ပါရှိသည့်အတိုင်း အမှန်လက်ခံရေးကူးကြောင်း သက်သေခံပါသည်။ အမှတ်စဉ်/မြေတိုင်းစာရေးလက်မှတ် -

တိုက်ဆိုင်စစ်ဆေးပြီးမှန်ကန်ပါသည်။ လက်ထောက်ဦးစီးမှူးလက်မှတ် -

စိစစ်အတည်ပြုသည်။ ဗြိတိသျှလက်မှတ် -

မြေပိုင်လက်လွှဲအပ်ခြင်းနှင့် တောင်းအပ်ပေးပါသည့်အခါ

၂၀၁၈ OCT ၂၀၁၆

Figure 4-7 Land Form 106

4.6.3 Site Description

4.6.3.1 Site Accessibility

The access way of the project site is simple.

From Yangon

- a) Drive along the Yangon-Mandalay Road (old) and turn left street after passing Shwe Shan Lay Restaurant. This street crosses Myo Shaung Road.
- b) After few minutes driving, the site is faced.
- c) The site is at the left side of entering street. (Shown at **Figure 4-5**)

4.6.3.2 Site Boundaries and Surrounding Environment

The factory is surrounded on the four sides as follows: (See at **Figure 4-2**.)

- East Side: Free Land
- West Side: Free Land
- Left Side: Jade Blue Company Limited
- Right Side: Narani Thein Monastery Road

4.6.4 Factory Layout and Infrastructure

4.6.4.1 Layout Plan

The main buildings are located at Error! Reference source not found..

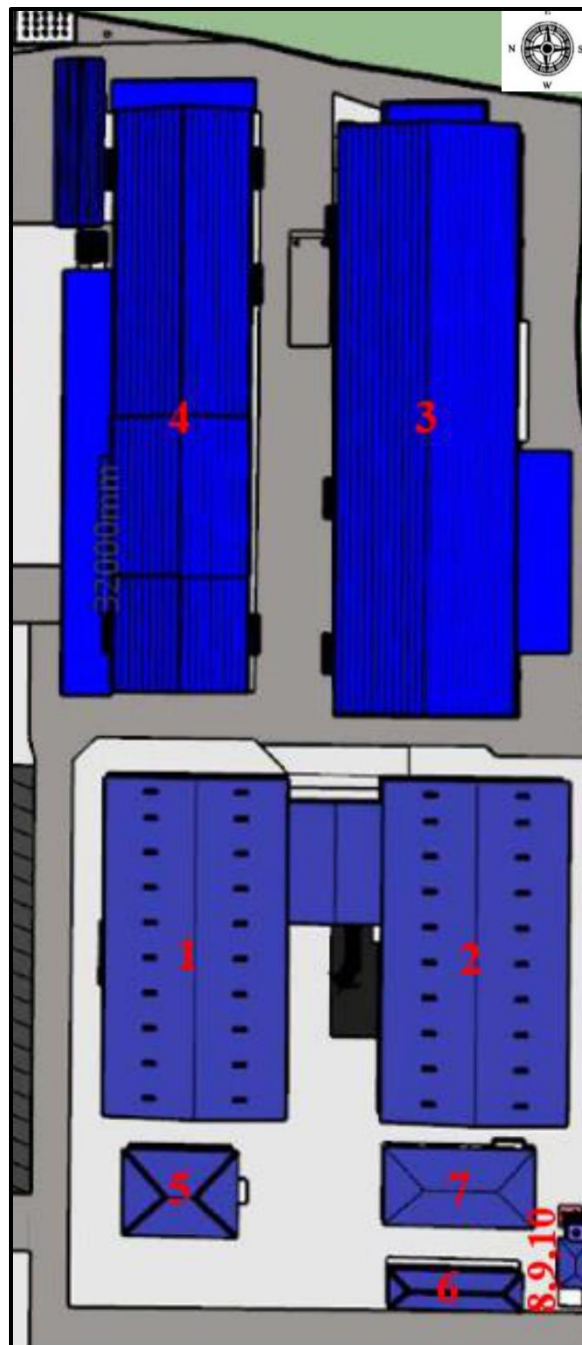


Figure 4-8 Factory Layout Plan

#### 4.6.4.2 Structure of the Factory

The following table shows the list of buildings constructed in the proposed project.

Table 4-2 Lists of Buildings with Dimensions

Sr. No.	Items	No. of Storeyed	L x B/ L x B x H	Unit
1.	Factory A	Two storeyed	68.5 x 36.25	m x m
2.	Factory B	Two storeyed	68.5 x 36.25	m x m

Sr. No.	Items	No. of Storeyed	L x B/ L x B x H	Unit
3.	Factory C	Two storeyed	8,640	m <sup>3</sup>
4.	Raw Material (Non-woven Fabric) Production Plant	One storeyed	3,360	m <sup>3</sup>
5.	Office and Hostel	Three storeyed	27.5 x 14.54	m x m
6.	Security House and Hostel	Two storeyed	27.45 x 6	m x m
7.	Canteen	One storeyed	30 x 14.95	m x m
8.	Generator House	One storeyed	20 x 15	ft x ft
9.	Transformer	One storeyed	12 x 10	ft x ft
10.	Panel Room	One storeyed	12 x 12	ft x ft

L = Length, B = Breath, H = Height



Factory A and Factory B



Factory C



Raw Material (Non-woven Fabric) Production Plant



Office and Hostel



Security House and Hostel



Canteen



Generator House



Transformer



Panel Room

Figure 4-9 Buildings within the Factory

#### 4.6.5 Types of Products and Production Quantity

##### 4.6.5.1 Types of Products

**Cobes Industries (B II) Company Limited** manufactures seven types of final products. They are

- ❖ Common Scrub Suit
- ❖ Coverall
- ❖ Isolation Gown
- ❖ Hardcover Surgical Gown
- ❖ Bulk Surgical Gown
- ❖ Headgear
- ❖ Experimental Clothes



The photos of sample products are shown as following.



Common Scrub Suit



Coverall



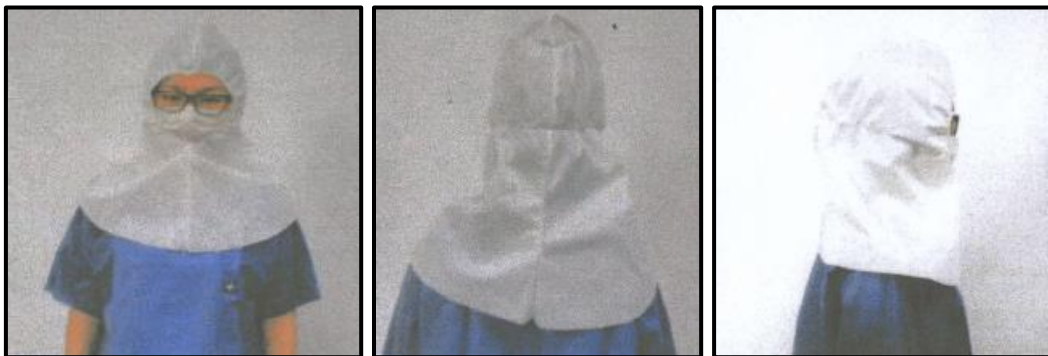
Isolation Gown



Hardcover Surgical Gown



Bulk Surgical Gown



Headgear



Experimental Clothes

Figure 4-10 Photos of Sample Products

**Cobes Industries (B II) Company Limited** manufactures also main raw material for above products such as SMS (polypropylene Spunbond; polypropylene SMS, Breathable Film; Spunbond-Meltblown-Spunbond). At the time not ready to manufacture it, SMS is imported and above seven products should be manufactured.

Brief description about SMS is as follow.

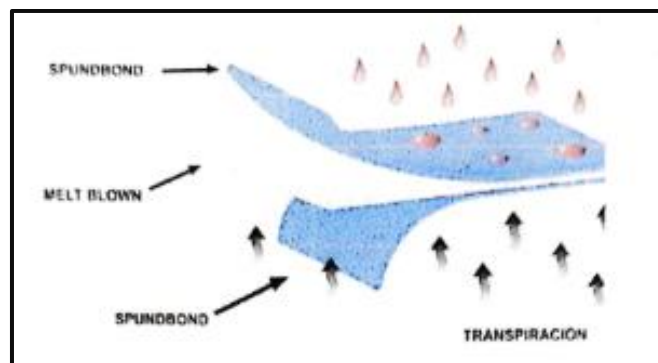


Figure 4-11 Brief Description of SMS

#### 4.6.5.2 Production Quantity

**Cobes Industries (B II) Company Limited** intends to manufacture a 30 years plan and it is shown as follow.

Table 4-3 Annual Production Statement

Sr. No.	Particular	A/U	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5	Year 6 ~ 10	Year 11 ~ 20	Year 21 ~ 30
1.	Common Scrub Suit	Piece	2,000,000	2,040,000	2,080,800	2,101,608	2,143,640	2,186,513	2,230,243	2,250,822
2.	Coverall	Piece	1,800,000	1,836,000	1,872,720	1,891,447	1,929,276	1,967,862	2,007,219	2,025,740
3.	Isolation Gown	Pack/10 Pcs	3,050,000	3,111,000	3,173,220	3,204,952	3,269,051	3,334,432	3,401,121	3,432,504
4.	Hardcover Surgical Gown	Piece	5,000,000	5,100,000	5,202,000	5,254,020	5,3539,100	5,466,282	5,575,608	5,627,055
5.	Bulk Surgical Gown	Piece	11,500,000	11,730,000	11,964,600	12,084,246	12,325,931	12,572,450	12,823,899	12,924,227
6.	Headgear	Piece	300,000	306,000	312,120	315,241	321,546	327,977	334,536	337,623
7.	Experimental Clothes	Piece	300,000	306,000	312,120	315,241	321,546	327,977	334,536	337,623
	<b>TOTAL</b>		<b>23,950,000</b>	<b>24,429,000</b>	<b>24,917,580</b>	<b>25,166,756</b>	<b>25,670,091</b>	<b>26,183,493</b>	<b>26,707,163</b>	<b>26,953,595</b>
<b>Extension Project</b>										
1.	SMS - Nonwoven Fibre	Ton	5,800	5,916	6,034	6,095	6,217	6,341	6,468	6,527

#### 4.6.6 Raw Materials

There are two groups of raw materials for non-woven fabric and seven kinds of products as non-sterilized disposable surgical-scrubs and related kind of clinical wears.

##### 4.6.6.1 Raw Materials for Non-woven Fabric

**Cobes Industries (B II) Company Limited** manufactures non-woven fabric using following raw materials.

- ❖ Polypropylene Resin
- ❖ Colour Master Batch
- ❖ Anti-Static Solution
- ❖ Anti-Static PP Resin
- ❖ Soft PP Resin

The photos of these raw materials are summarized as follow.



Figure 4-12 Raw Materials for Non-woven Fabric

##### 4.6.6.2 Raw Materials for Non-sterilized Disposable Surgical-scrubs and Related Kind of Clinical Wears

The main raw material in non-woven fabrics (Polypropylene, Spunbond, SMS) and other 21 auxiliary raw materials for non-sterilized disposable surgical-scrubs and related kind of clinical wears. The norm of raw material utilization is as shown as following table.

Table 4-4 Norm for One Dozen

Sr. No.	Particulars	Unit	Common Scrub Suit	Coverall	Isolation Grown	Hardcover Surgical Gown	Bulk Surgical Gown	Headgear	Experimental Clothes
			1	2	3	4	5	6	7
			Pcs	Pcs	Pcs	Pcs	Pcs	Pcs	Pcs
1.	Fabric (Polypropylene Spunbond, Polypropylene SMS, Breathable Film)	Meter	1.94	2.63	1.44	1.45	1.31	0.18	0.88
<b>Accessories</b>									
1.	40s/ 2 SP Thread	Meter	20.8449	-	6.95	5.50	5.50	-	7.20
2.	150 D Thread	Meter	2.6856	-	1.04	2.40	2.40	0.60	2.50
3.	40s/ 2 SP Water Proof Thread	Meter	-	164.565	-	-	-	-	-
4.	3 cm Loop	Meter	-	-	-	0.180	0.180	-	-
5.	3 cm Hoop	Meter	-	-	-	0.051	0.051	-	-
6.	White Latex	kg	-	-	-	0.013	0.013	-	-
7.	HM - 825 Hot Melt Glue	kg	-	-	-	0.005	0.005	-	-
8.	3 mm White Vecro	Meter	-	-	-	-	0.007	-	-
9.	B 7.5 White Cuff 5 cm 3.1 g	Pcs	-	-	-	2.00	2.00	-	-
10.	Double Adhesive Tape	Meter	-	-	-	-	-	-	0.32
11.	Zipper	Pcs	-	1	-	-	-	-	-
12.	Rubber Band	kg	-	0.008	0.0016	-	-	0.002	0.00
13.	2” Width Adhesive Tape	Meter	0.06	-	-	-	-	-	-
14.	2.5” Width Adhesive Tape	Meter	-	0.104	0.03	0.13	0.06	-	-
15.	Hangtag	Pcs	-	-	-	1.00	1.00	-	-
16.	Pouch	Pcs	-	-	-	1.00	-	-	-
17.	PE Bag	Pcs	1.02	1.0	0.10	0.05	0.05	0.01	0.02
18.	Label	Pcs	2.04	6.1	0.02	1.00	-	1.00	1.00

Sr. No.	Particulars	Unit	Common Scrub Suit	Coverall	Isolation Gown	Hardcover Surgical Gown	Bulk Surgical Gown	Headgear	Experimental Clothes
			1	2	3	4	5	6	7
			Pcs	Pcs	Pcs	Pcs	Pcs	Pcs	Pcs
19.	Carton	Pcs	0.02	0.04	0.01	0.05	0.01	0.01	0.02
20.	Corrugated Paper Plate	Pcs	-	0.04	-	0.05	0.01	0.01	0.02
21.	PE Instruction Book	Pcs	-	1.0	-	1.00	-	-	0.02

#### 4.6.7 Machinery and Equipment List

There are two groups of machinery and equipment list, first for non-woven fabric production and second for non-sterilized disposable surgical-scrubs and related kind of clinical wears. There are also auxiliary machineries which are imported and local purchase.

##### 4.6.7.1 Machinery and Equipment for Non-woven Fabric Production

**Cobes Industries (B II) Company Limited** uses 24 kinds of machinery to produce non-woven fabric and they are summarized as follow. They are imported items.

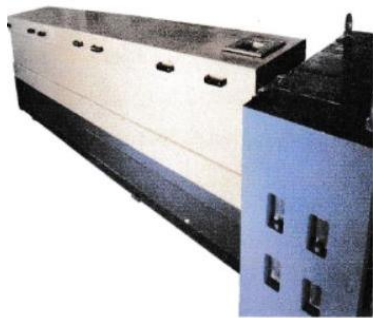
Table 4-5 List of Machinery and Equipment for Non-woven Fabric

Sr. No.	Particular	Qty	Unit	Specification
1.	Main Extruder	4	Set	Screwing, heating and pushing the melting polypropylene
2.	Recycle Extruder 120 mm	2	Set	Recycling an unqualified products
3.	Filter	4	Set	Filtering the dirty things from polypropylene liquids
4.	Metering Pump 300 CC	2	Set	Measuring the amount of melting spunbound liquids
5.	Metering Pump 150 CC	2	Set	Measuring the amount of melting the meltblown liquids
6.	Spinning Die Body	4	Set	Heating the spunbound liquid
7.	Spinneret Plate & Distribution Plate	4	Set	Spinning spunbond liquid
8.	Quenching Chamber & Diffuser	2	Set	Spreading the non-woven string
9.	Web Former	1	Set	Control machine and power supplies
10.	Calendar (Kuster)	1	Set	Heating, pressing to become non-woven fabric
11.	Winder	1	Set	Rolling up the non-woven fabric
12.	Slitter System	1	Set	Cutting the rolling ones
13.	Raw Material Suction System and Feeding System	4	Set	Suctioning the raw material and balancing it
14.	Hydrophilic Device	1	Set	Painting the non-woven fabric
15.	Cooling System	2	Set	Suctioning the air and cooling the non-woven fabric (spunbond)
16.	Air Heater	2	Set	Producing the hot air to the meltblown woven fabric
17.	Meltblown Die Head Assembly	2	Set	Heating and spinning the meltblown liquid
18.	Electronic Control Panel	18	Set	Control machine and power supplies
19.	Ultrasonic Cleaning	1	Set	Cleaning die-head body
20.	Vacuum Heating Oven	2	Set	Producing hot air



Sr. No.	Particular	Qty	Unit	Specification
21.	Wrapper	1	Set	Packing rolling non-woven
22.	Roots Fan	2	Set	Filtering and producing cooling water
23.	Diesel Generator Set	3	Set	Electronic power output

The photos of machinery are shown as follow.



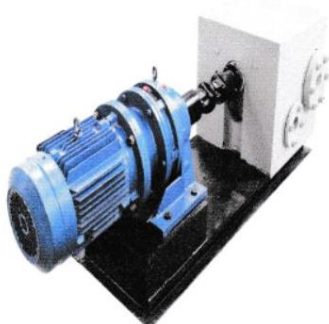
Main Extruder



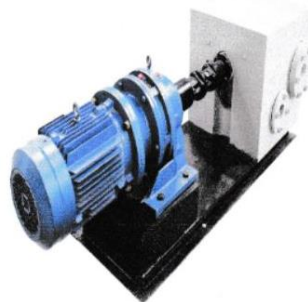
Recycle Extruder 120 mm



Filter



Metering Pump 300 CC



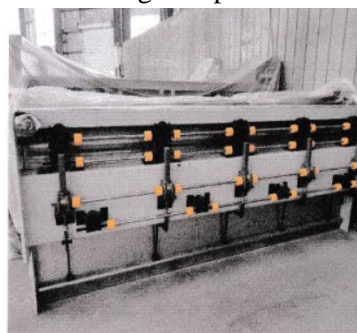
Metering Pump 150 CC



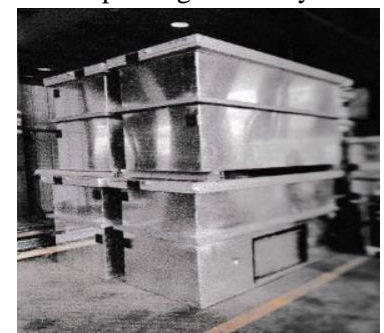
Spinning Die Body



Spinneret Plate & Distribution Plate



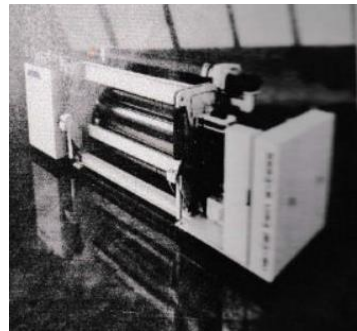
Quenching Chamber & Diffuser



Web Former



Calendar (Kuster)



Winder



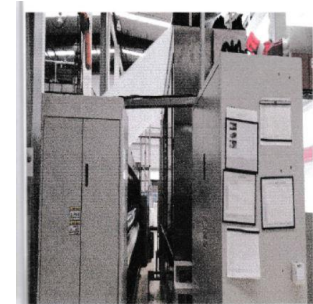
Slitter System



Raw Material Suction System and Feeding System



Hydrophilic Device



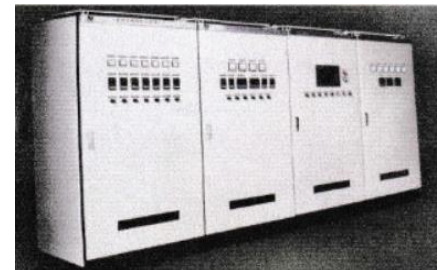
Cooling System



Air Heater



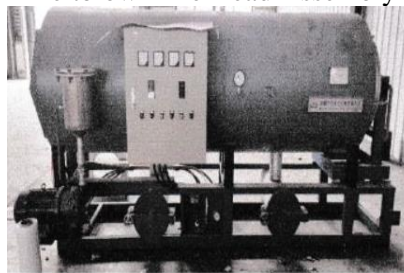
Meltblown Die Head Assembly



Electronic Control Panel



Ultrasonic Cleaning



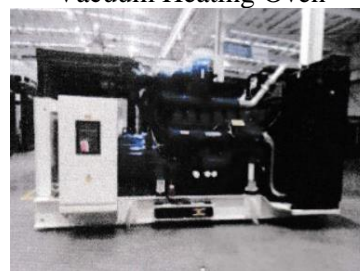
Vacuum Heating Oven



Wrapper



Roots Fan



Diesel Generator Set

Figure 4-13 Photos of Machinery and Equipment for Non-woven Fabric

#### 4.6.7.2 Machinery and Equipment for Non-sterilized Disposable Surgical-scrubs and Related Kind of Clinical Wears

**Cobes Industries (B II) Company Limited** uses 27 kinds of machinery to produce non-sterilized disposable surgical-scrubs and related kind of clinical wears and they are summarized at the following table.

Table 4-6 List of Machinery and Equipment (To be Imported)

Sr. No.	Particular	Quantity	Unit
1.	Continuous Sealing Machine	4	Set
2.	Glue Machine (XY or Double Joint)	4	Set
3.	Leak Sealing Machine	1	Set
4.	Four Side Heat Sealing Machine	3	Set
5.	Lace Machine	50	Set
6.	Spot Welding	80	Set
7.	Exhaust Heat Sealing Machine	3	Set
8.	Automatic Buckle Machine	2	Set
9.	Automatic Belting Machine	2	Set
10.	Tape Cutting Machine	4	Set
11.	Slitting Machine	2	Set
12.	Hanging Crane	3	Set
13.	Strong Tensile Testing Equipment	1	Set
14.	Hydrostatic Test Equipment	1	Set
15.	Constant Temperature Incubator	1	Set
16.	Constant Temperature Drying Box	1	Set
17.	Electronic Balance	1	Set
18.	Water Bath Equipment	1	Set
19.	Autoclave	1	Set
20.	Martindale Equipment	1	Set
21.	Thin Edge Slitter	2	Set
22.	Double Color Print & Grooving Machine	1	Set
23.	Single Color Printing Machine	1	Set
24.	Manual Grooving Machine	1	Set
25.	Bingding Machine	2	Set
26.	Belting Machine	1	Set
27.	Printing Machine	1	Set

The photos of some machinery are shown as follow.



Automatic Belting Machine



Automatic Buckle Machine



Double Colour Print & Grooving Machine



Exhaust Heat Sealing Machine



Martindale Equipment



Print Machine



Single Colour Print Machine



Thin Edge Sitting Machine

Figure 4-14 Photos of Some Machinery and Equipment for Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

#### 4.6.7.3 Auxiliary Machinery on Local Purchase and Imported

Table 4-7 List of Electrical Materials (Local Purchase)

Sr. No.	Particular	Quantity	Unit
1.	Projector	4	Set
2.	Attendance Machine	20	Set
3.	HD Camera	85	Pcs
4.	UPS	80	Pcs
5.	Voltage Regulator	5	Pcs
6.	Electronic Scale	10	Set

Sr. No.	Particular	Quantity	Unit
7.	Balance Scale	3	Set
8.	Generator	2	Unit

Table 4-8 Furniture and Fixtures Requirement (Local Purchase)

Sr. No.	Particular	Quantity	Unit
1.	Long Table (Canteen)	50	Set
2.	Bed	15	Set
3.	Wardrobe	15	Set
4.	Safety Box	1	Set
<b>Dormitory</b>			
1.	Sofa	5	Set
2.	Mattress	15	Set
3.	Microwave Oven	2	Set
4.	Rice Cooker	2	Set
5.	3 Layer Glass Table	2	Set
6.	Television	5	Set
7.	Shower	30	Set
<b>Others</b>			
1.	Toilet (Factory)	25	Set
2.	Toilet (Office and Dormitory)	5	Set
3.	Basin	20	Set

Table 4-9 List of Vehicle (To Be Imported)

Sr. No.	Particular	Quantity	Unit
1.	Motor Forklift	3	Set

Table 4-10 List of Vehicle (Local Purchase)

Sr. No.	Particular	Quantity	Unit
1.	Commercial Vehicle	1	Set

#### 4.6.8 Manufacturing Process

There are two manufacturing processes; first for manufacturing non-woven fabric and second for non-sterilized disposable surgical-scrubs and related kind of clinical wears.

##### 4.6.8.1 Process for Non-woven Fabric

Non-woven fabric is a fabric-like material made from staple fibre (short) and long fibre (continuous long) bonded together by chemical, mechanical, heat on relevant treatment. The factory making non-woven fabric is SMS type and it means spunbond, meltblown, spunbond. The main processing line is shown as below.

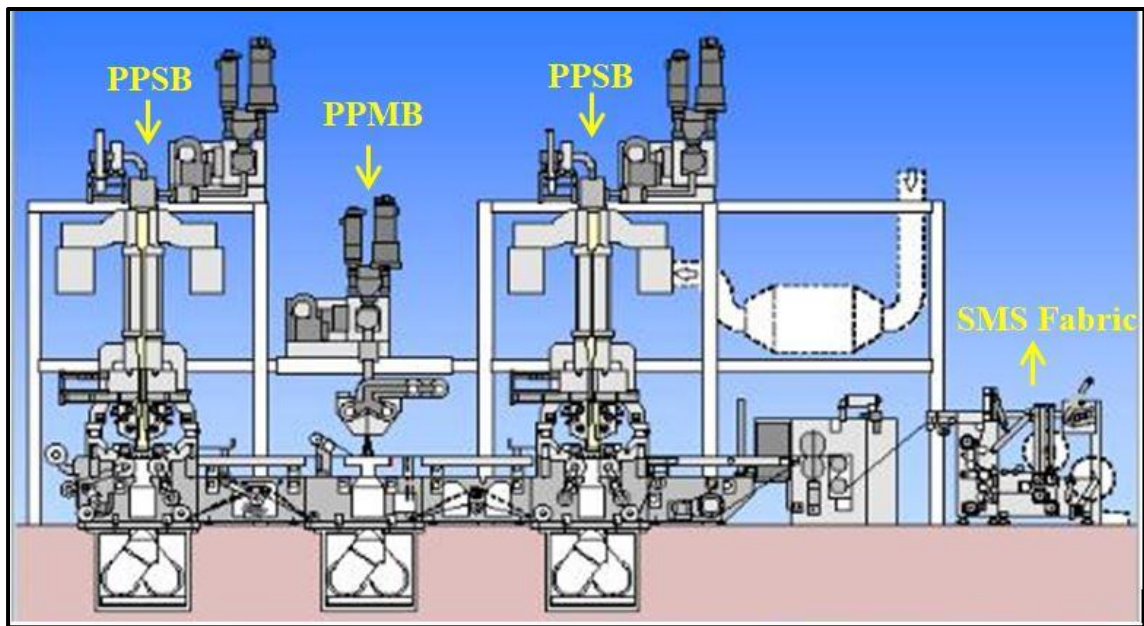
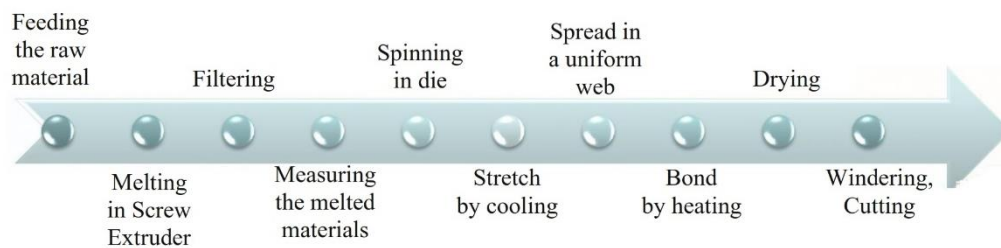


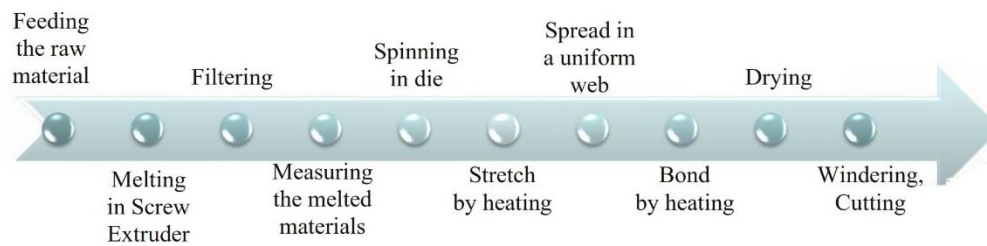
Figure 4-15 SMS Compound Line

SMS is a tri laminate non-woven fabric, made up of top layer of spunbond polypropylene, a middle layer of meltblown polypropylene and bottom layer of spunbond polypropylene. Spunbond polypropylene has excellent properties, strength and durability, and on the other hand, meltblown has relatively weak tensile properties but due to the smaller fibres and larger surface area taken up by the fibres, it has excellent wicking and barrier properties. So together, they can create a strong product which can also offer a barrier to fluids and particles.

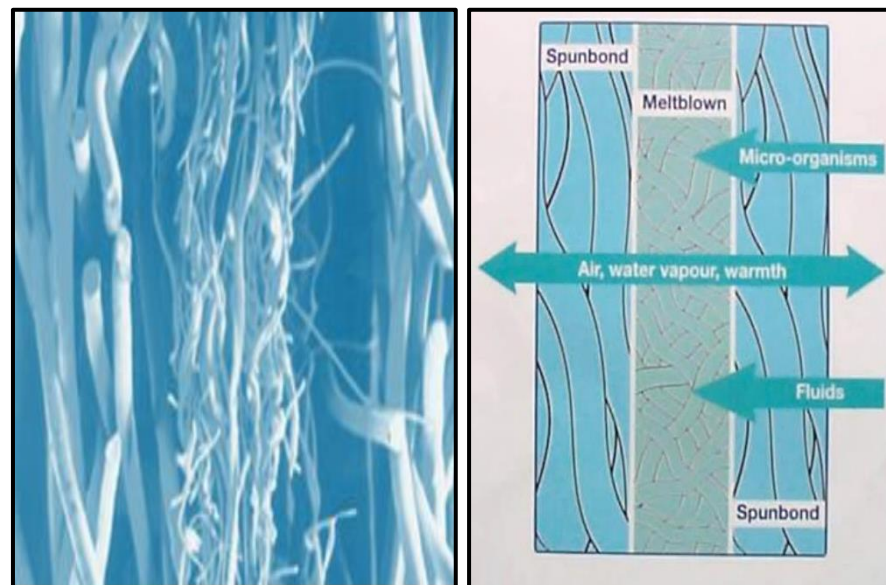
### Spunbond Non-woven Technology



### Meltblown Non-woven Technology



### SMS



#### 4.6.8.2 Process for Non-sterilized Disposable Surgical-scrubs and Related Kind of Clinical Wears

**Cobes Industries (B II) Company Limited** uses Cutting, Making and Packing (CMP) system, the main form of production In Myanmar. The CMP system is a form of production on consignment in which the raw materials are imported from abroad Main raw materials may be semi-product as non-woven fabric and real raw as plastic resins.

**Cobes Industries (B II) Company Limited** plans that semi-product as non-woven fabric is imported before not ready to produce it. After the time that ready to produce non-woven fabric, only plastic resins are imported. Non-woven fabric is cut in Cutting Department, sewing, gluing, zipper, button and hangtag hanging are done in Sewing Department. Then, check the quality in Quality Control Department and packed in carton boxes in the Packing Department. Finished products are exported to USA, European Countries and Japan. The following procedures show the manufacturing processes of the proposed project.

- ❖ Collection of Raw Material (Non-woven Fabric)

- ❖ Fabric Relaxing and Spreading
- ❖ Cutting
- ❖ Gluing and Heat Pressing
- ❖ Ink Stamping on Fabric
- ❖ Sewing and Linking
- ❖ Dust Blowing
- ❖ Checking and Label Tagging
- ❖ Folding
- ❖ Packaging with Plastic Bag
- ❖ Packaging with Carton Boxes
- ❖ Storing in Warehouse
- ❖ Transport with Trucks

All the processes will be implemented with the support not only of instrumental control devices but also with manual at different stages of operation. Products are checked in production lines and quality control room to ensure products are in strict adherence to stringent quality standards. This intention is to operate the manufacturing team on a shift system. All the above will be accompanied with a high standard of operating procedures.

❖ **Collection of Raw Material (Non-woven Fabric)**

The main raw material as non-woven fabric is imported from China and it is stored as the following figure.



Figure 4-16 Storing of Non-woven Fabric

These rolls of fabric are carried by forklift and sent to the Cutting Department.

❖ **Fabric Relaxing and Spreading**

The rolls of fabric are unpacked and spread to cut and spreading photo is shown as the following figure.



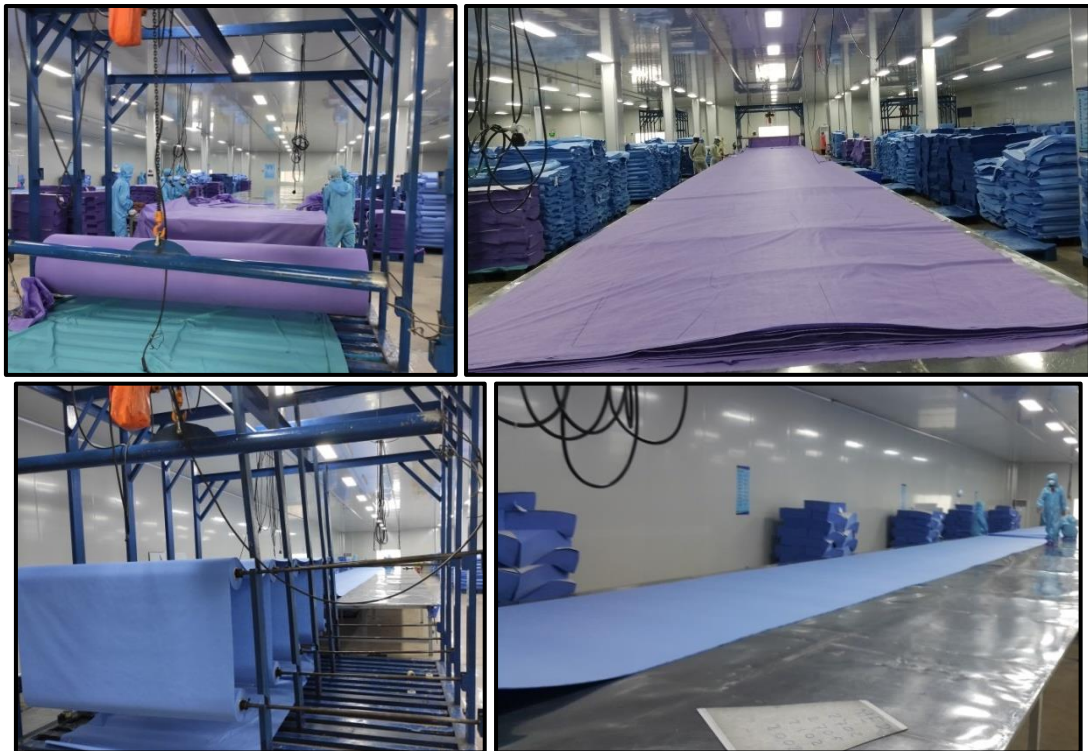


Figure 4-17 Spreading the Rolls of Fabric

❖ **Cutting**

In cutting department, fabrics are cut into required pattern and size. There are 5 cutting tables (one table having 6 ft x 88 ft 9 in, two tables having 11 ft 11 in x 88 ft 9 in and two tables having 11 ft 2 in x 88 ft 9 in) and 5 cutting machines (with 4-meter length tracking line). There are two forms of cutting; first large size and second respective patterns from large size. These figures are as follow.



Figure 4-18 Large Size Cutting



Figure 4-19 Respective Patterns Cutting

❖ **Gluing and Heat Pressing**

After cutting the fabric, patterns are glued to each other. The sides of patterns are glued with brush. Hand patterns are glued by employees and waist belt fabric pieces are glued by automatic gluing machines. There are two automatic machines for fabric gluing.

Some hand patterns are pressed with heat, instead of gluing. There are also two heat press machines for hand patterns linking. Glued hand patterns are sent to drying room with temperature approximately 30 Degree Celsius to dry the glue. There are 25 shelves in drying room.





Figure 4-20 Gluing & Heat Pressing, Drying

❖ **Ink Stamping on Fabric**

Using even pressure, lightly press the stamp onto the foam to coat the stamp, then press onto the fabric and wait a second for the fabric to absorb it. Cut patterns are stamped with both auto machines and manual system. There are 2 auto machines for stamping.



Figure 4-21 Stamping

❖ **Sewing and Linking**

After drying the glued hand patterns, they are sent to sewing section. All gown patterns are sent to sewing section and all the parts of a fabrics are sewn to make a complete gown. Sewing process is done by manually. Fabrics are

sewn using ‘Group System’, which is done by dividing the supporting and assembling lines system to get better quality and productivity. In this sewing section, processes are slightly different according to the type of product and designs asked by buyers. Some fabrics for waist belt are swan in sewing line and some are stuck into gown patterns with glue.

There are 3 places for operation and total of 20 sewing lines in operation places. All types of design are operated by using auto-handling system. Work training practices are also done for new employees in operation room.

Patterns are sewn in an assembly line, and become more complete as it progresses down the sewing line. Sewing machine operators receive a bundle of cut fabric and repeatedly sew the same portion of the garment, passing that completed portion to the next operator. For e.g., the first operator sews hand pattern, and the next one sews the neck line, etc.



Figure 4-22 Sewing and Linking

❖ **Dust Blowing**

After sewing, the garments are sent to the blowing machines to remove the dust particles.



Figure 4-23 Dust Blowing

❖ **Checking and Label Tagging**

After dust removing garments are checked on desk in neat and tight, glue in link, align in portion etc. After checking the quality, garments are tagged with label.



Figure 4-24 Checking and Label Tagging

❖ **Folding**

After labeling, the garments are folded by respective form.



Figure 4-25 Folding

❖ **Packaging with Plastic Bag**

After folding, the garments are packed in plastic bags.





Figure 4-26 Packaging with Plastic Bag

❖ **Packaging with Carton Boxes**

The final inspected products are sent to the packaging room and there are 3 packing lines. At that room, plastic packs are stamped with respective forms and packed into carton boxes.



Figure 4-27 Packaging with Carton Boxes

❖ **Storing in Warehouse**

The finished products in carton boxes are sent to warehouse by using crate and forklift.



Figure 4-28 Storing in Warehouse

❖ **Transport with Trucks**

After storing the warehouse, the finished products carton boxes are transported by trucks to port and sent to USA, European Countries and Japan.



Figure 4-29 Transport with Trucks

Production flow charts are as follow.

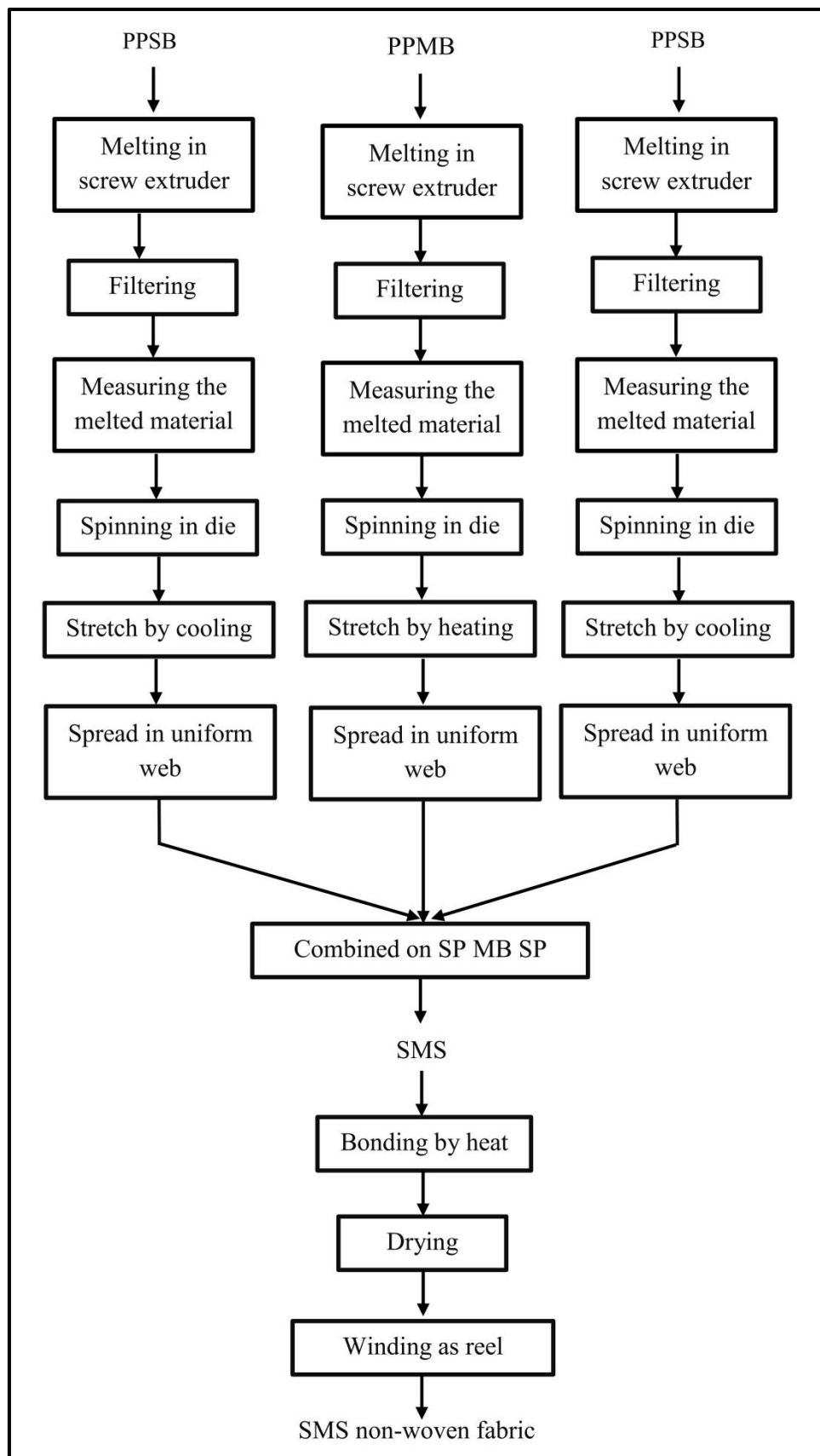


Figure 4-30 Process Flow Diagram for Non-woven Fabric



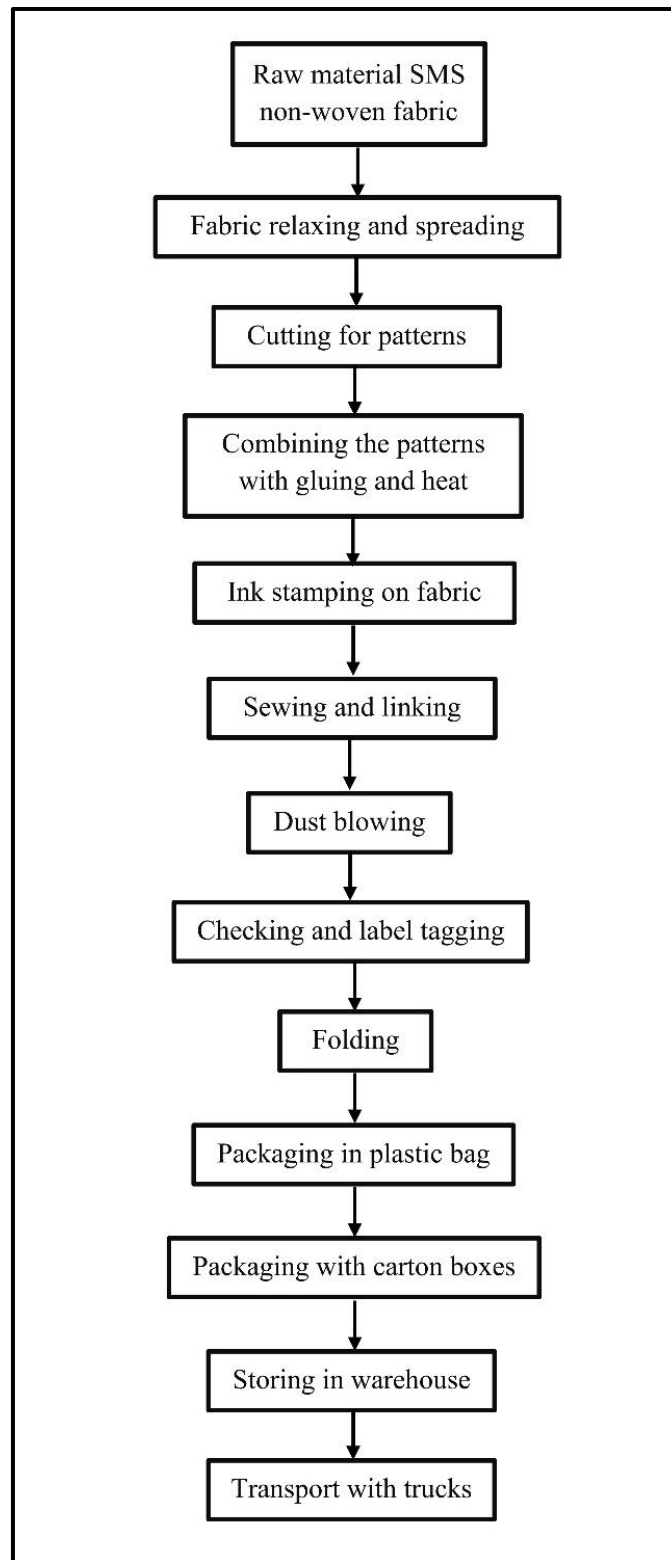


Figure 4-31 Process Flow Diagram for Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

#### 4.6.9 Utilities

##### 4.6.9.1 Electricity

**Cobes Industries (B II) Company Limited** will use electricity from National Grid Line (electricity for main line of Electrical and Power Communication) through (11/0.4 kV) distribution transformer which capacity is 500 kVA and 1,000 kV. The EI certificate for 500 kVA transformer is attached as **Appendix 13** and that for 1,000 kVA transformer is under application process.



Figure 4-32 Transformer

Expected annual electricity consumption are as follow.

Table 4-11 Annual Electricity Usage

Sr. No.	Particulars	A/U	Year-1	Year -2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year 10~30
1.	Electricity	kWh	360,000	363,600	367,236	370,908	374,617	378,364	382,147	385,969	389,828	393,727

##### 4.6.9.2 Generator

For the emergency cases, **Cobes Industries (B II) Company Limited** prepare to use two numbers of diesel generators; one set of 200 kVA and one set of 600 kVA. The generator certificate for 200 kVA and 600 kVA is seen in **Appendix 14** and that for three units of 1,500 kVA generators are under application process.

Some information about generators are as follow.

Specification	200 kVA	600 kVA	1,500 kVA
Maximum Capacity	200 kVA	600 kVA	1,500 kVA
Rated Voltage	400 V	400 V	380/220 V

Specification	200 kVA	600 kVA	1,500 kVA
Generator	-	X 255400	WPS 1500
Kind of Engine (Diesel)	-	KTA 19-68	-
Horse Power of Engine	208 HP/ 155 kW	770 HP/ 575 kW	-
Engine No.	20/404	41298979	-

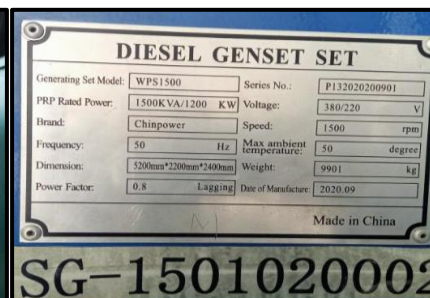
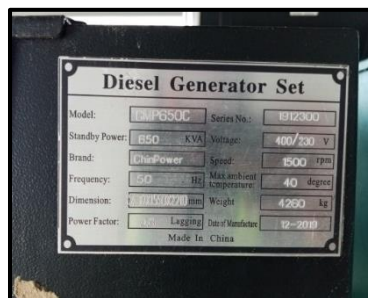


Figure 4-33 Diesel Generators

#### 4.6.9.3 Fuel Requirement

Main used fuel for this project is diesel and used as fuel for generators and vehicles such as forklift, motor car, truck etc. Diesel is brought from Htoo and stores in Piper. The average consumption of diesel is approximately 1,250 gallons (25 pipers) per month.



Figure 4-34 Diesel Tank

#### 4.6.9.4 Water Requirement

Although production of non-sterilized disposable surgical-scrubs and related kind of clinical wears does not need water as raw material, there are two tube wells with 4 in diameter, in the factory for other purposes. Purified drinking water is used for drinking purpose and the photo of water bottles are shown as figure.



Figure 4-35 Purified Water Bottles

#### 4.6.10 Financial Information and Investment Plan

##### 4.6.10.1 Financial Information

The financial information of **Cobes Industries (B II) Company Limited** is as follows.

Table 4-12 Financial Information

<b>Type of Investment</b>	100% Foreign Investment
<b>Type of Business</b>	Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis
<b>Authorized Capital</b>	USD 1,000,000
<b>Number of Shares</b>	100% of Authorized Capital

<b>Type of Share</b>	100,000 Ordinary Shares of USD 10 each
<b>Parent Company’s Capital Amount</b>	USD 1,000,000
<b>Annually or Period of Proposed Capital to be Brought in</b>	Within two years as soon as BRIC approval
<b>Construction Period</b>	Within two years
<b>Validity of Investment Permit</b>	Initially (10) years + Extendable to two times of (5) years

#### 4.6.10.2 Investment Plan

The investment plan is as follows:

Table 4-13 Investment Plan (Amount of Capital - Foreign)

Sr. No.	Particular	(USD in Million)			
		Original Proposed Value	Actual Invested Value	Further Proposed Value	Total Proposed Value
1.	Cash	0.391	0.619	0.700	1.091
2.	Building (Renovation Cost)	0.200	0.200	-	0.200
3.	Machinery & Equipment (Import)	0.328	-	3.974	4.302
4.	Electrical Material (Local)	0.034	0.034	-	0.034
5.	Motor Vehicle (Local)	0.029	0.028	-	0.029
6.	Furniture & Fixture (Local)	0.018	0.018	-	0.018
<b>Total</b>		<b>1.000</b>	<b>0.899</b>	<b>4.674</b>	<b>5.674</b>
		<b>100%</b>	<b>90%</b>	<b>-</b>	<b>-</b>

Remark: Exchange Rate 1 USD = 1,520 Kyats

Documents about the investment of original proposed value 1.0 million USD to 5.674 million USD are shown as

#### 4.6.11 Working Hour and Manpower Requirement

##### 4.6.11.1 Working Hour

Working hours of **Cobes Industries (B II) Company Limited** are as follow.

Table 4-14 Working Hour

<b>Working Hour (Management Office and Factory)</b>	8 hours per day
<b>Working Days</b>	5.5 days per week
<b>Monday to Friday</b>	7:30 a.m. ~ 4:30 p.m. (Lunch Break: 11:30 a.m. ~ 12:30 p.m.)
<b>Saturday</b>	7:30 a.m. ~ 11:30 a.m.

#### 4.6.11.2 Manpower Requirement

Manpower is the main requirement for the operation of every project. To perform the operation and maintenance of the factory, the project proponent needs to control the employees in the best way. The manpower requirement of the project is as follows.

Table 4-15 Manpower Requirement

Sr. No.	Position	Number of Person	Number of Person		
		Labour as Proposal	Current Hired Labours	Increased Labour	Total
<b>Oversea Employee</b>					
1.	Factory Manager	1	-	-	-
2.	Account Manager	1	-	-	-
3.	Producing Manager	1	1	-	1
4.	Vice Producing Manager	1	-	1	1
5.	Warehouse Supervisor	1	-	-	-
6.	Quality Control Manager	1	1	2	3
7.	Cutting Workshop Manager	1	-	2	2
8.	Cutting Workshop Supervisor	1	1	-	1
9.	Mechanic Manager	1	-	-	-
10.	Technician (Quality Assurance)	1	-	-	-
<b>Subtotal (Oversea)</b>		<b>10</b>	<b>3</b>	<b>5</b>	<b>8</b>
<b>Local Employee (Indirect Worker)</b>					
1.	Account Manager	1	-	-	-
2.	HR Manager	1	-	-	-
3.	Interpreter	12	-	-	-
4.	Purchase Executive	1	-	-	-
5.	Vice Producing Manager	1	-	-	-
6.	Vice Producing Supervisor	3	-	-	-
7.	Production Line Monitor	30	11	2	13
8.	Vice Cutting Workshop Supervisor	1	-	-	-
9.	Cutting Table Monitor	4	-	-	-
10.	Vice Mechanic Supervisor	1	-	-	-
11.	Mechanic	10	6	3	9
12.	Vice Warehouse Supervisor	1	-	-	-
13.	Warehouse Executive	5	-	-	-
14.	Vice Quality Control Manager	1	-	-	-
15.	Quality Control	18	8	5	13
16.	Driver	1	-	-	-
17.	Cleaner	5	-	-	-

Sr. No.	Position	Number of Person	Number of Person		
		Labour as Proposal	Current Hired Labours	Increased Labour	Total
18.	Sewing Worker	650	418	200	618
19.	Folding Worker	200	-	50	50
20.	Sealing Section Leader	4	-	-	-
21.	Sealing Worker	40	-	-	-
22.	Security	10	-	-	-
<b>Subtotal (Local)</b>		<b>1,000</b>	<b>443</b>	<b>260</b>	<b>703</b>
<b>Total</b>		<b>1,010</b>	<b>446</b>	<b>265</b>	<b>711</b>

#### 4.6.12 Management of the Waste Materials

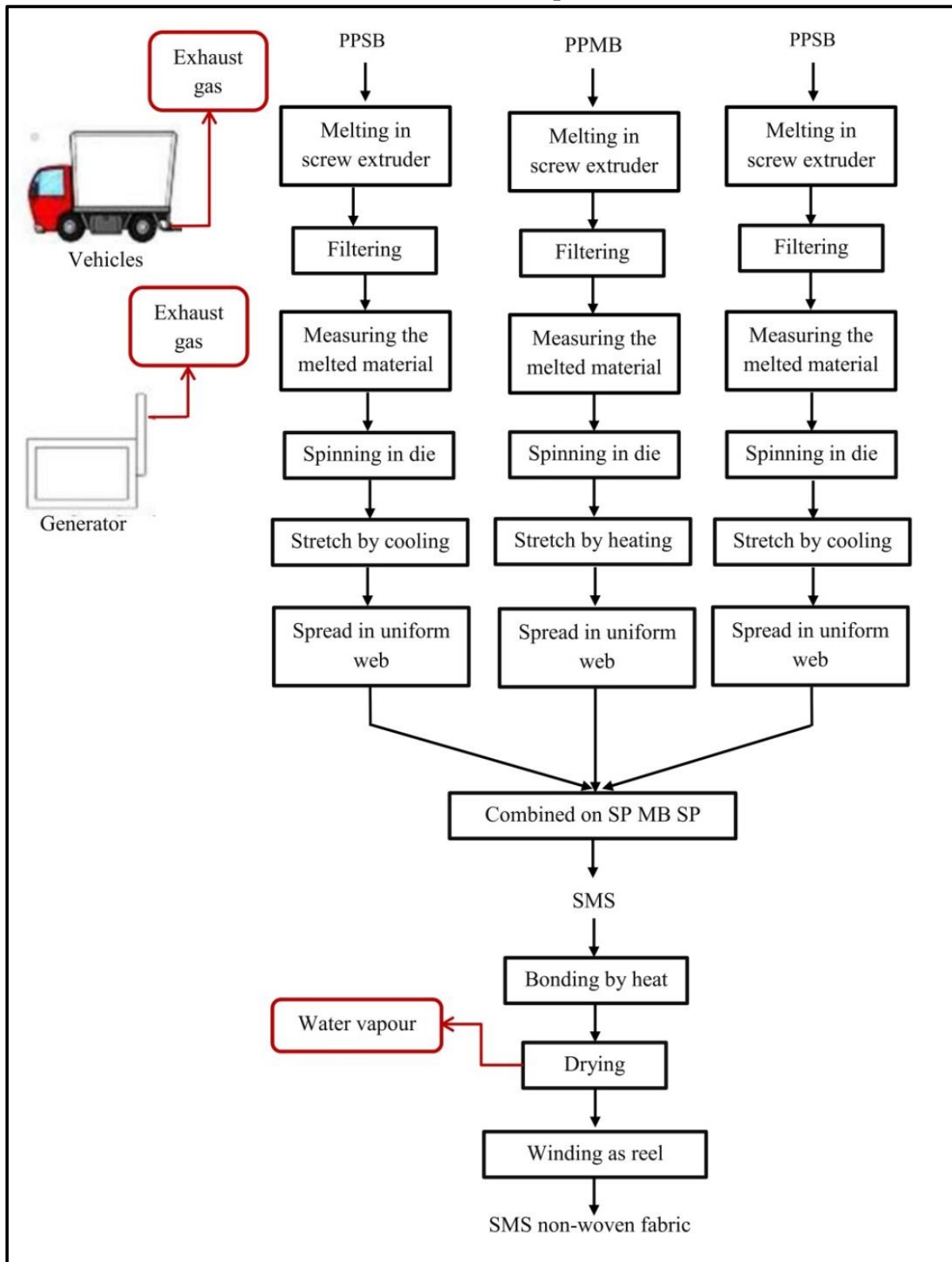
At **Cobes Industries (B II) Company Limited**, the procedures of management for waste materials are as following.

- Emitted gas or vapour (Emission to air)
- Liquid wastes
- Solid wastes

##### 4.6.12.1 Emitted Gas or Vapour (Emission to Air)

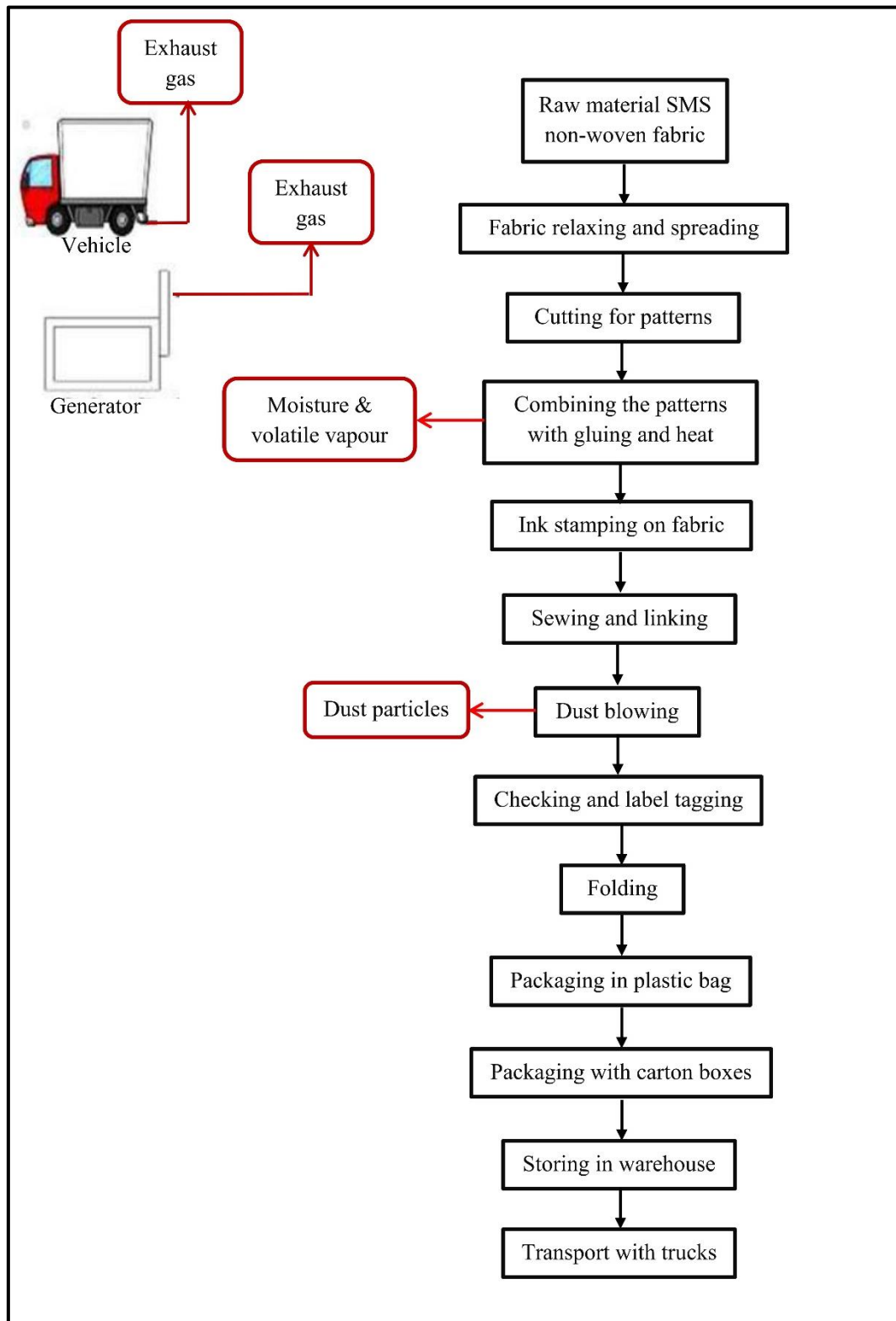
Emitted gases or vapour are combusted gases from exhausts of motor vehicles (forklift, motor cars, and wheel loader), electric generator, water vapour and volatile compounds from glue drying, dust from dust blowing machines, vapours come out from kitchen by cooking. The sources of emitted gases or vapour from the manufacturing processes are shown in brief as follow.

**From non-woven fabric production**





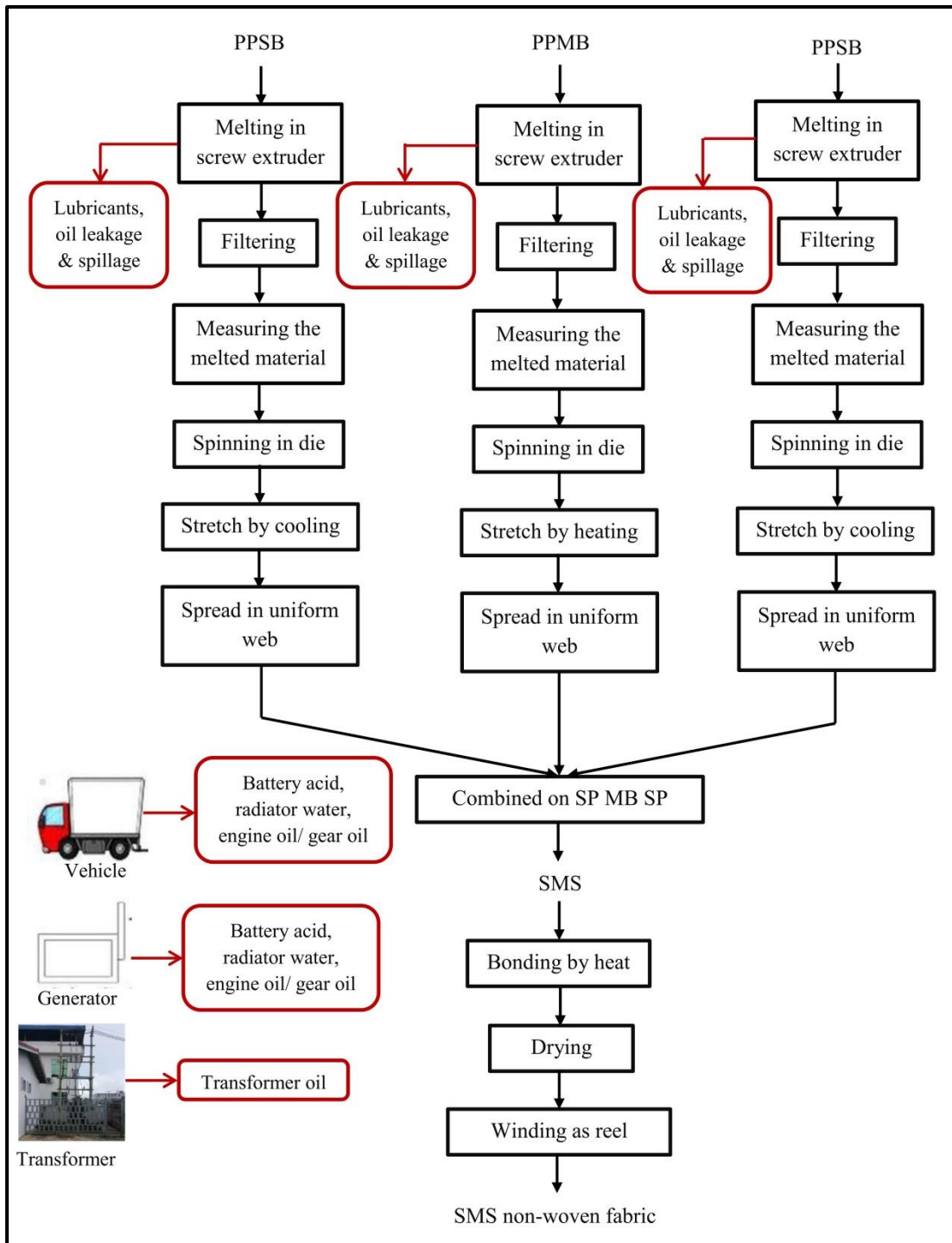
**From non-sterilized disposable surgical-scrubs and related kind of clinical wears production**



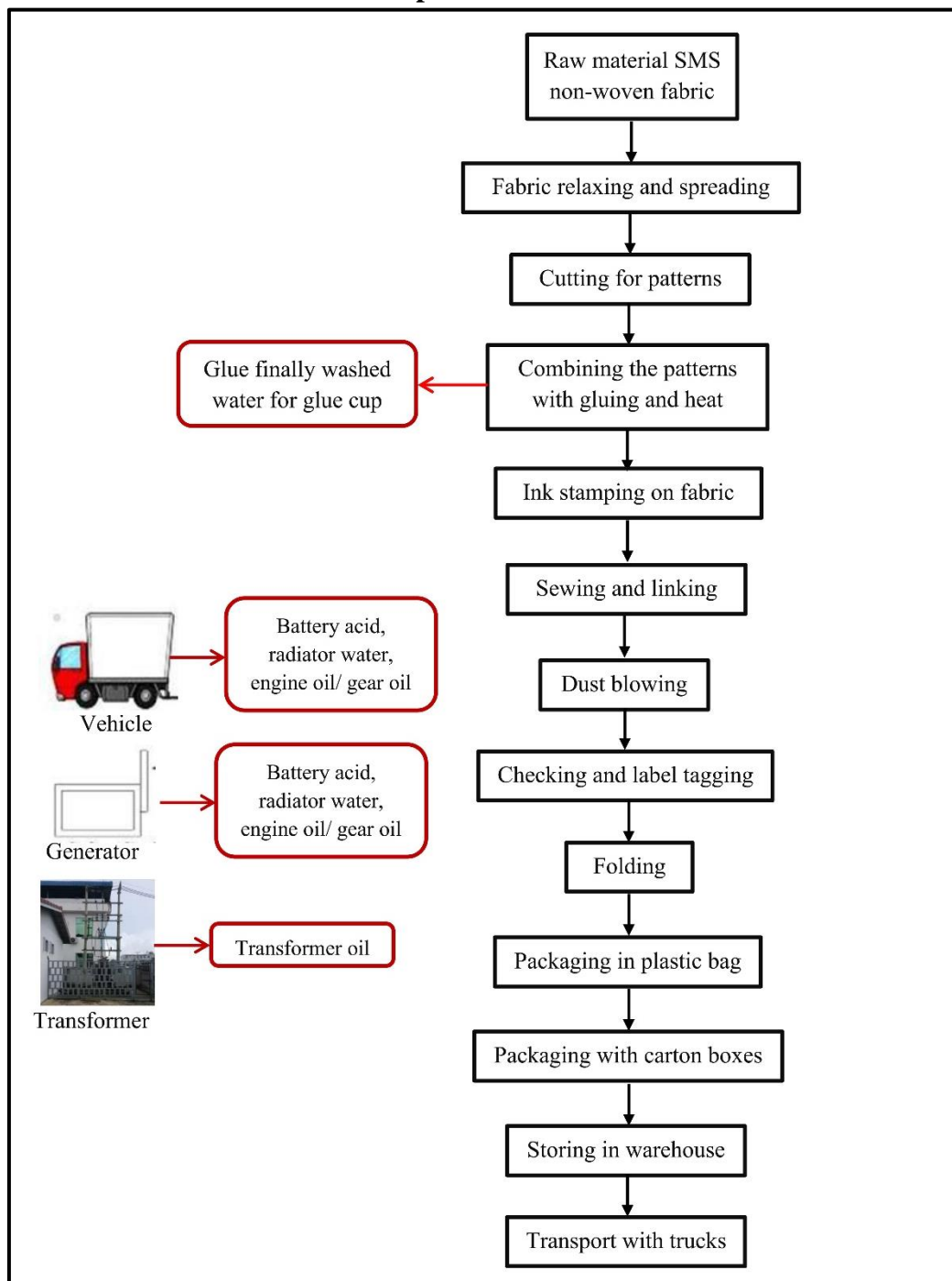
#### 4.6.12.2 Liquid Wastes

Liquid wastes are spillage of engine oil, fuel oil, lubricant, battery acid when renew and transport, wastewater after cleaning and washing by employees, from kitchen, washing the glue cups and they are very negligible compare with other industries.

#### From non-woven fabric production



**From non-sterilized disposable surgical-scrubs and related kind of clinical wears production**

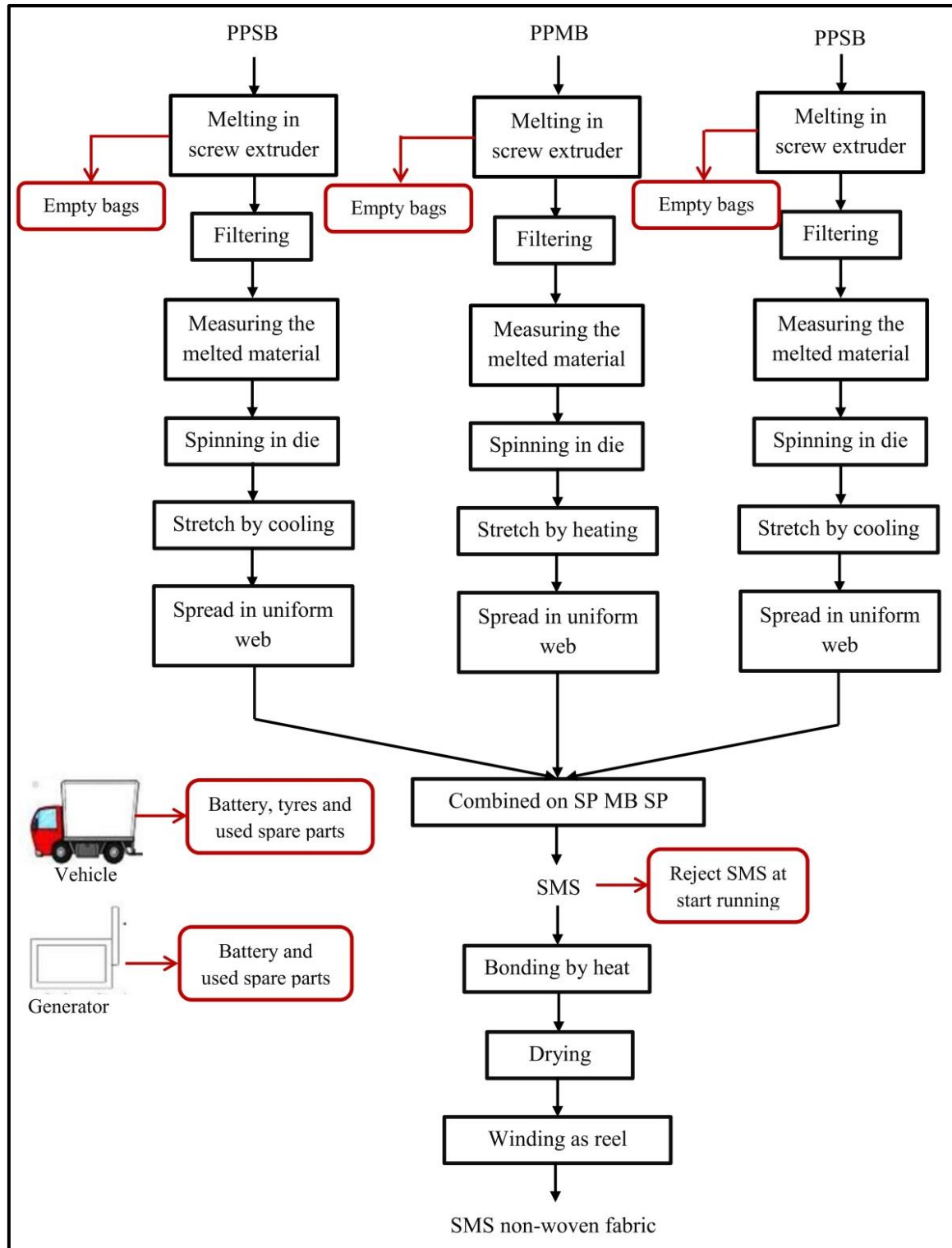


**4.6.12.3 Solid Wastes**

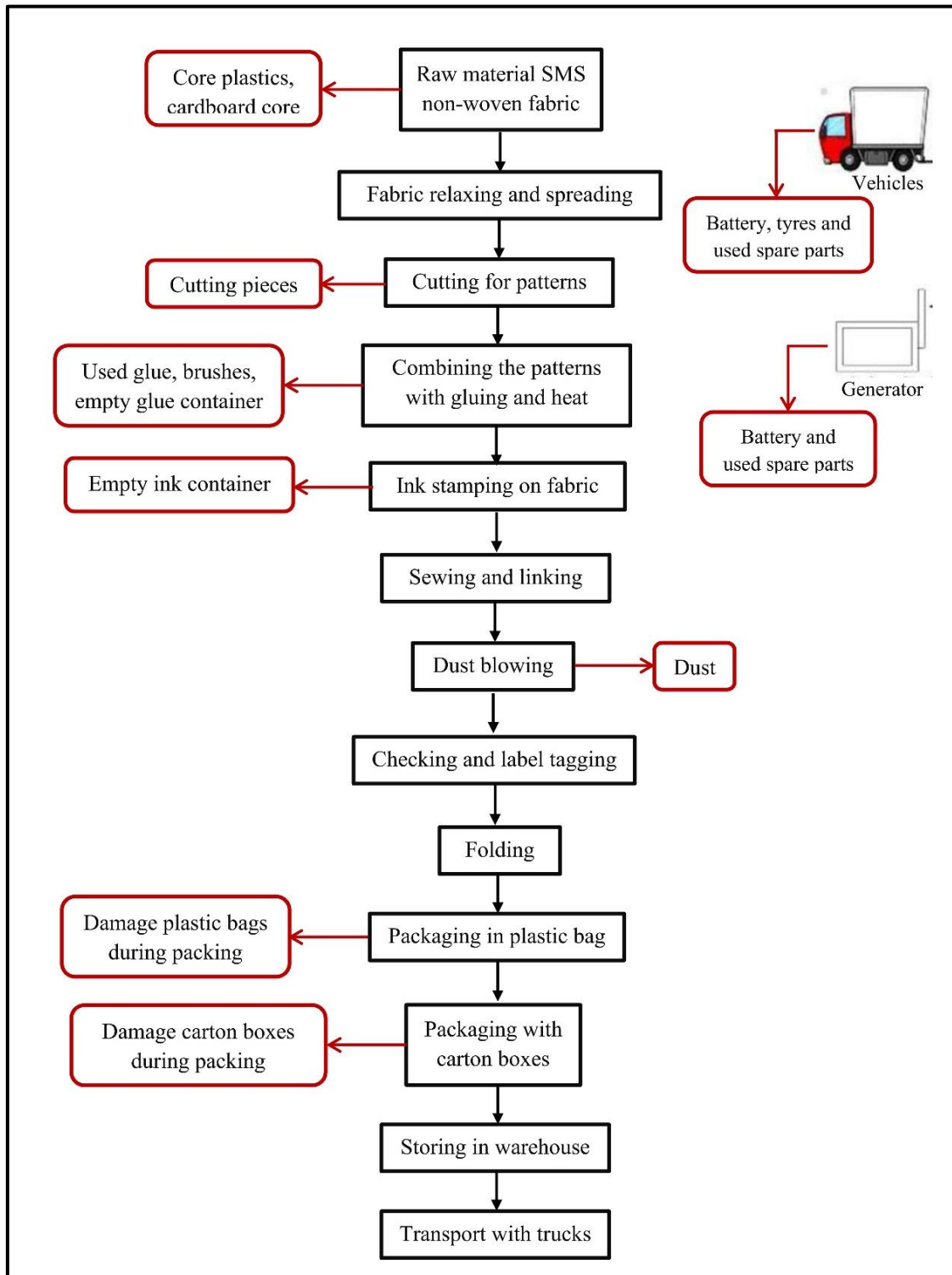
At **Cobes Industries (B II) Company Limited**, there are solid wastes as used vehicle parts of tyre, battery and used spare parts); used generator’s parts (battery, used spare parts); empty bags of PP resins, used brand core and packaging plastics from non-woven fabric, reject non-woven fabric pieces at start running, cutting pieces from cutting department, used glue brush, empty

ink container from ink stamping, broken needle from sewing, thread pieces, dust, damage plastics bags, carton boxes and replaced machine spare parts.

**From non-woven fabric production**



**From non-sterilized disposable surgical-scrubs and related kind of clinical wears production**



**4.6.12.4 Management Plan for Wastes**

At **Cobes Industries (B II) Company Limited**, there are three kinds of wastes as emitted gas, vapour and dust particles; liquid wastes and solid wastes.

**Management for emitted gas, vapour and dust particles**

Cobes Industries (B II) Company Limited	
The sources	<ul style="list-style-type: none"> <li>▪ Combusted gases from exhaust of motor vehicles</li> <li>▪ Combusted gases from exhaust of electric generator</li> <li>▪ Water vapour and volatile compounds from glue drying</li> <li>▪ Dust from dust blowing unit</li> <li>▪ Vapours come out from kitchen</li> <li>▪ Leakage of transformer oil vapour</li> <li>▪ Leakage of refrigerants from air conditioning and refrigerators</li> </ul>
Risk Assessment	<ul style="list-style-type: none"> <li>▪ Combusted gas normally CO<sub>2</sub> gas in global warming gas</li> <li>▪ When combustion not complete, CO gas come out and it is poisonous gas</li> <li>▪ When bad quality fuels are used, the SO<sub>2</sub> gas emit to air and it is poisonous gas and it causes acid rain</li> <li>▪ Volatile compounds make nuisance</li> <li>▪ Explosion may occur when dust, air and spark are in right ratio.</li> <li>▪ Transformer oil vapour is carcinogenic.</li> <li>▪ Refrigerants are ozone layer destroyer.</li> </ul>
The impacted area	<ul style="list-style-type: none"> <li>▪ The people along through transportation route of raw materials and finished goods.</li> <li>▪ The employees within the factory yard</li> </ul>
The impact amount and duration	<ul style="list-style-type: none"> <li>▪ The impact amount is low to the people and the duration is short.</li> <li>▪ For the employees, the impact amount is medium and the duration is longer.</li> </ul>
Management Procedure	<ul style="list-style-type: none"> <li>▪ Good maintenance of motor vehicles and generator</li> <li>▪ Using good quality fuels</li> <li>▪ Glue drying temperature not exceed the normal</li> <li>▪ Preventing the dust entering to warehouse, production room i.e. not opening the doors if unnecessary conditions</li> <li>▪ Good maintenance the transformer by authorized person</li> <li>▪ Good maintenance the air conditioners and refrigerators by skilled person</li> </ul>

**Management for liquid wastes**

Cobes Industries (B II) Company Limited	
The sources	<ul style="list-style-type: none"> <li>▪ Wastewater from the unsystematic disposal of the employees</li> <li>▪ Spillage of fuel, oils, battery acid when renew and transport</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Glue brush, washed water</li> <li>▪ Liquid wastes from kitchen</li> <li>▪ Leakage of transformer oil</li> </ul>
Risk Assessment	<ul style="list-style-type: none"> <li>▪ Oil can prevent air and light to transit to water and soil.</li> <li>▪ Battery acid makes pH changes of surrounding water and soil, is also corrosive.</li> <li>▪ Transformer oil is cariogenic.</li> </ul>
The impacted area	<ul style="list-style-type: none"> <li>▪ Along the drain in the factory yard and municipal drain</li> </ul>
The impact amount and duration	<ul style="list-style-type: none"> <li>▪ The impact amount to the factory’s environment is medium and duration is medium.</li> <li>▪ The impact amount to the employees is low and duration is short.</li> </ul>
Management Procedure	<ul style="list-style-type: none"> <li>▪ Not excess using the cleaning water if not necessary</li> <li>▪ Systematic disposal (regular septic tank cleaning)</li> <li>▪ Used oil are kept in systematically and selling, dispose by Development Committee’s guidelines.</li> <li>▪ When renewing and transportation of fuel, oil, battery acid, skilled person must be dutied.</li> <li>▪ To make and manage not to excess glue washed water to check BOD, COD and make reduce if necessary</li> <li>▪ Good maintenance the transformer by authorized person</li> </ul>

### Management for solid wastes

Cobes Industries (B II) Company Limited	
The sources	<ul style="list-style-type: none"> <li>▪ Empty bags of PP resins</li> <li>▪ Cardboard core of non-woven fabrics</li> <li>▪ Packing plastics of non-woven fabrics</li> <li>▪ Temporary reject SMS pieces when start running</li> <li>▪ Cutting pieces of fabrics</li> <li>▪ Empty glue containers</li> <li>▪ Empty ink containers</li> <li>▪ Broken needles and pieces of thread</li> <li>▪ Thread ribbon</li> <li>▪ Dust particles</li> <li>▪ Damage plastics bags</li> <li>▪ Damage carton boxes</li> <li>▪ Core of binding tapes</li> <li>▪ Used vehicle parts (e.g. tyre, battery, spare parts)</li> <li>▪ Used spare parts of machines</li> <li>▪ Used generator parts (e.g. battery, spare parts)</li> </ul>
Risk Assessment	<ul style="list-style-type: none"> <li>▪ Changing the composition of water and soil</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Plastic materials are not easily decompose and adverse impact for ecosystem</li> <li>▪ Dust, air and spark in right ratio makes explosion</li> </ul>
The impacted area	<ul style="list-style-type: none"> <li>▪ People near the disposing place in factory environment</li> </ul>
The impact amount and duration	<ul style="list-style-type: none"> <li>▪ The impact amount and duration are medium for people near the disposing place.</li> <li>▪ The impact amount is small and duration is short for factory environment.</li> </ul>
Management Procedure	<ul style="list-style-type: none"> <li>▪ Systematic keeping and selling, reuse in other purposes</li> <li>▪ Dispose in the specific area guided by the Development Committee</li> </ul>

#### 4.6.13 Sanitation and Sewage Disposal

The sanitary wastewater from canteen, kitchen and cleaning are disposed into well- designed concrete drainage (1 ft 7 in width x 2 ft 6 in depth). Storm water will also be discharged by these drainages inside and outside of the compound. For convenience purpose, the project proponent provides 38 numbers of toilets (10 for males and 28 for females).



Figure 4-36 Toilets and Septic Tanks



#### 4.6.14 Storm Water and Drainage System

The storm water and drainage system of the said project is shown as following **Figure 4-37.**



Figure 4-37 Storm Water and Drainage System

#### 4.6.15 Water Distribution System

Daily water consumption of **Cobes Industries (B II) Company Limited** factory is about 12,000 gallons and mainly domestic use such as kitchen, canteen, office, basins and toilets. The production of finished goods does not need water usage.

#### 4.6.16 Storm Water Management Plan of CIC (B II)

The proposed site area GIS (geographic information system) mapping tool was used to provide analysis elevation profile and information as well as drainage areas. The mapping summaries of existing Drainage flow direction, Drain basin history, development and land use, and related planning. This section also defines each study area drainage basin and provides a brief introduction to the unique properties of each basin.

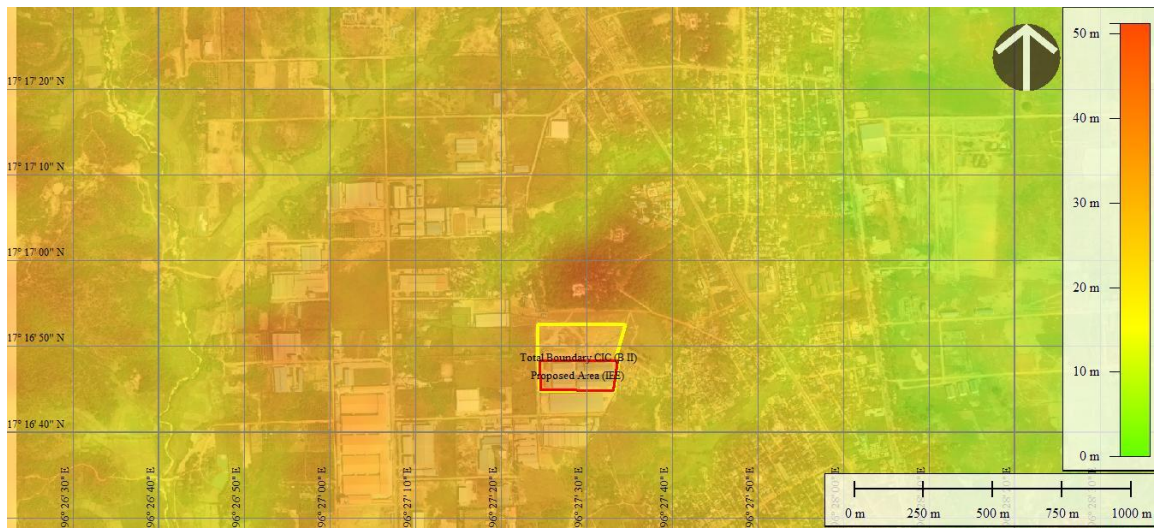


Figure 4-38 Elevation Profile Map of Proposed Site

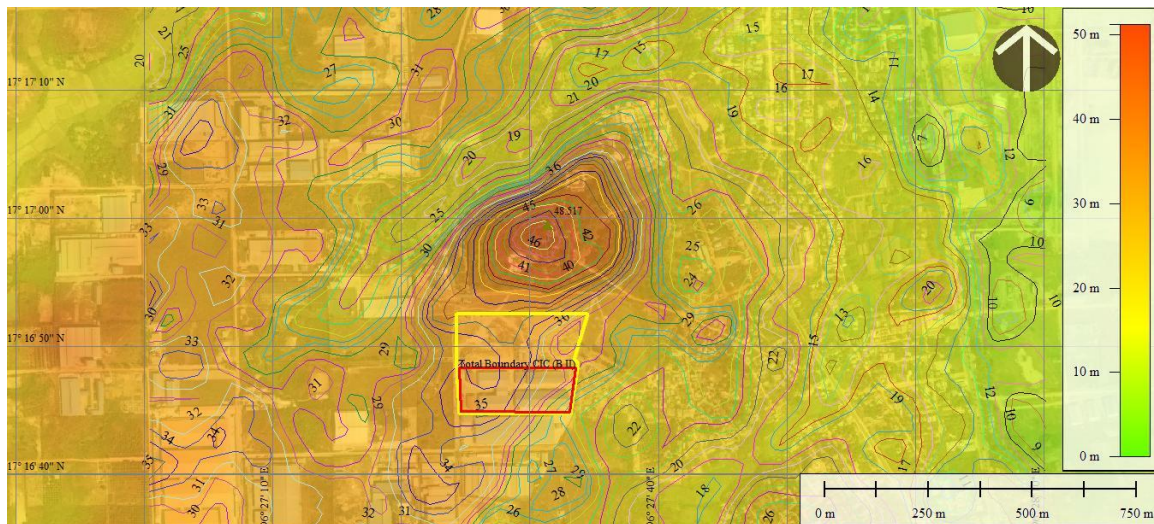


Figure 4-39 Contour Map of Proposed Site

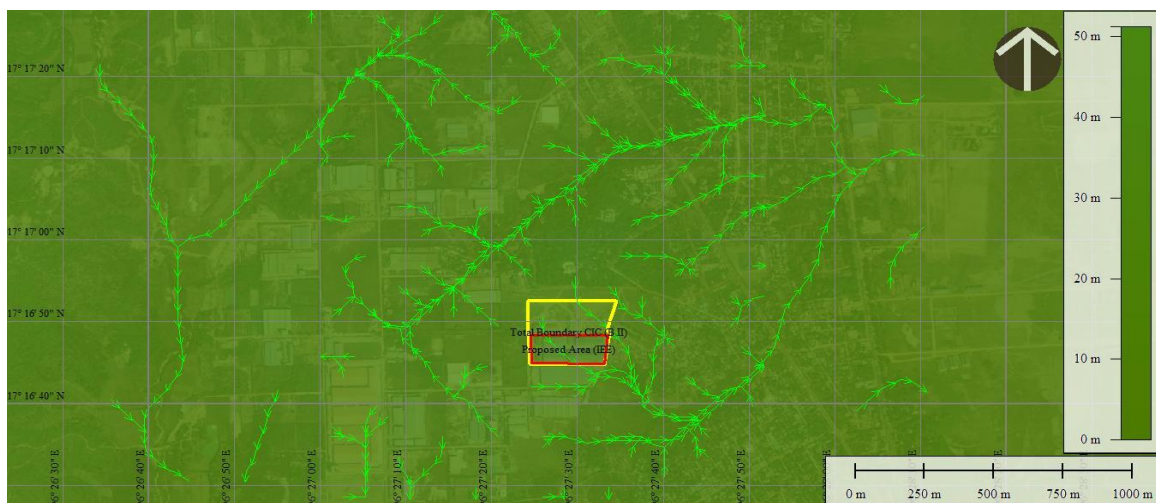


Figure 4-40 Flow of Tributary Streams in Study Area

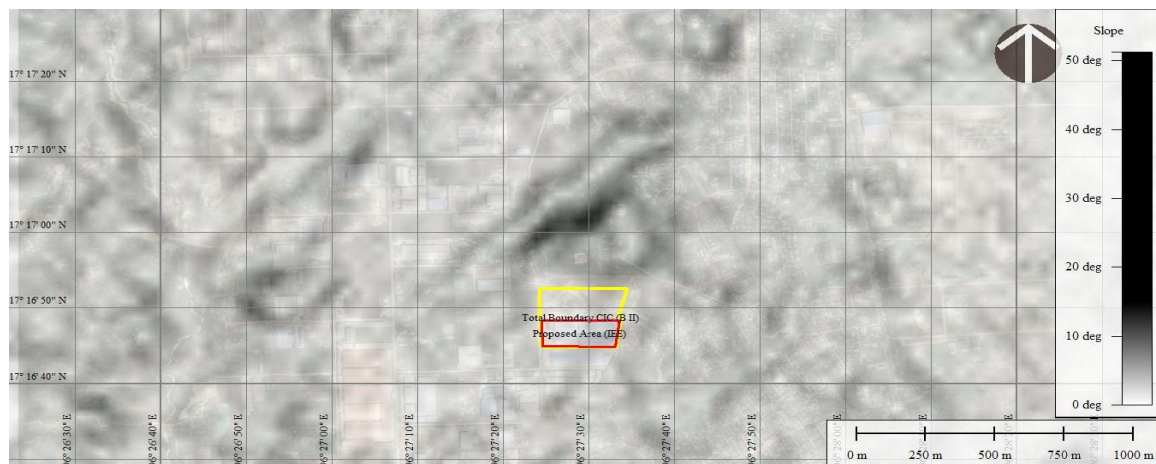


Figure 4-41 Slope profile of Study Area

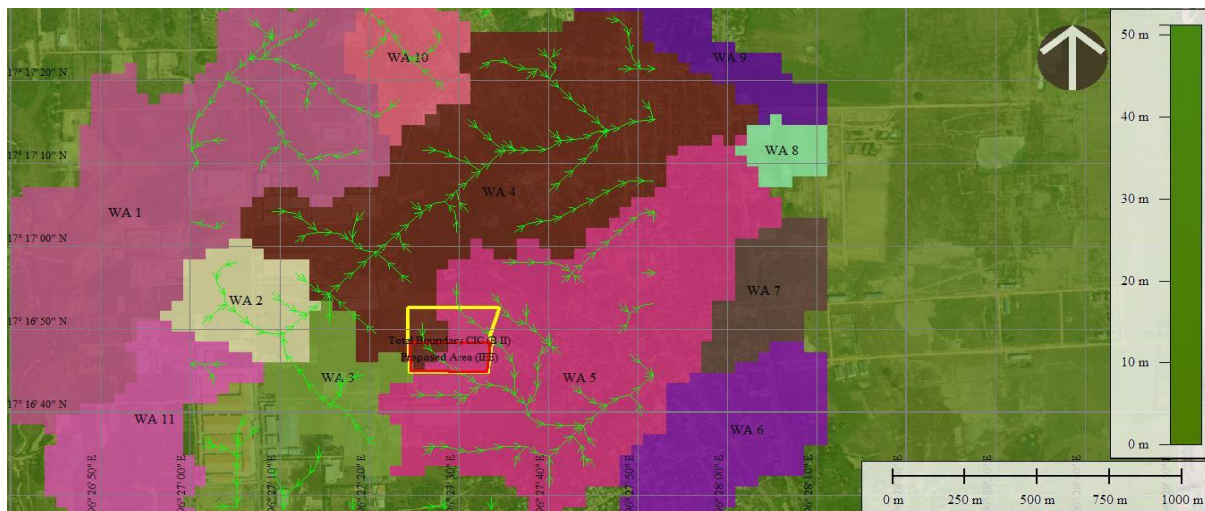


Figure 4-42 Watershed Map of Study Area

The stormwater management plan presented herein and as shown on the Site Plans has been prepared in accordance with applicable state, and regulations. The design includes Best Management Practices for maintaining stormwater runoff quality both during and after construction, and is designed to protect downstream and underlying receiving waters from stormwater related impacts. The Project will result in an improvement of stormwater runoff quality and quantity. The details are seen in **Appendix 39**.

#### 4.7 Analysis of Alternatives

The consideration of alternatives to a proposal is a requirement of the environmental assessment systems. It lies at the heart of the process and methodology.

A comparison of alternatives will help to determine the best method of achieving project’s objectives while minimizing the environmental impacts. Furthermore, this can help to indicate the environmental protection with the best environmental practices with more creative options.

From an environmental perspective, not carrying out this development may be the best option. Without the development, the area would remain a relatively undisturbed area providing a habitat for the varied flora and fauna presently observed. This area will continue to be impacted, although minimally, by anthropogenic and natural factors. From a socioeconomic perspective, the “no action” alternative may not be the best alternative as the numerous benefits to be gained from the development both locally and nationally would not be realized and the resources in the area would continue to be underutilized.

#### **4.7.4 Project Alternatives**

The alternative consideration is “no project option”.

This alternative means forfeiting the proposed development avoiding all its impact both positive and negative. Pros and Cons for this option are discussed. The Pro identified is below:

- ❖ There will be no environment and social impact arising from the implementation of the project.

The Cons identified are below:

- ❖ Possible revenue for the proponent after the project is lost
- ❖ A piece of land would be left un-utilized which could collect waste overtime and become environmental and social hazard in the long term.
- ❖ The real estate price for the land would drop if the land were left un-used.

#### **4.7.5 Site Alternatives**

Bago Township has been selected to construct Manufacturing and Distribution Various Kinds of Disposable Surgical Scrubs Plant by Cobes Industries (B II) Company Limited. The advantages of the specific site are as follows.

**a) Sites need to be accessible for easy logistics**

For an industrial development, the site should be accessible by road and highways. The site can be easily reach from Yangon-Mandalay Highway Road and Myo Shaung Road. As the project site exits within the industrial zone, there are other access ways to reach the proposed project area.

**b) Build on previously developed, degraded, or urban land whenever feasible**

The application site occupies 7.1 acres of land in Bago Township and this is an adequate area for a proposed industrial project; manufacturing of non-sterilized disposal surgical-scrubs and related kind of clinical wears. It lies within the area of Bago Township in order to get development in industry for township, there is no other previously developed place can serve as a suitable place.

**c) Ensure there are sufficient fresh water and other resources**

Consideration must be given to the increased demand on existing water and energy supplies as well as waste and sewage disposal facilities needed to

service both the industries, new workers and their families. Furthermore, water and energy plans must be considered for both the proposed project and the local community, including its commercial, agricultural, and civic activities.

Thus, this location was viewed favorable due to the accessible roads; stable and reliable communication network; availability of water and security and there lies no ecologically sensitive area etc.

## **5.0 DESCRIPTION OF THE SURROUNDING ENVIRONMENTAL SOCIAL CONDITIONS**

In this chapter, the environmental profile, the existing environment baseline situation (primary data), and secondary information such as natural environment/ physical components, biological components and socio-economic status for the proposed project are described. For the purpose of characterization and quantification of various pollutants, visits were made and detailed field studies were conducted in each category. Based on the measured values, the averages values have been taken as basis to characterize the typical pollution streams.

### **5.1 Methodology for Data Collection and Analysis**

For preparation of this IEE report, there are two methodologies to collect the data to describe the current environmental and social conditions of the proposed project.

- (i) Primary Data Collection and Analysis
- (ii) Secondary Data Collection and Analysis

#### **5.1.1 Primary Data Collection and Analysis**

The objective of the IEE baseline data collection is to present the general description of the environment as primary data collection. The methodology is designed to assess the baseline data of the environmental quality factors for “**Cobes Industries (B II) Company Limited**” Project. Baseline environmental parameters are defined according to the guidelines, which apply to projects dedicated to the proposed project.

Environmental baseline data (primary data) such as air quality, light intensity, noise and vibration are measured by using instruments. For water quality, wastewater quality and soil quality, samples are collected and analyzed at the GMES laboratory and ALARM ecological laboratory. The results are mentioned in this Chapter. All of the results are attached in Appendices.

All necessary criteria such as site selections for sampling and analysis of ambient air quality, workplace air quality, noise level, water quality and soil quality were identified by GMES.

#### **5.1.2 Secondary Data Collection and Analysis**

Some data such as socioeconomic conditions, physical, biological environment and weather data are collected from the respective websites and reviewed by the IEE study team. The regional data of the Bago Township was collected from the Township Data published by General Administration Department (GAD) in 2020.

### **5.2 Environmental Baseline Situation (Primary Data)**

Green Myanmar Environmental Services Company Limited (GMES) had done measuring primary data or baseline environmental parameters such as ambient and workplace (indoor) air quality, noise & vibration, water quality and soil quality from 16.9.2021 to

17.9.2021. The materials and methods of instruments used for surveying the environmental baseline data and the results are mentioned in the following section.

The water samples, wastewaters and soil samples were collected and analyzed the results in the respective laboratories.

### 5.2.1 Air Quality

The objective of the air-quality monitoring program is to describe the baseline air quality conditions in the project area.

Dispersion of different air pollutants released into the atmosphere has significant impacts on the neighborhood air environment of a project and forms an important part of impact assessment studies.

The air quality status with respect to the project site will form the baseline information over which the predicted impacts due to the proposed project can be superimposed to find out the net (Final) impacts on air environment. Based on the final impacts of the air environment, a viable Environmental Management Plan (EMP) can be prepared.

The baseline status of the air quality can be assessed through scientifically designed air quality measuring network.

#### (ii) Methods of Sampling and Analysis

The rate of air quality was recorded automatically every one minute for gases causing air pollution (Sulfur dioxide, nitrogen dioxide, carbon dioxide, carbon monoxide, sulfur dioxide and particulate matters) to describe ambient air quality.

Sampling pump was adjusted to 2 liter/min.

#### (iii) Materials Used for Measurement

The ambient air quality parameters such as carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), particulate matters (PM<sub>2.5</sub> & PM<sub>10</sub>), wind speed, wind direction, temperature are measured by using **Haz-Scanner** which is a true environmental air station providing ambient air quality measurement of critical EPA criteria pollutants and air parameters.

Aeroqual 500 series with PM sensor is used to measure the particulate matters (PM<sub>2.5</sub> and PM<sub>10</sub>), CO, NO<sub>2</sub> and CO<sub>2</sub> for workplace (indoor) air quality.



Haz-Scanner



Aeroqual 500 Series

VOC is measured continuously for 1 hour with **MX6** Multi-Gas detector. On-site Calibration (Pump test & zero sensing) were done by following Instrument User Manual before every single measurement. Biannually, instrument is calibrated by authorize factory calibration services.



**MX6**

**KANE 945 Plus Combustion Analyzer** is used to measure the stack emission gas of diesel generator and thermal oil heater. It can measure the parameters such as oxygen (O<sub>2</sub>), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>).



**KANE 945 Plus**

**(iv) Selection of Sampling Locations**

Air quality measurement was taken at the project site. The sampling points were selected based on their locations relative to key community receptors, as well as their current or potential for impairments.

- 1) Ambient air quality at the project site was measured at only one sampling point
- 2) Workplace (indoor) air quality was measured at six points and
- 3) Stack emission from diesel generator.

**5.2.1.1 Ambient Air Quality**

Different analysis methods are used for different parameters of ambient air quality as shown in the following table.

Table 5-1 Measured Parameters for Ambient Air Quality

No.	Parameters	Analysis Methods
1.	Sulfur Dioxide (SO <sub>2</sub> )	Electrochemical sensors
2.	Nitrogen Dioxide (NO <sub>2</sub> )	Electrochemical sensors
3.	Carbon Dioxide (CO <sub>2</sub> )	NDIR (optional sensor)
4.	Carbon Monoxide (CO)	Electrochemical sensors
5.	Particulate Matter 2.5 (PM <sub>2.5</sub> )	Infrared Light Scattering
6.	Particulate Matter 10 (PM <sub>10</sub> )	Infrared Light Scattering

Ambient air quality at the project site was measured continuously at only one sampling point for 24 hours.



Table 5-2 Location of Ambient Air Quality Measuring Point

Sr. No.	Measuring Points	Geographic Information	Description	Remarks
1.	AMP	17° 16' 46.73" N 96° 27' 24.58" E	Inside the Factory Premise	See <b>Figure 5-1</b>

AMP = Ambient Air Quality Measuring Point

### Ambient Air Quality Measuring Results

At the initial stage of the project, baseline air quality should be measured on the vicinity of the site to assess background levels of key pollutants and to differentiate between existing ambient conditions and project-related impacts in future. Air quality is defined by the concentration of dust and pollutant gas of the ambient air.

The ambient air measuring was conducted from 16.9.2021 to 17.9.2021. The air quality measuring result for ambient air is described in **Table 5-3**.



Figure 5-1 Location of Ambient Air Quality Measuring Point



Figure 5-2 Status of Ambient Air Quality Measurement

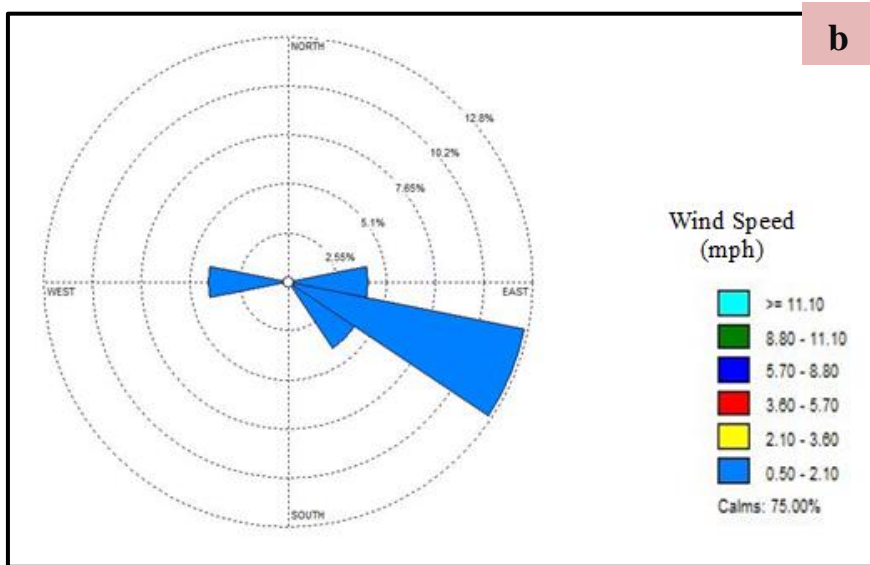
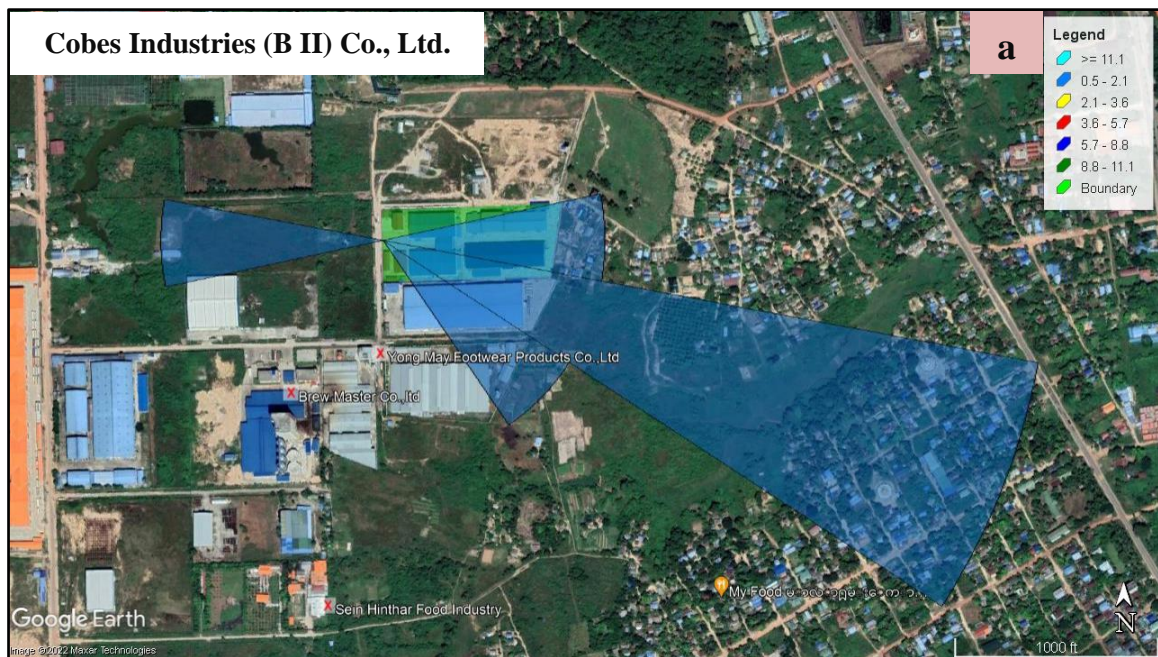
Table 5-3 Measuring Results of Ambient Air Quality Baseline Data (AMP)

No.	Parameters	Unit	Analysis Values		National Environmental (Emission) Quality Guidelines		Remarks
			Result Value	Average Period	Guideline Value	Average Period	
1.	Nitrogen Dioxide	µg/m <sup>3</sup>	62.85	24 hours	*200	1 hour	16/9/2021 3:45 - 4:44 (Peak Hour)
2.	Sulfur Dioxide	µg/m <sup>3</sup>	0	24 hours	*20	24 hours	
3.	Particulate Matter PM <sub>10</sub>	µg/m <sup>3</sup>	37.37	24 hours	*50	24 hours	
4.	Particulate Matter PM <sub>2.5</sub>	µg/m <sup>3</sup>	18.96	24 hours	*25	24 hours	
5.	Ozone	µg/m <sup>3</sup>	81.90	24 hours	*100	8-hour daily Maximum	13:30 - 14:29 17/9/2021
6.	Ammonia	ppm	8.54	24 hours	NG	-	
7.	Carbon Dioxide	ppm	236.53	24 hours	NG	-	
8.	Carbon Monoxide	ppm	0	24 hours	NG	-	
9.	Volatile Organic Compound	ppb	0	24 hours	NG	-	
10.	Oxygen	%	20.02	24 hours	NG	-	
11.	Wind Speed	mph	0.4	24 hours	NG	-	
12.	Wind Direction	Deg	210	24 hours	NG	-	

Note: NG = No Guideline

Source: IEE Study Team

According to the above table, all the parameters were within the recommended air quality guidelines established by National Environmental Quality (Emission) Guidelines.



Wind Class Frequency Distribution

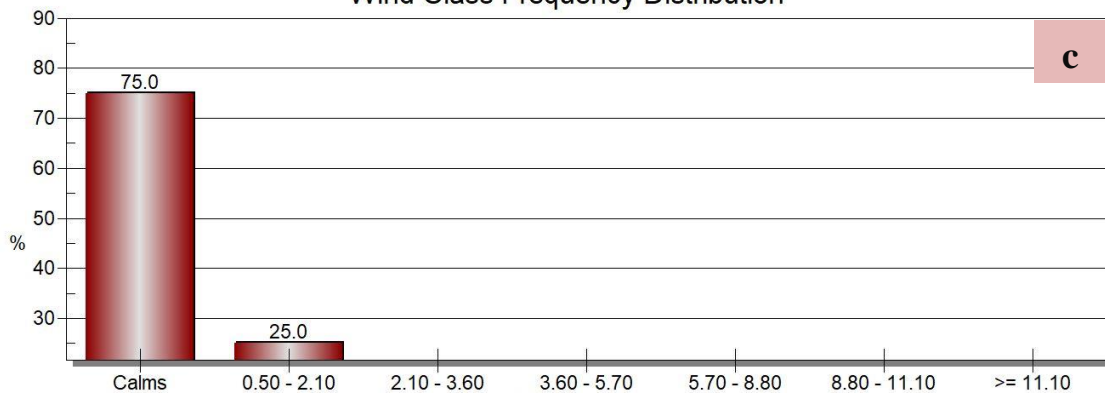


Figure 5-3 (a) Windrose Plot superimposed over the Project Site, (b) Windrose Plot, (c) Wind Class Frequency Distribution Chart

### 5.2.1.2 Workplace Air Quality

Measurements to determine the environmental conditions of working environment of the factory were carried out for short-time interval samples (one hour for each sample measurement). The instrument was monitored by two technicians.

Workplace (indoor) air quality was measured during the working hour on September 16 and 17, 2021 and the results are listed in **Table 5-4**.

Table 5-4 Locations of Workplace (Indoor) Air Quality Measuring Points

Sr. No.	Measuring Points	Description	Remarks
1.	WMP-1	Sewing 1	See <b>Figure 5-4</b>
2.	WMP-2	Sewing 2	See <b>Figure 5-4</b>
3.	WMP-3	Sewing 3	See <b>Figure 5-4</b>
4.	WMP-4	Sewing 4	See <b>Figure 5-4</b>
5.	WMP-5	Cutting	See <b>Figure 5-4</b>
6.	WMP-6	Warehouse 1	See <b>Figure 5-4</b>
7.	WMP-7	Warehouse 2	See <b>Figure 5-4</b>
8.	WMP-8	Packaging Material Warehouse	See <b>Figure 5-4</b>
9.	WMP-9	Raw Material Production Area 1	See <b>Figure 5-4</b>
10.	WMP-10	Raw Material Production Area 2	See <b>Figure 5-4</b>
11.	WMP-11	Glue Making Room	See <b>Figure 5-4</b>
12.	WMP-12	Sewing (Future)	See <b>Figure 5-4</b>
13.	WMP-13	Cutting (Future)	See <b>Figure 5-4</b>

WMP = Workplace Air Quality Measuring Point



WMP-1



WMP-2



WMP-3



WMP-4



WMP-5



WMP-6



WMP-7



WMP-8



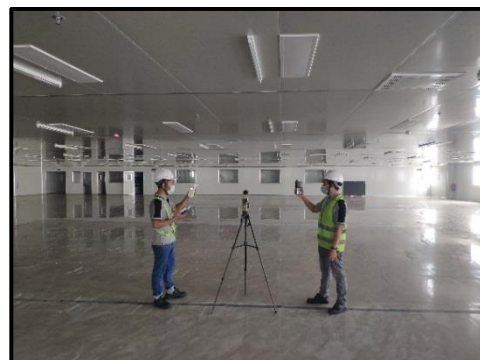
WMP-9



WMP-10



WMP-11



WMP-12



WMP-13

Figure 5-4 Status of Workplace Air Quality Measuring Points

Table 5-5 Workplace Air Quality Measurement Results

Sr. No.	Measuring Points	Parameter		
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	VOC (ppm)
1.	WMP-1	18	7	18.7
2.	WMP-2	22	7	10.2
3.	WMP-3	40	26	16.2
4.	WMP-4	54	35	12.2
5.	WMP-5	50	21	9.6
6.	WMP-6	45	21	6
7.	WMP-7	40	19.2	0.4
8.	WMP-8	21	8	3.8
9.	WMP-9	12	6	0
10.	WMP-10	8	4	0
11.	WMP-11	42.8	19.5	67.6
12.	WMP-12	30	12	0
13.	WMP-13	25	10	0

Source: IEE Study Team

The workplace (indoor) air quality does not have the specific guidelines.

### 5.2.1.3 Stack Emission Measurement

The stack emission measurement was done at the diesel generators on September 16, 2021.

#### Information of Generator

Type: Diesel Generator  
 Capacity: 600 kVA  
 Fuel Type: Diesel

The following **Table 5-6** describes the location of measuring points and the **Table 5-7** summarizes the measuring results.

Table 5-6 Location of Stack Emission Measuring Point

Sr. No.	Measuring Points	Geographic Information	Remarks
1.	Generator	17° 16' 44.77" N 96° 27' 25.60" E	See Figure 5-5



Figure 5-5 Location Points for Stack Emission Measurement

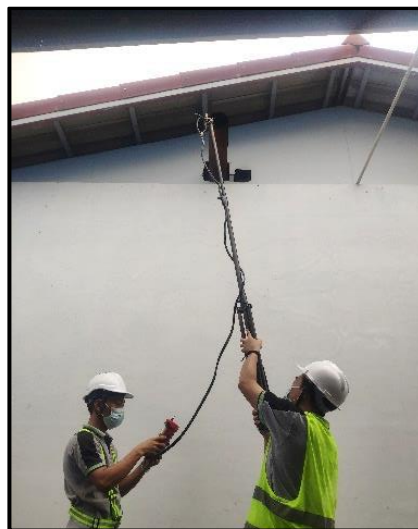


Figure 5-6 Status of Generator Stack Emission Measurement

Table 5-7 Generator Stack Emission Measuring Result

Sr. No.	Parameter	Unit	Result Value	Small Combustion Facilities Emission Guidelines (NEQG)
1.	CO <sub>2</sub>	%	2.26	-
2.	O <sub>2</sub>	%	17.9	-
3.	CO	mg/m <sup>3</sup>	230	-

Sr. No.	Parameter	Unit	Result Value	Small Combustion Facilities Emission Guidelines (NEQG)
4.	SO <sub>2</sub>	mg/m <sup>3</sup>	0	2000
5.	NO <sub>2</sub>	mg/m <sup>3</sup>	172	-

Source: IEE Study Team

According to the above table, the result of SO<sub>2</sub> was within acceptable limits and the other parameters do not have the specific guidelines.

### 5.2.2 Noise and Vibration

Noise is one of the most undesirable and unwanted by-products of our modern lifestyle. It may not seem as harmful as air and water pollution, but it affects human health and well-being and can contribute to deterioration of human well-being in general and can cause neurological disturbances and physiological damage to the hearing mechanism in particular. It is, therefore, necessary to measure both the quality as well as the quantity of noise in and around the site.

Parameter for noise level survey was determined according to Myanmar National Environmental Quality (Emission) Guidelines.

Noise surveys have been conducted at the project site in order to establish an acoustic baseline onto which potential impacts from the proposed project may be superimposed.

Vibration measurement will be conducted using an **InstanTel Blast Mate Series III or MiniMate Plus**. Both indicator systems have identical process of preparation, installation and data retrieving. The specifications of **InstanTel MiniMate** vibration instrument (Internal or External gephone) are:

- Maximum Range: 127 mm/s
- Minimum Trigger Level: 0.51 mm/s
- Accuracy: 1% of Bruel & Kjaer reference accelerometer @ 15 Hz
- Frequency - Sampling Rate 1024 samples / sec
- Direction: 3-D (Longitudinal, Transverse and Vertical)
- Frequency Analysis: Frequency at Peak and DIN 4150

### Material Used for Measurement

**SOUND LEVEL METER (GM-1356)** is used to measure the noise level and its country of origin is China. The calibration is done by reference of standard unit and also done by instrument supplier.



Noise Meter



**InstanTel BlastMate Series III or MiniMate Plus** is used to measure the vibration level.



**Vibration Meter**

### 5.2.2.1 Boundary Noise Levels

The boundary noise level was continuously measured for 24 hours. The locations of boundary noise measuring points are described in **Table 5-8** and the measuring results are presented in **Table 5-9**.

Table 5-8 Location of Boundary Noise Levels Measuring Point

Sr. No.	Measuring Points	Geographic Information	Remarks
1.	NMP-1	17° 16' 47.74" N 96° 27' 24.68" E	See <b>Figure 5-7</b>
2.	NMP-2	17° 16' 48.09" N 96° 27' 28.69" E	See <b>Figure 5-7</b>
3.	NMP-3	17° 16' 48.35" N 96° 27' 33.51" E	See <b>Figure 5-7</b>
4.	NMP-4	17° 16' 45.07" N 96° 27' 33.02" E	See <b>Figure 5-7</b>
5.	NMP-5	17° 16' 44.87" N 96° 27' 28.65" E	See <b>Figure 5-7</b>
6.	NMP-6	17° 16' 44.72" N 96° 27' 24.70" E	See <b>Figure 5-7</b>

NMP = Boundary Noise Level Measuring Point



**Figure 5-7** Locations of Boundary Noise Levels Measuring Points



Figure 5-8 Status of Boundary Noise Levels Measurement

Table 5-9 Ambient Noise Level Measuring Results (Daytime)

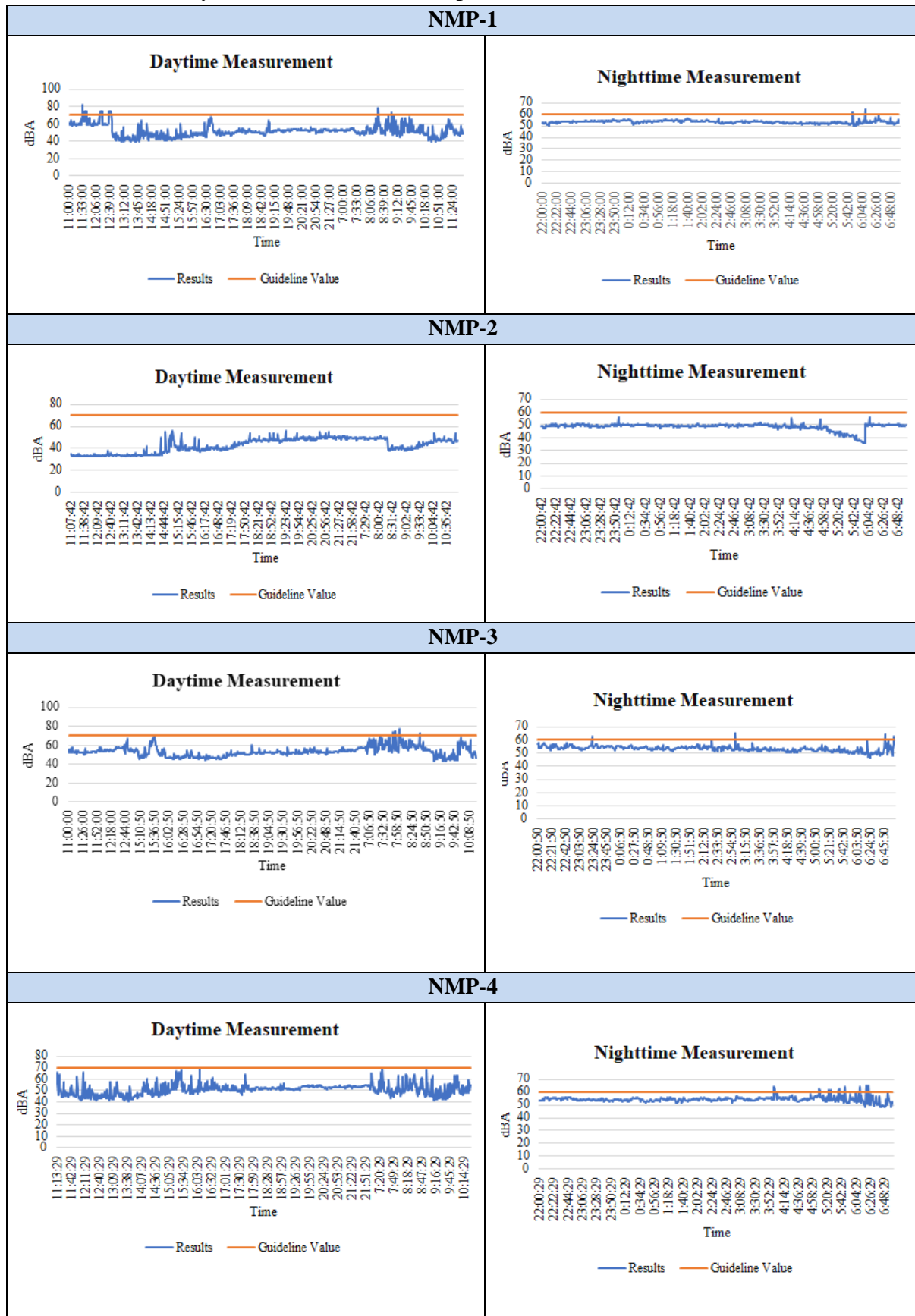
Sr. No.	Measuring Points	Daytime Measuring Results (dBA)			NEQG Guideline Value (dBA)
		Avg	Max	Min	
1.	NMP-1	51.90	82.00	39.50	70
2.	NMP-2	42.74	55.60	32.90	70
3.	NMP-3	53.34	77.60	43.20	70
4.	NMP-4	50.89	69.60	40.70	70
5.	NMP-5	51.03	74.70	44.80	70
6.	NMP-6	56.64	83.30	39.40	70

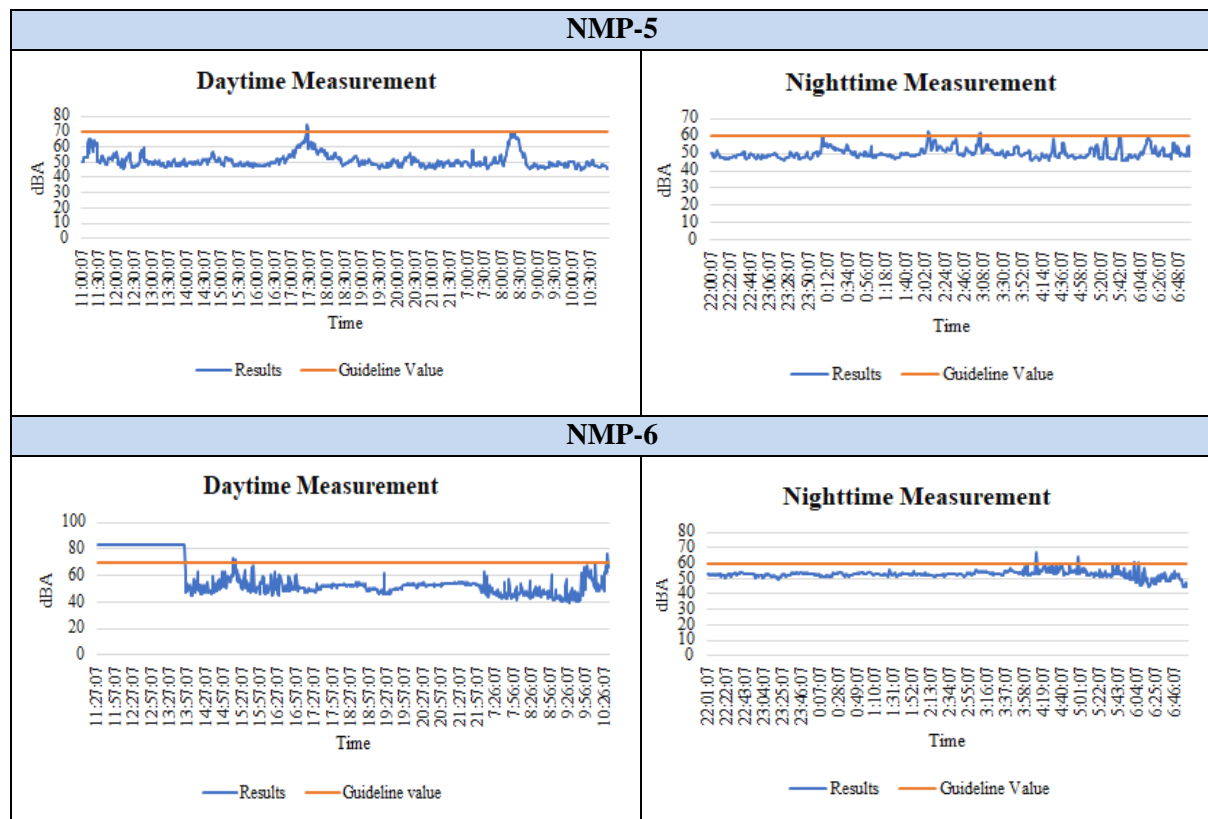
Table 5-10 Ambient Noise Level Measuring Results (Nighttime)

Sr. No.	Measuring Points	Nighttime Measuring Results (dBA)			NEQG Guideline Value (dBA)
		Avg	Max	Min	
1.	NMP-1	53.50	64.30	50.40	70
2.	NMP-2	48.65	55.80	35.50	70
3.	NMP-3	53.39	64.80	46.60	70
4.	NMP-4	54.42	65.40	48.00	70
5.	NMP-5	50.14	62.30	45.60	70
6.	NMP-6	52.81	66.80	44.50	70

The project is located in the industrial land. The observed values of the noise level for daytime and night time are within the limit of Guideline. Therefore, the noise values cannot affect the workers and the environment. The boundary noise measurement graphs are shown in the following table.

Table 5-11 Boundary Noise Measurement Graphs





### 5.2.2.2 Workplace (Indoor) Noise Levels

Measurements to determine the environmental conditions of working environment of the factory were carried out for short-time interval samples (one hour for each sample measurement).

Table 5-12 Locations of Workplace (Indoor) Noise Level Measuring Points

Sr. No.	Measuring Points	Description	Remarks
1.	NMP-1	Sewing 1	See Figure 5-9
2.	NMP-2	Sewing 2	See Figure 5-9
3.	NMP-3	Sewing 3	See Figure 5-9
4.	NMP-4	Sewing 4	See Figure 5-9
5.	NMP-5	Cutting	See Figure 5-9
6.	NMP-6	Warehouse 1	See Figure 5-9
7.	NMP-7	Warehouse 2	See Figure 5-9
8.	NMP-8	Packaging Material Warehouse	See Figure 5-9
9.	NMP-9	Raw Material 1	See Figure 5-9
10.	NMP-10	Raw Material 2	See Figure 5-9
11.	NMP-11	Glue Making Room	See Figure 5-9
12.	NMP-12	Sewing (future)	See Figure 5-9
13.	NMP-13	Cutting (future)	See Figure 5-9
14.	NMP-14	Generator Room	See Figure 5-9



WMP-1



WMP-2



WMP-3



WMP-4



WMP-5



WMP-6



WMP-7



WMP-8



WMP-9



WMP-10



WMP-11



WMP-12



WMP-13



WMP-14

Figure 5-9 Status of Workplace (Indoor) Noise Level Measurement

Table 5-13 Measuring Results of Indoor (Workplace) Noise Levels

Sr. No.	Measuring Points	Description	Noise Level ( $L_{eq}$ )			OHS Exposure Guideline (8 hr)
			Avg	Max	Min	
1.	NMP-1	Sewing 1	76.62	79.10	74.00	90
2.	NMP-2	Sewing 2	74.28	77.16	72.20	90
3.	NMP-3	Sewing 3	72.71	75.90	68.30	90
4.	NMP-4	Sewing 4	73.98	82.50	69.00	90
5.	NMP-5	Cutting	79.00	82.00	76.00	90
6.	NMP-6	Warehouse 1	59.26	59.10	52.50	90
7.	NMP-7	Warehouse 2	57.10	60.28	50.45	90
8.	NMP-8	Packaging Material Warehouse	56.83	69.40	54.60	90

Sr. No.	Measuring Points	Description	Noise Level ( $L_{eq}$ )			OHS Exposure Guideline (8 hr)
			Avg	Max	Min	
9.	NMP-9	Raw Material 1	69.98	78.50	60.00	90
10.	NMP-10	Raw Material 2	70.71	76.90	67.30	90
11.	NMP-11	Glue Making Room	73.62	80.10	67.50	90
12.	NMP-12	Sewing (future)	39.26	42.10	37.50	90
13.	NMP-13	Cutting (future)	38.10	45.31	36.45	90
14.	NMP-14	Generator Room	100.53	127.90	55.30	90

Source: IEE Study Team

According to the measuring results of average noise levels at workplace, the noise levels except generator rooms were within the acceptable conditions. The major noise pollution source inside the factory may be happened due to operation of generators and they are used in case of emergency only when the electricity goes out.

### 5.2.2.3 Vibration

The location of vibration measuring point is described in **Table 5-14** and the measuring results are presented in **Table 5-15**.

Table 5-14 Location of Vibration Measuring Point

Sr. No.	Measuring Points	Geographic Information	Remarks
1.	VMP	17° 16' 46.83" N 96° 27' 24.63" E	See <b>Figure 5-10</b>

VMP = Vibration Measuring Point



Figure 5-10 Location of Vibration Measuring Points



Figure 5-11 Status of Vibration Measurement

Table 5-15 Vibration Measurement Results

Summary of Vibration Monitoring Results					
Instrument ID	Date		Maximum Peak Vector Sum (mm/s)	Current Threshold (mm/s)	Remark
VMP	16/09/2021	17/09/2021	0.94	0.5	Max: PVS on 16.09.2021 5:45 PM

Remark : Vibration level is less than Threshold limit 0.5 mm/sec not recorded the data.

Table 5-16 Vibration Measurement Records

Date & Time	X	Y	Z	Current Threshold (mm/s)
16/9/2021 10:00:00 AM	0.800	0.470	0.50	0.5
16/9/2021 10:55:00 AM	0.100	0.100	0.18	0.5
16/9/2021 10:17:00 AM	0.100	0.100	0.11	0.5
16/9/2021 10:27:00 AM	0.100	0.100	0.11	0.5
16/9/2021 10:39:00 AM	0.100	0.100	0.24	0.5
16/9/2021 10:45:00 AM	0.100	0.100	0.10	0.5
16/9/2021 10:56:00 AM	0.100	0.100	0.11	0.5
16/9/2021 11:00:00 AM	0.250	0.340	0.30	0.5
16/9/2021 11:05:00 AM	0.100	0.100	0.20	0.5
16/9/2021 11:07:00 AM	0.100	0.100	0.11	0.5
16/9/2021 11:17:00 AM	0.100	0.100	0.11	0.5
16/9/2021 11:19:00 AM	0.100	0.100	0.21	0.5
16/9/2021 11:22:00 AM	0.170	0.140	0.13	0.5
16/9/2021 11:34:00 AM	0.100	0.100	0.10	0.5
16/9/2021 11:36:00 AM	0.100	0.100	0.11	0.5
16/9/2021 11:37:00 AM	0.100	0.100	0.15	0.5
16/9/2021 11:38:00 AM	0.100	0.100	0.11	0.5
16/9/2021 11:41:00 AM	0.100	0.100	0.10	0.5



Date & Time	X	Y	Z	Current Threshold (mm/s)
16/9/2021 11:43:00 AM	0.300	0.280	0.19	0.5
16/9/2021 11:44:00 AM	0.100	0.100	0.12	0.5
16/9/2021 11:47:00 AM	0.100	0.100	0.19	0.5
16/9/2021 11:48:00 AM	0.100	0.100	0.14	0.5
16/9/2021 11:50:00 AM	0.100	0.100	0.12	0.5
16/9/2021 12:05:00 PM	0.100	0.100	0.10	0.5
16/9/2021 12:06:00 PM	0.100	0.100	0.11	0.5
16/9/2021 12:08:00 PM	0.100	0.100	0.13	0.5
16/9/2021 12:09:00 PM	0.100	0.100	0.10	0.5
16/9/2021 12:14:00 PM	0.100	0.100	0.11	0.5
16/9/2021 12:24:00 PM	0.100	0.100	0.10	0.5
16/9/2021 12:25:00 PM	0.100	0.100	0.13	0.5
16/9/2021 12:26:00 PM	0.100	0.100	0.12	0.5
16/9/2021 12:27:00 PM	0.100	0.100	0.12	0.5
16/9/2021 12:28:00 PM	0.100	0.100	0.13	0.5
16/9/2021 12:37:00 PM	0.100	0.100	0.11	0.5
16/9/2021 12:38:00 PM	0.100	0.100	0.11	0.5
16/9/2021 12:40:00 PM	0.100	0.100	0.10	0.5
16/9/2021 12:49:00 PM	0.350	0.420	0.28	0.5
16/9/2021 12:58:00 PM	0.100	0.100	0.12	0.5
16/9/2021 1:06:00 PM	0.100	0.100	0.11	0.5
16/9/2021 1:09:00 PM	0.100	0.100	0.10	0.5
16/9/2021 1:13:00 PM	0.100	0.100	0.11	0.5
16/9/2021 1:20:00 PM	0.100	0.100	0.15	0.5
16/9/2021 1:21:00 PM	0.100	0.100	0.13	0.5
16/9/2021 1:22:00 PM	0.150	0.180	0.16	0.5
16/9/2021 1:23:00 PM	0.100	0.100	0.15	0.5
16/9/2021 1:25:00 PM	0.100	0.100	0.11	0.5
16/9/2021 1:44:00 PM	0.100	0.100	0.10	0.5
16/9/2021 1:57:00 PM	0.100	0.100	0.10	0.5
16/9/2021 2:04:00 PM	0.100	0.100	0.10	0.5
16/9/2021 2:05:00 PM	0.100	0.100	0.11	0.5
16/9/2021 2:06:00 PM	0.100	0.100	0.10	0.5
16/9/2021 2:11:00 PM	0.100	0.100	0.11	0.5
16/9/2021 2:15:00 PM	0.100	0.100	0.10	0.5
16/9/2021 2:18:00 PM	0.100	0.100	0.14	0.5
16/9/2021 2:22:00 PM	0.100	0.100	0.11	0.5
16/9/2021 2:26:00 PM	0.100	0.100	0.14	0.5
16/9/2021 2:27:00 PM	0.100	0.100	0.11	0.5

Date & Time	X	Y	Z	Current Threshold (mm/s)
16/9/2021 2:33:00 PM	0.100	0.100	0.11	0.5
16/9/2021 2:35:00 PM	0.100	0.100	0.14	0.5
16/9/2021 2:42:00 PM	0.150	0.140	0.13	0.5
16/9/2021 2:50:00 PM	0.100	0.100	0.11	0.5
16/9/2021 3:17:00 PM	0.100	0.100	0.10	0.5
16/9/2021 3:19:00 PM	0.100	0.100	0.11	0.5
16/9/2021 3:24:00 PM	0.100	0.100	0.14	0.5
16/9/2021 3:31:00 PM	0.100	0.100	0.10	0.5
16/9/2021 3:47:00 PM	0.100	0.100	0.17	0.5
16/9/2021 3:48:00 PM	0.100	0.100	0.10	0.5
16/9/2021 4:01:00 PM	0.100	0.100	0.11	0.5
16/9/2021 4:04:00 PM	0.100	0.100	0.14	0.5
16/9/2021 4:06:00 PM	0.100	0.100	0.11	0.5
16/9/2021 4:09:00 PM	0.100	0.100	0.10	0.5
16/9/2021 4:11:00 PM	0.100	0.100	0.11	0.5
16/9/2021 4:18:00 PM	0.100	0.100	0.16	0.5
16/9/2021 4:30:00 PM	0.100	0.100	0.13	0.5
16/9/2021 4:34:00 PM	0.100	0.100	0.10	0.5
16/9/2021 4:43:00 PM	0.100	0.100	0.10	0.5
16/9/2021 4:53:00 PM	0.100	0.100	0.11	0.5
16/9/2021 4:58:00 PM	0.100	0.100	0.12	0.5
16/9/2021 5:01:00 PM	0.580	0.690	0.72	0.5
16/9/2021 5:02:00 PM	0.100	0.100	0.11	0.5
16/9/2021 5:04:00 PM	0.100	0.100	0.12	0.5
16/9/2021 5:08:00 PM	0.100	0.100	0.12	0.5
16/9/2021 5:09:00 PM	0.430	0.570	0.67	0.5
16/9/2021 5:12:00 PM	0.100	0.100	0.12	0.5
16/9/2021 5:14:00 PM	0.100	0.100	0.11	0.5
16/9/2021 5:20:00 PM	0.100	0.100	0.10	0.5
16/9/2021 5:24:00 PM	0.100	0.100	0.12	0.5
16/9/2021 5:28:00 PM	0.100	0.100	0.16	0.5
16/9/2021 5:45:00 PM	0.580	0.720	0.94	0.5
16/9/2021 6:22:00 PM	0.100	0.100	0.10	0.5
16/9/2021 6:35:00 PM	0.100	0.100	0.10	0.5
16/9/2021 6:42:00 PM	0.100	0.100	0.17	0.5
16/9/2021 6:46:00 PM	0.100	0.100	0.11	0.5
16/9/2021 7:19:00 PM	0.100	0.100	0.10	0.5
16/9/2021 7:48:00 PM	0.100	0.100	0.11	0.5
16/9/2021 7:53:00 PM	0.100	0.100	0.11	0.5

Date & Time	X	Y	Z	Current Threshold (mm/s)
16/9/2021 7:57:00 PM	0.100	0.100	0.11	0.5
16/9/2021 8:08:00 PM	0.100	0.100	0.11	0.5
16/9/2021 8:26:00 PM	0.100	0.100	0.10	0.5
16/9/2021 8:35:00 PM	0.270	0.190	0.28	0.5
16/9/2021 8:40:00 PM	0.740	0.580	0.45	0.5
16/9/2021 8:47:00 PM	0.100	0.100	0.12	0.5
16/9/2021 8:51:00 PM	0.200	0.150	0.30	0.5
16/9/2021 8:59:00 PM	0.100	0.100	0.13	0.5
16/9/2021 9:12:00 PM	0.100	0.100	0.10	0.5
16/9/2021 9:16:00 PM	0.100	0.100	0.10	0.5
16/9/2021 9:38:00 PM	0.100	0.100	0.10	0.5
16/9/2021 9:44:00 PM	0.100	0.100	0.11	0.5
16/9/2021 9:45:00 PM	0.100	0.100	0.11	0.5
16/9/2021 9:49:00 PM	0.100	0.100	0.11	0.5
16/9/2021 9:58:00 PM	0.100	0.100	0.12	0.5
16/9/2021 10:19:00 PM	0.100	0.100	0.10	0.5
16/9/2021 10:21:00 PM	0.100	0.100	0.13	0.5
16/9/2021 10:39:00 PM	0.100	0.100	0.10	0.5
16/9/2021 10:42:00 PM	0.100	0.100	0.11	0.5
16/9/2021 10:55:00 PM	0.100	0.100	0.11	0.5
16/9/2021 11:19:00 PM	0.100	0.100	0.12	0.5
16/9/2021 11:46:00 PM	0.100	0.100	0.13	0.5
17/9/2021 12:04:00 AM	0.100	0.100	0.11	0.5
17/9/2021 12:26:00 AM	0.100	0.100	0.10	0.5
17/9/2021 12:31:00 AM	0.100	0.100	0.11	0.5
17/9/2021 12:34:00 AM	0.100	0.100	0.10	0.5
17/9/2021 12:45:00 AM	0.100	0.100	0.13	0.5
17/9/2021 12:54:00 AM	0.100	0.100	0.10	0.5
17/9/2021 12:59:00 AM	0.100	0.100	0.12	0.5
17/9/2021 1:07:00 AM	0.100	0.100	0.11	0.5
17/9/2021 1:22:00 AM	0.100	0.100	0.10	0.5
17/9/2021 1:30:00 AM	0.100	0.100	0.13	0.5
17/9/2021 1:43:00 AM	0.100	0.100	0.11	0.5
17/9/2021 1:53:00 AM	0.100	0.100	0.11	0.5
17/9/2021 2:03:00 AM	0.100	0.100	0.10	0.5
17/9/2021 2:04:00 AM	0.100	0.100	0.10	0.5
17/9/2021 2:06:00 AM	0.100	0.100	0.13	0.5
17/9/2021 2:14:00 AM	0.100	0.100	0.10	0.5
17/9/2021 2:23:00 AM	0.100	0.100	0.10	0.5

Date & Time	X	Y	Z	Current Threshold (mm/s)
17/9/2021 2:24:00 AM	0.100	0.100	0.11	0.5
17/9/2021 3:04:00 AM	0.100	0.100	0.10	0.5
17/9/2021 3:21:00 AM	0.100	0.100	0.10	0.5
17/9/2021 3:23:00 AM	0.100	0.100	0.11	0.5
17/9/2021 3:40:00 AM	0.100	0.100	0.10	0.5
17/9/2021 3:46:00 AM	0.100	0.100	0.11	0.5
17/9/2021 4:40:00 AM	0.100	0.100	0.10	0.5
17/9/2021 5:12:00 AM	0.100	0.100	0.12	0.5
17/9/2021 5:31:00 AM	0.100	0.100	0.10	0.5
17/9/2021 5:32:00 AM	0.100	0.100	0.10	0.5
17/9/2021 5:45:00 AM	0.100	0.100	0.10	0.5
17/9/2021 5:49:00 AM	0.100	0.100	0.10	0.5
17/9/2021 5:52:00 AM	0.100	0.100	0.12	0.5
17/9/2021 5:55:00 AM	0.100	0.100	0.13	0.5
17/9/2021 6:01:00 AM	0.100	0.100	0.10	0.5
17/9/2021 6:02:00 AM	0.100	0.100	0.10	0.5
17/9/2021 6:04:00 AM	0.100	0.100	0.10	0.5
17/9/2021 6:06:00 AM	0.100	0.100	0.11	0.5
17/9/2021 6:16:00 AM	0.100	0.100	0.11	0.5
17/9/2021 6:28:00 AM	0.100	0.100	0.10	0.5
17/9/2021 6:31:00 AM	0.100	0.100	0.10	0.5
17/9/2021 6:34:00 AM	0.100	0.100	0.12	0.5
17/9/2021 6:35:00 AM	0.100	0.100	0.10	0.5
17/9/2021 6:49:00 AM	0.100	0.100	0.10	0.5
17/9/2021 6:52:00 AM	0.100	0.100	0.11	0.5
17/9/2021 7:10:00 AM	0.100	0.100	0.11	0.5
17/9/2021 7:16:00 AM	0.100	0.100	0.11	0.5
17/9/2021 8:15:00 AM	0.420	0.300	0.51	0.5
17/9/2021 8:23:00 AM	0.100	0.100	0.13	0.5
17/9/2021 8:26:00 AM	0.100	0.100	0.10	0.5
17/9/2021 8:27:00 AM	0.100	0.125	0.10	0.5
17/9/2021 8:36:00 AM	0.100	0.100	0.10	0.5
17/9/2021 8:52:00 AM	0.100	0.100	0.11	0.5
17/9/2021 8:53:00 AM	0.100	0.100	0.11	0.5
17/9/2021 8:58:00 AM	0.100	0.100	0.11	0.5
17/9/2021 8:59:00 AM	0.100	0.100	0.10	0.5
17/9/2021 9:01:00 AM	0.100	0.100	0.11	0.5
17/9/2021 9:09:00 AM	0.102	0.100	0.10	0.5
17/9/2021 9:35:00 AM	0.590	0.390	0.74	0.5

Date & Time	X	Y	Z	Current Threshold (mm/s)
17/9/2021 9:48:00 AM	0.100	0.100	0.10	0.5
17/9/2021 9:49:00 AM	0.100	0.100	0.10	0.5
17/9/2021 9:58:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:01:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:07:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:08:00 AM	0.100	0.100	0.13	0.5
17/9/2021 10:11:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:19:00 AM	0.100	0.100	0.11	0.5
17/9/2021 10:27:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:38:00 AM	0.100	0.100	0.10	0.5
17/9/2021 10:40:00 AM	0.100	0.100	0.10	0.5
17/9/2021 10:43:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:44:00 AM	0.100	0.100	0.11	0.5
17/9/2021 10:45:00 AM	0.100	0.100	0.18	0.5
17/9/2021 10:46:00 AM	0.100	0.100	0.11	0.5
17/9/2021 10:47:00 AM	0.151	0.100	0.13	0.5
17/9/2021 10:48:00 AM	0.100	0.100	0.11	0.5
17/9/2021 10:49:00 AM	0.100	0.100	0.11	0.5
17/9/2021 10:50:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:51:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:52:00 AM	0.100	0.100	0.14	0.5
17/9/2021 10:53:00 AM	0.100	0.100	0.12	0.5
17/9/2021 10:54:00 AM	0.100	0.100	0.12	0.5

### Vibration Level Guideline

Reference source is from DIN 4150: Part 3 “Structural Vibration in Buildings” Guideline on Limit of Vibration

<b>DIN 4150</b>			
Type of Structure	Peak Particle Velocity (mm/sec)		
Frequency	1 ~ 10 Hz	10 ~ 50 Hz	50 ~ 100 Hz
Commercial and Industrial Building (Type-1)	20	20 ~ 40	40 ~ 50
Dwellings (Type-2)	5	5 ~ 15	15 ~ 20
Ancient and Historic Buildings (Type-3)	3	3 ~ 8	8 ~ 10

Maximum Peak Vector Sum is 0.94 mm/s and it is less than the peak particle velocity 3 mm/s in DIN 4150. i.e. Ancient and Historic Buildings (Type-3)

### 5.2.3 Light Intensity

Light intensity is important for the work place. Therefore, study team from Green Myanmar Environmental Services Co., Ltd. investigated light intensity at the six locations in the factory-I and one location in the factory-II by using Lux Meter on

September 2021. Accurate and quantifiable measurement of light is essential in creating desired outcomes in practical day-to-day applications as well as unique applications. From measuring the amount of light in a workspace surface to ensuring emergency exits have proper illumination, light measurement and analysis is an important step in ensuring efficiency and safety. To perform these measurements, technicians often make use of lux meters, which are specialized devices that measure the intensity of light falling on a surface, or "lux."

From the workers’ perspective, poor lighting at work can lead to eyestrain, fatigue, headaches, stress and accidents. On the other hand, too much light can also cause health and safety problems such as “glare” headaches and stress. Both can lead to mistakes at work, poor quality and low productivity. Various studies suggest that good lighting at the workplace pays dividends in terms of improved productivity, and a reduction. Improvements in lighting do not necessarily mean that you need more lights and therefore use more electricity – it is often a case of making better use of existing lights; making sure that all lights are clean and in good condition; and that lights are positioned correctly for each task. It is also a case of making the best use of natural light. Most garment factories have a combination of natural and artificial lighting. However, little attention appears to be paid on the nature of the work - it is as though all work in the factory requires the same degree of lighting.

**Material Used for Measurement**

**LUX METER** is used to measure the light intensity.



**Lux Meter**

Table 5-17 Locations of Light Intensity Measuring Points

Sr. No.	Measuring Points	Description	Remarks
1.	LMP-1	Sewing 1	See <b>Figure 5-12</b>
2.	LMP-2	Sewing 2	See <b>Figure 5-12</b>
3.	LMP-3	Sewing 3	See <b>Figure 5-12</b>
4.	LMP-4	Sewing 4	See <b>Figure 5-12</b>
5.	LMP-5	Cutting Room	See <b>Figure 5-12</b>
6.	LMP-6	Glue Making Room	See <b>Figure 5-12</b>



LMP-1



LMP-2



LMP-3



LMP-4



LMP-5



LMP-6

Figure 5-12 Light Measurement Activities

The following **Table 5-18** describes the measuring results of light intensity during the working hours on September 16<sup>th</sup> 2021.

Table 5-18 Light Measurement Results

Sr. No.	Measuring Points	Location	Measure Values (Lux)	Guideline Values (Lux)
1.	LMP-1	Sewing 1	487	<b>Visual Work: Production Line (300-750)</b>
2.	LMP-2	Sewing 2	385	
3.	LMP-3	Sewing 3	471	
4.	LMP-4	Sewing 4	461	
5.	LMP-5	Cutting Room	301	
6.	LMP-6	Glue Making Room	338	

According to the above table, all of the light levels were within the limits.

#### 5.2.4 Water and Wastewater Quality

Selected water quality parameters of drinking water, tube well water, and wastewater have been studied for assessing the water environment and evaluating the anticipated impact of the proposed project.

The purpose of this study is to:

- Assess the water quality characteristics for critical parameters,
- Predict impact on water quality by this project and related activities, and
- Suggest appropriate mitigation measures.

#### Selection of Sampling Locations

Table 5-19 Locations of Water and Wastewater Sampling Points

Sr. No.	Sampling Points	Geographic Information	Description	Remarks
1.	ID-1	17° 16' 48.09" N 96° 27' 24.84" E	Tube Well-1	Water
2.	ID-1	17° 16' 47.89" N 96° 27' 28.45" E	Tube Well-2	Water
3.	ID-3	17° 16' 48.17" N 96° 27' 24.59" E	Drainage Water	Wastewater

Source: IEE Study Team



Figure 5-13 Location of Water and Wastewater Sampling Points



### 5.2.4.1 Water Quality

The analysis results of the physico-chemical parameters are presented in the–**Table 5-20**. The analysis results were compared with drinking water standards.

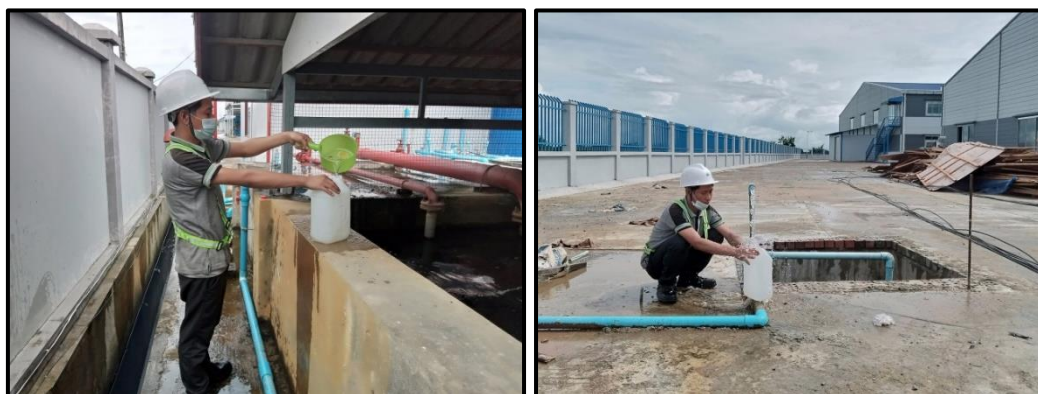


Figure 5-14 Status of Water Sampling

Table 5-20 Result of Water Quality (GMES Laboratory)

Sr. No.	Parameters	Unit	Analysis Value		Minimum Measurement Range of Methods	Drinking Water Standards		
			ID-1 (Tube Well 1)	ID-2 (Tube Well 2)		WHO (2011)	EPA (Spring 2012)	Indian Specification (IS:10500, 2012)
1.	Aluminum	mg/l	0.02	0.02	<b>0.01</b>	<b>0.2</b>	<b>0.2</b>	<b>0.03</b>
2.	Arsenic	mg/l	0.01	0.02	<b>0.005</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
3.	Chloride	mg/l	17	22	<b>5</b>	<b>250</b>	<b>250</b>	<b>250</b>
4.	Copper	mg/l	ND	ND	<b>0.5</b>	<b>2</b>	<b>1</b>	<b>0.05</b>
5.	Cyanide	mg/l	ND	ND	<b>0.01</b>	<b>0.07</b>	<b>0.2</b>	<b>0.05</b>
6.	Manganese	mg/l	ND	0.28	<b>0.2</b>	<b>0.4</b>	<b>0.05</b>	<b>0.1</b>
7.	pH	-	6.32	6.38	<b>0.1</b>	<b>6.5~8.5</b>	<b>6.5~8.5</b>	<b>6.5~8.5</b>
8.	Sulfate	mg/l	ND	ND	<b>2</b>	<b>250</b>	<b>250</b>	<b>200</b>
9.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	85	112	<b>5</b>	-	-	<b>200</b>
10.	Total Dissolved Solids	mg/l	140	160	<b>1</b>	<b>600</b>	<b>500</b>	<b>500</b>
11.	Total Hardness as CaCO <sub>3</sub>	mg/l	38	25	<b>5</b>	<b>500</b>	-	<b>200</b>
12.	Total Iron	mg/l	0.1	0.3	<b>0.1</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>
13.	Turbidity	NTU	4.3	4.51	<b>0.01</b>	<b>5</b>	-	<b>1</b>

Note: ND - Not Detected

According to the results, although the arsenic value in ID-2 (Tube well 2) was slightly higher than the drinking water standards, all other parameters are within the desirable limits as per drinking water standards.

#### 5.2.4.2 Wastewater Quality

The analysis results of the physico-chemical parameters are presented in **Table 5-21**. The analysis results were compared with National Emission Quality (Emission) Guidelines (2015).



Figure 5-15 Status of Wastewater Sampling

Table 5-21 Result of Wastewater Quality (GMES Laboratory)

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Method	National Environmental Quality (Emission) Guidelines (2015) General Application
			ID-3 (Drainage Water)		
1.	5-day Biochemical Oxygen Demand	mg/l	120	30	50
2.	Arsenic	mg/l	0.025	0.005	0.1
3.	Chemical Oxygen Demand	mg/l	400	30	250
4.	Copper	mg/l	ND	0.5	0.5
5.	Oil and Grease	mg/l	8	5	10
6.	pH	-	7.08	0.1	6~9
7.	Total Cyanide	mg/l	ND	0.01	0.1
8.	Total Iron	mg/l	ND	0.1	3.5
9.	Total Suspended Solids	mg/l	130	1	50

According to the wastewater analysis results, the values of BOD<sub>5</sub>, COD and total suspended solids were higher than the NEQG, and all other parameters were within the limits of NEQG.

#### 5.2.5 Soil Quality

To monitor the soil quality, the soil sample was collected in the project area.

### Selection of Sampling Locations

The soil sample of the factory was collected at one location inside the factory compound on September 16, 2021.

Table 5-22 Locations of Soil Sampling (SS)

Sr. No.	Sampling Points	Geographic Information	Description
1.	SS-1	17° 16' 48.96" N 96° 27' 33.67" E	Inside the factory compound

SS = Soil Sampling



Figure 5-16 Location of Soil Sampling Points

### Analysis Results

The collected soil samples were tested at GMES laboratory. The analysis results of the physico-chemical parameters are presented in the Table 5-23.



Figure 5-17 Status of Soil Sampling

Table 5-23 Results of Soil Quality

Sr. No.	Parameter	Unit	Analysis Value	Minimum Measurement Range of Methods
			SS-1	
1.	Aluminum	mg/kg soil	0.3	0.05
2.	Arsenic	mg/kg soil	0.05	0.025
3.	Chloride	g/kg soil	0.055	0.025
4.	Copper	mg/kg soil	ND	2.5
5.	Cyanide	mg/kg soil	ND	0.05
6.	Extractable Acidity	cmol/kg soil	3.35	0.25
7.	Manganese	mg/kg soil	7.05	1
8.	P-Alkalinity	mmol/l extract	0	0.2
9.	pH	-	6.56	0.1
10.	Total Alkalinity	mmol/l extract	1.7	0.2
11.	Total Iron	g/kg soil	5	0.5

ND - Not Detected

Source: IEE Study Team

The above results are noted as baseline data and it will compare with the future results. Comparison will show better or worse.

### 5.3 Natural Environment/ Physical Component (Secondary Data)

Physical environment essentially illustrates baseline conditions of climate, topography, geology, soils and hydrology of the project area, where necessary, of proposed project regardless of an assessment study. These data are extracted from the regional facts about Bago District, Bago Township prepared by the Administrative Department of Township (2020) and study area is an area of that township.

#### 5.3.1 Climate

The climate of the Bago Township is a tropical monsoon climate. The highest temperature is 42.2°C and lowest temperature is 13°C during 2016 to 2020. The rainfall and temperatures of years 2016 to 2020 are as follow:

Table 5-24 Climate of Bago Township (2016-2020)

Sr. No.	Year	Rainfall		Temperature	
		Rainy Days	Total Rainfall (inches)	Summer (°C)	Winter (°C)
1.	2016	136	126.38	41.5	14.0
2.	2017	140	148.62	39.3	13.0
3.	2018	131	123.47	40.2	13.0
4.	2019	111	101.1	42.2	14.7
5.	2020	115	95.16	34.1	22.3

### 5.3.2 Topography

Bago Township is situated at between north-latitude 17° 14' and 17° 50' and between east-longitude 96° 24' and 96° 41'. The area of Bago Township is 717,861 acres (1,121.66 square miles). The length of Bago Township is 21 miles from east to west and 43 miles from south to north.

Bago is the city of Bago Division, is situated average 31 ft above sea level. Bago city is the east part of the drainage of the Bago Yoma Mountain Range. The west portion of the whole township is forest cover mountainous area and part of the north is highest portion and has forest reserve with previous trees. And then, at north Dyte Oo and Lat Pa Tan Townships, at east Waw and Thanat Pin Townships, at south Kawa Township and at west Helgu, Tiekgyi and Tharyawadi Townships of Yangon Division are located. The proposed project is located at Bago Industrial Zone. But Industrial zone land is not flat plain. This area is range of hills area.

### 5.3.3 Geology

Bago Township is situated in the Bago region. So, most of Bago Township the geology is similar to Bago region. Bago region occupies the southernmost on land segment of the Central Myanmar Belt. It is bordered

- on the north by Magway and Mandalay Regions,
- on the east by Kayin and Mon States,
- on the south by Yangon and Ayeyarwady Regions, and
- on the west by Rakhine State.

Except for the low hills of the Bago Yoma, running north-south across the center of the Region, the foot-hills of the Eastern Highlands Province in the eastern part and those of the WR in the west, Bago Region is composed mostly of flat alluvial plains.

Except for the small northwestern part, the Bago region has not received enough geological investigations as much as it deserves. It is probably because Bago Yoma, known to be underlain almost entirely by Miocene clastic sedimentary rocks, is considered less attractive for the economic mineral potential. Generally, people are more interested in the reported economic mineral occurrences or in areas where there have been some local mining activities. Moreover, the Bago Yoma is very thinly populated and thickly wooded, hence it was largely reserved forest area. It is hardly accessible for the rigorous geological field work although it is surrounded by fairly

thickly populated agricultural flat lands. The northwestern part of Bago region, however, was intensively investigated because of its oil potential.

The geology of Bago region is in fact interesting and is unique because the region embraces the southern segment of the Western Ranges (WR), the southern segment of the Central Myanmar Belt (CMB) and a narrow western part of the Eastern Highlands Province (EHP). Therefore, the geological succession of the Bago region is composed of a mixture of some rock units of the WR, the CMB and a few of the EHP, as shown in **Table 5-25** and **Figure 5-18**.

Table 5-25 Geological Succession of the Bago Region

Age	Unit
Quaternary	Laterite, landslide material and Alluvium Unconformity
Upper Miocene-Pliocene	Irrawaddy Formation Unconformity
Miocene } Oligocene }	Bago Group Unconformity
Eocene	Eocene Strata (molasse facies): Several Rock Units Faulted Contact
Cretaceous-Eocene	Indoburman Flysch of WR
Premian	Moulmein Limestone Unconformity
Precambrian	Gneisses and Schists
<b>Igneous Rocks</b>	
Quaternary/ Tertiary	Dolerites of Bago Yoma
Eocene } Cretaceous }	Granitoid Rocks
Mesozonic	Dislocated Ultramafic Rocks

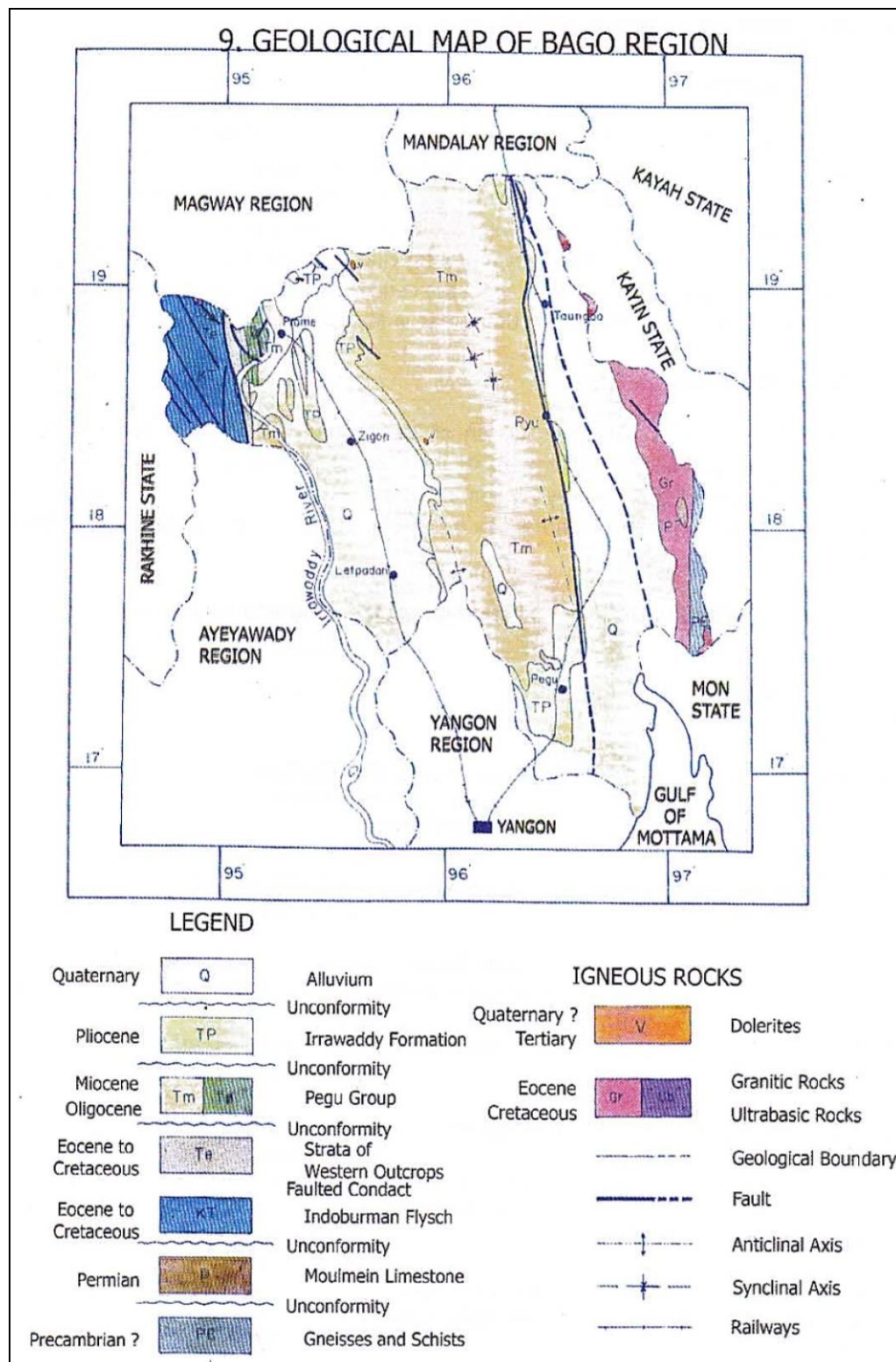


Figure 5-18 Geological Map of Bago Region

### 5.3.4 Soil

The soil type of Bago Township is alluvial soil and is as shown in **Figure 5-19**.

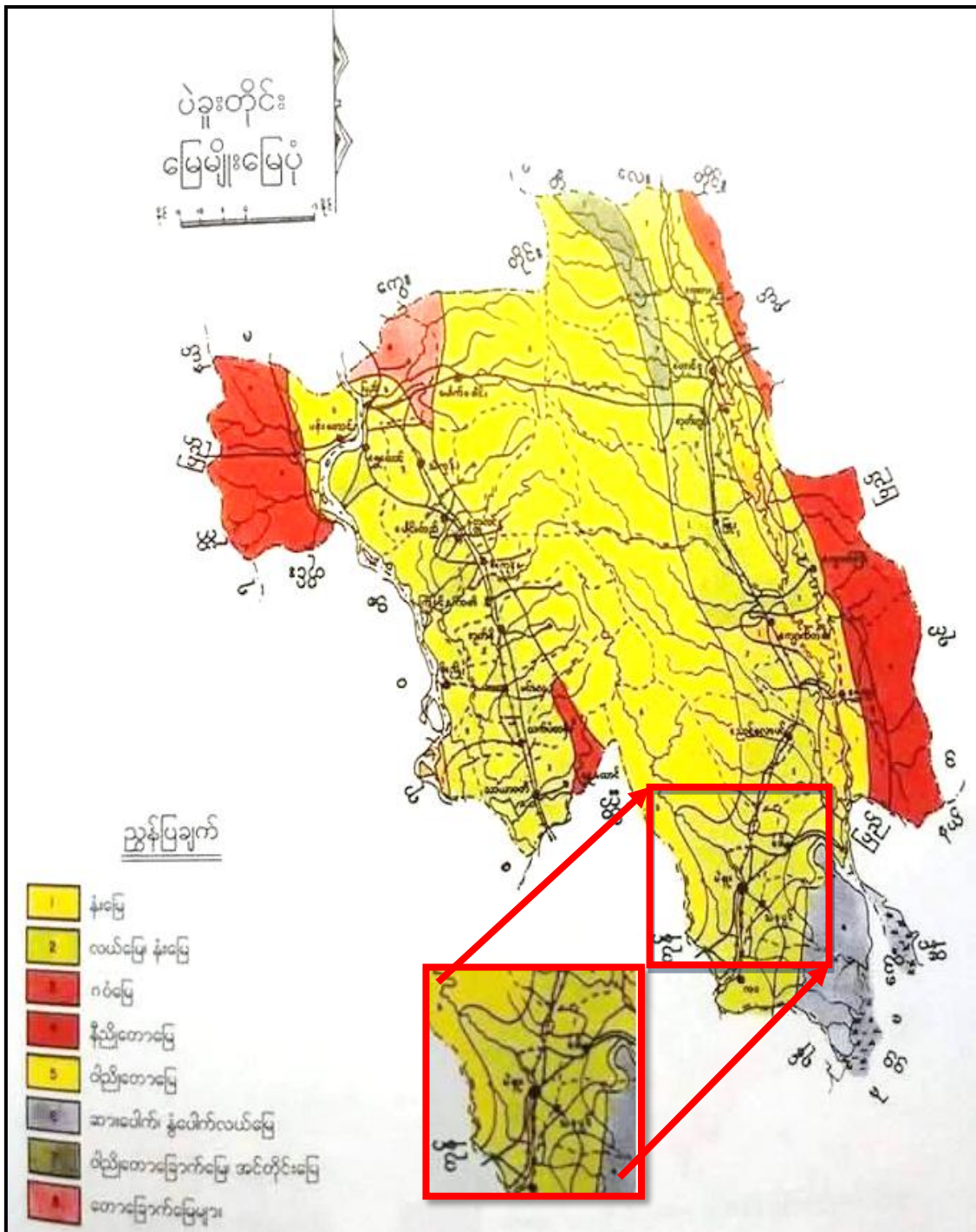


Figure 5-19 Description of Soil Type Map

### 5.3.5 Hydrology

The only water body nearest to the project location is Bago River. Bago River basin is shared between Bago Division and Yangon Division. The Bago River is originated from the south of Bago mountain range which flows 331 kilometers toward south and finally confluence into the Yangon River which drains to the sea. The northern part of the basin has higher altitude up to 800 m whereas lower southern part



is relatively plain and fertile. The total catchment area of Bago River is 5,348 km<sup>2</sup>. The Bago River Basin has a tropical monsoon climate. The annual rainfall is around 2,750 mm. Almost 85% of all the rainfall occurs during the monsoon season (May-Oct). The average flow in the Bago River is 135 m<sup>3</sup>/s, which increases to 450 m<sup>3</sup>/s during the rainy season. The Bago River flows through Bago city and is flooded almost every year during the monsoon period. The Bago River is very important as the water is diverted for irrigation and to maintain the water level of Moeyingyi wetland during the dry season (Jan-Apr) through canal. The intake of the canal lies between Zangtu and Bago Station.

## 5.4 Biological Component (Secondary Data)

As the project site is in the Bago Industrial Zone, Bago Township, the ecological information was received from the general administrative department of the Bago Township.

There is much natural vegetation in Bago Township such as teak, pyingadou, padauk, thityar, inngin, thingan, tamalan, kanyin, kayaway, thitkhar, koatco, kyana, sagaryar, sit, taungtamar, thadi, thinwin, thitkatoe, thitsay, mangyi, thitsho, anan, in, kanyaung, kantkaw, kaungmu, kyaylan, sandawar, nyan, talinekhauung, tawthatyet, taungpelal, and many kind of bamboos, etc. And then, there have medicinal properties plants at the Bago Township such as seephyu, phankhar, taungmayo, sintonemanwe, saymyinkhar, taungthangyi, kayayay, wonau, wild lemon, gonemin, sanwin, payanawar,

Many animals are grazed in Bago Township. There is elephant, leopard, wild boar, wild buffalo, bear, sambur, guar, hilly goat, gi, pangolin, hilly tortoise, turtle, tortoise, otter, wild cat, bull, many kinds of monkey, snake, king of cat, wild dog, hog-badger, and many kinds of lizard.

## 5.5 Socio-economic Status (Secondary Data)

### 5.5.1 Population

In 2020, there are about 442,022 people in Bago Township as shown in the following table. The percentage of urban population and rural population is about 50% respectively.

Table 5-26 Total Populations of Bago Township (2020)

Sr. No.	Township	House	Household	Ward	Village Tract	Village	Populations		
							Male	Female	Total
1.	Urban	38,565	43,679	40	-	-	103,571	118,116	221,687
2.	Rural	66,715	71,761	-	66	211	107,058	113,277	220,335
<b>Total</b>		<b>105,280</b>	<b>115,440</b>	<b>40</b>	<b>66</b>	<b>211</b>	<b>210,629</b>	<b>231,394</b>	<b>442,022</b>

### 5.5.2 Ethnicity

The races residing in Bago township are shown in the following table. Most of the people who live in these townships are Burmese, followed by Kayin and Indian people.

Table 5-27 Races in Bago Township (2020)

Sr. No.	Race	No. of Person	Percentage (%)
<b>Population by National Ethnic Group</b>			
1.	Kachin	115	0.026
2.	Kayah	104	0.023
3.	Kayin	17,289	3.91
4.	Chin	463	0.10
5.	Mon	5,517	1.25
6.	Burmese	392,516	88.80
7.	Rakhine	793	0.18
8.	Shan	822	0.19
9.	Paoht	650	0.15
10.	Palaung	4,254	0.96
11.	Danu	3,460	0.78
12.	Taungyo	2,705	0.61
13.	Kayan	2,320	0.52
<b>Total</b>		<b>431,008</b>	<b>97.51</b>
<b>Population by Foreigner</b>			
1.	Chinese	2,788	0.631
2.	Indian	6,389	1.445
3.	Pakistanis	848	0.192
4.	Bangladeshis	196	0.044
5.	Others	793	0.179
<b>Total</b>		<b>11,014</b>	<b>2.491</b>

### 5.5.3 Religion

The different kinds of religion present in Bago Township are shown in the following table. More than 90% of the people living in the township are Buddhists, followed by Christians.

Table 5-28 Religion in Bago Township (2020)

Sr. No.	Religion	No. of Person
1.	Buddhism	413,780
2.	Christianity	17,135
3.	Hinduism	6,137
4.	Islam	2,925
5.	Others	2,045
<b>Total</b>		<b>442,022</b>

### 5.5.4 Local Economy and Livelihood

Bago Township is the central economic township in Bago Region. The main livelihood of the township is agriculture and services work. Bago Township is situated at the junction of land route and junction of riverine route so road and communication

is best. And then, the main products of the township is rice produced that is dispatched to Yangon Region.

Table 5-29 Existing Status of Local Livelihoods in Bago Township (2020)

Sr. No.	Types of Workers	No. of Person
1.	Government Staff	8,519
2.	Service Staff	1,947
3.	Agriculture	38,632
4.	Livestock	3,162
5.	Trader	20,840
6.	Factory	38,478
7.	Fishing	3,000
8.	Odd Job	26,214
9.	Others	126,141
<b>Total</b>		<b>266,933</b>

#### 5.5.5 Land Use

Land use in Bago township is shown in the following table. The township mainly uses its land for agriculture.

Table 5-30 Land Use of Bago Township (2020)

Sr. No.	Land Category	Area (acres)
1.	Net Cultivation Area <ul style="list-style-type: none"> <li>▪ Paddy Land</li> <li>▪ Farmland for Crop</li> <li>▪ Cultivated Island</li> <li>▪ Garden Land</li> <li>▪ Nipa Palm Land</li> </ul>	<b>205,422</b> 104,713 - 5,906 94,764 37
2.	Vacant Land Area <ul style="list-style-type: none"> <li>▪ Paddy Land</li> <li>▪ Farmland for Crop</li> <li>▪ Cultivated Island</li> <li>▪ Garden Land</li> <li>▪ Nipa Palm Land</li> </ul>	- - - - -
3.	Grazing Ground	5,189
4.	Industrial Land	1,820
5.	Urban Land	12,293
6.	Rural Land	8,807
7.	Others	38,857.4
8.	Reserved Forest and Protected Forest Area	395,842
9.	Wild Forest	-
10.	Virgin Soil Area	945
11.	Non-cultivated Area	58,789
<b>Total</b>		<b>727,962.4</b>

### 5.5.6 Social Infrastructure and Services

#### (a) Education Attainment

According to the secondary data from General Administration Department, there are 34 basic education high schools, 77 middle schools, 5 primary schools, 114 over primary school, 15 pre-primary schools and 28 monastery education schools. And then, Bago Township has University at Oakthar Ward (8).

#### (b) Connectivity

The selected project location has well connectivity and accessibility through road and air.

Air: Nearest airport is Yangon airport which is located around 30 km.

Road: The project is easily approachable from Yangon-Bago road.

#### (c) Health Facility

Bago Township has 6 hospitals. There are Bago General Hospital with 500 beds, Zaungtu administrative unit hospital, Pharygyi administrative unit hospital, Thantawgyi administrative unit hospital, Phyarkalay administrative unit hospital and Chothein private hospital, Myinkyar private hospital, Thamardi private hospital, Aung private hospital and Swaltaw private hospital. Rural healthcare department has 54 centers in the Bago Township.

#### (d) Economic Infrastructure

The Project is situated in the Bago Industrial Zone, Bago Township. In Bago Township, there are many types of industries. The economic infrastructures in Bago Township are as follows:

Table 5-31 Economic Infrastructure

Sr. No.	Description	Quantity
1.	Private Factory	94
2.	Major Market	14
3.	State-owned Hotel	2
4.	Private Hotel/	39
5.	Motel	4
6.	Inn	8
7.	Guest House	2
8.	State-owned Petroleum Station	1
9.	Private Petroleum Station	56
10.	Media/Studio/Publication	238
11.	Transport Service Line	21
12.	State-owned Bank	1
13.	Private Bank	17

<b>Sr. No.</b>	<b>Description</b>	<b>Quantity</b>
14.	Township-wise Inter-link Road	8
15.	Bridge above 180 feet	7

## **5.6 Cultural Components**

Bago region has many historical and cultural components such as Kanbawza Thardi Place, Shwe Thar Laoung Image and Phyargi Pagoda that is situated at the Bago City. However, there are no cultural resources in the surrounding of project implementation area because the project site is situated in industrial zone.

## 6.0 IMPACT ASSESSMENT AND MITIGATION MEASURES

**Cobes Industries (B II) Company Limited** project could create an impact on the environment in two distinct phases.

- Temporary on short-term effects during the construction phase and decommissioning phase and
- Long-term effects during the operation phase.

Impacts are summarized as follows.

Construction Phase	Operation Phase	Decommissioning Phase
<ul style="list-style-type: none"> <li>▪ Impacts on air quality</li> <li>▪ Impacts on noise levels</li> <li>▪ Impacts on surface water quality</li> <li>▪ Impacts on contamination of soil and ground water</li> <li>▪ Impacts of solid wastes</li> <li>▪ Impacts on occupational health and safety</li> <li>▪ Impacts on community health and safety</li> </ul>	<ul style="list-style-type: none"> <li>▪ Impacts on air quality</li> <li>▪ Impacts on noise and vibration</li> <li>▪ Impacts on soil</li> <li>▪ Impacts on water quality</li> <li>▪ Impacts on natural resources depletion</li> <li>▪ Impacts on occupational health and safety</li> </ul>	<ul style="list-style-type: none"> <li>▪ Impacts on air quality</li> <li>▪ Impacts on noise levels</li> <li>▪ Impacts on surface water quality</li> <li>▪ Impacts on contamination of soil and ground water</li> <li>▪ Impacts of solid wastes</li> <li>▪ Impacts on occupational health and safety</li> <li>▪ Impacts on community health and safety</li> </ul>

### 6.1 Impact Assessment

Prediction of impacts is the most important component in environmental impact assessment studies. Both, qualitative and quantitative techniques and methodologies are used to identify/analyze the potential impacts likely to arise as a result of the proposed development activities on physical, ecological and socio-economic constituents of the environment within the study area.

The impacts generated are both beneficial as well as adverse. There may be some positive and negative impacts in the surrounding environment of the project site due to the implementation of the project. The possible environmental impacts are identified based on the analysis of environmental baseline information and project activities. Most of the identified impacts have been quantified to the extent possible on the professional judgment. Each of the environmental issues has been examined in terms of their current conditions, likely impacts during the operation and decommissioning phases.

### 6.2 Methodology in Assessing Impacts

The significance of the aspects/ impacts of the process were rated by using a matrix method. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The significances of the impacts were determined through a synthesis of the criteria and rating scales.

### 6.2.1 Spatial Classification

Spatial classification describes the geographic extend of environmental effects from the project.

Table 6-1 Spatial Classification

Spatial Scale	Criteria	Score
Project site	Impact area is localized or footprint of process.	2
Local	The impact area that covers the whole project site or 1km radius of the project site.	3
Regional	Impact area exceeds 1km <sup>2</sup> and up to 100 km <sup>2</sup> .	4
National	Impact area extends to nation wise.	5

### 6.2.2 Temporal Classification

Temporal classification describes the duration or period of time required until the environmental effect can no longer be measured, or the valued ecosystem components return to their baseline conditions.

Table 6-2 Temporal Classification

Scale of Temporal Impact	Criteria	Score
Short Term	Impact will be occurred during short term activities or operation and disappear itself through natural process after the operation.	2
Medium Term	The impact will last for a period of time (such as a season (3 months) or up to 1 year or during maintenance period or construction period.	3
Long Term	The impact will be occurred throughout the operational life of the project. But it can be alleviated by naturally or mitigation measures.	4
Permanent	This is non-reversible impact and cannot be rectified by natural process or human action.	5

### 6.2.3 Severity Classification

Severity classification describes the magnitude of the impact that shows the magnitude of the damage. In other words, it is the amount of change of the measurable parameters relative to its baseline conditions.

Table 6-3 Severity Classification

Severity	Classification	Score
Very Low	Impact is unlikely to be noticed. That means the environmental values are not altered.	1
Low	Localized impact occurs but only on small patch of affected environment or communities with negligible damage. Though the environmental values are altered, the natural process in the area are not affected.	2

Severity	Classification	Score
Medium	The environmental values are altered, but functions and processes in the environment proceed in a modified way.	3
High	The environmental values are altered in such a way that the function or process of the environment temporarily ceases.	4
Very High	The environmental values are altered in such a way that the function or process of the environment permanently ceases.	5

#### 6.2.4 Likelihood Classification

Likelihood of the impacts describes the chances of the occurrences of these impacts.

Table 6-4 Likelihood Classification

Likelihood	Classification	Score
Rare	<i>Impact has never been occurred but it should not be taken into account as 0% probability.</i>	2
Unlikely	<i>Impact is unlikely to occur but may occur at sometimes during operation.</i>	4
Likely	Impact is likely to occur at sometimes as there are some incidents experienced before in similar projects.	6
Very Likely	Impact is very likely to occur several times during operational phase in similar projects.	8
Certainly	Impact will occur anytime during operational phase. Incident has happened in similar projects.	10

#### 6.2.5 Significance Evaluation

The scored points of each criteria for individual impact is identified first. Then based on the score points of each criteria, the combining effects of spatial, temporal, severity and likelihood are evaluated. That total score points express the magnitude and how far of each impact can go. These total score points of the impacts indicate that the level of significance of those impacts.

$$\text{Significance} = (\text{Spatial} + \text{Temporal} + \text{Severity}) \times \text{Likelihood}$$

Table 6-5 Significance Evaluation

Significance	Scores	Effectuated
Negligible	8-30	No impact or possible impacts with no noticeable consequences. Does not require any additional mitigation.
Minor	31-60	Possible impacts with low consequences. No significant long-term changes and may be easily rehabilitated naturally. It may or may not require additional mitigation as the activity has low impact with low significance.
Moderate	61-90	Significant changes that may be rehabilitated with mitigation or modification. It may require certain additional mitigation and management action as the activity could have medium significance impact.



Significance	Scores	Effectuated
Major	91-120	Significant or substantial changes that can cause public concern. Fully rehabilitation may or may not achieved. It may require specific additional mitigation measures and management action as the activity could have high significance impact.
Critical	121-150	Permanent changes to the environment. Serious environmental harm cannot be reduced by implementing mitigation measures. Require alternative technology as the activity has very high significance impact.

### 6.3 Construction Phase

The said project was established from year 2020, April 1<sup>st</sup> and at the time of preparation for IEE report, it finished and started operation except SMS production.

#### 6.3.1 Construction Activities

The total available land for the proposed factory is 7.1 acres of total 16 acres. The factory consists of construction the main buildings, office and hostel, security house and hostel, canteen, generator house, transformer yard, panel room, firefighting pump house, fire tank, septic tank for factory and septic tank for other, storm water discharge channels and concrete pavement. After constructing the buildings, flooring, wiring, installing the machineries and equipment be done. During the construction, the technical works for the development, steel structure works, excavation and earth moving such leveling, compacting and filling, reinforcement, structure works, carpentry, masonry, plastering, electrical works and painting.

#### 6.3.2 Construction Inputs

The factory inputs will include the following.

- ❖ Construction raw materials including steel structure, sand, cement, gravel/ballast, painting materials,
- ❖ Construction machines, especially truck, crane, concrete mixer and tools and other relevant construction equipment,
- ❖ Construction labour force of both skillful and un-skilled workers,
- ❖ Energy, water and sanitation facilities for the workers,
- ❖ Power from MOEE or own generator.

#### 6.3.3 Adverse Impacts and Mitigation Measures for Construction Phase

During the construction phase, it is essential to adapt strategies to prevent or minimize dust emission, noise generation, health and safety hazards, and negative impacts related to the generated construction wastes.

##### 6.3.3.1 Impacts and Mitigation Measures on Air Quality during Construction Phase

Activities	Construction activities such as main buildings, office and hostel, security house, canteen, generator house, etc.
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	<p>Other activities - firefighting pump house, fire tanks, septic tanks, access road, concrete pavement</p> <p>Running of vehicles ad special truck, crane and electric generator</p>
Pollution	<p>Generation of TSP and PM</p> <p>The main source of air pollution during construction phase is dust (TSP and PM) emission from cleaning of ground cover around the project site, earth work, mixing of cement with sand, lime and movement of vehicles.</p> <p>Generation of Gases and PM</p> <p>The emission of exhaust gases and particulate matters are from the construction vehicles, equipment (e.g. generator, compressor, crane) which power by diesel fuel.</p> <p>The emission by diesel fuel is large source of PM and gases such as NO<sub>x</sub> which forming ozone.</p> <p>The other possible source of air pollution is emitted gases by burning of solid wastes.</p>
Mitigation Measures	<p><b>Mitigation Measures for Generation of Dust (TSP and PM)</b></p> <ul style="list-style-type: none"> <li>▪ <b>Site Boundary and Entrance</b> Vehicles washing facilities including a high pressure water jet at every entrance and exit. Entrance and exit point shall be paved with concrete, bituminous or hardcore materials.</li> <li>▪ <b>Access Haul Road</b> Main haul roads shall be paved with concrete, bituminous, hardcore materials. Spray with water before using.</li> <li>▪ <b>Exposed Earth</b> Exposed earth should be properly treated by compacting, paving with concrete.</li> <li>▪ <b>Stockpile</b> Covered by impervious sheets place in sheltered area. Spray with water if necessary.</li> <li>▪ <b>Loading/Unloading of Dusty Materials</b> Dusty materials should be carried by seal bags.</li> <li>▪ <b>Debris Handling</b> Should be covered entirely by impervious sheets. Stored in sheltered area. If possible, should be sprayed when storing, transporting.</li> <li>▪ <b>Site Clearence</b> Spray with water to maintain the entire surface wet. Demolished items shall be covered by impervious sheets, place in sheltered area.</li> </ul>

	<p><b>Mitigation Measures for Generation of Gases and Particulate Matter</b></p> <ul style="list-style-type: none"> <li>▪ All vehicles, equipment have their engines turned off while without working (e.g. park on site)</li> <li>▪ Regular check and well maintenance the engines.</li> <li>▪ Use good quality fuels.</li> </ul>
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**6.3.3.2 Impacts and Mitigation Measures on Noise Levels during Construction Phase**

Activities	Traffic, Construction Activities, Heavy Machine Running such as Excavator, Crane, concrete mixer, electric generator, etc.
Pollution	During the construction phase, the sources of noise are from the construction works such as carpentry work, noisy drilling machine, cement mixing machine and also from engines and pumps, electric generator and vehicle movements.
Mitigation Measures	<p><b>Mitigation at Working Time</b></p> <ul style="list-style-type: none"> <li>▪ Limiting site construction activities to the working hour (7:00 a.m. to 4:00 p.m.) and noisy activities to morning hours (8:00 a.m. to 12:00 noon)</li> <li>▪ Whenever feasible, schedule different noisy activities.</li> <li>▪ Avoid nighttime activities.</li> </ul> <p><b>Mitigation at the Source</b></p> <ul style="list-style-type: none"> <li>▪ Use the quiet, properly maintained equipment or machinery in good condition.</li> <li>▪ All noisy machines and equipment should be fitted with noise muffles or silencers.</li> </ul> <p><b>Mitigation along the Path</b></p> <ul style="list-style-type: none"> <li>▪ Install temporary noise barrier.</li> <li>▪ Provide adequate PPE.</li> </ul>

**6.3.3.3 Impacts and Mitigation Measures on Vibration during Construction Phase**

Activities	Traffic, Construction Activities, Heavy Machine Running
Pollution	<ul style="list-style-type: none"> <li>▪ Ground vibration</li> <li>▪ Old, fragile buildings of historical must be taken care to avoid damage.</li> <li>▪ Machine tools effect to workers (Whole body vibration and hand arm vibration)</li> </ul>
Mitigation Measures	<p><b>Mitigation of Design Consideration</b></p> <ul style="list-style-type: none"> <li>▪ Route heavily loaded trucks away from residential streets, if possible, Select streets with fewest homes, if available possible.</li> <li>▪ Operate earthmoving equipment on the construction lot on far away from vibration, sensitive sites as possible.</li> </ul> <p><b>Mitigation at Operation Sequence</b></p> <ul style="list-style-type: none"> <li>▪ High vibration works do not occur at the same time.</li> <li>▪ Avoid nighttime activities.</li> </ul>

	<p><b>Mitigation by using Alternative Methods</b></p> <ul style="list-style-type: none"> <li>▪ Instead of impact pile use drilled pile if possible.</li> <li>▪ Avoid vibratory rollers and packers near sensitive area.</li> </ul>
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#### 6.3.3.4 Impacts and Mitigation Measures on Surface Water Quality during Construction Phase

Activities	Emission of Dust and Exhaust Gases, Spill leakage of fuel, oil, battery acid, wastewater issued by construction workers
Pollution	<p>Discharge of untreated wastewater of construction sites contaminated with silt and mud will not only cause flooding resulting from blockage of drainage but also damage the ecosystem of the downstream water bodies. Wastewater from constructions site can be</p> <ul style="list-style-type: none"> <li>▪ Construction site surface runoff</li> <li>▪ Wastewater from vehicle washing</li> <li>▪ Wastewater from site toilet, and plant maintenance facilities</li> <li>▪ Wastewater from hiring workers</li> </ul>
Mitigation Measures	<p>Spillage of oil, fuel and battery fluid when renewing and transportation is controlled</p> <p>Stockpiles must be protected by use of silt fencing, covers, or other appropriate containment to prevent the mitigation of sediment into the storm water system.</p> <p>Discharging sanitary waste to the ground is prohibited, and therefore suitable facilities or portable toilets will be provided.</p>

#### 6.3.3.5 Impacts and Mitigation Measures on Contamination of Soil and Ground Water during Construction Phase

Activities	Construction materials such as sand, lime, cement, chemical, oil, fuel, packing material and debris from construction site
Pollution	<p>There can be contamination of soil due to spill of fuel, oil, lubricant, battery acid from vehicles, cranes, machineries and generator.</p> <p>There can be also domestic sewage which can percolate into the ground water.</p>
Mitigation Measures	<p>Maintain all vehicles and machineries to prevent spill of fuel, oil, hydraulic oil and battery acid.</p> <p>Avoid washing from oil spill with water because this will only help percolate oil underground. Soak oil spill and then dispose the soak at the approved disposal site. Pave vehicles and cranes prank and collect run off.</p> <p>For disposal of domestic wastewater, construct a small septic tank together with soak pit to collect the sewage.</p>

**6.3.3.6 Impacts and Mitigation Measures of Solid Wastes during Construction Phase**

Activities	Construction materials such as sand, cement, chemical, oil, packing material and debris
Pollution	<ul style="list-style-type: none"> <li>▪ Solid wastes generated during the construction phase will be large quantity of debris in the forms of bits and pieces of building materials, metal, timber, bamboo used as scaffolds</li> <li>▪ , leftover brick, sand, gravel, and so on.</li> <li>▪ Many of the leftover materials are unused or surplus materials because even well-experienced planning and design engineers may not be able to estimate the exact quantity of building material to be used. There will always be unused or surplus timbers, metal, sand, cement, bricks, etc.</li> </ul>
Mitigation Measures	<ul style="list-style-type: none"> <li>▪ All unused or surplus building materials can be sold to other who needs it.</li> <li>▪ Avoid open burning of debris.</li> <li>▪ Discipline workers for good house-keeping practice; demand the building contractor to do this and ask him to take responsibility for the conducts of his construction workers.</li> <li>▪ Best practices for waste disposal are to store the waste in the designated area, to strict the schedule of disposing solid wastes, to use the solid waste in the land level adjustment in the landfill area, to provide the facilities for proper handling and storage of construction materials, and to use the durable, long-lasting materials that will not need to be replaced as often, to purchase of perishable construction materials such as paints incrementally, to use the building materials that have minimal packaging and also to use the construction materials containing recycled content.</li> </ul>

**6.3.3.7 Impacts and Mitigation Measures on Occupational Health and Safety during Construction Phase**

Activities	Emission of dust and exhaust gas, accident injury, migrant employees’ cases (different habits, culture, language) using local road network
Pollution	<ul style="list-style-type: none"> <li>▪ Personal injuries and illnesses arising out of work situations impose a substantial burden in terms of lost production, wages loss, medical expenses, and disability compensation payments.</li> <li>▪ There will be a number of construction workers such as site cleaning, earth work, steel work, masonry work, general work, material storage and management work, installation of equipment and machineries, wiring, test running during the construction phase.</li> <li>▪ Poor working conditions could deteriorate workers’ safety and health, Occupational hazard such as falling from height, it by fallen objects, injury by sharp objects,</li> </ul>

	electric shocks, thermal shock, heat burn, and slipping etc. will be associated with project construction workers.
Mitigation Measures	<ul style="list-style-type: none"> <li>▪ Eliminate some of the hazards by removing inessential activities from the works.</li> <li>▪ Provide appropriate PPE in conjunction with training, use and maintenance of the PPE.</li> <li>▪ Provide safe, secure and healthy camps for construction workers adequately.</li> <li>▪ Provide necessary training on OHS for workers and supervisor, their implementation at work place.</li> <li>▪ Implement of OHS programs systematically by appointing a safety officer.</li> </ul>

#### 6.3.3.8 Impacts and Mitigation Measures on Community Health and Safety during Construction Phase

Activities	<p>The movement of workers to and from the place of work and the movement of vehicles carrying equipment and construction material is expected to increase the stress on the local transport and road network. Traffic hazard will also increase.</p> <p>Dust and particulate emissions, wastes generation, noise and vibration could occur during the construction of the project. Contaminated runoff could be adverse impact on public health.</p>
Pollution	Emission of dust and exhaust gases, accident, migrant employees' case, using local road network
Mitigation Measures	<ul style="list-style-type: none"> <li>▪ Transportation during weekend and off-peak hours as much as possible.</li> <li>▪ Ensuring that construction vehicles preferably deliver materials during off-peak hours when traffic volume is low.</li> <li>▪ Water sprinklers will be used.</li> <li>▪ Covering of materials to be done during transportation.</li> <li>▪ Strict enforcement of on-site speed constrict</li> <li>▪ Plan and manage the prevention of communicable diseases as discipline, education, providing the prevention objects. (e.g. face mask, face shields, hand sanitizers, etc.)</li> </ul>

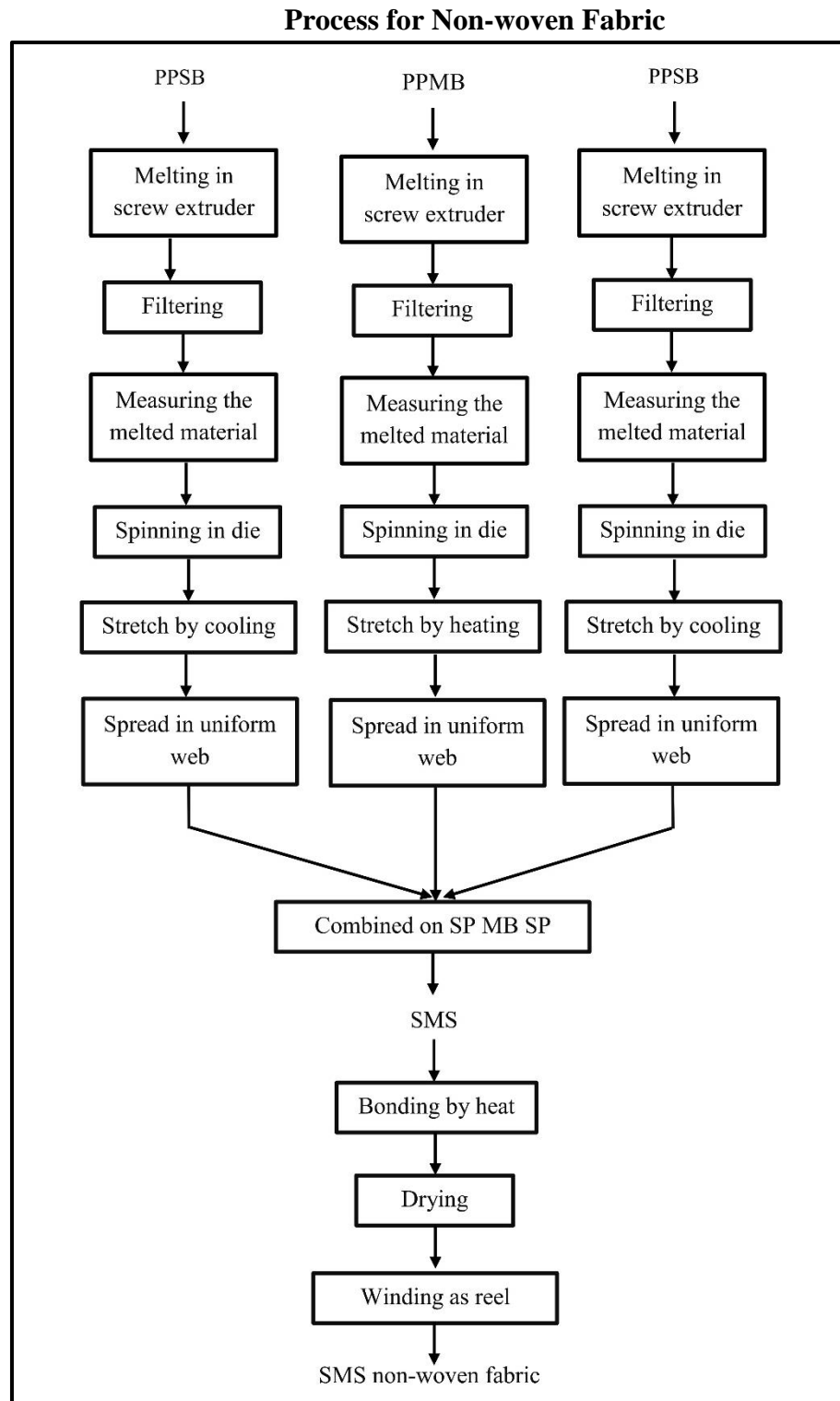
## 6.4 Operation Phase

Cobes Industries (B II) Company Limited plans two manufacturing lines; first for manufacturing of non-woven fabric and second for manufacturing of non-sterilized disposable surgical-scrubs and related kind of clinical wears. Therefore, inputs and mitigation measures for two main manufacturing processes are mentioned as follows.

### 6.4.1 Manufacturing the Non-woven Fabric, Impact and Mitigation of its Manufacturing

#### 6.4.1.1 Manufacturing the Non-woven Fabric

Manufacturing the non-woven fabric is already shown at section 4.6.8.1 and it is restated as follows.



#### 6.4.1.2 Impacts during Manufacturing of Non-woven Fabric

Impacts during manufacturing of non-woven fabric are shown as following **Table 6-6**.

Table 6-6 Environmental Aspects of Manufacturing of Non-woven Fabric

Inputs	Operations	Outputs (Wastes/ Outputs)
<b>Main Process Line</b>		
Polypropylene resin	<b>Raw Material Feeding</b>	Packing waste (plastics, printing ink) Spillage
Machine running (Screw extruder, heating)	<b>Melt in Screw Extruder</b>	Melted resin, heat burn
Machine running (Filter)	<b>Filtering</b>	Clear melted resin (reject melt resin)
Metering pump running (motor drive)	<b>Measuring the Melted Resin Quantity (CC)</b>	Known volume clear melted resin (motor heat up)
Spinning die body operation	<b>Spinning in Die</b>	Spun type resin (reject spun resin at starting)
Spinner plate and distribution plate operation	<b>Stretch by Heating (PPMB)</b>	Stretched resin
Quenching chamber and diffuser	<b>Stretch by Cooling (PPSB)</b>	Stretched resin (reject stretched resin at starting)
Web former running	<b>Spread in Uniform Web</b>	Uniform web (reject web at starting)
Calendar running	<b>SB-MB-SB Laminating</b>	Raw SMS sheet (reject raw SMS sheet at starting)
Heat and compression	<b>Bonding by Heat</b>	Bonded SMS (reject bonded sheet at starting)
Drying machine running	<b>Drying</b>	Dry SMS (moisture) (reject dry SMS at starting)
Cardboard core winder running	<b>Winding as Reel</b>	SMS as reel (reject SMS at starting)

#### 6.4.1.3 Impacts and Mitigation Measures during Manufacturing of Non-woven Fabric

Impacts and mitigation measures during manufacturing of non-woven fabric are shown as following Table 6-7.



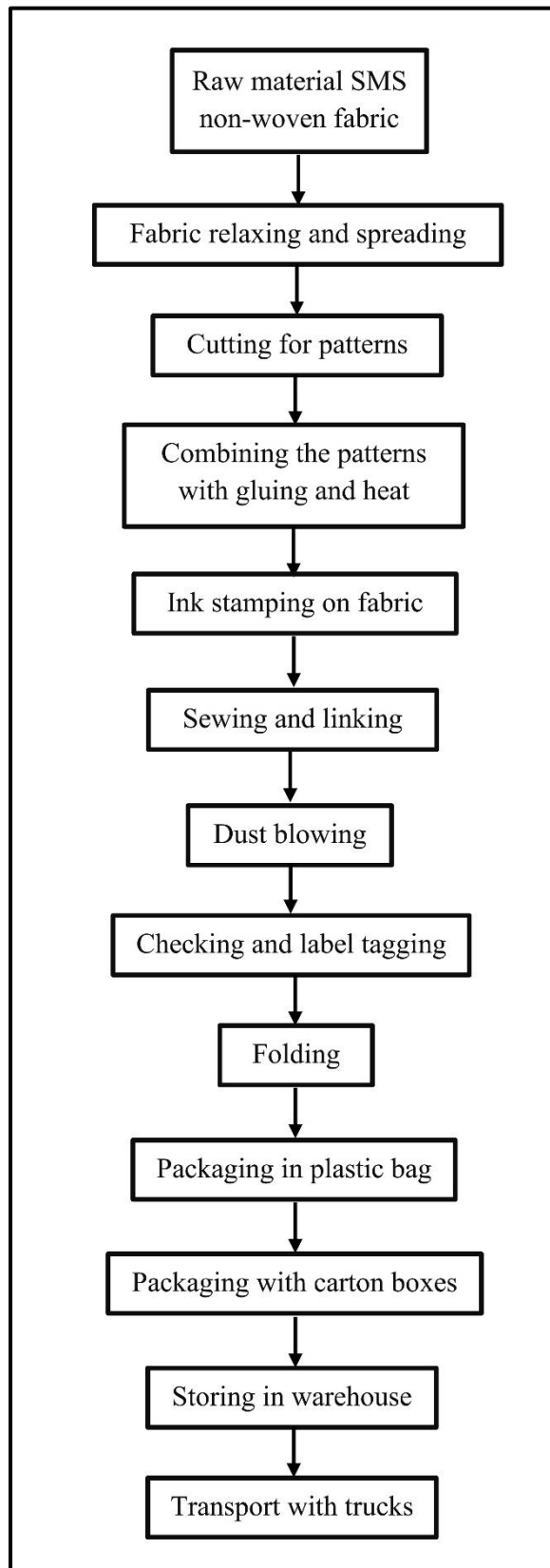
Table 6-7 Impacts and Mitigation Measures during Manufacturing of Non-woven Fabric

Operation	Impacts (Wastes/ Outputs)	Mitigation Measures
Raw material feeding (Resin)	Packing waste (plastics, printing ink) Spillage	Collect systematically and sold. Spillage resin is collected, cleaned and reused.
Melt in screw extruder	Heat burn oil spill, leakage	Good maintenance
Filtering	Reject melt resin	Recovered and reused
Measuring the melted resin quantity	Motor heat up oil spill, leakage	Good maintenance
Spinning in die	Reject spun resin at starting	Recovered and reused
Stretch by heating (PPMB)	Reject stretched resin at starting	Recovered and reused
Stretch by cooling (PPSB)	Reject stretched resin at starting	Recovered and reused
Spread in uniform web	Reject web at starting	Recovered and reused
SB-MB-SB laminating	Reject raw SMS sheet at starting	Recovered and reused
Bonding by heat	Reject bonded sheet at starting	Recovered and reused
Drying	Reject dry SMS at starting Evolved moisture	Recovered and reused Good ventilation
Winding as reel	Reject SMS at starting	Recovered and reused

#### 6.4.2 Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

Manufacturing the non-sterilized disposable surgical-scrubs and related kind of clinical wears is already shown at **Section 4.6.8.2** and it is restated as follows.

**Process for Non- Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears**



#### 6.4.2.1 Impacts during Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

Impacts during manufacturing the non-sterilized disposable surgical-scrubs and related kind of clinical wears are shown as the following **Table 6-8**.

Table 6-8 Environmental Aspects of Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

Inputs	Operations	Outputs (Wastes/ Outputs)
<b>Main Process Line</b>		
Fabrics, accessories, cut panels, etc.	<b>Raw Material Receipt and Storage</b>	Packing wastes, plastics wraps, carton boxes, ropes and tapes, cardboard core
Machine operation and fabric	<b>Fabric Relaxing and Spreading</b>	Plastic cover, cardboard core from fabric rolls
Machine operation and human resources	<b>Cutting for Patterns</b>	Fabric scraps from cutting
Machine operation and human resources	<b>Combining the Patterns with Gluing and Heat Pressing</b>	Dirty underneath fabric with adhesive glue, empty glue buckets, used glue brushes, wastewater from glue cup, heat energy
Ink	<b>Ink Stamping on Fabric</b>	Empty ink container
Machine operation, work training, human resources and maintenance	<b>Sewing and Linking</b>	Thread, broken needles
Machine operation and human resources	<b>Dust Blowing</b>	Fabric dust
Human resources and label	<b>Checking and Label Tagging</b>	Torn label
Human resources	<b>Folding</b>	-
Plastic bags and human resources	<b>Packaging in Plastic Bag</b>	Damaged plastic bags during packing
Carton box, tape and human resources	<b>Packaging in Carton Boxes</b>	Core of tapes, damage carton boxes during packing
Crate, trolley and human resources	<b>Storing in Warehouse</b>	-
Trucks, fuel and human resources	<b>Transport with Trucks</b>	Exhaust gas emission, traffic jam

#### 6.4.2.2 Impacts and Mitigation Measures during Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

Impacts and mitigation measures during manufacturing the non-sterilized disposable surgical-scrubs and related kind of clinical wears are shown in the following **Table 6-9**.

Table 6-9 Impacts and Mitigation Measures during Manufacturing the Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears

Operation	Impacts (Wastes/ Outputs)	Mitigation Measures
Raw Material Receipt and Storage	Packing wastes, plastics wraps, carton boxes, ropes and tapes, cardboard core	Collect systematically and sold, reuse. Dispose by under instruction of Development Committee.
Fabric Relaxing and Spreading	Plastic cover, cardboard core from fabric rolls	Collect systematically and sold, reuse. Dispose by under instruction of Development Committee.
Cutting for Patterns	Fabric scraps from cutting	Collect systematically and sold, reuse. Dispose by under instruction of Development Committee.
Combining the Patterns with Gluing and Heat Pressing	Dirty underneath fabric with adhesive glue, empty glue buckets, used glue brushes, wastewater from glue cup, heat energy	Collect systematically and sold, reuse. Dispose by under instruction of Development Committee.
Ink Stamping on Fabric	Empty ink container	Collect systematically and sold, reuse. Dispose by under instruction of Development Committee. Temperature control
Sewing and Linking	Thread, broken needles	Dispose by under instruction of Development Committee.
Dust Blowing	Fabric dust	Good ventilation, PPE wearing

Operation	Impacts (Wastes/ Outputs)	Mitigation Measures
Checking and Label Tagging	Torn label	Dispose by under instruction of Development Committee.
Folding	-	-
Packaging in Plastic Bag	Damaged plastic bags during packing	Dispose by under instruction of Development Committee.
Packaging in Carton Boxes	Core of tapes, damage carton boxes during packing	Collect systematically and sold, reuse. Dispose by under instruction of Development Committee.
Storing in Warehouse	-	Control the moisture and temperature. Good ventilation
Transport with Trucks	Exhaust gas emission, traffic jam	Good maintenance Good quality fuel Plan to avoid traffic jam

### 6.4.3 Operational Phase Impact Evaluation and Mitigation Measures

#### 6.4.3.1 Evaluation of Impacts before Mitigation Measures during Manufacturing

During the manufacturing of **Cobes Industries (B II) Company Limited**, the evaluation of impacts before mitigation measures is as following **Table 6-10**.

Table 6-10 Evaluation of Impacts before Mitigation Measures during Manufacturing

Environmental Component	Impact	Significance = (S <sub>p</sub> +T+S <sub>e</sub> )L					
		S <sub>p</sub>	T	S <sub>e</sub>	L	Significance	Rating
Air Quality	<ul style="list-style-type: none"> <li>▪ Dust and other exhaust gases to atmospheric emission of SO<sub>2</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>, PM, etc. generate from stack of generators, vehicles, kitchen</li> <li>▪ Water vapour, volatile vapour</li> </ul>	3	4	3	8	80	Moderate (-)
Ground Water Quality	<ul style="list-style-type: none"> <li>▪ Spillage of lube-oil, fuel, battery acid, radiator water, transformer oil</li> <li>▪ Sewage water, wash and bath water</li> <li>▪ Wastewater from kitchen</li> </ul>	3	4	3	6	60	Minor (-)
Surface Water Quality	<ul style="list-style-type: none"> <li>▪ Spillage of lube-oil, fuel, battery acid, radiator water, transformer oil</li> <li>▪ Sewage water, wash and bath water</li> <li>▪ Wastewater from kitchen</li> </ul>	3	4	3	6	60	Minor (-)

Environmental Component	Impact	Significance = (S <sub>p</sub> +T+S <sub>e</sub> )L					
		S <sub>p</sub>	T	S <sub>e</sub>	L	Significance	Rating
Wastewater Generation	<ul style="list-style-type: none"> <li>Washed water for glue cup and brushes</li> </ul>	3	4	3	8	80	Moderate (-)
Soil Quality	<ul style="list-style-type: none"> <li>Dust, empty bags of resins</li> <li>Spillage of radiator water, battery acid, lubricant, oil, fuel from generator, vehicle</li> <li>Cutting pieces of fabric, used glue brushes, empty glue and ink containers</li> <li>Damage plastic bags, carton boxes, labels, broken needles</li> <li>Core of SMS, tape</li> </ul>	3	4	3	8	80	Moderate (-)
Noise	<ul style="list-style-type: none"> <li>Generated from vehicles</li> <li>Generated from generator</li> <li>Generated from various machineries such as extruder, roller, pumps, etc.</li> </ul>	3	4	3	8	80	Moderate (-)
Solid Waste Generation	<ul style="list-style-type: none"> <li>Dust, empty bags of resins</li> <li>Spillage of radiator water, battery acid, lubricant, oil, fuel from generator, vehicle</li> <li>Cutting pieces of fabric, used glue brushes, empty glue and ink containers</li> <li>Damage plastic bags, carton boxes, labels, broken needles</li> <li>Core of SMS, tape</li> </ul>	3	4	3	8	80	Moderate (-)
Traffic Jam	<ul style="list-style-type: none"> <li>Vehicles carrying raw materials, products and employees, machineries</li> </ul>	3	4	3	8	80	Moderate (-)

#### 6.4.3.2 Evaluation of Impacts after Mitigation Measures during Manufacturing

During the manufacturing of **Cobes Industries (B II) Company Limited**, the evaluation of impacts after mitigation measures is as following **Table 6-11**.

Table 6-11 Evaluation of Impacts after Mitigation Measures during Manufacturing

Environmental Component	Impact	Significance = (S <sub>1</sub> +T+S <sub>2</sub> )L					
		S <sub>p</sub>	T	S <sub>e</sub>	L	Significance	Rating
Air Quality	<ul style="list-style-type: none"> <li>Dust and other exhaust gases to atmospheric emission of SO<sub>2</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>, PM, etc. generate from stack of generators, vehicles, kitchen</li> <li>Water vapour, volatile vapour</li> </ul>	3	4	3	6	60	Minor (-)

Environmental Component	Impact	Significance = (S <sub>1</sub> +T+S <sub>2</sub> )L					
		S <sub>p</sub>	T	S <sub>e</sub>	L	Significance	Rating
Ground Water Quality	<ul style="list-style-type: none"> <li>▪ Spillage of lube-oil, fuel, battery acid, radiator water, transformer oil</li> <li>▪ Sewage water, wash and bath water</li> <li>▪ Wastewater from kitchen</li> </ul>	3	4	2	6	54	Minor (-)
Surface Water Quality	<ul style="list-style-type: none"> <li>▪ Spillage of lube-oil, fuel, battery acid, radiator water, transformer oil</li> <li>▪ Sewage water, wash and bath water</li> <li>▪ Wastewater from kitchen</li> </ul>	3	4	2	6	54	Minor (-)
Wastewater Generation	<ul style="list-style-type: none"> <li>▪ Washed water for glue cup and brushes</li> </ul>	3	4	2	6	54	Minor (-)
Soil Quality	<ul style="list-style-type: none"> <li>▪ Dust, empty bags of resins</li> <li>▪ Spillage of radiator water, battery acid, lubricant, oil, fuel from generator, vehicle</li> <li>▪ Cutting pieces of fabric, used glue brushes, empty glue and ink containers</li> <li>▪ Damage plastic bags, carton boxes, labels, broken needles</li> <li>▪ Core of SMS, tape</li> </ul>	3	4	2	6	54	Minor (-)
Noise	<ul style="list-style-type: none"> <li>▪ Generated from vehicles</li> <li>▪ Generated from generator</li> <li>▪ Generated from various machineries such as extruder, roller, pumps, etc.</li> </ul>	3	4	2	6	54	Minor (-)
Solid Waste Generation	<ul style="list-style-type: none"> <li>▪ Dust, empty bags of resins</li> <li>▪ Spillage of radiator water, battery acid, lubricant, oil, fuel from generator, vehicle</li> <li>▪ Cutting pieces of fabric, used glue brushes, empty glue and ink containers</li> <li>▪ Damage plastic bags, carton boxes, labels, broken needles</li> <li>▪ Core of SMS, tape</li> </ul>	3	4	2	6	54	Minor (-)
Traffic Jam	<ul style="list-style-type: none"> <li>▪ Vehicles carrying raw materials, products and employees, machineries</li> </ul>	3	4	2	6	54	Minor (-)

### 6.4.3.3 Comparison of Impact Significance before and after Mitigation Measures

During the manufacturing phase of Cobes Industries (B II) Company Limited, comparison of impact significance before and after mitigation measures are as following.

Table 6-12 Comparison of Impact Significance before and after Mitigation Measures

Sr. No.	Environmental Component	Before Mitigation Measures		After Mitigation Measures		Less/More
		Rating	Significance	Rating	Significance	
1.	Air Quality	80	Moderate	60	Minor	-20
2.	Ground Water Quality	60	Minor	54	Minor	-6
3.	Surface Water Quality	60	Minor	54	Minor	-6
4.	Wastewater Generation	80	Moderate	54	Minor	-26
5.	Soil Quality	80	Moderate	54	Minor	-26
6.	Noise	80	Moderate	54	Minor	-26
7.	Solid Waste Generation	80	Moderate	54	Minor	-26
8.	Traffic Jam	80	Moderate	54	Minor	-26

## 6.5 Potential Impacts during Decommissioning Phase

The following table shows the possible impacts on project decommissioning phase.

Table 6-13 Environmental Aspects of Decommissioning Phase

Potential Impact	Project Activities
Air Quality	<ul style="list-style-type: none"> <li>▪ Dust &amp; other exhaust atmospheric emission of SO<sub>2</sub>, NO<sub>x</sub>, CO, PM etc. Occur from machines, vehicles, and as the stack gas from generators, etc.</li> <li>▪ Dust emissions from demolishing activities and transportation of vehicles</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>▪ Disposal of oil from vehicles</li> <li>▪ Activities related with decommissioning works</li> <li>▪ Sewage discharge from construction workers’ tents</li> <li>▪ Wastewater from daily use of workers</li> </ul>
Soil Quality	<ul style="list-style-type: none"> <li>▪ Activities related with decommissioning works</li> <li>▪ Accidental spillage of oil used in decommissioning activities.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>▪ Generation from vehicle movement &amp; especially from demolished activities, the operation of generators, or any other vibrating machines</li> </ul>
Solid Waste Generation	<ul style="list-style-type: none"> <li>▪ Demolished waste such as roof, broken bricks, glass and iron etc.</li> </ul>
Liquid Waste Generation	<ul style="list-style-type: none"> <li>▪ The sanitary wastewater from decommissioning workers and its amount depends on the number of workers involved.</li> <li>▪ Not be large extent because the time is very limited.</li> </ul>
Fire Hazards	<ul style="list-style-type: none"> <li>▪ There is no serious impact, except the misuse of machines related with decommissioning activities on fire hazard.</li> </ul>



Job Opportunities	<ul style="list-style-type: none"> <li>▪ Short term Job opportunities for construction workers</li> <li>▪ Factory’s closure makes local economy condition poorer</li> </ul>
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### 6.5.1 Impacts and Mitigation Measures during Decommissioning Phase

Table 6-14 Mitigation Measures during Decommissioning Phase

Environmental Component	Mitigation Measures
Air Quality	<ul style="list-style-type: none"> <li>▪ Good maintenance for vehicles and generators</li> <li>▪ Good quality fuel</li> <li>▪ Avoid firing any debris</li> <li>▪ Water springing</li> <li>▪ Dusty material should be carried by seal bags</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>▪ Skilled workers perform renewing, filling, transportation oils, fuel and battery acid</li> <li>▪ Prevent the silt, sediment into the storm water discharge</li> <li>▪ Sanitary waste not to discharge to the ground</li> <li>▪ Suitable facilities or portable toilets will be provided</li> </ul>
Soil Quality	<ul style="list-style-type: none"> <li>▪ Skilled workers perform renewing, filling, transportation oils, fuel and battery acid</li> <li>▪ Avoid working from oil spill</li> <li>▪ Soak oil spill and then dispose at approved disposal site</li> </ul>
Noise	<ul style="list-style-type: none"> <li>▪ Limiting demolition activities to working hours (7:00a.m. to 4:00 p.m.)</li> <li>▪ Schedule different noisy activities</li> <li>▪ Usage of quiet, properly maintained equipment</li> <li>▪ Install temporary noise barrier</li> </ul>
Solid Waste Generation	<ul style="list-style-type: none"> <li>▪ Demolished wastes be sold to others who need them. Dispose under instruction of Development Committee.</li> <li>▪ Discipline workers for demolishing in good housekeeping manners.</li> </ul>
Liquid Waste Generation	<ul style="list-style-type: none"> <li>▪ Collect the transformer oil, lube oil, fuel etc. in housekeeping practice</li> <li>▪ Reuse or sold them to other</li> <li>▪ Dispose under instruction of Development Committee</li> </ul>
Fire Hazards	<ul style="list-style-type: none"> <li>▪ Discipline the demolished workers to be alert for firing can occur any time</li> <li>▪ Avoid firing aby debris on demolished wastes</li> <li>▪ Smoking is prohibited in danger place</li> </ul>

### 6.5.2 Evaluation of Impact Significance before and after Mitigation and Comparison during Decommissioning Phase

Evaluation of impact significance before and after mitigation and comparison during decommissioning phase are shown at following **Table 6-15**.

Table 6-15 Evaluation of Impact Significance before and after Mitigation and Comparison during Decommissioning Phase

Environmental Component	Before Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						After Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						Less/ More
	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	
Air Quality	3	3	4	8	80	Mod (-)	3	3	3	6	54	Minor (-)	-26
Water Quality	3	3	4	6	60	Minor	3	3	3	6	54	Minor	-6

Environmental Component	Before Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						After Mitigation Sig = (S <sub>p</sub> +T+S <sub>e</sub> )*L						Less/ More
	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	S <sub>p</sub>	T	S <sub>e</sub>	L	Sig	Rating	
						(-)						(-)	
Soil Quality	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6
Noise	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6
Solid Waste Generation	3	3	5	8	88	Mod (-)	3	3	3	6	54	Minor (-)	-34
Liquid Waste Generation	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6
Fire Hazard	3	3	4	6	60	Minor (-)	3	3	3	6	54	Minor (-)	-6

## 6.6 Best Management Practices

In order to ensure the proper operation of the factory, a management system must be implemented for the production line as well as for the supporting facilities. This management scheme shall assure regular monitoring and compliance, and process performance. Proper staff training and organized record keeping will also take place.

For **Cobes Industries (B II) Company Limited**’s factory, **energy use, water use, hazardous chemical use and solid wastes generation** emerged as the areas with the overall greatest impact on the environment, employees, and local community. While these do not represent all of the environmental impacts associated with said factory, readily available Best Management Practices for these four areas can offer the most potential savings and environmental impact.

### 6.6.1 Energy Use

The impacts associated with energy use are the most significant environmental impacts resulting from said factory operations. Machineries using for manufacturing of SMS fabrics and non-sterilized disposable surgical-scrubs and related kind of clinical wears use high energy consumption and there are high power diesel generators are ready for standby. Emission of gases by the diesel generators contains a mixture of compounds NO<sub>x</sub>, PM, CO<sub>2</sub> and H<sub>2</sub>O in normal condition, if combustion is incomplete, CO emits to atmosphere. If low grade fuel is used, the SO<sub>2</sub> emits. The CO and SO<sub>2</sub> are poisonous gases and NO<sub>x</sub> makes ozone formation.

To reduce these emissions, manufacturer of said factory should:

- reduce overall energy consumption through conservation and efficiency improvements, reducing both diesel emissions and monthly facility energy costs.
- minimize use of on-site diesel generators, which generally emit more pollutants per kilowatt-hour of energy produced than centrally provided hydroelectric power by the government.

### **Best Management Practices for Energy Use**

Best Management Practices are to

- racking, measuring, and benchmarking current energy use,
- optimize equipment use based on changes in production,
- determine appropriate task-based lighting levels for each area of the facilities,
- optimize existing lighting systems by adjusting lighting proximity and using task lighting,
- develop written procedures and implement schedule, facility-wide lighting system maintenance program,
- implement a strategic relapsing program,
- use automated controlled lighting systems,
- upgrade from magnetic to electronic or hybrid ballasts,
- use compact fluorescent lights in place of incandescent bulbs,
- upgrade exit signs to use light-emitting diode (LED) lights in places of incandescent bulbs,
- develop a written policy to consider energy efficiency when purchasing new equipment,
- install an evaporative cooling system.

#### **6.6.2 Water Use**

There is a little water use in manufacturing as glue cup washing, brush washing and water is used for other supporting processes.

#### **Water Use for Supporting Facilities**

Employee Housings	Bathrooms (including toilets, faucets, showers) and other personal uses.
Employee Canteens	Bathrooms and Toilets
Food Preparation	Cooking, food preparation, dishwashing, and cleaning
Generator and Vehicle	Radiator water, land scaping

#### **Best Management Practices for Water Use**

Best Management Practices are to-

- develop and implement a preventive maintenance schedule for water leak identification and repair.
- install water-efficient shower heads in dormitory.
- retrofit old toilets in dormitories and factory bathrooms to improve water efficiency.
- install low-flush toilets in dormitories and factory bathrooms to improve water efficiency.
- close the water tabs when not in use.
- discipline the employees use water not more than enough.

### 6.6.3 Hazardous Chemical Use

During operation phase of Cobes Industries (B II) Company Limited, hazardous raw material such as glue and diesel are stored separate concrete paved room to reduce seepage. Diesel is also stored in generator room paved with concrete and there is also firefighting equipment beside this room



Figure 6-1 Glue Storage, Diesel Storage and Firefighting Equipment

### 6.6.4 Solid Waste Generation and Management

During operation phase of said factory, there are solid wastes in large and they become hazardous for fire if not manage in proper procedure. The solid wastes contain cutting pieces of fabrics, cardboard core, core of tape, damaged plastic bags and damaged carton boxes, plastic wrap sheets and torn labels and they are inflammable. The solid wastes are collected systematically and sold them and dispose under instruction of Development Committee.





Figure 6-2 Waste Bins and Solid Waste Storage



Figure 6-3 Disposal of Wastes to the City Development Committee (Bago)

## 6.7 Prevention Methods for Fire Hazard

The project proponent provides 18 units of 5-kg fire extinguishers, 94 units of 3 kg fire extinguishers and 12 water hydrants for emergency cases. The fire extinguishers are provided in the various departments according to the following list

Operation department (I)	14 units
Operation department (II)	16 units
Operation department (III)	10 units
Cutting department	18 units
Warehouse	10 units
Sewing panels	2 units
Waste storage room	1 unit
Office, security gate and canteen	41 units

The project proponent also performs the installation of a sprinkler system and the fire extinguishers, hydrants and fire hose reels to handle the situation. In case of emergency, the water for fire-fighting can be easily obtained from (34' 8" × 23' 6" × 9') water tank.

The company organized fire drill and fire emergency plan to:

- enhance workers' safety and fire prevention activities
- understand the process of managing fires
- improve the coordination and coordination ability in dealing with emergencies
- enhance the personnel's awareness of mutual rescue and self-rescue in the fire, and
- clarify the duties of the fire prevention person-in-charge and the volunteer firefighters in the fire.

Fire drill and fire emergency training records are attached in **Appendix 23**.

Automatic alarm system is provided at the factory for alerting the workers in case of fire. The main entrances and escape route for emergency cases of the factory are made known to all workers. The assembly point for emergency cases has been defined in front of the factory. Smoking and betel chewing are strictly prohibited within and environment of factory in accordance with laws provided. It is necessary to make sure that electrical equipment and installations are maintained to prevent short circuit causing fire breakouts, serious injury and kill.

As Liquefied Petroleum Gas (LPG) is used as cooking fuel in dormitory, automatic alarm system is also provided in dormitory. Moreover, the factory was constructed with steel structure hence little chance of fire hazard. The following figures show the installed fire extinguishers and sprinkler, water hydrants and alarm system in the factory.



Figure 6-4 Placement of Firefighting Equipment and Escape Route





Figure 6-5 Installed Fire Extinguishers and Sprinkler, Water Hydrants, LPG and Fire Alarm System



Figure 6-6 Fire Drill and No Smoking and Betel Chewing Notice



## 6.8 Residual Impacts

As the impacts on environmental qualities exists throughout the entire project, the project proponent needs to implement the mitigation measures mentioned in the Environmental Management Plan (EMP) for reducing the residual impacts.

## 6.9 Cumulative Impacts

As the project is located in the industrial zone, some of impacts can be the commutative impacts.

Cumulative Impacts	Causes/Reasons
Air pollution, noise pollution, soil contamination, traffic and road accidents	Some developments exist near the project site
Groundwater pollution in the vicinity	Disposal of sewage and domestic wastes
High water usage (impact on the ground water level)	Usage of same ground water source

## 6.10 Corporate Social Responsibility

Cobes Industries (B II) Company Limited has a plan to allocate 2 % of gross profit earned from the business for a CSR Fund to be used for the following activities.

- ❖ 25% for supporting scholarship to education of employees from workshop, institution for school age children of the employees, to grant stipend for continuing the study of higher education (College University) level etc.
- ❖ 25% for basic health care of the employees by opening medical clinics within the factory compound , perfection of medical equipments in clinic, preparing the medicines land first-aid treatment for emergency healthcare program and providing allowances when any of the employee families suffer from illness.
- ❖ 25% for increasing knowledge with respect to Manufacturing and Marketing to improve working sills of the employee of factory, for undertaking systematic training course per rank, hierarchy to become skillful workers of higher productivity along with proficiency in particular field of works.
- ❖ 25% for creating necessary recreations of factory employees peace and harmony, having good air ventilation in works to become convenience while working and to allow easy access in other communication programs and for higher living standards.

The commitment for CSR plan is attached in **Appendix 30**.

### 6.10.1 Plan for Health

Cobes Industries (B II) Company Limited provides their workers for the following health programs.

- a) Medicine and first aids are places at factory as emergency matters happen.
- b) In factory, there are first aid boxes and a resting room for sickness people as a plan.
- c) One who gets injury shall be sent to Social Welfare Hospital as care.

- d) The factory will provide employees to learn in training concern with health care for one time in three months. It aims first aids for injured person in emergency case. The factory will pay the costs of hospital to employees who are working in long term at factory as a plan for health.
- e) The factory will supply the cost of medicine according to requirement for health of employees who are working long time.

**6.10.2 Plan for the Employees of Factory with Welfare and Peace and Harmony**

Cobes Industries (B II) Company Limited plans to submission in plan for the employees of factory with welfare and peace and harmony as follows:

**1) Transportation for Office Staffs**

A plan of provide ferry which that is used for coming to factory and going to home. It is free cost to employees when they take the ferry of factory.

Thirteen numbers of ferries are provided for employees are routes are as follows.



①	စက်မှုဇုန်	-	ဒဂုံ
②	စက်မှုဇုန်	-	ကျောက်ပြင်
③	စက်မှုဇုန်	-	မင်္ဂလာ
④	စက်မှုဇုန်	-	ရွှေလှိုင်
⑤	စက်မှုဇုန်	-	ကမာစ
⑥	စက်မှုဇုန်	-	အင်းစိန်
⑦	စက်မှုဇုန်	-	အုတ်မြစ်
⑧	စက်မှုဇုန်	-	လာဂျီ
⑨	စက်မှုဇုန်	-	ကလိ
⑩	စက်မှုဇုန်	-	သဂုံ
⑪	စက်မှုဇုန်	-	သဂုံ
⑫	စက်မှုဇုန်	-	သဂုံ
⑬	စက်မှုဇုန်	-	ကမာစ

Figure 6-7 Provided Ferries and their Routes

**2) Providing Awards in Punctually of Work**

Overtime fees are counted in twice to one hour for employees of factory. In order to need of work, there provides additional fees for them working till night.

**3) Housing Plan for Employees**

There is a building for employees in this factory as they are staying in it. The employees who are residing at such building are free charges in right. Those employees will be provided by meal in monthly. TV is [planned in recreation for those who are residing at such building.



Figure 6-8 Hostels

**4) Opening Canteen for Employees Welfare**

There is a shop to serve tea, snacks and rice/curry.



Figure 6-9 Canteen

**5) Providing Peace and Harmony of the Compound of Work**

The employees who are hardworking and no absence of work will get the bonuses of yearly in plan.

**6) A Plan for Injury**

The factory provides one room for first aids boxes and a resting room of sickness persons. If employee gets injury, they plan to send in curing to Social Welfare Hospital. For those social welfares employee must also employee put their subscribes.

## 7.0 ENVIRONMENTAL MANAGEMENT PLAN AND MONITORING PLAN

### 7.1 Objectives

Environmental Management Plan (EMP) makes to ensure that the quality of the environmental aspects does not deteriorate due to the operation of the proposed project. The EMP also ensures that the proposed project is to be implemented in compliance with relevant laws and regulations stipulated by national authorities.

In the previous chapter, the activities of the proposed project and their respective potential impacts are determined. Then the mitigation measures for alleviating of the adverse impacts and the evaluation for significance of residual impacts are presented. According to the outcome of the evaluation of residual impact significance, it can be considered that the mitigation measures can reduce the adverse impacts of the project activities to acceptable level. Hence in this chapter, a comprehensive Environmental Management Plan is stipulated based on the formerly proposed mitigation measures. Thus, this EMP covers the mitigation measures as well as additional considerations such as monitoring, management plan and others.

### 7.2 Structure

Environmental Management Plan (EMP) is a quality system that provides the framework to:

- Mitigate the probable or potential adverse impacts on various environmental components which have been identified during impact assessment.
- Protect the environmental resources where possible.
- Enhance the environmental components where possible.
- Monitor and verify the effectiveness of the mitigation measures implemented.

Therefore, the structure of EMP is prepared based on the following four principles.

- 1) Plan (P): Plan a framework to implement for alleviation of the project related impacts. (**Management Plan**)
- 2) Do (D): Carry out the implementation of the plan by the Environmental Management Team (EMT). (**Responsible Team and Responsibilities**)
- 3) Check (C): Monitor and check the effectiveness of the implemented EMP. (**Environmental Monitoring Plan**)
- 4) Act (A): Take corrective actions to improve the results, if found the implemented EMP is inadequate. (**EMP review and Corrective Action**)

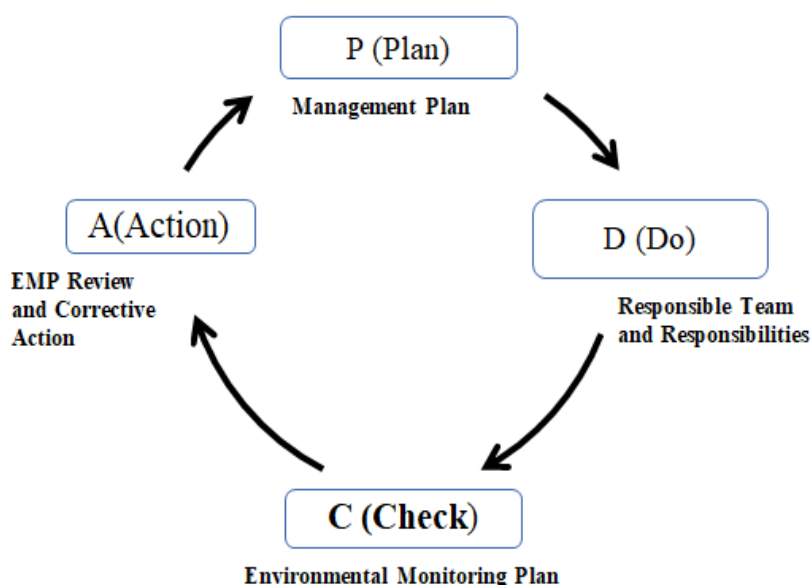


Figure 7-1 Basic Principle of Environmental Management Plan

### 7.3 Environmental Management Committee (EMC)

During the operation phase, an Environmental Management Committee (EMC) will be set and assigned responsibility to officers from various disciplines to co-ordinate the activities concerned with management and implementation of environmental control measures. EMC is necessary to ensure that key procedures are executed, and desired functions are carried out effectively.

The duties of the Environmental Management Committee (EMC) will include the following:

- ❖ Environmental monitoring of the project site and the surrounding area
- ❖ Commissioning of pollution control equipment
- ❖ Specification and regulation of maintenance schedules for pollution control equipment
- ❖ Ensuring that standards of housekeeping in the factory are maintained
- ❖ Developing the green belt
- ❖ Ensuring water use is minimized
- ❖ Carrying out the Environmental Management Plan
- ❖ Organizing meetings of the Environmental Management Committee and reporting to the committee.

Table 7-1 List of Environmental Management Committee (EMC)

Sr. No.	Name	Position/ Duty in EMC	Name of Affiliated Department / Title	Responsibilities in EMC
1.	Mr. Dong Shu Yin	Chairman	General Manager	▪ To support the implementation of the environmental

Sr. No.	Name	Position/ Duty in EMC	Name of Affiliated Department / Title	Responsibilities in EMC
				management plan (EMP) and environmental monitoring plan (EMoP) <ul style="list-style-type: none"> <li>▪ To monitor and assess the implementation of EMP and EMoP</li> <li>▪ To discuss the results of EMP with the other EMC members</li> </ul>
2.	Daw Khin Mar Aye	Member	HR Manager	<ul style="list-style-type: none"> <li>▪ To monitor the parameters described in EMP</li> <li>▪ To prepare the monitoring report</li> <li>▪ To communicate with residents</li> <li>▪ To participate in any environmental and emergency activities</li> <li>▪ To give suggestions for improving EMP</li> </ul>
3.	Daw Tin Zar Oo	Member	Supervisor (Sewing)	<ul style="list-style-type: none"> <li>▪ To notify about the location of fire leakage immediately proceed to the help</li> <li>▪ To participate in any health-care activities for both employees and communities</li> <li>▪ To give suggestions for improving EMP</li> </ul>
4.	Daw Kyi Lae Lae Win	Member	Supervisor (Sewing)	<ul style="list-style-type: none"> <li>▪ To inform the environmental team at one when find out some problems to occur</li> <li>▪ To follow the EMP and aware of environmental impacts</li> <li>▪ To participate in any environmental and emergency activities</li> </ul>
5.	U Thar Aye	Member	EP	<ul style="list-style-type: none"> <li>▪ To response the accident, incident, injuries and complaints from employees</li> <li>▪ To monitor environmental aspects in workplace</li> <li>▪ To report to General Manager</li> </ul>

## 7.4 Environmental Management Plan (EMP)

The Project requires an Environmental Management Plan (EMP) to determine the significant impacts from implementation of the project and a range of mitigation measures. An EMP is also required as per the provision of the Environment Protection Act and Regulations of Government of Myanmar.

Based on the impact assessment done in the Chapter (6), the following specific plans were prepared for project proponent to implement, monitor, review and improve along the respective phases of the project.

- ❖ Air Pollution and Dust Management Plan
- ❖ Noise and Vibration Management Plan
- ❖ Solid Waste Management Plan
- ❖ Hazardous Chemicals or Other Substance Handling, Storage and Disposal Management Plan
- ❖ Energy and Resource Management Plan
- ❖ Drainage Management Plan
- ❖ Emergency Response and Disaster Management Plan

Table 7-2 Environmental Management Plan

Air Pollution and Dust Management Plan	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To minimize the adverse impact to air quality caused by stack gas emission from generator and also dust management generated from machineries operations</li> <li>▪ To reduce the source and amounts of the pollutants that are responsible for the pollution of the air quality</li> <li>▪ To comply with national emission guidelines</li> </ul>
<b>Performance Indicator</b>	<ul style="list-style-type: none"> <li>▪ Nil complaints relating to air quality management</li> </ul>
<b>Management Plan</b>	<ul style="list-style-type: none"> <li>▪ The factory use chimney with adequate stack height to ensure the proper dispersion of pollutants generated from the operation of generators for reducing the impact of stack air emission on environment. The factory ensures that the chimney is in proper functional condition at all time.</li> <li>▪ The factory has planted a lot of trees in its premises which reduce the carbon emission by the factory and minimize the air pollution.</li> <li>▪ Periodic maintenance of generators is conducted.</li> <li>▪ Most of the compound area is paved with concrete to minimize dust.</li> <li>▪ There is no open burning of waste materials at the site.</li> <li>▪ Workers are provided mask and safety suites for working in any dusty area.</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ Monitor the stack air emission quality biannually</li> <li>▪ Biannually monitor the ambient air quality (including dust level PM<sub>2.5</sub>, PM<sub>10</sub>)</li> </ul>
<b>Time Frame</b>	<ul style="list-style-type: none"> <li>▪ Entire life span of the factory</li> </ul>
<b>Estimated Annual Cost</b>	<ul style="list-style-type: none"> <li>▪ Approximately 7,60,000 MMK</li> </ul>
<b>Responsibility</b>	Management of the factory: <b>Mechanic Manager</b> <ul style="list-style-type: none"> <li>▪ Implement the above air pollution and dust management plan</li> </ul>



	<ul style="list-style-type: none"> <li>▪ Contact the environmental service contractor for monitoring air quality as scheduled</li> </ul> <p><b>Production Manager</b></p> <ul style="list-style-type: none"> <li>▪ Inspect whether air quality in the production area is good/ enough or not</li> </ul> <p><b>EHS Officer</b></p> <ul style="list-style-type: none"> <li>▪ Monitor the hygiene of air environment inside and surrounding of the factory</li> <li>▪ Report the results of the air quality monitoring to the management and keep the records</li> </ul>
<b>Noise and Vibration Management Plan</b>	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To avoid nuisance noise to nearby residents generated from generator and other vibrating machineries</li> <li>▪ To comply with noise standard of national emission guidelines</li> </ul>
<b>Performance Indicator</b>	<ul style="list-style-type: none"> <li>▪ Nil complaints relating to noise or vibration nuisance</li> </ul>
<b>Management Plan</b>	<ul style="list-style-type: none"> <li>▪ Build noise insulated generator room and ensure satisfactory maintenance of relevant equipment.</li> <li>▪ Impose speed limit to truck / other vehicles &amp; machineries at the factory area.</li> <li>▪ Restrictions are imposed to factory vehicles about using horn outside the locality.</li> <li>▪ Actions against vibration i.e. shock absorber, damper/isolator should be taken.</li> <li>▪ Machines that could create vibration are installed at ground floor of the factory with appropriate vibration management system.</li> <li>▪ Provide sufficient personal protective equipment’s (PPE) at the workplace.</li> <li>▪ All the related personnel will be provided proper training about the relevant issues.</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ Monitor the workplace noise level (dB) biannually</li> </ul>
<b>Time Frame</b>	<ul style="list-style-type: none"> <li>▪ Throughout the project life</li> </ul>
<b>Estimated Annual Cost</b>	<ul style="list-style-type: none"> <li>▪ Approximately 5,400,000 MMK</li> </ul>
<b>Responsibility</b>	<p><b>General Manager</b></p> <ul style="list-style-type: none"> <li>▪ Hire independent third-party organization for measuring and monitoring of noise levels</li> <li>▪ Ensure that all workers use PPE during operation</li> </ul>
<b>Solid Waste Management Plan</b>	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To minimize waste generation by developing strategies for the management and disposal of all waste in a manner that is sustainable and sensitive to the environment</li> <li>▪ To comply with government waste management policy</li> </ul>
<b>Management Plan</b>	<ul style="list-style-type: none"> <li>▪ The factory does not dispose any kinds of solid wastes on the factory premises or not dump in the surface water like local pond, canal or river etc.</li> <li>▪ The solid waste is stored properly. Solid waste is stored separately in a certain storage room in proper manner, metal/ hazardous material waste such as electric bulbs, empty containers are stored in separate place of the waste storage.</li> <li>▪ Recyclable solid wastes are sent to local buyer for reuse or recycling. The metal or glass waste of electric bulbs is taken by the suppliers to recycle.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Daily wastes are stored trash bins and in such a manner that they are not released to open land.</li> <li>▪ All the related personnel are provided proper training about the relevant issue.</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ The inventory record of waste disposal will be maintained as proof for proper management</li> </ul>
<b>Time Frame</b>	<ul style="list-style-type: none"> <li>▪ Entire life span of the factory</li> </ul>
<b>Estimated Annual Cost</b>	<ul style="list-style-type: none"> <li>▪ Approximately 1,000,000 MMK</li> </ul>
<b>Responsibility</b>	<p><b>HR Manager</b></p> <ul style="list-style-type: none"> <li>▪ Responsible for overall site cleanliness and waste management</li> </ul> <p><b>EHS Officer</b></p> <ul style="list-style-type: none"> <li>▪ Monitor the site through cyclical inspections</li> </ul> <p><b>All workers’ Handling Wastes</b></p> <ul style="list-style-type: none"> <li>▪ Regular waste collection to minimize excessive waste storage</li> </ul>
<b>Hazardous Chemicals or Other Substance Handling, Storage and Disposal Management Plan</b>	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To reduce the risk of contamination from fuels, oils and hazardous wastes</li> <li>▪ To response effectively to incidents such as spills and leaks</li> </ul>
<b>Performance Indicator</b>	<ul style="list-style-type: none"> <li>▪ Reduction in amount of hazardous chemicals used wastes</li> <li>▪ Reduction in chemical accidents</li> </ul>
<b>Management Plan</b>	<ul style="list-style-type: none"> <li>▪ Temporarily storage on site of glue is done in safe containers, labeled with details of composition, properties, handling information and the date of expire are tagged with chemical container The hazardous substances are placed in leak - proof containers to prevent spillage and leaching.</li> <li>▪ Safety data sheets (SDS) need to display or hang at glue storage area and workplace.</li> <li>▪ Dispose of hazardous chemicals and containers in accordance with Occupational Health and Safety (OHS) and environmental requirements. The empty chemical containers will hand over to suppliers for recycle or appropriate disposal.</li> <li>▪ Hazardous chemical, glue, is used properly by following user and safety instruction.</li> <li>▪ All the related personnel are provided proper training about the relevant issue</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ All spills and accidental release of hazardous chemicals must be reported and documented immediately.</li> <li>▪ Workers are provided occupational health and safety training On regular basis.</li> </ul>
<b>Time Frame</b>	<ul style="list-style-type: none"> <li>▪ Throughout the factory operation</li> </ul>
<b>Estimated Annual Cost</b>	<ul style="list-style-type: none"> <li>▪ Approximately 500,000 MMK</li> </ul>
<b>Responsibility</b>	<p><b>EHS Officer</b></p> <ul style="list-style-type: none"> <li>▪ Ensure procedures are followed and incidents reported</li> <li>▪ Organize OHSA training for workers</li> </ul> <p><b>Storekeeper</b></p> <ul style="list-style-type: none"> <li>▪ Store and handle dangerous chemicals/ substances carefully</li> </ul> <p><b>All workers’ Handling Hazardous Substances</b></p> <ul style="list-style-type: none"> <li>▪ Should follow the written instruction for handling hazardous substances</li> </ul>

<b>Energy and Resource Management Plan</b>	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To minimize electricity, fuel and water use results from operation and workplace lighting</li> <li>▪ To comply with standards of energy use</li> <li>▪ To enhance the energy efficiency and to realize the saving potentials</li> </ul>
<b>Performance Indicator</b>	<ul style="list-style-type: none"> <li>▪ Annual energy savings for all departmental facilities</li> <li>▪ Annual fuel savings for vehicle fleet</li> </ul>
<b>Management Plan</b>	<p><b>Energy and Resource Saving Target</b></p> <ul style="list-style-type: none"> <li>▪ The company shall establish targets for electricity, water and fuel usage reduction rate for quarterly or yearly basis.</li> </ul> <p><b>Energy Management</b></p> <ul style="list-style-type: none"> <li>▪ A dedicated energy management team comprising personnel from relevant department is working to overview the overall energy management system.</li> <li>▪ Notices for energy saving are hang in wall.</li> <li>▪ Energy saving lights are installed in different area of the factory for saving energy.</li> <li>▪ Take energy rating into account when purchasing new equipment.</li> <li>▪ All the related personnel are provided proper training about turn off the machine and light switch after work.</li> <li>▪ Energy audits must be carried out periodically</li> <li>▪ Awareness for the management – Responsible persons must be involved in the awareness program so that all of them are aware and strive to improve the energy efficiency. Almost all of the employees must be given short awareness program.</li> <li>▪ Training for the responsible members – Main persons relating to energy management must be imparted varying duration of the training in energy efficiency.</li> <li>▪ Financing for the implementation of energy saving options.</li> <li>▪ Focus on best practices and best available technology on energy efficiency</li> </ul> <p><b>Electricity Usage</b></p> <ul style="list-style-type: none"> <li>▪ Use energy efficient lamp and devices. That costs more upfront but over the years it saves more money and energy</li> <li>▪ Use maximum day light</li> <li>▪ Educate employees regarding with the energy saving features of electrical appliances such as air conditioner, microwaves, fans, printers, computers and other devices to let them use these features to cut the energy usage</li> <li>▪ Plant shady trees outside of the building to protect from hotness of the building inside</li> <li>▪ Use variable speed drive motor where possible</li> <li>▪ Turn off and unplug the equipment when not using</li> </ul> <p><b>Water Usage</b></p> <ul style="list-style-type: none"> <li>▪ Detect the leak and fix it immediately</li> <li>▪ Use self-closing water taps</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Use eco flush toilets</li> <li>▪ Use high pressure low volume nozzles on spray or washer</li> <li>▪ Consider the rainwater harvesting for outdoor cleaning and some minor use</li> <li>▪ Measure the water consumption. Monitor monthly water usage to identify the peak month</li> <li>▪ Educate the employees to use water wisely</li> </ul> <p><b>Fuel Usage</b></p> <ul style="list-style-type: none"> <li>▪ Carry out regular maintenance of generators and vehicles to keep at optimum fuel consumption</li> <li>▪ Vehicle trip schedule can be controlled for efficient use to reduce fuel consumption (e.g., combining trips of convenient direction)</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ Conduct annual energy efficiency audit to find out the scope for energy savings</li> <li>▪ Audit the monthly water, fuel and electricity consumption and review to optimize energy saving</li> </ul>
<b>Time Frame</b>	<ul style="list-style-type: none"> <li>▪ Monthly throughout the factory operation</li> </ul>
<b>Estimated Annual Cost</b>	<ul style="list-style-type: none"> <li>▪ Approximately 2,500,000 MMK</li> </ul>
<b>Responsibility</b>	<p><b>Management of the Factory</b></p> <ul style="list-style-type: none"> <li>▪ Arrange energy auditing</li> <li>▪ Monitor and record the consumption of electricity, fuel and water and other electrical issues</li> <li>▪ Take necessary actions if any problem arises</li> </ul>
<b>Drainage Management Plan</b>	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To protect groundwater dependent vegetation</li> <li>▪ To prevent pollution underlying groundwater sources</li> </ul>
<b>Performance Indicator</b>	<ul style="list-style-type: none"> <li>▪ Implement an environmentally friendly sewerage system</li> </ul>
<b>Management Plan</b>	<ul style="list-style-type: none"> <li>▪ Make Sure that all drainage systems are covered &amp; liquid wastes are disposed to drain after treatment to avoid soil pollution.</li> <li>▪ Clean the drainages line periodically.</li> <li>▪ Detention/retention basin is needed for surface water runoff.</li> <li>▪ Make sure not to dispose solid wastes into drainage channel.</li> <li>▪ Maintain all drainages to be cleaned in order to avoid blockage and foul odor.</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ Proper maintenance of drainage system will be conducted periodically.</li> </ul>
<b>Time Frame</b>	<ul style="list-style-type: none"> <li>▪ Entire life span of the factory</li> </ul>
<b>Estimated Annual Cost</b>	<ul style="list-style-type: none"> <li>▪ Approximately 200,000 MMK</li> </ul>
<b>Responsibility</b>	<p><b>Environmental Management Committee (EMC)</b></p> <ul style="list-style-type: none"> <li>▪ Make arrangement for drainage designs</li> <li>▪ Ensure the above plan is well implemented</li> <li>▪ Monitor the effectiveness of the EMP</li> <li>▪ To take action if there is any concern</li> </ul>
<b>Emergency Response and Disaster Management Plan</b>	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To reduce the risk of accidents at the factory area</li> </ul>
<b>Performance Indicator</b>	<ul style="list-style-type: none"> <li>▪ Establish a safe working environment</li> </ul>
<b>Management Plan</b>	<ul style="list-style-type: none"> <li>▪ The factory management has taken proper measures to handle any emergency like fire, earthquake, flood, etc.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Provision and inspection of firefighting equipment and fire hydrant system in all the sections</li> <li>▪ A detail evacuation plan (fire exit, emergency exit door etc.) is established and communicated with workers</li> <li>▪ Periodic inspection of generator and equipment preventive maintenance; aware the workers about electric shock by necessary training</li> <li>▪ Regular fire drill operation is conducted</li> <li>▪ Workers are informed about what to do in earthquake like stay in a safe place such as under table, desk during earthquake, workers who will be outside during earthquake shall remain stay out of the building, trees, lamp post etc. Other relevant safety instruction of emergency situation is informed to workers by training</li> <li>▪ A medical team has been prepared for primary treatment</li> <li>▪ Prepare and emergency contact directory consisting contact numbers of nearest fire service, local police station, hospitals, etc., &amp; display it in a place that everybody can see it</li> <li>▪ Declaring the factory as a “no smoking zone”</li> <li>▪ When plant runs at abnormal situation e.g., if emission level increases than its normal level then immediately inform to Factory manager / EHS officer as well as production supervisor</li> <li>▪ If any emergency situation arises then assigned person will turn on the emergency alarm to make the workers alert</li> <li>▪ Build a safety committee which from firefighting team, rescue team. The committee arrangement a meeting every month to discuss about safety management.</li> <li>▪ Ensure proper training of the employees about the disaster management, fire safety as well as occupational health &amp; safety.</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ Check daily fire extinguishers and water hydrant in position</li> <li>▪ Inspect twice a day if all fire exits are open</li> <li>▪ Test fireman switch daily</li> <li>▪ Servicing fire extinguishers and records of accidents, which is recorded on and around the entire facility</li> </ul>
<b>Time Frame</b>	<ul style="list-style-type: none"> <li>▪ Entire lifespan of factory</li> </ul>
<b>Estimated Annual Cost</b>	<ul style="list-style-type: none"> <li>▪ Approximately 1,500,000 MMK</li> </ul>
<b>Responsibility</b>	<p><b>General Manager/ HR Manager</b></p> <ul style="list-style-type: none"> <li>▪ Arrange fire drill after every three months</li> </ul> <p><b>EHS Officer</b></p> <ul style="list-style-type: none"> <li>▪ Responsible for fire prevention and response</li> </ul>
<b>Socio-economic Impact Management Plan</b>	
<b>Objective</b>	<ul style="list-style-type: none"> <li>▪ To minimize the negative impacts on the socio-economic of local community</li> <li>▪ To promote the positive impacts</li> </ul>
<b>Management Plan</b>	<ul style="list-style-type: none"> <li>▪ Maximum employment shall be done from local area by giving priority to local people under direct or indirect employment programs</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Throughout the operation phase, management shall ensure that there is no harm/damage to local socioeconomic condition due to emission, water pollution and accidents occurred from the operational activity of the plant</li> <li>▪ Company shall regularly conduct CSR activities in the local area by organizing different kind of social activities.</li> </ul>
<b>Monitoring &amp; Reporting</b>	<ul style="list-style-type: none"> <li>▪ Suggestions of employees and local people are recorded and updated time to time</li> </ul>
<b>Time Frame</b>	Entire lifespan of the factory
<b>Estimated Annual Cost</b>	2% of gross profit
<b>Responsibility</b>	<p><b>Proponent/Director, HR Manager, EHS Officer</b></p> <ul style="list-style-type: none"> <li>▪ Ensure the above plan is implemented</li> <li>▪ Check complaints log and to solve the public concerns</li> <li>▪ Monitor the effectiveness of socio-economic management plan</li> </ul>

## 7.5 Environmental Monitoring Plan (EMoP)

Monitoring is an essential and an integral part of the implementation of the proposed environmental mitigation measures. Environmental monitoring generates useful information and improves the quality of implementation of mitigation measures.

Monitoring involves the observation, review and assessment of onsite activities to ensure adherence to regulatory standards and the recommendations made to reduce negative impacts. The plan must be comprehensive and address relevant issues, with a reporting component that will be made available to the regulatory agencies based on a mutually agreed frequency. It is recommended that a minimum yearly monitoring report be submitted to the authorities. The monitoring report will include at a minimum:

- Raw data collected
- Tables/graphs (where appropriate)
- Discussion of results with respect to the development in progress, highlighting parameters which exceed standards
- Recommendations

According to the section 108 of EIA Procedure, the project proponent will submit the Monitoring Report prescribed in the schedule of the Initial Environmental Examination (IREE) to the Ministry every (6) month or as may be prescribed by the Ministry.

**Table 7-3** shows the environmental monitoring plan for operation phase and decommissioning phase. Whereas the project proponent, Cobes Industries (B II) Company Limited is responsible during the operation phase and the demolition contractor is responsible during the decommissioning phase for the implementation of environmental monitoring, summarization of the results and submission of the monitoring report to Environmental Conservation Department (ECD), Bago Region under Ministry of Natural Resources and Environmental Consideration (MONREC) periodically.

Table 7-3 Environmental Monitoring Plan

Sr. No.	Environmental Issues	Monitoring Items	Location	Monitoring Frequency	Responsibility
<b>Operation Phase</b>					
1.	Air Quality	Ambient air quality	Inside the Factory Premise	Twice a year	EMC
		Workplace (indoor) air quality	Workplace (Sewing-1,2,3,4, cutting. Warehouse-1,2, packaging materials warehouse, raw material production area-1,2, glue making area, sewing (future) and cutting (future))	Twice a year	EMC
		Stack emission of generators	Generators	Twice a year	EMC
		<ul style="list-style-type: none"> <li>▪ Inspection of the machinery, equipment, and vehicles</li> <li>▪ Inspection of the ventilation system</li> <li>▪ Inspection of the toilets and sewage system</li> <li>▪ Inspection of the waste disposal yards and waste bin</li> <li>▪ Preparation of inspection record / report</li> </ul>	Workplace	Monthly	EMC and Supervisors
2.	Noise and Vibration	Boundary noise levels (in decibel)	Inside the Factory Premise	Twice a year	EMC
		Workplace (indoor) noise levels (in decibel)	Workplace (Sewing-1, 2, 3, 4, cutting. Warehouse-1,2, packaging materials warehouse, raw material production area-1,2, glue making area,	Twice a year	EMC

Sr. No.	Environmental Issues	Monitoring Items	Location	Monitoring Frequency	Responsibility
			sewing (future), cutting (future) and generator room)		
		Vibration	Inside the Factory Premise	Twice a year	EMC
		<ul style="list-style-type: none"> <li>▪ Record the noise and vibration activities</li> <li>▪ Inspection of the installation of sound barriers</li> <li>▪ Regular supply of sufficient quantity of PPE</li> </ul>	Workplace	Twice a year or when instructed or when necessary	EMC and Supervisors
3.	Light Intensity	Light	Workplace (Sewing-1,2,3,4, cutting room and glue making room)	Twice a year	EMC
4.	Water and Wastewater Quality	Water Quality	Tube-well waters	Twice a year	EMC
		Wastewater Quality	Drainage water	Twice a year	EMC
		<ul style="list-style-type: none"> <li>▪ Inspection of the storm-water flowing</li> <li>▪ Inspection and maintenance of the screen to collect the solid wastes</li> <li>▪ Inspection of the condition of concrete floor</li> <li>▪ Inspection of the leakage and spillage of oil, lubricant and fuel</li> <li>▪ Preparation of inspection record / report</li> </ul>	Workplace area and inside the factory premise	Monthly	EMC and Supervisors
5.	Soil Quality	Soil	Inside the factory premise	Twice a year	EMC



Sr. No.	Environmental Issues	Monitoring Items	Location	Monitoring Frequency	Responsibility
6.	Waste Management	<ul style="list-style-type: none"> <li>▪ Separate bins for different kinds of waste</li> <li>▪ Record the solid waste amount</li> <li>▪ Inspect the waste disposal system</li> <li>▪ Inspect storage system of waste</li> </ul>	Workplace, dormitory, office and factory premise	Weekly or as necessary	EMC
7.	Hazardous Substances Management	<ul style="list-style-type: none"> <li>▪ Record the storage amount of hazardous wastes such as fluorescent tube lights, batteries, glue cup, machine oil containers, etc.</li> <li>▪ Inspect the disposal system</li> <li>▪ Inspect the hazardous wastes storage area</li> </ul>	Hazardous waste storage area	Monthly or as necessary	EHS Officer and EMC
		<ul style="list-style-type: none"> <li>▪ Provide training to employees on how to dispose of hazardous substances</li> </ul>	For all employees	As necessary	EHS Officer and EMC
		<ul style="list-style-type: none"> <li>▪ Ensure SDS for hazardous products are up-to-date and accessible at any time</li> </ul>	Chemical storage area and workplace	Monthly or as necessary	EHS Officer, EMC and employees
		<ul style="list-style-type: none"> <li>▪ Usage, handling and storage of diesels</li> </ul>	Generators	Monthly	EHS Officer, EMC and employees
8.	Water Consumption	<ul style="list-style-type: none"> <li>▪ Record the amount of water usage</li> <li>▪ Close all the water taps when not in use</li> </ul>	Drinking water and domestic water use	Monthly	EMC and employees

Sr. No.	Environmental Issues	Monitoring Items	Location	Monitoring Frequency	Responsibility
9.	Electricity Consumption	<ul style="list-style-type: none"> <li>▪ Record electricity usage</li> <li>▪ Power off the unused equipment</li> </ul>	Electric meter	Monthly	EMC and employees
10.	Fuel Consumption	<ul style="list-style-type: none"> <li>▪ Record diesel consumption</li> </ul>	Generator	Monthly	EMC and employees
11.	Landscaping	<ul style="list-style-type: none"> <li>▪ Record the landscaping situation</li> </ul>	Factory compound	Twice a year	EMC
12.	Occupational Health and Safety	<ul style="list-style-type: none"> <li>▪ Record the OHS</li> <li>▪ Record the workers' complains and conflict</li> <li>▪ Supply the first aid kits</li> <li>▪ Inspect drinking water supplying situation</li> <li>▪ Ensure proper solid waste disposal and collection facilities</li> <li>▪ Inspect the toilets and sewage system</li> </ul>	Factory compound	Monthly	EMC
		<ul style="list-style-type: none"> <li>▪ Give training for OHS and first aid</li> </ul>	Factory compound	Twice a year	
13.	Communities Health and Safety	<ul style="list-style-type: none"> <li>▪ Record the accident</li> <li>▪ Record the Training of security employees and drivers for safe driving</li> <li>▪ Record the complains from the local people</li> <li>▪ Limit the speed of the vehicles</li> </ul>	Local people	Monthly	

Sr. No.	Environmental Issues	Monitoring Items	Location	Monitoring Frequency	Responsibility
14.	Other Social Consideration	<ul style="list-style-type: none"> <li>▪ CSR activities</li> <li>▪ Worker welfare activities</li> </ul>	Nearest local area	Yearly	EMC and HR Manager
15.	Emergency Response Equipment	<ul style="list-style-type: none"> <li>▪ Firefighting equipment such as fire extinguishers, fire hydrants, fire hose</li> </ul>	Factory premise, dormitory, workplace, generator room, fuel and chemical storage areas	Daily	Fire brigade team
		<ul style="list-style-type: none"> <li>▪ Fire-drill testing</li> </ul>	Factory premise and dormitory	Once every three months	Fire brigade team
		<ul style="list-style-type: none"> <li>▪ Servicing firefighting equipment</li> </ul>	All equipment	Once every three months	Once every three months
		<ul style="list-style-type: none"> <li>▪ Reviewing records of accidents which is recorded on &amp; around the entire facility</li> </ul>	-	Once every three months	Once every three months
16.	Emergency Risk	<ul style="list-style-type: none"> <li>▪ Inspect the firefighting equipment</li> <li>▪ Record the training situation and trained person</li> <li>▪ Inspect and record the emergency response activities</li> <li>▪ Inspect and record the situation of drain in the project area</li> <li>▪ Record the emergency response plan</li> <li>▪ Record the inspection information</li> </ul>	Factory premise	Monthly or if necessary	EMC
<b>Decommissioning Phase</b>					
1.	Air Quality	Ambient air quality	Inside the factory premise	Once	Contractor for demolition

Sr. No.	Environmental Issues	Monitoring Items	Location	Monitoring Frequency	Responsibility
2.	Noise and Vibration	Noise level in decibel	Inside the factory premise	Once	Contractor for demolition
		Vibration	Inside the factory premise	Once	Contractor for demolition
3.	Water and Wastewater Quality	Water quality for drinking and domestic use	Water tank for site use	Once	Contractor for demolition
		Wastewater quality	Municipal drain and final discharge point of site	Once	Contractor for demolition
4.	Soil Quality	Soil	Inside the factory premise	Once	Contractor for demolition

## 7.6 Estimated Cost for Environmental Monitoring

Adequate budgetary provisions have been made by proponent. The management for execution of environmental management plans should be framed. The detailed capital and recurring (per annum) budget should be earmarked for pollution control/monitoring equipment; operation and maintenance of pollution control facilities.

The project is going in starting operation phase when this IEE report was prepared. Thus, estimated EMP budget was more emphasized for operation phase. The Project will carry out impact monitoring during operation phase and decommissioning phase. The following table shows the estimated expenditures for the implementation of Environmental Management Plan for operation phase *twice a year* and for decommissioning phase *one time*. It can change according to the situation. The project proponent will carry out impact monitoring during operation and decommissioning stages. The following table shows the costs estimated for Environmental Monitoring for Cobes Industries (B II) Company Limited.

Table 7-4 Estimated Cost for the Basic Environmental Monitoring during the Operation and Decommissioning Phases

Sr. No.	Environmental Issues	Monitoring Items	Number of Location (a)	Recommended Monitoring Frequency (Time/year) (b)	Rate (MMK/ Measurement) (c)	Total Annual Amount (MMK) (a x b x c)
<b>Operation Phase</b>						
1.	Air Quality	Ambient air quality	1	2	800,000	1,600,000
		Workplace (outdoor) air quality	13	2	200,000	5,200,000
		Stack	1	2	400,000	800,000

Sr. No.	Environmental Issues	Monitoring Items	Number of Location (a)	Recommended Monitoring Frequency (Time/year) (b)	Rate (MMK/ Measurement) (c)	Total Annual Amount (MMK) (a x b x c)
		emission of generator				
2.	Noise and Vibration	Boundary noise levels	6	2	250,000	3,000,000
		Workplace noise levels	14	2	50,000	1,400,000
		Vibration	1	2	500,000	1,000,000
3.	Light	Light at workplace	6	2	30,000	360,000
4.	Water Quality	Tube well water	2	2	250,000	1,000,000
		Effluent water quality	1	2	350,000	700,000
5.	Soil Quality	Soil	1	1	300,000	300,000
6.	Waste Management				Lump sum	1,000,000
7.	Hazardous Waste Management				Lump sum	500,000
8.	Energy and Resource Consumption (Water, diesel and electricity)				Lump sum	2,500,000
9.	Emergency Response Equipment (Signboard on safety, emergency safety measures, fire safety measures and so on)				Lump sum	1,500,000
10.	Public Health and Occupational Safety				Lump sum	1,500,000
<b>Total Costs for Operation Phase</b>						<b>22,360,000</b>
<b>Decommissioning Phase</b>						
1.	Air Quality	Ambient air quality	1	1	800,000	800,000
2.	Noise and Vibration	Noise	6	1	250,000	1,500,000
		Vibration	1	1	500,000	500,000
3.	Water Quality	Drinking water and domestic-use water	2	1	250,000	500,000
		Effluent water quality	1	1	350,000	350,000
4.	Soil Quality	-	1	1	300,000	300,000
<b>Total Costs for Decommissioning Phase</b>						<b>3,950,000</b>

## 7.7 Grievance Redress Mechanism (GRM)

A grievance mechanism is a formal, legal or non-legal (or judicial/ non- judicial) complaint process that can be used by individuals, workers, communities and/or civil society organizations that are being negatively affected by certain business activities and operations. Grievance mechanisms are also called ‘dispute’, ‘complaints’ and ‘accountability’ mechanisms.

### 7.7.1 Grievance Mechanisms for Human Rights Violations

Grievance mechanisms exist at the project, company, sector, national, regional, and international levels. They may directly address a company’s behavior and responsibilities, a government’s obligation to protect citizens or an institution’s duty to comply with its policies and procedures. Grievance mechanisms also vary in objective, approach, target groups, composition, government backing, procedure and costs.

### 7.7.2 Workplace Coordinating Committee (WCC)

The project proponent has Workplace Coordinating Committee (WCC) team for Grievance solution within the factory. First, letters are retrieved from the suggestion box and select the letters which need to be solved. Then, WCC members hold a coordination meeting to convene and agreed the necessary measures. The following table shows the members in WCC team.

Table 7-5 Workplace Coordinating Committee (WCC) Team

No.	Name	Designation	Position of WCC
1.	Mr. Dong Shu Yin	General Manager	Employer Representative
2.	Daw Khin Mar Aye	HR Manager	Employer Representative
3.	Daw Tin Zar Oo	Supervisor (Sewing)	Employee Representative
4.	Daw Kyi Lae Lae Win	Supervisor (Sewing)	Employee Representative
5.	U Thar Aye	EP	Employee Representative

## 7.8 Training

Trainings (including mini language training) are essential for ensuring that the provisions of the EMP are implemented efficiently and effectively. The project proponent provides fire-fighting trainings and work trainings for the workers and staffs.

The project proponents provide trainings for workers and these records are attached in **Appendix 23, 24 and 25.**

### 7.8.1 Environmental Training

All employees should undergo general environmental awareness training and training about their responsibilities under the EMP. The training should ensure that all employees understand their obligation to exercise due diligence for environmental matters. Employees in this instance means all people working on-site including contractors and subcontractors.

Environmental training should include;

- A site induction
- Familiarization with the requirements of the EMP
- Environmental emergency response training
- Familiarization with site environmental controls, and
- Targeted environmental training for specific personnel. For example, plant operators may require specific training in dust minimization.

The need for additional or revised training should be identified and implemented from the outputs of monitoring and reviewing this IEE report.

### 7.8.2 Reporting and Recording

The reporting frequencies, type of report and specifications to perform are needed. This includes:

- Internal monitoring and inspection
- Incident, accident and emergency reporting
- Measuring performance indicators and interpreting and acting on the indicators
- Training programs

Records of all training should be maintained and should include;

- Who was trained,
- When the person was trained,
- Name of the trainer, and
- A general description of the training content.

Table 7-6 Reporting and Recording

No.	Activity	Schedule
<b>RECORD KEEPING</b>		
1.	Records of training and safety	Every performing day
2.	Records of generation of solids and liquid wastes and their treatment	Daily
3.	Disposal and use of hazardous substances	Make to be updated
4.	Grievance meeting and solution	Every performing day
5.	Incident, accident and emergency cases	Every time they occur

## 7.9 Emergency Plan

The project proponent needs to provide their emergency plan for project, which will provide guidelines to allow for flexible response to a range of potential circumstances. The followings are recommended emergency steps for the project.

### 7.9.1 Evacuation Routes

Evacuation routes maps must be posted in each work area. The following information need to be marked on evacuation maps.

- Emergency exists
- Primary and secondary evacuation routes
- Locations of fire extinguishers

- Fire alarm pull stations’ location (e.g. Assembly points)

**\*The project proponent needs to provide evacuation route maps in each working area.**

### 7.9.2 Operating a Fire Extinguisher

Fire extinguishers should be only used if safe and if trained to do so.



**NOTE:** Fire extinguishers should be only used if safe and if trained to do so.

Even though extinguishers come in a number of shapes and sizes, they all operate in a similar manner. Here's an easy acronym for fire extinguisher use:

- **P A S S** -- Pull, Aim, Squeeze, and Sweep

Uses of a fire extinguisher properly Remember the acronym <b>PASS</b> .	
	<p><b>P</b> – Pull the pin at the top of the extinguisher that keeps the handle from being accidentally pressed.</p>
	<p><b>A</b> - Aim at the base-not the flames. This is important- in order to put out the fire, you must extinguish the fuel.</p>
	<p><b>S</b> – Stand approximately 8 feet away from the fire and squeeze the handle to discharge the extinguisher. If you release the handle, the discharge will stop.</p>
	<p><b>S</b> – Sweep the nozzle back and forth at the base of the fire and then move towards the fire once it starts to diminish. After the fire appears to be out, watch it carefully since it may re-ignite! Be sure to read the instructions</p>



	on your fire extinguisher different fire extinguishers recommend operating them from different distances.
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### Using Fire Extinguishers

1. Ensure that you use the correct extinguisher
2. Always keep an emergency exit behind you. (Away from the fire)
3. Stay low to avoid the effects of smoke/heat.
4. Direct extinguisher stream at base of flames.
5. Move stream in a side to side, sweeping motion.
6. If the fire gets to the point where you can no longer able to control it, retreat and close the doors. (Do not lock)

### Using Fire Hose Reels

1. Turn on the stop valve
2. Run out the length of hose
3. Turn on the water nozzle and direct stream at the base of the fire.
4. Ensure you leave a direct egress path between you and the exit door/ egress route.



**NOTE:** Fire Hose Reels should NOT be used within range of electrical equipment.

Fires have been classified into six categories involving different substances:

- **Class A**, combustible carbon-based solids e.g. paper, wood or textiles
- **Class B**, flammable liquids e.g. paraffin, petrol, diesel or oil (but not cooking oil)
- **Class C**, flammable gases, e.g. butane, propane or methane
- **Class D**, burning metals, e.g. aluminum, lithium or magnesium
- **Fires caused by electrical equipment** (indicated by an electric spark symbol and not the letter E)
- **Class F**, fats and cooking oils.

### Types of extinguisher to use

- Class A fires – water, water mist, foam, dry powder, wet chemical

- Class B – water mist, foam, dry powder, CO<sub>2</sub>, some wet chemical
- Class C – water mist, dry powder
- Class D – specialist dry powder
- Electrical – water mist, foam, CO<sub>2</sub>
- Class F – water mist, wet chemical.

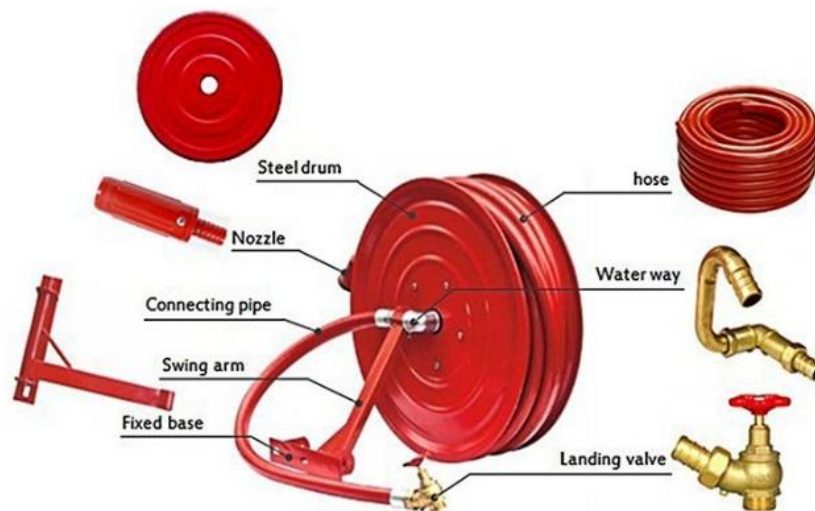
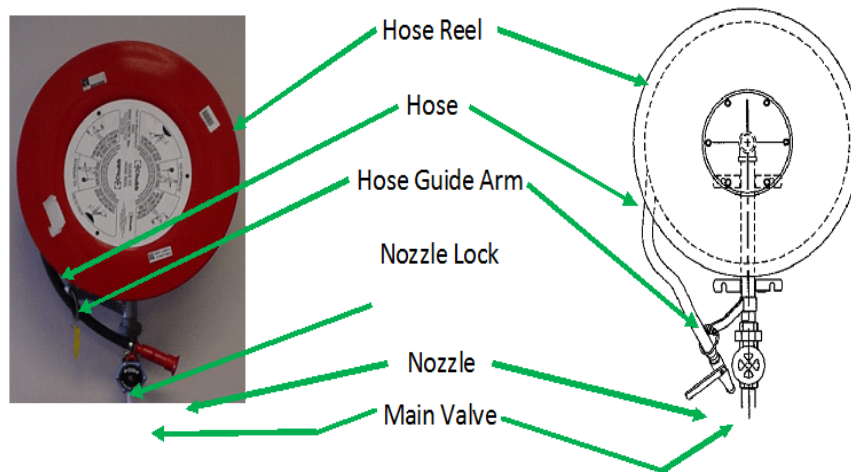


Figure 7-2 Explanation of Fire Hose Reel

## 7.10 Occupational Health and Safety Issues

### 7.10.1 Safety Issues

Basic safety issues for garment factory are

- Respiratory protection
- Eye protection
- Heat stress protection
- Fire protection
- Training program

- Finger protection
- Proper lighting
- Ergonomic design of the workstation
- Awareness
- First aid medicine

### 7.10.2 Medical Emergency

A medical emergency is an acute injury or illness that poses an immediate risk to a person’s life or long-term health. These emergencies may require assistance from another person, who should ideally be suitably qualified to do so (for e.g., Doctor, nurse etc.).

When the injuries happen,

- ❖ Call medical emergency phone number
- ❖ Do not move victim unless absolutely necessary
- ❖ Call the following personnel trained in CPR and First aid to provide the required assistance prior to the arrival of the professional medical help;

If personnel trained in First aid are not available, as a minimum, attempt to provide the following assistance;

1. Stop the bleeding with firm pressure on the wounds (note: avoid contact with blood or other bodily fluids)
2. Clear the air passages using the Heimlich maneuver in case of choking.

In case of rendering assistance to personnel exposed to hazardous materials, consult the Safety Data Sheet (SDS) and wear the appropriate personal protective equipment. Attempt first aid ONLY if trained and qualified.

The project proponent provides first aid kits in each working area.



Figure 7-3 Provided First Aid Kits

## 7.11 Green Belt Development

The factory needs to grow trees which can absorb carbon dioxide and minimize the air

pollution, in its premises. The company has small land area for green belt development. Plants like neem, peace lily, snake plant, areca palm, lady palm, shrubs etc. can be grow. These plants can give not only their visual and healthy benefits but also small land use.

The trees will be grown within the plant boundary and at the periphery of the company premises. This will help in reducing the concentration of pollutants and will also be effective in attenuating noise levels.

For conserving environment from adverse effect of emissions, the industry must ensure that:

- ❖ Minimum 33% of the land on which industry is proposed is covered by plantation.
- ❖ On the periphery of the proposed site, a series of trees will also be planted.
- ❖ A wall of 3 m height shall be constructed on the sides where land is not available for green belt development to prevent fugitive dust emission.

The following characteristics would be taken into consideration while selecting plant species for green belt development and tree plantation.

- Fast growing and tall trees.
- They should have large leaf area index.
- They should not have any noticeable effect on the plant yield due to gaseous pollutants.
- The planting should be in appropriate alternate rows around the proposed site to prevent lateral pollution dispersion.
- The trees should maintain regional ecological balance and conform to soil and hydrological conditions. Indigenous species would be preferred.

## **7.12 Social Environmental Aspect**

- No rehabilitation/resettlement issues are involved
- The proposed project on implementation will generate direct employment opportunities.

## **8.0 PUBLIC CONSULTATION AND DISCLOSURE**

### **8.1 Purpose**

Public consultations on environmental management programs are designed to provide a real understanding of industry issues and the aim is to make the public aware of the environmental impact of industrial operations and the increase in job opportunities caused by industry. By participating in the consultation process with anyone affected by the proposed project, the business community will be able to resolve any issues that may arise in advance.

### **8.2 Methodology and Approach**

Green Myanmar Environmental Services Co., Ltd. (GMES) approaches two methods for consultation and disclosure, which are meeting and receiving suggestion letters. For public consultation meeting, GMES had arranged in two ways:

- i. Quantitative approach and
- ii. Qualitative approach.

For quantitative approach, suggestion forms have been used for factory employees in the proposed area. On the other hand, for qualitative approach, group discussion has been arranged.

There are two group discussions: one for meeting with employees of the factory and another for consultation meeting with the relevant government organizations and local community in the vicinity of project.

### **8.3 Meeting with Factory Employees**

This meeting aims for the health and safety of workers. Regarding to the IEE report for the “Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis”, the employees were met and discussed about drinking water system, cleaning system, sanitation system, noise level, dust amount, particles, smell smoke, lighting system, ventilation system and the social situation at the workplace.

Method: Meeting  
Date: September 16<sup>th</sup>, 2021  
Participants: Factory Employees (30) Persons  
Venue: Factory’s Canteen

There were thirty participants attended the meeting and received suggestion letters from them. The attendee lists, and suggestion forms from discussion with factory employees are attached as **Appendix 35** and **Appendix 36**.



Figure 8-1 Photos of Employee Discussion Program

The details of the discussion meeting with the employees are as follows.

Table 8-1 Information on Meetings with Factory Employees

<b>1. Suggestion on Occupational Health and Safety</b>	
(a) Use of Occupational Safety Equipment	About the personal protective equipment, all persons mentioned that they were adequate support.
(b) Drinking Water System in the Workplace	All persons who attended the meeting mentioned that there were provided the good drinking water for the employees.
(c) Sanitation System in the workplace	All persons who attended the meeting, the sanitation system is clean and adequate support.
(d) Cleaning system	Hand basins for washing; All persons who attended the meeting stated that they were comfortable with the soap / hand sanitizer adequate support.
<b>2. Recommendations Regarding Working Conditions in the Workplace</b>	

(a) Occupational Noise Situation	Regarding the noise situation in the workplace, 23 employees who attended the meeting did not make any noise. Seven employees were mentioned to be slightly noisy.
(b) Occupational Odors/ Fumes	Regarding the situation of workplace, 26 employees mentioned that there was no odors / fumes and four employees mentioned that there was slightly odor.
(c) Occupational Light Conditions	All participants stated that there was good and adequate lighting in the workplace.
(d) Occupational Particles Conditions	All participants stated that there were no particles in the workplace.
(e) Workplace Ventilation System	All staff members who attended the meeting stated that they were comfortable with the workplace ventilation system.
<b>3. Workplace Social Situation</b>	
Social Relation in the Workplace	All participants who attended the meeting expressed it was convenient with upper level and lower level.
<b>4. Recommendations for Prevention of Occupational Diseases</b>	
(b) Measuring Body Temperature	All participants who attended the meeting expressed, it is stated that the body temperature of the factory workers is measured daily before entering to the workplace.
(c) Keeping Hand Basins/ Soaps	All participants who attended the meeting expressed, there were adequate support soap, and hand sanitizer, hand wash basins in the factory.
(d) Wearing Mask/ Face	All persons mentioned that they were adequately provided with masks / face shields in the workplace.
(e) Spraying Chlorine in the Dining Room and Toilets	All persons mentioned that occasional chlorination spraying was done in the dining room and restrooms of the factory.

The response plan on the opinions and suggestions of the factory employees are as follows.

Table 8-2 Response Plan on the Opinions and Suggestions of the Factory Employees

Sr. No.	Suggestions from Employees	Responses from Employers
1.	About the personal protective equipment, all persons mentioned that they were adequate support at the factory.	The factory provides a full range of workplace protective equipment to its employees.
2.	All persons mentioned who attended the meeting stated that there were provided the good drinking water for the employees.	The factory provides 20 liters purified drinking water bottles at the factory.
3.	All persons mentioned who attended the meeting, the Sanitation system is clean and adequate support.	Three were adequate toilets and cleaned daily.
4.	Hand basins for washing; All persons mentioned who attended the meeting stated that they were comfortable with the soap /	Adequate supply of soap/ hand sanitizer is provided for cleaning.

Sr. No.	Suggestions from Employees	Responses from Employers
	hand sanitizer adequate support and adequate support.	
5.	Regarding the noise situation in the workplace, 23 employees who attended the meeting did not make any noise. Seven employees were mentioned to be slightly noisy.	Only the voices of employees talking and sewing about noise in the workplace.
6.	Regarding the situation of workplace, 26 employees mentioned that there was no odors / fumes and four employees mentioned that there was slightly odor.	We are checking for any slight odor from the clothes inside the machine line.
7.	All participants stated that there was good and adequate lighting in the workplace.	There was adequate lighting in the workplace.
8.	All participants stated that there were no particles in the workplace.	There were installed dust controller machines in the workplace.
9.	All participants who attended the meeting expressed it was convenient with upper level and lower level.	Adequate air-conditioning is provided for good ventilation in the workplace.
10.	All staff members who attended the meeting stated that they were comfortable with the workplace ventilation system.	Supervisors and staff assist each other in social work in the workplace.
11.	All participants who attended the meeting expressed, it is stated that the body temperature of the factory workers is measured daily before entering to the workplace.	Before entering the workplace, daily temperature measurement was taken to the employee
12.	All participants who attended the meeting expressed, there were adequate support soap, and hand sanitizer, hand wash basins in the factory.	There were adequate supported hand wash basins, soap and hand sanitizers at the factory.
13.	All persons mentioned that they were adequately provided with masks / face shields in the workplace.	Adequate masks/ face shields are provided at the factory.
14.	All persons mentioned that occasional chlorination spraying was done in the dining room and restrooms of the factory.	Spraying disinfectant (chlorine) was done twice a week in the canteen and toilets in the factory.
15.	<ul style="list-style-type: none"> <li>▪ It is recommended that the use and disposal of industrial plastic bags be more careful now.</li> <li>▪ Noise is recommended as sewing sound.</li> <li>▪ Due to the installation of particle detectors, it is recommended that there are no particles in the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>▪ There have a plan that is the systematic disposal and disposal of industrial plastic bags program at the factory.</li> <li>▪ There were taken the noise reduction in the workplace.</li> <li>▪ No particle emissions due to dust detectors are installed at the factory.</li> </ul>



Sr. No.	Suggestions from Employees	Responses from Employers
	<ul style="list-style-type: none"><li>▪ The factory environment is clean and the restrooms are recommended to be clean.</li></ul>	<ul style="list-style-type: none"><li>▪ There were performed to keep and clean the environment by the company</li></ul>

#### **8.4 Consultation Meeting with the Public and Neighbors of the Factory**

The Public Consultation Meeting (PCM) for IEE will be planned in order to collect opinions and feedback of the public and to disseminate information on the IEE study of the project. Cobes Industries (B II) Company Limited will plan to take the public consultation meeting collaborated with GMES. However, the public consultation meeting program is not carried out due to the COVID-19 situation and National Security situation. If the possible situation reaches, it will be carried out with the instruction of the Environmental Conservation Department (ECD) to be complied and then resubmit PCM included version of the IEE report.

## 9.0 CONCLUSION AND RECOMMENDATIONS

During the preparation of IEE report, it was observed that most of the negative impacts on the environment are largely localized. The negative environment impacts that will result from the project include waste generation, emissions and fire hazards during operation which, however, can be mitigated if adequate control measures are taken into account. Based on this environmental study, environmental management and mitigation measures are proposed to ensure that there are no environmental impacts that exceed acceptable levels.

### 9.1 Findings

The impact on the social environment shall be positive, because employee of the local people is hired during operation of the project, improving the livelihood. Since the proposed project area is in the industrial zone, there is no significant impacts for biodiversity, cultural and heritages.

For the environmental quality monitoring, **Ambient air quality** was measured for 24 hours within the project area. The collected air quality monitoring data were checked with the target values and the results are recorded in Tables. It was found that all parameters were within the recommended air quality guidelines established by National Environmental Quality (Emission) Guidelines. The **workplace (indoor) air quality** was measured at 13 locations and it doesn't have the specific guidelines. The **stack emission measurement** was done and the result of SO<sub>2</sub> was within acceptable limits and the other parameters do not have the specific guidelines.

**Boundary noise level** measuring was done at six locations within the factory premise. According to the investigation, both daytime and nighttime results are within the guidelines and it can be said that the noise values cannot affect the workers and the environment. The **workplace (indoor) noise level** measuring was done at 14 locations and the results are compared with OHS exposure guidelines. According to the measuring results of average noise levels at workplace, the noise levels except generator rooms were within the acceptable conditions. The major noise pollution source inside the factory may be happened due to operation of generators and they are used in case of emergency only when the electricity goes out.

**Light intensity** measuring was done at six locations in the workplace and all the results were within the acceptable limits.

For **water quality**, selected water quality parameters of ground water have been studied for assessing the water environment and evaluating the anticipated impact of the proposed project. tube well water and wastewater samples were collected and analyzed at the laboratory of Green Myanmar Environmental Services Co., Ltd. and Ecological laboratory. According to the results, although the arsenic value in ID-2 (Tube well 2) was slightly higher than the drinking water standards, all other parameters are within the desirable limits as per drinking water standards. According to the wastewater analysis results, the values of BOD<sub>5</sub>, COD, oil and grease and total suspended solids were higher than the NEQG, and all other parameters were within the limits of NEQG. This impact can be reduced by mitigation measures.

In order to monitor the **soil quality**, soil sample is collected from inside the project site and tested at GMES laboratory. The analysis results of the physico- chemical parameters are presented in Tables.

Cobes Industries (B II) Company Limited doesn't use water for production but for domestic use from ground water resource. The water consumption of the factory is 12,000 gallons per month. The main impact for this project is solid waste generation and fire hazards. Even though the project proponent provides the firefighting equipment and waste disposal system, make sure to follow the instruction every time.

## 9.2 Recommendations

The following recommendations have been made for efficient and effective implementation of environmental conservation, ecosystem management, health and safety, social responsibilities measure through the lifespan of the proposed project:

- Follow the comments and suggestions made by ECD after reviewing this IEE report
- Once EMP is approved by concerned authorities, strict implementation is essential
- For full and proper implementation of EMP, well understanding and supports by proponent and its administrative authority is deeming necessity
- Fully implement Corporate Social Responsibility (CSR) Plan as an ethical business obligation, so as to be regarded as good neighbor/investor in the neighborhood
- Daily, monthly and annual action plan shall be formulated based on EMP and fully practiced
- Environmental Management Plan (EMP) in IEE reports mainly deals through awareness campaigns, provision of safety measures and sanitation such as clean toilets, provision of first-aid kit, training and estimated cost required for implementation of EMP.

The project proponent also needs to provides -

1. Separate clinic room with patient beds where injury employees can rest for a while
2. First-aid kits at operation rooms in order to give medical assistance for less severe accident at workplace
3. Write Emergency Calls Numbers clearly on notice board
4. Keep ready Standard Operation Procedure for machines and Safety Data Sheet for materials at visible working place
5. More ventilation at workplaces
6. Clean regularly to remove foul odor from toilets
7. Usage instructions and notices in two languages (Chinese and Myanmar) in order to understand clearly at work for all employees
8. Plant trees for fresh air

## 9.3 Conclusions

The positive impacts will arise from the project if well implemented and laws adhered to and will benefit all stakeholders in the region. The project proponent has promised to adhere

to prudent implementation of the environmental management plan in addition to carrying out annual environmental audits which identify and mitigate any unforeseen negative impact.

In addition, the following conclusions are drawn:

- There will be no significant negative impacts arising from the operation of the proposed development.
- The proposed development and associated infrastructure implementations are of an appropriate scale relative to the existing layout.
- The development is consistent with the national development ambitions for the area.
- No significant adverse impacts on cultural and industrial heritage arise from the development.

The Project will cause some minor environmental impacts, which will be both positive and negative. The impacts resulting from the Project include


- air emission and suspension of dust,
- increased traffic within the industrial zone due to the transportation of raw materials and products,
- increased growth in the economy of the region,
- substantial income and employment opportunities and
- reduced poverty.

Implementation of appropriate mitigation measures during operation phases will minimize the negative impacts of the project to acceptable low levels. Environmental monitoring of the project will be undertaken regularly and through the first five years of its operation to ensure that the measures are being implemented properly and in compliance with the environmental rules and regulations.

In conclusion, the project will have overall beneficial impacts in reducing air pollution, dust, and improving socioeconomic conditions along the project corridor, and will have insignificant negative impacts, which will be carefully monitored and adequately mitigated.

# Appendices

Appendix 1 Comment of ECD (Bago) on Factory Inspection



ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
စာအမှတ်.....  
ရက်စွဲ.....  
ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးမြို့

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
ညွှန်ကြားရေးမှူးရုံး  
ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးမြို့  
စာအမှတ်၊ ပဲခူး/အီးအိုင်အေ(၅၃၆၄/၂၀၂၁)  
ရက်စွဲ၊ ၂၀၂၁ ခုနှစ်၊ ဇူလိုင်လ ၁၄ ရက်


သို့

Mr. Guo Chun Wai  
Cobes Industries B.II Co.,Ltd  
ရပ်ကွက်ကြီး(၉)၊ ပဲခူးမြို့၊ ပဲခူးတိုင်းဒေသကြီး

အကြောင်းအရာ။ သဘောထားမှတ်ချက် အကြောင်းပြန်ကြားခြင်း  
ရည်ညွှန်းချက်။ (၁) ဒေါ်ခင်မာအေး ၏ (၂၆-၈-၂၀၂၀) ရက်စွဲပါ တင်ပြလျှောက်ထားစာ  
(၂) လက်ထောက်ညွှန်ကြားရေးမှူးရုံး ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ပဲခူးခရိုင်၏ (၉-၇-၂၀၂၁) ရက်စွဲပါ စာအမှတ်၊ ပဲခူးခရိုင်/အီးအိုင်အေ (၃၄၃/၂၀၂၁)

၁။ ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့နယ်၊ ရပ်ကွက်ကြီး(၉) ရှိ Cobes Industries B.II Co.,Ltd ၏ CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး(တစ်ခါသုံး)ဝတ်စုံနှင့် ကျန်းမာရေးသုံးဆက်စပ်ဝတ်စုံများ ထုတ်လုပ်ခြင်းလုပ်ငန်းအား ပုဂ္ဂလိကစက်မှုမှတ်ပုံတင် လုပ်ငန်းလိုင်စင်လျှောက်ထားရေးအတွက် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ သဘောထားမှတ်ချက်ပေးနိုင်ရန် Cobes Industries B.II Co.,Ltd မှ ရည်ညွှန်း(၁)ပါစာဖြင့် တင်ပြလာခဲ့ရာ ပဲခူးခရိုင်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ လက်ထောက်ညွှန်ကြားရေးမှူးရုံးမှ (၂-၇-၂၀၂၁) ရက်နေ့တွင် ကွင်းဆင်းစစ်ဆေးပြီး စစ်ဆေးတွေ့ရှိချက်များအား ရည်ညွှန်း (၂)ပါစာဖြင့် ပေးပို့တင်ပြလာခဲ့ပါသည်။

၂။ မြေပြင်ကွင်းဆင်းစစ်ဆေးချက်များအရ ပူးတွဲပေးပို့သည့် ပုဂ္ဂလိကစက်မှုလုပ်ငန်း ကွင်းဆင်းစစ်ဆေးချက်ပုံစံတွင် ပါဝင်သော အပိုဒ် (၂၃)ပါ ပြုပြင်ဆောင်ရွက်ရမည့် ကိစ္စရပ်များအား ပြီးစီးအောင်လိုက်နာဆောင်ရွက်ရန်နှင့် ကနဦးပတ်ဝန်းကျင်ထိန်းသိမ်းရေးစစ်ခြင်း(IEE) အစီရင်ခံစာအား ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနဆိုင်ရာ လုပ်ထုံးလုပ်နည်းပါ အချက်အလက်များနှင့်အညီ ပဲခူးတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှတစ်ဆင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ရုံးချုပ်သို့ရေးဆွဲတင်ပြရန်နှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ အတည်ပြုပြီးဖြစ်သော ကနဦးပတ်ဝန်းကျင်ထိန်းသိမ်းရေးစစ်ခြင်း(IEE) ပါအချက်အလက်များအား လိုက်နာဆောင်ရွက်ရန် ပဲခူးတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနအနေဖြင့် သဘောထားမှတ်ချက်ပြု အကြောင်းကြားပါသည်။



(ဇော်မိုး)  
ညွှန်ကြားရေးမှူး

မိတ္တူကို

ကောင်စီဝင်(၂)၊ ပဲခူးတိုင်းဒေသကြီးစီမံအုပ်ချုပ်ရေးကောင်စီ၊ ပဲခူးမြို့  
ညွှန်ကြားရေးမှူးချုပ်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ နေပြည်တော်  
ညွှန်ကြားရေးမှူး၊ စက်မှုကြီးကြပ်ရေးနှင့် စစ်ဆေးရေးဦးစီးဌာန၊ ပဲခူးတိုင်းဒေသကြီး

လက်ထောက်ညွှန်ကြားရေးမှူးရုံး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ပဲခူးခရိုင်  
ရုံးလက်ခံ  
မျှောစာတွဲ

သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ပုဂ္ဂလိကစက်မှုလုပ်ငန်းကွင်းဆင်းစစ်ဆေးချက်ပုံစံ		
၁။	ကွင်းဆင်းစစ်ဆေးသည့်ရက်စွဲ	- ၂- ၇ - ၂၀၂၁
၂။	ကွင်းဆင်းစစ်ဆေးသည့် အကြောင်းအရင်း	- ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်လျှောက်ထားရန်
၃။	စက်ရုံ/ လုပ်ငန်းအမည်	- Cobes Industries (B-II) Co;Ltd.
၄။	လုပ်ငန်းအမျိုးအစား	- CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ် ဝတ်စုံများ ထုတ်လုပ်ခြင်း လုပ်ငန်း
၅။	လုပ်ငန်းအရွယ်အစား	- အကြီးစား
၆။	ပိုင်ရှင်အမည်/ မန်နေဂျာအမည်	- Mr.Guo Chun Wei
၇။	စက်ရုံ/ လုပ်ငန်း၏ အကြောင်း	-
	(က) တည်ထောင်သည့် (ခုနှစ်/လ/ရက်)	- ၁ - ၄ - ၂၀၂၀
	(ခ) မြေဧရိယာအကျယ်အဝန်း	- (၁၆)ဧက
	(ဂ) အဆောက်အဦအကျယ်အဝန်း	- ပင်မစက်ရုံအဆောက်အဦအနေဖြင့် 2791.26 m <sup>3</sup> ရှိ (၂ ထပ်) အဆောက်အဦ (၂) လုံး၊ ရုံးခန်း အနေဖြင့် 1194 m <sup>3</sup> ရှိ (၃ ထပ်) အဆောက်အဦ(၁)လုံး ၊ လုံခြုံရေးရုံးခန်းအနေဖြင့် 328 m <sup>3</sup> ရှိ (၂ ထပ်) အဆောက်အဦ(၁)လုံးတို့အား တည်ဆောက်ထား ရှိပြီး 3360 m <sup>3</sup> ရှိ (၁ ထပ်) အဆောက်အဦ (၁) လုံးနှင့် 8640 m <sup>3</sup> ရှိ (၂ ထပ်) အဆောက်အဦ (၁) လုံး တို့အား ဆက်လက် ဆောက်လုပ်လျက် ရှိပါသည်။
	(ဃ) အဆောက်အဦအမျိုးအစား	- Steel structure နှင့် RC အသုံးပြု တည်ဆောက်ထားပါသည်။
	(င) စက်ရုံ/လုပ်ငန်း၏ ပတ်ဝန်းကျင်အခြေအနေ	- အရှေ့ဘက်တွင် မြေကွက်လပ်၊ အနောက်ဘက်တွင် မြေကွက်လပ်၊ တောင်ဘက်တွင် Jade Blue Co;Ltd ၊ မြောက်ဘက်တွင် နာရဏီသိမ်ဘုန်းကြီးကျောင်းလမ်း တို့ တည်ရှိပါသည်။

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(စ) စက်ရုံ/လုပ်ငန်း၏လိပ်စာ အပြည့်အစုံ	- မြေကွက်အမှတ် (N1၁) ၊ ကွင်းအမှတ် (၁၃၁၅) ၊ လပျောရိုးကွင်း၊ ဥဿာမြို့သစ်၊ ရပ်ကွက်ကြီး(၉)၊ ပဲခူးမြို့၊ ပဲခူးတိုင်း ဒေသကြီး။
၈။ စစ်ဆေးရသည့် အကြောင်းအရင်း	
(က) ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်ခြင်း/လိုင်စင် သက်တမ်းတိုးခြင်း	- ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်လျှောက်ထားရန်
(ခ) ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်ခြင်းဖြစ်လျှင်	- ပုဂ္ဂလိက စက်မှုလုပ်ငန်းမှတ်ပုံတင် လျှောက်ထားရန် အတွက် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ သဘောထားမှတ်ချက်ပေးရန်။
(ဂ) လိုင်စင်သက်တမ်းတိုးခြင်းဖြစ်လျှင်	- -
(ဃ) အခြား	- -
၉။ အသုံးပြုသည့် လောင်စာအမျိုးအစား	
(က) လျှပ်စစ်	- 11/0.4 KV, 500 KVA ကိုယ်ပိုင် Transformer (၁) လုံး တပ်ဆင် အသုံးပြုပါသည်။
(ခ) ဒီဇယ်အင်ဂျင်	- ကိုယ်ပိုင် Generators 600 KVA (၁)လုံး နှင့် 200 KVA (၁)လုံး တို့ကို ထားရှိ အသုံးပြုပါသည်။
(ဂ) အသုံးပြုသည့် မြင်းကောင်ရေ	- -
(ဃ) သက်ဆိုင်ရာလျှပ်စစ်ဌာန၏ ခွင့်ပြုချက်ရရှိမှု	- စက်မှုကြီးကြပ်ရေးနှင့် စစ်ဆေးရေးဦးစီးဌာန၏ လျှပ်စစ်ဓာတ်အားအသုံးပြုခြင်းဆိုင်ရာ အန္တရာယ်ကင်းရှင်းကြောင်းလက်မှတ် - EI/BR (ပခ-၄၅၅) ရရှိပြီး ဖြစ်ပါသည်။
(င) အခြား	- -
၁၀။ အလုပ်သမား/ ဝန်ထမ်း/ နေ့စား	
(က) အရေအတွက်(ကျား)	- (၄၆) ယောက်
(ခ) အရေအတွက်(မ)	- (၇၀၂) ယောက်
(ဂ) အသက်အရွယ်အပိုင်းအခြား	- (၁၈)နှစ် အထက်
၁၁။ ကုန်ကြမ်း	
(က) အသုံးပြုသည့်ကုန်ကြမ်း	- ပိတ်စအလိပ်များ၊ တံဆိပ်များ၊ ကပ်ခွာများ။



၃	
အမျိုးအစား	အသုံးပြုပါသည်။
(ခ) ကုန်ကြမ်းရရှိမှုအခြေအနေ	- တရုတ်ပြည်သူ့သမ္မတနိုင်ငံနှင့် ယူတိုးပီးယား နိုင်ငံ အပြင် ပြည်တွင်းမှလည်း ဝယ်ယူရရှိပါသည်။
(ဂ) ကုန်ကြမ်းသယ်ဆောင်သည့် စနစ်	- ကုန်ကြမ်းများကို ပင်လယ်ဆိပ်ကမ်းမှတစ်ဆင့် စက်ရုံသို့ ကားဖြင့် သယ်ယူပို့ဆောင်ပါမည်။
(ဃ) ကုန်ကြမ်းသိုလှောင်ထားရှိမှု စနစ်	- ပိတ်လိပ်များနှင့် ကုန်ကြမ်းများအား စက်ရုံ အတွင်း Warehouse တွင် သိုလှောင်ထားရှိ ပါ သည်။
၁၂။ ထုတ်လုပ်မှုနည်းစနစ်	
(က) စက်ပစ္စည်းကိရိယာကိုအသုံးပြုခြင်း	- အသုံးပြုပါမည်။
(ခ) လုပ်သားအင်အားကိုအသုံးပြုခြင်း	- အသုံးပြုပါမည်။
(ဂ) စက်ပစ္စည်းကိရိယာ/လုပ်သားအင်အားနှစ်မျိုးစလုံးကို အသုံးပြုခြင်း	- စက်အင်အားနှင့် လုပ်သားအင်အား (၂) မျိုးစလုံး အသုံးပြုပါမည်။
(ဃ) အသုံးပြုသည့်စက်ပစ္စည်းအမျိုးအစားများနှင့်အရေအတွက်	- Sewing Machine (၅၄၉) လုံး၊ Ultrasonic Welding Machine (၇၂) လုံး၊ Lace Machine (၃၈)လုံး၊ Cut Belt Machine (၂)လုံး၊ ကော်မှုတ်စက် (၅) လုံး၊ အပူကော်မှုတ်စက်(၂) လုံး၊ ခါးကြိုးရိုက်စက် (၄) လုံး၊ Exhaust Sealing Machine (၂)လုံး၊ Needle test Machine (၂)လုံး၊ Continuous sealing Machine (၂)လုံး၊ Suction Head Machine (၁၈)လုံး စသည်ဖြင့် စက်ပစ္စည်း အမျိုးမျိုးတို့ကို အသုံးပြုပါသည်။
၁၃။ ကုန်ချော	
(က) ကုန်ချောထွက်ရှိမှုပမာဏ	- တစ်ရက်လျှင် ကုန်ချော အထည်အရေအတွက် (၃၀,၀၀၀) ခန့် ချုပ်လုပ်ပါသည်။
(ခ) ကုန်ချောသိုလှောင်ထားရှိမှု	- ကုန်ချောများအား စက်ရုံအတွင်းရှိ ကုန်ချော သိုလှောင်ရုံအတွင်းတွင် သိုလှောင်ထားရှိပါသည်။
(ဂ) တင်ပို့ရောင်းချမှုအခြေအနေ	- ကုန်ချောများအား ဥရောပနိုင်ငံသို့ တင်ပို့

	၄	
		ရောင်းချပါသည်။
၁၄။ စွန့်ပစ်ပစ္စည်း		
(က) စွန့်ပစ်ပစ္စည်းအမျိုးအစားများ	-	Production ပိုင်းမှ ပိတ်လိပ်ဖြတ်စညှပ်စများ၊ ပိတ်လိပ်ကတ္တူခွံများ၊ ကပ်ခွာအတိုအစနှင့် အပျက်များ၊ တံဆိပ်အပျက်များ၊ ကတ္တူဖာများ၊ လုပ်ငန်းသုံး စွန့်ပစ်ပစ္စည်းများနှင့် ဝန်ထမ်းများ အသုံးပြုခြင်းမှ ရေဘူး၊ ပလတ်စတစ်၊ မုန့်ခွံများ စသည့် စွန့်ပစ်အမှိုက်များ ထွက်ရှိပါသည်။
(ခ) အစိုင်အခဲထွက်ရှိလျှင် ပမာဏ	-	Production ပိုင်းမှ ဖြတ်စ၊ ညှပ်စ အပါအဝင် လုပ်ငန်းသုံး စွန့်ပစ်ပစ္စည်းများ တစ်ရက်လျှင် ဆာလာအိတ် (၆) အိတ်ခန့်၊ ဝန်ထမ်းများ အသုံးပြုခြင်းမှ စွန့်ပစ်အမှိုက်များ တစ်ရက်လျှင် ဆာလာအိတ် (၂)အိတ်ခန့် ထွက်ရှိပါသည်။
(ဂ) အရည်ထွက်ရှိလျှင် ပမာဏ	-	Production ပိုင်းမှ ရေသုံးစွဲမှုမရှိသော်လည်း ဝန်ထမ်းများ အသုံးပြုခြင်းမှ တစ်နေ့လျှင် (၅၀) ဂါလံခန့် ထွက်ရှိပါသည်။
(ဃ) အနံ့ထွက်ရှိမှုအခြေအနေ	-	-
(င) ဆူညံသံထွက်ရှိမှုအခြေအနေ	-	လုပ်ငန်းသဘောသဘာဝအရ စက်များလည်ပတ်ခြင်းမှ ဆူညံသံအနည်းငယ် ထွက်ရှိပါသည်။
(စ) အခိုးအငွေ့ထွက်ရှိမှုအခြေအနေ	-	-
(ဆ) စွန့်ပစ်ပစ္စည်းများကိုထားရှိမှုစနစ်	-	Production ပိုင်းမှထွက်ရှိလာသော ဖြတ်စ၊ညှပ်စများနှင့် လုပ်ငန်းသုံးစွန့်ပစ်ပစ္စည်းများကို မစွန့်ပစ်မီ စက်ရုံအတွင်း အမှိုက်ပိုဒေါင်တွင် သီးသန့် ထားရှိပြီး ဝန်ထမ်းသုံး စွန့်ပစ်အမှိုက်များကို အမှိုက်ပုံးများဖြင့် ထားရှိပါသည်။
(ဇ) စွန့်ပစ်ပစ္စည်းများကိုစွန့်ပစ်သည့်စနစ်	-	ဖြတ်စ၊ ညှပ်စများ ၊ လုပ်ငန်းသုံးစွန့်ပစ်ပစ္စည်းများနှင့် ဝန်ထမ်းသုံး စွန့်ပစ်အမှိုက်များအား မြို့နယ်စည်ပင်သာယာရေးအဖွဲ့နှင့် ချိတ်ဆက်၍ တစ်လ(၂) ကြိမ် စွန့်ပစ်ပါသည်။
(ဈ) စွန့်ပစ်ရေကို ပြန်လည်သန့်စင်သည့်စနစ်	-	ဝန်ထမ်းများအသုံးပြုခြင်းမှ ထွက်ရှိသည့်စွန့်ပစ်ရေများကို စက်ရုံဘေးရှိ စက်မှုဇုန်ရေမြောင်း

	၅	
		အတွင်းသို့ တိုက်ရိုက် စွန့်ပစ်ပါသည်။
၁၅။	စွန့်ပစ်ပစ္စည်းများကြောင့် ပတ်ဝန်းကျင် ထိခိုက်နိုင်မှု	- ထိခိုက်နိုင်ပါသည်။
၁၆။	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် ရေးဆွဲထားရှိမှုအခြေအနေ	- မရှိပါ။
၁၇။	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ရေး ဆွဲထားခြင်းရှိပါက တင်ပြရန်	- မရှိပါ။
၁၈။	ဝန်ထမ်းများအတွက်ဆောင်ရွက်ထားရှိမှု	
	(က) လူမှုရေး	- လူမှုဖူလုံရေးကဒ်များ ပြုလုပ်ပေးထား၍ ဝန်ထမ်း များ၏ လူမှုဖူလုံရေးအတွက် အပြည့်အဝ ဆောင်ရွက်ပေးထားပြီး ဝန်ထမ်း ကြို / ပို့ ယာဉ် များ စီစဉ် ဆောင်ရွက်ထားပါသည်။
	(ခ) ကျန်းမာရေး	- စက်ရုံအတွင်း သူနာပြု (၁) ဦးထားရှိ၍ ဝန်ထမ်း များ၏ ကျန်းမာရေးအတွက် ဆောင်ရွက်ပေးလျက် ရှိပါသည်။
	(ဂ) စီးပွားရေး	- စက်ရုံရှိ ဝန်ထမ်းများအနေဖြင့် တစ်ရက်လုပ်ခ (၄၈၀/-) မှ စတင်၍ လုပ်ငန်းကျွမ်းကျင်မှုပေါ် မူတည်ပြီး အကျိုးခံစားခွင့် ပေးပါသည်။
	(ဃ) လုပ်ငန်းခွင်ဘေးအန္တရာယ် ကင်းရှင်းရေး	- လုပ်ငန်းခွင် အန္တရာယ်ကင်းရှင်းရေး အတွက် (နှာခေါင်းစည်း၊ လက်အိတ်၊ ဖိနပ်၊ ဦးထုပ်၊ ဝတ်စုံ) စသည့် Personal Protective Equipment (PPE) များ ထုတ်ပေးထားပါသည်။
၁၉။	မီးဘေးအန္တရာယ်ကာကွယ်ထားရှိမှု စနစ်	- မီးဘေးအန္တရာယ် ကာကွယ်ရေး အနေဖြင့် မီးသတ်ဆေးဘူး 5kg (၄)ဘူး၊ 3kg (၅၈)ဘူး နှင့် Fire Hydrate System ၊ Auto Sprinkler များ တပ်ဆင်ဆောင်ရွက်ထားပြီး မီးသတ်ရေကန် အနေဖြင့် (၄၂၀၀၀) ဂါလံဆုံ မြေအောက်ကန် (၁)ကန် အပြင် မီးသတ်ဦးစီးဌာန၏ ညွှန်ကြားချက်၊ လမ်းညွှန်ချက်များအတိုင်း ဆောင်ရွက်ထားပါ သည်။

၂၀။ လိုက်နာဆောင်ရွက်ရမည့် ဥပဒေ၊ နည်းပဒေနှင့် လုပ်ထုံးလုပ်နည်းများ

သက်ဆိုင်ရာဌာနများ၏ တည်ဆဲဥပဒေ၊ နည်းဥပဒေ၊ အမိန့်ညွှန်ကြားချက်များ အပြင် ပြဋ္ဌာန်းထားသည့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ ဥပဒေ ၊ နည်းဥပဒေများ၊ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း ၊ အမျိုးသားပတ်ဝန်းကျင် ဆိုင်ရာအရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် အညီ လိုက်နာကျင့်သုံး အကောင်အထည်ဖော် ဆောင်ရွက်သွားရန် လိုအပ်ပါသည်။

၂၁။ စစ်ဆေးတွေ့ရှိချက်များ

ကွင်းဆင်းစစ်ဆေးချက်များအရ အောက်ပါအတိုင်း တွေ့ရှိရပါသည် -

- (က) Cobes Industries (B-II) Co ;Ltd သည် ပဲခူးတိုင်းဒေသကြီး ၊ ပဲခူးခရိုင် ၊ ပဲခူးမြို့၊ မြေကွက်အမှတ် (N1၁) ၊ ကွင်းအမှတ် (၁၃၁၅) ၊ လဖျော့ရိုးကွင်း၊ ဥဿာမြို့သစ်၊ ရပ်ကွက်ကြီး(၉) တွင် တည်ရှိပြီး CMP စနစ် ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ်ဝတ်စုံများ ထုတ်လုပ်ခြင်းလုပ်ငန်း တစ်ခု ဖြစ်ပါသည်။
- (ခ) Cobes Industries (B-II) Co ; Ltd သည် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ်ဝတ်စုံများ ထုတ်လုပ်ရန်အတွက် Sewing Machine (၅၄၉) လုံး၊ Ultrasonic Welding Machine (၇၂) လုံး၊ Lace Machine (၃၈)လုံး၊ Cut Belt Machine (၂)လုံး၊ ကော်မှုတ် စက် (၅) လုံး၊ အပူကော်မှုတ်စက်(၂) လုံး၊ ခါးကြိုး ရိုက်စက် (၄) လုံး၊ Exhaust Sealing Machine (၂)လုံး၊ Needle test Machine (၂)လုံး၊ Continu- ous sealing Machine (၂)လုံး၊ Suction Head Machine (၁၈)လုံး စသည့် စက်ပစ္စည်းများအား 11/0.4 KV, 500 KVA ကိုယ်ပိုင် Transformer (၁) လုံး အသုံးပြု၍ လည်ပတ် မည်ဖြစ်ပြီး လျှပ်စစ် ဓာတ်အားပြတ်တောက်ပါက ကိုယ်ပိုင် Generators 600 KVA (၁)လုံး နှင့် 200 KVA (၁)လုံးတို့ကို အသုံးပြုသွားမည်ဖြစ်ကြောင်း စစ်ဆေးသိရှိရ ပါသည်။
- (ဂ) ကုန်ကြမ်းများအနေဖြင့် ပိတ်စအလိပ်များ၊ တံဆိပ်များ၊ ကပ်ခွံများ စသည်တို့ကို တရုတ်ပြည်သူ့သမ္မတနိုင်ငံနှင့် ယူတိုးပီးယားနိုင်ငံ အပြင် ပြည်တွင်းမှလည်း ဝယ်ယူ ၍ ပင်လယ်ရေကြောင်းမှသယ်ယူပြီး စက်ရုံသို့ ကုန်းလမ်းမှတစ်ဆင့် ဖော်တော်ယာဉ် ဖြင့် သယ်ယူအသုံးပြုမည်ဖြစ်ကြောင်း သိရှိရပါသည်။
- (ဃ) စက်ရုံသို့ရောက်ရှိလာသော ကုန်ကြမ်းများကို ပထမဦးစွာ စက်ရုံအတွင်းရှိ ကုန်ကြမ်း သိုလှောင်ရုံတွင် သိုလှောင်သိမ်းဆည်းပါသည်။ ထို့နောက် (IQC) တွင် ကုန်ကြမ်း

၇

အရည်အသွေး ပြည့် / မပြည့် စစ်ဆေးပါသည်။ စစ်ဆေးပြီး အရည်အသွေး ပြည့်မှီ သော အထည်အလိပ်များကို ဂိုထောင်သို့ စာရင်းသွင်းပို့ဆောင်ပါသည်။ ထို့နောက် ကုန်ချောစတင် ထုတ်လုပ်ရန်အတွက် အဆိုပါ ကုန်ကြမ်းများအား (Cutting Department) ပိတ်ဖြတ်ဌာန သို့ပို့၍ သတ်မှတ်ထားသော ပုံစံများ၊ အရွယ်အစား များရအောင် စတင်ဖြတ်တောက်ပါသည်။ ထိုသို့ဖြတ်တောက်ပြီးသော အထည် ဖြတ်စများကို Sewing Line သို့ ပို့၍ စတင်ချုပ်လုပ်ပါသည်။ ထို့နောက် ချုပ်လုပ် ပြီးသော အထည်များအား အထည်ခေါက်ဌာနသို့ ပို့၍ အထည်ခေါက်စေပါသည်။ ထို့နောက် အဆိုပါ အထည်များအား (QC) တွင် အရည်အသွေး စစ်ဆေးခြင်း ဆောင်ရွက်၍ သတ်မှတ်ချက်အတိုင်း ပြည့်မီသော အထည်များအား (Packing Department ) ထုတ်ပိုးခြင်းများပြုလုပ်ပါသည်။ ရရှိလာသော ကုန်ချောများအား စက်ရုံအတွင်းရှိ ကုန်ချော သိုလှောင်ရုံတွင် သိမ်းဆည်းပါသည်။ ထို့နောက် အဆိုပါ ကုန်ချောများအား ဆိပ်ကမ်းသို့ မတင်ပို့မီ Final QC Department တွင် ထပ်မံ စစ်ဆေးပြီးနောက် ဥရောပနိုင်ငံသို့ တင်ပို့ရောင်းချလျက်ရှိသော လုပ်ငန်းတစ်ခု ဖြစ်ကြောင်း စစ်ဆေးသိရှိရပါသည်။

- (င) Production ပိုင်းတွင် ရေသုံးစွဲမှုမရှိသော်လည်း ဝန်ထမ်းများ အသုံးပြုရန်အတွက် (အကျယ် ၆ လက်မ x အနက် ၂၅၀ ပေ)ရှိ အဝီစိတွင်း (၁)တွင်းမှ ရယူ၍(၃၀၀၀၀) ဂါလံ ဝင်ဆုံးသော မြေအောက်ကန် (၁) ကန် တွင် သိုလှောင်၍ အသုံးပြုကြောင်း သိရှိရပါသည်။
- (စ) ထုတ်လုပ်မှုနည်းစဉ်တွင် ရေသုံးစွဲမှုမရှိသော်လည်း ဝန်ထမ်းများ အသုံးပြုရာမှ ထွက်ရှိလာသော စွန့်ပစ်ရေ (Domestic Waste Water) များကို စက်ရုံ ဘေး ပတ်လည် ရေမြောင်းမှတစ်ဆင့် စက်ရုံအရှေ့ဘက်ရှိ စက်မှုဇုန် ရေမြောင်းအတွင်း သို့ စွန့်ထုတ် လျက်ရှိကြောင်း သိရှိရပါသည်။
- (ဆ) စွန့်ပစ်ပစ္စည်းအနေဖြင့် Production ပိုင်းမှ ပိတ်လိပ်ဖြတ်စဉ်ပစ္စည်းများ၊ ပိတ်လိပ် ကတ္တူခွံများ၊ ကပ်ခွာအတိုအစနှင့် အပျက်များ၊ တံဆိပ်အပျက်များ ၊ ကတ္တူဖာများ၊ လုပ်ငန်းသုံးစွန့်ပစ်ပစ္စည်းများနှင့် ဝန်ထမ်းများ အသုံးပြုခြင်းမှ ရေဘူး၊ ပလတ်စတစ်၊ မုန့်ခွံများ စသည့် စွန့်ပစ်အမှိုက်များ မြို့နယ်စည်ပင်သာယာရေးအဖွဲ့နှင့် ချိတ်ဆက်၍ စွန့်ပစ်ကြောင်း စစ်ဆေးသိရှိရပါသည်။

၂၂။ သုံးသပ်ချက်များ

- (က) Cobes Industries (B-II) Co ; Ltd သည် CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး(တစ်ခါသုံး)ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ်ဝတ်စုံများ ထုတ်လုပ် သောလုပ်ငန်းဖြစ်ပြီး Productionပိုင်းမှ ကုန်ကြမ်းဖြစ်သော ပိတ်လိပ်ဖြတ်စ

ညှပ်စများ၊ ပိတ်လိပ်ကတ္တူများ၊ ကပ်ခွာအတိုအစနှင့် အပျက်များ၊ တံဆိပ် အပျက်များ၊ ကတ္တူဖာများ၊ လုပ်ငန်းသုံးစွန့်ပစ်ပစ္စည်းများနှင့် ဝန်ထမ်းများ အသုံး ပြုခြင်းမှ ရေဘူး၊ ပလတ်စတစ်၊ မုန့်ခွံများ စသည့် ဝန်ထမ်းသုံးစွန့်ပစ်အမှိုက်များ ထွက်ရှိနိုင်ကြောင်း သုံးသပ်ရပါသည်။

- (ခ) Productionပိုင်းတွင် ရေသုံးစွဲမှုမရှိသော်လည်း ဝန်ထမ်းများ အသုံးပြုရာမှ စွန့်ပစ် ရေများ၊ စီးဆင်းရေများ ထွက်ရှိနိုင်ကြောင်း သုံးသပ်ရပါသည်။
- (ဂ) လုပ်ငန်းသဘာဝအရ စက်များလည်ပတ်ခြင်း၊ လျှပ်စစ်မီးပြတ်တောက်ချိန်တွင် Generator အသုံးပြုခြင်းမှ ဆူညံသံအနည်းငယ် ထွက်ရှိနိုင်ပါသည်။ သို့ဖြစ် ပါ၍ အဆိုပါ လုပ်ငန်းလုပ်ကိုင်ဆောင်ရွက်ခြင်းဖြင့် ပတ်ဝန်းကျင်အား အနည်းငယ် ထိခိုက်မှုရှိနိုင်ပါကြောင်း သုံးသပ်ရပါသည်။

၂၃။ အကြံပြုချက်များ

- (က) မီးဘေးအန္တရာယ်ကာကွယ်ရေးအတွက် လုပ်ငန်းလည်ပတ်ရာတွင် အသုံးပြုမည့် ကုန်ကြမ်းများအား သီးသန့်ဂိုဒေါင်များအတွင်း စနစ်တကျထည့်သွင်း သိုလှောင် သွားရန်၊ ဂိုဒေါင်များအတွင်းတွင် အလိုအလျောက်မီးငြိမ်းသတ်သည့် စနစ် တပ်ဆင်ခြင်း၊ မီးငြိမ်းသတ်စက်၊ မီးသတ်ရေပိုက်နှင့် မီးသတ်ဆေးဘူးများကို မီးသတ်ဦးစီးဌာနမှ သတ်မှတ်ပေးသည့်အတိုင်း လုံလောက်စွာထားရှိသွားရန်နှင့် ဝန်ထမ်းများအား စနစ်တကျကိုင်တွယ် အသုံးပြုတတ်စေရေးအတွက် မီးသတ် ဦးစီးဌာနသို့ အကူအညီတောင်းခံ၍ သင်ကြားပြသထားခြင်း၊ အပတ်စဉ်၊ လစဉ် မီးငြိမ်းသတ်မှုဇာတ်တိုက် လေ့ကျင့်ခန်းများပြုလုပ်ခြင်းကို ဆောင်ရွက်သွားရန်၊ မီးဘေးလုံခြုံရေးစီမံချက် ရေးဆွဲထားရှိရန်နှင့် မီးသတ်ဦးစီးဌာန၏ လမ်းညွှန်ချက် များအတိုင်း တိကျစွာ လိုက်နာဆောင်ရွက်သွားရန်၊
- (ခ) ဝန်ထမ်းများခန့်ထားရာတွင် ဒေသခံဝန်ထမ်းများအား ဦးစားပေးခန့်အပ်သွားရန်၊
- (ဂ) ဝန်ထမ်းများ၏ ကျန်းမာရေးနှင့် လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးအတွက် ကာကွယ်ရေးဝတ်စုံများ (နှာခေါင်းစည်း၊ လက်အိပ်၊ ဖိနပ်၊ ဦးထုပ်၊ ဝတ်စုံ၊ နားကြပ် ကိရိယာ) စသည့် Personal Protective Equipment (PPE) များ ထုတ်ပေးထားပြီး လုပ်ငန်းခွင်အတွင်း ဝတ်ဆင်စေရေးနှင့် အန္တရာယ်ကင်းရှင်းစေရေးအတွက် စနစ် တကျ ကြီးကြပ်ကွပ်ကဲသွားရန်နှင့်အခါအားလျော်စွာဝန်ထမ်းများအား ကျန်းမာရေး စစ်ဆေးမှုများ ပြုလုပ်ပေးသွားရန်၊
- (ဃ) ထွက်ရှိလာသော လုပ်ငန်းခွင်သုံး စွန့်ပစ်ပစ္စည်းများ နှင့် ဝန်ထမ်းသုံး စွန့်ပစ်အမှိုက် များအား မစွန့်ပစ်မီ စနစ်တကျသိုလှောင်သိမ်းဆည်းရန်၊ စွန့်ပစ်ပါက သက်ဆိုင် ရာ မြို့နယ်စည်ပင်သာယာရေးအဖွဲ့ဖြင့် ချိတ်ဆက်၍ သတ်မှတ်နေရာ အရောက်

၉

စွန့်ပစ်ရန်နှင့် ပြန်လည်အသုံးပြု၍ရသော စွန့်ပစ်အမှိုက်များအား တက်နိုင်သမျှ ပြန်လည်အသုံးပြုခြင်း ဆောင်ရွက်ရန်၊



- (င) စက်ရုံလည်ပတ်ရာမှ ထွက်ရှိလာသော ဆူညံသံများကြောင့် ပတ်ဝန်းကျင် ဒေသခံများအား ပတ်ဝန်းကျင်ထိခိုက်မှု၊ လူမှုရေးထိခိုက်မှုနှင့် ကျန်းမာရေး ထိခိုက်မှုများ မရှိစေဘဲ သဟဇာတဖြစ်စေရေး ဆောင်ရွက်သွားရန်နှင့် ပတ်ဝန်းကျင် သန့်ရှင်းသယာလှပစေရေးနှင့် ကျန်းမာရေးအတွက် စက်ရုံဝင်း အတွင်း အရိပ်ရအပင်များ၊ သစ်ပင်၊ ပန်းမန်များ စိုက်ပျိုးရန်၊
- (စ) လူမှုရေးဆိုင်ရာ တာဝန်ခံမှု (Corporate Social Responsibility - CSR) အတွက် လူမှုရေး၊ ကျန်းမာရေး၊ ရပ်ရေး၊ ရွာရေးလုပ်ငန်းများတွင် ကူညီထောက်ပံ့ဖြည့်ဆည်း ဆောင်ရွက်ပေးရန်၊
- (ဆ) လုပ်ငန်းခွင်အမျိုးအစားပေါ်မူတည်၍ သတိပေးအန္တရာယ်ဖော်ပြချက်၊ သတိပေးအမှတ်အသားဆိုင်းဘုတ်များကို စက်ရုံအတွင်းလိုအပ်သည့်နေရာများတွင် ချိတ်ဆွဲသတိပေးခြင်းများ ဆောင်ရွက်သွားရန်၊
- (ဇ) ခန့်အပ်မည့်ဝန်ထမ်းဦးရေနှင့် လုံလောက်သည့် စက်ရုံအဆောက်အအုံ အကျယ်အဝန်း၊ အပူချိန်၊ လေကောင်းလေသန့် ရရှိအောင်ဆောင်ရွက်ရန်၊ ဝန်ထမ်းများ၏ လုပ်ငန်းခွင်အသွား/အပြန်ခရီး အတွက် ဘေးကင်းလုံခြုံစွာဆောင်ရွက်ပေးရန်၊ အလုပ်သမားများ၏ စိတ်ပိုင်းဆိုင်ရာ၊ ရုပ်ပိုင်းဆိုင်ရာလုံခြုံမှုအတွက် အလေးထား ဆောင်ရွက်ပေးရန်၊
- (ဈ) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ပုဒ်မ ၁၄ အရ ညစ်ညမ်းမှုကိုစတင်ဖြစ်ပေါ်စေသူသည် ပတ်ဝန်းကျင်တွင်ညစ်ညမ်းမှုကို ဖြစ်စေသည့်ပစ္စည်းများအား သတ်မှတ်ထားသည့် ပတ်ဝန်းကျင်အရည်အသွေး စံချိန်စံညွှန်းများနှင့်အညီ သတ်မှတ်ချက်များ အတိုင်းသန့်စင်ခြင်း၊ ထုတ်လွှတ်ခြင်း၊ စွန့်ပစ်ခြင်းနှင့် စုပုံခြင်းများပြုလုပ်ရန်၊
- (ည) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ပုဒ်မ ၁၅ အရ ညစ်ညမ်းမှုကို စတင်ဖြစ်ပေါ်စေသည့် လုပ်ငန်း၊ ပစ္စည်း သို့မဟုတ် နေရာတစ်ခုခု၏ ပိုင်ရှင် သို့မဟုတ် လက်ရှိဖြစ်သူသည် ပတ်ဝန်းကျင်ညစ်ညမ်းမှုများကို စောင့်ကြပ်ကြည့်ရှုရန်၊ ထိန်းချုပ်ရန်၊ စီမံခန့်ခွဲရန်၊ လျှော့ချရန် သို့မဟုတ် ပပျောက်စေရန် လုပ်ငန်းခွင် အထောက်အကူပြုပစ္စည်း သို့မဟုတ် ထိန်းချုပ်ရေးပစ္စည်းကိရိယာကို တပ်ဆင်ခြင်း သို့မဟုတ် သုံးစွဲခြင်းပြုရန်၊ ယင်းသို့ ဆောင်ရွက်ခြင်းမပြုနိုင်ပါက စွန့်ပစ်ပစ္စည်းများအား ပတ်ဝန်းကျင်ကို မထိခိုက်စေသော နည်းလမ်းများနှင့်အညီ စွန့်ပစ်နိုင်ရေးစီစဉ်ဆောင်ရွက်ရန်၊
- (ဋ) Cobes Industries (B-II) Co.,Ltd သည်CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော

သောလုပ်ငန်းတစ်ခုဖြစ်ပြီး လုပ်ငန်းဆောင်ရွက်ခြင်းနှင့် ပတ်သက်၍ ပဲခူးတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ ပဲခူးတိုင်းဒေသကြီး ရင်းနှီးမြုပ်နှံမှုကော်မတီသို့(၁၃-၉-၂၀၁၉)ရက်စွဲပါစာအမှတ်၊ပဲခူး/သယံဇာတ(၁၆၀၆/ ၂၀၁၉) စာဖြင့် သဘောထားမှတ်ချက်ပြန်ကြားထားခဲ့သည့်အတိုင်း ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများနှင့်အညီ ရေးဆွဲရမည့် ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်း အစီအစဉ် (Initial Environmental Examination - IEE) အစီရင်ခံစာ ကို ရေးဆွဲဆောင်ရွက်သွားရန်နှင့် ရေးဆွဲပြီး ပြန်လည်တင်ပြသွားရန်၊

- (၄) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ အခါအားလျော်စွာ ဝင်ရောက်စစ်ဆေးပါက စစ်ဆေးခံနိုင်ရေး ဆောင်ရွက်ထားရှိရန်၊
- (၅) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ ဥပဒေ၊ နည်းဥပဒေများ၊ လုပ်ထုံးလုပ်နည်းများနှင့်အခါအားလျော်စွာ ထုတ်ပြန်သောအမိန့်၊ ညွှန်ကြားချက်များအား အတိအကျလိုက်နာဆောင်ရွက်သွားရန်၊

၂၄။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ သဘောထားမှတ်ချက်များ

မြေပြင်ကွင်းဆင်းစစ်ဆေးချက်များအရ ပူးတွဲပါ ကွင်းဆင်းစစ်ဆေးချက်ပုံစံတွင် ပါဝင်သောအပိုဒ်(၂၃)ပါ ပြုပြင်ဆောင်ရွက်ရမည့်ကိစ္စရပ်များအား ပြီးစီးအောင် လိုက်နာဆောင်ရွက်ရန်၊ ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းအစီအစဉ် (Initial Environmental Examination - IEE) အစီရင်ခံစာ အား ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းပါ အချက်အလက်များနှင့်အညီ ပဲခူးတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှတစ်ဆင့် သယံဇာတနှင့်သဘာဝ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ရုံးချုပ်၊ နေပြည်တော်သို့အစီရင်ခံစာရေးသားတင်ပြရန်နှင့် ၎င်းအစီရင်ခံစာနှင့်ပတ်သက်၍ ညွှန်ကြားချက်များအတိုင်း ဆက်လက်လိုက်နာဆောင်ရွက်ရန် Cobes Industries (B-II) Co;Ltd သည် CMP စနစ်ဖြင့် ပိုးမသတ်ထားသောခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး)ဝတ်စုံနှင့် ကျန်းမာရေးသုံးဆက်စပ်ဝတ်စုံများထုတ်လုပ်သောလုပ်ငန်းအတွက် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ သဘောထားမှတ်ချက်အား ပေးပို့အကြောင်းကြားပါသည်။

(ပိုင်ရှင်)		(စစ်ဆေးသူ)	
လက်မှတ်	-	လက်မှတ်	-
အမည်	- ဇော်မာဇော်	အမည်	-
မှတ်ပုံတင်အမှတ်	- ၇၂၀၁၄၆၅၆၁ ၁၇၇၄၅၆	ရာထူး	-
နေရပ်လိပ်စာ	- ၁၂၅၀၇၆၁၅၁၊ လှေကားရုံကွင်း၊ ဧရာဝတီ-ဆက်မူလုံ၊ ပဲခူး	ဌာန	-

(ဇော်ပိုး)  
ညွှန်ကြားရေးမှူး  
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန  
ပဲခူးတိုင်းဒေသကြီးရုံး



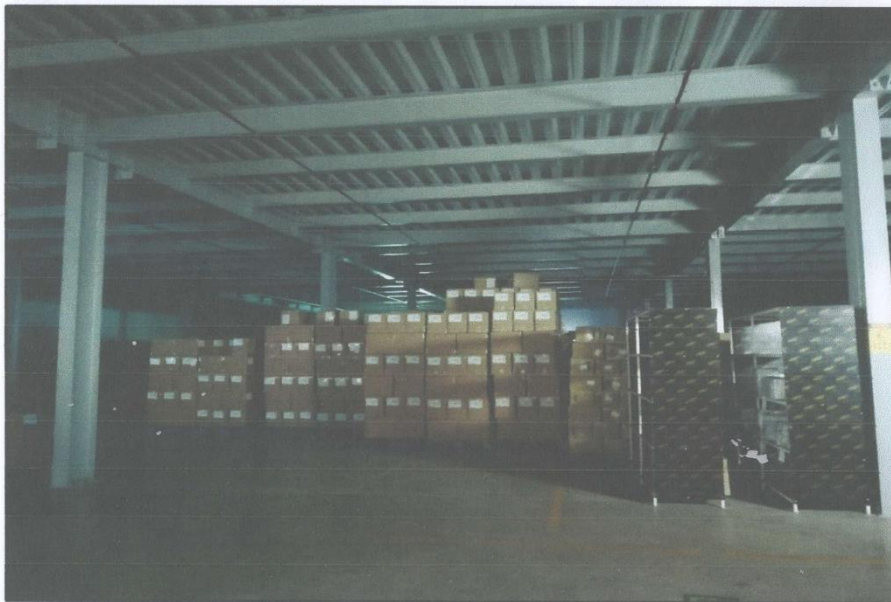
ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့နယ်၊ ရပ်ကွက်ကြီး(၉)ရပ်ကွက်၊ ကွင်းအမှတ်(၁၃၁၅)၊ လဖျော်ရိုးကွင်း၊ မြေကွက်အမှတ်( N1၁) ရှိ Cobes Industries (B-II) Co;Ltd. ၏ CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ်ဝတ်စုံများ ထုတ်လုပ်ခြင်း လုပ်ငန်းအား ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်လျှောက်ထားရန်အတွက် ပဲခူးခရိုင်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ (၂-၇-၂၀၂၁) ရက်နေ့တွင် မြေပြင်ကွင်းဆင်းစစ်ဆေးခြင်း မှတ်တမ်းဓာတ်ပုံ



ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့နယ်၊ ရပ်ကွက်ကြီး(၉)ရပ်ကွက်၊ ကွင်းအမှတ်(၁၃၁၅)၊ လပျော်ရိုးကွင်း၊ မြေကွက်အမှတ်( N1၁) ရှိ Cobes Industries (B-II) Co;Ltd. ၏ CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ်ဝတ်စုံများ ထုတ်လုပ်ခြင်း လုပ်ငန်းအား ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်လျှောက်ထားရန်အတွက် ပဲခူးခရိုင်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ (၂-၇-၂၀၂၁) ရက်နေ့တွင် မြေပြင်ကွင်းဆင်းစစ်ဆေးခြင်း မှတ်တမ်းဓာတ်ပုံ




ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့နယ်၊ ရပ်ကွက်ကြီး(၉)ရပ်ကွက်၊ ကွင်းအမှတ်(၁၃၁၅)၊  
လဖျော်ရိုးကွင်း၊ မြေကွက်အမှတ်( N1၁) ရှိ Cobes Industries (B-II) Co;Ltd. ၏  
စက်ရုံအတွင်း ကုန်ကြမ်းများ သိုလှောင်ထားရှိသည့် နေရာ




ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့နယ်၊ ရပ်ကွက်ကြီး(၉)ရပ်ကွက်၊ ကွင်းအမှတ်(၁၃၁၅)၊  
လဖျော်ရိုးကွင်း၊ မြေကွက်အမှတ်( N1၁) ရှိ Cobes Industries (B-II) Co;Ltd. ၏  
စွန့်ပစ်အမှိုက်များ သီးသန့်သိုလှောင်ထားရှိသည့် နေရာ



## Appendix 2 Certificate for Transitional Consultant Registration of Organization



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



No. 0006 Date 01 JUL 2017

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 အဖွဲ့အစည်းအား ထုတ်ပေးလိုက်သည်။)

(a) Name of Organization (အဖွဲ့အစည်းအမည်)	Green Myanmar Environmental Services Co., Ltd.
(b) Name of the representative in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ အမည်)	Engr. U Sein Thaug Oo
(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/ Ma Ya Ka (N) 082871
(e) Address of organization (ဆက်သွယ်ရန်လိပ်စာ)	115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon. <a href="mailto:gmescompany@gmail.com">gmescompany@gmail.com</a> , 09 5122448
(f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Organization
(g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

**EXTENSION**  
 သက်တမ်းတိုးပေးခြင်း

The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)  
 ဤလက်မှတ်အား (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်အထက်သား တိုးပေးခြင်း

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

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

**Areas of Expertise Permitted**  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control
2. Facilitation of meeting
3. Meteorology, Modeling for Air Quality
4. Risk Assessment and Hazard Management
5. Socio-Economy
6. Water Pollution Control
7. Waste Management
8. Chemical Engineering Plant Design
9. Chemical Engineering Process Design
10. Chemical Engineering, Laboratory Analysis for water and waste water
11. Environmental Management
12. Industrial Management


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

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)  
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လ သက်တမ်းတိုးမြှင့်သည်။  
*Soe Naing*  
12.6.2019  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

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

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)  
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။  
*Soe Naing*  
12.1.2021  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

### Appendix 3 Certificate for Transitional Consultant Registration of Personal



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



No. **0019**

Date **14 / 03 / 2018**

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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Engr. U Kyaw Soe Win
(b) Citizenship (နိုင်ငံသား)	Myanmar
(c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/ Ou Ka Ta (Naing) 038453
(d) Address (ဆက်သွယ်ရန်လိပ်စာ)	No. 155, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone(1), Hlaing Thar Yar Township, Yangon <a href="mailto:gmescompany@gmail.com">gmescompany@gmail.com</a> <a href="mailto:ksw1963@gmail.com">ksw1963@gmail.com</a> , 09 5081451
(e) Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Company Limited
(f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)  
ဤလက်မှတ်အား (၀-၄-၂၀၁၈) မှတ်ပုံတင် (၁၁.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။

*Soe Naing*  
14.3.2018  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department



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

**Areas of Expertise Permitted**  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Facilitation of meeting

2. Industrial Management

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (31.6.2021)  
ဤလက်မှတ်အား (၁-၁-၂၀၂၁) ရက်နေ့မှ (၃၁-၆-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။  
*Soe Naing*  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)  
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လ သက်တမ်း တိုးမြှင့်သည်။  
*Soe Naing*  
12.6.2019  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

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

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)  
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။  
*Soe Naing*  
16.1.2021  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department





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



CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0023 Date 11.03.2018

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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

- (a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်) Engr. U Sein Thaug Oo
- (b) Citizenship (နိုင်ငံသား) Myanmar
- (c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ်အမှတ်) 12/ Ma Ya Ka (N) 082871
- (d) Address (ဆက်သွယ်ရန်လိပ်စာ) No. 17/D, Aung Theikdi Yeik Thar, Mayangone Township, Yangon.  
[gmescompany@gmail.com](mailto:gmescompany@gmail.com) , [seinthaungoo@gmail.com](mailto:seinthaungoo@gmail.com)  
09 5122448
- (e) Organization (အဖွဲ့အစည်း) Green Myanmar Environmental Services Co.,Ltd.
- (f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) Person
- (g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်) 31 March 2018

EXTENSION  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended  
for one year from (1.4.2018) to (31.3.2019)  
ဤလက်မှတ်အား (၀-၄-၂၀၁၈) မှတ်တမ်းမှတ်ပုံတင်  
ရက်နေ့အထိ တစ်နှစ်အထိ တိုးမြှင့်ထားသည်။  
Soe Naing  
14.9.2018  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

*Soe Naing*

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

Areas of Expertise Permitted  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control


2. Chemical Engineering Process Design, Industrial Management

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


**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)  
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လ သက်တမ်း တိုးမြှင့်သည်။  
*Soe Naing* 12.6.2019  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

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

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)  
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။  
*Soe Naing* 16.1.2020  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department



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



No.                     10021                                          Date                     13.03.2018                    

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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Engr. Daw Khin Swe Aye
(b) Citizenship (နိုင်ငံသား)	Myanmar
(c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/Sa Kha Na (N) 017708
(d) Address (ဆက်သွယ်ရန်လိပ်စာ)	14 B, Wai Lu Wun Main Street, Sanchaung, Yangon. <a href="mailto:khinsweave.daw@gmail.com">khinsweave.daw@gmail.com</a> , 09 5015475
(e) Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION


သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)  
 ဤလက်မှတ်အား (၀-၄-၂၀၁၈) ရက်နေ့မှ (၃၁.၃.၂၀၁၉) ရက်နေ့ထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။

Soe Naing

14.9.2018

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



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

Green Myanmar Environmental Services Co., Ltd.

A-23

Areas of Expertise Permitted  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control


2. Waste Management

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


**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019) ကျွဲလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁.၁၂.၂၀၁၉) ရက်နေ့အထိ (၉)လ သက်တမ်း တိုးမြှင့်သည်။  
*Soe Naing 12.6.2019*  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

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

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020) ကျွဲလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။  
*Soe Naing 12.1.2020*  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department



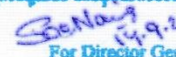
**REPUBLIC OF THE UNION OF MYANMAR**  
**Ministry of Natural Resources and Environmental Conservation**  
**CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION**  
 (ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)




No. 10028 Date 11 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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Prof. Engr. Daw Tin May Soe
(b) Citizenship (နိုင်ငံသား)	Myanmar
(c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/ Ka Ma Ya (N) 016072
(d) Address (ဆက်သွယ်ရန်လိပ်စာ)	115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon. <a href="mailto:tinmaysoe949@gmail.com">tinmaysoe949@gmail.com</a> , 09 5077081
(e) Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co., Ltd.
(f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

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

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

**Areas of Expertise Permitted**  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Water Pollution Control

2. Chemical Engineering Process Design

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

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

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

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



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



No. 10026 Date 09 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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	U Myo Myint
(b) Citizenship (နိုင်ငံသား)	Myanmar
(c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ်အမှတ်)	12/ Pa Ba Ta (N) 015315
(d) Address (ဆက်သွယ်ရန်လိပ်စာ)	115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon. <a href="mailto:gmescompany@gmail.com">gmescompany@gmail.com</a> , 09 2012723
(e) Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION  
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)  
ဤလက်မှတ်အား (၁-၄-၂၀၁၈) မှတ်ပေးမှ (၃၁.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။

*Soe Naing*  
14.9.2018

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

*Soe Naing*

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

**Areas of Expertise Permitted**  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Chemical Engineering, Laboratory Analysis for Water and Wastewater


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

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

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

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






REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)



No. 10022 Date 10.1.2018

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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Daw Khin Shwe Htay
(b) Citizenship (နိုင်ငံသား)	Myanmar
(c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/ Tha Ga Ka (N) 008808
(d) Address (ဆက်သွယ်ရန်လိပ်စာ)	No. 115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon <a href="mailto:shwehtay.khin@gmail.com">shwehtay.khin@gmail.com</a> , 09 5032910
(e) Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)

ဤလက်မှတ်အား (၀-၄-၂၀၁၈) ရက်နေ့မှ (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။

*Soe Naing*  
14.9.2018

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

*Soe Naing*

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

**Areas of Expertise Permitted**  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)


- 1. Water Pollution Control
- 2. Waste Management

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

**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019) ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လ သက်တမ်း တိုးမြှင့်သည်။  
*Soe Naing*  
12.6.2019  
For Director General  
(Soe Naing, Director)  
Environmental Conservation Department

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


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



REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION  
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)



No. 0025 Date 14.9.2018

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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	U Khin Aung
(b) Citizenship (နိုင်ငံသား)	Myanmar
(c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ်အမှတ်)	12/ Ma Ya Ka (N) 047032
(d) Address (ဆက်သွယ်ရန်လိပ်စာ)	115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon. <a href="mailto:khinaung1@gmail.com">khinaung1@gmail.com</a> , 09 43066741
(e) Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018


**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)

ဤလက်မှတ်အား (၀-၄-၂၀၁၈) ရက်နေ့မှ (၃၁.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။

*Soe Naing*  
14.9.2018

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

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

Areas of Expertise Permitted  
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Socio-Economy

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

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

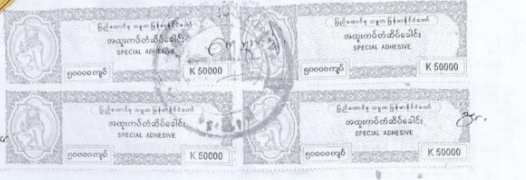
**EXTENSION**  
သက်တမ်းတိုးမြှင့်ခြင်း  
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021) ဤလက်မှတ်အား (၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။  
*Soe Naing*  
For Director General  
(Soe Naing, Director)  
Environmental Conservation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

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

**Appendix 4 Certificate of Incorporation**



Appendix 5 Land Lease Agreement



This LEASE AGREEMENT is made :-

**BETWEEN**

**U YE MIN TUN** ( 9/Ah Ma Za (Naing) 003158 ), No.(U-31), Kanthaya Street, Ward No.(4), Hsing Township, Yangon Region, the Republic of the Union of Myanmar (hereinafter referred to as "the LESSOR" which expression shall except where the context requires another and different meaning; therefrom, include its successors, legal representative and permitted assigns ) of the ONE PART.


**AND**

**COBES INDUSTRIES (BII) COMPANY LIMITED** ( Company Registration No. 121497387) according to the Myanmar Companies Law as 100% owned foreign company in the Republic of the Union of Myanmar having its registered office at Lot No.52(Ka), Kwin No.1315, La Hpyor Yoe Kwin, Okkathar (9th) Quarter, Bago Township, Bago Region, the Republic of the Union of Myanmar. (hereinafter referred to as "the LESSEE" which expression shall, except where the context requires another and different meaning therefrom, include its successors, legal representatives and permitted assigns ) for the purpose of this agreement represented by its Director MR. GUO, CHUNWEI ( P.P.No. E 26362396 ), of the OTHER PART.

**WHEREAS**

- The LESSEE is desirous of utilizing the lease land area ( 7.1 ) acres ( equivalent to 28732.706 square meter ) out of the Land area of ( 16.00 ) acres, located at Holding No. / Plot No. N 1B, Kwin No. ( 1315 ), La Hpyor Yoe Kwin, Okkathar ( 9th ) Quarter, Bago Township, Bago District, Bago Region, Myanmar with buildings ( those are under construction ) described in the map as per appendix A attached hereto ( which shall form an integral part of this Lease Agreement for Manufacturing of Sterilized disposable surgical-scrubs and related kind of clinical wears on CMP Basis.
- The LESSOR is desirous of leasing the land plot for initial 10 ( Ten ) years lease may be extendable to two, (5) year terms on mutual agreement between the two parties as afore-mentioned to the LESSEE to enhance the pharmaceutical industry development, whereby promote the foreign investment in Myanmar.
- The LESSOR represents and warrants that it has the legal and beneficial right on the said land and building whereas both the LESSOR and the LESSEE hereto are legally authorized to enter into this Lease Agreement.

NOW, THIS AGREEMENT WITNESSETH AS FOLLOWS.



**ARTICLE 1 : SCOPE OF AGREEMENT**

1.1 In consideration of the rent hereinafter reserved and the covenants made by the LESSEE hereinafter contained, the LESSOR and the LESSEE both hereby enter into the lease all that piece of land at Holding No. / Plot No. N 1B, Kwin No. ( 1315 ), La Hpyor Yoe Kwin, Okkathar ( 9th ) Quarter, Bago Township, Bago District, Bago Region, Myanmar with building ( those are under construction ) measuring ( 7.1 ) acres ( equivalent to 27,732.706 square meter ) as per map attached as appendix A hereto ( which shall form an integral part of this Lease Agreement ) together with all the rights basements appurtenances thereto, except all mine, deposit, under the said land and building for 10 ( Ten ) years which may be extendable two, (5) year terms on mutual agreement between this two parties.

1.2 On expiry of initial 10 years term, the lease hereunder shall at the discretion of the LESSEE and with the consent of the LESSOR, be renewed for further period of 10 years ( not exceeding the period prescribed by Foreign Investment Law ) according to the mutually agreed terms and subject to the approval of Myanmar Investment Commission.

**ARTICLE 2 : RENTAL FEES**


The lease rental for the Lease Land and Building for the first 10 years term shall be US\$ 2,548.00 per month and total rent fee for per annum is US\$ 30,576.00 for (7.1) acres.

**ARTICLE 3 : LEASE PERIOD**

3.1 The term of this agreement and the lease hereunder shall be initial 10 years from 15-2-2020.

3.2 The lease hereunder may be extended for a further 10 years and extendable to comprising 2 subsequent terms of 5 years each at the request of the LESSEE for the extension thereof, and in such case consent shall be given by the LESSOR.

3.3 For such extension for a further 10 years terms the LESSEE shall communicate intention of renewal in writing to the LESSOR at least (3) months prior to the expiry of initial period and each of the subsequently extended to two (5) years term.



**ARTICLE 4 : PAYMENT OF RENT**

4.1 The LESSEE shall pay the first year annual rent of initial (10) years amounting to US\$ 30,576.00 to the LESSOR in advance on the date of signing of this agreement.

4.2 The LESSEE shall pay the annual rent to the designated account of LESSOR within 15 days before the start of the lease period. Once both parties sign this agreement, the LESSEE shall pay a deposit of US\$ 20,000 to the bank account designated by LESSOR within 5 working days.

4.3 On expiry of initial (10) years, the LESSOR will negotiate rental with the LESSEE and if the LESSEE cannot oblige to the rental, the LESSOR has the option to terminate this Lease Agreement.

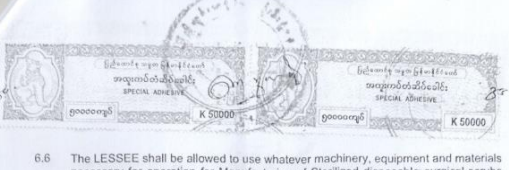
**ARTICLE 5 : EFFECTIVE DATE OF THE LEASE**

The effective date of this Lease Agreement shall be 15-2-2020.

**ARTICLE 6 : LESSEE'S RIGHTS AND OBLIGATIONS**

The LESSEE hereby covenants with the LESSOR that during the terms of the Lease for the followings.

- The LESSEE shall pay the said rent and fee in the manner herein before appointed for payment thereof and also to be responsible for charges collectable by the respective authorities with respect to any services supplied except land and building rental.
- The LESSEE shall not to sub-lease, assign or transfer the whole or any part of the leasehold interest hereby created without the prior approval of the LESSOR.
- The LESSEE shall keep in good repair and condition the buildings and structures in the demised premises and hand over such buildings and structures in such condition at the expiry of the lease period or the extended period, if any, of the lease.
- To ensure that all activities and operations carried out by the Lessee on the said Land are in conformity with the laws of the Republic of the Union of Myanmar.
- The LESSEE shall be responsible for preservation of the environment in and around the area of the project site and to control pollution of air, water and land, and other environmental degradation. The lessee shall take necessary measures in order to fulfill environmental protection such as installation of the waste water treatment procedures to keep the project site environmental friendly.



6.6 The LESSEE shall be allowed to use whatever machinery, equipment and materials necessary for operation for Manufacturing of Sterilized disposable surgical-scrubs and related kind of clinical wears on CMP Basis factory on the leased site in accordance with the existing laws of the Republic of the Union of Myanmar.

6.7 The LESSEE shall be allowed to renovate all premises with the prior approval of the LESSOR during the lease period.

6.8 The LESSEE shall pay all municipal tax or rates as well as assessments of similar nature that now are or may hereafter during the said term be imposed upon the demised premises or any part thereof except land revenue.

6.9 The LESSEE may peacefully and quietly hold the demised premises during the terms of the lease without any interruption or disturbance of whatsoever nature by the Lessor or any person lawfully or in trust for the Lessor.

6.10 The LESSEE shall ensure that foreign personnel, and their families employed by it shall abide by the Laws of the Republic of the Union of Myanmar and they do not interfere in the internal affairs of the Republic of the Union of Myanmar.

6.11 The LESSEE agrees to pay the stamp duty and commercial tax.

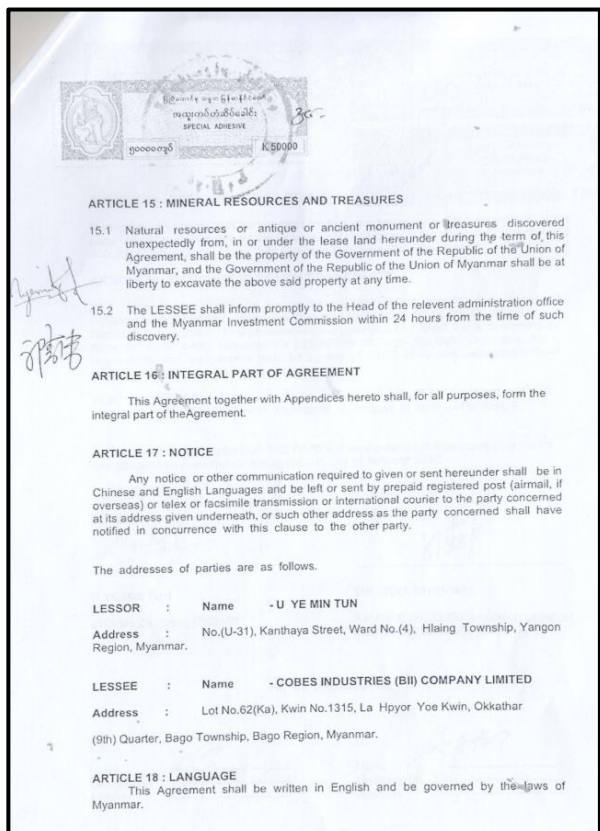
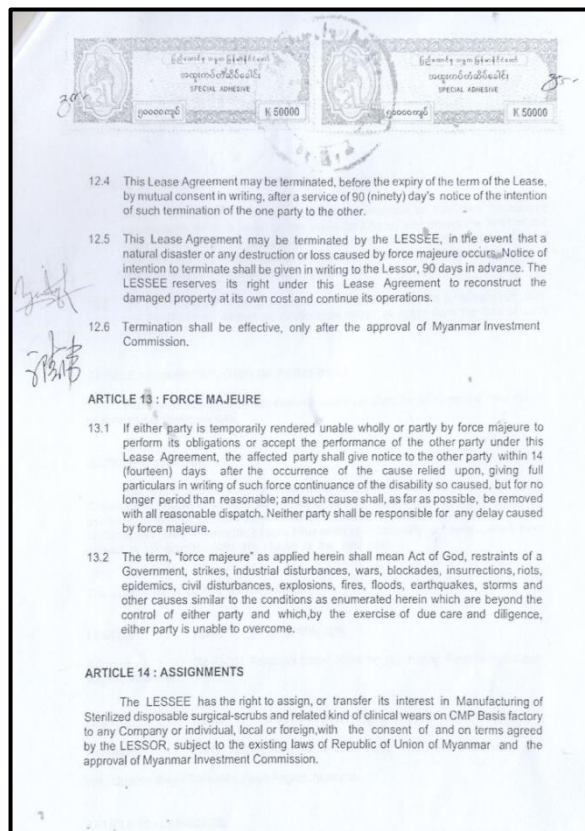
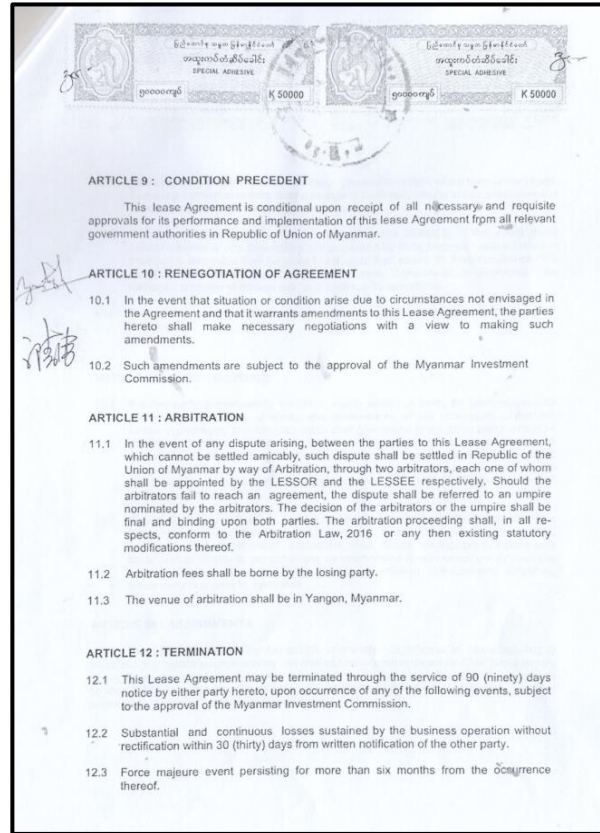
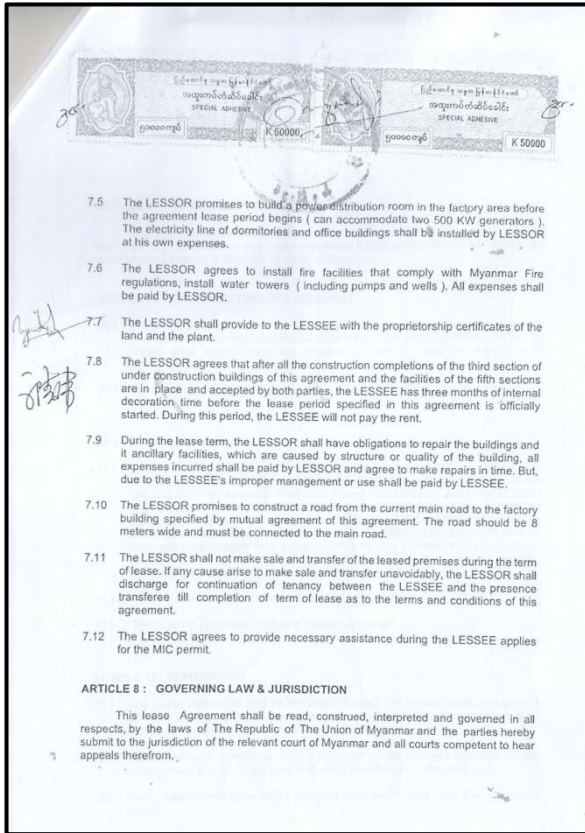
6.12 The LESSEE may install generators in the generator room of the plant, for generation in case of power cut, all expenses incurred shall be paid by LESSEE.

6.13 The LESSEE should arrange procurement of insurance for all properties belonged to the LESSEE and the LESSOR should arrange for and procure overall insurances for the Leased Premises at his own costs.

**ARTICLE 7 : LESSOR'S RIGHTS AND OBLIGATIONS**

The LESSOR do hereby covenants with the LESSEE during the term of the Lease for the followings.

- The LESSOR shall be no interference in the operation and management of the factory or disturbance of whatsoever nature by the Lessor or any person lawfully claiming to represent the Lessor during the term that this Lease in effect.
- The LESSOR also agrees that the Lessee shall implement the proposed development after receiving the approval of authorities concerns, as agreed by both parties.
- The LESSOR shall pay the land revenue during the leased period.
- The architectural drawings of the factory buildings of LESSOR shall be approved and signed by LESSEE.







### Appendix 6 Submission for Increase of Investment by CIC (B II) and BRIC Permit

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ  
အတည်ပြုမိန့်

အတည်ပြုမိန့်အမှတ် ၀၁၀-၀၂၇ / ၂၀၁၉

ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီသည် ၂၀၁၉ ခုနှစ် အောက်တိုဘာလ ၂ ရက်  
မှစ၍ (ဃ) အရ ဤအတည်ပြုမိန့်ကို ထုတ်ဖော်လိုက်သည်။

(၁) ရင်းနှီးမြှုပ်နှံသူအမည် ..... COBES INDUSTRIES COMPANY LIMITED

(၂) နိုင်ငံသား ..... CHINA

(၃) ဝန်ရပ်လိပ်စာ ..... HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. WU BUILDING, 302-308, WAN CHAI, HONGKONG.

(၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ ..... HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. WU BUILDING, 302-308, WAN CHAI, HONGKONG.

(၅) ဖွဲ့စည်းရာအရပ် ..... HONGKONG

(၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား ..... CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ်ဝတ်စုံများထုတ်လုပ်ခြင်းလုပ်ငန်း

(၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ) ..... မြေကွက်အမှတ်(N-၁)၊ ကွင်းအမှတ်(၁၃၁၅) လပျော်ရိုးကွင်း၊ ဥဿာ(၉)ရပ်ကွက်၊ ပဲခူးမြို့နယ်။

(၈) နိုင်ငံခြားမတည်ငွေရင်းပမာဏ ..... အမေရိကန်ဒေါ်လာ ၁ သန်း

(၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ ..... အတည်ပြုမိန့်ရရှိသည့်နေ့မှ ၂ နှစ် အတွင်း

(၁၀) စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်) ..... အမေရိကန်ဒေါ်လာ ၁ သန်းနှင့် ညီမျှသော မြန်မာကျပ်ငွေ

(၁၁) တည်ဆောက်မှု/ ပြင်ဆင်မှုကာလ ..... ၂ နှစ်

(၁၂) အတည်ပြုမိန့်သက်တမ်း ..... ၁၀ နှစ်

(၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ..... ရာခိုင်နှုန်းပြည့်နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု

(၁၄) မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည် ..... COBES INDUSTRIES (BII) COMPANY LIMITED

.....  
(ထံသို့)  
.....

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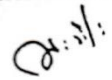
Form (5-B)


**THE REPUBLIC OF THE UNION OF MYANMAR**  
Bago Region Investment Committee  
**ENDORSEMENT**


Endorsement No. BGO-027/2019 Date 3<sup>rd</sup> October 2019


This endorsement is issued by the Bago Region Investment Committee according to the section 25 (d) of the Myanmar Investment Law-

- (1) Name of Investor COBES INDUSTRIES COMPANY LIMITED
- (2) Citizenship CHINA
- (3) Residence Address HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. C. WU BUILDING, 302-308, WAN CHAI, HONG KONG.
- (4) Name and Address of Principal Organization HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. C. WU BUILDING, 302-308, WAN CHAI, HONGKONG.
- (5) Place of Incorporation HONGKONG
- (6) Type of business MANUFACTURING OF NON-STERILIZED DISPOSABLE SURGICAL-SCRUBS AND RELATED KIND OF CLINICAL WEARS ON CMP BASIS.
- (7) Place(s) of Investment Project PLOT NO.(N1<sup>B</sup>), KWIN NO.(1315), LA HPYOR YOE KWIN, OAKTHAR (9TH) QUARTER, BAGO TOWNSHIP.
- (8) Amount of Foreign Capital US \$ 1 MILLION
- (9) Period for Foreign Capital to be brought in WITHIN TWO YEARS FROM THE DATE OF ISSUANCE OF BRIC ENDORSEMENT
- (10) Total Amount of Capital (Kyat) EQUIVALENT IN KYAT OF US\$ 1 MILLION
- (11) Construction Period 2 (TWO) YEARS
- (12) Validity of Endorsement 10 YEARS
- (13) Form of Investment WHOLLY FOREIGN OWNED
- (14) Name of Company Incorporated in Myanmar COBES INDUSTRIES (BII) COMPANY LIMITED.

  
(WIN THEIN)  
Chairman



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THE REPUBLIC OF THE UNION OF MYANMAR  
BAGO REGION INVESTMENT COMMITTEE  
Bago Region Government Office Compound, Taungoo Street, Yone Gye Quarter, Bago

Tel: 052-2201747  
Fax: 052-2201748


Our ref : 22/ 49/ 10 (884 /2019)  
Date : 26<sup>th</sup> October 2019

**Subject:** Decision of the Bago Region Investment Committee on the Endorsement for manufacturing of non-sterilized disposable surgical-scrubs and related kind of clinical wears on CMP basis under the name of Cobes Industries (BII) company limited

**Reference:** Cobes Industries (BII) company limited's letter dated 6<sup>th</sup> September 2019

1. The Bago Region Investment Committee, at its meeting ( 8 / 2019 ) held on 24<sup>th</sup> september 2019, approved the Endorsement for investment in manufacturing of non-sterilized disposable surgical-scrubs and related kind of clinical wears on CMP basis under the name of Cobes Industries (BII) company limited submitted by Cobes Industries company limited ( 100 % ) from Hongkong as a wholly foreign own investment in accordance with the Myanmar Investment Law and Rules.
2. The terms and conditions of the Endorsement are stated in the following paragraphs:
  - (a) The term of an Endorsed project shall be initially 10 years extendable to two times of (5) years commencing from the date of the issuance of the Endorsement by the Bago Region Investment Committee.
  - (b) The term of the Lease Agreement for land and building shall be initially 10 years extendable to two times of (5) years commencing from the date of signing of the Lease Agreement between U Ye Min Tun (Lessor) and Cobes Industries (BII) company limited (Lessee).
  - (c) The annual rent for the land and building shall be US \$ 30,576.00 (United State dollar thirty thousand five hundred and seventy six only) for the total area of the land measuring 28,732.706 square meters (7.1 acres).

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- 2 -

- (d) Cobes Industries (BII) company limited, which has obtained this endorsement to receive benefits relating to the right to use exemptions and reliefs under sections 75, 77 and 78 of the Chapter XVIII of Myanmar Investment Law, may submit the application form.
- (e) Cobes Industries (BII) company limited shall use its best efforts to achieve a timely realization of the work states in the endorsement application.
- (f) Cobes Industries (BII) company limited shall obey and respect the responsible of Investors under section 65 of Myanmar Investment Law and Chapter XX of Myanmar Investment Rules.
- (g) Cobes Industries (BII) company limited shall carry out prevention, mitigation and monitoring of significant environmental impacts according to the type of investment activities in accordance with the relevant laws, rules, regulations and procedures.
- (h) Cobes Industries (BII) company limited shall submit to the Commission of any transfer of shares or transfer of the business to any person during the investment period in accordance with section 72 of Myanmar Investment Law and rule 191 of Myanmar Investment Rules.
- (i) Cobes Industries (BII) company limited which has benefitted from the Endorsement or exemption and reliefs shall submit an annual report in the prescribed form to the Commission within three (3) months of the end of the financial year in accordance with rule 196 of Myanmar Investment Rules and shall publish a summary of the report on its website or the Commission's website.
- (j) Cobes Industries (BII) company limited must, during the operation period under the endorsement of the Commission, submit its operating report quarterly in the prescribed form in accordance with rule 197 of Myanmar Investment Rules.
- (k) Cobes Industries (BII) company limited shall obey the laws, rules and regulations promulgated by The Ministry of Health and Sport.

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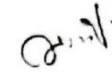
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- 3 -

3. Cobes Industries (BII) company limited shall carry out in accordance with the stipulations of the relevant Union Ministries, governmental department and governmental organizations to obtain license, permit or registration as per section 65(d) of the Myanmar Investment Law.

4. Cobes Industries (BII) company limited shall submit five (5) copies of all approvals, licences, permits and similar authorizations relevant to the initial implementation of the Investment and the Lease Agreement for Land to the Committee.



(Win Thein)  
Chairman

Cobes Industries (BII) company limited

- cc:
1. Ministry of Home Affairs
  2. Ministry of Government of the Republic of the Union of Myanmar
  3. Ministry of Natural Resources and Environmental Conservation
  4. Ministry of Labour, Immigration and Population
  5. Ministry of Industry
  6. Ministry of Commerce
  7. Ministry of Planning and Finance
  8. Ministry of Health and Sport
  9. Ministry of Investment and Foreign Economic Relation
  10. Myanmar Investment Commission
  11. Chairman, CMP Enterprises Supervision Committee
  12. Office of the Bago Region Government
  13. Director General, Department of Environmental Conservation
  14. Director General, Directorate of Labour
  15. Director General, Department of Immigration
  16. Director General, Directorate of Industrial Supervision and Inspection

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- 4 -

17. Director General, Department of Trade
18. Director General, Directorate of Investment and Company Administration
19. Director General, National Archives Department
20. Director General, Customs Department
21. Director General, Internal Revenue Department
22. Director, Investment Monitoring Section, Directorate of Investment and Company Administration
23. Bago Region Office, Directorate of Investment and Company Administration

DECISION COPY

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**COBES INDUSTRIES (BII) COMPANY LIMITED**

Plot No. (N1<sup>st</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer.

Bago Township, Bago District, Bago Region.

သို့/-

ဥက္ကဋ္ဌ

ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

ပဲခူးတိုင်းဒေသကြီး။

ရက်စွဲ ။ ။ ၂၀၂၀ ခုနှစ်၊ ဇွန်လ၊ ( ၈ )ရက်။

အကြောင်းအရာ ။ ။ COBES INDUSTRIES (BII) COMPANY LIMITED ၏ မတည်ရင်းနှီးငွေပမာဏတိုးမြှင့်၍ စက်ပစ္စည်း အခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းခြင်း၊ ကုန်ကြမ်းများတိုးမြှင့်တင်သွင်းခြင်း၊ ကုန်ချောများ တိုးမြှင့်ထုတ်လုပ်ခြင်း၊ လုပ်သားအင်အား တိုးမြှင့်ခန့်ထားခွင့် တို့အား ခွင့်ပြုပေးနိုင်ပါရန် တင်ပြခြင်း။

၁။ ကျွန်တော်များ COBES INDUSTRIES ( BII ) COMPANY LIMITED သည် ပဲခူးတိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီ၏ ( ၂-၁၀-၂၀၁၉ )ရက်စွဲပါ ခွင့်ပြုမိန့်အမှတ် ပခတ-( ၀၂၇/၂၀၁၉ ) အရ ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့နယ်၊ ဥဿာ(၉)ရပ်ကွက်၊ လဖျော်ဦးကွင်း၊ ကွင်းအမှတ်(၁၃၁၅)၊ မြေကွက်အမှတ်(N<sub>၁</sub>) တွင် CMP စနစ်ဖြင့် ပိုးသတ်မထားသော ခွဲစိတ်ခန်းသုံး(တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံးဆက်စပ်ဝတ်စုံများ ထုတ်လုပ်ခြင်းလုပ်ငန်းကို လုပ်ကိုင်ဆောင်ရွက်လျက်ရှိပါသည်။

၂။ ကုမ္ပဏီ၏ ရင်းနှီးမြှုပ်နှံသည့်မြေနေရာတွင် မတည်ရင်းနှီးငွေပမာဏတိုးမြှင့်၍ စက်ပစ္စည်း အခွန်အကောက် ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းခြင်း၊ ကုန်ကြမ်းများတိုးမြှင့်တင်သွင်းခြင်း၊ ကုန်ချောများ တိုးမြှင့်ထုတ်လုပ်ခြင်းတို့ကို ခွင့်ပြုပေးနိုင်ပါရန်တင်ပြခြင်း။

၃။ ကုမ္ပဏီသည် -  
(က) မူလအဆိုပြုမတည်ရင်းနှီးငွေပမာဏမှာ US\$ 1,000,000.00 ဖြစ်သော်လည်း ယနေ့အထိ ထည့်ဝင်ပြီးမတည်ငွေရင်းမှာ US\$ 899,438.63နှင့် နောက်ထပ် ထည့်ဝင်လိုသည့် မတည်ငွေရင်းမှာ US\$ 4,674,000.00 ဖြစ်ပါသောကြောင့် မတည်ငွေရင်းကို US\$ 1,000,000.00 မှ US\$ 4,674,000.00 တိုးမြှင့်၍ စုစုပေါင်းတန်ဖိုး US\$ 5,674,000.00 သို့ တိုးမြှင့်ခြင်း။

**COBES INDUSTRIES (BII) COMPANY LIMITED**

Plot No. (N1<sup>th</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quater.

Bago Township, Bago District, Bago Region.

- (ခ) မတည်ငွေရင်းတိုးမြှင့်ခြင်းကြောင့် စက်ပစ္စည်းတန်ဖိုး **US\$ 3,974,000.00** အား အခွန် အကောက်ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းခြင်း။
- (ဂ) ကုန်ကြမ်းများအားတိုးမြှင့်၍ အခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့်တင်သွင်းခြင်းနှင့် ကုန်ချောများတိုးမြှင့်ထုတ်လုပ်ခြင်း။
- (ဃ) မူလစာရင်းတွင် ပါဝင်သော ပြည်တွင်းလုပ်သားဦးရေ (၁၀၀၀)ဦး နှင့် နိုင်ငံခြားသားဦးရေ (၁၀) ဦးဖြစ်သော်လည်း စက်ရုံမှာ ပြည်တွင်းလုပ်သား (၅၅၈)ဦး နှင့် နိုင်ငံခြားသား (၃) ဦးကိုသာ ခန့်ထား၍ လည်ပတ်နေပါသည်။ ကျွန်တော်များ ကုမ္ပဏီသည် မတည်ငွေရင်းတိုးမြှင့်၍ စက်ပစ္စည်းများနှင့် ကုန်ကြမ်းပစ္စည်းများ ထပ်မံတိုးရသောကြောင့် အလုပ်သမားများထပ်မံတိုးခြင်းဖြစ်ပါသည်။ မူလအလုပ်သမားများနှင့် ထပ်တိုးအလုပ်သမားများအားလုံးကို စက်ရုံပိုမိုလည်ပတ်သည့်အချိန်တွင် ခန့်အပ်သွားမည်ဖြစ်ကြောင်း တင်ပြခြင်း။

၃။ ကုမ္ပဏီသည် အော်ဒါများ ပိုမိုရရှိလာပြီဖြစ်ရာ ကုန်ချောများတိုးမြှင့်ထုတ်လုပ်ခြင်းဖြစ်ပြီး အဆိုပါတိုးမြှင့်ထုတ်လုပ်သည့်ကုန်ချောများအတွက် လိုအပ်သည့် ကုန်ကြမ်းပစ္စည်းများကို တိုးမြှင့်တင်သွင်းရခြင်းဖြစ်ပါသည်။

၄။ ကျွန်တော်များ ကုမ္ပဏီသည် ထုတ်လုပ်သည့်ကုန်ချောပစ္စည်းများကို Europe, America, Japan, စသည့် နိုင်ငံများသို့ တင်ပို့မည်ဖြစ်ပါသည်။

၅။ သို့ပါ၍ **COBES INDUSTRIES (BII) COMPANY LIMITED** သည် မတည်ရင်းနှီးငွေ ပမာဏတိုးမြှင့်၍ စက်ပစ္စည်းအခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့်တင်သွင်းခြင်း၊ ကုန်ကြမ်းများ တိုးမြှင့်တင်သွင်းခြင်း၊ ကုန်ချောများတိုးမြှင့်ထုတ်လုပ်ခြင်းနှင့် လူဦးရေတိုးမြှင့်ခြင်းတို့ကို ခွင့်ပြုပေးနိုင်ပါရန် ပူးတွဲပါ အထောက်အထားများဖြင့် ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြုပ်နှံမှုကော်မတီသို့ လေးစားစွာဖြင့် တင်ပြအပ်ပါသည်။



လေးစားစွာဖြင့် -

*Handwritten signature of Mr. Guo Chunwei*

MR. GUO, CHUNWEI  
DIRECTOR  
COBES INDUSTRIES (BII) CO.,LTD

*Handwritten signature of Mr. Guo Chunwei*  
MR. GUO, CHUNWEI  
DIRECTOR  
COBES INDUSTRIES (BII) CO.,LTD.



### COBES INDUSTRIES (BII) COMPANY LIMITED

Plot No. (N1<sup>st</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quater.

Bago Township, Bago District, Bago Region.

#### ဒါရိုက်တာများအဖွဲ့အစည်းအဝေးမှတ်တမ်း

ကျင်းပသည့်နေ့ရက်	" "	၂၀၂၀-၂၀၂၀
ကျင်းပသည့်နေရာ	" "	ကုမ္ပဏီရုံးခန်းရုံးအစည်းအဝေးခန်းမ
ကျင်းပသည့်အချိန်	" "	နံနက်(၁၀:၀၀)နာရီ

#### တက်ရောက်သူများ

COBES INDUSTRIES CO., LTD ၏ ကိုယ်စားပြုဒါရိုက်တာ

- (1) Mr. Guo, Chunwei Director
- (2) Mr. Yongzhi, Li Director


အစည်းအဝေးတွင် ဒါရိုက်တာ Mr. Guo, Chunwei မှ သဘာပတိအဖြစ် ဆောင်ရွက်ပြီး ၎င်းမှ အောက်ပါတို့ကို သဘောတူဆွေးနွေးဆုံးဖြတ်ကြပါသည်။

#### ဆွေးနွေးချက်

COBES INDUSTRIES ( BII ) COMPANY LIMITED ၏ မတည်ရင်းနှီးငွေပမာဏ တိုးမြှင့်၍ စက်ပစ္စည်းအခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းခြင်း၊ ကုန်ကြမ်းများတိုးမြှင့် တင်သွင်းခြင်း၊ ကုန်ချောများ တိုးမြှင့်ထုတ်လုပ်ခြင်းအား ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ၏ အတည်ပြုမိန့်တွင် ပြင်ဆင်ရေးနှင့်ပတ်သက်၍ ဆွေးနွေးကြပြီး အောက်ပါအတိုင်း သဘောတူဆုံးဖြတ်ကြပါသည်။

#### ဆုံးဖြတ်ချက်များ

၁။ ကုမ္ပဏီသည် ပဲခူးတိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီ၏ ( ၂-၁၀-၂၀၁၉ )ရက်စွဲပါ ခွင့်ပြုမိန့်အမှတ် ပခတ-( ၀၂၇/၂၀၁၉ ) CMP စနစ်ဖြင့် ပိုးသတ်မထားသော ခွဲစိတ်ခန်းသုံး(တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံးဆက်စပ်ဝတ်စုံများ ထုတ်လုပ်ခြင်းလုပ်ငန်းကို လုပ်ကိုင်ဆောင်ရွက်ရာတွင် မူလအဆိုပြုမတည်ရင်းနှီးငွေပမာဏမှာ **US\$ 1,000,000.00** ဖြစ်သော်လည်း ယနေ့အထိ ထည့်ဝင်ပြီးမတည်ငွေရင်းမှာ **US\$ 899,438.63** နှင့် နောက်ထပ် ထည့်ဝင်လိုသည့် မတည်ငွေရင်းမှာ **US\$ 4,674,000.00** ဖြစ်ပါသောကြောင့် မတည်ငွေရင်းကို **US\$ 1,000,000.00** မှ **US\$ 4,674,000.00** တိုးမြှင့်၍ စုစုပေါင်းတန်ဖိုး **US\$ 5,674,000.00** သို့ တိုးမြှင့်ခွင့်ကို ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီသို့ တင်ပြရန်သဘောတူဆုံးဖြတ်ကြပါသည်။

### COBES INDUSTRIES (BII) COMPANY LIMITED

Plot No. (N1<sup>st</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer,  
Bago Township, Bago District, Bago Region.

၂။ ကုမ္ပဏီသည် မတည်ရင်းနှီးငွေပမာဏတိုးမြှင့်၍ စက်ပစ္စည်းအခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းခြင်း၊ ကုန်ကြမ်းများတိုးမြှင့်တင်သွင်းခြင်း၊ ကုန်ချောများတိုးမြှင့်ထုတ်လုပ်ခြင်းတို့ကိုဆောင်ရွက်ရန် သဘောတူဆုံးဖြတ်ကြပါသည်။

၃။ ကုမ္ပဏီသည် မတည်ငွေရင်းတိုးမြှင့်ခြင်းကြောင့် စက်ပစ္စည်းတန်ဖိုး US\$ 3,974,000.00 အား အခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းရန် သဘောတူဆုံးဖြတ်ကြပါသည်။

၄။ ကုမ္ပဏီသည် ကုန်ကြမ်းများအားတိုးမြှင့်၍ အခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းခြင်းနှင့် ကုန်ချောများတိုးမြှင့်ထုတ်လုပ်ခြင်းတို့ကို ဆောင်ရွက်ရန် သဘောတူဆုံးဖြတ်ကြပါသည်။

၅။ ကုမ္ပဏီသည်လုပ်သားဦးရေအားမူလ နိုင်ငံခြားသား (၁၀)ဦး၊ ပြည်တွင်းလုပ်သား (၁,၀၀၀)ဦးမှ ယခု နိုင်ငံခြားသား (၅)ဦး၊ ပြည်တွင်းလုပ်သား (၃၀၀)ဦး ထပ်မံတိုးမြှင့်လျက် စုစုပေါင်း နိုင်ငံခြားသား (၁၅) ဦး၊ ပြည်တွင်းလုပ်သား(၁,၃၀၀)ဦးအထိ တိုးမြှင့်ခန့်ထားရန် သဘောတူဆုံးဖြတ်ကြပါသည်။

၆။ ကုမ္ပဏီသည် မတည်ရင်းနှီးငွေပမာဏတိုးမြှင့်၍ စက်ပစ္စည်းအခွန်အကောက်ကင်းလွတ်ခွင့်ဖြင့် တင်သွင်းခြင်း၊ လူဦးရေတိုးမြှင့်ခြင်း၊ ကုန်ကြမ်းများတိုးမြှင့်တင်သွင်းခြင်း၊ ကုန်ချောများတိုးမြှင့်ထုတ်လုပ်ခြင်း တို့ကို ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီသို့တင်ပြပြီး၊ အတည်ပြုချက်ရယူရန် သဘောတူ ဆုံးဖြတ်ကြပါသည်။

အစည်းအဝေးကို မွန်းတည့် (၁၂:၀၀)နာရီ အချိန်တွင် အောင်မြင်စွာ ရုပ်သိမ်းလိုက်ပါသည်။

အတည်ပြုသူ

MR. GUO, CHUNWEI  
DIRECTOR  
COBES INDUSTRIES (BII) CO., LTD.

MR. GUO, CHUNWEI  
DIRECTOR  
COBES INDUSTRIES (BII) CO., LTD.



**Appendix 7 Amendment for BRIC Permit (15.6.2021)**



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ


၂၀၁၉ ခုနှစ် အောက်တိုဘာလ ၂ ရက်နေ့ရက်စွဲပါ အတည်ပြုမိန့်အမှတ် ပခတ-၀၂၇/၂၀၁၉ တွင် ပြင်ဆင်ချက်

၂၀၂၁ ခုနှစ် မေလ ၂၈ ရက်နေ့တွင် ကျင်းပပြုလုပ်ခဲ့သော ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှု ကော်မတီ၏ (၁/၂၀၂၁) ကြိမ်မြောက် အစည်းအဝေး ဆုံးဖြတ်ချက်အရ Cobes Industries (BII) Co., Ltd. ၏ ရင်းနှီးမြှုပ်နှံသူအမည်အား Cobes Industries Pte. Limited ဟုလည်းကောင်း၊ နေရပ် လိပ်စာအား 2 Venture Drive, #11-31, Vision Exchange, Singapore (608526) ဟုလည်းကောင်း၊ ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာအား Cobes Industries Pte. Limited, 2 Venture Drive, #11-31, Vision Exchange, Singapore (608526) ဟုလည်းကောင်း၊ ဖွဲ့စည်းရာအရပ်အား Singapore ဟုလည်းကောင်း ပြောင်းလဲခွင့်ပြုလိုက်သည်။

- (၁) ရင်းနှီးမြှုပ်နှံသူအမည် COBES INDUSTRIES PTE.LIMITED
- (၂) နိုင်ငံသား CHINA
- (၃) နေရပ်လိပ်စာ 2 VENTURE DRIVE, #11-31, VISION EXCHANGE, SINGAPORE (608526)
- (၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ COBES INDUSTRIES PTE.LTD , 2 VENTURE DRIVE, #11-31, VISION EXCHANGE, SINGAPORE (608526)
- (၅) ဖွဲ့စည်းရာအရပ် SINGAPORE

ဥက္ကဋ္ဌ(ကိုယ်စား)  
(ကိုကိုလတ်၊ အတွင်းရေးမှူး)

ရက်စွဲ၊ ၂၀၂၁ ခုနှစ် ဇွန်လ ၁၅ ရက်  
နေရာ၊ ပဲခူးမြို့

  
**THE REPUBLIC OF THE UNION OF MYANMAR**  
Bago Region Investment Committee

Amendment on Endorsement No. BGO - 027/2019 dated 2<sup>nd</sup> October 2019

The Bago Region Investment Committee, at its meeting 1/2021 held on 28<sup>th</sup> May 2021, approved the name of promoter of Cobes Industries (BII) Co., Ltd. be changed to Cobes Industries Pte. Limited, the address be changed to 2 Venture Drive, #11-31, Vision Exchange, Singapore (608526), the name and address of principal organization be changed to Cobes Industries Pte. Limited, 2 Venture Drive, #11-31, Vision Exchange, Singapore (608526) and the place of incorporation be changed to Singapore.

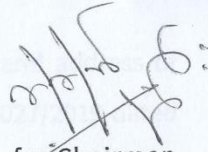
(1) Name of Promoter      COBES INDUSTRIES PTE.LIMITED

(2) Citizenship            CHINA

(3) Address                 2 VENTURE DRIVE, #11-31, VISION EXCHANGE,  
SINGAPORE (608526)

(4) Name and Address of Principal Organization      COBES INDUSTRIES PTE.LTD,  
2 VENTURE DRIVE, #11-31, VISION EXCHANGE, SINGAPORE (608526)

(5) Place of Incorporation      SINGAPORE

  
for Chairman  
(Ko Ko Latt, Secretary)

Date : 15<sup>th</sup> June 2021

Location : Bago


**BRIC**



**Confidential**

- 2 -


- cc:
1. Office of the Government of the Republic of the Union of Myanmar
  2. Ministry of Home Affairs
  3. Ministry of Planning and Finance
  4. Ministry of Investment and Foreign Economic Relation
  5. Ministry of Natural Resources and Environmental Conservation
  6. Ministry of Industry
  7. Ministry of Labour, Immigration and Population
  8. Ministry of Commerce
  9. Myanmar Investment Commission
  10. Chairman, CMP Enterprises Supervision Committee
  11. Office of the Bago Region Administration Council
  12. Director General, National Archives Department
  13. Director General, Internal Revenue Department
  14. Director General, Customs Department
  15. Director General, Directorate of Investment and Company Administration
  16. Director General, Department of Environmental Conservation
  17. Director General, Directorate of Industrial Supervision and Inspection
  18. Director General, Directorate of Labour
  19. Director General, Department of Immigration
  20. Director General, Department of Trade
  21. Director, Investment Monitoring Section, Directorate of Investment and Company Administration
  22. Bago Region Office, Directorate of Investment and Company Administration



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ

ဓမ္မစေတီလမ်း၊ ရပ်ကွက်ကြီး (၇)၊ ဥသောမြို့သစ်၊ ပဲခူးမြို့။



☎ ၀၅၂-၂၂၀၁၇၄၇ စာအမှတ်၊ ၂၂ / ၄၉ / ၁၀ ( ၃၅၅ / ၂၀၂၁ )

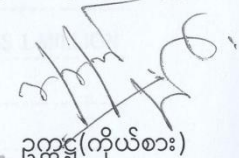
☎ ၀၅၂-၂၂၀၁၇၄၈ ရက်စွဲ ၊ ၂၀၂၁ ခုနှစ် ဇွန်လ ၁၁ ရက်

အကြောင်းအရာ။ Cobes Industries (BII) Co., Ltd. မှ အစုရှယ်ယာ/ရင်းနှီးမြှုပ်နှံသူအမည်/ လိပ်စာ၊ ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ၊ ဖွဲ့စည်းရာအရပ်အား ပြောင်းလဲခွင့်ပြုပါရန် တင်ပြလာခြင်းကိစ္စ

ရည် ညွှန်း ချက် ။ Cobes Industries (BII) Co., Ltd.၏ (၄-၅-၂၀၂၁) ရက်စွဲပါစာ

၁။ Cobes Industries (BII) Co., Ltd. မှ ရည်ညွှန်းပါစာဖြင့် တင်ပြလာသည့်ကိစ္စနှင့်စပ်လျဉ်း၍ ၂၀၂၁ ခုနှစ် မေလ ၂၈ ရက်နေ့တွင် ကျင်းပခဲ့သော ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ၏ (၁/၂၀၂၁)ကြိမ်မြောက် အစည်းအဝေးမှ အစုရှယ်ယာ/ ရင်းနှီးမြှုပ်နှံသူအမည်/ လိပ်စာ၊ ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ/ ဖွဲ့စည်းရာအရပ် ပြောင်းလဲခွင့်ပြုပါရန် တင်ပြလာခြင်းကိစ္စအား ခွင့်ပြုကြောင်း ဆုံးဖြတ်ခဲ့ပါသည်။

၂။ သို့ဖြစ်ပါ၍ ကော်မတီ၏ဆုံးဖြတ်ချက်အား သိရှိနိုင်ပါရန်၊ ကော်မတီ အတည်ပြုမိန့်တွင် ပြင်ဆင်ရန်အတွက် ဝန်ဆောင်ခအဖြစ် ကျပ် ၂၅,၀၀၀/- (ကျပ် နှစ်သောင်း ငါးထောင် တိတိ) အား ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန၊ ပဲခူးတိုင်းဒေသကြီးဦးစီးမှူးရုံးသို့ ပေးသွင်းထားသည့် ငွေသွင်းချလံ(မူရင်း)၊ အတည်ပြုမိန့်(မိတ္တူ)တို့ကို ဤကော်မတီရုံးသို့ တစ်လအတွင်း ပေးပို့ပါရန်နှင့် ပေးပို့ခြင်းမရှိပါက အထက်အပိုဒ်(၁)ပါဆုံးဖြတ်ချက်များ အလိုအလျောက် ပျက်ပြယ်မည် ဖြစ်ကြောင်း အကြောင်းကြားပါသည်။



ဥက္ကဋ္ဌ(ကိုယ်စား)

(ကိုကိုလတ်၊ အတွင်းရေးမှူး)

Cobes Industries (BII) Co., Ltd.


မိတ္တူကို

ဥက္ကဋ္ဌ၊ ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ

ရင်းနှီးမြှုပ်နှံမှုဌာနခွဲ(၂)၊ ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန

ရင်းနှီးမြှုပ်နှံမှုကြီးကြပ်ရေးဌာနခွဲ၊ ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန

Form (5-B)

  
**THE REPUBLIC OF THE UNION OF MYANMAR**  
Bago Region Investment Committee  
**ENDORSEMENT**

Endorsement No. BGO-027/2019 Date 2<sup>nd</sup> October 2019

This endorsement is issued by the Bago Region Investment Committee according to the section 25 (d) of the Myanmar Investment Law-

(1) Name of Investor COBES INDUSTRIES COMPANY LIMITED

(2) Citizenship CHINA

(3) Residence Address HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. C WU BUILDING, 302-308, WAN CHAI, HONG KONG.

(4) Name and Address of Principal Organization HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. C WU BUILDING, 302-308, WAN CHAI, HONGKONG.

(5) Place of Incorporation HONGKONG

(6) Type of business MANUFACTURING OF NON-STERILIZED DISPOSABLE SURGICAL-SCRUBS AND RELATED KIND OF CLINICAL WEARS ON CMP BASIS.

(7) Place(s) of investment Project PLOT NO.(N1<sup>B</sup>), KWIN NO.(1315), LA HPYOR YOE KWIN, OAKTHAR (9TH) QUARTER, BAGO TOWNSHIP.

(8) Amount of Foreign Capital US \$ 1 MILLION

(9) Period for Foreign Capital to be brought in WITHIN TWO YEARS FROM THE DATE OF ISSUANCE OF BRIC ENDORSEMENT


(10) Total Amount of Capital (Kyat) EQUIVALENT IN KYAT OF US\$ 1 MILLION


(11) Construction Period 2 (TWO) YEARS

(12) Validity of Endorsement 10 YEARS

(13) Form of Investment WHOLLY FOREIGN OWNED


(14) Name of Company Incorporated in Myanmar COBES INDUSTRIES (BII) COMPANY LIMITED.

 **BRIC**

  
**(WIN THEIN)**  
Chairman



ပုံစံ (၅-ခ)




ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
 ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ  
 အတည်ပြုမိန့်

အတည်ပြုမိန့်အမှတ် ပခတ-၀၂၇ / ၂၀၁၉      ၂၀၁၉ ခုနှစ် ဖောက်တိုဘာလ ၂ ရက်

ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီသည် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ ပုဒ်မ-၂၅ (ဃ) အရ ဤအတည်ပြုမိန့်ကို ထုတ်ပေးလိုက်သည် -

- (၁) ရင်းနှီးမြှုပ်နှံမှုအမည်      COBES INDUSTRIES COMPANY LIMITED
- (၂) နိုင်ငံသား      CHINA
- (၃) နေရပ်လိပ်စာ      HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. WU BUILDING, 302-308, WAN CHAI, HONGKONG.
- (၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ      HENNESSY ROAD, FLAT /RM 2503-2505, 25/F, C. WU BUILDING, 302-308, WAN CHAI, HONGKONG.
- (၅) ဖွဲ့စည်းရာအရပ်      HONGKONG
- (၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား      CMP စနစ်ဖြင့် ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး (တစ်ခါသုံး) ဝတ်စုံနှင့် ကျန်းမာရေးသုံး ဆက်စပ်ဝတ်စုံများထုတ်လုပ်ခြင်းလုပ်ငန်း
- (၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ)      မြေကွက်အမှတ်(N,ခ)၊ ကွင်းအမှတ်(၁၃၁၅)၊ လဖျော်ရိုးကွင်း၊ ဥဿာ(၉)ရပ်ကွက်၊ ပဲခူးမြို့နယ်။
- (၈) နိုင်ငံခြားမတည်ငွေရင်းပမာဏ      အမေရိကန်ဒေါ်လာ ၁ သန်း
- (၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ      အတည်ပြုမိန့်ရရှိသည့်နေ့မှ ၂ နှစ် အတွင်း
- (၁၀) စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်)      အမေရိကန်ဒေါ်လာ ၁ သန်းနှင့် ညီမျှသော မြန်မာကျပ်ငွေ
- (၁၁) တည်ဆောက်မှု/ ပြင်ဆင်မှုကာလ      ၂ နှစ်
- (၁၂) အတည်ပြုမိန့်သက်တမ်း      ၁၀ နှစ်
- (၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ      ရာခိုင်နှုန်းပြည့်နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု
- (၁၄) မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည်      COBES INDUSTRIES (BII) COMPANY LIMITED

  
 (ဝင်းသိန်း)  
 ဥက္ကဋ္ဌ

Appendix 8 Amendment for BRIC Permit (23.7.2021)



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ

၂၀၁၉ ခုနှစ် အောက်တိုဘာလ ၂ ရက်နေ့ရက်စွဲပါ အတည်ပြုမိန့်အမှတ် ပခတ-၀၂၇/၂၀၁၉ တွင်  
ပြင်ဆင်ချက်

၂၀၂၁ ခုနှစ် မေလ ၂၈ ရက်နေ့တွင် ကျင်းပပြုလုပ်ခဲ့သော ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှု  
ကော်မတီ၏ (၁/၂၀၂၁) ကြိမ်မြောက် အစည်းအဝေး ဆုံးဖြတ်ချက်အရ Cobes Industries (BII)  
Co., Ltd. ၏ ရင်းနှီးမြှုပ်နှံမှုအမည်အား Cobes Industries Pte. Limited ဟုလည်းကောင်း၊ နေရပ်  
လိပ်စာအား 2 Venture Drive, #11-31, Vision Exchange, Singapore (608526) ဟုလည်းကောင်း၊  
ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာအား Cobes Industries Pte. Limited, 2 Venture Drive, #11-  
31, Vision Exchange, Singapore (608526) ဟုလည်းကောင်း၊ ဖွဲ့စည်းရာအရပ်အား Singapore ဟု  
လည်းကောင်း ပြောင်းလဲခွင့်ပြုလိုက်သည်။

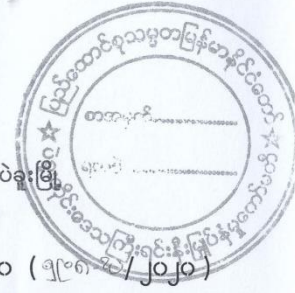
- (၁) ရင်းနှီးမြှုပ်နှံမှုအမည် COBES INDUSTRIES PTE.LIMITED
- (၂) နိုင်ငံသား CHINA
- (၃) နေရပ်လိပ်စာ 2 VENTURE DRIVE, #11-31, VISION EXCHANGE,  
SINGAPORE (608526)
- (၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ COBES INDUSTRIES PTE.LTD , 2 VENTURE  
DRIVE, #11-31, VISION EXCHANGE, SINGAPORE (608526)
- (၅) ဖွဲ့စည်းရာအရပ် SINGAPORE

ဥက္ကဋ္ဌ(ကိုယ်စား)  
(ကိုကိုလတ်၊ အတွင်းရေးမှူး)

ရက်စွဲ၊ ၂၀၂၁ ခုနှစ် ဇွန်လ ၁၅ ရက်  
နေရာ၊ ပဲခူးမြို့



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ  
တိုင်းဒေသကြီးအစိုးရအဖွဲ့ရုံးဝင်း၊တောင်ငူလမ်း၊ရုံးကြီးရပ်ကွက်၊ပဲခူးမြို့



☎ ၀၅၂-၂၂၀၁၇၄၇

စာအမှတ်၊ ၂၂ / ၄၉ / ၁၀ (၅၂၀၈၀၀ / ၂၀၂၀)

☎ ၀၅၂-၂၂၀၁၇၄၈

ရက်စွဲ ၂၀၂၀ ပြည့်နှစ် ဇူလိုင်လ ၉ ရက်

အကြောင်းအရာ။ Cobes Industries (BII) Co., Ltd. မှ ရင်းနှီးမြှုပ်နှံမှုပမာဏ တိုးမြှင့်ခွင့်ပြု  
ပါရန်တင်ပြလာခြင်းကိစ္စ

ရည် ညွှန်း ချက် ။ Cobes Industries (BII) Co., Ltd. ၏ (၈-၆-၂၀၂၀) ရက်စွဲပါစာ

၁။ Cobes Industries (BII) Co., Ltd. မှ ရည်ညွှန်းပါစာများဖြင့် တင်ပြလာသည့်ကိစ္စနှင့်  
စပ်လျဉ်း၍ ၂၀၂၀ ပြည့်နှစ် ဇွန်လ ၂၄ ရက်နေ့တွင်ကျင်းပသော ပဲခူးတိုင်းဒေသကြီးရင်းနှီး  
မြှုပ်နှံမှုကော်မတီ၏ (၃/၂၀၂၀) ကြိမ်မြောက်အစည်းအဝေးမှ အောက်ပါအတိုင်း ဆုံးဖြတ်ခဲ့ပါသည်-

- (က) မူလရင်းနှီးမြှုပ်နှံမှု မတည်ငွေရင်းပမာဏ အမေရိကန်ဒေါ်လာ ၁.၀၀၀ သန်းအား  
အမေရိကန်ဒေါ်လာ ၄.၆၇၄သန်းထပ်မံတိုးမြှင့်၍ စုစုပေါင်းအမေရိကန်ဒေါ်လာ  
၅.၆၇၄ သန်းသို့ တိုးမြှင့်ခွင့်ပြုရန်။

၂။ သို့ဖြစ်ပါ၍ ကော်မတီအစည်းအဝေးဆုံးဖြတ်ချက်အား သိရှိနိုင်ပါရန်၊ ကော်မတီ အတည်  
ပြုမိန့်တွင် ပြင်ဆင်ရန် ဝန်ဆောင်ခအဖြစ် ကျပ် ၂၅,၀၀၀ (ကျပ် နှစ်သောင်း ငါးထောင်တိတိ) အား  
ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန၊ ပဲခူးတိုင်းဒေသကြီးဦးစီးမှူးရုံးသို့ပေးသွင်း  
ထားသည့် ငွေသွင်းချလံ(မူရင်း)နှင့် ကော်မတီအတည်ပြုမိန့်(မိတ္တူ)ကို ဤကော်မတီရုံးသို့ တစ်လ  
အတွင်းပေးပို့ပါရန်နှင့် ပေးပို့ခြင်းမရှိပါက အထက်အပိုဒ်(၁)ပါ ဆုံးဖြတ်ချက်များ အလိုအလျောက်  
ပျက်ပြယ်မည်ဖြစ်ကြောင်း အကြောင်းကြားပါသည်။

*(Handwritten signature)*  
ဥက္ကဋ္ဌ(ကိုယ်စား)  
(ကိုကိုလတ်၊ အတွင်းရေးမှူး)

Cobes Industries (BII) Co., Ltd.

မိတ္တူကို

- ဥက္ကဋ္ဌ၊ ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ
- ရင်းနှီးမြှုပ်နှံမှုဌာနခွဲ(၂)၊ ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
- ရင်းနှီးမြှုပ်နှံမှုကြီးကြပ်ရေးဌာနခွဲ၊ ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
- ရုံးလက်ခံ/မျှောစာတွဲ

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
 ရင်းနှီးမြုပ်နှံမှုနှင့်နိုင်ငံခြားစီးပွားဆက်သွယ်ရေးဝန်ကြီးဌာန  
 ရင်းနှီးမြုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန  
 ပဲခူးတိုင်းဒေသကြီးဦးစီးမှူးရုံး  
 ငွေလက်ခံရန်အကြောင်းကြားစာ

အမှတ်စဉ် - ရက်စွဲ၊ ၂၀၂၀ ပြည့်နှစ်၊ ဇူလိုင်လ၊ ၂၀ ရက်

အောက်ဖော်ပြပါ လျှောက်ထားသူထံမှ သက်ဆိုင်ရာလျှောက်ထားလွှာအတွက် ဖော်ပြပါ ဝန်ဆောင်ခအား လက်ခံပါရန်နှင့် ငွေပြေစာမိတ္တူတစ်စောင်ကို ဌာနခွဲသို့ပေးပို့ပေးပါရန် အကြောင်း ကြားအပ်ပါသည်။

၁။ လျှောက်ထားသူ၏ -

(က) အမည် ..... ဖုန်းနံပါတ် .....  
 (ခ) နိုင်ငံသားစိစစ်ရေးကဒ်အမှတ်/နိုင်ငံကူးလက်မှတ်အမှတ် .....  
 (ဂ) နေရပ်လိပ်စာ/တယ်လီဖုန်း ..... ၀၉၇၇၈၃၉၇၀၇၀

၂။ ရင်းနှီးမြုပ်နှံသူ၏ -

(က) အမည် COBES INDUSTRIES COMPANY LIMITED  
 (ခ) ကုမ္ပဏီအမည် COBES INDUSTRIES (B.II) COMPANY LIMITED  
 (ဂ) လုပ်ငန်းအမျိုးအစား Manufacturing of non-sterilized disposable surgical-  
 scrubs and related kind of clinical wears on  
 ၃။ ပေးသွင်းမည့်ဝန်ဆောင်ခနှင့်စပ်လျဉ်း၍ - CMP basis.

(က) လျှောက်ထားလွှာ ပုံစံအမှတ် .....  
 (ခ) ဝန်ဆောင်ခနှုန်းထား (ဂဏန်းဖြင့်) ကျပ် .....  
 (စာဖြင့်) ကျပ် .....  
 (ဂ) ငွေအမျိုးအစား (ကျောဘက်ပါအတိုင်း)

ငွေလက်ခံပေးပါရန်  
 (ရင်းနှီးမြုပ်နှံမှုဌာနစု)

..... ကျပ် (.....)  
 ကျပ်တိတိ) ကိုလက်ခံရရှိပါသည်။

ငွေစာရင်းဌာနစု



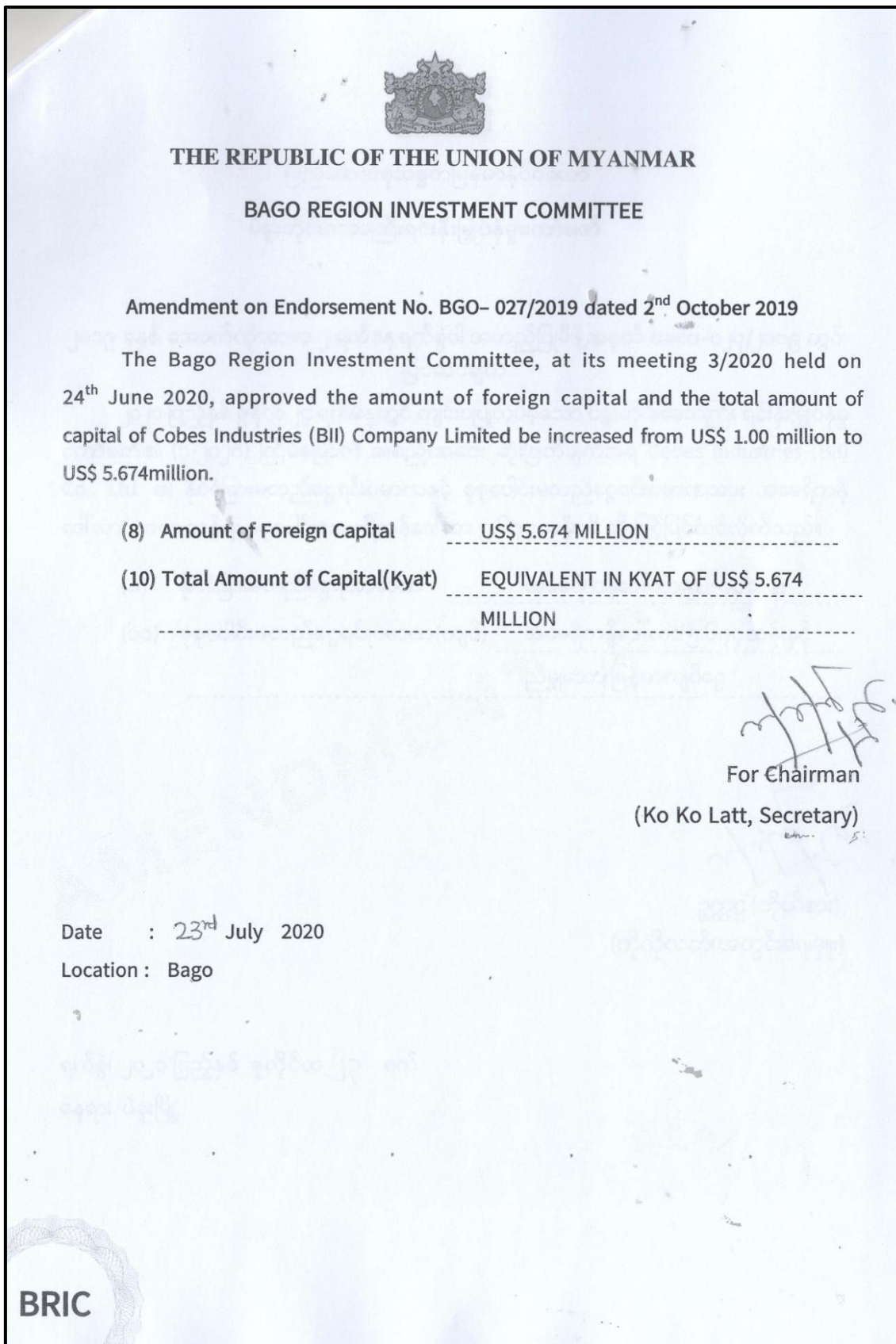
**Confidential**

- 2 -

5. Ministry of Natural Resources and Environmental Conservation
6. Ministry of Labour, Immigration and Population
7. Ministry of Commerce
8. Myanmar Investment Commission
9. Chairman, CMP Enterprises Supervision Committee
10. Office of the Bago Region Government
11. Director General, Customs Department
12. Director General, Internal Revenue Department
13. Director General, National Archives Department
14. Director General, Directorate of Industrial Supervision and Inspection
15. Director General, Directorate of Investment and Company Administration
16. Director General, Department of Environmental Conservation
17. Director General, Directorate of Labour
18. Director General, Department of Immigration
19. Director General, Department of Trade
20. Director, Investment Monitoring Section, Directorate of Investment and Company Administration

Date : 23 July 2020

Location : Bago





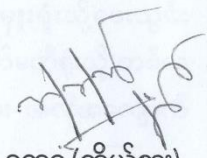
ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြုပ်နှံမှုကော်မတီ

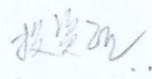
၂၀၁၉ ခုနှစ် အောက်တိုဘာလ ၂ ရက်နေ့ရက်စွဲပါ အတည်ပြုမိန့်အမှတ် ပခတ-၀၂၇/၂၀၁၉ တွင် ပြင်ဆင်ချက်

၂၀၂၀ ပြည့်နှစ် ဇွန်လ ၂၄ ရက်နေ့တွင် ကျင်းပပြုလုပ်ခဲ့သော ပဲခူးတိုင်းဒေသကြီး ရင်းနှီးမြုပ်နှံမှု ကော်မတီ၏ (၃/၂၀၂၀) ကြိမ်မြောက် အစည်းအဝေး ဆုံးဖြတ်ချက်အရ Cobes Industries (BII) Co., Ltd. ၏ နိုင်ငံခြားမတည်ငွေရင်းပမာဏနှင့် စုစုပေါင်းမတည်ငွေရင်းပမာဏအား အမေရိကန် ဒေါ်လာ ၁.၀၀၀ သန်းမှ စုစုပေါင်းအမေရိကန်ဒေါ်လာ ၅.၆၇၄ သန်းသို့ တိုးမြှင့်ပြင်ဆင်လိုက်သည်။

- (၈) နိုင်ငံခြားမတည်ငွေရင်းပမာဏ ----- အမေရိကန်ဒေါ်လာ ၅.၆၇၄ သန်း
- (၁၀) စုစုပေါင်းမတည်ငွေရင်းပမာဏ(ကျပ်) ----- အမေရိကန်ဒေါ်လာ ၅.၆၇၄ သန်းနှင့်  
----- ညီမျှသော မြန်မာကျပ်ငွေ

  
ဥက္ကဋ္ဌ (ကိုယ်စား)  
(ကိုကိုလတ်၊ အတွင်းရေးမှူး)

ရက်စွဲ၊ ၂၀၂၀ ပြည့်နှစ် ဇူလိုင်လ ၂၃ ရက်  
နေရာ၊ ပဲခူးမြို့





Appendix 9 Certificate of Exporter/Importer Registration

038226

**The Government of The Republic of the Union of Myanmar**  
**Ministry of Commerce**  
**Department of Trade**

**CERTIFICATE OF EXPORTER/IMPORTER REGISTRATION**

1. Enterprise Name (မြန်မာ/အင်္ဂလိပ်) **COBES INDUSTRIES (BII) COMPANY LIMITED.** 2. Registration No: **58931(14-11-19)**

3. Registration Term: **FIVE YEAR**

4. Start Date: **14-11-2019**

5. End Date: **13-11-2024**

6. Address (မြန်မာ/အင်္ဂလိပ်) **Lot No.62(Ka), Kwin No.1315, La Hpyor Yoe Kwin, Okkathar (9th) Quarter, Bago Township,  
 Bago Region Myanmar**

7. Business Registration No: **121407387(27-7-2019)**

8. Type of Business (မြန်မာ/အင်္ဂလိပ်)  Sole Proprietorship (တစ်ဦးတည်းပိုင်)  Partnership (အစုအဝတ်)  
 Limited Company (လီမိတက်ကုမ္ပဏီ) (Myanmar/Foreign)  
 Co-operative Society (သမဝါယမအသင်း)  
 Others (Please specify) (အခြား (ဖော်ပြရန်) သတ်မှတ်တမ်းပါလုပ်ငန်း အမျိုးအစားရှင်းပြပါ)

9. Type of Service:  New  Extension

10. Contact No: **09778397070** Telephone No. **David@cobeshk.com** e-mail


11. Remarks: **BRIC Endorsement No.BG0-027/201 / Date (2-10-2019)**

12. Terms and Conditions (စည်းကမ်းချက်များ)  
 I hereby register the above mentioned enterprise as Exporter/Importer subject to the following terms and conditions: (အောက်ဖော်ပြပါစည်းကမ်းချက်များဖြင့် မှတ်ပုံတင်ကုန်သည်အဖြစ် မှတ်ပုံတင်ရန်ဖြစ်ပါသည်)  
 (a) Line of goods permitted - all items except prohibited and restricted items.  
 (ခ) မြို့ပြသည့်ကုန်ပစ္စည်းအမျိုးအစား - တားမြစ်သတ်မှတ်ထားသော ကုန်ပစ္စည်းအမျိုးအစားမှလွှဲ၍ ကျန်ကုန်ပစ္စည်းများအားလုံး  
 (b) The enterprise must abide by the Export/Import rules and Regulations prescribed for the registered Exporter/Importer.  
 (ဂ) မှတ်ပုံတင်ကုန်သည်သည် မှတ်ပုံတင်ကုန်သည်အဖြစ်မှတ်ပုံတင်ရန်အတွက် သတ်မှတ်ထားသည့်စည်းကမ်းချက်များကို လိုက်နာရမည်




EHREG1198EIREGEX12130012

042315



**The Government of The Republic of the Union of Myanmar**  
**Ministry of Commerce**  
**Department of Trade**

**CERTIFICATE OF EXPORTER/IMPORTER REGISTRATION**

1. Enterprise Name (မြန်မာ/အင်္ဂလိပ်) **COBES INDUSTRIES (BII) COMPANY LIMITED.** 2. Registration No: **121497387 (14-11-19)**

3. Registration Term: **FIVE YEAR**

4. Start Date : **14-11-2019**

5. End Date : **13-11-2024**

6. Address : (မြန်မာ/အင်္ဂလိပ်) **Lot No.62(Ka), Kwin No.1315, La Hpyor Yoe Kwin, Okkathar (9th) Quarter, Bago Township,  
 Bago Region, Myanmar**

7. Business Registration No : **121497387**

8. Type of Business :  Sole Proprietorship(တစ်ဦးတည်းပိုင်)  Partnership(အစုအစပ်)  
 Limited Company(လီမိတက်ကုမ္ပဏီ)(Myanmar/Foreign)  
 Co-operative Society(သမဝါယမအသင်း)  
 Others(Please specify)အခြား(ဖော်ပြရန်) သင်း/ဖွဲ့ဖတ်တမ်းပါလုပ်ငန်း: ( )။ ဆောင်ရွက်ခွင့်ရှိသည်။

9. Type of Service :  New  Extension  Amendment

10. Contact No : **09778397070** **David@cobeshk.com**

Telephone No. Fax No. e-mail



11. Remarks : **BRIC Endorsement No.BGO-027/2019 Date (2-10-2019)**

12. Terms and Conditions : စည်းကမ်းချက်များ  
 I hereby register the above mentioned enterprise as Exporter/Importer subject to the following terms and conditions: (အောက်ဖော်ပြပါစည်းကမ်းချက်များဖြင့် မှီကုန်သွင်းကုန် လုပ်ငန်းရှင်အဖြစ် မှတ်တမ်းတင်ခွင့်ပြုသည်)  
 (a) Line of goods permitted - all items except prohibited and restricted items.  
 ခွင့်ပြုသည့်ကုန်ပစ္စည်းအမျိုးအမည် - တားမြစ်ကန့်သတ်ထားသော ကုန်ပစ္စည်းအမယ်များမှလွဲ၍ ကျန်ကုန်ပစ္စည်းများအားလုံး  
 (b) The enterprise must abide by the Export/Import rules and Regulations prescribed for the registered Exporters/Importers.(လုပ်ငန်းရှင်သည် မှတ်ပုံတင် မှီကုန်သွင်းကုန်လုပ်ငန်းရှင်လုပ်ကိုင်သူများ လိုက်နာရမည့်စည်းကမ်းချက်များကို လိုက်နာရမည်)

074  
27-1-20  
Stamp

*Signature*  
27-1-20  
For Director General  
(ရုံးပိုင်ခြင်းအစဉ်)  
Aye  
27-1-20

EIREG11198EIREGEX12130612

 The Republic of The Union of Myanmar  
Ministry of Planning, Finance and Industry  
Customs Department 

MACCS System ကိုအသုံးပြုမည့် ထုတ်ကုန်သွင်းကုန်လုပ်ငန်းရှင်များအတွက်  
Importer/Exporter Code ထုတ်ပေးခြင်း

COMPANY NAME	COBES INDUSTRIES (BII) COMPANY LIMITED.
HTK NO	121497387-00
I/E CODE	CKCMJNKD3C000

OWNER  
(ORIGINAL RECEIVED)

CUSTOMS IN CHARGE  
(USER REGISTRATION)

**Appendix 10 Membership Certificate of UMFCCI**

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံ  
 ကုန်သည်များနှင့်စက်မှုလက်မှုလုပ်ငန်းရှင်များအသင်းချုပ်  
**The Republic of The Union of Myanmar Federation of Chambers of Commerce and Industry**  
 No.(29), Min Ye' Kyaw Swar Road, Lanmadaw Township, Yangon, Myanmar.  
**Established In1919**




**အသင်းဝင်လက်မှတ်  
Certificate of Membership**

**Membership No. & Date**  
**43973 (15-11-2019)**  
 အောက်ဖော်ပြပါနိုင်ငံခြားကုမ္ပဏီ သည်ဤကုန်သည်စက်မှုအသင်းချုပ်တွင် ၂၀၁၉ခုနှစ်၊ နိုဝင်ဘာလ (၁၅) ရက်နေ့မှစ၍ အသင်းဝင်တစ်ဦး ဖြစ်ပါကြောင်း။  
 The under - mentioned **Foreign Company** is a member of the UMFCCI with effect from **43973 (15-11-2019)**  
 အသင်းဝင်အမည်နှင့် လိပ်စာ \_\_\_\_\_  
 မြေကွက်အမှတ်-၆၂(က)၊ ကွင်းအမှတ်(၁၃၁၅)၊ လဖျော်ရိုးကွင်း၊ ဥဿာ(၉)ရပ်ကွက်၊  
 ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီး။

**Member's Name & Address** **Cobes Industries (BII) Company Limited**  
 Lot No. 62 (Ka), Kwin No. (1315), La Hpyor Yoe Kwin, Okkathar (9th) Quarter,  
 Bago Township, Bago Region.

လုပ်ငန်းမှတ်ပုံတင်အမှတ်နှင့်ရက်စွဲ \_\_\_\_\_ ၁၂၁၄၉၇၃၈၇(၂၇.၇.၂၀၁၉)  
**Business Registration No. and Date** **121497387(27.7.2019)**

**Tel** 09-778397070 **Fax** \_\_\_\_\_ **e-mail** David@cobeshk.com

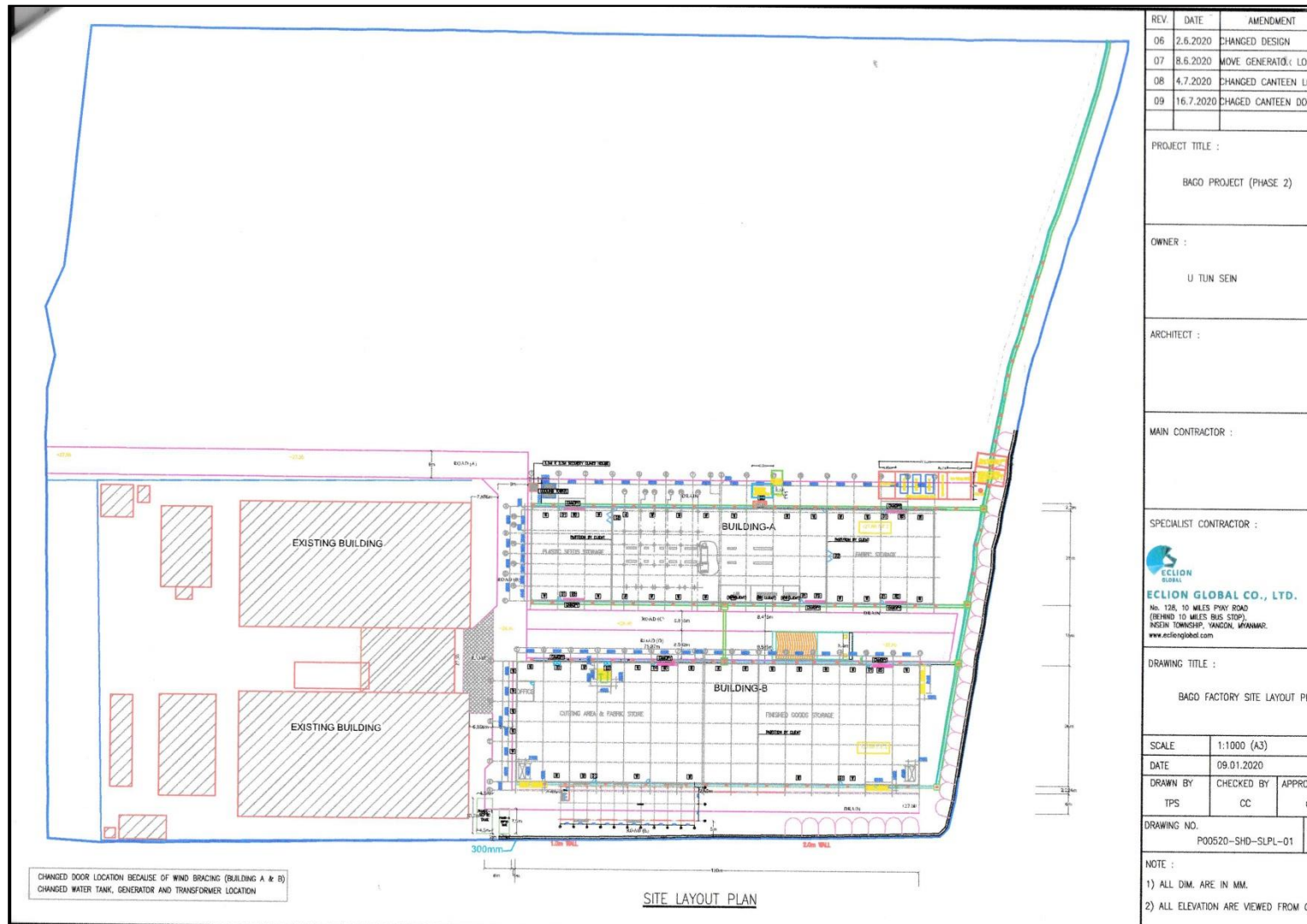
  
**Secretary General**  
 Signature of Member (or) Representative \_\_\_\_\_  
 Name & NRC No. **Mr. Guo, Chunwei (PP.No. E 26362396)**  
 Designation **Director**

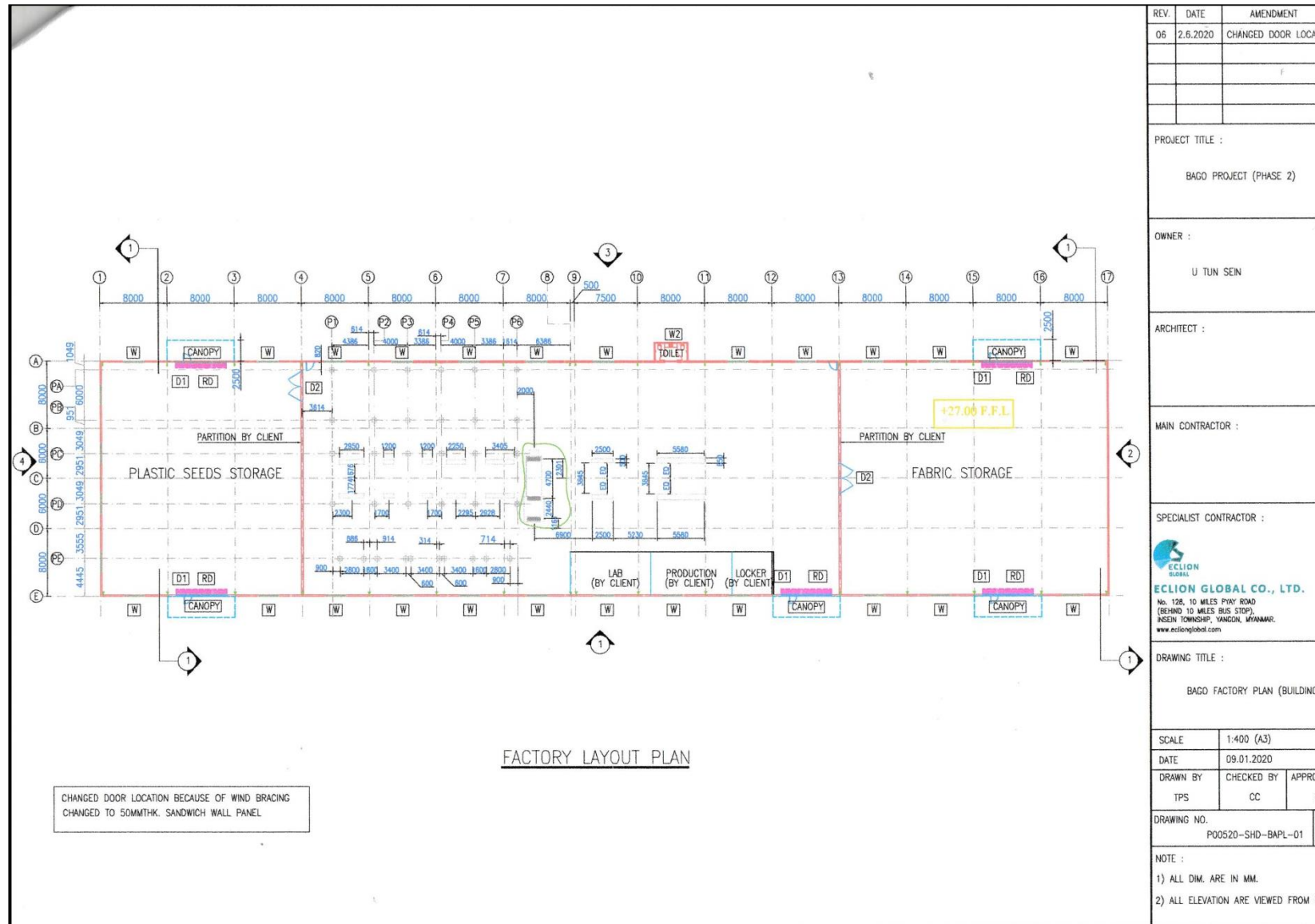
  
**President**

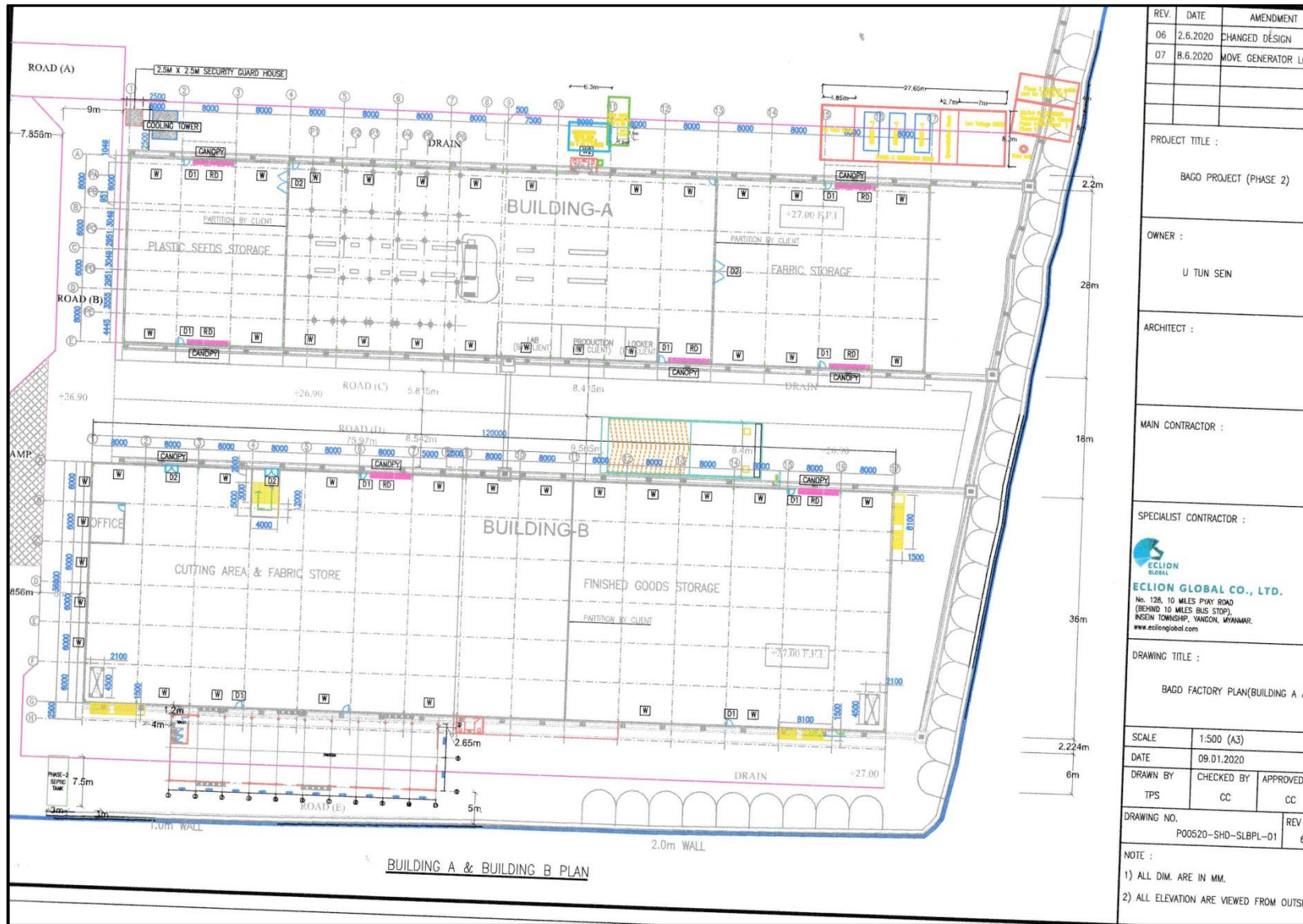
<u>Extended Period</u>	<u>Extended Registration No.</u>	<u>Authorized Signature</u>
(1) From 15-11-2019 to 31-12-2021	(02200)	 <b>Joint Secretary General</b>
(2) From _____ to _____		



### Appendix 11 Building Drawing Layout

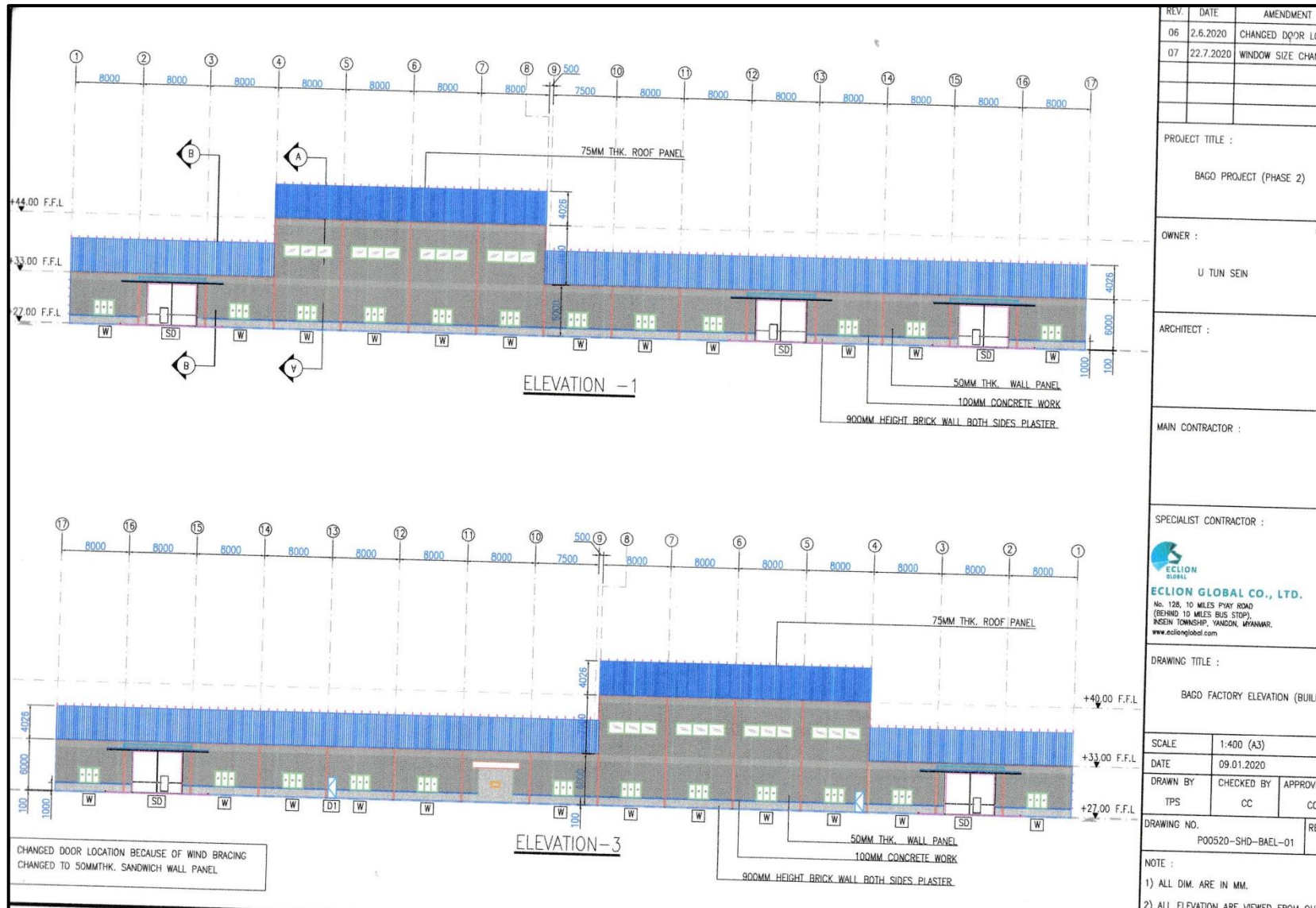





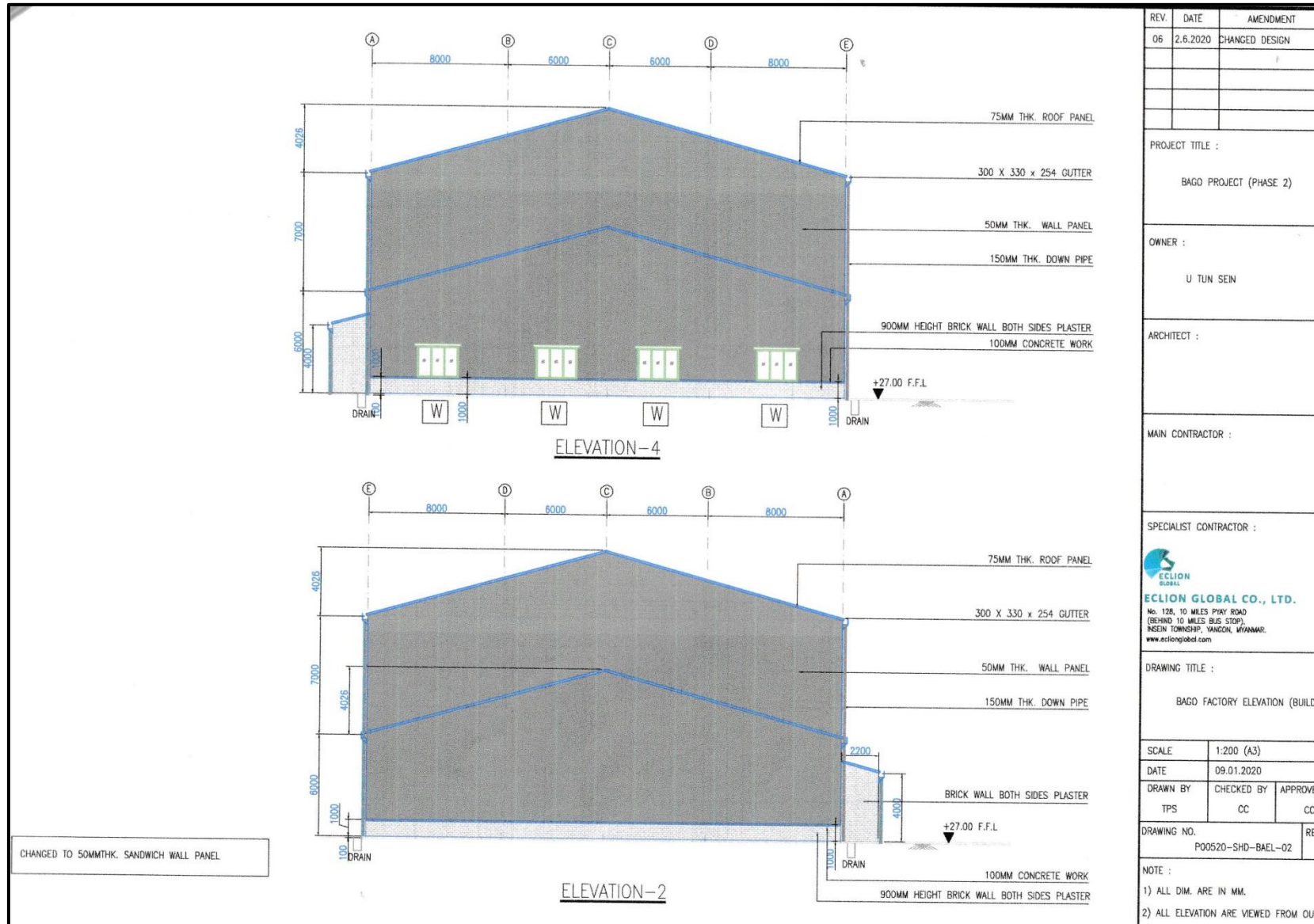



REV.	DATE	AMENDMENT
06	2.6.2020	CHANGED DESIGN
07	8.6.2020	MOVE GENERATOR LO
PROJECT TITLE :		
BAGO PROJECT (PHASE 2)		
OWNER :		
U TUN SEIN		
ARCHITECT :		
MAIN CONTRACTOR :		
SPECIALIST CONTRACTOR :		
 <b>ECLION GLOBAL CO., LTD.</b> No. 128, 10 MILES PWAY ROAD (BEHIND 10 MILES BUS STOP), INSEIN TOWNSHIP, YANGON, MYANMAR. www.eclionglobal.com		
DRAWING TITLE :		
BAGO FACTORY PLAN(BUILDING A & B)		
SCALE	1:500 (A3)	
DATE	09.01.2020	
DRAWN BY	CHECKED BY	APPROVED
TPS	CC	CC
DRAWING NO.	P00520-SHD-SLBPL-01	REV 6
NOTE :		
1) ALL DIM. ARE IN MM.		
2) ALL ELEVATION ARE VIEWED FROM OUTSIDE		



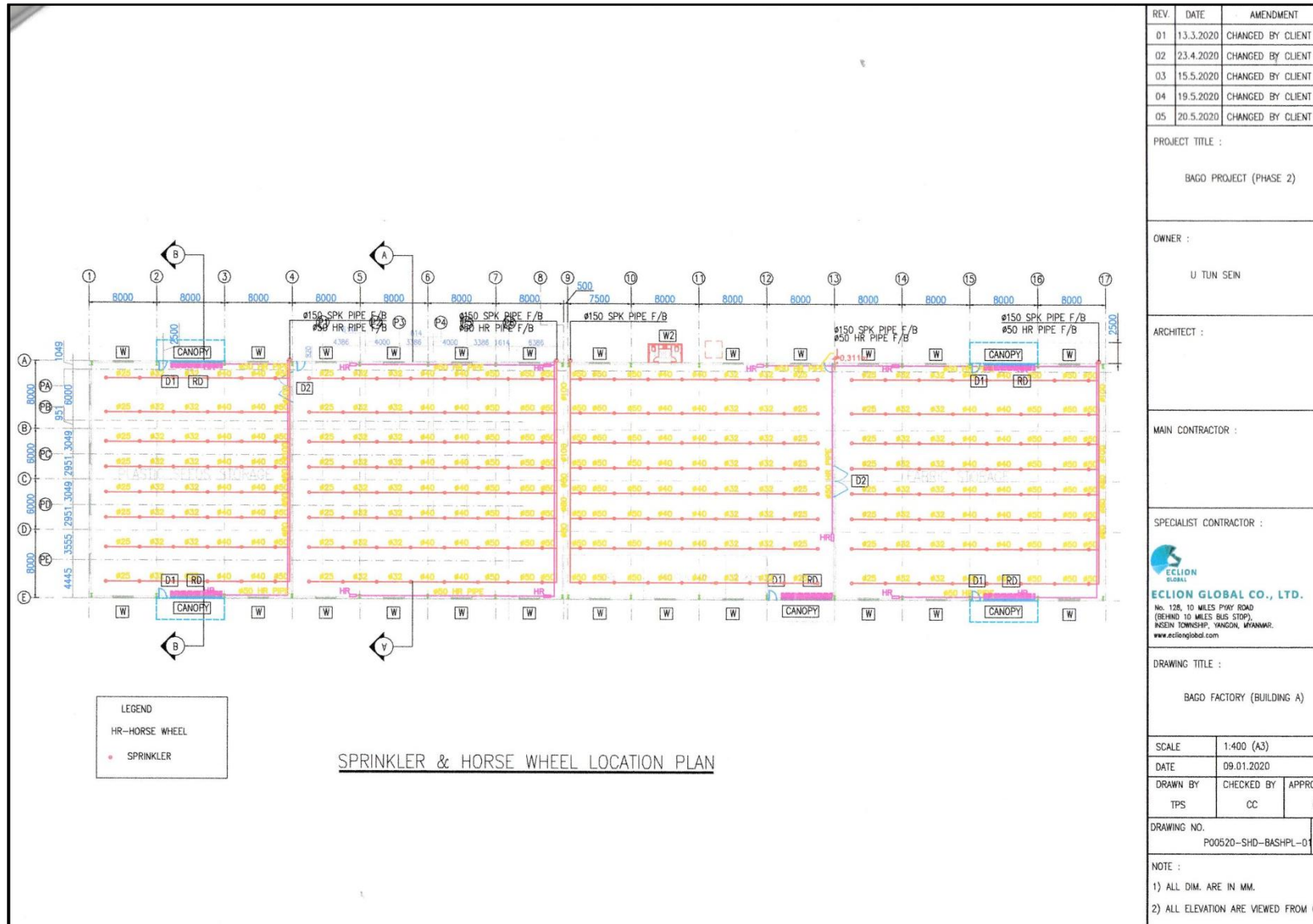


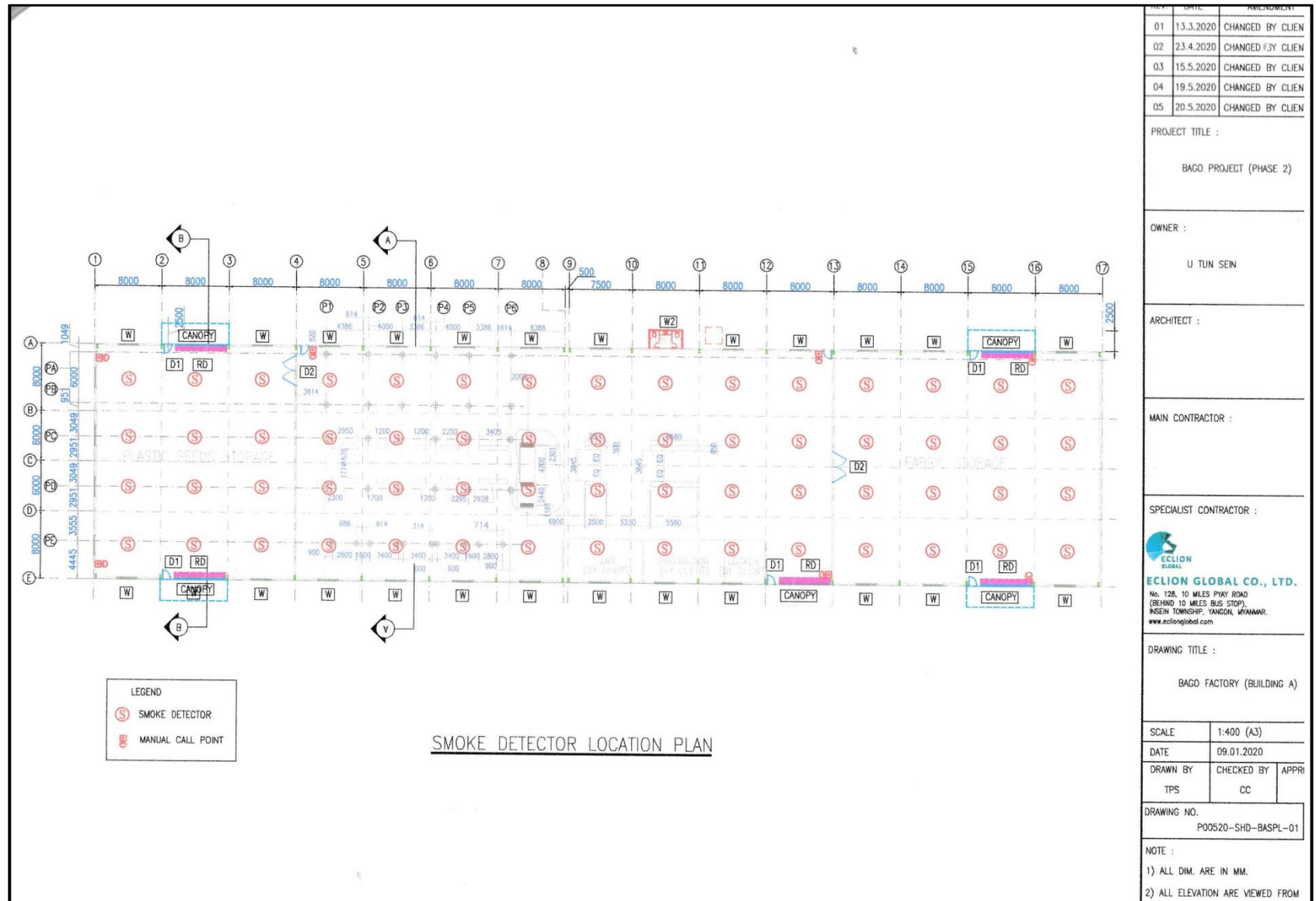
REV.	DATE	AMENDMENT
06	2.6.2020	CHANGED DOOR LO
07	22.7.2020	WINDOW SIZE CHAN
PROJECT TITLE :		
BAGO PROJECT (PHASE 2)		
OWNER :		
U TUN SEIN		
ARCHITECT :		
MAIN CONTRACTOR :		
SPECIALIST CONTRACTOR :		
 <b>ECLION GLOBAL CO., LTD.</b> No. 128, 10 MILES PIAY ROAD (BEHIND 10 MILES BUS STOP) RISEIN TOWNSHIP, YANSON, MYANMAR. www.eclionglobal.com		
DRAWING TITLE :		
BAGO FACTORY ELEVATION (BUILD		
SCALE	1:400 (A3)	
DATE	09.01.2020	
DRAWN BY	CHECKED BY	APPROVE
TPS	CC	CC
DRAWING NO.	P00520-SHD-BAEL-01	
NOTE :		
1) ALL DIM. ARE IN MM.		
2) ALL ELEVATION ARE VIEWED FROM OUT		

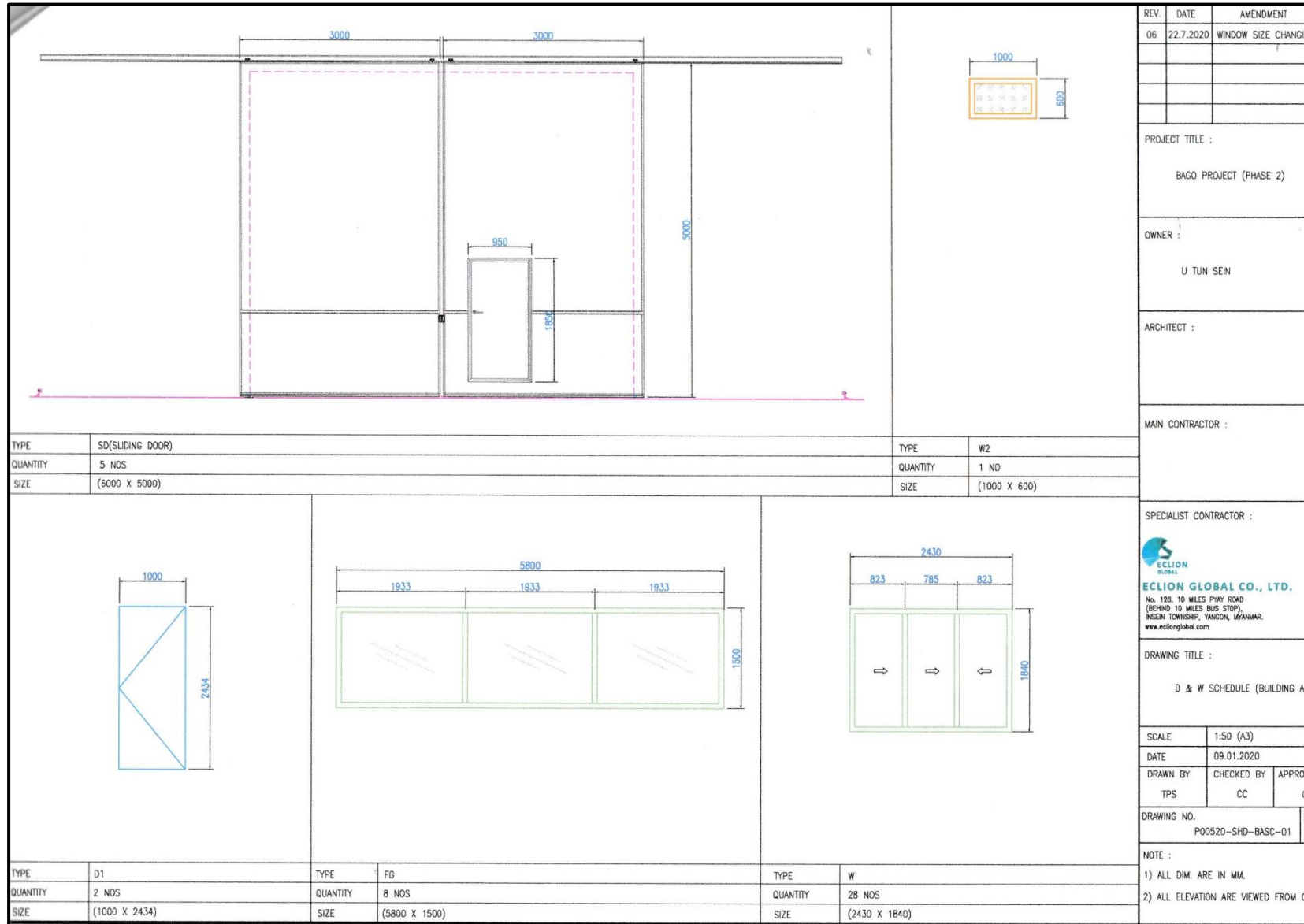


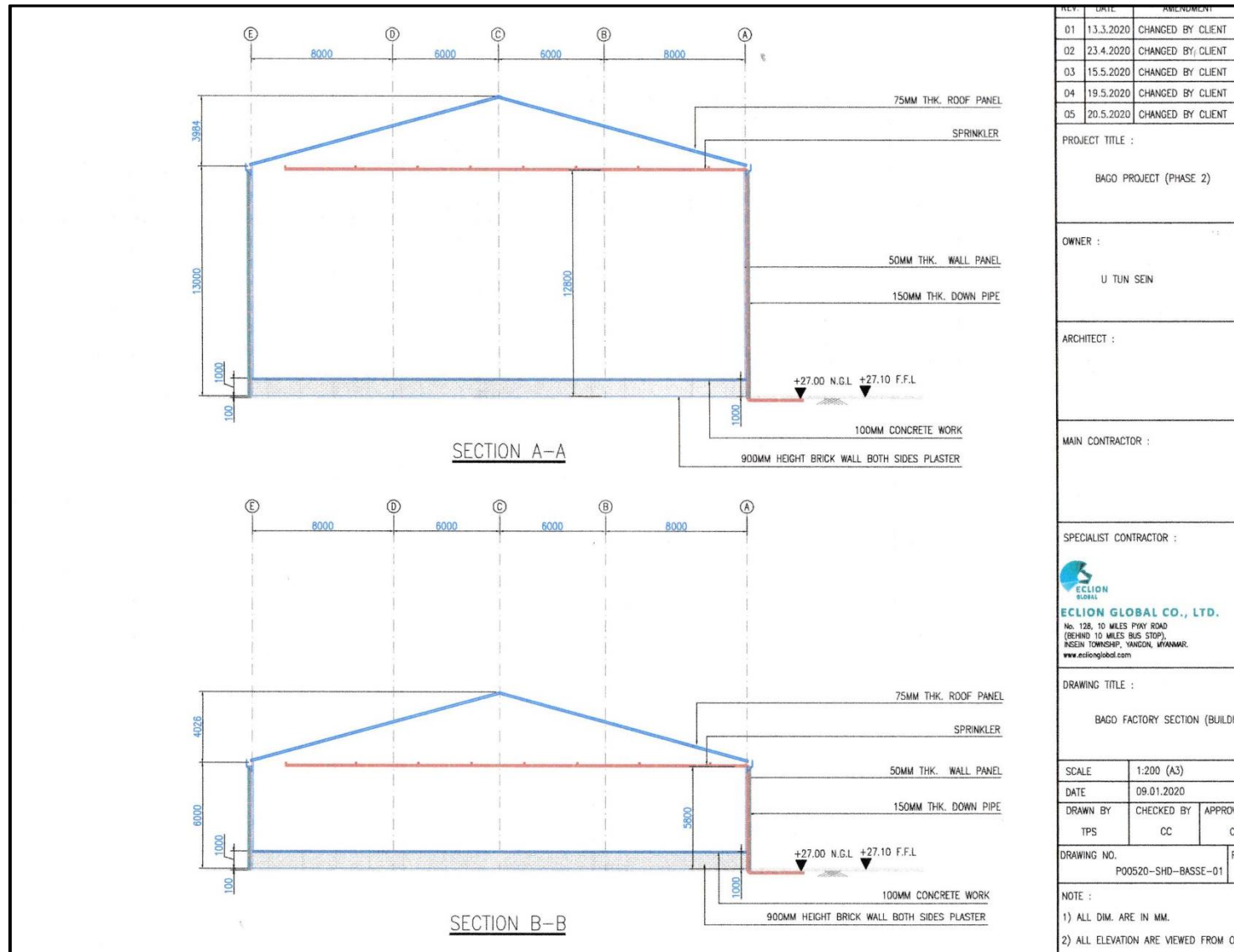
REV.	DATE	AMENDMENT
06	2.6.2020	CHANGED DESIGN
PROJECT TITLE :		
BAGO PROJECT (PHASE 2)		
OWNER :		
U TUN SEIN		
ARCHITECT :		
MAIN CONTRACTOR :		
SPECIALIST CONTRACTOR :		
 <b>ECLION GLOBAL CO., LTD.</b> No. 126, 10 MILES PIAY ROAD (BEHIND 10 MILES BUS STOP), GREEN TOWNSHIP, YANGON, MYANMAR. www.eclionglobal.com		
DRAWING TITLE :		
BAGO FACTORY ELEVATION (BUILD)		
SCALE	1:200 (A3)	
DATE	09.01.2020	
DRAWN BY	CHECKED BY	APPROVE
TPS	CC	CC
DRAWING NO.	RE	
P00520-SHD-BAEL-02		
NOTE :		
1) ALL DIM. ARE IN MM.		
2) ALL ELEVATION ARE VIEWED FROM OUT		

IEE Report for “Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis” Project  
 Cobes Industries (B-II) Company Limited









REV	DATE	AMENDMENT
01	13.3.2020	CHANGED BY CLIENT
02	23.4.2020	CHANGED BY CLIENT
03	15.5.2020	CHANGED BY CLIENT
04	19.5.2020	CHANGED BY CLIENT
05	20.5.2020	CHANGED BY CLIENT


PROJECT TITLE :  
 BAGO PROJECT (PHASE 2)

OWNER :  
 U TUN SEN

ARCHITECT :

MAIN CONTRACTOR :

SPECIALIST CONTRACTOR :

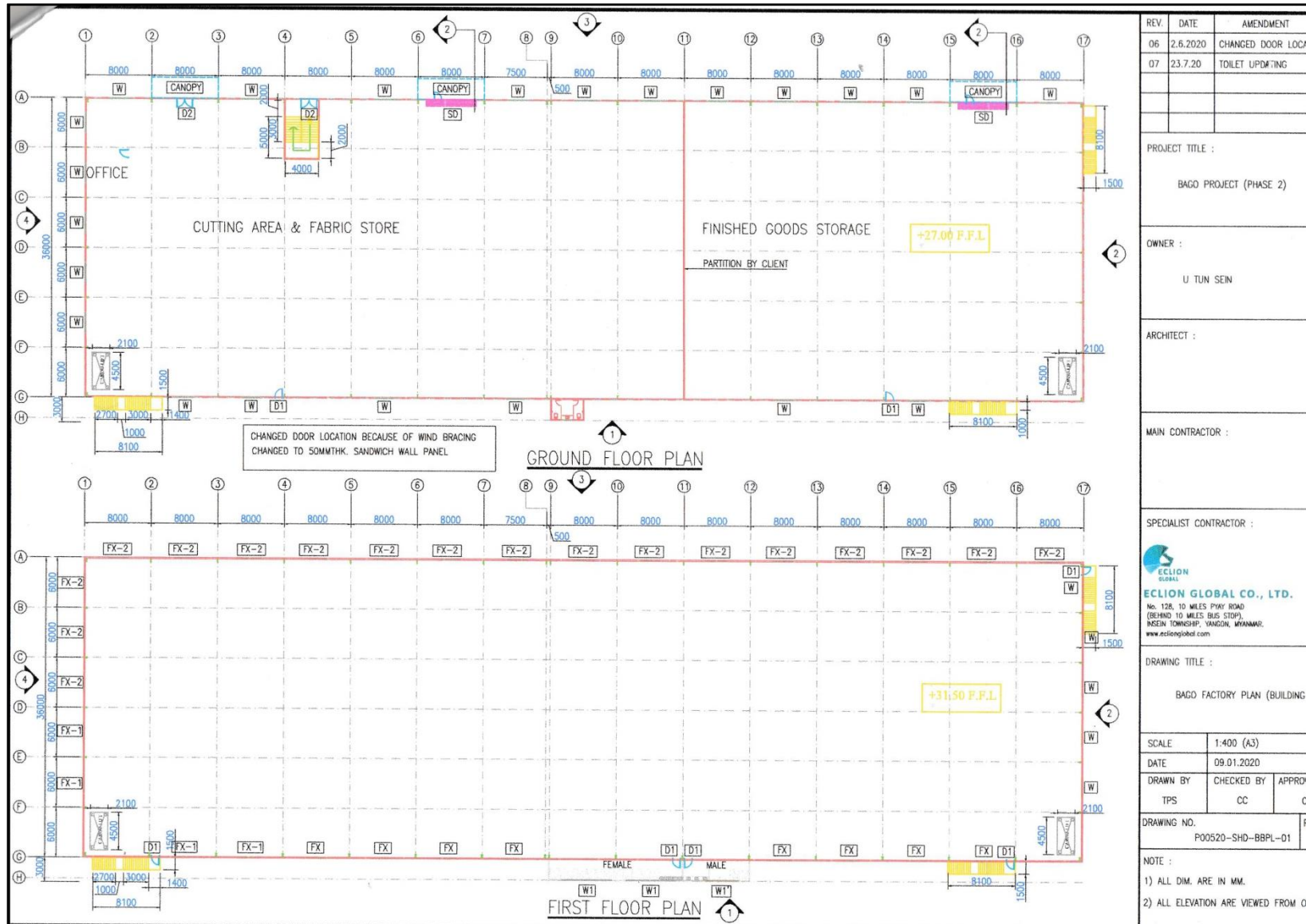
  
**ECLION GLOBAL CO., LTD.**  
 No. 128, 10 MILES PIAY ROAD  
 (BEHIND 10 MILES BUS STOP),  
 INSEIN TOWNSHIP, YANGON, MYANMAR.  
 www.eclionglobal.com

DRAWING TITLE :  
 BAGO FACTORY SECTION (BUILDING)

SCALE	1:200 (A3)	
DATE	09.01.2020	
DRAWN BY	CHECKED BY	APPROV
TPS	CC	C


DRAWING NO.  
 P00520-SHD-BASSE-01

NOTE :  
 1) ALL DIM. ARE IN MM.  
 2) ALL ELEVATION ARE VIEWED FROM O



### Appendix 12 Construction Permit from Bago Township Development Committee

ပဲခူးမြို့နယ်စည်ပင်သာယာရေးအဖွဲ့  
အဆောက်အအုံပြီးစီးကြောင်းနှင့်အသုံးပြုခွင့်လက်မှတ်



စာအမှတ်၊ ၁၅၈ / ဆ-၇ / ပခ-၁ (၀၀၂)  
ရက်စွဲ။ ၂၀၂၀ခုနှစ်၊ ဇန်နဝါရီလ ၁၃ ရက်

၁။ ပဲခူးမြို့ ဥယျာဉ်မြို့သစ်(၉)ရပ်ကွက်၊ စက်မှုဇုန်မြေကွက်အမှတ်(၆၂-က)တွင် ဦးရဲမင်းထွန်း  
၏ (၇-၂-၂၀၂၆) ရက်စွဲပါခွင့်ပြုမိန့်အမှတ်(၁၅၈)ဖြင့် ဆောက်လုပ်ခွင့်ပြုမိန့်ရရှိထားသော  
(၂)ထပ်(၃)လုံး၊ (၁)ထပ်(၄)လုံး၊ စုစုပေါင်းအဆောက်အအုံ(၇)လုံး (စုစုပေါင်းကြမ်းခင်းဧရိယာ  
၁၁၆၄၃၆.၇၅ စ/ပေ) အဆောက်အအုံများမှာ တင်ပြထားခဲ့သည့် အတိုင်းအတာနှင့် ပုံစံများ အတိုင်း  
ဆောက်လုပ်ပြီးစီး သွားပြီဖြစ်ပါသည်-


မြေကွက်အလားလေးရပ်

အရှေ့ - ဦးရဲမင်းထွန်း	အနောက် - လမ်း
တောင် - ဒေါ်နန်းကျင်နွယ်	မြောက် - ဦးရဲမင်းထွန်း

၂။ အဆိုပါအဆောက်အအုံသည် ဆောက်လုပ်ပြီးစီးသွားပြီဖြစ်သဖြင့် အောက်ပါရည်ရွယ်  
ချက်များအတိုင်း အထပ်လိုက်အသုံးပြုခွင့် ပြုလိုက်ပါသည်-

- (က) မြေညီထပ် ထက်ခါးလုံး၊ ကျွမ်းမာကျွမ်းကျင်စက်ဝင်ဝက်ခွဲမြှုပ်
- (ခ) ပထမထပ် ထက်ခါးလုံး၊ ကျွမ်းမာကျွမ်းကျင်စက်ဝင်ဝက်ခွဲမြှုပ်
- (ဂ) ဒုတိယထပ် -----

၃။ ဤလက်မှတ်သည် အိမ်ပိုင်ဆိုင်မှုမြေပိုင်ဆိုင်မှုတို့နှင့် သက်ဆိုင်ခြင်းမရှိဘဲ ဤလက်  
မှတ်အပိုဒ်(၂)ပါ ရည်ရွယ်ချက်တစ်ခုခုကို ပြောင်းလဲအသုံးပြုလိုပါက ပဲခူးမြို့နယ်စည်ပင်သာယာရေး  
အဖွဲ့သို့ ချက်ချင်းအကြောင်းကြားရမည်ဖြစ်ပါသည်။

  
 အမှုဆောင်အရာရှိ  
 (အောင်ခိုင်၊ ဒုတိယညွှန်ကြားရေးမှူး)


မိတ္တူကိုင်-

ဒု-ဦးစီးမှူး(အခွန်)၊ ပဲခူးမြို့နယ်စည်ပင်သာယာရေးအဖွဲ့၊  
လက်ခံ။



**ပဲခူးမြို့နယ်စည်ပင်သာယာရေးအဖွဲ့**  
**(အင်ဂျင်နီယာဌာနခွဲ)**  
**အဆောက်အအုံဆောက်လုပ်ခွင့် အမိန့်**

စာအမှတ်၊ ၁၅၇ /ဆ-၇ / ပခ-၁ (၀၀၂)  
 ရက်စွဲ၊ ၂၀၁၉ခုနှစ်၊ ဖေဖော်ဝါရီလ ၆ ရက်



ပဲခူးမြို့၊ ဥဿာမြို့သစ်(၉)ရပ်ကွက်၊ ကွင်းအမှတ်(၁၃၁၅)၊ လဖျော်ရိုးကွင်း၊ မြေကွက်အမှတ် (၆၂-၇)၊ မြေဧရိယာ(၁၆)ဧကအနက် (၄)ဧကရှိ မြေပေါ်တွင် ဦးရဲမင်းထွန်းမှ စက်ရုံအဆောက်အဦများ ဆောက်လုပ်နိုင်ရန်အတွက် စစ်ဆေးကြီးကြပ်ခအား(၇-၂-၂၀၁၉) ရက်စွဲပါချလ်အမှတ်(၉၁)ဖြင့် ပေးသွင်းခဲ့ပြီးဖြစ်ပါ၍ အောက်ပါအလားလေးရပ်ရှိသော မြေနေရာတွင် ပူးတွဲတင်ပြထားသည့် ပုံစံများအတိုင်း အဆောက်အဦကို ဆောက်လုပ်ခွင့်ပြုလိုက်သည်-

အရှေ့ - ဦးရဲမင်းထွန်း	အနောက် - လမ်း
တောင် - ဒေါ်နန်းကျင်နွယ်	မြောက် - ဦးရဲမင်းထွန်း

**လိုက်နာရန်စည်းကမ်းချက်များ**

- ၁။ ပဲခူးမြို့နယ်စည်ပင်သာယာရေးအဖွဲ့မှ အတည်ပြုပေးသော အဆောက်အအုံပုံစံအရသာ (၁)ထပ် အဆောက်အဦများအား (၆)လအတွင်း ပြီးအောင် ဆောက်လုပ်ရမည်။ (၂)ထပ်အဆောက်အဦများ ဖြစ်ပါက(၁)နှစ်အတွင်း၊ (၃)ထပ်အဆောက်အဦများဖြစ်ပါက (၁)နှစ်နှင့် (၆)လ၊ (၄)ထပ်နှင့်အထက် အဆောက်အဦများဖြစ်ပါက (၂)နှစ်အတွင်း ပြီးစီးအောင် ဆောက်လုပ်ရမည်။
- ၂။ အဆောက်အဦဆောက်လုပ်ရန်အတွက် ပန္နက်ရိုက်သည့်အခါတွင် အဖွဲ့၏ အင်ဂျင်နီယာဌာနခွဲသို့ အကြောင်းကြားရမည်။ အဖွဲ့အင်ဂျင်နီယာဌာနခွဲ၏စာဖြင့် ခွင့်ပြုချက်ရရှိသည့်အခါမှသာ စတင်ဆောက်လုပ်ရမည်။
- ၃။ မျက်နှာစာနယ်နိမိတ်ကုန်အထိ ရေစီးရေလာကောင်းမွန်အောင် အုတ်ရေမြောင်းဆောင်ရွက် ရမည်ဖြစ်ပြီး ဖွင့်၍လွယ်သော ကွန်ကရစ်အဖုံးတပ်ဆင်ရမည်။
- ၄။ အဆောက်အဦဆောက်လုပ်ရာတွင် မျက်နှာစာတွင်ရေမြောင်းကိုပိတ်၍ ကွန်ကရစ်ခင်းခြင်း၊ မပြုလုပ်ရန်။
- ၅။ မိမိခြံဝင်းအတွင်းနှင့် မြေကွက်ပတ်ဝန်းကျင်တွင် အဖွဲ့ကျန်းမာရေးအရာရှိမှ သတ်မှတ်သော စည်းကမ်းနှင့်အညီ စင်ကြယ်အောင် ထားရှိရမည်။
- ၆။ ရေလောင်းအိမ်သာ(သို့မဟုတ်)ကျန်းမာရေးနှင့်ညီသော အနံ့ကင်း ယင်လုံအိမ်သာကို အဖွဲ့မှ သတ်မှတ်သည့် အကျယ်အဝန်းအရ ဆောက်လုပ်ရမည်။
- ၇။ ကျူးကျော်မြေ၊ အစိုးရမြေ၊ သာသနာ့မြေပေါ်တွင် မဖြစ်စေရ။
- ၈။ စည်ပင်သာယာရေးအဖွဲ့မြေပေါ်သို့ ကျူးကျော်ဆောက်လုပ်ခြင်း မရှိစေရ။ (တံစက်မြိတ်နှင့် ဆင်ဝင်အပါအဝင်)
- ၉။ အဆောက်အဦဆောက်လုပ်ပြီးသောအခါ ဤအဖွဲ့သို့ ပြန်လည်တင်ပြအကြောင်းကြားပြီး အဖွဲ့မှ နေထိုင်ခွင့်ပြုကြောင်း စာရရှိမှသာ လူနေထိုင်ခွင့် ရှိမည်။

၁၀။ ပဲခူးမြို့နယ်စည်ပင်သာယာရေးကော်မတီကသော်လည်းကောင်း၊ အမှုဆောင်အရာရှိ ကသော်လည်းကောင်း ဥပဒေနှင့်မညီသော အဆောက်အဦးများကို ဖျက်သိမ်းခြင်း၊ ပြင်ဆင်ခြင်းနှင့် ရွှေ့ပြောင်းပေးရန် အမိန့်ချမှတ်ခဲ့သော ရက်ပေါင်း(၃၀)အတွင်း အပြီးဆောင်ရွက်ပေးရမည်။ ယင်းသို့ ဆောင်ရွက်ခြင်းအတွက် လျော်ကြေးငွေဖျက်သိမ်းခ စသည်များ ရရှိလိမ့်မည်မဟုတ်။

၁၁။ ပဲခူးမြို့နယ်စည်ပင်သာယာရေးအဖွဲ့က ထုတ်ပေးသော အဆောက်အဦးဆောက်လုပ် အမိန့်သည် ၎င်းအဆောက်အဦး ဆောက်လုပ်သည့် မြေပိုင်ဆိုင်မှုကို အသိအမှတ်ပြုခြင်းမဟုတ်။ ၎င်းအပြင် ၎င်းမြေကွက် အတွက် လိုင်စင်သက်တမ်း ဝရန်သက်တမ်း တိုးမြှင့်ပေးမည်မဟုတ်။

၁၂။ အဆောက်အဦးဆောက်လုပ်ထားသော မြေနှင့်ပတ်သက်၍ အရှုပ်အရှင်းဖြစ်ပါက စည်ပင်သာယာရေးအဖွဲ့မှ လုံးဝတာဝန်ယူမည်မဟုတ်သည့်အပြင် အဆောက်အဦးကိုသော်လည်းကောင်း၊ မြေကွက်ကိုသော်လည်းကောင်း၊ ပိုင်ဆိုင်ခွင့်နှင့် စပ်လျဉ်း၍ တရားရုံးတွင် သက်သေခံအဖြစ် အသိအမှတ် ပြုလိမ့်မည်မဟုတ်ပါ။

၁၃။ အဆောက်အဦးပိုင်ရှင်အား မဆောက်သင့်မဆောက်အပ်သော မြေပေါ်တွင် အဆောက်အဦးဆောက်လုပ်ထားကြောင်း သက်ဆိုင်ရာ အာဏာပိုင်အဖွဲ့အစည်းက တွေ့ရှိ၍ ပြောင်းရွှေ့ဖယ်ရှားပေးရန် ညွှန်ကြားလျှင် တိကျစွာလိုက်နာဆောင်ရွက်ရန်။

၁၄။ အထက်ပါစည်းကမ်းများကို လိုက်နာခြင်းမပြုဘဲ ပျက်ကွက်သော် စည်ပင်သာယာရေးအဖွဲ့ ဥပဒေပုဒ်မ ၁၃ (ဖ)၊ ၁၃(ဘ)နှင့် ပုဒ်မ ၈၀ တို့အရ တရားစွဲဆိုခြင်းနှင့် အရေးယူခြင်းခံရမည်။



အမှုဆောင်အရာရှိ  
(အောင်ခိုင်၊ ဒုတိယညွှန်ကြားရေးမှူး)

မိတ္တူကို

အင်ဂျင်နီယာမှူး၊ အင်ဂျင်နီယာဌာနခွဲ(အဆောက်အဦးတည်ဆောက်ဆဲနှင့်တည်ဆောက်ဆဲကာလအတွင်း ကွင်းဆင်းစစ်ဆေးနိုင်ပါရန်)၊  
ဒုဦးစီးမှူး(အခွန်)ထံ သိသာရန်နှင့်အဆောက်အဦးခွန်များ ကောက်ခံနိုင်ရေးအတွက် လိုအပ်သလို ဆောင်ရွက်ပါရန် ပေးပို့ပါသည်။  
လက်ခံစာတွဲ၊  
မျှောစာတွဲ။

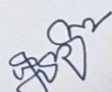
Appendix 13 EI Certificate

စီမံကိန်းဘဏ္ဍာရေးနှင့်စက်မှုဝန်ကြီးဌာန  
စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန  
လျှပ်စစ်စစ်ဆေးရေး  
လျှပ်စစ်ဓာတ်အားဖြန့်ဖြူးခြင်းလုပ်ငန်းဆိုင်ရာ  
အန္တရာယ်ကင်းရှင်းကြောင်းလက်မှတ်

ရက်စွဲ ၂၄ - ၁၂ - ၂၀၁၉ အမှတ်စဉ်၊ ၅၃၉ / ၂၀၁၉

၂၀၁၄ ခုနှစ်၊ လျှပ်စစ်ဥပဒေပုဒ်မ ၃၂ (ဃ)တွင် ပြဌာန်းထားသည့် အာဏာအရ လျှပ်စစ်ဓာတ်အားဖြန့်ဖြူးခြင်းလုပ်ငန်းကို စစ်ဆေးရာ လျှပ်စစ်ဥပဒေဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများနှင့် ကိုက်ညီကြောင်း စစ်ဆေးတွေ့ရှိရသဖြင့် အောက်ဖော်ပြပါနေရာဒေသတွင် လျှပ်စစ်ဓာတ်အားဖြန့်ဖြူးခြင်းလုပ်ငန်းဆိုင်ရာ လျှပ်စစ်အန္တရာယ်ကင်းရှင်းကြောင်းလက်မှတ်ကို ထုတ်ပေးလိုက်သည်။

၁။	သက်မှတ်ဗို့အား	- ၁၁၀၀၀ ဗို့
၂။	ဓာတ်အားလိုင်းအမျိုးအစားနှင့် အရွယ်အစား	- SAC 95mm <sup>2</sup>
၃။	ဓာတ်အားခွဲရုံ	- ၁၁ / ၀.၄ ကေဗီ၊ ၅၀၀ ကေဗီအေ ဓာတ်အားခွဲရုံ
၄။	နေရာဒေသ	- ဦးထွန်းစိန်၏ Press Aluminium Technology Manufacturing Co.,Ltd အလူမီနီယမ်ထုတ်လုပ်ရေးလုပ်ငန်း ဦးပိုင်အမှတ်(၆၂-က)၊လပျော်ရိုးကွင်း၊ကွင်းအမှတ်(၁၃၁၅)၊ ဥဿာ(၉)ရပ်ကွက်၊ပဲခူးမြို့၊ ပဲခူးခရိုင်၊ ပဲခူးတိုင်းဒေသကြီး( အရှေ့)။
၅။	မှတ်ချက်	- အဆောက်အအုံအတွင်း ဓာတ်အားဆက်သွယ် အသုံးပြုရန် အတွက် သက်ဆိုင်ရာတိုင်းဒေသကြီးလျှပ်စစ်စစ်ဆေးရေးဌာနနှင့် ဆက်သွယ်ဆောင်ရွက်ရန်။

  
 ဒေါက်တာမျိုးထိုက်  
 ညွှန်ကြားရေးမှူး  
 လျှပ်စစ်စစ်ဆေးရေးမှူးချုပ်

**စီမံကိန်း၊ ဘဏ္ဍာရေးနှင့် စက်မှုဝန်ကြီးဌာန**  
**ပဲခူးတိုင်းဒေသကြီးစက်မှုကြီးကြပ်ရေးနှင့် စစ်ဆေးရေးဦးစီးဌာန**  
**လျှပ်စစ်-စစ်ဆေးရေး**

**အကွက်အမှတ်(၉)၊ သမိန်ဗရမ်းလမ်း၊ (၆)ရပ်ကွက်၊ ဥသယမြို့သစ်၊ ပဲခူးမြို့။**  
**လျှပ်စစ်ဓာတ်အားအသုံးပြုခြင်းဆိုင်ရာအန္တရာယ်ကင်းရှင်းကြောင်းလက်မှတ်**

လက်မှတ်အမှတ်စဉ် **EI/BR-၀၂-၄၅၅**-----

၂၀၁၄ ခုနှစ် လျှပ်စစ်ဥပဒေပုဒ်မ ၃၂(ဃ)တွင် ပြဋ္ဌာန်းချက်အရ လျှပ်စစ်ဓာတ်အားအသုံးပြုခြင်း လုပ်ငန်းကို စစ်ဆေးရာတွင် လျှပ်စစ်ဥပဒေဆိုင်ရာလုပ်ထုံးလုပ်နည်းများနှင့် ကိုက်ညီကြောင်း စစ်ဆေး တွေ့ရှိရသဖြင့် အောက်ဖော်ပြပါနေရာဒေသ၌ လျှပ်စစ်ဓာတ်အားအသုံးပြုခြင်းလုပ်ငန်းကို အန္တရာယ် ကင်းရှင်းကြောင်းလက်မှတ် ထုတ်ပေးလိုက်သည်-

၁။ လျှပ်စစ်ဓာတ်အားအသုံးပြုခြင်း	
(က) သတ်မှတ်ဗို့အား	၂၃၀/၄၀၀-----
(ခ) လုပ်ငန်းအမျိုးအမည်	Cobes Industries B II Co., Ltd ဓက်ရုံ-----
(ဂ) ခွင့်ပြုဝန်အား	၅၃၇ HP-----
၂။ နေရာဒေသ	Mr. Guo Chun Wei----- ကွင်းအတွင်း (၁၃၁၅)၊ ဗမာ့ဗဟိုရုံးကွင်း စောဇာဒီးဓက်ရုံလမ်း၊ ပဲခူးမြို့-----
၃။ လက်မှတ်ထုတ်ပေးသည့်ရက်	၅.၁.၂၀၂၁-----
၄။ လက်မှတ်ကုန်ဆုံးသည့်ရက်	၄.၁.၂၀၂၂----- 4.1.2022-----
(ကျောဘက်တွင် ဖော်ပြထားသောစည်းကမ်းချက်များကိုလိုက်နာရပါမည်။)	
မှတ်ချက်။	11/0.4 kV, 500 kVA Transformer တပ်ဆင် အသုံးပြုရမည်။-----

**စစ်ဆေးရေးမှူး**  
**ပဲခူးတိုင်းဒေသကြီး လျှပ်စစ်စစ်ဆေးရေး**

Appendix 14 Generator Certificate

တိုင်း ဒေသကြီး ဦးစီးဌာန များ ရုံး  
 ပဲခူးတိုင်း ဒေသကြီး စက်မှုကြီးကြပ်ရေး  
 နှင့် စစ်ဆေးရေး ဦးစီးဌာန  
 ပဲခူးမြို့။  
 စာအမှတ်(၁၅၁၅(၇)ပခစ/ပခတ/လစ/၂၃/၂၀၂၁ (၀၀၂ )  
 ရက်စွဲ ၂၀၂၁ ခုနှစ်၊ ဇန်နဝါရီလ ၅ ရက်

အကြောင်းအရာ။ ပဲခူးတိုင်းဒေသကြီး(အရှေ့)၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့ရှိ 'Cobes Industries B.II Co., Ltd'  
 ကျန်းမာရေးသုံးဝတ်စုံချုပ်စက်ရုံအတွက် တပ်ဆင်ပြီးဖြစ်သော ၄၀၀ ဗို့ ၆၀၀ ကေစီ  
 အေနှင့် ၂၀၀ ကေစီအေ ဒီဇယ်အင်ဂျင်လျှပ်ထုတ်စက်(၂)လုံးတို့ဖြင့် လျှပ်စစ်ဓာတ်  
 အား ထုတ်လုပ်ခြင်းနှင့် အသုံးပြုခြင်းဆိုင်ရာ မှတ်ပုံတင်လက်မှတ်ထုတ်ပေးခြင်း။

ရည်ညွှန်းချက်။ ဒေါ်ခင်မာအေး 'Cobes Industries B.II Co., Ltd' ကျန်းမာရေးသုံးဝတ်စုံချုပ်စက်ရုံ  
 ၏ (၁၅.၁၂.၂၀၂၀) ရက်စွဲပါ လျှောက်ထားချက်အရ  
 အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ ပဲခူးတိုင်းဒေသကြီး(အရှေ့)၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့၊ညောင်  
 အင်းစက်မှုဇုန်၊ လဖျော့ရိုးကွင်း၊ ကွင်းအမှတ်(၁၃၁၅)ရှိ 'Cobes Industries B.II Co., Ltd' ကျန်းမာရေး  
 သုံးဝတ်စုံချုပ်စက်ရုံအတွက် တပ်ဆင်ပြီးဖြစ်သော ၄၀၀ ဗို့ ၆၀၀ ကေစီအေနှင့် ၂၀၀ ကေစီအေ ဒီဇယ်  
 အင်ဂျင် လျှပ်ထုတ်စက်(၂)လုံးတို့ဖြင့် ၂၀၂၁ ခုနှစ်၊ ဇန်နဝါရီလ ( ၅ ) ရက်နေ့မှစတင်၍ လျှပ်စစ်ဓာတ်  
 အား ထုတ်လုပ်သုံးစွဲနိုင်ရန်အတွက် လျှပ်စစ်ဓာတ်အားထုတ်လုပ်ခြင်းနှင့် အသုံးပြုခြင်းဆိုင်ရာ မှတ်ပုံတင်  
 လက်မှတ် (နှစ်)စောင်ကို ထုတ်ပေးလိုက်သည်။

နိုင်ဝင်း  
 စစ်ဆေးရေးမှူး  
 ပဲခူးတိုင်းဒေသကြီး လျှပ်စစ်စစ်ဆေးရေး

Mr. Guo Chun Wei  
 'Cobes Industries B.II Co., Ltd' ကျန်းမာရေးသုံးဝတ်စုံချုပ်စက်ရုံ  
 ကွင်းအမှတ်(၁၃၁၅)၊ လဖျော့ရိုးကွင်း၊ ညောင်အင်းစက်မှုဇုန်၊ ပဲခူးမြို့။  
 မိတ္တူကို-  
 - ညွှန်ကြားရေးမှူး၊လျှပ်စစ်စစ်ဆေးရေးဌာန၊စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန၊  
 နေပြည်တော်၊  
 - ဦးစီးဌာနမှူး၊ ပဲခူးတိုင်းဒေသကြီး စက်မှုကြီးကြပ်ရေးနှင့် စစ်ဆေးရေးဦးစီးဌာန၊ ပဲခူးမြို့၊  
 - ရုံးလက်ခံ၊  
 - မျှောစာတွဲ။

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်  
 စီမံကိန်း၊ ဘဏ္ဍာရေးနှင့် စက်မှုဝန်ကြီးဌာန  
 စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန  
 (လျှပ်စစ်စစ်ဆေးရေး)  
 လျှပ်စစ်ဓာတ်အားထုတ်လုပ်ခြင်းနှင့်အသုံးပြုခြင်းဆိုင်ရာလုပ်ငန်းမှတ်ပုံတင်လက်မှတ်  
 အမှတ်စဉ်၊ ၀၀၁ /၂၀၂၁

၁။ ၂၀၁၄ ခုနှစ် လျှပ်စစ်ဥပဒေ ပုဒ်မ ၃၂ (င)နှင့်တည့်ဆဲဥပဒေဆိုင်ရာလုပ်ထုံးလုပ်နည်းများအရ ပဲခူးမြို့၊ညောင်အင်းစက်မှုဇုန်၊ လယော့ရိုးကွင်းကွင်းအမှတ်(၁၃၁၅) ရှိ 'Cobes Industries B.II Co., Ltd' ကျန်းမာရေးသုံးဝတ်စုံချုပ်စက်ရုံတွင် တပ်ဆင်ပြီးဖြစ်သော ၄၀၀ ဗို့ ၆၀၀ ကေစီအေ ဒီဇယ်အင်ဂျင်သုံး လျှပ်ထုတ်စက်(၁)လုံးအား အောက်ဖော်ပြပါနယ်မြေဒေသအတွင်း မှတ်ပုံတင်လက်မှတ်တွင်ပါရှိသော စည်းကမ်းချက်များနှင့်အညီ ၂၀၂၁ ခုနှစ်၊ ဇန်နဝါရီ လ ( ၅ ) ရက်နေ့မှစတင်၍ လျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ခြင်းနှင့်အသုံးပြုခြင်းဆိုင်ရာ မှတ်ပုံတင်လက်မှတ်ကို ထုတ်ပေးလိုက်သည်။

(က)ခွင့်ပြုသည့်နယ်မြေဒေသ	-	'Cobes Industries B.II Co., Ltd' ကျန်းမာရေး
		သုံးဝတ်စုံချုပ်စက်ရုံ၊ ညောင်အင်းစက်မှုဇုန်၊ပဲခူး
မြို့နယ်	-	ပဲခူးမြို့နယ်၊
တိုင်းဒေသကြီး	-	ပဲခူးတိုင်းဒေသကြီး(အရှေ့)
(ခ) အများဆုံးထုတ်လုပ်သည့်ပမာဏ	-	600 kVA
(ဂ) သတ်မှတ်ဗို့အား	-	400 V
(ဃ) လျှပ်ထုတ်စက်နံပါတ်	-	X 255400
(င) အင်ဂျင်အမျိုးအစား	-	KTA 19-G8
(စ) အင်ဂျင်မြင်းကောင်ရေ	-	770 HP/ 575 kW
(ဆ) အင်ဂျင်နံပါတ်	-	41298979

၂။ ဓာတ်အားထုတ်လုပ်ခြင်းနှင့် အသုံးပြုခြင်းတို့အတွက် အသုံးပြုသော လျှပ်စစ်ပစ္စည်းကိရိယာ တည်ဆောက်မှုဆိုင်ရာ နည်းစနစ်များသည် လျှပ်စစ်ဥပဒေဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများပါ ပြဌာန်းချက်များအရ ဖြစ်ရမည့်အပြင် စစ်ဆေးရေးမှူး၏ စစ်ဆေးစမ်းသပ်ခြင်းကို ခံယူရပါမည်။

၃။ လျှပ်စစ်ဥပဒေဆိုင်ရာ လုပ်ထုံးလုပ်နည်းပါ ပြဌာန်းချက်များကို တိကျစွာ လိုက်နာဆောင်ရွက်ရမည်။

၄။ လျှပ်စစ်ဥပဒေဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများနှင့် ဤလက်မှတ်တွင်ပါရှိသော အကြောင်းအရာများကို လိုက်နာခြင်းမရှိပါက ထုတ်ပေးထားသော လက်မှတ်ကို ပြန်လည်ရုပ်သိမ်းမည်။

၅။ ဤမှတ်ပုံတင်လက်မှတ်သက်တမ်းသည် ခွင့်ပြုသည့်နေ့မှစတင်၍ (၄)နှစ် အချိန်ကာလအတွင်းသာ အကျိုးသက်ရောက်စေရမည်။

စတင်ခွင့်ပြုသည့်နေ့	-	၅ - ၁ - ၂၀၂၁
ကုန်ဆုံးသည့်နေ့	-	၄ - ၁ - ၂၀၂၅

လျှပ်စစ်စစ်ဆေးရေးမှူးချုပ်( )  
 နိုင်ငံစစ်ဆေးရေးမှူး  
 ပဲခူးတိုင်းဒေသကြီး လျှပ်စစ်စစ်ဆေးရေးမှူး

1/024

**ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်**  
**စီမံကိန်း၊ ဘဏ္ဍာရေးနှင့် စက်မှုဝန်ကြီးဌာန**  
**စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန**  
**(လျှပ်စစ်စစ်ဆေးရေး)**

**လျှပ်စစ်ဓာတ်အားထုတ်လုပ်ခြင်းနှင့်အသုံးပြုခြင်းဆိုင်ရာလုပ်ငန်းမှတ်ပုံတင်လက်မှတ်**  
 အမှတ်စဉ် - ၀၀၂ /၂၀၂၁

၁။ ၂၀၁၄ ခုနှစ် လျှပ်စစ်ဥပဒေ ပုဒ်မ ၃၂ (င)နှင့်တည့်ဆဲဥပဒေဆိုင်ရာလုပ်ထုံးလုပ်နည်းများအရ ပဲခူးမြို့၊ညောင်အင်းစက်မှုဇုန်၊ လဖျောရိုးကွင်း၊ကွင်းအမှတ်(၁၃၁၅) ရှိ 'Cobes Industries B.II Co., Ltd' ကျန်းမာရေးသုံးဝတ်စုံချုပ်စက်ရုံတွင် တပ်ဆင်ပြီးဖြစ်သော ၄၀၀ ဗို့ ၂၀၀ ကေစီအေ ဒီဇယ်အင်ဂျင်သုံး လျှပ်ထုတ်စက်(၁)လုံးအား အောက်ဖော်ပြပါနယ်မြေဒေသအတွင်း မှတ်ပုံတင် လက်မှတ်တွင်ပါရှိသော စည်းကမ်းချက်များနှင့်အညီ ၂၀၂၁ ခုနှစ်၊ ဇန်နဝါရီ လ ( ၅ ) ရက်နေ့မှစတင်၍ လျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ခြင်းနှင့်အသုံးပြုခြင်းဆိုင်ရာ မှတ်ပုံတင်လက်မှတ်ကို ထုတ်ပေးလိုက်သည်။

(က) ခွင့်ပြုသည့်နယ်မြေဒေသ	-	'Cobes Industries B.II Co., Ltd' ကျန်းမာရေး
		သုံးဝတ်စုံချုပ်စက်ရုံ၊ ညောင်အင်းစက်မှုဇုန်၊ ပဲခူး
မြို့နယ်	-	ပဲခူးမြို့နယ်၊
တိုင်းဒေသကြီး	-	ပဲခူးတိုင်းဒေသကြီး(အရှေ့)
(ခ) အများဆုံးထုတ်လုပ်သည့်ပမာဏ	- 200	kVA
(ဂ) သတ်မှတ်ဗို့အား	- 400	V
(ဃ) လျှပ်ထုတ်စက်နံပါတ်	-	-
(င) အင်ဂျင်အမျိုးအစား	-	-
(စ) အင်ဂျင်မြင်းကောင်ရေ	- 208	HP/ 155 kW
(ဆ) အင်ဂျင်နံပါတ်	-	201404

၂။ ဓာတ်အားထုတ်လုပ်ခြင်းနှင့် အသုံးပြုခြင်းတို့အတွက် အသုံးပြုသော လျှပ်စစ်ပစ္စည်းကိရိယာ တည်ဆောက်မှုဆိုင်ရာ နည်းစနစ်များသည် လျှပ်စစ်ဥပဒေဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများပါ ပြဋ္ဌာန်းချက်များအရ ဖြစ်ရမည့်အပြင် စစ်ဆေးရေးမှူး၏ စစ်ဆေးစမ်းသပ်ခြင်းကို ခံယူရပါမည်။

၃။ လျှပ်စစ်ဥပဒေဆိုင်ရာ လုပ်ထုံးလုပ်နည်းပါ ပြဋ္ဌာန်းချက်များကို တိကျစွာ လိုက်နာဆောင်ရွက်ရမည်။

၄။ လျှပ်စစ်ဥပဒေဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများနှင့် ဤလက်မှတ်တွင်ပါရှိသော အကြောင်းအရာများကို လိုက်နာခြင်းမရှိပါက ထုတ်ပေးထားသော လက်မှတ်ကို ပြန်လည်ရုပ်သိမ်းမည်။

၅။ ဤမှတ်ပုံတင်လက်မှတ်သက်တမ်းသည် ခွင့်ပြုသည့်နေ့မှစတင်၍ (၄)နှစ် အချိန်ကာလအတွင်းသာ အကျိုးသက်ရောက်စေရမည်။

စတင်ခွင့်ပြုသည့်နေ့ -	၅ - ၁ - ၂၀၂၁
ကုန်ဆုံးသည့်နေ့ -	၄ - ၁ - ၂၀၂၅

လျှပ်စစ်စစ်ဆေးရေးမှူးချုပ်(လိဗရစ်)၊  
 နိုင်ငံ-စစ်ဆေးရေးမှူး၊  
 ပဲခူးတိုင်းဒေသကြီး လျှပ်စစ်စစ်ဆေးရေးဌာန။

## Appendix 15 Water Analysis Report for ID-1 (GMES Laboratory)



# Green Myanmar Environmental Services Co., Ltd

No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City,  
Yangon, Myanmar

Tel: 09 897 978 296, 09-5081451 E-mail: [info@gmes-mm.com](mailto:info@gmes-mm.com)

**Project Name:** Cobes Industries (B II)  
Co., Ltd.

**Sample ID:** 1 (Tube Well-1)

**Date of Collection:** 16.9.2021

**Sampling Location:** Plot No. (N1<sup>B</sup>),  
Kwin No. 1315, La Hpyor Yoe Kwin,  
Oak Thar (9<sup>th</sup>) Quarter, Bago Township.

**Latitude:** N 17° 16' 48.09"

**Date of Arrival at Lab:** 16.9.2021

**Longitude:** E 96° 27' 24.84"

**Date of Issue of Results:** 30.9.2021

### Laboratory Analysis Results of Water

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	Drinking Water Standards		
					WHO (2011)	EPA (Spring 2012)	Indian Specification (IS:10500,2012)
1.	Aluminum	mg/l	0.02	0.01	0.2	0.2	0.03
2.	Arsenic	mg/l	0.01	0.005	0.01	0.01	0.01
3.	Chloride	mg/l	17	5	250	250	250
4.	Copper	mg/l	ND	0.5	2	1	0.05
5.	Cyanide	mg/l	ND	0.01	0.07	0.2	0.05
6.	Manganese	mg/l	ND	0.2	0.4	0.05	0.1
7.	pH	-	6.32	0.1	6.5~8.5	6.5~8.5	6.5~8.5
8.	Sulfate	mg/l	ND	2	250	250	200
9.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	85	5	-	-	200
10.	Total Dissolved Solids	mg/l	140	1	600	500	500
11.	Total Hardness as CaCO <sub>3</sub>	mg/l	38	5	500	-	200
12.	Total Iron	mg/l	0.1	0.1	0.3	0.3	0.3
13.	Turbidity	NTU	4.3	0.01	5	-	1

\*ND-Not Detected

Analyzed By

Approved By

**Daw Tun Eindra Soe**  
Technician (Laboratory)

**U Thet Min Paing**  
In-Charge (Laboratory)



**Appendix 16 Water Analysis Report for ID-2 (GMES Laboratory)**



**Green Myanmar**  
Environmental Services Co., Ltd

No.115, Kanaung Min Thar Gyi Road, Industrial Zone (1), Hlaing Thar Yar Industrial City,  
Yangon, Myanmar

Tel: 09 897 978 296, 09-5081451 E-mail: [info@gmes-mm.com](mailto:info@gmes-mm.com)

**Project Name:** Cobes Industries (B II) Co., Ltd.

**Sample ID:** 2 (Tube Well-2)

**Date of Collection:** 16.9.2021

**Sampling Location:** Plot No. (N1<sup>B</sup>), Kwin No. 1315, La Hpyor Yoe Kwin, Oak Thar (9<sup>th</sup>) Quarter, Bago Township.

**Latitude:** N 17° 16' 47.89"

**Date of Arrival at Lab:** 16.9.2021

**Longitude:** E 96° 27' 28.45"

**Date of Issue of Results:** 30.9.2021

**Laboratory Analysis Results of Water**

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	Drinking Water Standards		
					WHO (2011)	EPA (Spring 2012)	Indian Specification (IS:10500,2012)
1.	Aluminum	mg/l	0.02	0.01	0.2	0.2	0.03
2.	Arsenic	mg/l	0.02	0.005	0.01	0.01	0.01
3.	Chloride	mg/l	22	5	250	250	250
4.	Copper	mg/l	ND	0.5	2	1	0.05
5.	Cyanide	mg/l	ND	0.01	0.07	0.2	0.05
6.	Manganese	mg/l	0.28	0.2	0.4	0.05	0.1
7.	pH	-	6.38	0.1	6.5~8.5	6.5~8.5	6.5~8.5
8.	Sulfate	mg/l	ND	2	250	250	200
9.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	112	5	-	-	200
10.	Total Dissolved Solids	mg/l	160	1	600	500	500
11.	Total Hardness as CaCO <sub>3</sub>	mg/l	25	5	500	-	200
12.	Total Iron	mg/l	0.3	0.1	0.3	0.3	0.3
13.	Turbidity	NTU	4.51	0.01	5	-	1

\*ND-Not Detected

Analyzed By

Approved By

**Daw Tun Eaindra Soe**  
Technician (Laboratory)

**U Thet Min Paing**  
In-Charge (Laboratory)

**Appendix 17 Wastewater Analysis Report for ID-3 (GMES Laboratory)**



**Green Myanmar**

**Environmental Services Co., Ltd**

No.115, Kanaung Min Thar Gyi Road, Industrial Zone (1), Hlaing Thar Yar Industrial City, Yangon, Myanmar

Tel: 09 897 978 296, 09-5081451 E-mail: [gmescompany@gmail.com](mailto:gmescompany@gmail.com), [info@gmes-mm.com](mailto:info@gmes-mm.com)

**Project Name:** Code Industries B.11 Co., Ltd

**Sample ID:** 1 (တက်ရောက်စစ်ဆေးခြင်း)

**Date of Collection:** 7.2.2022

**Sampling Location:** Plot No (N1B), Field No. 1315, Oakthar (9) Ward, Bago Township.

**Latitude:** N 17° 16' 48.17"

**Date of Arrival at Lab:** 7.2.2022

**Longitude:** E 96° 27' 24.59"

**Date of Issue of Results:** 18.2.2022

**Laboratory Analysis Results of Ambient Water**

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Method	National Environmental Quality (Emission) Guidelines (2015) General Application
1.	5-day Biochemical Oxygen Demand	mg/l	120	30	50
2.	Arsenic	mg/l	0.025	0.005	0.1
3.	Chemical Oxygen Demand	mg/l	400	30	250
4.	Copper	mg/l	ND	0.5	0.5
5.	Oil and Grease	mg/l	8	5	10
6.	pH	-	7.08	0.1	6-9
7.	Total Cyanide	mg/l	ND	0.01	0.1
8.	Total Iron	mg/l	ND	0.1	3.5
9.	Total Suspended Solids	mg/l	130	1	50

\*ND – Not Detected

Analyzed By

U Myo Min Ko  
Lab Technician (Laboratory)

Checked by

U Thet Min Paing  
Lab Supervisor (Laboratory)

Approved By

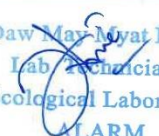

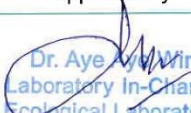
Daw Aye Thuzar Hein  
In-Charge (Laboratory)

## Appendix 18 Water Analysis Report for ID-1 (Ecological Laboratory)

Sr.		Quality Parameters	Results	Units	Drinking Standards	Remarks
1		pH <sup>1</sup>	6.3	S.U	6.5 – 8.5 <sup>c</sup>	Nearly Acid Range
2		Turbidity <sup>3</sup>	< 5	FAU	≤5 <sup>c</sup>	Clear
3		TDS <sup>4</sup>	95	mg/L	≤1000 <sup>c</sup>	Normal
4		Hardness <sup>3</sup>	36	mg/L	≤500 <sup>c</sup>	-
5		Chloride <sup>3</sup>	19	mg/L	≤250 <sup>c</sup>	Normal
6		Free Cyanide <sup>3</sup>	<0.01	mg/L	-	-
7		Aluminium <sup>3</sup>	0.02	mg/L	≤0.2 <sup>b</sup>	Normal
8		Arsenic <sup>5</sup>	0	mg/L	≤0.05 <sup>a</sup>	Normal
9		Copper <sup>7</sup>	ND	mg/L	≤2 <sup>b</sup>	LOD = 0.02 mg/L
10		Iron <sup>7</sup>	0.25	mg/L	≤1 <sup>c</sup>	Normal
11		Manganese <sup>3</sup>	< 0.01	mg/L	≤0.4 <sup>c</sup>	Normal
12		Alkalinity <sup>3</sup>	121	mg/L	-	-
13		Sulfate <sup>3</sup>	2.8	mg/L	≤ 250 <sup>c</sup>	Normal




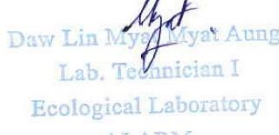

**Testing Results**

*This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.  
This report shall not be reproduced except in full, without written approval of the laboratory*

“ND” = Not Detected	“LOD” = Lower limit of detection	“-” = No Reference Standard
Tested by	Checked by	Approved by
 Daw May Myat Khine Lab. Technician II Ecological Laboratory ALARM	 Daw Lin Myat Myat Aung Lab. Technician I Ecological Laboratory ALARM	 Dr. Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

531 (D), MarlarMyaingYeik Thar Street, Kamayut Tsp., Yangon, Myanmar Tel: 01-503301, 01-503302, 09-407496078  
Email: aelab@alarmmyanmar.org , websites: www.alarmmyanmar.org

## Appendix 19 Water Analysis Report for ID-2 (Ecological Laboratory)

 <b>ALARM Ecological Laboratory</b> 					
<b>Water Testing Result Report</b>					
Report Number : EL-WR-21-01313 <span style="float: right;">Date : September 28, 2021</span>					
<b>Client Information</b> Client Name : <b>Cobes Industries B.II Co.,Ltd</b> Organization : <b>GMES Co.,Ltd</b> Client ID : - Registration Date & Time : <b>22.9.2021</b> Contact : <b>09-976543060</b> Testing Purpose : -	<b>Sample Information</b> Sample ID : <b>7304</b> Sample Name : <b>Tube Well - 2</b> Sample Type / Source : <b>Well</b> Sampling Date & Time : <b>16.9.2021</b> Sample Location : <b>Bago</b> Latitude : - Longitude : -				
<b>Testing Results</b> <i>This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.                      This report shall not be reproduced except in full, without written approval of the laboratory</i>					
Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH <sup>1</sup>	<b>6.4</b>	<b>S.U</b>	6.5 - 8.5 <sup>c</sup>	Nearly Acid Range
2	Turbidity <sup>3</sup>	<b>&lt; 5</b>	<b>FAU</b>	≤5 <sup>c</sup>	Clear
3	TDS <sup>4</sup>	<b>105</b>	<b>mg/L</b>	≤1000 <sup>c</sup>	Normal
4	Hardness <sup>3</sup>	<b>12</b>	<b>mg/L</b>	≤500 <sup>c</sup>	-
5	Chloride <sup>3</sup>	<b>5</b>	<b>mg/L</b>	≤250 <sup>c</sup>	Normal
6	Free Cyanide <sup>3</sup>	<b>&lt; 0.01</b>	<b>mg/L</b>	-	-
7	Aluminium <sup>3</sup>	<b>0.02</b>	<b>mg/L</b>	≤0.2 <sup>b</sup>	Normal
8	Arsenic <sup>6</sup>	<b>0</b>	<b>mg/L</b>	≤0.05 <sup>a</sup>	Normal
9	Copper <sup>7</sup>	<b>ND</b>	<b>mg/L</b>	≤2 <sup>b</sup>	LOD = 0.02 mg/L
10	Iron <sup>7</sup>	<b>0.36</b>	<b>mg/L</b>	≤1 <sup>c</sup>	Normal
11	Manganese <sup>3</sup>	<b>0.13</b>	<b>mg/L</b>	≤0.4 <sup>c</sup>	Normal
12	Alkalinity <sup>3</sup>	<b>101</b>	<b>mg/L</b>	-	-
13	Sulfate <sup>3</sup>	<b>2.6</b>	<b>mg/L</b>	≤ 250 <sup>c</sup>	Normal
“ND” = Not Detected		“LOD” = Lower limit of detection		“ - ” = No Reference Standard	
Tested by  Daw May Myat Khine Lab. Technician II Ecological Laboratory ALARM		Checked by  Daw Lin Myat Aung Lab. Technician I Ecological Laboratory ALARM		Approved by  Dr. Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)	
531 (D), MarlarMyaingYeik Thar Street, Kamayut Tsp., Yangon, Myanmar Tel: 01-503301, 01-503302, 09-407496078 Email: aelab@alarmmyanmar.org , websites: www.alarmmyanmar.org					

## Appendix 20 Soil Analysis Report for SS-1 (GMES Laboratory)



# Green Myanmar Environmental Services Co., Ltd

No.115, Kanaung Min Thar Gyi Road, Industrial Zone (1), Hlaing Thar Yar Industrial City,  
Yangon, Myanmar

Tel: 09 897 978 296, 09-5081451 E-mail: [info@gmes-mm.com](mailto:info@gmes-mm.com)

**Project Name:** Cobes Industries (B II) Co., Ltd.

**Sample ID:** SS-1  
(စက်ရုံအတွင်းရှိမြေကြီး)

**Date of Collection:** 16.9.2021

**Sampling Location:** Plot No. (N1<sup>b</sup>),  
Kwin No. 1315, La Hpyor Yoe Kwin,  
Oak Thar (9<sup>th</sup>) Quarter, Bago Township.

**Latitude:** N 17° 16' 48.96"

**Date of Arrival at Lab:** 16.9.2021

**Longitude:** E 96° 27' 33.67"

**Date of Issue of Results:** 30.9.2021

### Laboratory Analysis Results of Soil

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods
1.	Aluminum	mg/kg soil	0.3	0.05 mg/kg soil
2.	Arsenic	mg/kg soil	0.05	0.025 mg/kg soil
3.	Chloride	g/kg soil	0.055	0.025 mg/kg soil
4.	Copper	mg/kg soil	ND	2.5 mg/kg soil
5.	Cyanide	mg/kg soil	ND	0.05 mg/kg soil
6.	Extractable Acidity	cmol/kg soil	3.35	0.25 cmol/kg soil
7.	Manganese	mg/kg soil	7.05	1 mg/kg soil
8.	P - Alkalinity	mmol/l extract	0	0.2 mmol/l extract
9.	pH	-	6.56	0.1
10.	Total Alkalinity	mmol/l extract	1.7	0.2 mmol/l extract
11.	Total Iron	mg/kg soil	5	0.5 mg/kg soil

\*ND-Not Detected

Analyzed By

Approved By

Daw Tun Eindra Soe  
Technician (Laboratory)

U Thet Min Paing  
In-Charge (Laboratory)

Appendix 21 Fire Safety Certificate

**ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်**  
**ပြည်ထဲရေးဝန်ကြီးဌာန**  
**မီးသတ်ဦးစီးဌာန**

**မီးဘေးလုံခြုံရေးစစ်ဆေးထောက်ခံချက်**

အမှတ်စဉ်( ၂၄၂၅ )

ရက်စွဲ၊ ၂၀၂၀ ပြည့်နှစ်၊ ဇန်နဝါရီလ ၇ ရက်

၁။ ပဲခူး-တိုင်းဒေသကြီး/ပြည်နယ်၊ ပဲခူး-ဥယျာဉ်မြို့နယ်(၉)၊ အကွက်အမှတ်(၆၂) ရပ်ကွက်/ ကျေးရွာ၊ စိန်ပန်းလှဖျော်ရိုးကွင်း-လမ်း၊ အမှတ် မြေကွက်အမှတ်(၁၃/၁၅)၊ ဦးရဲမင်းထွန်း (၂)ထပ်(အထည်ချုပ်စက်ရုံ)(၂)လုံး၊ (၃)ထပ်(ရုံး)(၁)လုံး၊ (၂)ထပ် Security House(၁)လုံး၊ (၁)ထပ် Canteen(၁)လုံး

အဆောက်အဦအတွက်ဤဌာနမှသတ်မှတ်ပေးထားသော မီးဘေးလုံခြုံရေးဆိုင်ရာပြဌာန်းချက်များအား ( ၃-၁၂-၂၀၁၉ )ရက်နေ့တွင်ကွင်းဆင်းစစ်ဆေးသည့်အခါပြည့်စုံစွာဆောင်ရွက်ထားကြောင်းစစ်ဆေးတွေ့ရှိရသည်။

၂။ ဤထောက်ခံချက်သည် စစ်ဆေးသည့်နေ့မှစ၍ (၃)နှစ်အထိသာ အကျိုးဝင်သည်။

၃။ ထို့ပြင် မီးသတ်ဦးစီးဌာနမှ အခါအားလျော်စွာ ထပ်မံစစ်ဆေးချိန်တွင် မီးဘေးလုံခြုံရေးဆိုင်ရာပြဌာန်းချက်များကို လိုက်နာဆောင်ရွက်ခြင်းမရှိပါက ဤထောက်ခံချက်ကို ပြန်လည်ရတ်သိမ်းသွားမည်ဖြစ်ပြီး အဆောက်အဦအားအသုံးပြုသူ(သို့မဟုတ်)ပိုင်ရှင်သည် မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ ဥပဒေအရ အရေးယူခြင်းခံရမည်။

မှတ်ချက်။ ဤထောက်ခံချက်အား လွှဲပြောင်းသုံးစွဲခြင်းမပြုရ။ အဆောက်အဦအား မူလရည်ရွယ်ချက်မှ ပြောင်းလဲအသုံးပြုပါက ထောက်ခံချက်အသစ် ထပ်မံလျှောက်ထားရမည်။

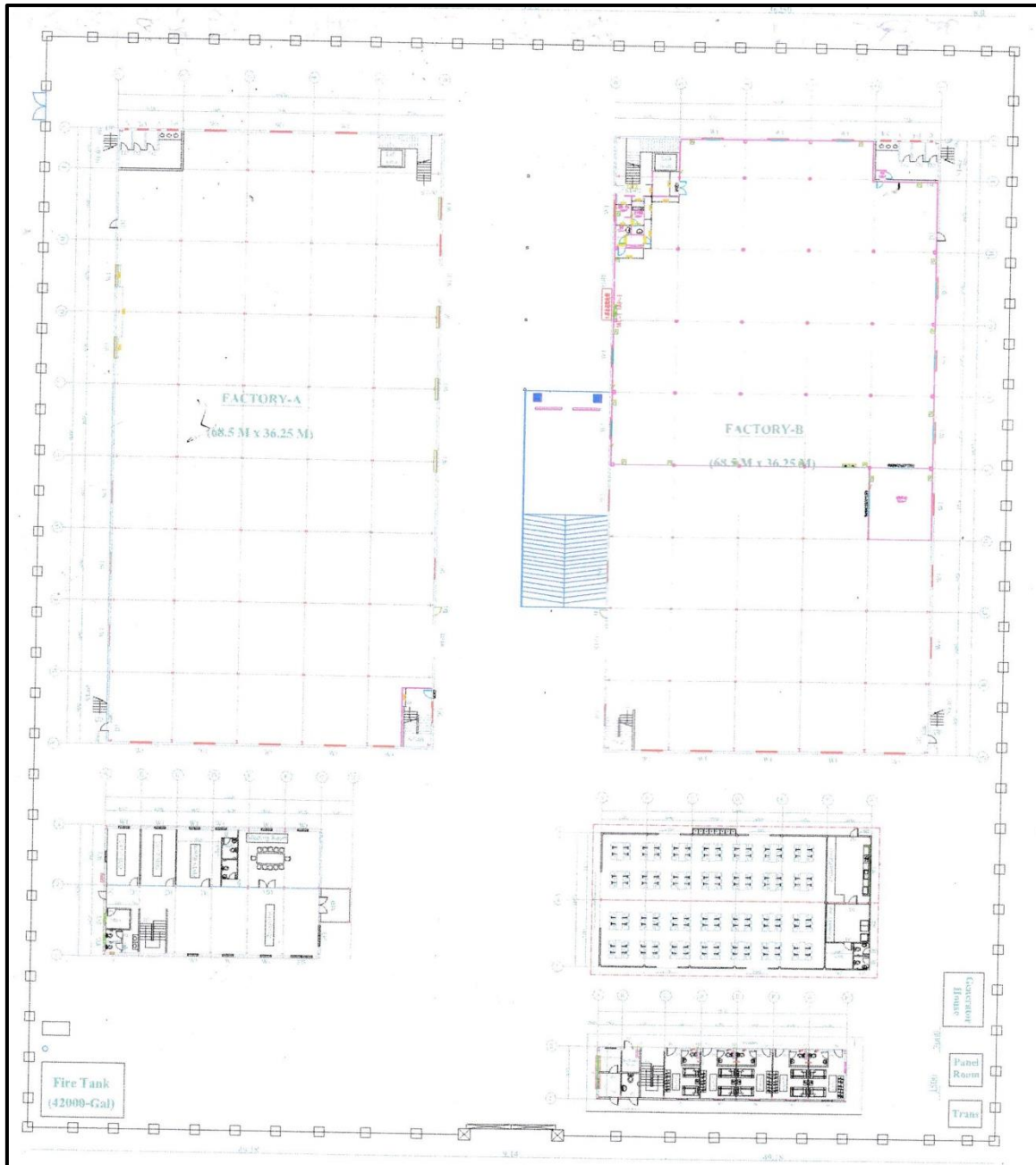
ညွှန်ကြားရေးမှူးချုပ်(ကိုယ်စား)  
(သိန်းထွန်းဦး၊ ညွှန်ကြားရေးမှူး)  
Nwe O E

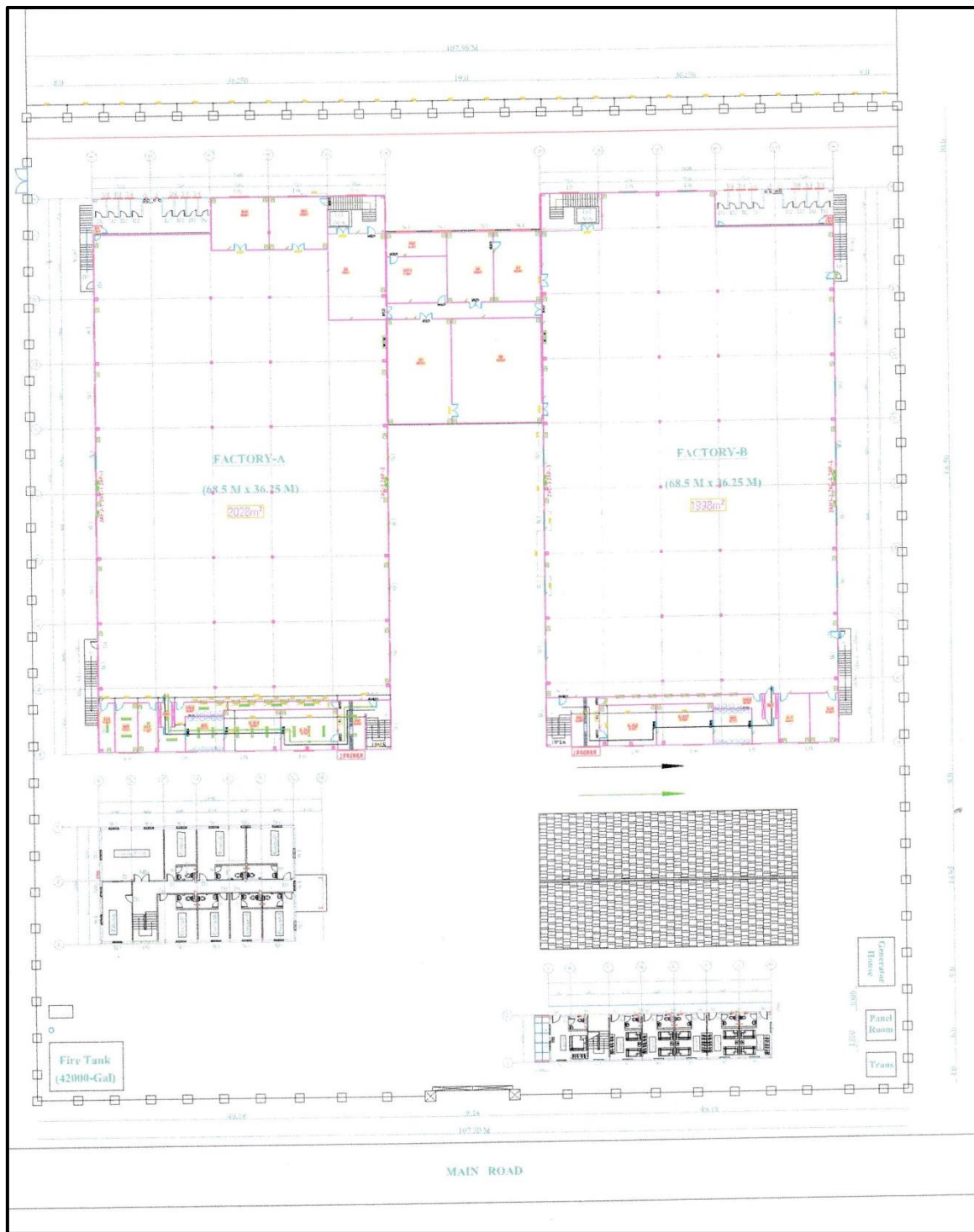
**Appendix 22 Layout Drawing of Fire Safety Equipment**

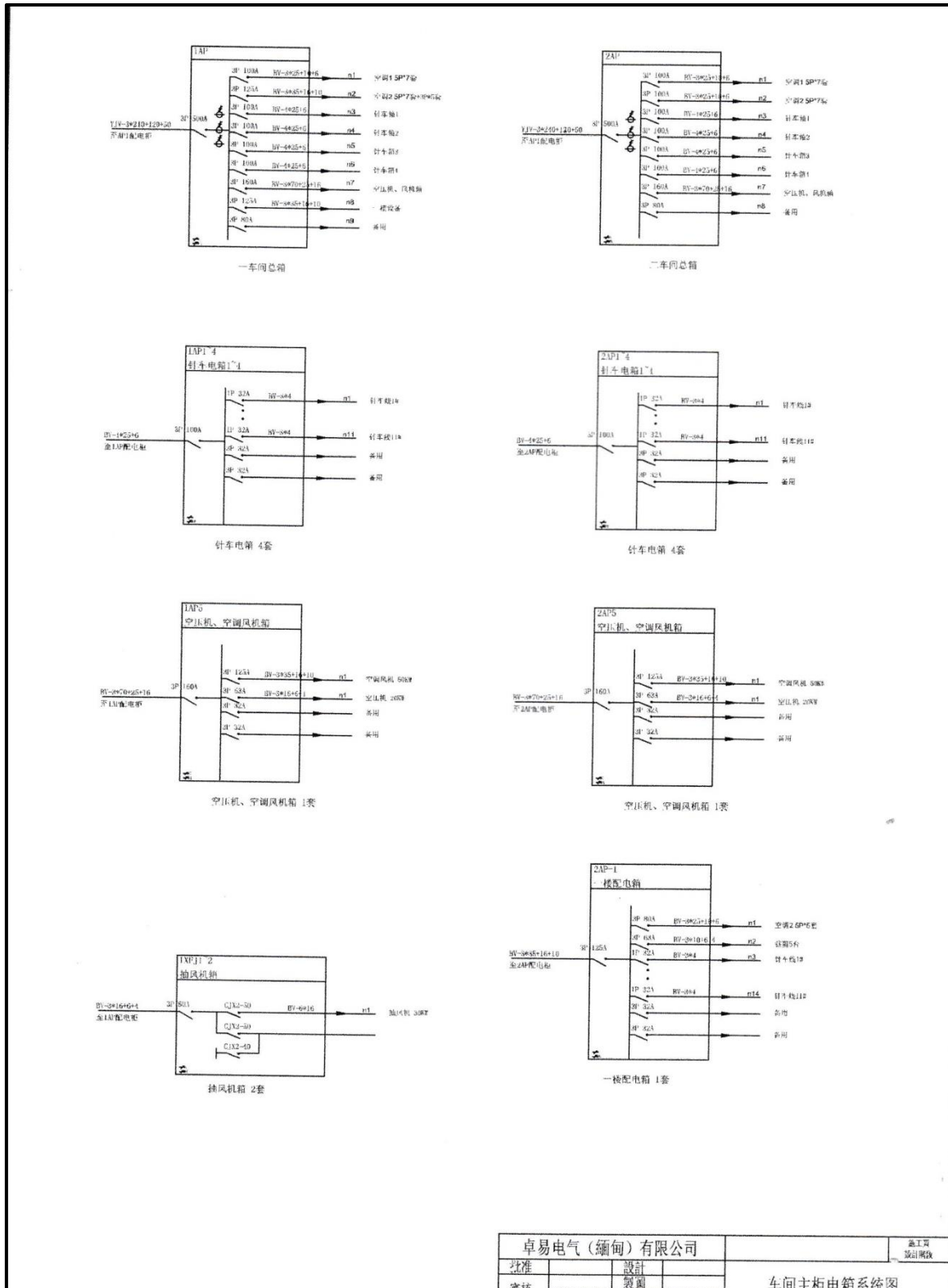












### Appendix 23 Emergency Training Photo Records



COBES INDUSTRIES BII CO LTD EMERGENCY TRAINING



COBES INDUSTRIES BII CO LTD EMERGENCY TRAINING



COBES INDUSTRIES BII CO LTD EMERGENCY TRAINING



Appendix 24 Certificate of Pharmacist Aide Training Course

**Hope**  
Training & Consultancy

PMH-2002-0077

**CERTIFICATE OF COMPLETION**

This is to certify that

**Naw Ree Htar Thaw**

has successfully completed and fulfilled requirements for the Programme,  
**Pharmacist Aide Training Course**  
from 7 - Dec - 2019 to 29 - 2 - 2020.

These training include the following modules (include group work and practical work) :

- Introduction to drug	- Type of dosage form	- Route of drug administration
- Classification of drug	- Essential drug list	- National Drug Law
- Storage & Maintenance of drugs	- Drug Interaction	- Common Drug List

  
**Daw Nyo Mi Mi Htun**  
Managing Director  
My Hope Co., Ltd

  
**Daw Swe Zin Htun**  
Sr.Instructor  
B.N.Sc (Generic),  
Diploma in Intensive Care

  
**Daw Aye Myat Thaw**  
Instructor  
B.N.Sc (Generic)  
(University of Nursing, MDY)






## Appendix 25 Photo Records of Employee Development Training





Appendix 26 Social Welfare Registration Card

နည်းဥပဒေ ၄၆ (က)  
ပုံစံ (၃)



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ  
အလုပ်သမား၊ အလုပ်အကိုင်နှင့် လူမှုဖူလုံရေးဝန်ကြီးဌာန  
လူမှုဖူလုံရေးအဖွဲ့  
အလုပ်ဌာနမှတ်ပုံတင်လက်မှတ်

ပိုင်ရှင်၏အမည်ရေးရန်

လိပ်စာရေးရန်

Mr. Guo Chun Wei ပိုင်ဆိုင်သော

အလုပ်ဌာနအမည်ရေးရန်


အခြေစိုက်နေသည့် လူမှုဖူလုံရေးအဖွဲ့: ရန်ကင်းစတီရှင်လမ်း၊ ဝေလုံးမြို့ ရှိ

ဤ Cobes Industries (B-II) Co., Ltd လုပ်ငန်း / ဌာနသည် လူမှုဖူလုံရေးဥပဒေအရ မှတ်ပုံတင်ပြီးဖြစ်ပါသဖြင့် အကျုံးဝင်အလုပ်ဌာနအဖြစ် သတ်မှတ် လိုက်သည်။

အလုပ်ဌာနအမှတ် 7001.39.8.2.13

စတင်အကျုံးဝင်သည့်နေ့ ၂၀၂၀ ခုနှစ်၊ ဇူလိုင် လ၊ ၁ ရက်

မှတ်ပုံတင်သည့်ရက်စွဲ ၂၀၂၀။



ဦးစီးအရာရှိ  
မြို့နယ်လူမှုဖူလုံရေးရုံး  
ဝေလုံးမြို့

**Appendix 27 Labour Inspection Recommendation Letter**



အလုပ်ရုံနှင့်အလုပ်သမားဥပဒေစစ်ဆေးရေးဦးစီးဌာန  
ပဲခူးခရိုင်ရုံး၊ ပဲခူးမြို့  
စာအမှတ်၊ ၁၇၂/၅/အလရ - စစ်ဆေး/၂၀(၁၅၈၈ )  
ရက်စွဲ၊ ၂၀၂၀ ပြည့်နှစ်၊ ဩဂုတ် လ ၂၁ ရက်

**ထောက်ခံချက်**

ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးမြို့၊ ဥဿာမြို့သစ်ရပ်ကွက်ကြီး(၉)၊ လဖျော့ရိုးကွင်း၊ ကွင်းအမှတ်(1315) တွင် ဖွင့်လှစ်လုပ်ကိုင်လျက်ရှိသည့် ( တရုတ်နိုင်ငံသား ) Mr. Guo Chun Wei ပိုင်ဆိုင်သော Cobes Industries ( B II ) Co.,Ltd သည် အလုပ်သမား ကျား ( ၃၆ ) ဦး၊ မ ( ၉၆၇ ) ဦး၊ စုစုပေါင်း ( ၁၀၀၃ ) ဦးဖြင့် လုပ်ကိုင်လျက် ရှိပြီး အလုပ်သမားဥပဒေပါအချက်များကို တိကျစွာ လိုက်နာဆောင်ရွက်မည် ဖြစ်ကြောင်း ဝန်ခံကတိပြု ပြီးဖြစ်၍ ကန့်ကွက် ရန်မရှိပါကြောင်း ထောက်ခံအပ်ပါသည်။

ခရိုင်စစ်ဆေးရေးမှူး  
( နီနီဆွေ၊ လက်ထောက်ညွှန်ကြားရေးမှူး )

မိတ္ထူကို  
ရုံးလက်ခံ

## Appendix 28 Safety Data Sheet (SDS) for HM-825

**NanPao Resin** 

**Material Safety Data Sheet**  
**HM-825**

### 1. Identification of the chemicals and the company / undertaking

Identification of Product    HM-825  
Chemical name:                Hot melt adhesive  
Synonym                        Mixture of thermoplastic rubber, resin and oil  
Company Identification: Foshan NanPao Advanced Materials Co., Ltd.  
Address:    Technology & Industrial Park, Leping Town, Sanshui District, Foshan City, Guangdong Province, China  
Post Code:    528137  
Tel.:            86-757-87393000-846  
Fax:            86-757-87393047  
Emergency Telephone number:    86-757-87393046

### 2. Composition / Information on ingredients

Ingredient	% by weight	Toxicity
Thermoplastic rubber	Major	None
naphthenic oil	Major	None
resin	Major	None
Hindered phenol antioxidant	Minor	None

### 3. Hazard Identification

Health hazard data  
Eye contact: Direct contact may cause eye irritation.  
Skin contact: Prolonged contact may cause transient reddening of the skin.  
Skin absorption: No evidence of harmful effects from available information.  
Swallow: No evidence of harmful effects from available information.  
Inhalation: Trace component and residual monomer vapors may be irritating to the eyes, mucous membrane, respiratory tract, and may produce symptoms of headache, nausea in poorly ventilated areas.

MSDS HM-825, Foshan NanPao Advanced Materials Co., Ltd. copyright owner 1

## NanPao Resin



### 4. First aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.
Skin contact	If contact the materials of high temperature, water cooling should be done immediately, serious scald should get medical treatment immediately. Don't tear out the solidifying materials from skin or clean it with solvent. Vegetable oil and mineral oil is recommended to clean the residual materials on skin.
Inhalation	Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Swallowing	No harmful effects expected.

### 5. Fire-fighting measures

Flash point	None. This product is non-explosive.
Extinguishing media	This product is non-explosive, but can burn. Use alcohol-type or all-purpose-type foams applied by manufacturer's recommended techniques for large fires. Use carbon dioxide, water spray or dry chemical media for small fires.
Fire-fighting measures	None
Unusual fire and explosion hazards	None
Upper Explosion limits (%)	None
Lower Explosion limits (%)	None
Hazardous Decomposition	Carbon dioxide

### 6. Accidental release measures

Accidental release Measures	Restrict the area to only those personnel needed.
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## NanPao Resin

Major spills should be collected for disposal. Minor spills may be flushed to sewer if allowed by national, state and local regulations.

### 7. Handling and Storage

Storage	Keep container closed when not used. Direct sunshine is avoided. No more than 60 °C
handling precautions	Keep away from fire sources, heat, contaminant and water pipe.
Ventilation	General (mechanical) room ventilation is expected to be satisfactory.
Other precautions	Avoid contact with eyes, skin and clothing. Avoid ingestion and inhalation. Wash thoroughly after handling.

### 8. Exposure controls / Personal protection

Ventilation equipment	General (mechanical) room ventilation is expected to be satisfactory.
Eye protection	Safety glasses
Hand protection	protective gloves
Working clothes	Wear appropriate protective clothing to prevent skin exposure. Wash clothing thoroughly before reuse.
Cleaning equipment	Eye bath and safety shower
Respirators	None, follow the local regulations when ventilation is inadequate.

### 9. Physical and Chemical Properties

Physical state: block tacky solid	Flash point: >210°C
Color: Light yellow transparent	Explosion limits: None
Odor: Mild	Specific gravity (H <sub>2</sub> O=1): About 1.01
PH value: N/A	Vapor pressure: ~ 0
Softening point: About 92°C	Solubility in water: ~ 0

### 10. Stability and reactivity

MSDS HM-825, Foshan NanPao Advanced Materials Co., Ltd. copyright owner 3

## NanPao Resin

Stability	Stable
National fire protection reactivity level	0 grade
Hazardous combustion products	Carbon monoxide/carbon dioxide
Polymerization reaction	None

### 11. Toxicological Information

Contacts I produce chronic effects	None
Way into human body	No inhalation at room temperature. No skin irritation and toxicity. Swallow and scald must be avoided.
The consequences of long-term touch	None
Vulnerable Organs	None
Carcinogens	Unknown

### 12. Ecological information

Persistence and undegradability, No Toxicity to fish or plants.

### 13 Disposal considerations

Waste disposal method(s)	Recycle or bury in a suitable landfill if allowed by national and local regulations.
Empty container notice	None

### 14. Transport information

U.S. Department of transportation Information	None
The name of the provision of the U.S. Department of Transportation	None
U.S. Department of Transportation provides the dangerous level	None
Transport quantity of the provision of U.S.	None

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## NanPao Resin

Department of Transportation

### 15. Regulatory information

Its components are not in the list of dangerous chemicals of any country.

### 16. Other information

The opinion expressed here are those of qualified experts within Foshan NanPao Advanced Materials Co., Ltd. We believe that the information contained herein is current as of the data of this Material Safety Data Sheet. Since the use of this information and of these opinion and the conditions of use of this product are not within the control of Foshan NanPao Advanced Materials Co., Ltd., it is the users' obligation to determine the conditions of safe use of the products.

\_\_\_\_\_ The end \_\_\_\_\_

## Appendix 29 Safety Data Sheet (SDS) for Valence

**Valence**<sup>®</sup> Adhesives  
华威粘合剂

华威化工（上海）有限公司  
Valence Chemical Technology (Shanghai) Co.,Ltd.

Superseded: 2014-2-18

# Material Safety Data Sheet

## PaperBond 8361

### 1. Chemical Product and Company Identification

Product Name: PaperBond  
Product Number: 8361  
Synonym Name: ----

Valence Chemical Technology (Shanghai) Co., Ltd.  
No. 82 Pingye Rd. Caojing Town Jingshan Shanghai P.R.China 201507  
Tel: 86-21-67256977 67256978  
Fax: 86-21-67256975

### 2. COMPOSITION/INFORMATION OF INGREDIENTS

CHEMICAL FAMILY: Water, Polymer, etc  
Molecular Formula: Mixture  
Hazardous: No

### 3. HAZARDS IDENTIFICATION

Not considered as hazardous.

EYE : As with any foreign materials in the eye, allowing the product to remain in the eye may cause a mild irritation.  
SKIN CONTACT: Prolonged skin contact may cause mild irritation.  
INHALATION: Not normally a problem under typical conditions of industrial use. No health effects are expected.  
INGESTION: Not significantly toxic or corrosive.

### 4. FIRST-AID MEASURES

EYE: If any should get into the eye, rinse with water until all traces are washed away. Get medical attention immediately.  
SKIN CONTACT: If any, wash contact areas thoroughly with soap and water. Launder contaminated clothing before reuse.  
INHALATION: If any, remove to fresh air. Give artificial respiration, if necessary. Get medical attention.  
INGESTION: Induce vomiting if ingestion is of a large amount.

### 5. FIREFIGHTING MEASURES

AUTOIGNITION: Unknown.  
FLASH POINT: N.A.  
EXTINGUISHING MEDIA: Liquid material is non-flammable, dry polymer film will burn. Any extinguishing media is suitable for use on fry film fire, such as CO2; Dry chemical; Foam  
SPECIAL FIREFIGHTING PROCEDURES: No special procedures are required.  
FIRE & EXPLOSION HAZARDS: Not applicable.  
UPPER EXPLOSION LIMIT (%): Not applicable.  
LOWER EXPLOSION LIMIT (%): Not applicable.  
NFPA FLAMMABILITY HAZARD CLASS -- 0 = Insignificant

### 6. ACCIDENTAL RELEASE MEASURES

SPILL & LEAK PROCEDURES: Spread absorbent materials. Shovel into closurable containers. Wash area with water. For safety and environmental precautions, please review entire Materials Safety Data Sheet for necessary information.

### 7. HANDLING AND STORAGE

STORAGE TEMPERATURE: 6 – 35° C  
HANDLING/STORAGE: Store at room temperature area. Avoiding freezing.

**Preferred Adhesive Supplier**

Address: No.82, Pingye road, Caojing Town,  
Jinshan, Shanghai  
Tel: 021-67256978 67256979  
Fax: 021-67256975  
www.valencechem.com

**Valence**<sup>®</sup> Adhesives  
华威粘合剂

华威化工（上海）有限公司  
Valence Chemical Technology (Shanghai) Co.,Ltd.

VENTILATION REQUIREMENTS: Local; general

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS: Local; general

EYE PROTECTION REQUIREMENTS: Avoid contact with eyes. Wear chemical goggles if there is likelihood of contact with eyes.

GLOVE REQUIREMENTS: Use of chemical resistant gloves is recommended.

CLOTHING REQUIREMENTS: Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.

CHANGE/REMOVAL OF CLOTHING: Not required unless adhesive has been splashed on clothing and passes through fabric.

WASH REQUIREMENTS: None.

RESPIRATOR REQUIREMENTS: Not normally required for foreseeable conditions of use.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE: Mixture

PHYSICAL FORM: Liquid

APPEARANCE/COLOR: White fluid

ODOR: Ammonia odor

ODOR THRESHOLD: Not available

pH: Approx. 5.0

BOILING POINT: 100° C

MELTING/FREEZING POINT: 0° C

SOLUBILITY IN WATER: Completely miscible

SPECIFIC GRAVITY (WATER=1): Approx. 1.0

EVAPORATION RATE: Approx. 40% (Water=1)

VOLATILES: Water

VOLATILE ORGANIC COMPOUNDS: Nil

AUTOIGNITION: Unknown

FLASH POINT: N.A.

OXIDIZING PROPERTIES: N/A

#### 10. STABILITY AND REACTIVITY

STABILITY: Stable

NFPA REACTIVITY HAZARD CLASS: 0 = Insignificant

HAZARDOUS DECOMPOSITION PRODUCTS Carbon monoxide, carbon dioxide; Acetic acid

#### 11. TOXICOLOGICAL INFORMATION

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

ROUTE OF ENTRY: Skin contact; Eye contact.

EFFECTS OF CHRONIC EXPOSURE: Generally non-toxic. Use of good industrial hygiene practices is required. Avoid direct contact with skin or eyes. Do not ingest or inhale.

TARGET ORGANS: Not applicable.

CARCINOGEN: No.

Not considered as hazardous.

#### 12. ECOLOGICAL INFORMATION

Not Available.

#### 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS: Waste disposal should be in accordance with existing federal, state and local environmental regulations.

EMPTY CONTAINER WARNINGS: Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

#### 14. TRANSPORTATION INFORMATION

DOT INFORMATION:

DOT SHIPPING NAME: ADHESIVE no. 1

**Preferred Adhesive Supplier**

Address: No.82, Pingye road, Caojing Town,  
Jinshan, Shanghai  
Tel: 021-67256978 67256979  
Fax: 021-67256975  
www.valencechem.com

**Valence**<sup>®</sup> *Adhesives*  
华威粘合剂

华威化工 (上海) 有限公司  
Valence Chemical Technology (Shanghai) Co.,Ltd.

DOT HAZARD CLASS: Non hazardous  
DOT REPORTABLE QUANTITY: Not noted  
IATA INFORMATION: N.A.

**15. LAW LIBRARY**

Applicable regulations: ROHS、EN71-Part3、ASTM F963、94/62/EC、Hasbro SRS-012、FDA 21CFR 175.105

**16. OTHER DATA**

References	67/548EEC, 94/62EEC, National legislation
Tabulation units	Valence Chemical Technology (Shanghai) Co., Ltd. No.82 Pingye Rd, Caojing Town Jingshan Shanghai P.R.China TEL: (86) 21-67256977 67256978 FAX: (86) 21-67256975
Validated	David. Chan
Date of Tabling	Feb.18, 2014

The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

**Preferred Adhesive Supplier**

Address: No.82, Pingye road, Caojing Town,  
Jinshan, Shanghai  
Tel: 021-67256978 67256979  
Fax: 021-67256975  
www.valencechem.com

## Appendix 30 Explanation for Taking of Responsibilities for Corporate Social Responsibility (CSR)

### **COBES INDUSTRIES (BII) COMPANY LIMITED**

Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer,  
Bago Township, Bago District, Bago Region.

To

The Chairman  
Bagon Region Investment Committee  
Republic of the Union of Myanmar  
Bago Region.

Date : : 6, September' 2019.

**Subject : : Explanation for taking of responsibility for CSR ( Corporate Social Responsibility)**

We " **COBES INDUSTRIES (BII) CO.,LTD** " have proposed to Myanmar Investment Commission to open office to **Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis** factory in (7.1) acres (28,732.706 Sq Meter) out of (16) acres at the place so called as Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer, Bago Township, Bago District, Bago Region, Myanmar.

From such proposed works Company will subscribe for CSR (2%) from gross profit. In doing so, such subscribe money will be used for charity of employees, occasional proper training courses for employees and so on.

Yours Faithfully,



**MR. GUO, CHUNWEI**  
**DIRECTOR**  
**COBES INDUSTRIES (BII)**  
**CO.,LTD**

**COBES INDUSTRIES (BII) COMPANY LIMITED**

Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer,  
Bago Township, Bago District, Bago Region.

To

The Chairman  
Bagon Region Investment Committee  
Republic of the Union of Myanmar  
Bago Region.

Date : : 6, September' 2019.

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We " **COBES INDUSTRIES (BII) CO.,LTD** " have proposed to Myanmar Investment Commission to open office for **Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis** factory in (7.1) acres (28,732.706 Sq Meter) out of (16) acres at the place so called as Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer, Bago Township, Bago District, Bago Region, Myanmar.

For such proposed work, company will subscribe ( 2% ) from the gross profit for CSR. The contributions are made as follows:

1. 25% for supporting scholarship to education of employees from workshop, institution for school age children of the employees, to grant stipend for continuing the study of higher education ( College University ) level etc.
2. 25% for basic health care of the employees by opening medical clinics within the factory compound, perfection of medical equipments in clinic, preparing the medicines land firstaid treatment for emergency healthcare program and providing allowances when any of the employee families suffer from illness.

**COBES INDUSTRIES (BII) COMPANY LIMITED**

Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer,  
Bago Township, Bago District, Bago Region.

3. 25% for increasing knowledge with respect to Manufacturing And Marketing to improve working skills of the employee of factory, for undertaking systematic training course per rank, hierarchy to become skillful workers of higher productivity along with proficiency in particular field of works.

4. 25% for creating necessary recreations of factory employees peace and harmony, having good air ventilation in works to become convenience while working and to allow easy access in other communication programs and for higher living standards.

Yours Faithfully,



**MR. GUO, CHUNWEI**  
**DIRECTOR**  
**COBES INDUSTRIES (BII)**  
**CO.,LTD**

## Appendix 31 Submission in Plan for the Employees of Factory With Welfare and Peace and Harmony

<b>COBES INDUSTRIES (BII) COMPANY LIMITED</b> Plot No. (N1 <sup>B</sup> ), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer, Bago Township, Bago District, Bago Region.	
To	
	The Chairman Bagon Region Investment Committee Republic of the Union of Myanmar Bago Region.
	Date : : 6, September' 2019.
Subject :	<b><u>Submission in Plan for the Employees of Factory With Welfare and Peace and Harmony</u></b>
<p>It intends to <b>Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis</b> factory in (7.1) acres (28,732.706 Sq Meter) out of (16) acres at the place so called as Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer, Bago Township, Bago District, Bago Region, Myanmar.</p> <p>As a company it plans to submission in plan for the employees of factory of welfare and peace and harmony. As follows;</p> <p><b>( 1 ) Transportation for Office Staffs</b> A plan of provide ferry which that is used for coming to factory and going to home. It is free cost to employees when they take the ferry of factory.</p> <p><b>( 2 ) Providing Awards in Punctuality of Work</b> Overtime fees is counted in twice to one hour for employees of factor. In order to need of work there provides additional fees for them working till night.</p> <p><b>( 3 ) Housing Plan for Employees</b> There is a building for employees in this factory as they are staying in it. The employees who are residing at such for free charges in right. Those employees will be provided by meal in monthly. TV is planned in recreation for those who are residing at such building.</p>	



**COBES INDUSTRIES (BII) COMPANY LIMITED**

Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer,  
Bago Township, Bago District, Bago Region.

**( 4 ) Opening Canteen for Employees Welfare**

There is a shop to serve tea, sancks and rice / curry.

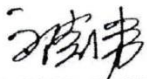
**( 5 ) Providing Peace and Harmony of the Compound of Work**

The employees who are hard working and no absence of work will get the bonuses of yearly in plan.

**( 6 ) A Plan for Injury**

We provide one room for first aids box and a resting room of sickness persons. If employee gets injury we plan to send in curing to Social Welfare Hospital. For those social welfares employee must also employee put their subscribes.

Yours Faithfully,



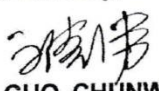
**MR. GUO, CHUNWEI**

**DIRECTOR**

**COBES INDUSTRIES (BII)**

**CO.,LTD**

## Appendix 32 Plan for Preventing of Environment

<b>COBES INDUSTRIES (BII) COMPANY LIMITED</b> Plot No. (N1 <sup>B</sup> ), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer, Bago Township, Bago District, Bago Region.	
To	
	The Chairman Bagon Region Investment Committee Republic of the Union of Myanmar Bago Region.
	Date : : 6, September' 2019.
<b>Subject :</b>	<b>: Plan for preventing of Environment</b>
1.	According to above mentioned, it intends to <b>Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis</b> factory in (7.1) acres (28,732.706 Sq Meter) out of (16) acres at the place so called as <b>Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer, Bago Township, Bago District, Bago Region, Myanmar.</b>
2.	As a company for conservation of environment we plan for the following matters.  ( a ) Put to methods that facts of plan are fully mentioned at least damage while generating and producing in step by step.  ( b ) Manage planning of fresh air and green environment and remit (waste water ) from the product of materials with Waste Water Treatment Plan.
Yours Faithfully,	
	
	<b>MR. GUO, CHUNWEI</b> <b>DIRECTOR</b> <b>COBES INDUSTRIES (BII)</b>

## Appendix 33 Plan for Health

### **COBES INDUSTRIES (BII) COMPANY LIMITED**

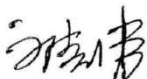
Plot No. (N1<sup>st</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer,  
Bago Township, Bago District, Bago Region.

#### Plan for Health

We COBES INDUSTRIES (BII) CO.,LTD , intends to **Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis** factory as for workers of our factory we provide for the followig health programs.

- (a) Medicine and first aids are placed at factory as emergency matters happen.
- (b) In factory there are first aids boxes and a resting room for sickness people as a plan.
- (c) One who gets injury shall be sent to Social Welfare Hospital as a care.
- (d) We will provide employees to learn in training concern with health care for one time in three months. It aims first aids for injured person in emergency case. The factory will pay the costs of hospital to employees who are working in long term at factory as a plan for health.
- (e) We will supply the cost of medicine according to requirement for healthy of employees who are working long time.

Yours Faithfully,



**MR. GUO, CHUNWEI**  
**DIRECTOR**  
**COBES INDUSTRIES (BII)**  
**CO.,LTD**

## Appendix 34 Fire Precaution Plan

### **COBES INDUSTRIES (BII) COMPANY LIMITED**

**Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quater,  
Bago Township, Bago District, Bago Region.**

#### **“ FIRE PRECAUTION PLAN ”**

1. We submit that it **COBES INDUSTRIES (BII) CO.,LTD** , intends to **Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis** factory in **(7.1) acres (28,732.706 Sq Meter)** out of **(16) acres** at the place so called as **Plot No. (N1<sup>B</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quater, Bago Township, Bago District, Bago Region, Myanmar.**

#### **2. Lightning Arrester**

This project is a lightning avoidance building, the lightning arrester will connect the whole metal construction steel as a whole, and form a lightning avoidance cage net.

#### **3. Fire Fighting**

This project buildings apply the refractory materials, and its wall, gilder, pole, roof are all inflammable. The connection of the electricity comply with the requirements and regulations of the departments concerned of government. The specific measures as follow:

##### **(a) Fire fighting spacing in plane**

Among the buildings, reserve enough space as the fireproof isolation belt and fire engine access.

##### **(b) Water supply for fire fighting and easing fire**

(1) Design the branch water supply system along the fire engine access.

(2) Connect the fire fighting water supply net with the factory's

(3) The fire hydrants out of buildings and structures, the water flow should fulfill water supply requirements.

(4) Setting the foam extinguisher, carbon dioxide extinguisher according to the feature of different places. The main building workshop, and inside should possess the fire fighting box, stair, and other measures.

**COBES INDUSTRIES (BII) COMPANY LIMITED**

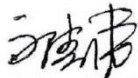
Plot No. (N1<sup>st</sup>), Kwin No.(1315), La Hpyor Yoe Kwin, Oak Thar (9th) Quatrer,  
Bago Township, Bago District, Bago Region.

**4.Fire fighting electricity and its supply**

Fire power equipment according to level 2 load power supply. And using a separate power supply circuit of, have clearly marked, fire protection tube wear measures to ensure that the fire electricity, fire accident lighting and the evacuation of indication for power supply time not less than 40 minutes. Important parts such as control center room set automatic fire alarm decive.

5. The workshop should be arranged according to the requirements of regulations standard, make sure the fire engine access is easy to pass.

Yours Faithfully,



**MR. GUO, CHUNWEI**

**DIRECTOR**

**COBES INDUSTRIES (BII)**

**CO.,LTD**

**Appendix 35 Attendee List of Employee Discussion Program**



## Green Myanmar

### Environmental Services Co., Ltd

No.115, Kanaung Min Thar Gyi Road, Industrial Zone (1), Hlaing Thar Yar Industrial City,  
Yangon, Myanmar  
Tel: 09 897 978 296, 09-5081451 E-mail: gmescompany@gmail.com, info@gmes-rum.com

Cobes Industries (B II) Company Limited ၏ ပံ့ပိုးဆောင်ရွက်မှုများ၊ ပံ့ပိုးမှုများ၊ ဥပဒေ (၉) ရက်ကွက်၊ ကွင်းအဖွဲ့ (၁၃၀၅)၊  
အကွက်အဖွဲ့ (N1B) တွင် ဆောင်ရွက်နေသော CMP စနစ်ဖြင့် ဦးဆောင်ထားသော ဖွဲ့စည်းပုံ (တပ်မိသုံး) တပ်စုံနှင့် ကျွန်ုပ်တို့အဖွဲ့  
ဆက်စပ်သက်ဆုံး ထုတ်လုပ်ခြင်းလုပ်ငန်းနှင့်ပတ်သက်၍  
လုပ်ငန်းဆိုင်ရာအကြံပြုချက်များဖြင့်တက်ရောက်လေ့လာစာရင်း

ရက်စွဲ - ၂၀၂၁ ခုနှစ်၊ ဇူလိုင်လ ၁၆ ရက်

စဉ်	အမည်	လုပ်ငန်းဆိုင်ရာ	လက်မှတ်
၁	မာသွယ်ဆောင်ရွက်	D-1 , clerk	
၂	ကျော်အောင်	D-2 - m/c	
၃	မောင်အောင်	D-2 MADC	
၄	စွယ်	D-2 Super	
၅	ဒွန်းကျော်	D-1 , L-7	
၆	Moe Peint Phyu	D-1 , Packing	
၇	ဇော်ကျော်	De , Glue Saper	
၈	မောင်အောင်	D-2 P/c	
၉	ကျော်ကျော်	D-1 Line 7	
၁၀	မိုးမိုးမောင်	D-0 Line-9	
၁၁	တင်အောင်	D-1 Line-6	
၁၂	ကျော်စင်	D-1 Line.6	
၁၃	မောင်မြင့်	D-1 Line-4	
၁၄	အောင်ကျော်	D-1 Line-4	
၁၅	မိုးမိုးစင်	D-1 Line-2	
၁၆			



# Green Myanmar

Environmental Services Co., Ltd

No.115, Kanung Min Thar Gyi Road, Industrial Zone (1), Hlaing Thar Yar Industrial City, Yangon, Myanmar

Tel: 09 897 978 296, 09-5081451 E-mail: gmcs-company@gmail.com, info@gmes-mm.com

Cobes Industries (B II) Company Limited ၏ ပံ့ပိုးမှုဆောင်ရွက်မှု၊ ပံ့ပိုးမှု၊ နည်းစနစ် (၉) ရပ်ကွက်၊ တွင်အဖွဲ့အစည်း (အဖွဲ့)၊ အဖွဲ့အစည်း (NIB) တွင် ဆောင်ရွက်နေသော CMP စနစ်ဖြင့် ဖြစ်ပေါ်လာသော မြစ်တစ်ဖျား (တစ်ဖျား) ဝတ်စုံနှင့် ကျွမ်းကျင်ရေးမှူး ဆက်ဆံဆောင်ရွက်ရာ အစီအစဉ်များကို အောက်ဖော်ပြပါအတိုင်း ဖော်ပြထားပါသည်။

ရက်စွဲ - ၂၀၂၁ ခုနှစ်၊ ဇူလိုင်လ ၁၀ (၁၆) ရက်

စဉ်	အမည်	ရပ်ကွက်/အဖွဲ့	လက်မှတ်
၁	စင်စောမိုး	Sw. ၂၇	Su
၂	သက္ကလေး	Sw. D-1, Line - B	Thiny
၃	သွင်သွင်စိမ်း	Sw. D-1, Packing	Yi
၄	အေးအေးစိမ်း	Sw. D-1, Packing	win
၅	မြတ်မြတ်စွယ်	D2, Super	Hlure
၆	ဒုတိယစောမိုး	D2, Clerk	Su
၇	စုစုစုစု	D1, L-9	Su
၈	ကျွန်းသို့	D2, L-4	Su
၉	စုစုစုစု	D2, L-2	Su
၁၀	အောင်အောင်စုစု	D1, L-5	Myo
၁၁	အောင်အောင်စုစု	D-1, L-5	Myo
၁၂	အောင်အောင်	D-2 L-5	Ae
၁၃	အောင်အောင်စုစု	QC	Su
၁၄	အောင်အောင်စုစု	QC	Khie
၁၅	အောင်အောင်စုစု	D-2 - super	Su
၁၆			




















Appendix 37 Requesting to Response Comments of Factory’s Employees



**Green Myanmar**  
Environmental Services Co., Ltd  
No.115, Kanaung Min Thar Gyi Road, Industrial Zone (1), Hlaing Thar Yar Industrial City,  
Yangon, Myanmar  
Tel: 09 897 978 296, 09-5081451 E-mail: [gmescompany@gmail.com](mailto:gmescompany@gmail.com), [info@gmes-mm.com](mailto:info@gmes-mm.com)

သို့  
တာဝန်ခံ  
COBES INDUSTRIES (BII) COMPANY LIMITED  
အကွက်အမှတ်(N1 B)၊ ကွင်းအမှတ်(၁၃၁၅)  
ဥယျာ(၉)ရပ်ကွက်၊ ပဲခူးမြို့၊  
ပဲခူးတိုင်းဒေသကြီး။

ရက်စွဲ - ၂၀၂၁ ခုနှစ်၊ ဒီဇင်ဘာလ (၁၅) ရက်

အကြောင်းအရာ ။ COBES INDUSTRIES (BII) COMPANY LIMITED ၏ လက်စားစနစ်ဖြင့်  
“ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး(တစ်ခါသုံး)ဝတ်စုံနှင့်ကျွန်းမာရေးသုံးဆက်စပ်  
ဝတ်စုံများထုတ်လုပ်ခြင်းလုပ်ငန်း” စက်ရုံ အတွက် စက်ရုံဝန်ထမ်းများ၏  
အကြံပြုချက်များအပေါ် ညှိနှိုင်းပြန်ကြားပေးပါရန်ကို။

အထက်အကြောင်းအရာပါကိစ္စနှင့်စပ်လျဉ်း၍ Green Myanmar Environmental Services Co., Ltd. နှင့် COBES INDUSTRIES (BII) COMPANY LIMITED တို့သည် ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးမြို့နယ်၊ ဥယျာ(၉)ရပ်ကွက်၊ ကွင်းအမှတ်(၁၃၁၅)၊ အကွက်အမှတ်(N1 B) တွင် လက်စားစနစ်ဖြင့် “ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး(တစ်ခါသုံး)ဝတ်စုံနှင့်ကျွန်းမာရေးသုံးဆက်စပ် ဝတ်စုံများထုတ်လုပ်ခြင်း လုပ်ငန်း” စက်ရုံအတွက် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (Initial Environmental Examination-IEE) အစီရင်ခံစာရေးဆွဲပေးရန် သဘောတူစာချုပ် ချုပ်ဆိုခဲ့ကြပါသည်။ အစီရင်ခံစာတွင် အများပြည်သူသဘောထားရယူခြင်းနှင့် သတင်း အချက်အလက်များ ထုတ်ပြန်ခြင်းခေါင်းစဉ်အတွက် ရေးသားဖော်ပြရန် ၂၀၂၁ ခုနှစ် စက်တင်ဘာလ၊ (၁၆)ရက်နေ့တွင် စက်ရုံဝန်ထမ်းများနှင့် တွေ့ဆုံညှိနှိုင်း အကြံပြုချက်များ ရယူခဲ့ပါသည်။ ယင်းအကြံပြုချက်များကို ဖတ်ရှုလေ့လာခဲ့ရာတွင် ဖော်ပြပါ အချက်များကို COBES INDUSTRIES (BII) COMPANY LIMITED မှ ပြန်လည် ရှင်းလင်း ပေးစေလိုပါသဖြင့် ဖြေရှင်းပေးရမည့် မေးခွန်းများကို အောက်တွင် ဖော်ပြထားပါသည်။

(က) စက်ရုံဝန်ထမ်းများနှင့်တွေ့ဆုံဆွေးနွေးခြင်းမှအကြံပြုချက်များ

- လုပ်ငန်းခွင်သုံး အကာအကွယ်ပစ္စည်းများ ထောက်ပံ့ထားကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်လာသူ ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။
- သောက်ရေသန့် သောက်သုံးကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်လာသူ ဝန်ထမ်းများ အားလုံး ဖော်ပြထားပါသည်။
- သန့်စင်ခန်းများမှာ သန့်ရှင်းပြီး လုံလောက်မှု ရှိကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက် လာသူ ဝန်ထမ်းများအားလုံး ဖော်ပြထား ပါသည်။
- ဆေးကြောသန့်ရှင်းရေးအတွက် လက်ဆေး ကန်များ၊ ဆပ်ပြာ/လက်သန့်ဆေးရည်များ ထားရှိ၍ အဆင်ပြေ ကောင်းမွန်ကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်လာသူ ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။
- လုပ်ငန်းခွင်ဆူညံသံအခြေအနေနှင့်ပတ်သက်၍ ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်း(၂၃) ဦးမှာ ဆူညံသံများမရှိကြောင်း၊ ဝန်ထမ်း(၇) ဦးမှာ ဆူညံသံအနည်းငယ်ရှိကြောင်းကို ဖော်ပြ ထားပါသည်။




- လုပ်ငန်းခွင်အနံ့အသက်/အရိုးအရွေးများအခြေအနေနှင့်ပတ်သက်၍ ဆွေးနွေးပွဲ တက်ရောက် လာသူ ဝန်ထမ်း(၂၆)ဦးမှာ မရှိကြောင်း၊ ဝန်ထမ်း(၄) ဦးမှာ အနံ့အသက် အနည်းငယ် ရှိကြောင်းကို ဖော်ပြ ထားပါသည်။
- လုပ်ငန်းခွင်အတွင်းအလင်းရောင် ကောင်းမွန် စွာရရှိပြီး လုံလောက်မှုရှိကြောင်းကို ဆွေးနွေးပွဲ တက်ရောက်လာသူ ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။
- လုပ်ငန်းခွင်တွင် အမှုန်အမွှားများမရှိကြောင်း ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်းများ အားလုံး ဖော်ပြထား ပါသည်။
- လုပ်ငန်းခွင်လေဝင်လေထွက်စနစ်နှင့် ပတ်သက်၍ အဆင်ပြေကောင်းမွန်ကြောင်းကို ဆွေးနွေးပွဲ တက်ရောက်လာသူ ဝန်ထမ်းများ အားလုံး ဖော်ပြထား ပါသည်။
- လုပ်ငန်းခွင်လူမှုဆက်ဆံရေးအနေဖြင့် လုပ်ငန်းခွင်ကြီးကြပ်သူများမှာကောင်းမွန်ပြီး၊ လုပ်ဖော်ကိုင်ဖက်များလည်း အချင်းချင်း ရိုင်းပင်းကူညီမှုရှိကြောင်းကို ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။
- လုပ်ငန်းခွင် မဝင်မီ စက်ရုံရှိဝန်ထမ်းများ၏ ဓမ္မာကိုယ်အပူချိန်တိုင်းတာခြင်းများကို နေ့စဉ်ပုံမှန် လုပ်ဆောင်ကြောင်း ဖော်ပြထား ပါသည်။
- စက်ရုံတွင် လက်ဆေးဘေစင်များ၊ ဆပ်ပြာများ နှင့် လက်သန့်ဆေးရည်များကို လုံလောက်စွာ ထောက်ပံ့ ထားကြောင်း ဖော်ပြထား ပါသည်။
- လုပ်ငန်းခွင်အတွင်း ဝန်ထမ်းများ Mask/Face shield များလုံလောက်စွာ ထောက်ပံ့ထား ကြောင်း ဖော်ပြထားပါသည်။
- စက်ရုံတွင် ထမင်းစားခန်းနှင့် သန့်စင်ခန်း များတွင် ကလိုရင်း ဆေးခြန်းခြင်းများကို အခါ အားလျော်စွာ လုပ်ဆောင် ပေးကြောင်း ဖော်ပြထားပါသည်။
- စက်ရုံသုံး ပလတ်စတစ်အိတ်များ သုံးစွဲမှုနှင့် စွန့်ပစ်မှုကို ယခုထက်ပိုမို ဂရုတစိုက် လုပ်ဆောင်ပေးစေ လိုပါကြောင်း အကြံပြု ထားပါသည်။
- ရှည်သံများအနေဖြင့် စက်ချုပ်သည့်အသံ ဖြစ်ကြောင်း အကြံပြုထားပါသည်။
- အမှုန်ဖမ်းစက်များ တပ်ဆင်ထားသောကြောင့် လုပ်ငန်းခွင်တွင် အမှုန်အမွှားများ မရှိကြောင်း အကြံပြုထားပါသည်။
- စက်ရုံပတ်ဝန်းကျင် အနေအထားသည် သန့်ရှင်းမှုရှိပြီး သန့်စင်ခန်းများမှာ သန့်ရှင်းမှုရှိကြောင်း အကြံပြု ထားပါသည်။

လေးစားစွာဖြင့်

Kyaw Soe Win  
Managing Director  
Green Myanmar  
Environmental Services Co., Ltd.

မိတ္တူကို -  
ရုံးလက်ခံ

Appendix 38 Project Proponent's Commitment on Suggestion form

 **COBES INDUSTRIES (B II ) CO.,LTD**  
 Lot No.62(Ka), Kwin No.1315,La Hpyor Yoe Kwin ,Oakthar(9<sup>th</sup>)Quarter,Bago Township, Bago Region,Myanmar

သို့  
 မန်နေဂျင်းဒါရိုက်တာ  
 စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာဝန်ဆောင်မှုလုပ်ငန်းကုမ္ပဏီလီမိတက်  
 အမှတ်(၁၁၅)၊ ကနောင်မင်းသားကြီးလမ်း၊  
 လှိုင်သာယာစက်မှုဇုန်(၁)၊ လှိုင်သာယာမြို့နယ်၊  
 ရန်ကုန်တိုင်းဒေသကြီး။


ရက်စွဲ - ၂၀၂၁ ခုနှစ်၊ ဒီဇင်ဘာလ (၁၇) ရက်

အကြောင်းအရာ။ ။ COBES INDUSTRIES (BII) COMPANY LIMITED ၏ လက်စားစနစ်ဖြင့်  
 "ပိုးမသတ်ထားသော ခွဲစိတ်ခန်းသုံး(တစ်ခါသုံး)ဝတ်စုံနှင့်ကျွန်းမာရေးသုံးဆက်စပ်  
 ဝတ်စုံများထုတ်လုပ်ခြင်းလုပ်ငန်း" စက်ရုံ စက်ရုံဝန်ထမ်းများ၏ အကြံပြုချက်များအပေါ်  
 ဆောင်ရွက်ပေးမည့် ပြန်ကြားခြင်းကိစ္စ။

ရည်ညွှန်းချက် ။ ။ ၂၀၂၁ ခုနှစ်၊ ဒီဇင်ဘာလ (၁၅)ရက်နေ့တွင် စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာ  
 ဝန်ဆောင်မှုလုပ်ငန်းကုမ္ပဏီလီမိတက်၏ ပေးပို့စာ။

အထက်ဖော်ပြပါကိစ္စနှင့်စပ်လျဉ်း၍ ရည်ညွှန်းပါစာဖြင့် COBES INDUSTRIES (BII) COMPANY  
 LIMITED ၏ စက်ရုံလုပ်ငန်းနှင့်ပတ်သက်၍ စက်ရုံဝန်ထမ်းများနှင့် အများပြည်သူများ၏ ဆွေးနွေး  
 အကြံပြုချက်များကို စက်ရုံသက်မှ ဆောင်ရွက်ပေးမည့် အစီအစဉ်များကို ပြန်ကြားအပ်ပါသည်။

ပူးတွဲ ။ ။ အကြံပြုချက်၊ ဆန္ဒသဘောထားများအပေါ် စက်ရုံမှ ဆောင်ရွက်ပေးမည့် အစီအစဉ်။

လက်မှတ် -  \_\_\_\_\_

တာဝန်ခံအမည် - ခင် မာ စော \_\_\_\_\_

ရာထူး - HR Manager \_\_\_\_\_

COBES INDUSTRIES (BII) COMPANY LIMITED  
 အကွက်အမှတ်(N1 B)၊ ကွင်းအမှတ်(၁၃၀၅)  
 ဥသော(၉)ရပ်ကွက်၊ ပဲခူးမြို့၊  
 ပဲခူးတိုင်းဒေသကြီး။

**COBES INDUSTRIES (BII) COMPANY LIMITED မှ စက်ရုံဝန်ထမ်းများ၏ အကြံပြုချက်များအပေါ် ဆောင်ရွက်ပေးမည့်အစီအစဉ်**

ဝန်ထမ်းများ၏အကြံပြုချက်များ	စက်ရုံမှ ပြန်လည်ဖြေကြားထားမှုများ
<ul style="list-style-type: none"> <li>လုပ်ငန်းခွင်သုံးအကာအကွယ်ပစ္စည်းများထောက်ပံ့ပေးထား ကြောင်း ဆွေးနွေးပွဲတက်ရောက်လာသည့် ဝန်ထမ်းများ အားလုံး အကြံပြုထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>လုပ်ငန်း ခွင်ဆုံး အကာအကွယ်ပစ္စည်းများ ထောက်ပံ့ပေးထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>သောက်ရေသန့် သောက်သုံးကြောင်းကို ဆွေးနွေး ပွဲ တက်ရောက်လာသည့် ဝန်ထမ်းများ အားလုံး အကြံပြုထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>20 လီတာဆန့် သောက်ရေသန့်ဖွဲ့ များ သောက်ဖွယ်ပေးထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>သန့်စင်ခန်းများမှာ သန့်ရှင်းပြီး လုံလောက်မှုရှိ ကြောင်းကို ဆွေးနွေး ပွဲ တက်ရောက်လာသည့် ဝန်ထမ်းများ အားလုံး အကြံပြုထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>သန့်စင်ခန်းများကို ရေစို ပိုးသတ်ဆေးဖြင့် လုံလောက်မှုရှိအောင် စီစဉ်ပေးထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>ဆေးကြောသန့်ရှင်းရေးအတွက် လက်ဆေးကန် များ၊ ဆပ်ပြာ/လက်သန့်ဆေးရည်များ ထားရှိ၍ အဆင်ပြေ ကောင်းမွန်ကြောင်းကို ဆွေးနွေးပွဲ တက်ရောက်လာသည့် ဝန်ထမ်းများအားလုံး အကြံပြု ထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>လက်ဆေးကန်များ၊ လက်သန့်ဆေးရည်များ ကို လုံလောက်စွာ စီစဉ်ပေးထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>လုပ်ငန်းခွင်ဆူညံသံအခြေအနေနှင့်ပတ်သက်၍ ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်း(၂၃) ဦးမှာ ဆူညံသံများမရှိကြောင်း၊ ဝန်ထမ်း(၇) ဦးမှာ ဆူညံသံအနည်းငယ်ရှိကြောင်းကို ဖော်ပြ ထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>လုပ်ငန်း ခွင် ဆူညံသံ ခြင့်ပယ်ပတ်သက် ကို ဝန်ထမ်းများ၏ စကားပြောသံ နှင့် စက်ကိရိယာ၏ စက်ချုပ်သံအား အသံများအား ဖြစ်ပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>လုပ်ငန်းခွင်အနံ့အသက်/အနိုးအငွေ့များအခြေအနေနှင့်ပတ်သက်၍ ဆွေးနွေးပွဲ တက်ရောက် လာသူ ဝန်ထမ်း(၂၆)ဦးမှာ မရှိကြောင်း၊ ဝန်ထမ်း(၄) ဦးမှာ အနံ့အသက် အနည်းငယ် ရှိကြောင်းကို ဖော်ပြ ထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>လုပ်ငန်း ခွင် မှ အနံ့အသက်များမှာ စက် ထိုင်ဘုတ်များရှိ အထည်များမှအရင်း၊ ငယ် အနံ့အသက်ထွက်နေသည်ကို ပြန်လည်စီစဉ် လုပ်ငန်းဆက်ပေးထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>လုပ်ငန်းခွင်အတွင်းအလင်းရောင် ကောင်းမွန် စွာရရှိပြီး လုံလောက်မှုရှိကြောင်းကို ဆွေးနွေးပွဲ တက်ရောက်လာ သည့် ဝန်ထမ်းများ အားလုံး အကြံပြုထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>လုပ်ငန်း ခွင် အလင်း အသက်အရောင် ကောင်း မွန်စွာ ရရှိစေရန်၊ နှင့် လုံလောက်မှု ရှိစေရန် စီစဉ် ဆောင်ရွက် ထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>လုပ်ငန်းခွင်အမှန်အမှားများ မရှိကြောင်းကို ဆွေးနွေးပွဲ တက်ရောက်လာသည့် ဝန်ထမ်းများအားလုံး အကြံပြုထား ပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>အမှန်စစ်စစ်စက်များကို တပ်ဆင်ထား ထောင့်ဖြတ်၊ အမှန်အမှားများ ထွက်ရှိပါ။</li> </ul>
<ul style="list-style-type: none"> <li>လုပ်ငန်းခွင်လေဝင်လေထွက်စနစ်နှင့်ပတ်သက်၍ အဆင်ပြေကောင်းမွန်ကြောင်းကို ဆွေးနွေးပွဲတက်ရောက် လာသည့် ဝန်ထမ်းများ အားလုံး အကြံပြု ထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>လုပ်ငန်း ခွင် လေဝင်လေထွက်စနစ် ကောင်း မွန်စွာ ရရှိစေရန်၊ နှင့် လုံလောက်မှု ရှိစေရန် စီစဉ် ဆောင်ရွက် ထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>လုပ်ငန်းခွင်အတွင်းလူမှုဆက်ဆံရေးနှင့်ပတ်သက်၍ လုပ်ငန်းခွင် ကြီးကြပ်သူများမှာ ကောင်းမွန်ပြီး၊ လုပ်ဖော် ကိုင်ဖော်များလည်း အချင်းချင်း ရိုင်းပင်း ကူညီမှု ရှိကြောင်းကို ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်းများ အားလုံး ဖော်ပြထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>လုပ်ငန်း ခွင် အတွင်း လူမှုဆက်ဆံရေး နှင့် ပတ်သက် သက်ရှိ ကြီးကြပ်သူများနှင့် ဝန်ထမ်းများအချင်း ချင်း ရိုင်းပင်း ကူညီမှု ရှိပါသည်။</li> </ul>

<ul style="list-style-type: none"> <li>• လုပ်ငန်းခွင် မဝင်မီ စက်ရုံရှိဝန်ထမ်းများ၏ ခန္ဓာကိုယ် အပူချိန်တိုင်းတာခြင်းများကို နေ့စဉ်ပုံမှန် လုပ်ဆောင်ကြောင်း ဖော်ပြထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>• လုပ်ငန်းခွင် မဝင်မီ ဝန်ထမ်းများ အား ကိုယ်ခန္ဓာအပူချိန် တိုင်းတာခြင်း များကို နေ့စဉ် လုပ်ဆောင်ပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>• စက်ရုံတွင် လက်ဆေးဘေစင်များ၊ ဆပ်ပြာများနှင့် လက်သန့်ဆေးရည်များကို လုံလောက်စွာထောက်ပံ့ထားကြောင်း ဖော်ပြထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>• လက်ဆေးဘေစင်များ၊ ဆပ်ပြာများ နှင့် လက်သန့်ဆေးရည် များကို လုံလောက်စွာ ထောက်ပံ့ထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>• လုပ်ငန်းခွင်အတွင်း ဝန်ထမ်းများ Mask/Face shield များလုံလောက်စွာ ထောက်ပံ့ထားကြောင်း ဖော်ပြထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>• Mask / Face shield များကို လုံလောက်စွာ ထောက်ပံ့ပေးထားပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>• စက်ရုံတွင်ထမင်းစားခန်းနှင့်သန့်စင်ခန်းများတွင် ကလိုရင်းဆေးဖြန်းခြင်းများကို အခါအားလျော်စွာ လုပ်ဆောင်ပေးကြောင်း ဖော်ပြထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>• ထမင်းစားခန်း နှင့် သန့်စင်ခန်း များကို တစ်ပတ်လျှင် ခွဲခြားပြီး သုံးသပ်ဆေးဖျန်းပေးပါသည်။</li> </ul>
<ul style="list-style-type: none"> <li>• စက်ရုံသုံး ပလတ်စတစ်အိတ်များ သုံးစွဲမှုနှင့် စွန့်ပစ်မှုကို ယခုထက်ပိုမို ဂရုတစိုက် လုပ်ဆောင်ပေးစေ လိုပါကြောင်း အကြံပြု ထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• ဆူညံသံများအနေဖြင့် စက်ချုပ်သည့်အသံ ဖြစ်ကြောင်း အကြံပြုထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• အမှုန်ဖမ်းစက်များ တပ်ဆင်ထားသောကြောင့် လုပ်ငန်းခွင်တွင် အမှုန်အမွှားများ မရှိကြောင်း အကြံပြုထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• စက်ရုံပတ်ဝန်းကျင် အနေအထားသည် သန့်ရှင်းမှုရှိပြီး သန့်စင်ခန်းများမှာ သန့်ရှင်းမှုရှိကြောင်း အကြံပြု ထားပါသည်။</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

## Appendix 39 Storm Water Management Plan Report

<p>Storm Water Management Plan CIC</p> <p><b>I. Introduction</b></p> <p>Storm Water Management Plan for communities identify potential problems and provide a road map for future drainage-related activities within new or existing developments. Future projects to be implemented based upon development phases or current flood-related issues, with the goal being to incorporate this information into development plans to protect the community and its infrastructure. Storm Water Management plans help eliminate or reduce flood risks for property owners and businesses and maintain safe emergency evacuation routes. In reducing risks for the target community, master drainage planning establishes safe pathways and buffer zones for floodwaters while preventing adverse impacts to downstream or neighboring communities.</p> <p><b>II. Methodology for preparation of Storm Water Management Plan</b></p> <p><b>Overview</b></p> <p>Current report is study of existing drainage system and its adequacy to meet current and future requirements.</p> <p><b>Objective</b></p> <p>This Storm Water Management Plan takes into account the land use element of the current Industrial Zone Development Plan as well as the existing and proposed zoning in developing the storm water runoff calculations. The objectives of this Storm Water Management Plan include:</p> <p>(a) mapping of the Industrial Zone storm drain system (trunk and main drains only) including unlined channels and ditches;</p> <p>(b) Updating the Industrial zone Base Map to show locations of public storm drains and facilities, including their size, material of construction, and flow directions;</p> <p>(c) Analyzing rainfall data collected over a period of 2, 5, 10, 20, 50 years, including development of IDF curves for different storm frequency periods;</p> <p><b>Scope of Work</b></p> <p>The Scope of Work for the Storm Water Management Plan includes the following tasks:</p> <p>(i) Collection and review of existing information as available with the Industrial zone Committee;</p> <p>(ii) Identification of areas/zones where drainage system is cross-connected with Natural water body;</p> <p>(iii) Field investigations to verify existing storm drainage system, typical cross sections of storm water channels, roadside drains and culverts;</p> <p>(iv) Collection and analysis of rainfall data and plotting the rainfall intensity duration curve for the study area;</p> <p>(v) Calculation of design flows based on the hydraulic analysis</p>	<p><b>Methodology</b></p> <p>The project team collected the secondary data available from town development committee. Historical rainfall information, existing drainage information, flood prone areas were collected. For information about the Zoning area and drainage conditions.</p> <p><b>Field Verifications</b></p> <p>The Project Team conducted field investigations to verify existing storm drainage system, typical cross sections of storm water channels, roadside drains and culverts. Flow directions of channels and surface runoff were verified.</p> <p><b>Rainfall Analysis</b></p> <p>For drainage, intensity of the rain is required for analysis. As such hourly rainfall data is required for discharge measurement and hydraulic analysis. Since hourly rainfall data of Project area Bago Industrial Zone is not available, at the time of COVID-19 Period, the rainfall data is available from DMH (Department of Meteorology and Hydrology) on rainfall data of Bago Industrial Zone (Year 1990-2019).</p> <p><b>Preparation of Storm Water Management Plan</b></p> <p>The Project Team prepared a Storm Water Management Plan (DMP) based on recommended system improvements identified during field investigations and hydraulic analysis. The DMP identified improvement of existing drainage facilities, and need of additional drainage facilities to minimize cross connection problems in the Industrial Zone to meet the growth related needs, and included a prioritized listing of each of the projects. Improvement projects are considered those located in areas with little or no anticipated future development. Growth related projects considered are those resulting from the increased runoff associated with future development. The DMP should become a tool that is used by the town to plan subsequent work. The following key elements are included:</p> <p>(i) Identification of all required improvement projects;</p> <p>(ii) Prioritization of projects;</p> <p><b>PROFILE OF BAGO INDUSTRIAL ZONE TOWN</b></p> <p><b>Location and Area</b></p> <p>The project is located as follows:</p> <p>Within the Industrial zone, Bago Township, South and West area are Industrial area</p> <p>East of undeveloped land located West of Bypass road of Bago town, West of Short line Ditch (runoff from this site currently enters the ditch) West of an existing Ditch which runoff to road drain North and East of a single family home. See Vicinity Map located in figure (1).</p>
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Figure (1) Vicinity Map

**Topography**

The town has almost flat topography except a small portion in the East boundary area (Proposed development Site), which is a little higher than the general ground level. The general slope of the Industrial Zone is from North to South. The difference between the maximum and minimum ground levels is about 2 to 5 meter.



Figure (2) Study Industrial location on Google Earth

**Description of study area**

The following are characteristics of the site:

As currently platted, the parcel CIC (proposed Industrial Area) will utilize 7.1 acres of the parcel for future development which includes 1.62 acres of road adjacent to the portion of land utilized

Site drains to the west with existing slopes ranging between 2.4 % and 2.8 %

Roadside drainage ditches are located on the West side of the site

Compound drain located along the east property line

**Industrial Zone Development and Land use**

Industrial zone development such as rooftops, roads, driveways, parking lots and sidewalks have created conditions where imperviousness dominates the landscape and precipitation is converted to surface flows. A direct relationship exists between increases in impervious surfaces and surface flow (see in following Figures). CIC's development and land use is similar to that of other industrial zone in the study basin. Much of the industrial land is in the western portions of the Bago City, and is generally in the lower reaches of the some of the streams that pass through the industrial area. Most of the new development is occurring in the upper reaches of the watershed, and this pattern will continue as the Industrial zone expands into the undeveloped portions of the urban growth boundary.

Development has resulted in an increase in surface water runoff, further complicating downstream flooding problem. Several areas, particularly within the Watershed (WA 110 WA 11) basin, are presently undergoing rapid development. This will cause a further increase in the amount of impervious area and will (in the absence of effective stormwater detention facilities) result in even higher flow volumes and flood peaks.



Figure (3) proposed site boundary over the aerial photograph (2006 Google Earth image).



Figure (4) proposed site boundary over the aerial photograph (2011 Google Earth image).

Figure (5) proposed site boundary over the aerial photograph (2016 Google Earth image).

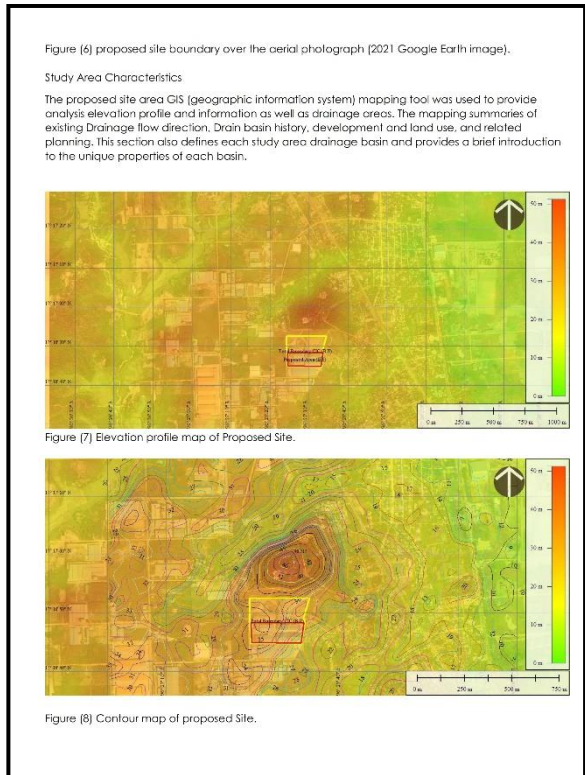


Figure (6) proposed site boundary over the aerial photograph (2021 Google Earth image).

**Study Area Characteristics**  
 The proposed site area GIS (geographic information system) mapping tool was used to provide analysis elevation profile and information as well as drainage areas. The mapping summaries of existing Drainage flow direction, Drain basin history, development and land use, and related planning, this section also defines each study area drainage basin and provides a brief introduction to the unique properties of each basin.

Figure (7) Elevation profile map of Proposed Site.

Figure (8) Contour map of proposed Site.

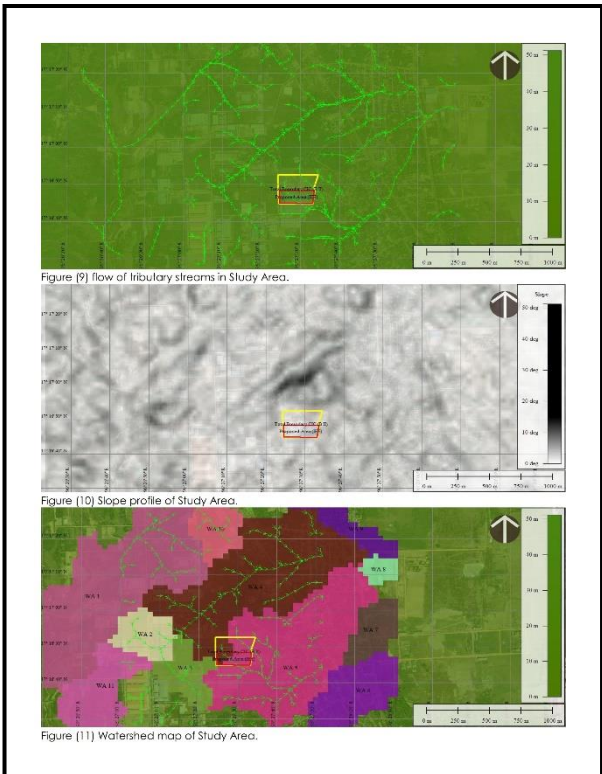
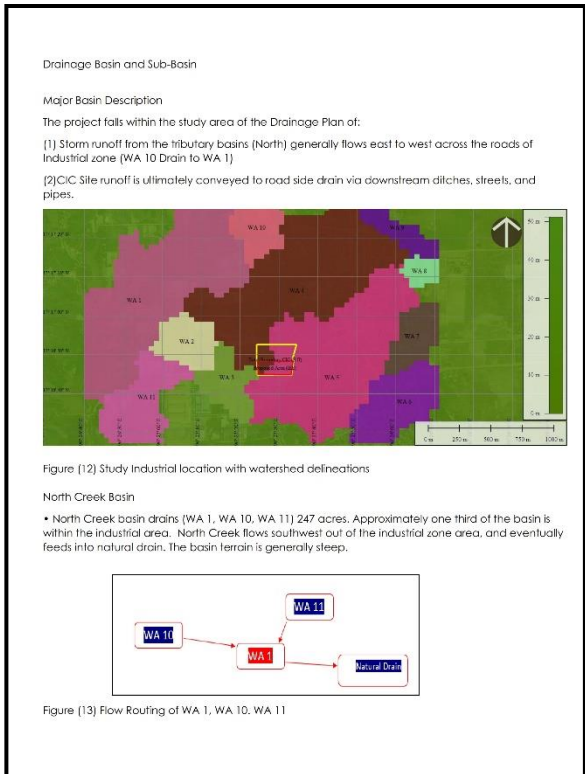


Figure (9) flow of tributary streams in Study Area.

Figure (10) Slope profile of Study Area.

Figure (11) Watershed map of Study Area.



**Drainage Basin and Sub-Basin**

**Major Basin Description**

The project falls within the study area of the Drainage Plan of:

- (1) Storm runoff from the tributary basins (North) generally flows east to west across the roads of Industrial zone (WA 10 Drain to WA 1)
- (2) IC Site runoff is ultimately conveyed to road side drain via downstream ditches, streets, and pipes.

Figure (12) Study Industrial location with watershed delineations

**North Creek Basin**

• North Creek basin drains (WA 1, WA 10, WA 11) 247 acres. Approximately one third of the basin is within the industrial area. North Creek flows southwest out of the industrial zone area, and eventually feeds into natural drain. The basin terrain is generally steep.

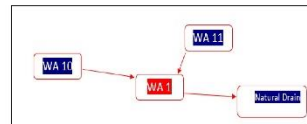


Figure (13) Flow Routing of WA 1, WA 10, WA 11

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Cobes Industries (B-II) Company Limited

• North Creek is a complex system with numerous tributaries within and upstream of the North, including West Creek itself and flow to South.

Middle Creek Basin

- Middle Creek basin drain (WA 2, WA 3, WA 4) 237 acres. WA 2 and WA 3 flow to WA 4 across the roads of Industrial Zone area.
- Several Stream were identified and drain to the Middle Creek basin.
- Stormwater from the proposed Development Site (WA 4) basin eventually drains to the road side drain, which has been placed on the east of site.

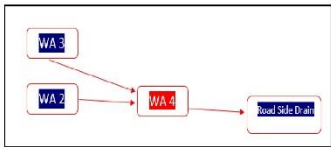


Figure (14) Flow Routing of WA 1, WA 10, WA 11

Sub-Basin Description

According to the Watershed delineation is performed in the watershed tool as shown in figure (12), the project site is located in the Northern WA 4 and WA 5.

Drainage Basin

- According to the watershed map the project site is located within sub-basin WA 4 and WA 5. The project site received runoff from roof area and paved area for a total of approximately 7 acres.
- Two sub-basins (WA 5 and WA 7), whose runoff drains either directly or indirectly to the WA 6, total the above mentioned over 229 acres. These sub-basins were used for all calculations for this report and are displayed in the Overall Drainage Exhibit located in the Map.
- An existing drain ditch, located east of the site running in a North to south direction, receives runoff from the North, and west Basins. It is assumed that the ditch is running full and that all runoff from the basin flows over the ditch embankment continuing in South direction.
- Short Line Ditch, located east and West of the proposed development, currently receives runoff from all roof area, including the proposed site.

- Approximately 29.4 acres consisting of a single-family household area, located east and affside, historically flows north to south onto the proposed site.

Watershed ID	AREA (acre)
WA 1	247
WA 2	39.6
WA 3	41
WA 4	237
WA 5	229
WA 6	72
WA 7	37.6
WA 8	14
WA 9	36
WA 10	40
WA 11	71

Table (1) Watershed area of proposed location (CIC located in WA 4 & WA 5)

Geology & Soils

The actual gathering of soil characteristics is limited to the top layer. The soil is examined by means of soil samples of which one is taken in proposed site. This is a very rough estimation on which it is hard to rectify the results gained. The soil type of study area are Clay and Clay loam.

Ullisan, et al [2014] made a geological evolution of the Bago-Yoma basin and thereby defined the most important sediments over time of which table provides an overview. The layers differ per area and vary between sandstone, clay and silt. Sandstone is rather permeable where clay and silt show a lower value to the permeability of the soil, but clear values are not known.

Bago-Sittoung basins	Type of soil	Thickness (layers (m))
Pliocene sediments	Mainly sandstones and partial clay and silt layers	100-400
Miocene sediments	Silt and clay layers	10-1500
Oligocene sediments	Mainly sandstone on partial clay layers	600-2250

(Reference Soil type of the Bago river basin (Win, 2014))

Table (2) Soil of proposed area location

Climate Summary

Located at an elevation of 14.73 meters (48.33 feet) above sea level, Bago has a Tropical monsoon climate (Classification: Am). The city's yearly temperature is 29.08°C (84.34°F) and it is 2.06% higher than Myanmar's averages. Bago typically receives about 92.55 millimeters (3.64 inches) of precipitation and has 128.91 rainy days (35.32% of the time) annually.

Altitude/Elevation	14.73m (48.33ft)
Annual high temperature	32.74°C (90.93°F)
Annual low temperature	23.49°C (74.28°F)
Average annual precip	92.55mm (3.64in)
Warmest month	April (38.88°C / 101.98°F)
Colest Month	January (18.78°C / 65.8°F)
Wettest Month	August (249.67mm / 9.83in)
Driest Month	February (0.62mm / 0.02in)
Number of days with rainfall (≥ 1.0 mm)	128.91 days (35.32%)
Days with no rain	236.09 days (64.68%)

Table (3) Climate of proposed area

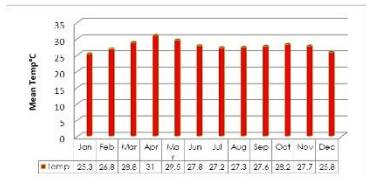
Average Temperature in Project Area

The hot season lasts for 2.0 months, from March 4 to May 4, with an average daily high temperature above 36 °C. The hottest day of the year is April 11, with an average high of 38 °C and low of 25 °C. The hottest month of the year is April, with an average high of 37 °C and low of 26 °C.

The cool season lasts for 3.9 months, from June 3 to September 29, with an average daily high temperature below 31 °C. The coldest day of the year is January 9, with an average low of 18 °C and high of 32 °C. The coldest month of the year is January, with an average low of 18 °C and high of 32 °C.

Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	32°C	33°C	37°C	37°C	34°C	30°C	30°C	30°C	31°C	32°C	33°C	32°C
Temp	24°C	26°C	29°C	31°C	29°C	27°C	27°C	26°C	27°C	28°C	27°C	25°C
Low	18°C	20°C	23°C	26°C	26°C	25°C	25°C	25°C	25°C	24°C	22°C	19°C

Month	Temp
Jan	26.3
Feb	26.8
Mar	28.8
Apr	31
May	29.5
Jun	27.8
Jul	27.2
Aug	27.5
Sep	27.6
Oct	28.2
Nov	27.7
Dec	25.8



Temperature Mean: 27.8 °C

Hours of Daylight	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours of Daylight	11.2h	11.6h	12.1h	12.6h	13.0h	13.5h	13.0h	12.7h	12.2h	11.7h	11.3h	11.1h

Precipitation

A wet day is one with at least 1 mm of liquid or liquid-equivalent precipitation. The chance of wet days in Project area varies very significantly throughout the year.

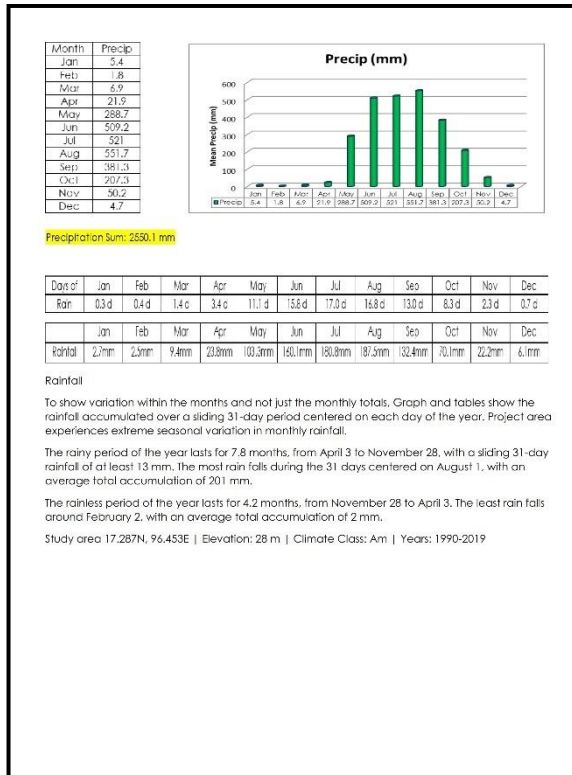
The wetter season lasts 5.2 months, from May 9 to October 15, with a greater than 29% chance of a given day being a wet day. The chance of a wet day peaks at 58% on August 7.

The drier season lasts 6.8 months, from October 15 to May 9. The smallest chance of a wet day is 0% on January 26.

Among wet days, we distinguish between those that experience rain alone, snow alone, or a mixture of the two. Based on this categorization, the most common form of precipitation throughout the year is rain alone, with a peak probability of 58% on August 7.

# IEE Report for “Manufacturing of Non-Sterilized Disposable Surgical-Scrubs and Related Kind of Clinical Wears on CMP Basis” Project

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Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	0.1	5.1	0.4	16	273.0	509.8	527.6	463.5	216.7	201.6	66.5	0.2
1991	0.0	0	0.0	26.7	36.8	275.6	151.8	495.7	270.3	162.8	55.1	10.5
1992	4	4.7	0	5.4	18.3	427.8	719.8	330.4	386.7	280.7	38.8	12.2
1993	0	0	17.0	15	291.6	365.6	341.5	461.1	418.2	93.9	11.7	0.1
1994	0	0	17.8	21.2	353.3	601	781.2	678.2	277.2	143.1	28.9	2.2
1995	0.1	0	7.9	7.3	314.3	427.9	635.0	488.8	487.4	183.7	63.8	0.1
1996	0.9	3	5.7	44	279.2	687.9	576.7	564.5	455.1	147.1	91.8	1.5
1997	0	0	4.9	59.2	141.2	381.4	609.3	800.5	375.4	157.8	38.4	0
1998	0.7	0	0.6	19.1	389.1	326.6	742.1	433	212.9	120.1	55.9	2.7
1999	2.3	2.7	1.8	45.9	432.7	412.3	389.3	461.8	387.6	215.5	59.1	2.9
2000	0.1	0.5	0.1	51.2	383	580.5	400	474.4	419.4	240.4	17.8	0.1
2001	2.1	7	34.3	2.7	330.4	457.6	486.4	509.8	292.1	282.3	45.7	4.7
2002	2.9	2.7	3.9	12.9	403.8	475.3	418.8	497.5	338.1	115.3	155.4	14.8
2003	0.5	1.7	7.6	14.7	249.8	390.8	350	364.9	302.4	103.5	14.4	0
2004	2.3	0.4	0.2	12.7	421.7	730.3	430.0	353.5	300.9	67.3	27.7	0
2005	0.4	0.6	19.4	20	150.4	545.7	300.3	578.3	84.7	145	89.1	19.9
2006	0	1	7.0	54.7	329.9	426.9	735.9	301.8	404.9	167.9	11.3	0.0
2007	0	0	1.0	0.2	017.3	545	611.1	447.6	489	227.9	59.1	0
2008	24.3	11.4	8.3	28.1	419.2	397.8	499.8	453.9	481.4	298.4	29.4	8.4
2009	0	0	0.9	38	344	668.8	525.1	633.6	270.0	212.6	11.3	0.2
2010	11.4	0	1	2.6	171.5	327.8	606.4	641.8	389	347.6	10.4	17.5
2011	4.7	0.1	10.1	17.8	418.4	624.1	648.6	574.8	312.4	120.2	42.6	0
2012	1.0	0	0.7	14.2	207.5	302.6	475.2	519.2	362.4	84.1	51.9	0.1
2013	41.5	9.1	1.5	0.1	127.4	437.6	617.4	594.5	469.4	344.1	63.9	4.1
2014	0	0	16.4	2.9	389.9	341.0	540.1	353.3	114	228.4	44.7	2.4
2015	18.9	0	7.4	38	183.7	447.2	601	493.9	306	179	64.4	5.7
2016	10.5	0	3.4	13.8	248.7	344.5	518	314	314	403.8	24.1	85.1
2017	11.4	0	3.9	89.8	389.8	684.2	519	536.5	340	440.7	44.0	2
2018	0	0.1	4.7	19.8	247.4	595.6	513	484	394.4	263.5	42.6	17.6
2019	11.3	1.4	3.6	14.3	213.3	434.4	437	353.7	420.7	292.3	33.2	0

**20 years Monthly Runoff**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total (mm)
2000	0.1	3.5	5.1	51.2	303	303.5	430	474.6	419.6	240.6	120	0.1	2601.1
2001	2.1	7	36.3	2.7	330.4	457.6	489.6	309.8	292.1	383.3	48.7	4.7	2460.3
2002	2.9	2.7	3.9	12.9	403.8	475.3	418.8	497.5	338.1	115.3	155.4	14.8	2414.4
2003	0.5	1.7	7.6	14.7	249.8	390.8	350	364.9	302.4	103.5	14.4	0	2223.8
2004	2.3	0.4	0.2	12.7	421.7	730.3	430.0	353.5	300.9	67.3	27.7	0	2411.8
2005	0.4	0.6	19.4	20	150.4	545.7	300.3	578.3	84.7	145	89.1	19.9	2403.8
2006	0	1	7.0	54.7	329.9	426.9	735.9	301.8	404.9	167.9	11.3	0.0	2403.8
2007	0	0	1.0	0.2	017.3	545	611.1	447.6	489	227.9	59.1	0	2384
2008	24.3	11.4	8.3	28.1	419.2	397.8	499.8	453.9	481.4	298.4	29.4	8.4	2413.3
2009	0	0	0.9	38	344	668.8	525.1	633.6	270.0	212.6	11.3	0.2	2413.3
2010	11.4	0	1	2.6	171.5	327.8	606.4	641.8	389	347.6	10.4	17.5	2413.3
2011	4.7	0.1	10.1	17.8	418.4	624.1	648.6	574.8	312.4	120.2	42.6	0	2413.3
2012	1.0	0	0.7	14.2	207.5	302.6	475.2	519.2	362.4	84.1	51.9	0.1	2413.3
2013	41.5	9.1	1.5	0.1	127.4	437.6	617.4	594.5	469.4	344.1	63.9	4.1	2413.3
2014	0	0	16.4	2.9	389.9	341.0	540.1	353.3	114	228.4	44.7	2.4	2413.3
2015	18.9	0	7.4	38	183.7	447.2	601	493.9	306	179	64.4	5.7	2413.3
2016	10.5	0	3.4	13.8	248.7	344.5	518	314	314	403.8	24.1	85.1	2413.3
2017	11.4	0	3.9	89.8	389.8	684.2	519	536.5	340	440.7	44.0	2	2413.3
2018	0	0.1	4.7	19.8	247.4	595.6	513	484	394.4	263.5	42.6	17.6	2413.3
2019	11.3	1.4	3.6	14.3	213.3	434.4	437	353.7	420.7	292.3	33.2	0	2413.3

**RAINFALL ANALYSIS**

In storm water drainage system design, estimation of runoff from the tributary catchment reaching various inlets of drain is important. This can be estimated if Intensity Duration Frequency (IDF) curves are available. The IDF curve is drawn based on rainfall data analysis of the project area.

The rainfall data obtained from Bogo station of DMH has been analyzed and the procedure for construction of IDF curve using Empirical method is explained. Once IDF curve for required return period are constructed, the same can be used for estimation of runoff using rational method.

**20 years 24 hour Peak rainfall**

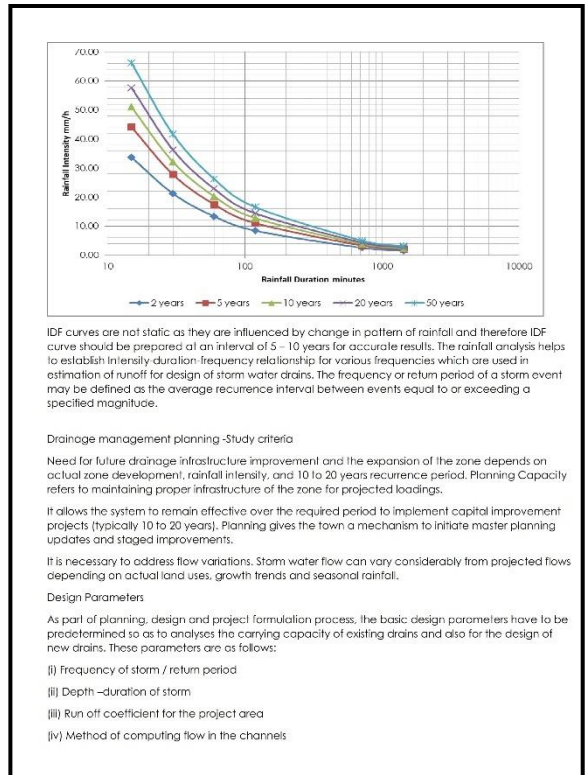
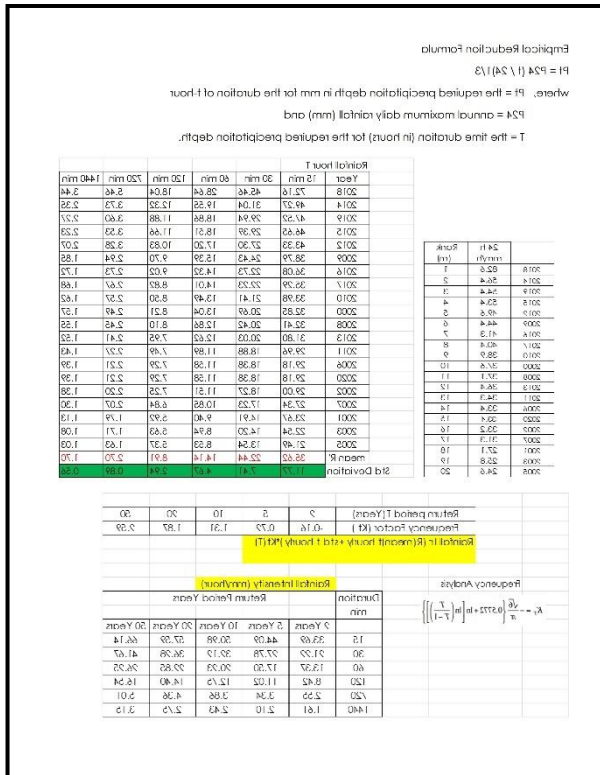
As indicated, the best possible estimation of peak run off rate is possible where the gauge records of rainfall are available from rain gauge recorder. (GSMAP JAXA & DMH record data).

Year	1	2	3	4	5	6	7	8	MAX
2000	15.2	17.1	12.3	28.4	11.8	17.7	37.4	23.1	37.6
2001	13.9	17.6	23.9	25	27.1	13.3	16.9	11.4	27.1
2002	33.2	20.1	13.2	15.6	19.9	13.9	14.8	19.5	35.2
2003	20.4	16.7	10.1	13.3	25.8	12.3	12.5	21.1	25.8
2004	19.3	21.7	21.7	11.6	12.4	11.3	13.9	22.7	22.7
2005	17.1	13.5	19.9	13.6	24.6	12.5	13.6	15.1	24.6
2006	24.6	30.4	16.4	11.3	12.3	14.2	11.2	16.7	33.1
2007	31.3	25.5	13.1	18.7	20.0	17.4	13.6	14.5	31.3
2008	22.5	24.4	25.3	26.9	22.2	15.4	31.8	37.1	37.1
2009	44.4	32.3	22.1	16.2	18.9	14.8	20.3	12.6	44.4
2010	36.6	22.4	25	30.5	34.3	22.8	20.2	16.1	36.6
2011	56.3	26.7	32.4	34.3	31.2	32.6	32.1	30.4	34.3
2012	36.6	30.8	44.9	49.5	27.4	36.3	35.6	29.3	49.6
2013	31.5	24.7	35.3	27.2	25.4	33.8	27.1	36.4	36.4
2014	35.5	49.4	46.1	56.4	46.5	46.4	35.5	37.5	56.4
2015	50.3	37.5	47.7	51.2	43.4	41.7	38.7	33.2	53.4
2016	25.2	30.8	27.5	33.1	41.3	25.7	30.7	31.4	41.3
2017	36.7	43.4	25.2	32.4	30.1	28.5	32.4	27.1	43.4
2018	59.2	36.3	33.7	71.9	42.6	66.5	63.3	54.3	66.5
2019	31.3	25.3	30.5	24.1	29.1	27.4	33.7	42.6	54.4
2020	27.5	29.9	32.1	27.4	33.4	28.3	29.3	33.4	33.4

**Modeling of Short Duration Rainfall IDF Equation for Project Area**

Year	mm/h	5 min	10 min	15 min	30 min	60 min	120 min	240 min	1440 min
2018	82.6	12.51	15.76	18.04	22.73	28.64	36.08	65.56	82.6
2019	54.4	8.54	10.76	12.32	15.52	19.55	24.65	44.76	54.4
2015	54.4	8.24	10.38	11.88	14.77	18.86	23.76	43.18	54.4
2012	49.4	7.51	9.46	10.83	13.65	17.20	21.66	39.37	49.4
2009	44.4	6.72	8.47	9.70	12.22	15.39	19.39	35.24	44.4
2016	41.3	6.25	7.88	9.02	11.36	14.32	18.04	32.78	41.3
2017	40.4	6.12	7.71	8.82	11.12	14.01	17.65	32.07	40.4
2010	38.9	5.89	7.42	8.50	10.70	13.49	16.99	30.87	38.9
2000	37.6	5.69	7.17	8.21	10.35	13.04	16.49	29.94	37.6
2008	37.1	5.62	7.08	8.10	10.21	12.86	16.20	29.45	37.1
2013	36.4	5.51	6.94	7.95	10.07	12.67	15.90	28.99	36.4
2011	34.3	5.19	6.54	7.49	9.44	11.89	14.98	27.22	34.3
2006	33.4	5.04	6.37	7.29	9.19	11.58	14.59	26.51	33.4
2020	33.4	5.04	6.37	7.29	9.19	11.58	14.59	26.51	33.4
2002	33.2	5.03	6.33	7.25	9.14	11.51	14.50	26.35	33.2
2007	31.3	4.74	5.97	6.84	8.41	10.85	13.67	24.84	31.3
2001	27.1	4.10	5.17	5.92	7.46	9.40	11.84	21.51	27.1
2003	25.8	3.91	4.92	5.63	7.10	8.94	11.27	20.48	25.8
2005	24.6	3.73	4.67	5.37	6.77	8.53	10.75	19.53	24.6





Pre-Development and Post-Development conditions

Assessment of Existing System

Overview

The study watershed boundary of Development site area is shown in Table (1) whereas the drainage basin in area. The coverage elevation profile of the Site is nearly 3 to 5 Meter (m). The general topography of the Zone is nearly flat and having slopes towards North to South.

The CIC site is located in an industrial area. As noted in the Town of Bago The post development discharge rate for any storm event from this site is to be controlled to the capacity of the receiving industrial storm drainage. The site will discharge all captured storm water as well as runoff from a small uncontrolled area west to the storm drainage on industrial Street.

Additionally, the uncontrolled area at the north end of the site is part of a conservation area and will not be developed. Runoff from this area will be allowed to drain to East natural Creek to the east as it does under existing conditions. A summary of the existing drainage conditions of this site is displayed in Table 5, 6, 7.

The proposed development consists of the construction of a single and multi-storey buildings, providing 9 units. On the surface, the site includes both hard and soft-landscaped surfaces, as well as a driveway, loading dock and parking. An open space area (nearly 9 acres) is proposed to take up the majority of the site limits. The development limits extend north up to 50m buffer from the Buddha monastery and east to 10m buffer from single family household area.

Under proposed conditions the un-developed northern part (nearly 9 acres) of the site will be allowed to flow uncontrolled to east natural Creek, as it did under existing conditions. Runoff from a portion of the main unit industrial area of the site (7 acres) will be allowed to flow to the industrial zone road side drain system. This flow will be accounted for in the allowable release rate.

The remaining site area will be captured and controlled in a stormwater cistern to internal drain ditches. An area breakdown for the CIC site layout is provided in Table 8. Please refer to Figure 15 for details of the post-development conditions, land-uses, and stormwater catchments.

Proposed Land-Use Area Breakdown

LAND-USE	AREA (m <sup>2</sup> )	RUNOFF-COEFFICIENT, C
Impervious Roof	15,710.2	0.9
Impervious At-Grade		0.9
Undevelopment Site	35,079	0.25
Vehicular Road Surface	10,323	0.9
Total Site Area	61,112.2	

Table (8) Proposed Land Use Area Breakdown

Figure (15) Post-development conditions of CIC

ID	Sq. m
1	4842
2	3667
3	5561
4	446
5	615
6	95.4
7	135
8	254
9	94.8
10	10323
11	35079
Total	61112.2

Table (9) Proposed Land-Use Area by Square meter

Figure (16) CIC site runoff and flow direction

Flood Prone Areas

The information about the flood prone area was gathered from public representatives, Zone development committee and local public. Following areas were identified. The area was physically inspected and problems were discussed with local residents. The details of the problematic areas are as follows:

(a) West part of proposed development site area drainage system is located in Watershed WA4 and WA 5 drain Basin.

(b) In absence of the outlet drain in west and south west some blocks area part of the industrial zone, the drains act as carrier of waste water.

Figure (17) Zone area runoff and flood prone areas

Recommended Immediate Priority

The overall work has to be completed in two phases:

(i) Short Term measures for year of first: The works will primarily consist of the following:

- (a) De-silting and garbage removal in all drains;
- (b) Removing of weeds form Drain outlet Near Junction of proposed site road
- (c) Preparation and implementation of operation and management plan for storm water drains.

(ii) Long Term measures for coming years: The works will primarily consists of the following:

- (a) Augmentation of existing drains;
- (b) Major rehabilitation, such as construction of box Culvert on New development area;

Conclusion

The stormwater management plan presented herein and as shown on the Site Plans has been prepared in accordance with applicable state, and regulations. The design includes Best Management Practices for maintaining stormwater runoff quality both during and after construction, and is designed to protect downstream and underlying receiving waters from stormwater related impacts. The Project will result in an improvement of stormwater runoff quality and quantity.

Appendix

Figure of CIC storm water management structure

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