

STAR SAPPHIRE HOTEL COMPANY LIMITED

INITIAL ENVIRONMENTAL EXAMINATION

HOTEL DAWEI PROJECT

Prepared by:



MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED

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Date: 27.5.2022

Attention: Dear Director

Environmental Conservation Department

Subject: Initial Environmental Examination (IEE) Report in respect of the Hotel Dawei Project by Star Sapphire Hotel Co., Ltd.

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

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

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



Commitment of Project Proponent

MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED (Third Party Consultant) has prepared this project report on Initial Environmental Examination (IEE) in compliance with all Myanmar Laws, rules and regulations and Environmental Conservation Law (2012) and etc.

Star Sapphire Hotel Company Limited; As proponent of this project, do hereby solemnly affirm and declare that:

- The project particulars in this report are correct and true to the best of my knowledge
- The report is prepared by complying with all Myanmar Laws, rules and regulations and Environmental Conservation Law (2012)
- Legal and other obligations are incorporated in the designs, procedures and project controls,

Star Sapphire Hotel Company Limited which is Hotel Dawei Project is located at No. (7/A), Arzarni Road, Byaw Taw Wa Quarter, Dawei City, Tanintharyi Division, Myanmar. Do hereby solemnly affirm and declare that I fully understand and undertake to operate the project strictly in accordance with the said conditions and commitments in this IEE report.

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Lists of Abbreviation

| | |
|---------------------|--|
| 1. CEMP | = Construction Environmental Management Plan |
| 2. CSR | = Corporate Social Responsibility |
| 3. EMP | = Environmental Management Plan |
| 4. EIA | = Environmental Impact Assessment |
| 5. ECD | = Environmental Conservation Department |
| 6. ECC | = Environmental Compliance Certificate |
| 7. EMoP | = Environmental Monitoring Plan |
| 8. GIIP | = Good International Industry Practices |
| 9. HSE | = Health, Safety and Environment |
| 10. IEE | = Initial Environmental Examination |
| 11. IFC | = International Finance Corporation |
| 12. NEQG | = National Environmental Quality (Emission) Guidelines |
| 13. MIC | = Myanmar Investment Commission |
| 14. MOECF | = Ministry of Environmental Conservation and Forestry |
| 15. MONREC | = Ministry of Natural Resources and Environmental Conservation |
| 16. OEMP | = Operation Environmental Management Plan |
| 17. OSHA | = Occupational Safety and Health Administration |
| 18. PPE | = Personal Protective Equipment |
| 19. WHO | = World Health Organization |
| 20. YCDC | = Yangon City Development Committee |
| 21. YESB | = Yangon City Electricity Supply Board |
| 22. YCDC | = Yangon City Development Committee |
| 23. Sq meter | = Square meter |
| 24. % | = Percentage |
| 25. °C | = Degree Celsius |
| 26. BOD | = Biochemical Oxygen Demand |
| 27. COD | = Chemical Oxygen Demand |
| 28. CO | = Carbon Monoxide |
| 29. CO ₂ | = Carbon Dioxide |
| 30. NO ₂ | = Nitrogen Dioxide |
| 31. VOC | = Volatile Organic Compound |
| 32. O ₃ | = Ozone |
| 33. dB (A) | = Decibel Unit |
| 34. MT | = Metric Ton |
| 35. Kt | = Kilo Ton |
| 36. kWh | = Kilo Watt Hour |
| 37. km | = Kilo Meter |
| 38. PM | = Particulate Matter |
| 39. ppm | = Part Per Million |

အစီရင်ခံစာအကျဉ်းချုပ်

နိဒါန်း

ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်(ဟိုတယ်ထားဝယ်)သည် မြေဧရိယာ (၃.၈၉၉)ဧက ကျယ်ဝန်းသည့် မြေကွက်အမှတ်-၇(အေ)၊ အာဇာနည်လမ်း၊ ဗျောတောဝရပ်ကွက်၊ ထားဝယ်မြို့၊ တနင်္သာရီတိုင်းဒေသကြီးတွင် တည်ရှိပါသည်။ စီမံကိန်း၏အရှေ့မြောက်ဘက်တွင်ထားဝယ်လေဆိပ်၊ အနောက်ဘက်တွင်မြို့ပတ်လမ်းတည်ရှိပြီး မြို့တော်ခန်းမနှင့်ဘေးချင်းကပ်လျက်တည်ရှိပါသည်။

အဆိုပါ စီမံကိန်းသည် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်(MIC) မှ ခွင့်ပြုမိန့်အမှတ် မနသ- ၉၄၆/၂၀၁၃ ဖြင့် ၁၃-၁၂-၂၀၁၃ ရက်နေ့တွင် ခွင့်ပြုချက်ရရှိပြီးဖြစ်ပါသည်။ ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်(ဟိုတယ် ထားဝယ်)သည် သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန(MONREC)၊ ပတ်ဝန်းကျင်ထိန်းသိမ်း ရေးဦးစီးဌာန(ECD) ၏ ၃၀-၉-၂၀၂၁ ရက်စွဲပါ စာအမှတ် ၂/၇/၆(၀၁-၀၉)(၁၂၁၈/၂၀၂၁) စာအားရရှိခဲ့ပါသည်။

ECD စာအရ ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်(ဟိုတယ်ထားဝယ်)သည် စီမံကိန်းနှင့် စီမံကိန်းဧရိယာ ပတ်ဝန်းကျင်ဆိုင်ရာကာကွယ်မှုများအတွက် တာဝန်ရှိပါသည်။ ထို့အပြင် သယံဇာတနှင့်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဝန်ကြီးဌာန(MONREC) လက်အောက်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန(ECD)၏ လမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်(EMP) အား ဆောင်ရွက်ရမည် ဖြစ်ပါသည်။ ၎င်း ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် နှင့်အညီ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာမူဝါဒ၊ သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေနှင့် အခြားသောသဘာဝ ပတ်ဝန်းကျင်ဆိုင်ရာစည်းမျဉ်းများနှင့် လုပ်ထုံးလုပ်နည်းများဖြင့် ပြင်ဆင်ခြင်း၊ တင်ပြခြင်းများလုပ်ဆောင်ရပါမည်။ ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်(ဟိုတယ်ထားဝယ်)အတွက် IEEအား Myanwei Environmental Solutions Co., Ltd. (Myanwei) မှ ၂၀၂၂ ခုနှစ်၊ ဇန်နဝါရီလတွင် စတင်ဆောင်ရွက်ခဲ့ပါသည်။

စီမံကိန်းအကြောင်းအရာဖော်ပြချက်

အဆိုပြုစီမံကိန်းသည် စုစုပေါင်းအမြင့် (၄၉) ပေနှင့် ဧရိယာ ၇၄၂၃၆(၂၇၇×၂၆၈) စတုရန်းပေ ကျယ်ဝန်းသော ဟိုတယ်တည်ဆောက်ရန် ရည်ရွယ်ထားခြင်းဖြစ်ပါသည်။ ထိုအဆောက်အဦတွင် အခန်းပေါင်း (၁၂၂) ခန်း၊ လူစီး ဓာတ်လှေကား (၃) စီး၊ ပစ္စည်းသယ်ဓာတ်လှေကား (၂) စီး၊ လှေကား (၆) စင်းနှင့် ကားပါကင်နေရာများ ပါဝင်မည်ဖြစ်ပါသည်။ စုစုပေါင်းဧရိယာ (၃.၈၉၉) ဧက ကျယ်ဝန်းပြီး အဆိုပြုဒီဇိုင်းတွင် မြေအောက်ခန်း (၁) ခန်းနှင့် အထပ် (၄) ထပ် ပါဝင်မည်ဖြစ်ပါသည်။ အခန်းအမျိုးအစားများအနေဖြင့် Standard Room (၄) ခန်း၊ Superior Room (၁၀၇)ခန်း၊ Deluxe Room (၆) ခန်း၊ Boutique Suite (၄) ခန်း၊ Presidential Suite (၁) ခန်း စသဖြင့်ခွဲခြားထားမည်ဖြစ်ပါသည်။ အသေးစိတ်အား အခန်း(၁) တွင် ဖော်ပြထားပါသည်။

ကားပါကင်ထားရှိမှု - ဧရိယာ ၈၀ × ၁၀၀ စတုရန်းပေရှိသည့် ကားပါကင်သို့ အာဇာနည်လမ်းမှဝင်ရောက် နိုင်ပါသည်။ ကားပါကင်တွင် စုစုပေါင်းယာဉ်အစီးရေ (၃၀) စီး ရပ်နားနိုင်မည်ဖြစ်ပါသည်။

ရေရရှိမှုစနစ်နှင့် အသုံးပြုမှု - အဆိုပြုစီမံကိန်းသည် မြေအောက်ရေအရင်းအမြစ်မှ တစ်မိနစ်လျှင် (၄) ဂါလံ မှ (၆) ဂါလံရရှိသည့် စက်ရေတွင်း (၄) တွင်းအနက် (၁)တွင်းအတွက် တစ်ရက်လျှင် (၆) နာရီ အသုံးပြု နိုင်ရန်ရည်ရွယ်ထားပါသည်။ အဆိုပြုစီမံကိန်းတွင် ရေစိမ်းနှင့် သန့်စင်ပြီးသောရေများအား မြေပေါ် မြေအောက် ရေသိုလှောင်ကန်များဖြင့် သိုလှောင်ထားရှိသွားမည်ဖြစ်ပါသည်။ မြန်မာနိုင်ငံအဆောက်အအုံ ဆိုင်ရာ စည်းမျဉ်းများအပေါ် အခြေခံသည့်တွက်ချက်မှုအရ အဆိုပြုစီမံကိန်းသည် တစ်ရက်လျှင် ရေဂါလန် (၁၂,၅၀၀) အသုံးပြုနိုင်မည်ဖြစ်ပါသည်။

လျှပ်စစ်ဓာတ်အားရယူမှု - အဆိုပြုစီမံကိန်းသည် လိုအပ်သောလျှပ်စစ်ဓာတ်အားကို ၁၅၀၀kVA ထရန်စဖော်မာမှ ရယူသွားမည်ဖြစ်ပါသည်။ ဓာတ်အားပြတ်တောက်ချိန် အသုံးပြုရန်အတွက် ၄၀၀ kVA ရှိသော အရံမီးစက် (၂) လုံး တပ်ဆင်ထားပါသည်။ ၂၀၂၀-၂၀၂၁ မှတ်တမ်းများအရ မီးစက်အတွက် ခန့်မှန်းဒီဇယ် လိုအပ်ချက်မှာ တစ်လလျှင် ၃၃ ဂါလံ ဖြစ်ပါသည်။

ဆီစစ်ကန် - တစ်နေ့လျှင် မီးဖိုချောင်မှ ရေဆိုး (၁၇.၉) ဂါလံခန့် ထွက်ရှိနိုင်ပါသည်။ ထို့ကြောင့် အလျား ငပေ၊ အကျယ် ငပေ နှင့် အမြင့် ငပေ ရှိသော ကန်အား ဆီစစ်ကန်အဖြစ်ထားရှိနိုင်မည် ဖြစ်ပါသည်။ အနည်အနှစ်များကိုလည်း (၃) လတကြိမ် ပုံမှန်ဆယ်ယူရှင်းလင်းပါသည်။

မိလ္လာကန် - အဆိုပြုစီမံကိန်းသည် တစ်ရက်လျှင် (၂၂.၃၀) စတုရန်းမီတာခန့် သိုလှောင်နိုင်သော မိလ္လာကန် (၃)လုံး တည်ဆောက်သွားမည် ဖြစ်ပါသည်။

ရေဆိုးသန့်စင်စနစ်- အဆိုပြုစီမံကိန်းသည် Kubota ရေဆိုးသန့်စင်စနစ်အားအသုံးပြုတည်ဆောက်မည် ဖြစ်ပြီး ၎င်းသည် ၉၀% (သို့) ပိုမိုသည့် BOD သန့်စင်နိုင်သည့်နှုန်းထားရှိနိုင်မည်ဖြစ်ပြီး BOD 20 mg/l သို့မဟုတ် ပို၍နည်းသည့် သန့်စင်ပြီးသောရေများ ရရှိနိုင်မည်ဖြစ်ပါသည်။ သန့်စင်ပြီးသောရေများကို ပြင်ပ မြောင်းအတွင်း စွန့်ပစ်မည်ဖြစ်ပါသည်။ သန့်စင်ကန်၏ သိုလှောင်နိုင်မှုပမာဏမှာ (၅၂) စတုရန်းမီတာ ဖြစ်သည်။

ရေနုတ်မြောင်းစနစ် - အဆိုပြုစီမံကိန်းသည် အကျယ် (၁)ပေ (၃)လက်မ နှင့် အနက် ၃ပေရှိသော ရေနုတ်မြောင်းများအား ဟိုတယ်၏ ဘေးပတ်လည်တွင် ထည့်သွင်းသွားမည် ဖြစ်ပြီး ၎င်းကို အပြင်ပရိုရေနုတ်မြောင်းနှင့် ချိတ်ဆက်ထားမည်ဖြစ်ပါသည်။ အနီးနားပတ်ဝန်းကျင်သို့ အနံ့သက်ဆိုးများ မထွက်ရှိစေရန် မြောင်းဖုံးများဖြင့် ဖုံးအုပ်ထားမည်ဖြစ်ပါသည်။

အမှိုက်စွန့်ပစ်မည့်စနစ်- စီမံကိန်းအဆိုပြုသူသည် လုပ်ငန်းဆောင်ရွက်သည့်နေရာများတွင် အမှိုက်ပုံး (သို့) ကွန်တိန်နာ ထားရှိပေးမည်ဖြစ်ပါသည်။ အမှိုက်ပုံး (သို့) ကွန်တိန်နာတွင် အမှိုက်များအား သိမ်းဆည်းစုဆောင်းပြီး ပြင်ပအဖွဲ့အစည်းအား အကြောင်းကြား၍ တစ်ရက်ခြား ပုံမှန်စွန့်ပစ်သွားမည် ဖြစ်ပါသည်။

စီမံကိန်း အဆိုပြုသူ၏ အချက်အလက်များ

| | |
|--------------------------------|--|
| ရင်းနှီးမြှုပ်နှံသူ၏အမည် | ဒေါက်တာထွန်းမင်းလတ် |
| နိုင်ငံသား | မြန်မာနိုင်ငံသား |
| နိုင်ငံသားစိစစ်ရေးကတ်ပြားအမှတ် | ၁၂/ဒဂန (နိုင်) ၀၈၄၁၁၄ |
| နေရပ်လိပ်စာ | အမှတ် (၄၅)၊ ဇေယျသုခလမ်း၊ ၅၄ရပ်ကွက်၊ သုဝဏ္ဏ၊ သယံကျွန်းမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။ |

ဥပဒေနှင့် မူဝါဒဆိုင်ရာ အချက်အလက်များ

ဟိုတယ်ထားဝယ်သည် သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဦးစီးဌာန (MONREC) မှ ထုတ်ပြန်ထားသော သက်ဆိုင်ရာ အမျိုးသားသဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေများ၊ ပြည်တွင်း ပြည်ပစသော နိုင်ငံတကာအသီးသီးမှ ထုတ်ပြန်ထားသော သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေများကို လိုက်နာဆောင်ရွက်သွားမည် ဖြစ်သည်။ လိုက်နာဆောင်ရွက်သွားမည့် ဥပဒေ၊ နည်းဥပဒေစာရင်းမှ အောက်ပါအတိုင်း ဖြစ်သည်-

- ၁။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၁၂
- ၂။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ၊ ၂၀၁၄
- ၃။ ပတ်ဝန်းကျင်ထိန်းသိမ်းမှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ ၂၀၁၅
- ၄။ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ၊ ၂၀၁၅
- ၅။ မြန်မာနိုင်ငံ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒ၊ ၂၀၁၉
- ၆။ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ၊ ၂၀၁၆
- ၇။ မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ၊ ၁၉၉၃
- ၈။ ကုန်သွယ်လုပ်ငန်းခွင်ဥပဒေကို ပြင်ဆင်သည့် ဥပဒေ၊ ၂၀၁၄
- ၉။ အခကြေးငွေပေးချေရေးဥပဒေ၊ ၂၀၁၆
- ၁၀။ မြေအောက်ရေအက်ဥပဒေ၊ ၁၉၃၀
- ၁၁။ မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ဥပဒေ၊ ၂၀၁၅
- ၁၂။ လျှပ်စစ်ဥပဒေ၊ ၂၀၁၄
- ၁၃။ လူမှုဖူလုံရေးဥပဒေ၊ ၂၀၁၂
- ၁၄။ အလုပ်သမားရေးရာ အငြင်းပွားမှု ဖြေရှင်းရေးဥပဒေ၊ နည်းဥပဒေ၊ ၂၀၁၂
- ၁၅။ အလုပ်အကိုင်နှင့်ကျွမ်းကျင်မှု ဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ၊ ၂၀၁၃
- ၁၆။ အလုပ်သမားလျှော်ကြေးအက်ဥပဒေ ၁၉၂၃
- ၁၇။ ခွင့်နှင့် အားလပ်ရက်ဆိုင်ရာ ဥပဒေ ၁၉၅၁၊ ၂၀၁၄ တွင် တစိတ်တပိုင်းပြင်ဆင်သည်။
- ၁၈။ အနည်းဆုံးအခကြေးငွေပေးချေရေးဥပဒေ၊ ၂၀၁၃

၁၉။ ပြည်သူ့ကျန်းမာရေးဥပဒေ၊ ၁၉၇၂

၂၀။ ကူးစက်ရောဂါများကာကွယ်နှိမ်နင်းရေးဥပဒေ၊ ၂၀၁၁

၂၁။ လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာဥပဒေ၊ ၂၀၁၉

၂၂။ ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများ ထိန်းသိမ်းရေး ဥပဒေ၊ ၂၀၁၆

အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်အများ

လက်ရှိပတ်ဝန်းကျင်၏ ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်နှင့် ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာခြင်းများနှင့် သက်ရောက်မှုများကို ၂၀၂၂ ခုနှစ်၊ ဇန်နဝါရီလ၊ ၂၇ ရက်နေ့တွင် ပြုလုပ်ခဲ့ပါသည်။ ရလဒ်များကို အခန်း (၄)တွင် အသေးစိတ် ဖော်ပြထားပါသည်။ ထို့အပြင် ဟိုတယ်တည်နေရာနှင့် သက်ဆိုင်သည့် အချက်အလက်များ ဖြစ်သော လူမှုစီးပွားအခြေအနေ၊ ရူပပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ရာသီဥတုဆိုင်ရာ အချက်အလက်များ အစရှိသည်များကို တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်မြို့နယ်မှ တရားဝင် ပြဌာန်းထားသော မြို့နယ်ဆိုင်ရာအချက်အလက်များမှ ကိုးကားဖော်ပြထားပါသည်။

အဓိက ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေးနည်းလမ်းများ

အဆိုပြုစီမံကိန်း၏ အဓိကဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုကို အခြေခံစစ်တမ်းများ ပေါ်မူတည်၍ ယေဘုယျနည်းလမ်းများအတိုင်း လျော့ချမှုများ ပြုလုပ်သွားပါမည်။ ပတ်ဝန်းကျင် ထိခိုက်မှုကို လေ့လာဆန်းစစ်ရာတွင် စီမံကိန်းကာလအတွင်း ထိခိုက်မှု တစ်ခုချင်းစီ၏ ပမာဏ၊ ကြာမြင့်ချိန်၊ ကျယ်ပြန့်မှုနှင့် ဖြစ်နိုင်ချေတို့အား ဖော်ပြထားပါသည်။

| အကဲဖြတ်ခြင်း | အတိုင်းအတာ | | | | |
|--------------|---------------------|---|--|--|---|
| | ၁ | ၂ | ၃ | ၄ | ၅ |
| ပမာဏ | မလုံလောက်သော | အနည်းငယ် နှင့် လုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော | အသင့်အတင့် နှင့် အနည်းငယ် လုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော | မြင့်မားနှင့် သိသာစွာလုပ်ငန်းခွင်ပြောင်းလဲမှု ဖြစ်စေနိုင်သော | အလွန်မြင့်မားနှင့် အမြဲတမ်းလုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော |
| အချိန် | ၀-၁ နှစ် | ၂-၅ နှစ် | ၆-၁၅ နှစ် | လုပ်ငန်း လည်ပတ်စဉ် ကာလ တစ်လျှောက် | လုပ်ငန်းပိတ်သိမ်းခြင်းကာလအထိ |
| ကျယ်ပြန့်မှု | လုပ်ငန်းခွင်အတွင်း | ဒေသအတွင်း | တိုင်း/ပြည်နယ်အတွင်း | နိုင်ငံအတွင်း | နိုင်ငံတကာအတွင်း |
| ဖြစ်နိုင်ချေ | လုံးဝ မဖြစ်နိုင်သော | မဖြစ်နိုင်သော | ဖြစ်နိုင်သော | ဖြစ်နိုင်ချေမြင့် သော | အတိအကျ |

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

ပတ်ဝန်းကျင်ထိခိုက်မှုကိုအောက်ပါအတိုင်း ခွဲခြားနိုင်သည်။

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

တည်ဆောက်ခြင်းကာလအတွင်း သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုရေး အကျိုးသက်ရောက်မှုကို အကဲဖြတ်ခြင်း အနှစ်ချုပ်

စီမံကိန်းလေ့လာစဉ်ကာလအတွင်း တည်ဆောက်ခြင်းပြီးစီးပြီးဖြစ်သည့်အတွက် ဤအဆင့်အားထည့်သွင်းစဉ်းစားခြင်းမပြုတော့ပါ။

ဇယား - စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်း သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုရေး အကျိုးသက်ရောက်မှုကို အကဲဖြတ်ခြင်း အနှစ်ချုပ်

| ထိခိုက်မှုများ | စီမံကိန်းလုပ်ဆောင်ချက်များ | သိသာထင်ရှားသက်ရောက်မှု | | | | | သိသာထင်ရှားသည့်သက်ရောက်မှု | အကြောင်းအရင်း | လျော့ချခြင်းအစီအစဉ် |
|--|--|------------------------|--------|--------------|--------------|-------------|----------------------------|--|--|
| | | ပတ်ဝန်းကျင် | အချိန် | ကျယ်ပြန့်မှု | ဖြစ်နိုင်ချေ | သတ်မှတ်ချက် | | | |
| သဘာဝအရင်းအမြစ်များအပေါ် သက်ရောက်မှုများ | | | | | | | | | |
| လေထုညစ်ညမ်းခြင်း | <ul style="list-style-type: none">မီးစက်နှင့်မီးဖိုချောင်မှ ထွက်ရှိသော (အဖုန်မှုန့်နှင့် အမှုန့်မွှားများ) | ၂ | ၄ | ၁ | ၃ | ၂၁ | နိမ့် | <ul style="list-style-type: none">သက်ရောက်မှုမရှိပါ။ | <ul style="list-style-type: none">ထိခိုက်မှုလျော့ချရန်မလိုအပ်ပါ။ |
| ဆူညံသံများ ထွက်ရှိခြင်း | <ul style="list-style-type: none">လမ်းအသွားအလာ နှင့် ရေစက်အသုံးပြု ခြင်းမှ အသံထွက်ပေါ်နိုင်ခြင်း | ၂ | ၄ | ၁ | ၃ | ၂၁ | နိမ့် | <ul style="list-style-type: none">ရေစက်မောင်းနှင်ခြင်းမှ အသံထွက်ပေါ်နိုင်ခြင်း | <ul style="list-style-type: none">ထိခိုက်မှုလျော့ချရန်မလိုအပ်ပါ။ |
| ဂေဟစနစ်အပေါ် သက်ရောက်မှုများ | | | | | | | | | |
| သစ်ပင်ပန်းမန်များ နှင့် ကုန်းနေ၊ ရေနေ သတ္တဝါများ အပေါ် သက်ရောက်မှုများ | လုပ်ငန်းလည်ပတ်စဉ် ကာလအတွင်း | ၁ | ၄ | ၁ | ၁ | ၆ | အလွန် နိမ့် | <ul style="list-style-type: none">သက်ရောက်မှု မရှိပါ။ | <ul style="list-style-type: none">ဆောက်ရွက်ရန်မလိုပါ။ |
| လူသားများအပေါ် သက်ရောက်မှုများ | | | | | | | | | |
| မီးဘေးအန္တရာယ် | <ul style="list-style-type: none">လောင်စာများ ကိုင်တွယ် အသုံးပြုခြင်း၊ | ၄ | ၄ | ၁ | ၂ | ၁၈ | နိမ့် | <ul style="list-style-type: none">မီးလိုင်းများ၊ လောင်စာသိုလှောင် | <ul style="list-style-type: none">မီးသတ်ဆေးဘူး၊ မီးသတ်ပိုက်များ ထားရှိခြင်း၊ |

| ထိခိုက်မှုများ | စီမံကိန်းလုပ်ဆောင်ချက်များ | သိသာထင်ရှားသက်ရောက်မှု သည့် | | | | | သိသာထင်ရှားသည့်သက်ရောက်မှု | အကြောင်းအရင်း | လျော့ချခြင်းအစီအစဉ် |
|---|--|-----------------------------|--------|--------------|--------------|-------------|----------------------------|---|---|
| | | ပမာဏ | အချိန် | ကျယ်ပြန့်မှု | ဖြစ်နိုင်ချေ | သတ်မှတ်ချက် | | | |
| | မီးစက်အသုံးပြုခြင်းကြောင့် ဖြစ်ပေါ်နိုင်ခြင်း • မတော်တဆမှု | | | | | | | ခြင်းနှင့် စည်းကမ်းမဲ့ခြင်း/ပေါ့ဆခြင်း တို့ကြောင့် ဖြစ်ပေါ်နိုင်ခြင်း | • အရေးပေါ်ထွက်ပေါက်များ ထားရှိခြင်း။ |
| အမှိုက်စွန့်ပစ်မှုမှ သက်ရောက်မှုများ | | | | | | | | | |
| စွန့်ပစ်အပိုင်အခဲများ | • မီးဖိုချောင်မှ အမှိုက်များနှင့် အမှိုက်များ တခြားသော အမှိုက်များ ထွက်ရှိခြင်း။ | ၄ | ၄ | ၁ | ၅ | ၄၅ | မြင့် | • အန္တရာယ်ရှိသော မီးချောင်း၊ ပိုးသတ်ဆေးဘူး စသည်တို့ ထွက်ရှိခြင်း • မီးဖိုချောင်မှ အမှိုက်များနှင့် ထွက်ရှိခြင်း။ | • အမှိုက်အမျိုးအစားအလိုက် ပြန်လည်အသုံးပြုခြင်း နှင့် စွန့်ပစ်ခြင်း။ • စွန့်ပစ်နေရာသတ်မှတ်ခြင်း |
| စွန့်ပစ်ရည်များ | • မိလ္လာရေနှင့် မီးဖိုချောင်မှ ဆီများ ယိုဖိတ်ခြင်း | ၃ | ၄ | ၂ | ၄ | ၃၆ | အလယ်အလတ် | • မြေဆီလွှာ၊ မြေပေါ် မြေအောက်ရေများ ညစ်ညမ်းနိုင်ခြင်း | • မိလ္လာကန်များကို စနစ်တကျ ဖုံးအုပ်ခြင်း။ • ရေဆိုးများကို သန့်စင်ပြီးမှ စွန့်ပစ်ခြင်း။ • ရေကူးကန်တွင် ရေဆိုးသန့်စင်စနစ် ထည့်သွင်းတပ်ဆင်ခြင်း။ |

ဇယား- ဖြိုဖျက်ခြင်းကာလအတွင်း သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုရေး အကျိုးသက်ရောက်မှုကို အကဲဖြတ်ခြင်း အနှစ်ချုပ်

| ထိခိုက်မှုများ | စီမံကိန်းလုပ်ဆောင်ချက်များ | သိသာထင်ရှား သည့် သက်ရောက်မှု | | | | | သိသာထင်ရှား သည့် သက်ရောက်မှု | အကြောင်းအရင်း | လျော့ချခြင်းအစီအစဉ် | |
|---|---|------------------------------|--------|--------------|--------------|-------------|------------------------------|--|--|--|
| | | ပမာဏ | အချိန် | ကျယ်ပြန့်မှု | ဖြစ်နိုင်ချေ | သတ်မှတ်ချက် | | | | |
| သဘာဝအရင်းအမြစ်များအပေါ် သက်ရောက်မှုများ | | | | | | | | | | |
| လေထုညစ်ညမ်းခြင်း | <ul style="list-style-type: none">လေထုညစ်ညမ်းစေသော အရာများ ထွက်ရှိခြင်း (အမှုန်အမွှားများ၊ ဖုန်မှုန့်များ)မီးခိုးများထွက်ခြင်းအိတ်ဇောငွေ့များ တခြားအငွေ့ များ ထွက်ခြင်း | ၄ | ၅ | ၁ | ၃ | ၃၀ | အသင့်အတင့် | <ul style="list-style-type: none">ဖုန်မှုန့်များကြောင့် ဒေသခံပြည်သူများ၏ ကျန်းမာရေး ထိခိုက်နိုင်ခြင်းဖန်လုံအိမ်ဓာတ်ငွေ့ ထွက်ရှိခြင်းကြောင့် ရာသီဥတုအပေါ် သက်ရောက်နိုင်ခြင်းလေထုညစ်ညမ်းခြင်းကြောင့် ရောဂါများ ဖြစ်ပွားနိုင်ခြင်းဒေသခံအိမ်သို့ဖုန်မှုန့် များ ကျရောက်နိုင်ခြင်း | <ul style="list-style-type: none">ကိရိယာများကို စနစ်တကျ သိမ်းဆည်းအသုံးပြုခြင်း။ပတ်ဝန်းကျင်နှင့် ကိုက်ညီသော ဆာလဖာ ပါဝင်မှုနည်းသော လောင်စာများ သုံးစွဲခြင်း။စက်ပစ္စည်းများကို လိုအပ်မှသာ အသုံးပြုခြင်း။ဖုန်များကို ရေဖြန်းပေးခြင်း။အမှိုက်များကို မီးရှို့ခြင်းမှ ရှောင်ရှားခြင်း။အမှိုက်များကို စနစ်တကျ စွန့်ပစ်ခြင်း။ | |
| ရေအရင်းအမြစ် ထိခိုက်ခြင်း | <ul style="list-style-type: none">မြေအောက်ရေ ညစ်ညမ်းခြင်းဓာတုပစ္စည်းများ၊ ဆီများ ယိုဖိတ်ခြင်း | ၄ | ၄ | ၃ | ၄ | ၄၄ | အလယ်အလတ် | <ul style="list-style-type: none">မြေအောက်ရေ အလွန်အကျွံ ထုတ်ယူသုံးစွဲခြင်းမြေအောက်ရေ ညစ်ညမ်းခြင်း | <ul style="list-style-type: none">မိလ္လာရေနှင့် စွန့်ပစ်ရေများ မြေကြီးပေါ်သို့ မစီးဆင်းစေခြင်း။ဆီယိုဖိတ်မှုမရှိစေခြင်း။ | |

| ထိခိုက်မှုများ | စီမံကိန်းလုပ်ဆောင်ချက်များ | သိသာထင်ရှား သည့် သက်ရောက်မှု | | | | | သိသာထင်ရှား သည့် သက်ရောက်မှု | အကြောင်းအရင်း | လျော့ချခြင်းအစီအစဉ် |
|-------------------------|--|------------------------------|--------|--------------|--------------|-------------|------------------------------|---|--|
| | | ပမာဏ | အချိန် | ကျယ်ပြန့်မှု | ဖြစ်နိုင်ချေ | သတ်မှတ်ချက် | | | |
| | | | | | | | | <ul style="list-style-type: none"> ဓာတုပစ္စည်းများ (သို့) ဆီများ ဖိတ်စင်ခြင်း | <ul style="list-style-type: none"> ယိုဖိတ်မှုရှိပါက မြေဆီလွှာနှင့် မြေအောက်ရေ ညစ်ညမ်းမှု မဖြစ်စေရန် သန့်စင်ခြင်း။ မြေပေါ်မြေအောက် ရေအရည်အသွေး စမ်းသပ်ခြင်း |
| ဆူညံသံများ ထွက်ရှိခြင်း | <ul style="list-style-type: none"> လုပ်ငန်းစဉ် ဆောင်ရွက်ရာမှ ထွက်ပေါ်ခြင်း | ၂ | ၄ | ၁ | ၃ | ၂၁ | နိမ့် | <ul style="list-style-type: none"> ပစ္စည်းများ သယ်ယူပို့ဆောင်ခြင်း၊ အဆောက်အအုံ၊ ဖြိုဖျက်ခြင်းကြောင့် ဆူညံသံများ ထွက်ရှိခြင်း | <ul style="list-style-type: none"> နေ့အချိန်တွင်သာ လုပ်ငန်းဆောင်ရွက်ခြင်း။ ပစ္စည်းသယ်ယူခြင်းကိုအခေါက်ရေ လျော့ချခြင်း။ အသံနှင့် တုန်ခါမှုကို တိုင်းတာခြင်း |
| မြေဆီလွှာ ပျက်စီးခြင်း | <ul style="list-style-type: none"> မြေတူးဖော်ခြင်း၊ သယ်ယူခြင်း စီမံကိန်းဧရိယာ ရှင်းလင်းခြင်း | ၄ | ၄ | ၂ | ၃ | ၃၀ | အလယ်အလတ် | <ul style="list-style-type: none"> တူးဖော်ခြင်းလုပ်ငန်း များကို မိုးရေနှင့် လေတို့ကြောင့် မြေဆီလွှာ တိုက်စားမှု ဖြစ်စေခြင်း ယာဉ်များ သွားလာခြင်းနှင့် မြေများ သယ်ယူပို့ဆောင်ခြင်း | <ul style="list-style-type: none"> လုပ်ငန်းစဉ်များကို မိုးရွာစဉ်ကာလ အတွင်းဆောင်ရွက်ခြင်းကို ရှောင်ရှားခြင်း လျောစောက်၏ မတ်စောက် အရှည်ကို လျော့ချခြင်း အသုံးပြုဧရိယာကို သတ်မှတ်ထားခြင်း သီးနှံများ ပြန်လည်စိုက်ပျိုးခြင်း မြောင်းနှင့် ပိုက်လိုင်းများကို လုပ်ငန်းစဉ်မစခင် ထားရှိခြင်း |

| ထိခိုက်မှုများ | စီမံကိန်းလုပ်ဆောင်ချက်များ | သိသာထင်ရှား သည့် သက်ရောက်မှု | | | | | သိသာထင်ရှား သည့် သက်ရောက်မှု | အကြောင်းအရင်း | လျော့ချခြင်းအစီအစဉ် |
|---|--|------------------------------|--------|--------------|--------------|-------------|------------------------------|---|---|
| | | ပမာဏ | အချိန် | ကျယ်ပြန့်မှု | ဖြစ်နိုင်ချေ | သတ်မှတ်ချက် | | | |
| | | | | | | | | ကြောင့် မြေဆီလွှာ ထိခိုက်နိုင်ခြင်း | |
| ဂေဟစနစ်အပေါ် သက်ရောက်မှုများ | | | | | | | | | |
| သစ်ပင်ပန်းမန်များ နှင့် ကုန်းနေ၊ ရေနေ သတ္တဝါများ အပေါ် သက်ရောက်မှုများ | အဆောက်အဦး ဖြိုဖျက်ခြင်း လုပ်ငန်းစဉ်များကြောင့် ဖြစ်ပေါ်နိုင်ခြင်း | ၁ | ၄ | ၁ | ၁ | ၆ | အလွန်နိမ့် | <ul style="list-style-type: none"> • သက်ရောက်မှု မရှိပါ။ • ဆောင်ရွက်ရန်မလိုပါ။ | |
| လူသားများအပေါ် သက်ရောက်မှုများ | | | | | | | | | |
| လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေး (မတော်တဆထိခိုက်မှုများနှင့် ဒဏ်ရာရရှိမှုများ) | <ul style="list-style-type: none"> • စက်ပစ္စည်းများ အသုံးပြုခြင်းကြောင့် မတော်တဆများ ဖြစ်ပေါ်နိုင်ခြင်း | ၅ | ၄ | ၁ | ၄ | ၄၀ | အလယ်အလတ် | <ul style="list-style-type: none"> • လုပ်ငန်းများ ဆောင်ရွက်ခြင်း ကြောင့် ထိခိုက်ဒဏ်ရာ ရနိုင်ခြင်း၊ ဖျားနာခြင်းများ ဖြစ်ပေါ်နိုင်ခြင်း။ | <ul style="list-style-type: none"> • လုပ်သားများအား ကိရိယာများ အသုံးပြုတတ်စေရန်သင်တန်းပေးခြင်း။ • လေးလံသော အရာများ မလိုဘဲ မတင်ခြင်း မပြုလုပ်ရန်။ • အမှိုက်များ၊ အရည်များ ဖိတ်စင်ခြင်းကို သန့်ရှင်းခြင်း။ • ယာဉ်များတွင် သတိပေးအချက်ပြများ တပ်ဆင်ခြင်း။ • ရှေးဦးသူနာပြုသင်တန်း၊ မီးဘေးသင်တန်း၊ ကာကွယ်ရေးသင်တန်းများ ပေးခြင်း။ |

| ထိခိုက်မှုများ | စီမံကိန်းလုပ်ဆောင်ချက်များ | သိသာထင်ရှား သည့် သက်ရောက်မှု | | | | | သိသာထင်ရှား သည့် သက်ရောက်မှု | အကြောင်းအရင်း | လျော့ချခြင်းအစီအစဉ် |
|---|---|------------------------------|--------|--------------|---------------|-------------|------------------------------|--|--|
| | | ပမာဏ | အချိန် | ကျယ်ပြန့်မှု | ဖြစ်နိုင်စေချ | သတ်မှတ်ချက် | | | |
| | | | | | | | | | <ul style="list-style-type: none"> တစ်ကိုယ်ရေကာကွယ်ရေးသုံး ပစ္စည်းများ ပေးအပ်ခြင်း။ |
| အမှိုက်စွန့်ပစ်မှုမှ သက်ရောက်မှုများ | | | | | | | | | |
| စွန့်ပစ်အပိုင်အခဲများ | <ul style="list-style-type: none"> အဆောက်အဦး ဖြိုဖျက်ခြင်းမှ ထွက်ရှိခြင်း | ၄ | ၄ | ၁ | ၅ | ၄၅ | မြင့် | <ul style="list-style-type: none"> ဖြိုဖျက်ခြင်းကြောင့် အမှိုက်များ ထွက်ရှိနိုင်ခြင်း | <ul style="list-style-type: none"> အမှိုက်အမျိုးအစားအလိုက် ပြန်လည်အသုံးပြုခြင်းနှင့်စွန့်ပစ်ခြင်း စွန့်ပစ်နေရာသတ်မှတ်ခြင်း |
| စွန့်ပစ်ရည်များ | <ul style="list-style-type: none"> မိလ္လာဖြိုဖျက်ခြင်း အလုပ်သမားများမှ ထွက်ရှိခြင်း | ၃ | ၄ | ၂ | ၄ | ၃၆ | အလယ်အလတ် | <ul style="list-style-type: none"> မြေဆီလွှာ၊ မြေပေါ် မြေအောက်ရေများ ညစ်ညမ်းနိုင်ခြင်း | <ul style="list-style-type: none"> အလုပ်သမားများအား သင့်လျော်သော ယာယီမိလ္လာစနစ် ပေးခြင်း။ ရှိပြီးသော မိလ္လာကန်များကို ရေဆိုးများထွက်ရှိခြင်း မရှိစေရန် စနစ်တကျ ဖုံးအုပ်ခြင်း။ |
| အန္တရာယ်ရှိသော စွန့်ပစ်အမှိုက်များ | <ul style="list-style-type: none"> စက်ပစ္စည်း ပြင်ဆင်ရာမှ ဆီ၊ ချောဆီများ ထွက်ရှိခြင်း။ | ၂ | ၄ | ၁ | ၂ | ၁၄ | အလွန်နိမ့် | <ul style="list-style-type: none"> ဆီ၊ ချောဆီနှင့် အန္တရာယ်ရှိသော စွန့်ပစ်အမှိုက်များ ထွက်ရှိခြင်း မတော်တဆ စွန့်ပစ်ခြင်းမရှိစေရန် ဆောင်ရွက်ခြင်း | <ul style="list-style-type: none"> သိမ်းဆည်းရန် သီးသန့်နေရာများ ထားရှိခြင်း။ အလုပ်သမားများအား ဓာတုပစ္စည်း၊ လောင်စာများ အသုံးပြုခြင်းဆိုင်ရာ သင်တန်းပေးခြင်း။ လောင်စာဆီခွံများကို စနစ်တကျ ချိတ်ဆက်စွန့်ပစ်ခြင်း။ |

ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်

အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် Environmental Management System (EMS) ဖြင့် အစီအစဉ်တကျ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင် စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေးသားမက စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များ ပါဝင်ပါသည်။ ၎င်း EMP အစီအစဉ်များကိုတွင် ဟိုတယ်အတွက် ကျန်းမာရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်ဆောင်ရွက်သွားရန်လိုအပ်ပါသည်။ အဆိုပါဟိုတယ်၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ရေရှည်ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်သော ပတ်ဝန်းကျင်အဖြစ် အကောင်အထည်ဖော်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ဆိုင်ရာ ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေရန် စီမံခန့်ခွဲမှုအစီအစဉ်များနှင့် စောင့်ကြပ်ကြည့်ရှုရမည့်အစီအစဉ်များကို အောက်ပါအတိုင်းပတ်ဝန်းကျင်ဆိုင်ရာ အကြောင်းအရာတစ်ခုချင်းစီအလိုက် ခွဲခြားထားပါသည်။

၁။ မီးဘေးအန္တရာယ် စီမံခန့်ခွဲမှု အစီအစဉ်

- မီးသတ်ဆေးဘူးများ၊ မီးသတ်ပိုက်ဘီးများနှင့် အရေးပေါ်အခြေအနေများအတွက် ဟိုတယ်နံရံများတွင် မီးသတ်ဆေးဘူးများထားရှိရပါမည်
- အများသူငှာ ဧရိယာအတွင်း အရေးပေါ်ထွက်ပေါက်နှင့် စုဝေးရာနေရာတို့ကို ညွှန်ပြရပါမည်
- လက်ရှိမီးငြိမ်းသတ်ရေးပစ္စည်းများကို ပုံမှန်စစ်ဆေးခြင်း ပြုလုပ်ရပါမည်။ မီးလောင်မှု အရေးပေါ် အခြေအနေမျိုးတွင် ရေလှောင်ကန်ထားရှိပါမည်
- မီးလောင်မှုဖြစ်ပွားပါက အလုပ်သမားများအား သတိပေးရန်အတွက် ဟိုတယ်တွင် မီးသတိပေးချက် တပ်ဆင်ရပါမည်
- ဟိုတယ်၏ အရေးပေါ်ကိစ္စများအတွက် အဓိကဝင်ပေါက်များနှင့် လမ်းကြောင်းများကို အရေးပေါ်ကိစ္စများအတွက် ပစ္စည်းများဖြင့် ပိတ်ဆို့ထားခြင်း မပြုရန်

၂။ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

- ဟိုတယ်အဆောက်အဦတစ်ခုစီတွင် သီးခြားအမှိုက်ပုံးများ ထားရှိရန်
- အမှိုက်များကို အမျိုးအစားအလိုက် အမှိုက်ပုံးများတွင် သီးခြားစုဆောင်းပြီး အမှိုက်စွန့်ပစ်ကန်တွင် စနစ်တကျစွန့်ပစ်ရန်
- ပုဂ္ဂလိက၏ဝန်ဆောင်မှုကို အသုံးပြု၍ ပုံမှန်စွန့်ပစ်ပေးရန်
- ပြည်တွင်းဝယ်လက်များထံ (ပလတ်စတစ်အိတ်၊ စက္ကူပုံးများ) ကို ပြန်လည်ရောင်းချရန်

၃။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

- ဟိုတယ်၏ မိလ္လာစနစ်နှင့် ရေစီးကြောင်းများနှင့် အနီးဝန်းကျင်ရှိ ရေမြောင်းစနစ်များကို ရေလုံစေခြင်းနှင့် လုံလောက်သော အရွယ်အစား ထားရှိစေခြင်း

➤ မိလ္လာလိုအပ်ချက်များကို ပုံမှန်စစ်ဆေးပေးခြင်းနှင့် ပြုပြင်ထိန်းသိမ်းခြင်း

စီမံကိန်းဖော်ဆောင်သည့် အချိန်အတွင်း ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ၊ လျော့ချရေး နည်းလမ်းများ၊ အစီအစဉ်များ၊ တိုင်းတာမှုများ စသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များကို လုပ်ဆောင်ရပါသည်။ Hotel Dawei မှ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် အဖွဲ့အစည်း၊ ဖွဲ့စည်းခြင်း၊ ပုံမှန်ဆန်းစစ်လေ့လာခြင်းများ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ ပတ်ဝန်းကျင် လေထုအရည်အသွေး၊ မိလ္လာစနစ်၊ စွန့်ပစ်အပိုင်အခဲ စွန့်ပစ်မှုများကို စက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အဖွဲ့အစည်းမှ ဆန်းစစ်သွားမည်ဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်းမှ လူထုအကျိုးပြုလုပ်ငန်းများနှင့် အရေးပေါ်ဆောင်ရွက်ချက်များ၊ ဒေသဆိုင်ရာ အကျိုးပြုလုပ်ငန်းများ ကို လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။

Corporate Social Responsibility (CSR) အစီအစဉ်

ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်(ဟိုတယ်ထားဝယ်)မှ ကျွန်ုပ်တို့၏ အသားတင်အကျိုးအမြတ်၏ ၂% ကို မြန်မာနိုင်ငံလူမှုအသိုက်အဝန်းနှင့် နိုင်ငံအတွက် ကူညီဆောင်ရွက်ပေးမည့် လူမှုဖူလုံရေးလုပ်ငန်းများတွင် လှူဒါန်းမည်ဖြစ်ပါသည်။

ဇယား- Hotel Dawei ၏ လူထုအကျိုးပြုလုပ်ငန်းများဆောင်ရွက်မည့် အစီအစဉ်

| စဉ် | အကြောင်းအရာ | လှူဒါန်းမှု ရာခိုင်နှုန်း |
|-----|--|---------------------------|
| ၁။ | စာသင်ကျောင်းများ | ၀.၅% |
| ၂။ | သင်တန်းကျောင်းများ | ၁% |
| ၃။ | ဝန်ထမ်းများ၏ ကျန်းမာရေးစောင့်ရှောက်မှု | ၀.၅% |

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်းသည် သတင်းအချက်အလက်ရယူခြင်း၊ လူထု၏ ထင်မြင်ချက်များနှင့် တခြားသော ပူးပေါင်းပါဝင်မှုများအတွက် ထိရောက်သော လမ်းစဉ်ဖြစ်ပါသည်။ ကိုရိုနာ ဗိုင်းရပ်စ် (Covid-19) စတုတ္ထအကျော့ ရောဂါဖြစ်ပွားမှုသည် ဤအစီအရင်ခံစာ ရေးသားနေစဉ် ထားဝယ်မြို့၌ ပြန်လည်ဖြစ်ပွား လျက်ရှိပါသည်။ ကျန်းမာရေးနှင့် အားကစားဝန်ကြီးဌာနမှ လူအများထိတွေ့ခြင်းမှ ကင်းဝေးစေ ရန်အတွက် လူ ၅ ဦးထက်ပို၍ စုဝေးခြင်းမပြုရန် ကြေငြာချက်ကို ထုတ်ပြန်ကြေငြာခဲ့ပါသည်။ ထို့ကြောင့် အဆိုပြုစီမံကိန်း၏ ပတ်ဝန်းကျင်အနေအထားနှင့် ၎င်းတို့၏ စီမံခန့်ခွဲမှု အစီအစဉ်ကို တတိယအဖွဲ့အစည်း ဖြစ်သော Myanwei ၏ လူမှုကွန်ယက်စာမျက်နှာတွင် ဧပြီလ ၇ ရက်၊ ၂၀၂၂ ပြည့်နှစ်တွင် ထုတ်ဖော်ကြေငြာခဲ့ပါသည်။ အစိုးရအဖွဲ့အစည်းများ၊ တခြားသော အဖွဲ့အစည်းများ၊ ဒေသခံပြည်သူများနှင့် ပြည်သူများမှ အကြံပြုချက်များ၊ တိုင်ကြားခြင်းများ၊ မှတ်ချက်များကို ၎င်းထံသို့ စာတိုပေးပို့မေးမြန်းခြင်း၊ အီးမေးလ်၊ ဖုန်း စသည်တို့မှတစ်ဆင့် မေးမြန်းနိုင်ပါသည်။

နိဂုံး

အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက် ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြရှင်းလင်း တင်ပြထားပါသည်။ စီမံကိန်းနှင့် သက်ဆိုင်သူများအား စီမံကိန်းဆိုင်ရာ အကြောင်းအရာများ ရှင်းလင်းတင်ပြခြင်း၊ အကြံပြုချက်များနှင့် ဆွေးနွေးတင်ပြလာသည့် သဘောထား အကြံဉာဏ်များကိုရယူပြီး အစီအရင်ခံစာတွင် ဖော်ပြထားပါသည်။ အဆိုပြုစီမံကိန်းသည် ဒေသခံများ အလုပ်အကိုင် အခွင့်အလမ်းများ ဖန်တီးရန်နှင့် ဝန်ထမ်းများ၏ လုပ်ငန်းခွင်စွမ်းဆောင်ရည်တို့ကို မြှင့်တင်သွားမည် ဖြစ်ပါသည်။ အလားတူစွာ ဒေသခံများ၏ လူနေမှုဘဝသည်လည်း မြှင့်တက်လာစေရန် ညွှန်ကြားထားသော လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ်များကို ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။ ထို့ကြောင့် ဒေသခံပြည်သူများ၏ တိုးတက်မှုအတွက် များစွာ အထောက်အကူပြုမည်ဟု ဆိုနိုင်ပါသည်။

အကြံပြုချက်များအရ

- အစီရင်ခံစာတွင် ဖော်ပြထားသည့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် ကတိကဝတ်များကို စီမံကိန်း၏ သက်တမ်းတလျှောက်တွင် အကောင်အထည်ဖော် ဆောင်ရွက်ရမည်။
- အစီအစဉ်နှင့် အရည် စွန့်ပစ်ပစ္စည်းများကိုစည်ပင်သာယာရေးကော်မတီ၏ စည်းကမ်းများအတိုင်း စွန့်ပစ်ရမည်။
- ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်များကို နေ့စဉ်၊ လစဉ်နှင့် နှစ်စဉ် လုပ်ငန်းခွင်အတွင်း လုပ်ဆောင်ရမည်။
- ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ် မှတ်တမ်းများကို သေချာသိမ်းဆည်း၍ တတိယအဖွဲ့အစည်း သို့ တင်ပြရမည်။
- ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ရမည်။

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

EXECUTIVE SUMMARY

Introduction

Star Sapphire Hotel Company Limited (Hotel Dawei) is located at No.7/A, Arzarni Road, Byaw Taw Wa Quarter, Dawei City, Tanintharyi Division which land area is 3.899 acres wide. The Dawei Airport is located on the north-east, the Ring Road is located on the west and adjacent to city hall of the project.

The project approved for the investment endorsement from the Myanmar Investment Commission (MIC) Permit No. MaNaTha 946/2013 in December 13th, 2013. Star Sapphire Hotel Company Limited (Hotel Dawei) got the letter from Ministry of Natural Resources and Environmental Conservation (MONREC), Environmental Conservation Department (ECD) Letter No.2/7/6 (01-09) (1218/2021) on 30th September, 2021.

According to ECD recommendation, Star Sapphire Hotel Company Limited (Hotel Dawei) shall responsible for the preservation of the environment and around the area of the project site. In addition to this, it shall carry out as per instructions made by Ministry of the Natural Resources and Environmental Conservation (MONREC) under Environmental Conservation Department (ECD) in which to conduct an Environmental Management Plan (EMP). It has to prepare, submit, perform activities in accordance with this EMP, and abide by the environmental policy, Environmental Conservation Law and other environmental related rules and procedures. IEE for Star Sapphire Hotel Company Limited (Hotel Dawei) has been started by Myanwei Environmental Solutions Co., Ltd. (Myanwei) in January 2022.

Project Description

The proposed project is aimed to build hotel which is 49 feet in total height and 74,236 (277 × 268) square feet in area. It may include (122) rooms, (3) passenger lifts, (1) lobby lift, (6) stairs and car parking area. The total area is (3.899) acres wide and the proposed design includes one basement and fourth floors. The room type will be separated into (1) presidential suite, (4) boutique suite, (6) deluxe rooms, (107) superior rooms, (4) standard rooms. The details are expressed in Chapter 1.

Packing Lots: The car parking is accessible from Arzani Road which is 80' × 100' square feet in area. The car parking will be provided the total numbers of 30 vehicles at the placement.

Water Supply System and Usage: The proposed project aims to use 4 tube well which is 4-6 gallon per minute, 6hrs/day for 1 tube well as ground water resource. The proposed project will store raw water and treated water in underground tank and overhead tank. According to the calculation based on MNBC, the proposed project may use 12,500 gallons per day.

Electricity: The proposed project intends to get required electricity supply form 1500kVA Transformer. The 400 KVA two generators will be installed for backup use of power outage. According to the 2020 – 2021 (Financial Year) data record, the estimated diesel requirement for generator is (33) gallons per month.

Grease Trap Tank: The estimated 17.9 gallons of wastewater may flow from the kitchen per day. Therefore, the tank size which is 6' in length, 6' in wide and 6' in height may be installed as grease trap tank is regularly cleaned of oil silt every 3 months.

Septic Tank: The proposed project will install the three septic tanks which can store 22.30 m³/day.

Wastewater Treatment System: The proposed project aims to use Kubota wastewater treatment plant, which have achieved 90% removal. The treated effluent will be discharge to the external drain. The storage size of treatment plant is 52m³.

Drainage System: The proposed project will install 1'3" in width and 3' in depth drainage channel line around the hotel compound which is connecting to the public drainage. The drainage channel will be cover to prevent smell and odor to the surrounding.

Waste Disposal: Project proponent will prepare garbage bin or container in operation area. Collect all waste to keep at garbage bin or container and inform private organization to collect and dispose garbage of regularly every other day.

Information of Star Sapphire Hotel Company Limited

| | |
|---------------------------------|---|
| Investor Name: | Dr. Tun Min Latt |
| Citizenship: | Myanmar |
| Company ID No./ Passport No | 12/ DaGaNa (N) 004114 |
| Address of Registration office: | No. (45), Zayyathukha Street, (54) Ward, Thuwunna, Thingangyun Township, Yangon Region. |

Policy, Legal and Institutional Framework

Hotel Dawei will follow the relevant national environmental legislations established by the MONREC and overview of current local and international environmental and social policies including related international or regional. List of laws and regulation are as follow:

1. The Environmental Conservation Law (2012)
2. The Environmental Conservation Rules (2014)
3. Environment Impact Assessment Procedure (2015)
4. National Environmental Quality (Emission) Guidelines (2015)
5. Environmental Policy of Myanmar (2019)
6. Myanmar Investment Laws, 2016
7. Myanmar Insurance Law (1993)
8. The Commercial Tax Law, Amended 2014
9. Payment of Wages Law (2016)
10. Underground Water Act (1930)
11. Myanmar Fire Brigade Law (2015)
12. The Electricity Law (2014)
13. The Social Security Law (2012)
14. Labor Dispute Settlement Law (2012)
15. The employment and skill development (2013)
16. The Worker's Compensation Act, (1923)
17. The Leave and Holidays Act (1951, partially revised in 2014)
18. The Minimum Wage Law (2013)
19. Public Health Law (1972)
20. Prevention and Control of Communicable Disease Law (2011)
21. Occupational Safety and Health Law (2019)
22. The Conservation of Water Resources and Rivers Law (2016)

Brief Description of Surrounding Environment

The investigation of surrounding environment, site survey and the monitoring of environmental condition was done in 27th January 2022. The results are detailed in Chapter 4. In addition, information related in hotel location such as socio-economic status: physical information, biological information, weather information etc. Tanintharyi Region quoted from official township data from Dawei Township.

Environmental Impact and Mitigation Measures

The main potential environmental impacts of the proposed project will be mitigated by general measure based on basic surveys. Environmental impact assessments include the extent of each impact during the project period, time, amplitude and probability it is mentioned.

Impact assessment parameters and its scale

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

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

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

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

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

Evaluation and Perdition of Significant Impacts and Mitigation Measures on Construction phase

This step is no longer considered as construction was completed during the project study period.

Evaluation and Perdition of Significant Impacts and Mitigation Measures on Operation phase

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|---|--|----------------------------------|---|---|---|----|------------------------|--|--|
| | | M | D | E | P | SP | | | |
| Impact on Environmental Resource | | | | | | | | | |
| Air | <ul style="list-style-type: none">Gas and fuel from generator and hotel kitchen | 2 | 4 | 1 | 3 | 21 | Low | <ul style="list-style-type: none">Not Significant Impact | <ul style="list-style-type: none">No Mitigation Measure |
| Noise and Vibration | <ul style="list-style-type: none">Traffic flow and water pumping system | 2 | 4 | 1 | 3 | 21 | Low | <ul style="list-style-type: none">The noise from pumping system | <ul style="list-style-type: none">No Mitigation Measure |
| Impact on Ecological Resources | | | | | | | | | |
| Flora and fauna on terrestrial and aquatic life | Operation activities | 1 | 4 | 1 | 1 | 6 | Very Low Insignificant | <ul style="list-style-type: none">Not Significant Impact on Ecological Resources | <ul style="list-style-type: none">No Mitigation Measure |
| Impact on Human | | | | | | | | | |
| Fire Hazard | <ul style="list-style-type: none">Fire Hazard from handling of fuel, and generators and other. | 4 | 4 | 1 | 2 | 18 | Low | <ul style="list-style-type: none">Fire hazard from bad electrical connections, improper fuel storage | <ul style="list-style-type: none">Provide fire extinguishers or fire detectorMaintain safe and clear exits. |
| Waste Generation Impact | | | | | | | | | |

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|--------------|---|----------------------------------|---|---|---|----|---------------------|--|---|
| | | M | D | E | P | SP | | | |
| Solid Waste | <ul style="list-style-type: none"> Waste from visitors, kitchen wastes. | 4 | 4 | 1 | 5 | 45 | High | <ul style="list-style-type: none"> Hazardous waste such as used fluorescent lamps, LED bulbs and pesticide spray bottles etc., Garbage disposed by the hotel guests, employee, kitchen and visitors. | <ul style="list-style-type: none"> Separate the wastes depending on the types and recycle. Define the dump area for demolished materials |
| Liquid Waste | <ul style="list-style-type: none"> Untreated or inadequately treated sewage effluent and domestic wastewater | 3 | 4 | 2 | 4 | 36 | Moderate | <ul style="list-style-type: none"> Contamination of soil, surface water and ground water | <ul style="list-style-type: none"> Sewage treatment plant will be constructed onsite with design based on the peak water demand of per day. Recycling or water treatment system should be installed in swimming pool facilities Direct discharge to public drainage system or water source is prohibited |

Evaluation and Perdition of Significant Impacts and Mitigation Measures on Demolishing/Decommissioning Phase

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|----------------------------------|------------------|----------------------------------|---|---|---|----|---------------------|--------|--------------------|
| | | M | D | E | P | SP | | | |
| Impact on Environmental Resource | | | | | | | | | |

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|----------------|---|----------------------------------|---|---|---|----|---------------------|---|---|
| | | M | D | E | P | SP | | | |
| Air | <ul style="list-style-type: none"> Emissions of air pollutants, including airborne particulates (dust) Fugitive emissions Exhaust and combustion emissions | 4 | 5 | 1 | 3 | 30 | Moderate | <ul style="list-style-type: none"> Dust generation and nuisance/health impacts on the local community. Emissions of Greenhouse Gasses (GHG's) causing global climate impacts Diseases associated with high levels of air pollutants Dust on residential lands | <ul style="list-style-type: none"> Well maintain and operate equipment, Use appropriate fuel mixtures, e.g. diesel fuel with low sulphur content (5% sulphur content) Use environmentally friendly equipment with higher fuel efficiency. Avoid equipment and vehicles left running unnecessarily; Water-down dusty work areas. Maintain handling areas in a dust free state as far as practicable. Avoid open burning of solid waste through segregation and recycling, and through disposal according to a solid waste management plan |
| Water Resource | <ul style="list-style-type: none"> Groundwater pollution Accidental chemical or oil spill from the project's operations | 4 | 4 | 3 | 4 | 44 | Moderate | <ul style="list-style-type: none"> Stress on already heavily utilised local groundwater resources Groundwater pollution Accidental chemical or oil spill from the project's operations (eg. Refuelling operation) | <ul style="list-style-type: none"> Ensure that no sanitary or waste water is discharged onto the land. Identify high risk spill areas- e.g. generators and fuel tanks – and have impervious surfaces and capture facilities in place. Clean up spills to prevent surface water and ground water pollution. Test ground and surface water quality. |

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|---------------------|--|----------------------------------|---|---|---|----|---------------------|--|---|
| | | M | D | E | P | SP | | | |
| Noise and Vibration | <ul style="list-style-type: none"> Generating noise from the operation and Traffic flow | 2 | 4 | 1 | 3 | 21 | Low | <ul style="list-style-type: none"> The noise and vibration may be the result of pile drivers, earth moving and excavation, equipment, concrete mixers, cranes and the transportation of equipment, materials and people. | <ul style="list-style-type: none"> Carry out the activities in day time to prevent disturbance to the society. Use noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities, and exhaust muffling devices for combustion engines. Avoid or minimizing project transportation through community areas |
| Soil Erosion | <ul style="list-style-type: none"> Mobilization and transport of soil particles Site cleaning operations | 4 | 4 | 2 | 3 | 30 | Moderate | <ul style="list-style-type: none"> Exposure of soil surfaces to rain and wind during site clearing, earth moving, and excavation activities. The mobilization and transport of soil particles may cause the sedimentation of surface drainage networks, which may result in impacts to the quality of natural water systems and ultimately the biological systems that use these waters. | <ul style="list-style-type: none"> Schedule to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical Contour and minimize length and steepness of slopes Mulch to stabilize exposed areas Re-vegetate areas promptly Design channels and ditches for post-construction flows Line steep channel and slopes (e.g. use jute matting) |

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|---|---|----------------------------------|---|---|---|----|------------------------|---|--|
| | | M | D | E | P | SP | | | |
| Impact on Ecological Resources | | | | | | | | | |
| Flora and fauna on terrestrial and aquatic life | Operation of decommission | 1 | 4 | 1 | 1 | 6 | Very Low Insignificant | <ul style="list-style-type: none">Not Significant Impact on Ecological Resources | <ul style="list-style-type: none">No Mitigation Measure |
| Impact on Human | | | | | | | | | |
| Occupational Health and Safety | <ul style="list-style-type: none">Accidental cases cause by operating machines. | 5 | 4 | 1 | 4 | 40 | Moderate | <ul style="list-style-type: none">Over-exertion, and ergonomic injuries and illnesses, such as repetitive motion, over-exertion, and manual handling.Struck by objectsMoving machineryInhaling of dust | <ul style="list-style-type: none">Train workers in lifting and materials handling techniques.Plann work site layout to minimize the need for manual transfer of heavy loads.Clean up excessive waste debris and liquid spills regularlyEnsure moving equipment is outfitted with audible back-up alarmsFirst aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers.Provide Personal Protective Equipment (PPEs) like earmuffs, safety gloves, helmets and goggles.Assign electrical maintenance staff (handyman) is to be assigned to do |

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|--------------------------------|--|----------------------------------|---|---|---|----|-------------------------|--|--|
| | | M | D | E | P | SP | | | |
| | | | | | | | | | regular inspections and take preventive measures. |
| Waste Generation Impact | | | | | | | | | |
| Solid Waste | <ul style="list-style-type: none"> Decommission of buildings | 4 | 4 | 1 | 5 | 45 | High | <ul style="list-style-type: none"> Wastes from the s excess fill materials from grading and excavation activities, scrap wood and metals, and small concrete spills | <ul style="list-style-type: none"> Separate the wastes depending on the types and recycle. Define the dump area for demolished materials Final wastes should be disposed by using private service. |
| Wastewater Discharge | <ul style="list-style-type: none"> Decommission of existing septic tank. Discharges of sewages from workers. | 3 | 4 | 2 | 4 | 36 | Moderate | <ul style="list-style-type: none"> Contamination of soil, surface water and ground water | <ul style="list-style-type: none"> Adequate portable or permanent sanitation facilities serving all workers should be provided at all sites. Cover the existing septic tank carefully not to spillage on the ground or water area. |
| Hazardous Waste | <ul style="list-style-type: none"> Used oil and lubricant discharged from the maintenance of vehicles and machines. | 2 | 4 | 1 | 2 | 14 | Very Low Insignificance | <ul style="list-style-type: none"> Reduce the risk of contamination from fuels, oils and hazardous wastes Response effectively to incident and accident | <ul style="list-style-type: none"> Proper inspection and maintenance in storage of hazardous waste. Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. Train workers on the correct transfer and handling of fuels and chemicals and the response to spills |

| Categories | Source of Impact | Significant Potential Impacts of | | | | | Impact Significance | Reason | Mitigation Measure |
|------------|------------------|----------------------------------|---|---|---|----|---------------------|--------|--|
| | | M | D | E | P | SP | | | |
| | | | | | | | | | <ul style="list-style-type: none"> The empty chemical containers will hand over to suppliers for recycle or appropriate disposal The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty. |

Environmental Management Program

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

1. Fire Management Plan

- Must be provide fire extinguishers, fire hose reels and fire hydrants on the walls of the hotel for fire emergency cases.
- Must be indicated the emergency exit and assembly point in public area.
- Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire frightening.
- The emergency fire alarms are installed at the hotel for alerting the workers in case of fire.
- The main entrances and route for emergency cases of the hotel must not be blocked with materials or machines for fire emergency cases.

2. Solid Waste Management Plan

- Must be provides separate garbage bins at each hotel building.
- All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area
- Final wastes should be disposed by using private's service.
- Reselling solid waste (plastic bags, paper boxes) to local buyers

3. Liquid Waste Management Plan

- Make the hotel sewage and drainage system and surrounding drainage system waterproof and adequately sized.
- Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.

Environmental impacts during project implementation, mitigation measures, programs, environmental management plans such as surveys are implemented. Hotel Dawei organization for environmental management programs, regular assessments will be conducted. Ambient air quality, sanitation system, solid waste will be assessed by the plant's environmental management program. The proposed project includes community service and emergency response, local benefit activities will be carried out.

Corporate Social Responsibility (CSR) Plan

Hotel Dawei will contribute 2% of our Net Profit to social welfare activities that will help society and country of Myanmar.

CSR plan of Star Sapphire Hotel Company Limited

| No. | Particle | Contribution |
|-----|------------------------|--------------|
| 1. | Public school | 0.5% |
| 2. | Non-profit training | 1 |
| 3. | Employees (Healthcare) | 0.5% |

Public Consultation

The public consultation is the effective way to achieve the information purpose, to seek views of the participation and partnership purpose. During the preparation of this report, the fourth wave of Covid-19 disease becomes serious in Dawei. The Ministry of Health and Support declared to avoid gathering more than 5 people to avoid close contact and to prevent spreading of disease. Thus, the project condition, the present environmental condition and the management plan are declared through the social media of Myanwei Environmental Solution Company Limited Facebook page in 7th April, 2021 due to current situation. The suggestion, complain and comments from the public, organization and stakeholder are warmly welcome and accept via mailing, comment, telephoning and messengers.

Conclusions

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

This is recommended that;

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

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

CHAPTER 1 PROJECT DESCRIPTION

1.1. INTRODUCTION

This report describes the findings of the Initial Environmental Examination (IEE) for Hote Dawei Project by Star Sapphire Hotel Company Limited (Hotel Dawei). The main objective of this report is to identify the major environmental impacts due to implementation of the project along with the effective measures to mitigate the potential adverse impacts.

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), the said project requires an Initial Environmental Examination (IEE) to meet the environmental assessment according to requirements of Notification No.2/7/6 (EIA) (1218/2021) in 30th September, 2021. Therefore, Star Sapphire Hotel Company Limited (Hotel Dawei) commissioned Myanwei Environmental Solutions Company Limited for IEE report study.

1.2. LOCATION OF PROPOSED PROJECT

The proposed project is located at (7/A), Arzarni Road, Byaw Taw Wa Quarter, Dawei City, Tanintharyi Division, Myanmar. The proposed project locates at the coordinates of North Latitude 14°04'38.88"N and East Longitude 98°12'35.14"E. Location of the proposed project area were shown in Figure 1-1.

1.2.1. Adjacent Area of Project

The Pauk Taing Chaung is flowing from north to south which is located southeast of 0.7km from the project area. Dawei Prison is located at the southwest of 0.2 km from the project area. Dawei Education Collage is located at the west of 0.4 km from the project. Dawei Airport Station is located north east of 0.5 km from the project area.

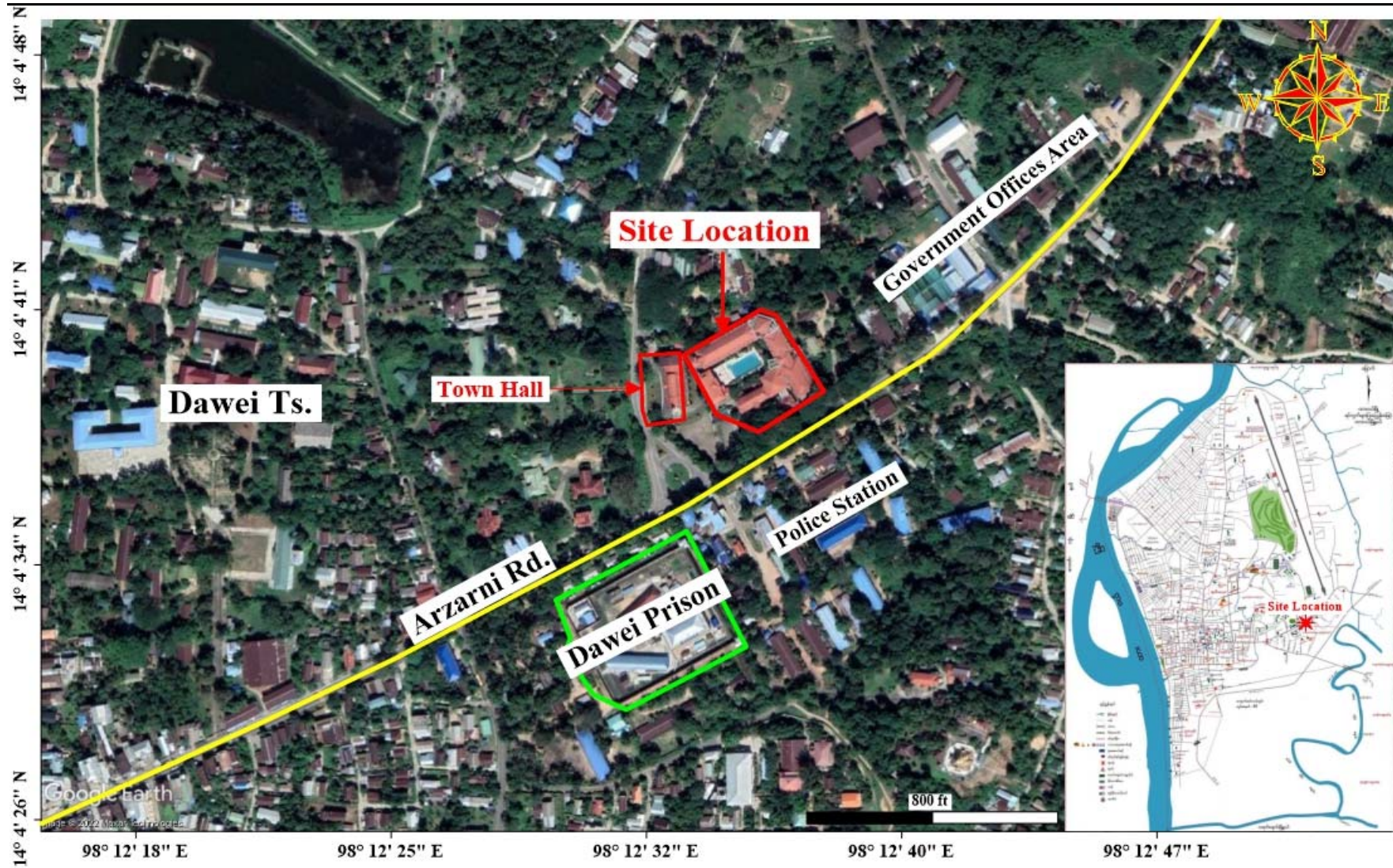


Figure 1-1 Location Map of the Project

1.3. PROJECT IMPLEMENTATION PROGRAM

The proposed project is the 100% local investment by Star Sapphire Hotel Company Limited with an investment amount of 9888.48 million kyats. The proposed project is located at (7/A), Arzarni Road, Byaw Taw Wa Quarter, Dawei City, Tanintharyi Division, Myanmar and the total land area 3.899 acres. The proposed project is aimed to build hotel which is 49 feet in total height and 74,236 square feet in area. The term of the Lease shall be 30 years commencing from the date of signing Star Sapphire Hotel Company Limited for proposed project site for 3.899 Acres of land. The proposed project is initial 30 years and extension is three times of 5 years.

1.4. CONSTRUCTION PHASE

Engineering and Procurement for the construction phase were established in July, 2012. The construction phase may last nine years. The project is now completely constructed all of components.



Figure 1-2 Construction Stage of Proposed Project



Figure 1-3 Aerial Photo of Proposed Project

1.5. TYPE OF BUILDING AND INTERNAL FUNCTION AREA ARRANGEMENT

The main entrance of the proposed design is on Arzarni Road. The ground floor will be used as a hotel lobby, with the 3rd floor as a common area and the remaining floors as hotel rooms. The proposed design includes three elevator and one lobby elevator, both of which can be used from the ground floor to the 3rd floor of the basement. The stair 1 can be used from ground floor to 3rd floor, the stair 2 can be used from Basement 2nd to 3rd Floor and the stair 3 can be used from basement 2 to ground floor.

Central area/ facilities such as corridor, stair, toilet, mechanical room, lift, etc, are provided on every floor. The details of function area on each floor of the building are presented in Table 1-1 and can be summarized as follow-

- Basement consists of chemical room, firefighting pump and ground water tank with total function are of 6,259 ft².
- Ground floor consists of reception area, restaurant area, kitchen and 37 bed rooms with total function area of 36,015 ft².
- First floor consists of meeting room, office area, common area and twin bed room with total function area of 34,790 ft².
- Second floor consists of 40 bed rooms with total function area of 18,932 ft².
- Third floor consists of presidential suite with total function area of 3,328 ft².
- Guest House consists of 4 bed rooms with total function area of 3,360 ft².
- Club House consists of gym and spa with total function area of 2,926 ft².

Table 1-1 Numbers of Hotel Rooms in Each Floor

| Type of Floor | Hotel Rooms |
|----------------------|-------------------------------|
| Ground Floor | 37 |
| First Floor | 40 |
| Second Floor | 40 |
| Third Floor | 1 |
| Guest House | Ground Floor 1, First Floor 3 |
| Club House | Ground Floor 2, First Floor 2 |
| Total | 126 |

1.6. OPERATION OF HOTEL SERVICES

The hotel service room is included (122) rooms, (3) passenger lift, (1) lobby lift, (6) stairs and car parking area. The room type will be separated into (1) presidential suite, (4) boutique suite, (6) deluxe rooms, (107) superior rooms, (4) standard rooms. And other services of Hotel Dawei is mention in following;

- 1) Restaurant and cafeteria
- 2) Conferences/ Workshop/ Wedding receptions
- 3) Swimming pool
- 4) Travel and Communication
- 5) Spa & Gym Facilities

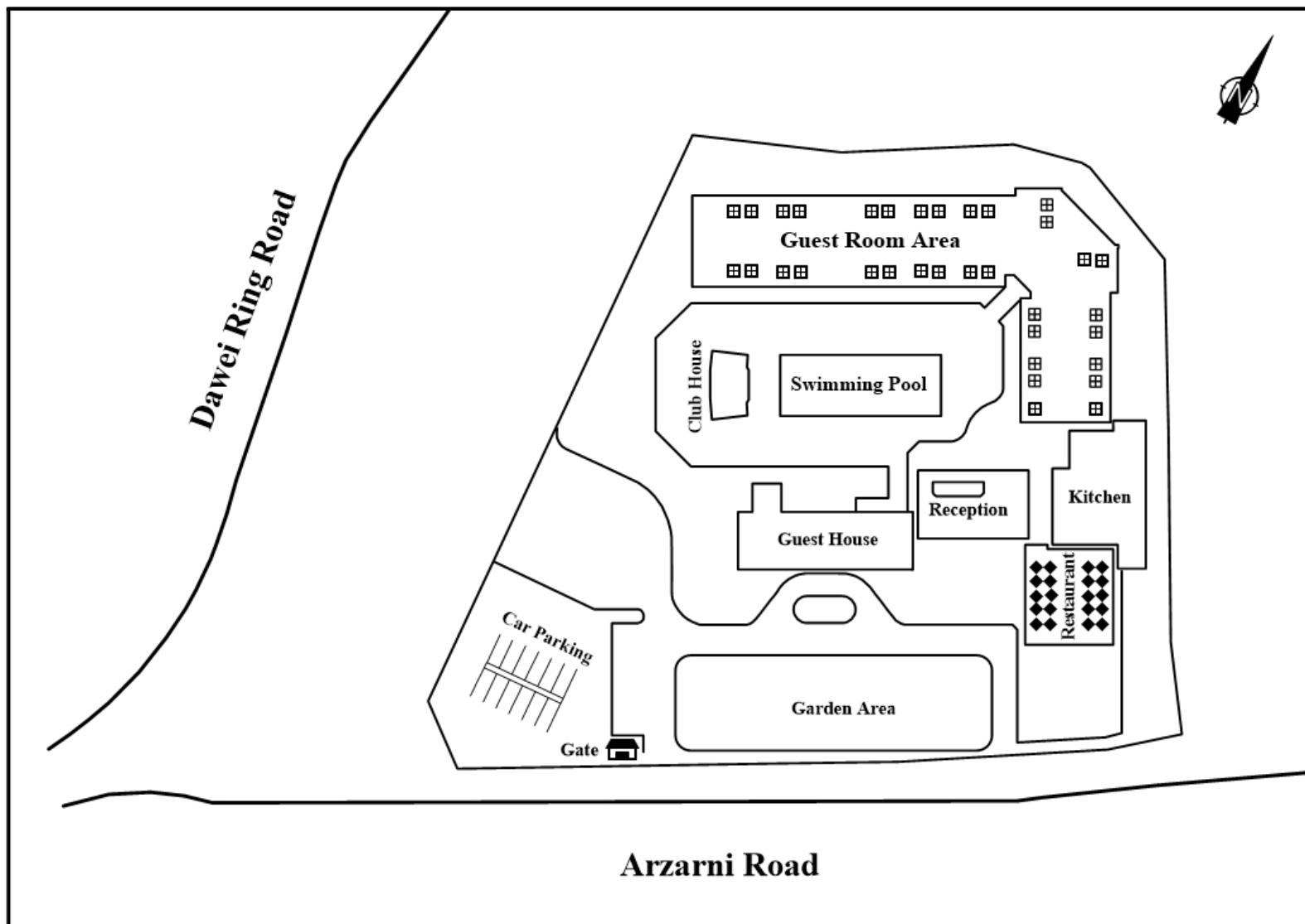


Figure 1-4 Project site layout drawing

1.6.1. Packing Lots

The car parking is located in front of the hotel and covers an area of 743.22 m². The car parking in which the total numbers of 30 vehicles can be used.



Figure 1-5 Car Parking Area of Star Sapphire Hotel

1.6.2. Water Supply System and Water Usage

1.6.2.1. Water Resource

The main water supply is from the tube well. This well water is pumped to the water treatment facility that is housed in the service support center located in the southern side of hotel compound. Drinking water is provided by 1liter purified drinking water 2 bottles per day for a hotel guest and daily demand is 20-liter purified drinking water 4 bottles per day for hotel staff.

1.6.2.2. Water Demand

The total estimated demand for water by the hotel during full operation is 5,151 gallon per day for 30% occupancy (61,812 gallon per year).





Figure 1-6 Domestic Water & Filtration System

1.6.2.3. Water Purification System

The proposed will use Reverse Osmosis System (RO) to purify water. The raw water from tube well or water supply stem pass through the carbon prefilter which reduces elements that cause water to taste and smell unpleasant, like chlorine. The carbon prefilter removes chlorine to protect the RO membrane. These waters then pass through the RO membrane which filters out dissolved solids, including radium, lead, arsenic, and many others. The last stage is the carbon postfilter that use second activated carbon filter that polishes the water to make sure it's crystal clear. The treated water will be stored in the treated water tank. The quality of water system is presented in Table 1-2.



Figure 1-7 Reverse Osmosis System (RO)

Table 1-2 Expected Water Quality Condition

| Daily (m ³ /day) | Water Quality Condition | | | | |
|-----------------------------|-------------------------|------------|------------|-----------|----------|
| | | BOD (mg/l) | COD (mg/l) | SS (mg/l) | pH |
| 54 m ³ | Influent | 200 | 250 | 160 | 5.8 ~8.6 |
| | Effluent | 20 | 60 | 15 | 5.8 ~8.6 |

1.6.3. Energy and Electricity Usage

The project would receive electric power via main transmission line of Petro & Trans Co., Ltd. The electricity supply during full operation will be from the 1500 kVA transformer. There will be two standby 400 kVA generators for backup in case of power cut. The total estimated demand for fuel for generators is diesel 33 gallons per month (2020-2021 financial year). Estimated electricity usage is about 26,349 units per month.



Figure 1-8 Generator Used for office work in Hotel Area

1.6.4. Fire Hazards Protect Facility

Fire extinguishers, fire hose reels and fire hydrants will be installed in the hotel for fire emergency cases. Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire frightening is also constructed 20'x8'x10'at the proposed area. The emergency contact numbers of township and district fire services department must be printed and tagged at easily visible places for fire emergency cases. The emergency fire alarms will be installed at the hotel for alerting the workers in case of fire. The main entrances and route for emergency cases of the hotel must not be blocked with materials or machines for fire emergency cases. In addition, the project proponent will plan to provide trainings on firefighting for the workers by a professional or otherwise by sending to training courses.



Figure 1-9 Firefighting System

1.6.5. Water Drainage and Flood Protection

The wastewater is not released from the production processes. The domestic wastewater from kitchen and dishwashing sink will be installed with drainage pipe with PVC to drain wastewater from washing area into the concrete channel. The concrete channel will install around the hotel building to collect rainwater in the hotel area. The effluent storage tank and the filtration system will be installed to purify the domestic discharge. The purified effluent will be discharge into the irrigation which is located in front of the hotel to supply water for agriculture. The proposed project will follow all the instructions from Dawei Township Development Committee.



Figure 1-10 Drainage System

1.6.6. Hotel Laundry Operation

The laundry sorting area of the hotel should be large enough to buffer one day worth of laundry and these sorting of laundry should not cause interfere with other laundry activities. After the linens and uniforms are sorted properly the laundry staff collects the batches of laundry and load them to the washers. After the washing cycle is completed, the washed items are dried on the dryer. The drying times and temperature vary considerable according to the type of linen. Even though a lot of flooding of linens are now automated, the hotels still do a lot of folding by hand. While folding the linens the laundry attendants should also look for any damages occurred to them while the laundry process.



Sorting & washing



Drying



Folding



Use of Linen

Figure 1-11 Photo of laundry section

1.6.7. Solid Waste Management Facility

Hotel Dawei will provide separate garbage bins at each building. All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste bin: non-hazardous waste, hazardous waste, re-usable waste and final wastes will be disposed by using Dawei's municipal service. Solid waste generated at the site will primarily be domestic in nature (paper, plastics, packaging, waste food, etc.). The hotel operators are willing to institute waste segregation and recycling procedures at the hotel and the extent to which these can be effectively executed will be examined.



Figure 1-12 Solid Waste Management Facility at Star Sapphire Hotel

1.6.8. Hygiene and Toilets Facilities for Employees

Hygiene issues must be taken especially seriously. When entering a hotel room, it is nice to have the impression that we are the first guests who will be using it. The bathroom should be sparkling clean. And designed so that the hotel service could quickly bring it to such a state before the arrival of the next guests. The number of toilets is 122 rooms for guests, 20 rooms for commonly used in hotel compound. The number of toilets, which male staff for 8 numbers and female for 6 numbers which will be separated according to the genders.



Figure 1-13 Toilet and Restroom facility for staffs

1.6.9. Sewage Treatment and Effluent Disposal

The sewage treatment system to service the demands of the hotel is built on land west of the hotel compound. The conventional sewage treatment system is installed. Being the conventional septic system design, the septic tank has a settling and decomposition chamber that allows the sewage solids to separate from the liquid, undergo partial decomposition, and be stored as sludge at the bottom of the tank. The effluent from the septic tank then flows by gravity into the subsurface absorption field where it infiltrates into the soil. When septic tanks are full, it is planned to be emptied by the Dawei Township Municipality.





Figure 1-14 Sewage Treatment and Effluent Disposal at Star Sapphire Hotel

1.7. DECOMMISSIONING PHASE

The proposed project investment duration is 30 years and extension are three times of 5 years. The project will close out the project according to their MIC proposal.

1.8. ALTERNATIVE PROJECT SITE

No alternative has been proposed project from this area since the proposed project area is situated at No. (7/A), Arzarni Road, Byaw Taw Wa Quarter, Dawei Township, Tanintharyi Region, Myanmar which has been constructing during IEE study. There is no forest area, historical site and other sensitive group near the project area.

CHAPTER 2

PROJECT PROPONENT PROFILE

2.1. PROJECT INFORMATION

The project approved for the investment endorsement from the Myanmar Investment Commission (MIC) Endorsement No. Ma Na Tha 946/2013 on 13 December 2013 in Appendix. The Tanintharyi Region Investment Committee announce for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in hotel project under the name of Star Sapphire Hotel Company Limited as a solely owned by Myanmar citizen. This is the information of project proponent from the registration of Myanmar Investment Commission (MIC), which is described in below Table 2-1.

Table 2-1 Information of Star Sapphire Hotel Company Limited

| | |
|---------------------------------|---|
| Investor Name: | Dr. Tun Min Latt |
| Citizenship: | Myanmar |
| Company ID No./ Passport No | 12/ DaGaNa (N) 004114 |
| Address of Registration office: | No. (45), Zayyathukha Street, (54) Ward, Thuwunna, Thingangyun Township, Yangon Region. |

Table 2-2 Salient feature of the project

| | |
|----------------------------|--|
| Type of Proposed Business: | Hotel Service Business with B.O.T System |
| Type of investment: | 100% Local Investment |
| Type of Share: | Ordinary Share |
| Type of land: | Industrial Land |
| Total land area: | 3.899 acre |
| Land lease year: | 30 years |
| Address: | No. (7/A), Arzarni Road, Byaw Taw Wa Quarter, Dawei Township, Tanintharyi Region, Myanmar. |
| Contact person: | U Maung Maung Jaim (General Manager) |
| Mobile: | 09-43024477 |
| E-mail | Maungmaung.jaim@gmail.com |

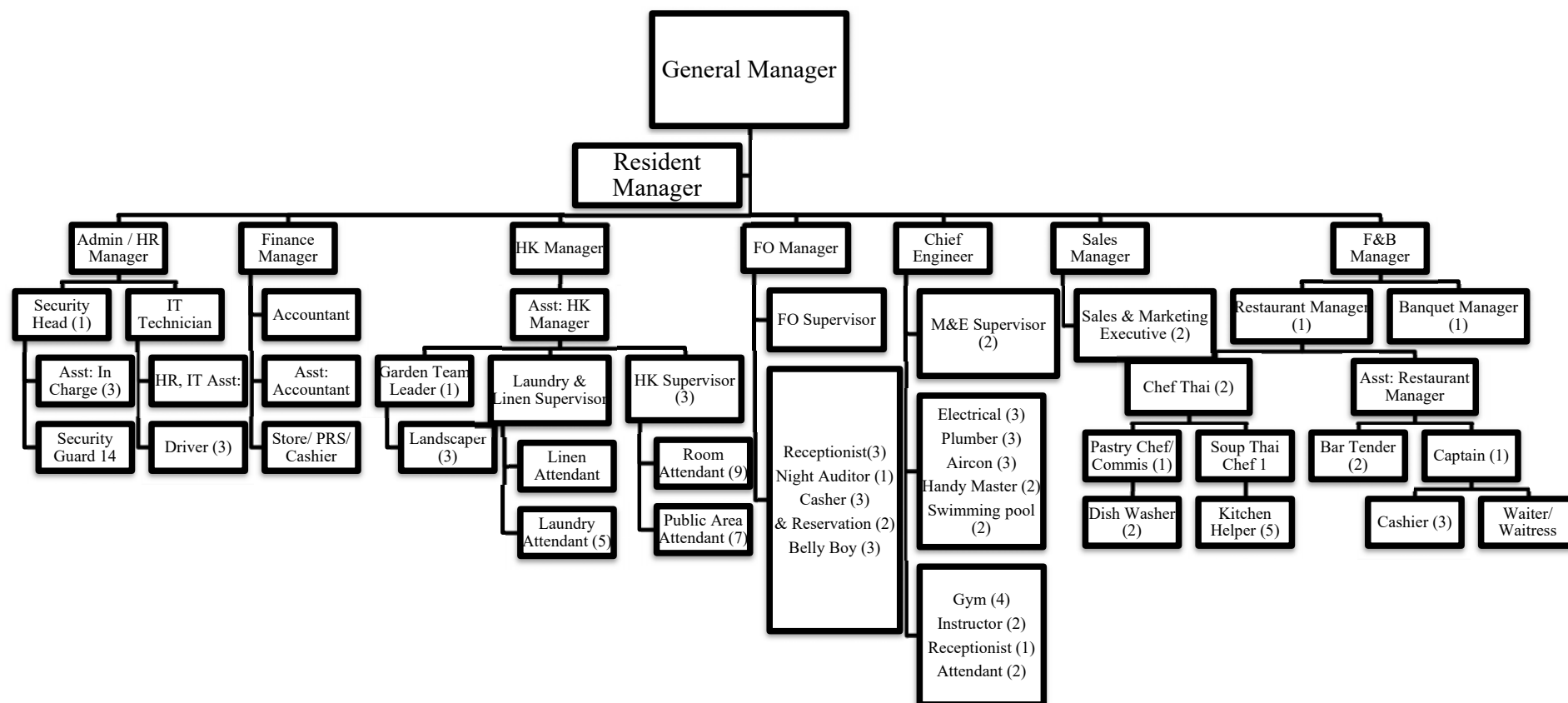


Figure 2-1 Organization Chart of Star Sapphire Hotel Company Limited

CHAPTER 3 ENVIRONMENTAL CONSULTANT PROFILE

3.1. SCOPE OF IEE STUDY

The IEE study firstly established baseline environmental setting within 100 meters of the project area, including existing conditions of air quality, water quality, noise, weather and local climate, waste, landscape and social assessment. The field studies were carried out by Myanwei Environmental Solutions Co., Ltd. (Myanwei) conducted field survey, assessment activities, and prepared the report.

A reconnaissance study was performed on the proposed project site and baseline environmental data were also collected from possible sources using the appropriate measuring devices. Data interpretation and analysis were made based on those collected data for the present and potential future conditions. Suitable measures were proposed for the impacts to be mitigated to reduce to acceptable ones.

3.1.1. The specific objectives of the IEE study are as follows:

- To conduct preliminary examination of the environmental consequences of the project
- To describe the existing environmental condition of the proposed project site
- To collect detailed information about used of process, technology, equipment and machinery for proposed project
- To assess the potential environmental impacts of the proposed project
- To develop environmental management plan (EMP) with site specific environmental mitigation measures and monitoring standards guidelines for the proposed project
- To carry our public consultants to address any issues in concern with implementation of this project

3.2. IDENTIFICATION OF IEE STUDY TEAM

MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED prepares the Initial Environmental Examination (IEE) with the Environmental Management Plan (EMP) for the proposed project. The environmental study was carried out by the study team and the following is a summary of team member's responsibilities during the study period.

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

Table 3-1 Member of IEE study team

| Name | Qualification | Responsibility |
|--|--|--|
| MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED | Transition Consultant Registration Certificate No. 0069 | EIA Organization |
| Mr. Lin Htet Sein | MSc (Regional Geology) BSc (Hons) Geology Dip in Environmental Science | Project Director, Environmental Consultant, Project Management |

| | | |
|------------------------|---|--|
| | Certificate in Environmental & Social Assessment Certificate in Environmental Sustainability TCR No. 0048 | |
| Dr. Hein Lynn Aung | M.B, B.S (Yangon), Business Management (International Collage of Management Sydney, Australia) | Project Director, Public Health Consultant, Project Management |
| Ms. Khin Thu Zar Myint | B.E(Materials and Metallurgy) Dip in Environmental Planning and Management | Senior Environmental Consultant, Social Research, Public consultation, Social Economic Investigation |
| Ms. Su Myat Hlaing | B.E. Civil Engineering B. Tech Civil Engineering | Environmental Engineer |
| Mr. Saw Yan Naung | B.E. Chemical Engineering B. Tech Chemical Engineering | Junior Environmental Consultant, Monitoring Measure, Document Administration |
| Mr. Myat Ko Ko | B. Sc (Hons) Geology M.Sc. Geology (Economic and Mining) Certificate of Environment Management Certificate of Geotechnical Engineering (Myanmar Geoscience Society) | Junior Environmental Consultant, Monitoring Measure, Document Administration |
| Mr. Kaung Sett Lwin | B. Sc (Hons) Geology Certificate of Geotechnical Engineering (Myanmar Geoscience Society) | Junior Environmental Consultant, Monitoring Measure, Document Administration |
| Mr. Si Yan Hein | B. Sc Geology Certificate of Geotechnical Engineering (Myanmar Geoscience Society) | Junior Environmental Consultant, Monitoring Measure, Document Administration |
| Mr. Htoo Nanda Aung | B. Sc Forestry | Junior Environmental Consultant, Monitoring Measure, Document Administration |

CHAPTER 4 POLICY, LEGAL AND INSTITUTIONAL FRAME WORK

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

4.1. MYANMAR REGULATORY FRAMEWORK

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

4.1.1. Laws and Regulations Related to Environmental and Social Considerations

Requirements related to environmental (and social) impact management for development projects are as follow:

4.1.1.1. Constitution 2008

| | |
|---------------------------------|--|
| Section 37, (a): | The Union is the ultimate owner of all lands and all-natural resources above and below the ground, above and beneath the water and in atmosphere in the Union. |
| Section 37, (b): | The Union shall permit citizens rights of private property, right of inheritance, right of private initiative and patent in accord with the laws. |
| Section 372: | The Union guarantees the right to ownership, the use of property and the right to private invention and patent in the conducting of business if it is not contrary to the provisions of this Constitution and the existing laws. |
| Section 45 | The Union shall protect and conserve natural environment. |
| Section 390, (a), (b), (c), (d) | Every citizen has the duty to assist the Union in preserving and safeguarding the cultural heritage, conserving the environment, striving for the development of human resources, and protecting and preserving the public property. |

4.1.1.2. Environmental Conservation Law, 30 March 2012

| | |
|---|--|
| Objectives | to contract a healthy and clean environmental and to conserve natural and cultural heritage for the benefit of present and future generations; to maintain the sustainable development through effective management of natural resources and to enable to promote international, regional and bilateral cooperation in the matters of environmental conversation. |
| Section 3 | c) to enable to emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generations; (d) to reclaim ecosystems as may be possible which are starting to degenerate and disappear; (e) to enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially; |
| Chapter IV Provisions of Duties and Powers relating to the | (a) To specify categories and classes of hazardous wastes generated from the production and use of chemicals or other hazardous substances in carrying out industry, agriculture, mineral production, sanitation and other activities; |

| | |
|--|---|
| <p>Environmental Conservation of the Ministry: Section 7</p> | <p>(b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment;</p> <p>(c) To promote and carry out the establishment of necessary factories and stations for the treatment of solid wastes, effluents and emissions which contain toxic and hazardous substances;</p> <p>(d) prescribing environmental quality standards including standards on emissions, effluents, solid wastes, production procedures, processes and products for conservation and enhancement of environmental quality;</p> <p>(j) To prescribe the terms and conditions relating to effluent treatment in industrial estates and other necessary places and buildings and emissions of machines, vehicles and mechanisms;</p> <p>(m) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment;</p> <p>(o) To manage to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the businesses which explore, trade and use the natural resources in environmental conservation works.</p> |
| <p>Chapter VI Environmental Quality Standards: Section10</p> | <p>The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards:</p> <p>(a) suitable surface water quality standards in the usage in rivers, streams, canals, springs, marshes, swamps, lakes, reservoirs and other inland water sources of the public;</p> <p>(b) water quality standards for coastal and estuarine areas;</p> <p>(c) underground water quality standards;</p> <p>(d) atmospheric quality standards;</p> <p>(e) noise and vibration standards;</p> <p>(f) emissions standards;</p> <p>(g) effluent standards;</p> <p>(h) solid wastes standards;</p> <p>(i) other environmental quality standards stipulated by the Union Government.</p> |
| <p>Section 14</p> | <p>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.</p> |
| <p>Section 15</p> | <p>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.</p> |
| <p>Section 16</p> | <p>A person or organization operating business in the industrial estate or business in the SEZ or category of business stipulated by the Ministry:</p> |

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| | <p>(a) is responsible to carry out by contributing the stipulated cash or kind in the relevant combined scheme for the environmental conservation including the management and treatment of waste;</p> <p>(b) shall contribute the stipulated users' charges or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization;</p> <p>(c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, SEZ or business.</p> |
| Chapter X Prior Permission 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 25 | The project proponent has to comply with the terms and conditions include in prior permission. |
| Section 29 | The project proponent has to abide by the stipulations included in the rules, regulations, by-law, order, notification and procedure, which are issued by said law. |
| Chapter XIII Offences and Penalties Section 32 | Whoever violates any prohibition contained in the rules, notifications, orders, directives and procedures issued under this Law shall, on conviction, be punished with imprisonment for a term not exceeding one year, or with fine, or with both. |

4.1.1.3. Environmental Conservation Rules, 2014

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| Rules 58 | The Ministry shall form the EIA Report Review Body with the experts from the relevant Government departments, organizations. |
| Rules 59 | The Ministry may assign duty to the Department to scrutinize the report of EIA prepared and submitted by any organization or person relating to EIA and report through the EIA Report Review Body. |
| Rules 61 | The Ministry may approve and reply on the EIA report o IEE or EMP with the guidance of the Committee. |
| Sub-rule (a) of rule 68 | The project proponent has to avoid emit, discharge or dispose the materials which can pollute to environment, or hazardous waste or hazardous material prescribed by notification in the place where directly or indirectly injure to public. |
| Sub-rule (b) of rule 68 | The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem. |
| Chapter XIII Prohibitions Section 69 | <p>(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.</p> <p>(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.</p> |

4.1.1.4. Environmental Impact Assessment Procedure, December 2015

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| Screening: Section 23 | <p>a) The project proponent shall submit the Project Proposal to the Ministry for Screening.</p> <p>b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment.</p> <p>c) Following the preliminary Screening and verification that the Project Proposal contains all required documents and related materials, subject to Articles 8, 9, 10, 11, 26 and 27 the Department shall make a determination in accordance with Annex 1 _ Categorization of Economic Activities for Assessment Purposes', taking into account Article 25 and the additional factors listed in Article 28 in order to designate the Project as one of the following, and then submit it to the Ministry:</p> <p>i) An EIA Type Project, or</p> <p>ii) An IEE Type Project, or</p> <p>iii) A Non-IEE or EIA Type, and therefore not required to</p> |
| CHAPTER VIII. Responsibility for all Adverse Impacts Section 102 | <p>The Project Proponent shall bear full legal and financial responsibility for:</p> <p>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</p> <p>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.</p> |
| 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. |
| CHAPTER IX. Monitoring 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 maybe required, within not later than twenty-four (24) hours, and in |

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| | 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 110 | Within ten (10) days of completing a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, the Project Proponent shall make such report (except as may relate to National Security concerns) publicly available on the Project's website, at public meeting places (e.g. libraries, community halls) and at the Project offices. Any organization or person may request a digital copy of a monitoring report and the Project shall, within ten (10) days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor. |
| 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 here under shall extend to access by the Ministry to the Project's contractors and subcontractors. |
| CHAPTER VIII. | The monitoring reports shall include: |

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| Monitoring Section 102 | <p>a) documentation of compliance with all Conditions;</p> <p>b) progress made to date on implementation of the EMP against the submitted implementation schedule;</p> <p>c) difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties;</p> <p>d) number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation;</p> <p>e) accidents or incidents relating to the occupational and community health and safety, and the environment; and</p> <p>f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required</p> |
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4.1.1.5. National Environmental Quality (Emission) Guidelines (NEQG) (December 2015)

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| Objectives | To provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health. |
| Scope of Application | Provisions of the general and applicable industry-specific Guidelines shall be reflected in project environmental management plan (EMP) and environmental compliance certificate (ECC) and together constitute a project's commitment to take necessary measures to avoid, minimize and control adverse impacts to human health and safety, and the environment through reducing the total amount of emissions generation; to adopting process modifications, including waste minimization to lower the load of pollutants requiring treatment; and as necessary, to apply treatment techniques to further reduce the load of contaminants prior to release or discharge. |
| CHAPTER II Implementation Procedures | As specified in the EIA Procedure, all projects are obliged to use, comply with and refer to applicable national guidelines or standards or international standards adopted by the Ministry. These Guidelines will henceforth be applied by the Ministry in satisfying this requirement until otherwise modified or succeeded by other guidelines or standards |
| Section 10 | As specified in the EIA Procedure, following project approval a project shall commence implementation strictly in accordance with the project EMP and any additional requirements set out in the project ECC, which will encompass conditions relating to 3 emissions. In this regard, the Ministry will require that project sad here to general and applicable industry guidelines asset out in Annex 1. |
| Section 11 | While these Guidelines generally apply to all projects subject to the EIA Procedure, it is the prerogative of the Ministry to decide how the Guidelines should be applied to existing projects as referred to in the EIA Procedure, as distinguished from new projects. At the Ministry's discretion less stringent levels or measures than provided for in these Guidelines may be specified as appropriate, and a timeframe agreed for a project to fully comply with these Guidelines. |
| 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 project EMP 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 EMP and ECC. |

4.1.1.6. National Environmental Policy of Myanmar (2019)

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| National Environmental Policy Vision & mission | <p><u>Vision</u></p> <p>A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar.</p> <p><u>Mission</u></p> <p>To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all policies, laws, regulation, plans, strategic, programmes and projects in Myanmar.</p> |
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4.1.1.7. Myanmar Investment Law, 2016

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| Chapter II Objective Section 3 | <p>The objectives of this Law are as follows:</p> <p>(a) to develop responsible investment businesses which do not cause harm to the natural environment and the social environment for the interest of the Union and its citizens;</p> <p>(b) to protect the investors and their investment businesses in accordance with the law;</p> <p>(c) to create job opportunities for the people;</p> <p>(d) to develop human resources;</p> <p>(e) to develop high functioning production, service, and trading sectors.</p> <p>(f) to develop technology, agriculture, livestock and industrial sectors;</p> <p>(g) to develop various professional fields including infrastructure around the Union;</p> <p>(h) to enable the citizens to be able to work alongside with the international community;</p> <p>(i) to develop businesses and investment businesses that meet international standards.</p> |
| Chapter XIII Employment of Staff and Workers Section 51 | <p>The investor:</p> <p>(a) may appoint of any citizen who is a qualified person as senior manager, technical and operational expert, and advisor in his investment within the Union in accordance with the Laws;</p> <p>(b) shall appoint them to replace, after providing for capacity building programs in order to be able to appoint citizens to different level positions of management, technical and operational experts, and advisors;</p> <p>(c) shall appoint only citizens for works which does not require skill;</p> <p>(d) shall appoint skilled citizen and foreign workers, technicians, and staff by signing an employment contract between employer and employee in accordance with the labor laws and rules;</p> <p>(e) shall ensure to obtain the entitlements and rights in the labor laws and rules, including minimum wages and salary, leave, holiday, overtime fee, damages, compensation of the workman, social welfare, and other insurance relating to workers in stipulating the rights and duties of employers and employees and occupational terms and conditions in the employment contract;</p> <p>(f) shall settle disputes arising among employers, among workers, between employers and workers, and technicians or staff in the investment in accordance with the applicable laws.</p> |
| Chapter XVI Responsibilities of Investors Section 65 | <p>The Investor:</p> <p>(f) shall not make any significant alteration of topography or elevation of the land on which he is entitled to lease or to use, without the approval of the Commission;</p> <p>(g) shall abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss</p> |

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| | <p>to the natural and social environment and not to cause damage to cultural heritage;</p> <p>(i) shall close and discontinue the investment only after payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce;</p> <p>(j) shall pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directives and so forth during the period of suspension of investment for a credible reason;</p> <p>(k) shall pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease and death due to the work;</p> <p>(l) shall supervise foreign experts, supervisors and their families, who employ in their investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar;</p> |
| Chapter XVII Insurance Section 73 | The investor shall ensure the types of insurance stipulated in the provision of the rules at any insurance enterprise which is entitled to carry out insurance businesses within the Union. |

4.1.1.8. Myanmar Investment Rules, 2017

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| Rule 202 | The project proponent has to comply with the conditions of the permit issued by the MIC and applicable laws when making the investment |
| Rule 203 | The project proponent has to fully assist while negotiating with the authority for settling the grievance of the local community which has been affected due to investment |
| Rule 206. | The project proponent has to submit the passport, expert evidence or document of degree and profile to the MIC office for approval if decide to appoint a foreigner as senior management, technician expert or consultant according to subsection (a) of section 51 of Myanmar Investment Law |
| Myanmar Insurance Law (1993) | <p>Section 15 - If the project proponent uses the owned vehicles the project owner has to ensure the insurance for the injured person.</p> <p>Section 16 - The project proponent has to ensure insurance to compensate for general damages because the project may cause damages to the environment and injury to the public.</p> |

4.1.1.9. Myanmar Insurance Law (1993)

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| Chapter II Establishment and Aim Section 4 | <p>The Myanmar Insurance is established with the following aims: -</p> <p>social and economic losses which the people may encounter, due to common perils;</p> <p>(b) to promote the habit of savings individually by effecting life assurance, thus contributing to the accumulation of resource, of the State;</p> <p>(c) to win the trust and confidence of the people in the insurance system by providing effective insurance safeguards which may become necessary in view of the social and economic developments.</p> |
| Chapter VI Effecting Insurance and Granting of Benefits Section 15 | Owners of motor vehicles shall affect compulsory Third Party Liability Insurance with the Myanmar Insurance. |
| Section 16 | An entrepreneur or an organization operating an enterprise which may cause loss to State-owned property or which may cause damage to the life and property of the public or which may cause pollution to the environment shall affect compulsory General Liability Insurance with the Myanmar Insurance. |

4.1.1.10.The Commercial Tax Law (1990) Amended 2014

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| Chapter 5 Registration and Intimation of Commencement of Enterprise Article 11 (b) | Any Person who commences operation of a goods production enterprise or service enterprise shall furnish letter of intimation on the commencement of the operation as such to the relevant Township Revenue Officer as stipulated by regulations. |
| Chapter 6 Monthly Payment of Tax and Sending of Three-Monthly Return Article 12 (a) | Any person who has taxable proceed of sale or receipt from service within a year, shall pay due monthly tax within ten days after the end of the relevant month. Moreover, a three-monthly return shall be furnished to the relevant Township Revenue Officer within one month after the end of relevant three-month. |
| Article 12 (b) | The Township Revenue Officer may intimate any person to pay due monthly tax and send three-monthly return if there is cause to consider that he has taxable proceed of sale or receipt from service within a year. |
| Article 12 (c) | If it is failed to pay tax under sub-section (a) or (b), or if there is cause to consider that the tax paid is less than the tax payable, the Township Revenue Officer may, based on the information received, estimate and claim the tax payable or the additional tax payable. |
| Article 12 (d) | The tax paid under sub-section (a), (b) or (c) shall be set-off from the tax due in the assessment. |
| Article 12 (e) | The tax payable on goods imported under sub-section (c) of section 4 of the Law shall be collected together with the customs duties by the Customs Department in accord with the manner of collecting customs duties. |

4.1.1.11.The Amended Law for Factories Act, 1951 (Amended in 2016)

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| Hygiene in Working Environment: Section 3 | Mentions responsibilities of employer and manager regarding waste disposal, ventilation, extreme temperature, dust and gas generation, minimum space for each worker, lighting, portable drinking water and toilets for employees. |
| Safety in Working Environment: Section 4 | States responsibilities of employer and manager concerning with machine guarding, personal protective equipment, housekeeping, aisles and exits, chemical storage and fire protection system to avoid accident. |

4.1.1.12.The Private Industrial Enterprise Law, 1990

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| Chapter II Basic Principles Section 3 | Private Industrial Enterprises shall be conducted in accordance with the following basic principles: - (a) to enhance the higher proportion of the manufacturing value added in the gross national product and value of services, and to increase the production of the respective economic enterprises which are related to the industrial enterprise; (b) to acquire modern technical know-how for raising the efficiency of industrial enterprises and to establish the sale of finished goods produced by the industrial enterprise not only in the local market, but also in the foreign market; (d) to cause narrowing down of the gap between rural development and urban development by causing the development and improvement of industrial enterprises; (e) to cause opening up of more employment opportunities; (f) to cause avoidance of or reduction of the use of technical know-how which cause environmental pollution; (g) to cause the use of energy in the most economical manner. |
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| Chapter III Registration of Private Industrial Enterprises Section 4 | (a) Any person desirous of conducting any private industrial enterprise; (b) Any person conducting any private industrial enterprise on the day this Law is enacted; by using any type of power which is three horsepower and above or manpower of ten wage-earning workers and above shall register under this Law. |
| Chapter VI Duties and Rights of the Entrepreneur Section 13 | The duties of the entrepreneur are as follows: - (b) shall abide by the terms and conditions of the registration certificate; (l) shall shift the place of enterprise, change the nature of enterprise, amalgamate enterprises and split up enterprises only with the approval of the Directorate; (g) shall abide by the orders and directives issued from time to time by the Ministry and the Directorate; |

4.1.1.13.The Prevention of Hazard from Chemical and Related Substances Law, 2013

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| Chapter II Aims Section 3 | This law was enacted with the objectives of: a. To protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances; b. To supervise systematically in performing the chemical and related substances business with permission for being safety; c. To perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically; d. To perform the sustainable development for the occupational safety, health and environmental conservation. Regarding the chemical management and storage, currently, regulations governing chemicals management are divided between various Acts, mostly dating from colonial times; hence the legislation is in many respects related to the British framework. The Factory Act and the Public Health Act contain the provisions for chemicals management and storage. Some chemicals are likely to require permits. |
| Section 15 | A person who has obtained a licence, before starting the respective chemical and related substances business: - (a) shall be inspected for the safety and the power of resistance of the machinery and equipment by the respective Supervisory Board and Board of Inspection; (b) shall be attended the person who serve in the work to the respective foreign trainings or the trainings and the expert trainings on prevention of hazard from the chemical and related substances opened by the government department and the government organizations. |
| Section 16 | A person who has obtained a licence: - (a) shall abide the licence regulations; (b) shall perform to abide strictly the instructions for being safety in using the chemical and related substances by himself and also the persons who serve the work; (c) shall keep the required safety equipment enough in the chemical and related substances businesses, furthermore shall grant the personal protection equipment and dresses free of charge to the working persons; (d) shall make the course of training and study and instruction if necessary to the working persons for using the occupational safety equipment, the personal protection equipment and the dresses systematically in the chemical and related substances business; (e) shall be inspected by the respective Supervisory Board and Boards of Inspection in respect of whether or not the hazard may impact on the Human Being and Animals' health and the environment; (f) shall make medical checkup the working persons who will work in the chemical and related substances business and shall permit to serve in that work after |

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| | <p>obtaining the recommendation that his health is suitable for that work. This medical checkup records shall be kept systematically;</p> <p>(g) shall send the copy of informative letter of the permission to the respective Department of Township Administration, if the hazardous chemical or related substances are permitted to store;</p> <p>(h) shall acquire in advance the guidance and agreement of the respective Department of Fire Brigade, if the business that is worried to fire hazard is operated by using the fire hazard substances or the explosive substances;</p> <p>(i) shall transport only the permitted amount of the chemical and related substances in accordance with the prescriptive stipulations, if they are transported in local;</p> <p>(j) shall take the permission from the Central Supervisory Board if the chemical and related substance is altered and transferred from one place to any other place which contained in the license;</p> <p>(k) shall abide and perform in accordance with the related environmental laws not to impact and damage to the environment in operating the chemical and related substances business.</p> |
| Section 17 | A person who has obtained a licence, shall put the insurance in accordance with the prescriptive stipulations to be able to pay the compensation, if the impact and damage is occurred on the Human Being and Animals or the environment in respect of the chemical and related substances businesses. |
| Section 22 | A person who has obtained the registration certificate shall abide the regulations consisted in the registration certificate furthermore shall also abide the order and instructions issued occasionally by the Central Supervisory Board. |
| Chapter IX Hazard Control and Decrease Section 27 | <p>A person who has obtained the licence to be complied the following matters to control and decrease the hazard of the chemical and related substances: -</p> <p>(a) classifying the hazard level to protect in advance the hazard according to the properties of the chemical and related substances;</p> <p>(b) expressing the Material Safety Data Sheet and Pictogram;</p> <p>(c) providing the safety equipment, the personal protection equipment to protect and decrease the accident and attending to the training to be used systematically;</p> <p>(d) performing in accordance with the stipulations in respect of transporting, possessing, storing, using, discharging the chemical and related substances;</p> |

4.1.1.14.The Law on Standardization (2014)

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| Chapter (II) Objectives Section 3 | <p>The objectives of this Law are as follows:</p> <p>(a)to enable to determine Myanmar Standards;</p> <p>(b)to enable to support export promotion by enhancing quality of production organizations and their products, production processes and services;</p> <p>(c)to enable to protect the consumers and users by guaranteeing imports and products are not lower than prescribed standard, and safe from health hazards;</p> <p>(d)to enable to support protection of environment related to products, production processes and services from impact, and conservation of natural resources;</p> <p>(e)to enable to protect manufacturing, distributing and importing the disqualified goods which do not meet the prescribed standard and those which are not safe and endangered to the environment;</p> <p>(f)to support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade.</p> <p>(g)to facilitate technological transfer and innovation by using the standards for the development of national economic and social activities in accordance with the national development programme.</p> |
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| Chapter 7 Taking Action by Committee No. 19 | The committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative order: warning suspending the certificate of certification for limited period cancelling the certificate of certification |
| Chapter (VI) Application for and Issue of Certification Section 17 | A person desirous of obtaining certificate of certification shall apply to the department and organization which has obtained the accreditation. |
| Chapter (VII) Taking Action by Committee Section 19 | The Committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative orders: (a)warning; (b)suspending the certificate of certification for limited period; (c)cancelling the certificate of certification |
| Chapter (IX) Offences and Penalties Section 26 | If any person who obtained certificate of certification uses standardization mark on the product which is not in conformity with the relevant standard or relating to service shall be punished with imprisonment for a term not exceeding one year or with fine not more than one million Kyats or with both. |

4.1.1.15.The Labor Organization Law (2011)

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| Chapter V Rights and Responsibilities of the Labour Organization Section 17 | 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 programmes. 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. |
| Section 18 | 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. |
| Section 19 | 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. |
| Section 20 | 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. |
| Section 21 | The labour organizations have the right to participate in solving the collective bargains of the workers in accord with the labour laws. |
| Section 22 | The labour organizations shall carry out peacefully in carrying out holding of meetings, going on strike and carrying out other collective activities in accord with their procedures, regulations, by-laws and any directives prescribed by the relevant Labour Federation. |

4.1.1.16.The Social Security Law (2012)

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| The Social Security Law, enacted in 2012, was amended the Social Security Act in 1954. It stipulates the formation and implementation of social security systems. | |
| Chapter II | The objectives of this Law are as follows: |

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| Objectives Section 3 | <p>(a) to support the development of the State's economy through the development of production by causing to enjoy more security in social life and health care by the workers who are major productive force of the State by the collective guaranty of the employer, worker and the State;</p> <p>(b) to enjoy more security in social life and medical care by the public by effecting their insurance voluntarily;</p> <p>(c) to raise public confidence upon the social security scheme by providing benefits which are commensurate with the realities;</p> <p>(d) to have the right to draw back some of the contributions paid by the employers and the workers as savings, in accord with the stipulations;</p> <p>(e) 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, death, employment injury of the workers.</p> |
| Chapter V Social Security System and Benefits Section 11 | <p>(a) 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) production industries doing business whether or not they utilize mechanical power or a certain kind of power, works of production, repairing or services, or engineering works, mills, warehouses, establishments;</p> <p>(ix) works carried out with foreign investment or citizen investment or joint ventured businesses;</p> <p>(b) Any establishment which is applied with the provisions of compulsory registration under sub-section (a) shall continue to be applied by this Law even though any of the following situations occurs if it continues to carry out such work:</p> <p>(i) carrying out work by employing under stipulated minimum number of workers but more than one worker;</p> <p>(ii) changing the employer or changing the type of business.</p> |
| Social Security System Section 13 | <p>The Social Security Board shall manage and keep the following social security systems in accord with the stipulations that insured persons may enjoy social security benefits:</p> <p>(b) Family Assistance Insurance System:</p> <p>i) education allowance benefit for the children of insured persons who earn below the specified amount of income;</p> <p>ii) health care and aid benefit in time of natural disaster;</p> <p>iii) suitable benefit for dependent family members.</p> |
| Section 15 | <p>(a) The following funds are included in the Social Security Fund:</p> <p>(i) health and social care fund;</p> <p>(ii) family assistance fund;</p> <p>(iii) invalidity benefit, superannuation pension benefit, and survivors' benefit fund;</p> <p>(iv) unemployment benefit fund;</p> <p>(v) other social security fund for social security system of compulsory registration and contribution specified by the Ministry of Labour, in co-ordination with the Social Security Board, according to clause (2) of subsection (e) of section 13;</p> <p>(vi) other social security fund specified as to which contribution may be paid after voluntary according to clause (2) of sub-section (e) of section 13;</p> <p>(vii) fund for Social Security Housing Plan;</p> |
| Section 18 | <p>(b) The employer shall deduct contributions to be paid by worker from his remuneration and pay to the social security fund together with contribution to be paid by him. The employer shall also bear the expenses for such contribution.</p> |

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| Chapter VI Application to Employment Injury Benefit Insurance System, Employment Injury Benefit Fund and Benefits Section 45 | The provisions contained in this Law relating to the employment injury benefit insurance system shall apply to the following workers: (a) workers at establishments which are applied to social security system who have registered compulsorily in accord with sub-section (a) of section 16 and contributed to the social security funds contained in clauses (1), (3), (4) and (5) of sub-section (a) of section 15; (b) workers specified as being applied to provisions of compulsory registration for employment injury benefit insurance system by notification of the Ministry of Labour, in co-ordination with the Social Security Board with the approval of the Union Government. |
| Section 48 | (a) The employer shall affect insurance by registering for employment injury benefit insurance system contained in section 45 at the relevant township social security office and pay contribution to employment injury benefit fund in accord with stipulations in order that workers applied to provisions of compulsory registration may obtain the employment injury benefits; (b) The employers may affect insurance by registering voluntarily for insurance of the workers who are not applied to provisions of compulsory registration for employment injury benefit insurance system, by paying stipulated contribution to employment injury benefit insurance fund; (c) When registering to effect insurance for employment injury benefit in accord with sub-sections (a) and (b), the worker shall submit medical certificate. |
| Section 49 | Non-application to the Workmen's Compensation Act (a) The employers and insured persons of establishments where the employer had registered compulsorily in accordance with sub-section (a) of section 48 or where the employer had registered voluntarily in accord with sub-section (b) of section 48 who have paid contribution to employment injury benefit fund shall not apply to the provisions contained in the Workmen's Compensation Act as regards the employment injury benefit; (b) The insured persons who has affected insurance for employment injury benefit in accord with sub-sections (a) and (b) of section 48 shall be entitled only to the employment injury insurance benefits contained in this Law. |
| Section 53 | (a) The employers and workers shall co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment; |
| Section 75 | The employer of establishments applied by this Law: (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: i) records and lists of workers' daily attendance; ii) records of appointing new worker, employing worker by changing of work, suspension from work, dismissal from work and resignation from work; iii) records of promotion and paying remuneration; iv) records and lists of employers, managers, and administrators; and records of changes of them; (b) shall inform the relevant township social security office if the following matters arise: i) change in number of workers and address of establishment; ii) change of employer, change of business, suspension from work, and termination of work; iii) employment injury, employment death, and occupational diseases; |

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| | (c) shall produce work records and lists on requirement of inspection team or official assigned duty under this Law by the Social Security Head Office and various Regional Social Security Offices. |
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4.1.1.17.The Ethnic Rights Protection Law (24th February, 2015)

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| Chapter II Objectives | <p>The objectives of this Law are as follows:</p> <p>(a) to obtain equal citizen's rights for all ethnic groups;</p> <p>(b) to live eternally together with amicable relations among ethnic groups on the basis of genuine Union Spirit;</p> <p>(c) to preserve and develop language, literature, fine art, culture, custom, national character, and historical heritage of ethnic groups;</p> <p>(d) to promote solidarity, mutual rarity and respect, and mutual assistance among ethnic groups;</p> <p>(e) to promote socioeconomic development including education, health, economy, transport and communication, so forth, of less-developed ethnic groups;</p> <p>(f) to fully obtain the rights prescribed in the Constitution by ethnic groups.</p> |
| Chapter IV Formation of the Ministry and Appointment of the Union Minister | 5. The matters of projects shall completely be informed, coordinated and performed with the relevant local ethnic groups in the case of development works, major projects, businesses and extraction of natural resources will be implemented within the area of ethnic groups. |

4.1.1.18.Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)

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| This law was enacted for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. It stipulates that employer in which more than 30 workers are employed shall form the workplace coordinating committee consisting of the representatives of workers and the representatives of employer. | |
| Section 23 | A party, employer or worker, may complain individual dispute relating to his grievance to the Conciliation Body and if he is not satisfied with the conciliation of such body in accord with stipulated manners, may apply to the competent court in person or by the legal representative. |
| Section 24 | The relevant Conciliation Body shall, in respect of the collective dispute known or received by the complaint of either party, employer or worker, in respect of the dispute; information sent by the Minister or the Region or State Government or any other means, carry out as follows: (a) conciliating so as to be settled within three days, not including the official holidays, from the day of knowing or receipt of such dispute; (b) concluding mutual agreement if the settlement is reached in conciliating under sub-section (a), before the Conciliation Body. |
| Section 25 | The Conciliation Body shall refer the collective dispute which does not reach settlement to the relevant Arbitration Body and inform the persons relating to the dispute. |
| Section 38 | No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause. |
| Section 39 | No employer shall alter the conditions of service relating to workers concerned in such dispute at the consecutive period before commencing the dispute within the period under investigation of the dispute before the Arbitration Body or Tribunal, to affect the interest of such workers immediately. |
| Section 40 | The project proponent has to not close the work without negotiation, discussion on dispute in accord with this law, decision by Tribunal |

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| Section 51 | The project proponent has to pay the compensation decided by Tribunal if violates any act or any omission to damage the interest of labour by reducing of product without efficient cause. |
| Section 46 | Any employer who violates any prohibition contained in sections 38 and 39 shall, on conviction, be punished with a fine for a minimum of one-lakh kyats. |

4.1.1.19. The Employment and Skills Development Law (2013)

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| This law was enacted for safeguarding the right of workers or having skillful of workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. Employer shall conduct occupational training to enhance the skills of workers. | |
| Chapter (2) Employment and Employment Seeking Section 3 | The Ministry shall manage the facilities and measures to help for selection of employment, obtaining employment for employment seeker suitable according to the age and strength; tenure in employment and skill development, and to help employers for obtaining workers suitable for the employment |
| Chapter (3) Making Contract of Employment Section 5 | (a)(1) After the employer has employed a worker for any job, he shall within 30 days of so doing, sign a Contract of Employment with the worker. This clause however shall not apply to permanent workers of government departments and organizations. (2) If prior to employment, the worker is required to attend any per-employment training for a period or appointed on probation for a period, sub-section (1) shall not apply for that period. (c) The workplace rules in the Employment Contract shall conform to the rules made under existing laws and the rights of the workers in the Contract shall not be less than those in existing laws. |
| Chapter (5) Implementing Training Programs and Skills Development of Workers Section 14 | Employer shall conduct occupational training to enhance the skills of workers who are to be employed as well as workers who are presently employed in accordance with the requirements of the enterprise and the policy of the Skills Development Agency. |
| Chapter (8) Establishing and Utilizing Workers' Skills Development Fund Section 30 | (a) The employers of Industrial and Service Enterprises shall pay contribution to the fund every month without fail amounting to not less than below 0.5% of the payroll of his workers up to the level of supervisors of the workers. (b) The employer shall not deduct the contribution paid under sub-section (a) to the fund from the wages of the workers. |

4.1.1.20. The Worker's Compensation Act, 1923

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| It stipulates that employer is required to make payments to employees who become injured or who die in any accidents arising during and in consequence of their employment. Such compensation also must be made for diseases which arise as a direct consequence of employment, such as carpal tunnel syndrome. | |
| Chapter IV Determining the Categories of Work Section 6 | The National Committee shall determine, by notification, commercial, production and service, agricultural and livestock breeding business which shall be applied by the provisions relating to minimum wage contained in this Law, in the whole country or relevant Union, Region or State. Moreover, it may amend the said businesses in accord with the changing situation from time to time. |
| Chapter VII The Duties of the Employer Section 12 | The employer: (a) shall not pay wage to the worker less than the minimum wage stipulated under this Law; (b) may pay more than the minimum wage stipulated under this Law; |

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| | <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 cash and 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> |
| Section 13 | <p>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 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>Chapter IX</p> <p>Assigning Duty to the Inspection Officer, Inspection and Taking Action</p> <p>Section 18</p> | <p>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> <p>(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.</p> |

4.1.1.21.Payment of Wages Law (2016)

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| The Payment of Wage Act defines the payment obligation to the workers employed in the factories or railway administration. It stipulates the method of payment stating that the payment should be made in cash on a regular payday, and allows legal action against delayed payment or un-agreeable deduction. | |
| Chapter II Methods and Time of Payment of Wages Section 3 | <p>The employer:</p> <p>(a) shall pay wages to the workers employing in his business in local currency or foreign currencies stipulated by the Central Bank of Myanmar. Such payment may be paid in cash or cheque or deposit into the bank account of the worker with the agreement between the employer and the worker.</p> <p>(b) In paying such wages:</p> <p>(i) if it is necessary to pay particular benefit, profits and opportunities for workers working in commerce, production and service businesses, it may be paid in cash or some in cash and some in things set up by local price on own volition of workers in accordance with the stipulations.</p> <p>(ii) For workers employing in agriculture and livestock breeding business, it may be paid some wage in cash and something set up by local price according to custom, or on the volition of majority of worker or by collective agreement. In paying so, it shall be for personal use and the interest of his family, and shall be appropriate and equitable.</p> <p>(c) If any worker is conscripted under the Public Military Service Law, the (60) days of wages shall be paid as a special right</p> |
| Section 4 | <p>The employer:</p> <p>(a) shall pay wages at the end of the work or at the time agreed to pay to the worker for hourly, daily, weekly or other part time work, or temporary or piece work;</p> <p>(b) shall not exceed one month than the period agreed with the worker under sub-section (a) to pay wages;</p> <p>(c) shall pay the wages for the permanent work monthly. In making such payment:</p> <p>(i) if workers are not more than 100, wages shall be paid at the end of the period for payment of wage;</p> <p>(ii) If workers are more than 100, it shall be paid no later than five days after the end of the period for payment of wage;</p> <p>(d) shall pay the due wages within two working days from the date of termination, if a worker is terminated;</p> <p>(e) shall pay the wages at the end of the period for payment of wages, if a worker resigns on his own volition by sending prior written notice of resignation;</p> <p>(f) shall pay the due wages to a legal heir within two working days after the decease, if a worker is deceased;</p> <p>(g) shall pay all wages on a working day</p> |
| Section 5 | If an employer encounters difficulty to make payment under sub-section(c) of the Section 4 due to any unexpected condition, including natural disaster, the employer shall submit that which date has been altered for the payment of wages with the consent of the workers to the Department on reasonable ground. |
| Chapter III | The employer: |

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| Deduction from Wages Section 13 | <p>(a) may deduct from wages, except leaves which are entitled wages under the relevant law and public holidays, for the absent period from work;</p> <p>(b) may deduct expenses which are allowance accommodation and ferry service are arranged by the employer, meal allowance, electricity charges, water service charges and income taxes liable to be paid by worker and cash paid in excess under a mistake, which are not included in the expression of wages under this Law;</p> <p>(c) may deduct advance payment or reimburse or savings for the worker or any contribution under any law demanded by a worker from wages;</p> <p>(d) may deduct from the wages of the worker under a decision of a Court or Arbitration Council or Arbitration Body.</p> |
| Chapter IV Overtime Wages Section 14 | The worker has the right to enjoy overtime wages stipulated by the law if he works over time. |

4.1.1.22.The Minimum Wage Law (2013)

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| The minimum wage law, passed in March 2013, was replaced the 1949 Minimum Wage Act. The law provides a framework for minimum wage determination: the presidential office establishing a tripartite minimum wage committee shall decide minimum wage with industrial variation based on a survey on living costs of workers possibly every two years. This also stipulates equal payment. | |
| Chapter VII The Duties of the Employee Section 12 | <p>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 and 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 live stock business, some cash and some property at prevailing regional price may be paid jointly according to local customer desire of the majority of workers or collective agreement. Such payment shall be for any personal use and benefit to the worker and his family and the value shall also be considerable and fair.</p> |
| Section 13 | <p>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 the relevant department in accord with the stipulations;</p> |

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| | <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>Chapter VIII</p> <p>The Rights of the Workers Relating to the Minimum Wage</p> <p>Section 14</p> | <p>A worker working in any establishment relating to this Law:</p> <p>(a) has the right to obtain the minimum wage stipulated under this Law or, if the employer pay more than the said wage;</p> <p>(b) has the right to continue to enjoy the pay paid more, if the pay received is more than the minimum wage stipulated under this Law, before the coming into force of this Law;</p> <p>(c) has the right to enjoy the minimum wage stipulated under this Law, if the minimum wage contained in the employment agreement is less than the minimum wage stipulated under this Law;</p> <p>(d) has the right to enjoy not less than the minimum wage stipulated for each work where he is working when working in two or more works;</p> <p>(e) has the right to enjoy the stipulated minimum wage for the time worked in the part-time job, hourly job;</p> <p>(f) has the right to enjoy a holiday per week with pay in the salary-paid work. If he is employed in such holiday, he shall have the right to obtain over-time fee in accord with the existing law;</p> <p>(g) if working less than the working hours per day stipulated in a daily-waged job is not due to reduced working according to the desire of the worker, or if work has to be paused due to the failure of employer to give job, the full wage shall be paid as if the work is done full-time;</p> <p>(h) has the right to enjoy the stipulated minimum wage without discriminating between man and woman;</p> <p>(i) has the right to enjoy the minimum wage in cash, if he is a worker working in the commercial, production and service business. Moreover, if the specific benefits, interests or opportunities are to be paid, it may be paid in cash or partly in cash and partly in property at prevailing regional price jointly according to the desire of the worker;</p> <p>(j) if he is a worker working in the agricultural and livestock breeding business, the minimum wage may be enjoyed in some cash and some property at prevailing regional price jointly according to local custom or desire of the majority of workers or collective agreement for the worker and his family in accord with the stipulations.</p> |
| Chapter X | Any employer: |

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| Prohibitions and Penalties Section 22 | <p>(a) shall not fail to pay the workers the minimum wage stipulated under this Law;</p> <p>(b) shall not pay to the workers less than the minimum wages and other benefits which is entitled by the worker under section 14;</p> <p>(c) relating to the accounts, schedules, documents and lists of wage of the workers:</p> <p>(i) shall not make false entry, deceitful recording or false and deceitful reporting;</p> <p>(ii) shall not fail to report to the relevant department in accord with the stipulations;</p> <p>(iii) shall not fail to produce when required by the inspection officer;</p> <p>(d) shall not fail to go and accept inspection when summoned by the inspection officer;</p> <p>(e) shall not obstruct or interfere with the inspection officer who comes and inspects on duty.</p> |
| Section 24 | <p>Any employer:</p> <p>(a) shall not violate any term and condition contained in the minimum wage notification;</p> <p>(b) shall not fail to inform the workers relating to the rates of minimum wage concerning to his workers among the rates of minimum wage stipulated under this Law and announce at the place where the workers are able to see it in the work centre and workplace;</p> |

4.1.1.23. The Leave and Holidays Rules (1951, partially revised in 2018)

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| This act has been used as the basic framework for leaves and holidays for workers with minor amendment in 2006 and 2014. This defines the public holidays that every employee shall be granted with full payment. It also defines the rules of leaves for workers including medical leave, earned leave and maternity leave. | |
| Chapter (3) Leave Section 23 | A worker has the right to take leave with respective wages or with respective salary according to the type of leave and designated period set-up by the law. However, workers are entitled to take earned leave with respective average wages or average salary. |
| Section 24 | Workers have the right to take casual leave, medical leave or maternity leave within the probation period. |
| Section 25 | For days in which a worker is not in the workplace after the end of a period of leave, such days shall not be counted as leave. |
| Section 26 | If there are holidays just before or right after one's leave commences, these days cannot be counted as part of the leave period. |
| Section 27 | Subjecting a worker to relocation, suspension of duty, reduction of salary or termination within their leave period is not allowed. |
| Chapter (4) Duties and Responsibilities of Worker Section 49 | <p>The worker</p> <p>(a) must ask for leave from the employer or the manager or from an authorized person with Form</p> <p>(1) within the normal working hours.</p> |

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| | <p>(b) must report to the employer or to the manager or to an authorized person when the worker is back in the workplace after taking leave.</p> <p>(c) must inform employer or manager or authorized person, by phone or any other method, if the worker is unable to return to the workplace from their current location by the end of leave due to natural disaster or unforeseen happenings or accident occurring within the leave period.</p> |
| <p>Chapter (5)</p> <p>Duties and Responsibilities of an Employer</p> <p>Section 50</p> | <p>The employer</p> <p>(a) must provide the worker casual leave, medical leave and maternity leave with respective wages or salary. Moreover, must allow the worker earned leave with respective average wages or average salary. If the employer normally pays the cost of living, then the cost of living must also be included.</p> <p>(b) must provide the worker with earned leave starting from the day of entitlement within 12 months, with respective average wages or with average salary, and also must advance the entitled wage prior to the worker taking leave.</p> <p>(c) must announce the number of entitled earned leave calculations within three months starting from the last day of the 12-month period or entitled earned leave. In this way, workers can take leave by turns (alternatively). Moreover, to fix the eligibility period within which workers can take earned leave.</p> <p>(d) if the worker resigns or is terminated or in case of death, has to pay the respective wages/salary within two business/working days starting from the date of incidence.</p> <p>(e) has to pay the eligible wage/salary for earned leave to his/her official representative (if the worker is deceased).</p> <p>(f) has to pay for the respective earned leave period if there is a temporary or permanent shutdown.</p> <p>has to allow eligible earned leave if the nature of work is less than twelve months.</p> <p>(g) is not allowed to suspend, to reduce the salary, to relocate or to terminate a worker due to the worker taking maternity leave or medical leave.</p> <p>(h) has to fill up Form (1), (2), (3), (4), (5) and (6) according to the law. These forms shall be easily accessible from the Inspector. The employer must maintain these documents for up to twelve months' period.</p> <p>(i) has to record the leave taken in Form (7) and submit to the Inspector not later than every seventh day of each month.</p> <p>(j) wants the worker to work on a gazette holiday, the employer must receive consent from the worker. The employer must submit Form (8) to the Inspector for approval.</p> |

4.1.1.24.Public Health Law (1972)

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| <p>Chapter 2</p> <p>Prevention of Public Health Objectives</p> | <p>To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. This law focuses as follows:</p> <p>The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law.</p> |
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| | <p>The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law.</p> <p>The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.</p> |
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4.1.1.25.Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)

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| <p>Chapter 2</p> <p>Prevention and Response</p> <p>Section 3</p> | <p>(a) 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>(ii) immunization of those who have attained eligible target group including adult by injection or orally, when necessary;</p> <p>(iii) carrying out health education activities relating to communicable disease;</p> <p>(iv) carrying out the activities of surveillance, prevention and control concerning communicable disease;</p> <p>(v) carrying out the activities of medical examination for prevention of communicable disease in cross-border entrance and exit of the country, international airport, seaport, other necessary airport, seaport and bus terminal;</p> <p>(vi) prohibition or restriction of movements at home, hotel, motel and guest house;</p> <p>(vii) isolation of infected person of communicable disease or suspect of being infected there with;</p> <p>(viii) carrying out the activities of spraying, immunization by injection or orally and environmental sanitation necessary for prevention and control according to communicable diseases;</p> <p>(ix) giving advice to and coordinating with relevant Government departments, organizations and non-governmental organizations for construction of healthy housing, obtaining safe drinking water and fresh water for use, proper waste disposal in order to prevent occurrence of communicable disease for workers who are carrying out activities of social and economic development;</p> <p>(x) carrying out other functions prescribed by the Ministry of Health, from time to time.</p> |
| Section 4 | <p>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> |
| Section 9 | <p>Sub-sections (d) and (e) contained in section 11 of the Prevention and Control of Communicable Diseases Law shall be substituted as follows:</p> <p>"(d) other necessary investigation;</p> <p>(e) prohibition of the right of movement of the vehicle carrying animal or animal product suspected of having epidemic disease."</p> |
| Section 11 | <p>After sub-section (e) of section 14 of the Prevention and Control of Communicable Diseases Law, sub-section (f) shall be inserted as follows:</p> |

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| | "(f) right of movement of the vehicle carrying animal or animal product suspected of having epidemic disease." |
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4.1.1.26.Occupational Safety and Health Law (2019)

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| Purpose: | To effectively implement measures related to safety and health in every industry and to set occupational safety and health standards; |
| Section-26 Sub-section (e) | The project proponent has to provide adequate and relevant personal protective equipment to workers free of charge and make them wear it during work so as not to expose workers to any serious occupational diseases or hazards. |
| Section-26 Sub-section (1) | The project proponent has to arrange and display occupational safety and health instructions, warning signs, notices, posters, and signboards. |
| Section-30 Sub-section (a) | The worker shall wear or use at all times any protective clothes, equipment and tools provided by the employer for the purpose of safety and health. |
| Section-30 Sub-section (d) | The worker shall proper and systematic use any equipment and tools, machines, any parts of the machines, vehicles, electricity and other substances being used at the workplace. |
| Section-30 Sub-section (e) | The worker shall take reasonable care for the safety and health of himself/ herself and of other persons who may be affected by his/ her acts or omissions at work. |

4.1.1.27.Natural Disaster Management Law (2013)

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| Chapter II Objectives Section 3 | <p>The objectives of this Law are as follows:</p> <p>(a) to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks;</p> <p>(b) to form the National Committee and Local Bodies in order to implement natural disaster management programmes systematically and expeditiously;</p> <p>(c) to coordinate with national and international government departments and organizations, social organizations, other non-government organizations or international organizations and regional organizations in carrying out natural disaster management activities;</p> <p>(d) to conserve and restore the environment affected by natural disasters;</p> <p>(e) to provide health, education, social and livelihood programmes in order to bring about better living conditions for victims.</p> |
| Chapter VI Natural Disaster Management Section 13 | <p>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> |

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| | <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) shall give priority and protect infants, the elderly, the disabled and women (especially pregnant women or mothers and suckling mother) in carrying out the functions contained in sub-section (a);</p> <p>(c) shall refrain from the act that causes injuring human dignity in supporting the victims.</p> |
| Chapter VIII Offence and Penalties Section 25 | Whoever, if the natural disaster causes or is likely to be caused by any negligent act without examination or by willful action which is known that a disaster is likely to strike, shall be punished with imprisonment for a term not exceeding three years and may also be liable to fine. |
| Section 26 | Whoever interferes, prevents, prohibits, assaults or coerces any natural disaster management to the department, organization or person assigned by this Law shall, on conviction, be punished with imprisonment for a term not exceeding two years or with fine or with both. |
| Section 27 | Whoever misinforms about the natural disaster for the purpose of dread to the public shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both. |
| Section 28 | <p>Any department, organization or person assigned by this Law commits any of the following acts or omissions shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both:</p> <p>(a) falsification of data on damage and losses caused by natural disasters dishonestly;</p> <p>(b) willful failure to perform assigned responsibility.</p> |
| Section 29 | Whoever violates any prohibition contained in rules, notifications and orders issued under this Law shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both. |
| Section 30 | <p>Whoever commits any of the following acts or omissions shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both:</p> <p>(a) willful failure to comply with any of the directives of the department, organization or person assigned by this Law to perform any of the natural disaster management;</p> <p>(b) entering into the area or building affected by natural disaster without permission;</p> <p>(c) utilizing, trading, preventing or destroying food, relief items and rehabilitation materials provided for victims dishonestly;</p> <p>(d) making a false application for food, relief items and rehabilitation materials or cash assistance to the department, organization or person assigned by this Law as it is affected by natural disaster.</p> |
| Section 31 | Whoever fails willfully to comply with the direction of remove or evacuation from an area or building at risk natural disaster to the public in such place for the |

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| | purpose of reduction of damage and losses when the natural disaster strikes or it will be a natural disaster and for the purpose of no obstruction to the prevention and reduction activities of the natural disaster shall, on conviction, be punished with imprisonment for a term not exceeding one month or with fine or with both. |
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4.1.1.28. Myanmar Engineering Council Law, 2013

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| Chapter 2 Objectives Section 3 | The Objectives of this law are as follows: (a) to develop the dignity, ethical principles and ability of Myanmar citizen engineers, graduate technologists and technicians who are working in the engineering services (b) to explore beneficial, useful and good methods to research and develop the State's natural resources and human resources with the least environmental impact by a combination of engineering technology and information technology; (c) to guide, control, maintain and take necessary action with regard to specified standards and norms relating to specified subjects, systematic methods, safety and ethical principles and duties in teaching engineering subjects and in technological research and services; (d) to perform engineering and technological activities of the State and tasks assigned by the relevant ministry or organization from time to time; |
| Chapter 13 Prohibitions and Penalties Section 37 | No one shall perform any engineering work and technological work which are specified as being dangerous to the public by a rule enacted under this law without having received a registration certificate issued by the council, except for engineers appointed in a government department or an organization in the performance of their duties. |
| Section 37 | No engineer, graduate technologist and technician shall use, together with his name, a title which is not compatible with his status. |
| Section 38 | No registered engineer, graduate technologist and technician- (a) shall transfer his registration certificate to anyone or allow it to be used by anyone; (b) shall fail to return his registration certificate to the council within 30 days from the day on which a decision is passed, or an administrative action is taken, under this law to cancel the registration certificate. |
| Section 39 | Anyone convicted of having violated the prohibition contained in section 37 shall be punished with imprisonment for not more than 2 years or with a fine or with both. |
| Section 40 | any registered engineer, graduate technologist or technician convicted of having violated the prohibition contained in section 38 shall be punished with imprisonment of not more than 1 year or with a fine or with both. |
| Section 41 | Any registered engineer, graduate technologist or technician convicted of having violated the prohibition contained in 39 shall be punished with imprisonment of not more than 1 year or with a fine or with both. |
| Section 42 | Any registered engineer, graduate technologist or technician convicted of having violated any prohibition under this law shall be punished with imprisonment of not more than 6 months or with a fine or with both. |

4.1.1.29. The Myanmar Fire Force Law (2015)

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| Purpose | To ensure to prevent the fire, to provide the precautionary material and apparatuses, if the fire caused in the project area to be defeated because the project is business in which electricity and any inflammable materials such as petroleum are used. So, the project owner has to institute the specific fire service in line with the above law. |
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| Section 25 | The project proponent has to institute the specific fire services. The project owner has to provide materials and apparatuses for fire precaution and prevention. |
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4.1.1.30. Myanmar Fire Brigade Law, 2015

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| Chapter II Objectives Section 3 | The objectives of this Law are as follows: (a) to prevent destruction of State-owned property, private property, cultural heritage and the lives and property of the public by fire and other natural disaster; (b) to organize the Fire brigade systematically and to train members of the fire brigade; (c) to carry out extinguishing fire, prevention and search and rescue when fire, other natural disaster, epidemic disease or any kind of sudden disaster occurs; (d) to educate, organize and incite extensively so as to achieve public cooperation when any disaster occurs; (e) to participate and help, if necessary, for the State safety, peace of the public and the rule of law |
| Chapter VIII Activities for Fire Safety Section 15 | The different levels of Fire Safety Body shall: (a) perform the activities for fire safety in accord with the procedures laid down by the Central Body; (b) organize and educate to obtain the cooperation of the public in the activities for fire safety; (c) supervise as may be necessary the participation of all the relevant members of fire brigade in accord with the work programmes laid down by the Central Body when fire hazard, other natural disaster, epidemic disease or sudden disaster occurs; (d) appoint fire safety warning groups in coordination with the relevant administrative organizations. |
| Section 16 | The person-in-charge of the Township Fire Services Department shall: (a) issue, from time to time, the directives on fire safety to be abided by the residents in the city, ward or village - tract; (b) inspect or cause to inspect in accord with the stipulations whether the residents in the city, ward or village - tract abide by the directives issued under sub-section (a) and arrange to enable warning or taking action, as may be necessary, against those who do not abide by. |
| Chapter XI Prohibitions Section 24 | No person shall fail to abide by the directives of fire safety issued under section 16 by the head of the relevant Township Department of Fire Services. |
| Section 25 | The owner or manager of the factory, workshop, bus terminal, airport, port, hotel, motel, lodgings, condominium, market, department, organization or business exposed to fire hazard shall, in accord with the directive of the Department of Fire Services: (a) not fail to form the Reserve Fire Brigade; (b) not fail to provide fire safety equipment. |
| Section 26 | No person shall, knowing that there is no outbreak of fire, report fraudulently the outbreak of fire to the Fire brigade. |
| Section 25 | No person shall, without cause, obstruct, block, disturb, or attack the members of the fire brigade and vehicles which departed to extinguish the fire and direct by any means to the place which is not related to the outbreak of fire. |

4.1.1.31. Protection and Preservation of Cultural Heritage, 1998

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| Chapter II Objectives Section 3 | <p>The objectives of this Law are as follows:</p> <p>(a) to implement the protection and preservation policy with respect to perpetuation of cultural heritage that has existed for many years;</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>(c) to uplift hereditary pride and to cause dynamism of patriotic spirit of citizens by protecting and preserving the cultural heritage regions.</p> <p>(d) to promote public awareness and will as to the high value of the protection and preservation of the cultural heritage regions;</p> <p>(e) to protect the cultural heritage regions from destruction;</p> <p>(f) to carry out protection and preservation of the cultural heritage regions in conformity with the International Convention approved by the State.</p> |
| Chapter VI Applying for Prior Permission, Scrutinizing and Issuing Section 13 | <p>A person desirous of carrying out one of the following shall abide by the provisions of other existing laws and also apply to the Department in accordance with stipulations to obtain prior permission under this Law:</p> <p>(a) within the ancient monumental zone or the ancient site zone:</p> <p>(1) constructing or extending a building;</p> <p>(2) renovating the ancient monument or extending the boundary of its enclosure;</p> <p>(b) within the protected and preserved zone, constructing, extending, renovating a hotel, motel, guesthouse, lodging house or industrial building or extending the boundary of its enclosure;</p> <p>(c) within the cultural heritage region</p> <p>(1) carrying out the renovation and maintenance work of the ancient monument without altering the original ancient form and structure or original ancient workmanship;</p> <p>(2) carrying out archaeological excavations;</p> <p>(3) building road, constructing bridge, irrigation canal and embankment or extending the same.</p> |
| Chapter VII Prohibitions Section 22 | <p>No person shall construct a building which is not in conformity with the conditions prescribed region wise by the Ministry of Culture in the cultural heritage region.</p> |

4.1.1.32. The Protection and Preservation of Ancient Monument Law (2015)

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| Purpose | To ensure the protection of the ancient monument and information about it if it was in the project area. This law focuses as follows; |
| Section 12 | The project proponent has to report to the village-tract or ward administrators if the project proponent will find any ancient monument under the ground or on the ground or under the water. |
| Section 15 | The project proponent has to obtain the prior permission of the Department of Ancient Research Museum if the project area is in the prescribed area of the Ancient monument. |
| Sub-section (f) of section 20 | The project proponent has to obtain the prior permission, by written, of Department of Ancient Research and National Museum if the project proponent disposes of the chemical and solid waste in the Ancient Monument. |

4.1.1.33. The Conservation of Water Resources and Rivers Law, 2016

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| Chapter II Aims | The aims of this Law are as follows: |
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| Section 3 | (a) to conserve and protect the water resources and rivers system for beneficial utilization by the public; (b) to smooth and safety waterways navigation along rivers and creeks; (c) to contribute to the development of State economy through improving water resources and river system; (d) to protect environmental impact. |
| Chapter V Prohibitions Section 8 | No person shall: (a) carry out any act or channel shifting with the aim to ruin the water resources and rivers and creeks. (b) cause the wastage of water resources wilfully. |
| Section 11 | No person shall: (a) dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk. (b) catch aquatic creatures within river-creek boundary, bank boundary or waterfront boundary with poisonous materials or explosives. (c) dispose of disposal soil and other materials from panning for gold, gold mineral dredging or resource production in the river and creek, into the river and creek or into the water outlet gully which can flow into the river and creek. |
| Section 11 | 11. No person shall: (a) dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk. (b) catch aquatic creatures within river-creek boundary, bank boundary or waterfront boundary with poisonous materials or explosives. (c) dispose of disposal soil and other materials from panning for gold, gold mineral dredging or resource production in the river and creek, into the river and creek or into the water outlet gully which can flow into the river and creek. |
| Section 19 | No one shall dispose of any substance into the river-creek that may cause damage to waterway or change of watercourse from the bank or vessel which is plying, vessel which has berthed, anchored, stranded or sunk. |
| Section 22 | No one shall, without the permission of the directorate, pile sand, shingle and other heavy materials for business purposes in the bank area and waterfront area. |
| Chapter VI Penalties Section 29 | Whoever attempts or conspires or abets in the commission of an offence under this Law shall be punished with the punishment provided for such offence in this Law. |
| Chapter VII Miscellaneous Section 30 | Any government department and organization or any person desirous of constructing drainage, utilizing river water intake, constructing bridges spanning rivers, connecting underground pipe, connecting underground electric power cable, connecting underground telecom cable or digging in rivers and creeks, bank boundary and waterfront boundary, under the requirement of work, shall in order not to adversely affect the water resources and rivers and creeks, carry out only after obtaining the approval of the Ministry of Transport. |

4.1.1.34.Underground Water Act (21st June, 1930)

The underground water act enacted on the date of 21st June in 1930 whereas it is expedient to conserve and protect underground sources of water supply in the Union of Burma. This act prohibits sinking of a tube for the purpose of obtaining underground water except under and in accordance with the terms of a license granted by the water officer. Township Officer or sub-divisional officer had power to close a license tube after exercising

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| jurisdiction over the local area concerned and the expense of such closure shall be recoverable from the owner of the tube as if it were an arrear of land-revenue. | |
| Section 3 | No person shall sink a tube for the purpose of obtaining underground water except under and in accordance with the terms of a licence granted by the water officer. Every person owning a tube which was in existence before the extension of this Act to the local area concerned shall apply to the water officer for a licence for the said tube, and such licence shall be granted free of charge. |
| Section 5 | Every person obtaining or attempting to obtain underground water shall supply the water officer with such information as the President of the Union may by rule prescribe. |
| Section 6 | The President of the Union may make rules 1- (a) prescribing the conditions subject to which licences may be granted by the water officer under section 3; (b) prescribing the form of and the procedure for granting such licences and the fees payable for the issue thereof; (c) prescribing the information to be supplied to the water officer under section 5. |

4.1.1.35.The Electricity Law (2014)

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| In 2014, the new Electricity Law, a comprehensive piece of legislation covering licensing, a new regulatory commission, standards, inspection, tariff, and restrictions, replaced the Electricity Law of 1984. The Electricity Law divides projects into “small” (up to 10 MW), “medium” (between 10 MW to 30 MW) and large (upwards of 30 MW); the states and regions can issue permits for small and medium power plants. In case these plants are not connected to the national grid, the Union Government Ministry is not the primary authority involved. The authorities have a legal right to use land for the purpose of power plants under the Electricity Law, and have the right to expand and maintain their facilities. The law also provides that the authorities can build transmission lines in accordance with existing laws. | |
| Purpose | To ensure compliance with the conditions of permission for productions of in line with the above law. |
| Section 10 (b) | The project proponent will implement the project with the best practices to reduce the damages on the environment, health and socio-economy also will pay compensation for the damages and will pay the fund for environmental conservation. |
| Section 18 | The project proponent has to take the certificate of electric safety, issued by the chief-inspector, before the commencement of power generation. |
| Section 21 (a) | The project proponent has to be liable for damages to any person or enterprise by failure to abide by the quality standards or rules, regulation, by-law, order, and a directive issued |
| Section 22 (a) | The project proponent has to be liable for damages to any person or enterprise by the negligence of project owner. |
| Section 26 (a, b) | The project owner has to comply with the permission for electric searching and generation. |
| Section 27 | The project proponent will inform promptly to chief-inspector and head officer of related office while occurring of accident in electricity generation. |
| Section 40 | The project proponent will comply with the standards, rules, and procedure. Moreover, will allow the inspection by respected governmental department and organization if it is necessary. |
| Section 68 | The project proponent will pay the compensation to anyone who is injured or caused to death in electric shock or fire caused by the negligence or omitting of the project owner or representative of the project owner. |

4.1.1.36.The Motor Vehicles Law, 2015

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| Chapter 2 Objectives Section 3 | The main objectives of this law are as follows: (a) For the safe driving of motor vehicles in public areas through registration according to official rules and regulations. (b) To provide driving licenses for driving particular types of motorized vehicles after qualification checks. (c) For the easy flow of road users and for the protection against road risks and vehicle perils. (d) To avoid traffic congestion and to use high technology transportation systems efficiently in order to implement protection against road risks and vehicle perils. (e) To reduce environmental pollution caused by motor vehicles. |
| Chapter (3) Motor vehicle registration Section 4 | Every owner of a motor vehicle must register the vehicle with the registration officer. |
| Section 5 | The owner of a motor vehicle must maintain the vehicle in a safe condition equal to the standard condition. |
| Section 6 | The registration officer may not register the motor vehicle if the vehicle is disqualified for failing to comply with safety standards or the engine is broken or if the applicant has failed to disclose previous facts about former registrations of the vehicle. |
| Section 8 | (a) The owner of the vehicle can request the registration officer to issue a temporary registration according to the regulations. (b) The temporary registration according to this section cannot be valid for more than three months. And this law does not allow temporary registration more than one time. |
| Section 10 | The owner of a vehicle must notify the registration officer if the main parts of his/her vehicle needs to be changed or repaired. |
| Chapter (9) Prohibitions Section 45 | No one is allowed to drive, request someone to drive, or park, motor vehicles in public places under the following conditions: (a) The motor vehicle is not registered. (b) The registration has been suspended, revoked or expired; the registration card is not displayed. (c) The registration card has been revoked or is expired. |
| Section 46 | No one is allowed to drive, or allow to drive, motor vehicles in public places without risk insurance for others. This prohibition does not extend to passengers. |
| Section 47 | (a) No one is allowed to drive a motor vehicle in public places without carrying the driving license with him/her. (b) No one is allowed to drive a motor vehicle in public places without a driving license. (c) The owner of, and the person responsible for, a motor vehicle are not allowed to give permission to someone without a driving license to drive in public places. |
| Section 50 | No one is allowed to do the following in public places: (a) Driving above the speed limit or below the minimum speed. (b) Driving a motor vehicle which endangers others. (c) Driving a motor vehicle after the consumption of narcotic drugs or alcohol. |
| Section 50 | No one is allowed: (a) To operate a business of manufacturing, selling or equipping motor vehicles without a business license. (b) To operate a business of maintaining or repairing motor vehicles without a business license. |

4.1.1.37.National Land Use Policy, 2014 October

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| Chapter I Basic Principles of the National Land Use Policy Section 8 | In terms of the National Land Use Policy: (a) It shall use the land resources of the State sustainably and systematically by conserving and protecting them for the interest of all peoples of the State; (b)It shall enact the National Land Law which harmonize the existing laws relating to use of land resources and land tenures in the whole country including rural and urban areas and which may be implemented systematically; (c) It shall cause to decide the matters relating to land disputes arisen between the land users and the stakeholders transparently and truly in accord with the National Land Law; |
| Section 8 | In implementing the continued entry of the foreign direct investments, sustainable economic development, effectiveness of the environmental conservation and protection, social harmonization, firmness of land tenures, immoveable property right and settlement of land dispute: (a) It shall increase responsible undertaking and respect the rule of law; (b)It shall strengthen the clean governance system by carrying out land use management, land tenure management in accord with law systematically and truly; (c) It shall establish modernized systems to enable to have access to correct information relating to land use management and land tenure management; (d)It shall establish the land dispute settlement mechanism which is easily implementable and impartial; (e) It shall arrange and carry out coordination process with the Stakeholder's transparently. |
| Chapter II The Situation of the Existing Land Management Mechanism Section 12 | The State has arranged and carried out to expand agricultural land use by the State-owned organizations, cooperative societies, associate ons, joint ventures, other organizations which acquire agricultural land for businesses and individual agriculturalists after forming the Vacant, Fallow and Virgin Lands Management Central Committee under the Notification 44/91 dated 13 th November, 1991. |

4.1.1.38.The Conservation of Biodiversity and Protected Areas Law, 1994

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| Chapter II Objectives Section 3 | The objectives of this Law are as follows: - (a) to implement the Government policy for wildlife protection; (b) to implement the Government policy for natural areas conservation; (c) to carry out in accordance with the International Conventions acceded by the State in respect of the protection and conservation of wildlife, ecosystems and migratory birds; (d) to protect endangered species of wildlife and their natural habitats; (e) to contribute for the development of research on natural science; (f) to protect wildlife by the establishment of zoological gardens and botanical gardens. |
| Chapter V Protected Wildlife Section 15 | The Director General shall, with the approval of the Minister: (a) determine and declare endangered species of wild animal which are to be protected according to the following categories: (i) completely protected species of wild animals; (ii) normally protected species of wild animals; |

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| | <p>(iii) seasonally protected species of wild animals;</p> <p>(b) determine and declare the endangered species of wild plants and their nature habitats thereof;</p> <p>(c) lay down and carry out measures for the preservation of protected wildlife species;</p> <p>(d) co-ordinate with the relevant department or organization if the wildlife which are to be determined for protection are under the administration of another Government department or Government organization.</p> |
| Chapter X Appeal Section 33 | A person dissatisfied with an administrative order passed by a Forest Officer may file an appeal to the Director General within 30 days from the date of such order. |
| Chapter XI Offences And Penalties Section 35 | <p>Whoever commits any of the following acts shall, on conviction be punished with imprisonment for a term which may extend to 3 years or with fine which may extend to kyats 10,000 or with both: -</p> <p>hunting without a licence;</p> <p>violation of any condition of the hunting licence;</p> <p>raising without permission, for commercial purpose normally protected wild animals and seasonally protected wild animals;</p> <p>causing water and air pollution, causing damage to a water-course or putting poison in the water in a natural area;</p> <p>possessing or disposing of pollutants or mineral pollutants in a natural area;</p> <p>establishing and operating a zoological garden or a botanical garden without a licence.</p> |
| Section 36 | <p>Whoever commits any of the following acts shall, on conviction be punished with imprisonment for a term which may extend to 5 years or with fine which may extend to kyats 30,000 or with both: -</p> <p>(a) killing, hunting or wounding a normally protected wild animal or seasonally protected wild animal without permission, possessing, selling, transporting or transferring such wild animal or any part thereof without permission;</p> <p>(b) extracting, collecting or destroying in any manner any kind of protected wild plants within the prescribed area without permission;</p> <p>(c) destroying ecosystem or any natural state in the natural area;</p> <p>(d) altering, removing, destroying or obliterating without permission. any boundary mark of a natural area or any boundary mark of a zoological garden or botanical garden administered by the Government or in which the Government has subscribed share capital.</p> |
| Section 37 | <p>Whoever commits any of the following acts shall, on conviction be punished with imprisonment for a term which may extend to 7 years or with fine which may extend to kyats 50,000 or with both: -</p> <p>(a) killing, hunting or wounding a completely protected wild animal without permission, possessing, selling, transporting or transferring such wild animal or any part thereof without permission;</p> <p>(b) exporting without the recommendation of the Director General a completely protected wild animal or a protected wild plant or any part thereof.</p> |
| Section 38 | <p>The provisions of section 36 sub-section (a) or section 37 sub-section (a) shall not apply to: -</p> <p>the possessing as a souvenir or wearing as a traditional custom of any part of normally protected wild animal or a seasonally protected wild animal;</p> <p>the possessing or wearing with a certificate of registration issued under section 27 subsection (b) of any part of a completely protected wild animal; the possessing, use, sale, transport or transfer of a drug prepared from a part of a protected wild animal.</p> |

4.2. AUTHORIZED INSTITUTIONS AND RECOMMENDATIONS

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

4.3. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUIDELINES

According to the Environmental Conservation Law, MOECF shall set standards of environmental qualities as agreed by the Union Government and the Environmental Conservation Committee to provide the basis for regulation and control of noise and vibration, air emissions and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health. In section 13 of NEQG, Air emissions, noise, odor, and liquid/effluent discharges will be sampled and measured at points of compliance as specified in the project EMP and ECC.

4.3.1. General Guidelines

4.3.1.1. Air Emission

Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that: (i) emissions do not result in concentrations that reach or exceed national ambient quality guidelines and standards, or in their absence current World Health Organization (WHO) Air Quality Guidelines¹ for the most common pollutants as summarized below; and (ii) emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e. not exceeding 25 percent of the applicable air quality standards) to allow additional, future sustainable development in the same air shed. Industry-specific guidelines summarized hereinafter shall be applied by all projects to ensure that air emissions conform to good industry practice. Reference should be made to WHO's Air Quality Guidelines for Europe² for air pollutants not included in the following Table 4-1.

Table 4-1 WHO's air quality guideline

| Parameter | Averaging Period | Guideline Value |
|---|------------------|-----------------|
| Nitrogen Dioxide | 1-year | 40 |
| | 1-hour | 200 |
| Ozone | 8-hour | 100 |
| Particulate Matter PM ₁₀ ^a | 1-year | 10 |
| | 24-hour | 50 |
| Particulate Matter PM _{2.5} ^b | 1-year | 10 |
| | 24-hour | 25 |
| Sulfur dioxide | 24-hour | 20 |
| | 10-minute | 500 |

^aParticulate matter 10 micrometers or less in diameter

^bParticulate matter 2.5 micrometers or less in diameter

4.3.1.2. Wastewater

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

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

Table 4-2 Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges

| Parameter | Unit | Guideline Values |
|---------------------------------|-------------------|------------------|
| 5-day Biochemical oxygen demand | mg/l | 50 |
| Ammonia | mg/l | 10 |
| Arsenic | mg/l | 0.1 |
| Cadmium | mg/l | 0.1 |
| Chemical oxygen demand | mg/l | 250 |
| Chlorine (total residual) | mg/l | 0.2 |
| Chromium (hexavalent) | mg/l | 0.1 |
| Chromium (total) | mg/l | 0.5 |
| Copper | mg/l | 0.5 |
| Cyanide (free) | mg/l | 0.1 |
| Cyanide (total) | mg/l | 1 |
| Fluoride | mg/l | 20 |
| Heavy metals (total) | mg/l | 10 |
| Iron | mg/l | 3.5 |
| Lead | mg/l | 0.1 |
| Mercury | mg/l | 0.01 |
| Nickel | mg/l | 0.5 |
| Oil and grease | mg/l | 10 |
| pH | S.U. ^a | 6-9 |
| Phenols | mg/l | 0.5 |
| Selenium | mg/l | 0.1 |
| Silver | mg/l | 0.5 |
| Sulphide | mg/l | 1 |
| Temperature increase | °C | <3 ^b |

| Parameter | Unit | Guideline Values |
|-------------------------|--------|------------------|
| Total coliform bacteria | 100 ml | 400 |
| Total phosphorus | mg/l | 2 |
| Total suspended solids | mg/l | 50 |
| Zinc | mg/l | 2 |

a Standard Unit

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

4.3.2. IFC EHS Guidelines

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

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

Table 4-3 Community health and safety contents

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

| Contents | Brief Description |
|-------------------------------------|---|
| | immunization programs for workers, and (3) providing treatment through standard case management in on-site or community health care facilities. |
| Emergency preparedness and Response | All projects should have an Emergency preparedness and Response Plan that is commensurate with the risks of the facility and that includes the following basic elements: (1) Administration (policy, purpose, distribution, definitions, etc.) (2) Organization of emergency areas (command centers, medical stations, etc. (3) Roles and responsibilities, (4) Communication systems, (5) Emergency response procedures, (6) Emergency resources, (7) Training and updating, (8) Checklists (role and action list and equipment checklist), and (9) Business Continuity and Contingency. |

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

4.4. COMMITMENT OF STAR SAPPHIRE HOTEL COMPANY LIMITED

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

- ✓ To set up welfare plan such as staff medical checkup, training program and public talk for getting knowledge, risk prevention, bonus and social security services.
- ✓ To promote Corporate Social Responsibility- (CSR) with 2% of the net profit for development of safe, economic and social environment
- ✓ To carry out fire safety assessment and ensure adequate and appropriate fire safety measures for employees

To carry out disposing wastes according to Dawei City Development Committee regulations, protect, and preserve the project environment from pollution of air, water and land by following laws and guidelines lay down by MONREC.

CHAPTER 5 SURROUNDING ENVIRONMENT

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



Figure 5-1 Surrounding Environment of Proposed Project

5.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

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

- Onsite Measurements and Analysis – Baseline parameters such as air quality and noise quality of the existing project site during the operation phase were measured onsite. For water quality parameters was also measured on site and sample raw water and waste were sent to respective laboratories for analysis. The analyzed results are mentioned in this chapter.
- Secondary data collection of proposed project site area – Socio economic condition, physical/biological environment, and weather data are collected from official township data of Dawei Township, Tanintharyi Region.

5.2. ENVIRONMENTAL BASELINE STUDY

The field observation for determining the environmental baseline of the proposed project area was undertaken during construction period. The survey team consists of the senior consultant and environmental quality team. The baseline data collected regarding the environmental condition of the project area was conducted in the following section. The environmental setting around the project site and monitoring location point is shown in Table 5-1.

Table 5-1 Environmental Setting around the Proposed Project Site

| Particulars | Detail |
|---|---|
| Coordinate Point | 14°04'38.88"N 98°12'35.14"E |
| Climate Conditions (Department of Meteorology and Hydrology - DMH) | Annual Mean Maximum Temperature: (38.12°C) Annual Mean Minimum Temperature: (15.5°C) Annual Rainfall: 203.92 inches |
| Wind Speed | 0.059 m/s |
| Present land use at the proposed site | Industrial Land Use Type |
| Nearest Road | Dawei – Myitta Road |
| Nearest Water bodies | Pauk Taing Chaung |
| Forest Area | No Exist |
| Wetlands | No Exist |
| Protective Area | No Exist |

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

5.2.1. Site survey and Environmental Monitoring

The baseline environmental quality at the Project Site and its immediate surroundings was established by wastewater, ambient air quality samples and noise level measurements at immediate surrounding areas. To determine the existing baseline environmental quality within the project site on 27th January 2022.

The overall conditions of air quality, water quality, soil quality, and noise levels are quoted from the project. The summary of the field survey for overall conditions is shown in Table 5-2.

Table 5-2 Summary of Environmental Survey

| Item | Parameter |
|-------------|--|
| Air quality | (1) Sulfur dioxide (SO ₂), (2) Carbon monoxide (CO), (3) Nitrogen dioxide (NO ₂), (4) PM ₁₀ and PM _{2.5} , (5) Ozone (O ₃), (6) Carbon Dioxide (CO ₂), |
| Noise level | Indoor sound level (LAeq) |
| Water | pH, Apparent Colour, Turbidity, TDS, Total solids, Chloride, Nitrate, Arsenic, Cadmium, Copper, Iron, Lead and Zinc |

5.2.2. Air Quality

To determine the existing baseline ambient air quality status within the operation 27th January 2022, 24-hours of working period air pollutants level, which include dust (PM₁₀ and PM_{2.5}) and gases (CO, CO₂, O₃, VOC, SO₂, NO₂) were measured using the Air Quality Monitor System (AQM-09) air monitoring station. To reveal the existing status of baseline air quality, the average ambient air qualities measured were compared with National Environmental Quality (Emission) Guideline and international ambient air quality standard (NAAQS, ACGIH) guidelines. The measurement location points are at latitude 14°04'37.45"N, longitude 98°12'36.68"E and 14°04'36.69"N, longitude 98°12'34.85"E.

| Monitor | Parameter | Methodology | Location | GPS location |
|----------|--|--------------------------------|-------------------------|--------------------------------|
| AQM - 09 | PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , CO, CO ₂ , | Automatically and Real Time | Hotel Area (Point 1) | 14°04'37.45"N 98°12'36.68"E |
| AQM - 09 | PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , CO, CO ₂ , | Automatically and Real Time | Hotel Area (Point 2) | 14°04'36.69"N 98°12'34.85"E |

Table 5-3 Observed Air Quality Results

| Parameters | Observed value (Point 1) | Observed value (Point 2) | Guideline value | Unit | Organization | Averaging period |
|-------------------|--------------------------|--------------------------|-----------------|-------------------|--------------|----------------------|
| PM _{2.5} | 19.78 | 18.62 | 10 25 | µg/m ³ | NEQG | 24 hrs 1 year |
| PM ₁₀ | 24.23 | 22.97 | 50 20 | µg/m ³ | NEQG | 24 hrs 1 year |
| SO ₂ | 422.5 | 333.2 | 500 20 | µg/m ³ | NEQG | 10 minutes 24 hrs |
| NO ₂ | 30.1 | 27.6 | 200 40 | µg/m ³ | NEQG | 1 hrs 1 year |
| O ₃ | 446.3 | 369.2 | 100 | ppm | NAAQS | 8 hrs maximum |
| CO | 0.3 | 0.3 | 10 | ppm | ACGIH | 24 hrs |
| CO ₂ | 1 | 1 | 400 | ppm | EPA | 24 hrs |

NEQ = National Environmental Quality (Emission) Guideline

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

ACGIH = the American Council of Governmental Industrial Hygienists recommends

5.2.2.1. Summary of air quality result

It was observed that the air quality of O₃ concentration level are slightly exceeds the guideline but particulate matter (PM_{2.5}) and (PM₁₀) are within the limit NEQG emission guideline. The other parameters (NO₂, SO₂, CO, CO₂) are within the guidelines. Air quality monitoring result is presented in **Appendix**.



Figure 5-2 Air Quality Monitoring

5.2.3. Noise

The Noise level was measured by using Digital Sound Level Meter for working hours on 27th January 2022. The measurement location point is situated at latitude 14°04'37.45"N and longitude 98°12'36.68"E. The average noise level in the project site area is presented in Table 5-4.

Table 5-4 Comparison of Noise level measurement

| Location | GPS location | Noise Result | NEQ Guideline |
|----------------------|-----------------------------|--------------|---------------|
| Hotel Area (Point 1) | 14°04'37.45"N 98°12'36.68"E | 54.27 | 70 dBA |
| Hotel Area (Point 2) | 14°04'36.69"N 98°12'34.85"E | 53.45 | 70 dBA |

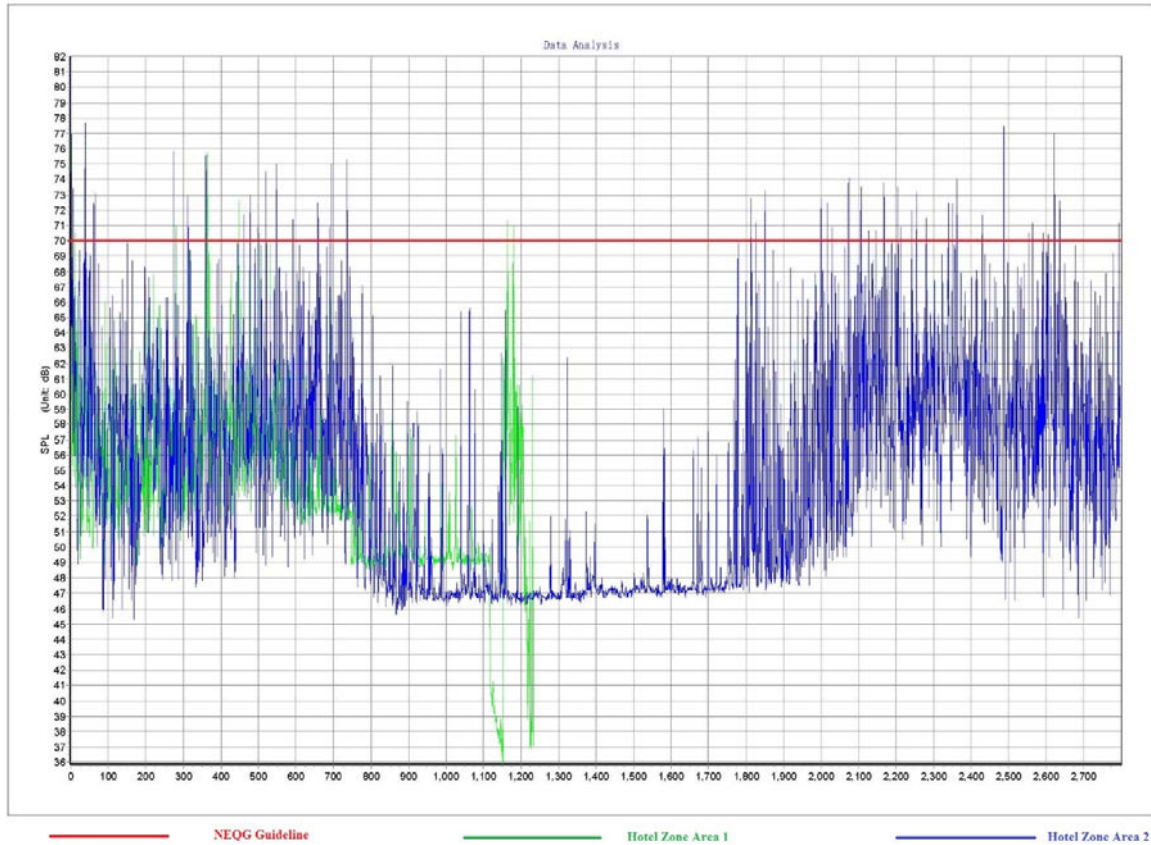


Figure 5-3 Sound Analysis Graph

5.2.3.1. Summary of Noise Result

However, according to the noise source monitoring at hotel area (inside the production sector) of noise level is exceeding the acceptable level of National Environmental Quality (Emission) Guideline. There is no building near the project area and the noise is temporary so that noise cannot affect to the surrounding.



Figure 5-4 Noise Level Measurement in Project

5.2.4. Water Quality

The baseline data on ground water quality was collected on 30th January 2022 with respect to WHO Guidelines for Wastewater Standard. The collected were tested at ALARM laboratory. Analyzed results of tube-well result compare with WHO Drinking water guideline.

Table 5-5 Coordinated point of Tube-Well Collection Point

| Sampling point | GPS Value | Description |
|----------------|--------------------------------|---|
| Wastewater | 14°04'39.48"N 98°12'33.57"E | wastewater: Domestic use of hotel site In site tu pH level testing in sampling point. The pH level is 7.9. |

5.2.4.1. Tube-well Water Result

The parameters such as pH, Turbidity, TDS, TSS, Total Solids, BOD, COD, Arsenic and Iron are measured. According to the analyzed result, all the parameters are under the guidelines. Laboratory analysis results can be seen in **(Appendix)** for wastewater.

Table 5-6 Tube-well Water Quality Laboratory Results

| No | Quality Parameters | Results | WHO Wastewater Guideline (Geneva-1993) | Remarks |
|----|--------------------|------------|--|---------|
| 1 | pH | 7.5 | 6.0 – 9.0 | Normal |
| 2 | Temperature | 24°C | ±3 | - |
| 3 | Colour | 58 | - | - |
| 4 | Turbidity | 6 | - | - |
| 5 | TDS | 151 mg/l | ≤2000 | Normal |
| 6 | TSS | 0 mg/l | ≤50 | Normal |
| 7 | Total Solids | 151 mg/l | - | - |
| 8 | Hardness | 27 mg/l | - | - |
| 9 | Dissolved Oxygen | 1.9 mg/l | - | - |
| 10 | BOD | 32 mg/l | ≤50 | Normal |
| 11 | COD | 88 mg/l | ≤250 | Normal |
| 12 | Total Chlorine | <0.02 mg/l | - | - |
| 13 | Arsenic | 0.025 mg/l | ≤0.1 | Normal |
| 14 | Iron | <0.1 mg/l | ≤3.5 | Normal |
| 15 | Alkalinity | 85 mg/l | - | - |



Figure 5-5 Photo of water sampling

5.2.5. Traffic Counting Survey

To establish baseline data on traffic conditions, Traffic Counting (TC) survey was carried out at two-day stations within the study area. (TC) 1 on 28 January 2021, from 2:00 PM to 4:00 PM weekday and (TC) 2 on 29 January, from 11:00 AM to 1:00 PM weekend on the Arzarni Road. The locations of traffic counting stations are indicated on a map in Figure 5-6.



Figure 5-6 Traffic Counting at the Arzarni Road

Traffic counting was done manually by three observers. The number and types of vehicles passing the station were recorded. The traffic counting data were used to calculate the V/C ratios.

Traffic condition is normally assessed in terms of road capacity relative to traffic volume, V/C ratio is commonly used for this purpose. This ratio is considered as a baseline traffic flow condition and will be further utilized to evaluate the consequences of the project's impact on local transportation.

The calculation of V/C ratios follows the following steps;

- 1) Convert the number of vehicles from observation to Passenger Car Unit (PCU) by using Passenger Car Equivalents (PCE) factors specified for each type of vehicles as indicated in Table 5-7. This is used as "Traffic Volume" or "V".
- 2) Select an applicable carrying capacity or "C" for the road. The capacity can be estimated following the highway capacity manual (HCM, 2000).
- 3) Ratio of V/C can be calculated using the following formula

$$\text{V/C ratio} = \frac{\text{Traffic Volume}}{\text{Carrying Capacity of Respective Road}}$$

V/C ratio can be used to compare with the values defined by the Division of Traffic Engineering (Thailand) as shown in for indication of present traffic condition.

Table 5-7 Passenger Car Equivalent Factor of each vehicle

| Types of Vehicles | Passenger Car Equivalents Factor (PCE) |
|--------------------------------|--|
| Passenger Car and Taxi | 1.00 |
| Light Bus | 1.00 |
| Medium truck (6 wheeled truck) | 2.10 |
| Heavy truck (10 wheeled truck) | 2.50 |
| Bicycle, Tricycle, Motorcycle | 0.33 |

Source: Paopong, 1997 and DOH of Thailand, 2011.

Table 5-8 Traffic Carrying Capacity and Highway Types

| Highway Types | Carrying Capacity of Traffic Volume (PCU/hr.) |
|---|---|
| 2 way road with more than 2 traffic lanes/multi-traffic lanes | 2,000 (per 1 traffic lane) |
| 2 way road with 2 traffic lanes | 2,000 (for both directions) |
| 2 way road with 3 traffic lanes | 4,000 (for both directions) |

Source: Paopong, 1997 and DOH of Thailand, 2011.

Note: The Thai and International standards are the same figure.

Table 5-9 Range of V/C Ratio for Traffic Condition Classification

| Range of V/C Ratio | Classification of Traffic Condition |
|--------------------|-------------------------------------|
| 0.88 – 1.00 | Severe traffic congestion |
| 0.67 – 0.88 | Heavy traffic congestion |
| 0.52 – 0.67 | Satisfactorily traffic flow |
| 0.36 – 0.52 | Good traffic flow |
| 0.20 – 0.36 | Very good traffic flow |

Source: Paopong, 1997

5.2.6. Result of the Study

The results of traffic counting are presented in Table 5-9. The data show traffic volume of 7 categories of vehicles as follows: (i) passenger car; (ii) light truck; (iii) six-wheeled truck; (iv) ten-wheeled truck; (v) heavy truck including trailer; (vi) bicycle and tricycle; and (vii) motorcycle. Pushcarts and motored tricycles (tuk tuks) were included in the passenger car category. The results of traffic counting condition are shown in Table 5-10.

Table 5-10 Existing traffic counting condition near project site

| Description | Traffic Station | | |
|---------------------------------|------------------------------------|--------------------------------------|---------|
| | Friday, 28 th (Weekday) | Saturday, 29 th (Weekend) | Average |
| Total Traffic volume (PCU/day) | 940 | 1025 | 982 |
| Carrying capacity (C)(PCU/hour) | 2000 | 2000 | 2000 |
| Average V/C ratio | 0.255 | 0.297 | 0.275 |
| Traffic condition | Very Good Traffic Flow | | |

Source: Traffic survey by Total Business Solution Co., Ltd. 24-26 March, 2017

5.3. PHYSICAL COMPONENT

5.3.1. Climate and Meteorology

Dawei Township lies close to the sea, and thus, has much rain. The annual rainfall ranges from 150 to over 200 inches. The rain starts around May 15. July is the month when rain falls heaviest. A certain month-ending day in July 1997, on which the rain poured for over 21 inches is a rainfall record by itself. The south-west monsoon withdraws from Myanmar with the Tanintharyi Division including Dawei as its last stronghold. Normally, it takes leave of Dawei after the first week of October. It is quite unusual Dawei, albeit on the coastal region along the Andaman Sea, has never been struck by storms. The reason is that there stands, in between Dawei and the Andaman Sea, the Taung-nyo mountain range. The dry season is from December to March. Even during this period, there are likelihood of some light rains. Strong north-eastern winds blow. The hottest months are late March, April, and early May. The highest temperatures for Dawei is 100 degrees F, the lowest being 65 degrees F. The coldest months are December and January.

The proposed project is located at Dawei Township, Tanintharyi Division. The climate condition of Dawei Township is the dry season. The highest temperature is 38.12°C and the lowest temperature is 15.5°C. The annual rainfall and temperature is presented in Table 5-11.

Table 5-11 Annual Rainfall and Temperature

| Year | Rainfall | | Temperature | |
|------|-------------|----------------|------------------------|------------------------|
| | Raining day | Rainfall value | Summer season Max (°C) | Winter season Min (°C) |
| 2017 | 155 | 187.58 | 37 | 15.5 |
| 2018 | 164 | 270.67 | 37.5 | 14.5 |
| 2019 | 149 | 230.39 | 38.5 | 15.0 |
| 2020 | 108 | 127.03 | 39.5 | 17.0 |

Source: Department of Administrative Dawei Townships, Regional data (www.gad.gov.mm.com)

5.3.2. Topography

Topography is one of the basic factors that influence the development of agriculture. Even in this age of highly advanced technology and machinery that can level off massive irregular land surfaces,

extremely marshy land and rugged terrain are not suitable and profitable for use as agricultural land. Dawei area has very limited low flatland suitable for cultivation of field crops. About 90 percent of the land is hilly and mountainous. According to data available, the cultivated land area was only 5.3 percent of the township area and there still remains much culturable waste land that represents 20.8 percent of the township's total area. Even if all the reclaimable culturable waste lands were to be reclaimed in the near future, the total arable area would represent only a little more than a quarter of the total area of the township and 73.9 percent would remain as uncultivable land.

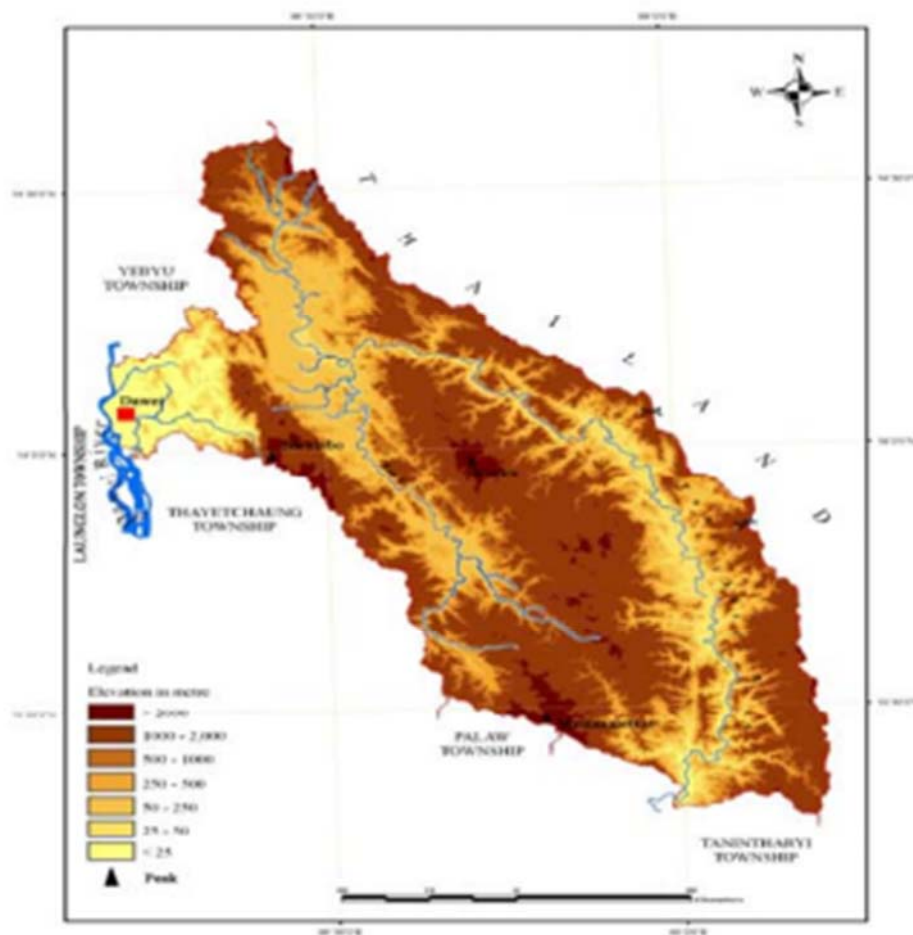


Figure 5-7 Topography of Dawei Township

5.3.3. Geology

The Tanintharyi region is in the southern part of the eastern most geotectonic belt of Myanmar as shown in Figure 5-8. During the Carboniferous Period – Upper Paleozoic Era, it was formed as the basement, composing of limestone, quartz, agglomerate and conglomerate. The stratigraphic units and thickness of Upper Carboniferous and Upper Paleozoic are shown in Table 5-12.

Table 5-12 Description stratigraphic units

| Age | Group | Stratigraphic Units | Thickness |
|---------------------|--------------|---------------------|-----------|
| Upper Carboniferous | Mergui Group | Alluvium | |
| | | Argillite | 152 m |

| Age | | Group | Stratigraphic Units | Thickness |
|-----------------|---------------|-------|--|-------------|
| Upper Paleozoic | | | Quartzose sandstone and greywacke | |
| | | | Pebbly sandstone and carbonaceous shale | 396 m |
| | | | Calcareous siltstone, pebbly mudstone with Felds panthic sandstone | 198 m |
| | Permian | | Moulmein Limestone | |
| | Carboniferous | | Mergui Group | Over 3000 m |

The name of Mergui Series was given by T. Oldham in 1856 to the unfossiliferous strata, composing of crushed shale, agglomerate, limestone and quartzite. The Mergui Series is Pre-Carboniferous in age and underlies the Moulmein Limestone. This Mergui Series should be equivalent to Kaeng Krachan Group in Thailand and is interpreted to be a turbidite deposit on the continental shelf.

The predominant rock type of the Mergui Series in Dawei district is argillite, fine grained rock of blue grey to black color at fresh, with obscure bedding and only incipient cleavage. The Carboniferous argillite composes of small crystals of andalusite and sillimanite, with finely divided graphite.

The stratigraphy of Carboniferous age of Mergui group includes sedimentary and metasedimentary rock unit. It consists of the great group of grits, shales, conglomerate, argillite, quartzite and greywacke intruded by tin-tungsten bearing granitoid rocks of late Mesozoic to Tertiary in age. The next major rock type is dark grey or almost black “greywacke” which has weathered to an ashy brown color. This rock lacks bedding and is composed of sub-angular fragments of fine-grained rock in matrix identical to the argillites.

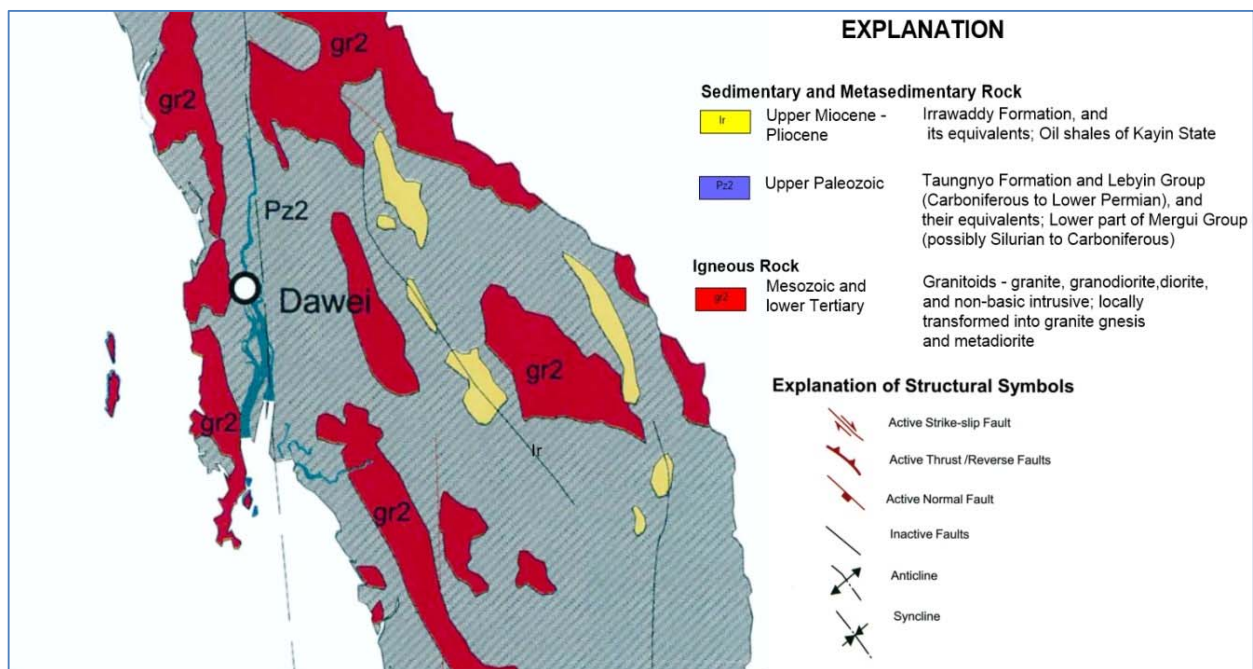


Figure 5-8 Geological Map of the project area

5.3.4. Hydrology

The project site is very close the Dawei River. The Dawei River is the primary river in this area, flowing from north to south at the foothill of Tanintharyi mountain ranges and enters into the Andaman Sea at the Tanintharyi Region Coast. There are many tributaries flow into the Dawei River from east and west. The natural drainage system of Dawei River is flowing through along the main slope of the terrain in the north-south direction. The hillside water flows along the minor slope in the direction perpendicular to the main slope from east west and west to east. These two sources of water are then drained to Dawei River. The hydrology condition of study area is shown in Figure 5-9.

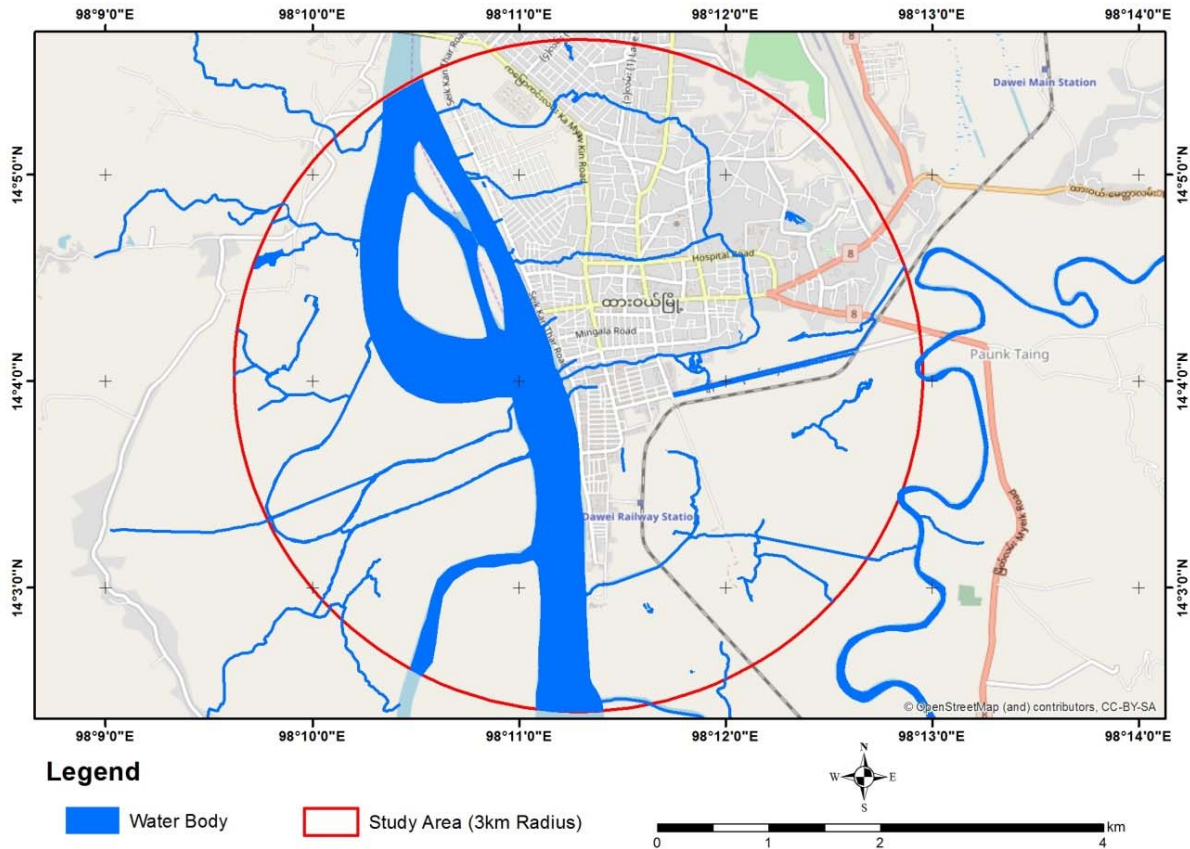


Figure 5-9 Hydrology condition of study area

5.3.5. Soil

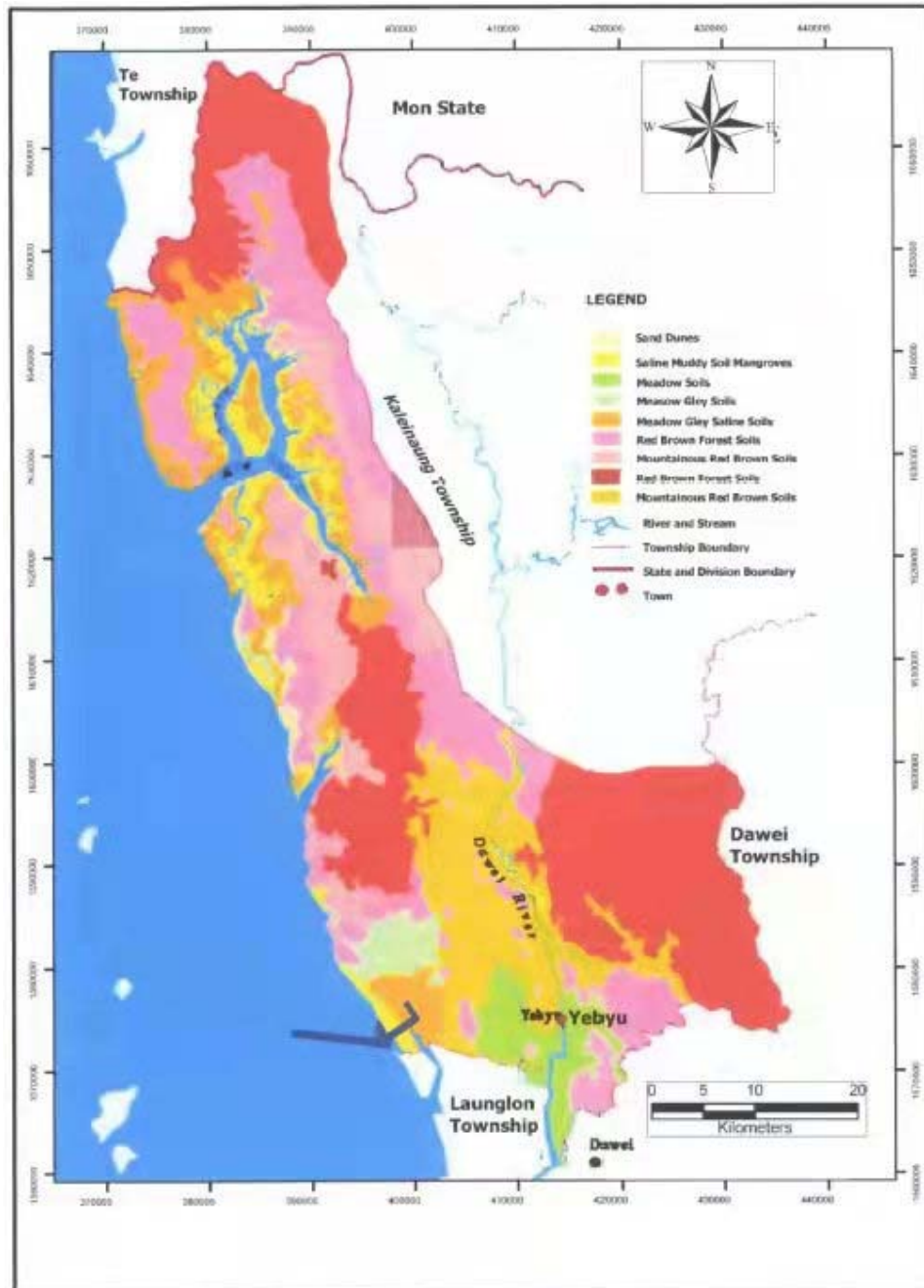
There are nine types of soils in Myanmar. Almost all of the proposed project area is occupied by the Saline Muddy Soil Mangroves and Meadow Gley Saline Soils. Their characteristics can be described as follow:

1) Saline Muddy Soil Mangroves

This soil has high salt and water, low oxygen and high hydrogen sulphide contents. It contains a high proportion of humus (Macnae, 1968). The best growth and development of mangroves takes place on alluvial and muddy soils which are generally formed by the deposition of water-borne soil particles. Mangrove soils are mostly anoxic except for the surface layer in which roots spread (Rag, 1987).

2) Meadow Gley Saline Soils

These soils occur in Ayeyarwady Delta and along the river bands of the Gulf of Motama and the marine flat lowlands, influenced by the tidal sea water which is always salty. Due to high salinity and whole year tidal sea water, the land can only be utilized for prawn breeding and mangrove firewood forests.



Source: Department of Geography, University of Yangon, Myanmar.

Figure 5-10 Soil Map of Tanintharyi Region

5.3.6. Land Use

The study area consists of the proposed projects and 3 km radius. The study area covers 3 km is characterized by four types of land use are as follow:

- (a). Urban and built-up area such as government institutes, education institutes, religious place, industrial, public park, and roads
- (b). Agricultural area such as paddy field and rubber farm
- (c). Water Body
- (d). Forest area

The land use types and the percent are shown in following Table 5-13.

Table 5-13 Land Use Information of Dawei Township

| No. | Land Items | Area (Acre) |
|-----|-------------------------|-------------|
| 1 | Urban and Built-Up Area | 973.38 |
| 2 | Agricultural Area | 1220.47 |
| 3 | Forest Area | 212.79 |
| 4 | Water Body | 400.36 |
| 5 | Vacant Area | 19.9 |
| 6 | Total | 2826.9 |
| 7 | 3k radius | 2826.07 ha |

5.4. BIOLOGICAL COMPONENT

The project area is near the Dawei Township. Therefore, the proposed project site is not located in or near a sensitive ecosystem in the Dawei Township. The proposed project activities are not affected to the changes of ecosystem in the Dawei Township.

5.5. SOCIO-ECONOMIC COMPONENT

5.5.1. Population

Star Sapphire Hotel is located across Dawei Township in Tanintharyi Region. In September 2020, there are about people 140,142 in Dawei Township as shown in Table 5-14.

Table 5-14 Population of Males and Females at Dawei Township (2020)

| Item | Older 18 year | | | Younger 18 year | | | Total | | |
|-------|---------------|---------|-------|-----------------|---------|-------|-------|---------|--------|
| | Males | Females | Total | Males | Females | Total | Males | Females | Total |
| Urban | 22953 | 27627 | 50580 | 11769 | 12060 | 23829 | 34722 | 39687 | 74409 |
| Rural | 18482 | 20537 | 39019 | 13483 | 13231 | 26714 | 31965 | 33768 | 65733 |
| Total | 41435 | 48164 | 89599 | 25252 | 25291 | 50543 | 66687 | 73455 | 140142 |

Source: Department of Administrative Dawei Townships, Regional data (www.gad.gov.mm.com)

5.5.2. Religion

The different kinds of religion present in Dawei Township are shown in Table 5-15. More than 90% of the people living in the townships is Buddhists.

Table 5-15 Religion in Dawei Township (2017)

| Township | Buddhist | Christian | Hindu | Muslim | other | Total |
|----------|----------|-----------|-------|--------|-------|--------|
| Dawei | 118948 | 17786 | 479 | 2428 | - | 140142 |

Source: Department of Administrative Dawei Townships, Regional data (www.gad.gov.mm.com)

5.5.3. Local Economy

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

Table 5-16 Numbers of Store and Shops in Dawei Township

| No | Type of Economy | Number |
|----|----------------------------------|--------|
| 1 | Store | 69 |
| 2 | Gold Shop | 106 |
| 3 | Electrical Store | 30 |
| 4 | Mobile Service/ Accessories Shop | 64 |
| 5 | Book Shop | 5 |
| 6 | Pharmacy | 60 |
| 7 | Retreatants | 50 |
| 8 | Tea Shop | 140 |
| 9 | Hardware Store | 80 |
| 10 | Agricultural Shop | 2 |
| 11 | Construction Materials Shop | 20 |
| 12 | Services | 3 |
| 13 | Rice Shop | 35 |
| 14 | Clothing Shop | 121 |
| 15 | Nirvana | 10 |
| | Total | 790 |

5.5.4. Public Infrastructure and Access

5.5.4.1. Communication and Transportation

Major transportation route in Dawei Township are railway, port, and car road as presented in Table 5-17.

Table 5-17 Transportation Route

| Categories | Township | | Distance |
|-------------------------------|----------|--------------|--------------------|
| | From | to | |
| Dawei to Myitta | Dawei | Myitta | 24 miles 3 phalong |
| Dawei to Kamyawkin Bridge St. | Dawei | Kamyawkin | 2 miles 5 phalong |
| Dawei to Launglone | Dawei | Launglone | 2 miles 2 phalong |
| Dawei Ring Road | - | - | 2 miles |
| Dawei to P lout | Dawei | Thayetchaung | 6 miles 6 phalong |

| Categories | Township | | Distance |
|----------------------|----------|------------|--------------------|
| | From | to | |
| Dawei to Ye Road | Dawei | Yebyu | 8 miles 2 phalong |
| Pagaye to Harmyingyi | Pagaye | Harmyingyi | 11 miles 6 phalong |

Source: Department of Administrative Dawei Townships, Regional data (www.gad.gov.mm.com)

5.5.4.2. Education

Location of major schools were situated in Dawei Township i.e. basic education primary school (B.E.P.S.), monastery teaching school, basic education middle school (B.E.M.S), basic education high school (B.E.H.S) and university, in the Dawei Township. The name and located village tract/ ward of schools are described in Table 5-18.

Table 5-18 List of Major School in Dawei Township

| No. | Name of School | Location |
|-----|----------------------------------|--------------------------|
| 1 | Technological University | Maung Mae Shawng Village |
| 2 | Computer University | Byaw Taw Wa Ward |
| 3 | Education Collage | Kyauk Maw Ward |
| 4 | Government Technical High School | Kyauk Maw Ward |
| 5 | Dawei Nursing School | Byaw Taw Wa Ward |
| 6 | B.E.H.S (1) | Pinne Taw Ward |
| 7 | B.E.H.S (2) | Bom Maw Ward |
| 8 | B.E.H.S (3) | Pinne Taw Ward |
| 9 | B.E.H.S (4) | Htein Thit Ward |
| 10 | B.E.H.S (5) | Thapye Chaung Village |
| 11 | B.E.H.S (6) | Aoe Lote Ward |
| 12 | B.E.H.S (Heinda) | Heinda Village |
| 13 | B.E.H.S (7) | Htein Thit Ward |
| 14 | B.E.H.S (Pagaye) | Pagaye Village |
| 15 | B.E.H.S (8) | Byaw Taw Wa Ward |
| 16 | B.E.H.S (Maung Mae Shawng) | Maung Mae Shawng Village |

Source: Department of Administrative Dawei Townships, Regional data (www.gad.gov.mm.com)

5.5.4.3. Health Status

The diseases of high prevalence reported in 2013 are Tuberculosis (TB), followed by Diarrhea, TB and snakebites. With reference to the Township Health Profile 2014 of Dawei Township, no accidental work injuries reported to the township hospital in 2013. The common diseases are shown in Table 5-19 and Table 5-20.

Table 5-19 Common Diseases in the Project Area, 2020

| Disease | Dawei Township | |
|-----------------------|----------------|-----------|
| | Morbidity | Mortality |
| Malaria (Per 100000P) | 342 | - |
| Dysentery | 1179 | - |

| | | |
|----------------------------|-----|---|
| Diarrhea (Per 100000P) | 150 | - |
| TB (Sputum+) (Per 100000P) | 181 | - |
| Hepatitis | 2 | - |

Table 5-20 Lists of Hospital in Dawei Township

| Hospital | Beds/Services | Responsible |
|----------------------|----------------------|--------------------|
| General Hospital | 200 | Government |
| Military Hospital | 100 | Government |
| Mediland Hospital | 100 | Private |
| Chan Myae Hospital | 25 | Private |
| Myint Mo Oo Hospital | 25 | Private |
| Thi Da Gu Hospital | 50 | Private |

5.6. CULTURAL AND VISUAL COMPONENTS

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

CHAPTER 6 IMPACT ASSESSMENT AND MITIGATION MEASURE

6.1. METHODOLOGY FOR THE ASSESSMENTS

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

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

Table 6-1 Impact Assessment Parameters and Its Scale

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

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

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

Impact Significance: Based on calculated significant point, impact significance is able to categorize as follows:

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

6.2. IMPACT IDENTIFICATIONS

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

6.2.1. Positive Impact

During the project implementation, local people can get job opportunities in administrative sectors, office works, transportation sectors, hotel service workers, F & B service, etc. Due to the implementation of the project, there will be employment opportunities especially for workers from the local community. Employees will also improve more in their professional knowledge and skills. The net effect of job creation is the improvement of the livelihoods and living standards of the beneficiaries and poverty reduction, development of local people's livelihood. Cause of the proposed project is located in Myanmar Tanintharyi Region, Dawei Township there may have business opportunities to local people.

6.2.2. Negative Impact

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

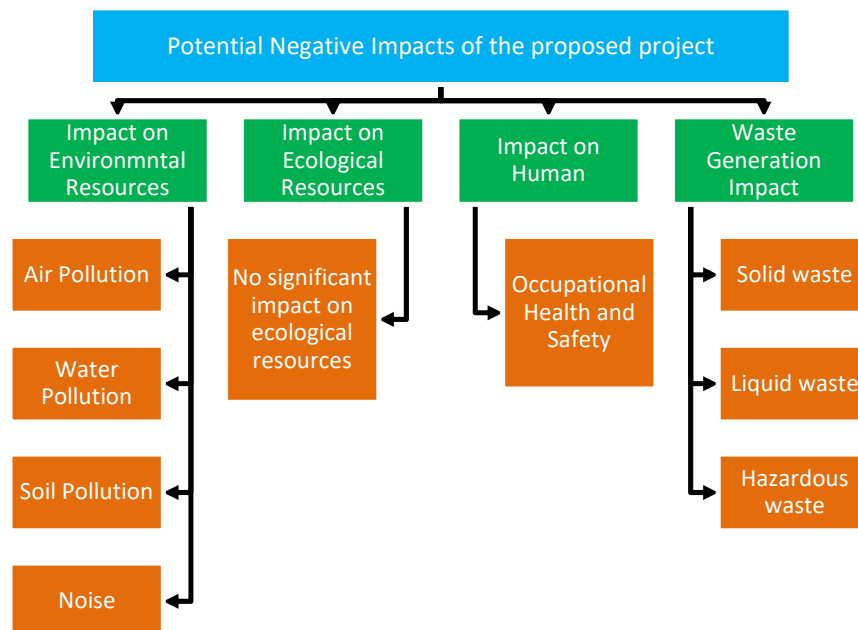


Figure 6-1 Potential Negative Impact Affect from Proposed Project

6.3. PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS

Construction phase: The project is already constructed during environmental assessment study and site visit. Therefore, this step is no longer considered as construction was completed during the project study period.

Operation phase, Impact assessment on environmental, social and economic aspect is based on analysis of the magnitudes of potential impacts and significant impacts of the project activities. Evaluation of significant of impact considered from significant point of evaluation as described in above Table 6-2.

Table 6-2 Significant Impacts and Mitigation Measure for Operation Phase

| Categories | Source of Impact | Significant of Potential Impacts | | | | | Impact Significance | Reason | Mitigation Measure |
|---|--|----------------------------------|---|---|---|----|------------------------|--|---|
| | | M | D | E | P | SP | | | |
| Impact on Environmental Resource | | | | | | | | | |
| Air | Gas and fuel from car and hotel kitchen | 2 | 4 | 1 | 3 | 21 | Low | Not Significant Impact | No Mitigation Measure |
| Noise and Vibration | Traffic flow and water pumping system | 2 | 4 | 1 | 3 | 21 | Low | The noise from running of water pumping system. | No Mitigation Measure |
| Impact on Ecological Resources | | | | | | | | | |
| Flora and fauna on terrestrial and aquatic life | Operation activities | 1 | 4 | 1 | 1 | 6 | Very Low Insignificant | Not Significant Impact on Ecological Resources | No Mitigation Measure |
| Impact on Human | | | | | | | | | |
| Fire Hazard | Fire Hazard from handling of fuel, generators and other. | 4 | 4 | 1 | 2 | 18 | Low | Fire hazard from bad electrical connections, improper fuel storage and smoking cigarettes. | Provide fire extinguishers or fire detector, sprinklers Maintain safe and clear exits. |
| Waste Generation Impact | | | | | | | | | |
| Solid Waste | Waste from visitors, kitchen wastes. | 4 | 4 | 1 | 5 | 45 | High | Hazardous waste such as used fluorescent lamps, | Separate the wastes depending on the types and recycle. |

| Categories | Source of Impact | Significant of Potential Impacts | | | | | Impact Significance | Reason | Mitigation Measure |
|--------------|--|----------------------------------|---|---|---|----|---------------------|--|---|
| | | M | D | E | P | SP | | | |
| | Non-hazardous and hazardous waste from the visitors and other activities. | | | | | | | LED bulbs and pesticide spray bottles etc., Garbage disposed by the hotel guests, employee, kitchen and visitors. | Define the dump area for demolished materials Final wastes should be disposed by using private service. |
| Liquid Waste | Untreated or inadequately treated sewage effluent and domestic wastewater which are high in organic content in the Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), sewage and kitchen oil spills | 3 | 4 | 2 | 4 | 36 | Moderate | Contamination of soil, surface water and ground water | Sewage treatment plant will be constructed onsite with design based on the peak water demand of per day. Recycling or water treatment system should be installed in swimming pool facilities Direct discharge to public drainage system or water source is prohibited |

6.4. IMPACT ON ENVIRONMENTAL RESOURCE

6.4.1. Air Quality

During the operation phase, there will be emission of dust from kitchen compounds. The measurement parameters consist of PM2.5, PM10, O3, CO, SO2, NO2. The measurement result will be compared with National Environmental Quality (Emission) Guidelines of Myanmar (NEQG) 2015. The result of ambient air quality measurements is summarized in Table 6-3 and can be described below:

| AQI Values | Level of Health Concern | Colour |
|------------|-------------------------------|--------|
| 0 to 50 | Good | Green |
| 51 to 100 | Moderate | Yellow |
| 101 to 150 | Unhealthy for sensitive group | Orange |
| 151 to 200 | Unhealthy | Red |
| 201 to 300 | Very Unhealthy | Purple |
| 301 to 500 | Hazardous | Maroon |

6.4.1.1. Computing the AQI

The air quality index is a piecewise linear function of the pollutant concentration. At the boundary between AQI categories, there is a discontinuous jump of one AQI unit. To convert from concentration to AQI this equation is used;

$$I = \frac{I_{high} - I_{low}}{C_{high} - C_{low}}(C - C_{low}) + I_{low}$$

Where;

- I = the (Air Quality) Index
- C = the pollutant concentration
- C_{high} = the concentration breakpoint that is ≥ C
- C_{low} = the concentration breakpoint that is ≤ C
- I_{high} = the Index breakpoint corresponding to C_{high}
- I_{low} = the index breakpoint corresponding to C_{low}

Table 6-3 Results of Ambient Quality Measurement

| Items | O ₃ | PM _{2.5} | PM ₁₀ | CO | SO ₂ | NO ₂ | AQI value | Level of health concern |
|--------------------------------------|--|--|--|--|--|--|--|-------------------------|
| | C _{low} - C _{high} (Avg) | C _{low} - C _{high} (Avg) | C _{low} - C _{high} (Avg) | C _{low} - C _{high} (Avg) | C _{low} - C _{high} (Avg) | C _{low} - C _{high} (Avg) | C _{low} - C _{high} (Avg) | |
| Monitoring Result (Point-1,2) (Hour) | 3 - 500 | 7 - 85 | 11 - 87 | 0.1 - 0.3 | 3 - 500 | 3 - 500 | 0 - 50 | Green |
| Air Quality Index | 22.435 | 8.17 | 8.59 | 25 | 15.82 | 22.43 | 8.17 - 25 | Good |

During the decommissioning phase, dust and particulate matters can emit from destroyed construction materials and this is assumed to be no significant impact at this phase.

6.4.2. Mitigation Measures for Air Quality Impact

No mitigation measure is needed in operation phase.

6.4.3. Impact of Noise

In the operation phase, it is noted that the section of the southern main road is presently being upgraded and it is unlikely that the additional traffic induced by Hotel Dawei will cause any undue congestion in the near term.

During the decommissioning phase, there will be noise impact due to demolishing activities of hotel buildings and other facilities. However, this impact will be short-term.

6.5. IMPACT ON ECOLOGICAL RESOURCE

The proposed project is located at Byaw Taw Wa Quarter, Dawei township. The nearest water body is Pauk Taing Chaung. There is **no significant impact on ecological resources**.

6.6. IMPACT ON HUMAN

6.6.1. Socio-economic Benefit

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

6.6.2. Mitigation Measures for Fire Hazard

In case of fire, all the guests and employees shall be evacuated systematically and as soon as possible. In cooperation with Dawei Township government fire stations, fire drills shall conduct regularly and 33 hotel employees shall be trained and organized as volunteer firefighting group. Fire alarm system, fire hoses, fire extinguishers, escape routes and emergency exits shall be inspected regularly and followed by proper maintenance as necessary.

No mitigation measure is needed in decommissioning phase.

6.7. IMPACT OF WASTE DISPOSAL

6.7.1. Solid Waste

In the operation phase, major solid wastes will be generated from daily room cleaning, kitchen, bar, restaurant, cafeteria, souvenir desk, reception/ office and staff quarters. Different kinds of solid wastes, such as tissue paper, food residues (organic wastes), glasses, tins, bottles, packing materials, stationeries, damaged/ expired devices or appliances and other miscellaneous will be generated every day. All these solid wastes will be collected separately in standard garbage bins based on their types and wet and dry status. Disposal of these collected wastes shall be done in accordance with Dawei

Township Municipality guidelines, in such a manner to avoid the creation of health risks and to maintain proper sanitary conditions in and around the hotel area.

6.7.2. Liquid Waste

During the operation phase, all resort guests and 63 employees will use toilet facilities, kitchen, bar, restaurant, cafeteria, swimming pool and washing machines on daily basis. Two different types of liquid wastes are expected, used water and sewer from toilets. All the used water which may include cleaning agents, disinfectants, and linen washing agents will be collected through separated channels or pipe lines into waste water treatment plant.

6.7.3. Mitigation Measures for Waste Disposal

Waste management in hotels is important as it is getting increasingly difficult to dispose of waste. Moreover, it makes good sense to the business. It is important to categorize the types and quantity of waste produced by every department of the hotel industry so that it is managed properly. For example, office waste (like papers, documents, brochures), household waste (jars, bottles, cardboard), organic waste (vegetable and fruit peels, flowers) can be segregated in color-coded bins for easy and hassle-free waste management. Recovery is the most important part of the process because some value of the material is retrieved through recycling. The last step is disposal which generally involves landfill and incineration of waste.

CHAPTER 7

ENVIRONMENTAL MANAGEMENT PLAN

7.1. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN

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

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

- Define details of who, what, where and when environmental management and mitigation measures are to be implemented
- Provide government and their stakeholders better on-site environmental management control over the life of operation
- Ensure that the commitments made as a part of the project's EMP are implemented throughout the project life
- Ensure the environmental management detail is performed and documented at all stages of the project
- Provide environmental management plans that minimize the environmental impact of the works and identify those responsible for its implementation.
- Define the monitoring program which assesses the implementation.

7.1.1. System of Environmental Management System

An EMS encourages an organization to continuously improve its environmental performance. The system follows a repeating cycle Figure 7-1. The organization first commits to an environmental policy, then uses its policy as a basis for establishing a plan, which sets objectives and targets for improving environmental performance. The next step is implementation. After that, the organization evaluates its environmental performance to see whether the objectives and targets are being met. If targets are not being met, corrective action is taken. The results of this evaluation are then reviewed by top management to see if the EMS is working. Management revisits the environmental policy and sets new targets in a revised plan. The company then implements the revised plan. The cycle repeats, and continuous improvement occurs.

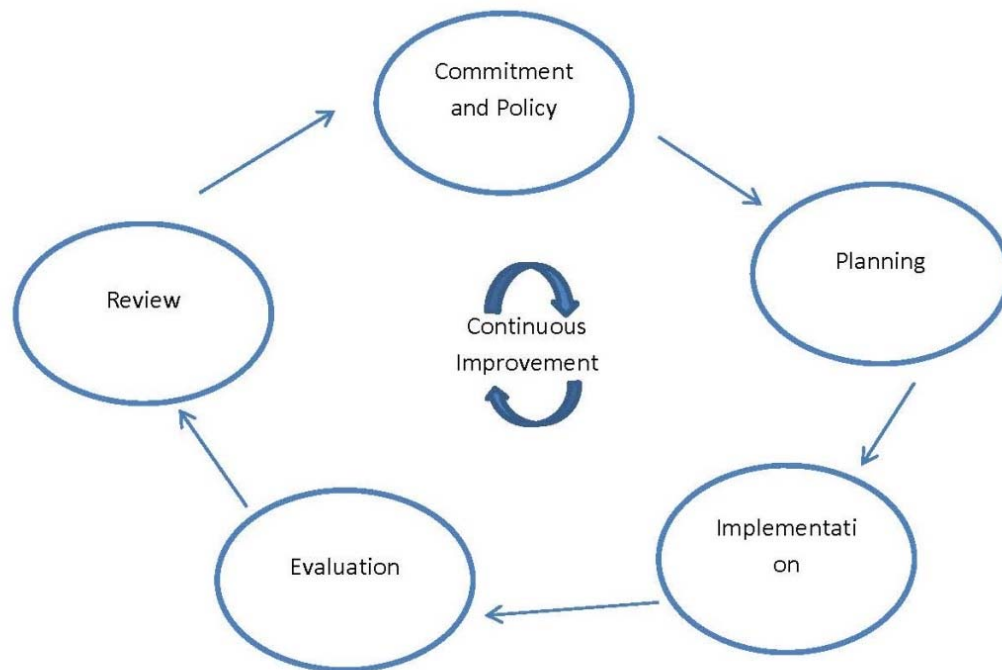


Figure 7-1 Environmental Management System

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

7.1.2. Institutional Requirement

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

7.2. RESPONSIBILITIES OF THE ENVIRONMENTAL MANAGEMENT PLAN

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

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

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

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

7.2.1. Structure and Responsibilities for the EMP Development and Implementation

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

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

7.3. ENVIRONMENTAL MANAGEMENT ACTION

The IEE for Hotel Dawei has been prepared to added potential issues based upon discussion with hotel management, workers, local community view, stakeholder consultation and the site visit. The IEE is additional to and compliments the hotel's safety management system. The following environmental impact issues which require environmental management plans based upon the potential impact activities of Hotel Dawei are as follows:

7.3.1. Air Pollution/ Dust Management Action

| | | | |
|----------------------------------|--|---|--|
| Objective | <ul style="list-style-type: none">➤ To minimize the adverse impact to air quality caused by stack gas emission from generator and also dust management generated from vehicular movement.➤ To comply with relevant government rules | | |
| Relevant Government Law and Rule | <ul style="list-style-type: none">➤ National Environmental Quality (Emission) Guideline 2015,➤ Motor Vehicles Act (2015) | | |
| Time Frame | <ul style="list-style-type: none">➤ Entire life spans of proposed project operation | | |
| Management Action | <ul style="list-style-type: none">➤ Must be plant around the proposed project to reduce carbon emission➤ Should be prohibited burning of waste material at the proposed project site➤ Must be control air pollution, the vehicles, generators and machineries have to check and maintain regularly.➤ The hotel should use chimney for generator through which the flue gas is emitted for reducing the impact of stack emission on environment. | | |
| Monitoring and Reporting | Frequency | Biannually | |
| | Monitoring Point | Indoor and Outdoor of proposed project | |
| | Parameters | PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , CO, CO ₂ | |
| Estimated Cost | 1,000,000 Kyats per year | | |
| Responsible Person | <ul style="list-style-type: none">▪ Head of maintenance: Total implementation of above of air pollution management plan▪ Production manager: Air quality in the production area is good enough▪ Manager: To hire organization/ independent third-party testing air quality▪ EHS officer: Monitor the hygiene of ambient air quality in surrounding of the hotel | | |

7.3.2. Noise Management Plan

| | |
|----------------------------------|---|
| Objective | ➤ To maintain low noise exposures, such that human health and well-being are protected. The specific objectives of noise management are to develop criteria for the maximum safe noise exposure levels, and to promote noise assessment and control as part of environmental health programmes. |
| Relevant Government Law and Rule | ➤ National Environmental Quality (Emission) Guideline 2015 |
| Time Frame | ➤ Throughout the project life |
| Management Action | <ul style="list-style-type: none"> ➤ Impose speed limit to track and vehicles at the transportation route. ➤ All the related personnel will be provided proper training about the relevant issues and ensure PPE wear during working in noisy area. |
| Monitoring and Reporting | Frequency Biannually |
| | Monitoring Point Two points in operation area (especially cutting and sewing) |
| | Parameters Sound Decibel |
| Estimated Cost | 500,000 Kyats per year |
| Responsible Person | HSE Manager or Environmental Management Team of Hotel Dawei |

7.3.3. Fire Management Plan

| | |
|----------------------------------|--|
| Objective | ➤ To ensure that fire control practices are implemented on site to minimise the risk of fire from site operations and bush fires |
| Relevant Government Law and Rule | ➤ Myanmar Fire Brigade Law 2015 |
| Time Frame | ➤ Entire life spans of proposed project operation |
| Management Action | <ul style="list-style-type: none"> ➤ Must be provide fire extinguishers, fire hose reels and fire hydrants on the walls of the hotel for fire emergency cases. ➤ Must be indicated the emergency exit and assembly point in public area. |

| | |
|--------------------------|--|
| | <ul style="list-style-type: none"> ➤ Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire frightening. ➤ The emergency fire alarms are installed at the hotel for alerting the workers in case of fire. ➤ The main entrances and route for emergency cases of the hotel must not be blocked with materials or machines for fire emergency cases. |
| Monitoring and Reporting | To check monthly Visual inspection, Firefighting equipment (fire extinguish, firefighting hose, portable fire pumps, fire hose reels, fire monitor and firefighting nozzles) |
| Estimated Cost | 1,200,000 Kyats per year |
| Responsible Person | HSE Manager, Operation Manager or Environmental Management Team of Hotel Dawei. |

7.3.4. Solid Waste Management Plan

| | |
|----------------------------------|---|
| Objective | <ul style="list-style-type: none"> ➤ To assess the activities involved for the proposed and determine the type, nature and estimated volumes of waste to be generated ➤ To identify any potential environmental impacts from the generation of waste at the site |
| Relevant Government Law and Rule | <ul style="list-style-type: none"> ➤ National Waste Management Strategy and Action Plan (Draft 2018) |
| Time Frame | <ul style="list-style-type: none"> ➤ Entire life spans of proposed project |
| Management Action | <ul style="list-style-type: none"> ➤ Must be provides separate garbage bins at each building. ➤ All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area ➤ Final wastes should be disposed by using Private service. |
| Monitoring and Reporting | <ul style="list-style-type: none"> ➤ Weekly waste has to be collected and handover to waste collector ➤ The inventory record of waste disposal will be maintained as proof for proper management as designed |
| Estimated Cost | 50,000 Kyats per month |
| Responsible Person | <p>Manager (HR)</p> <ul style="list-style-type: none"> ▪ Responsible for overall site cleanliness and waste management ▪ Regular waste collection to minimize excessive waste storage |

7.3.5. Liquid Waste Management Plan (Wastewater)

| | |
|----------------------------------|---|
| Objective | ➤ To implementation plan for the management of liquid waste from collection, through treatment and resource recovery, to residual disposal |
| Relevant Government Law and Rule | ➤ National Environmental Quality (Emission) Guidelines (2015), Underground Water Act |
| Time Frame | ➤ Entire life spans of proposed project |
| Management Action | ➤ Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations. |
| Monitoring and Reporting | Frequency Biannually |
| | Parameters pH, Temperature, Colour, Turbidity, TDS, TSS, Total Solids, Hardness, Dissolved Oxygen, BOD, COD, Total Chlorine, Arsenic, Iron, Alkalinity |
| | Proper maintenance of drainage and sewerage system will be conducted periodically |
| Estimated Cost | 500,000 Kyats per year |
| Responsible Person | Manager: To hire organization/ Independent third-party testing wastewater quality |
| | EHS officer: Monitor the condition of hotel's drainage and sewage system |

7.4. ENVIRONMENTAL MONITORING SCHEDULE AND REPORTING

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

Table 7-1 Environmental Monitoring Schedule for Hotel Dawei

| Issues | Parameter | Frequency | Area to be monitored | Monitoring Budgets Plan | Responsible Organization |
|------------------------------|--|---|---|-------------------------|---|
| Operation Phase | | | | | |
| Common | Monitoring of mitigation measures (Section 8.3) | Yearly (3 years after operation) | The project | 300000 Kyats | Star Sapphire Hotel Company Limited and Third Party |
| Air quality | SO ₂ , NO ₂ , CO, CO ₂ , O ₃ , PM _{2.5} , PM ₁₀ | Biannually monitoring and reporting to ECD (First 3 years after operation) | One point in the hotel area | 500000 Kyats | Star Sapphire Hotel Company Limited and Third Party |
| Noise | Noise level in decibel (dBA) | Biannually monitoring and reporting to ECD (First 3 years after operation) | One point in the hotel area | 150000 Kyats | Star Sapphire Hotel Company Limited and Third Party |
| Water | BOD, COD, Tubridy, pH, Color, Total Suspended Solids, TDS, Dissolved Oxygen, Total Chlorine, Arsenic, Alkalinity | Biannually monitoring and reporting to ECD (First 3 years after operation) | Discharge point | 250000 Kyats | Star Sapphire Hotel Company Limited and Third Party |
| Waste Generation | Solid waste and Liquid waste | weekly | Recycle house and waste house and at the hotel area | 10000 Kyats | Star Sapphire Hotel Company Limited and Third Party |
| Fire Hazardous | Visual inspection, firefighting equipment | Monthly | At the hotel area | 100000 Kyats | Star Sapphire Hotel Company Limited and Third Party |
| Decommissioning Phase | | | | | |
| Air quality | SO ₂ , NO ₂ , CO, CO ₂ , PM _{2.5} , PM ₁₀ | One time during this phase | One point in the production area | 500000 Kyats | Land Owner |

| Issues | Parameter | Frequency | Area to be monitored | Monitoring Budgets Plan | Responsible Organization |
|------------------------|------------------------------|----------------------------|--------------------------------|-------------------------|--------------------------|
| Operation Phase | | | | | |
| Noise | Noise level in decibel (dBA) | One time during this phase | One points in demolishing area | 150000 Kyats | Land Owner |
| Rehabilitation | Recovering and Revegetation | | All decommissioning area | 300000 Kyats | Land Owner |

7.5. CAPACITY BUILDING AND TRAINING PLAN

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

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

7.5.1. Assignment of responsibilities

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

7.5.2. Emergency procedures

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




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




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

7.5.3. Training for Emergencies

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

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

-  Hazard recognition and prevention (fire, explosion, etc.)
-  Proper use of fire extinguishers
-  Emergency reporting procedures

-  Preventive maintenance
-  Hazardous materials spill response
-  First Aid

7.5.4. Fire Prevention and Protection

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

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

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

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

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

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

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

7.5.5. Fire Protection Equipment

1. Explosion Suppression Systems: Explosion suppression systems should be used in unusually hazardous areas such as elevator legs, boots and head, or in areas such as bins, distributors and tanks.
2. Portable Fire Extinguishers: All buildings within a facility must have fully charged and operable portable fire extinguishers. If employees are expected to use portable extinguishers or other firefighting equipment against incipient fires, they must be trained to use the equipment. Training must include the following:
 - Correct type of extinguisher to use on different classes of fire
 - Proper techniques for use of the equipment to extinguish a fire
3. Standpipes and Hoses: All areas within a facility that are above 75 feet from ground level and in which combustible materials other than grain are stored should have wet or dry standpipes and hoses installed.
4. Automatic Sprinkler Systems: Automatic sprinkler systems are recommended in areas containing combustible materials.
5. Fire Hydrants: All grain and feed mill facilities should have adequate public or private fire hydrants on site. Each fire hydrant should have an adequate water supply.

7.5.6. Fire Safety and Evacuation Plan

Fire Evacuation plans should include the following information

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

Fire Safety Plans should include the following information:

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

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

Table 7-2 American National Fire Fighting Association (NFFA) Standards

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

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

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

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

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

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

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

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

7.5.7. Site Fire Control

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

7.5.8. Employee Information and Training

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

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

7.5.9. Health and Safety Training Plan for Worker

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

Table 7-3 Training Plan Used in Hotel Dawei

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

7.6. Public Disclosure Process

Informing the local public about project and answering public concerns is the effective way to achieve the information purpose, to seek views of the participation and partnership purpose. Although this is the effective way, the public consultation cannot be held depending on Covid-19 cases and the political situation in country.

During the preparation of this report, the fourth wave of Covid-19 disease becomes serious in Yangon. The Ministry of Health and Support declared to avoid gathering more than 5 people to avoid close contact and to prevent spreading of disease. Moreover, the government declared the “Stay Home” announcement and limited the travelling one township to another township to control the spreading of diseases. Moreover, the political situation changes are affecting to carry out this process.

Depending on the current conditions, Myanwei Environmental Solution Company Limited; third party, declared the information of the project on their social media page in 7th April, 2022. The company warmly welcomes the suggestion, complain and comments from the public, organization and stakeholder through via mailing, comment, telephoning and messengers.



Figure 7-2 Photo of Project Announcement on social media

7.7. GRIEVANCE REDRESS MECHANISM (GRM)

People who live near the project affected area or stakeholders can complain about the problems and impacts that they suffer; they can complain through Grievance Committee, which includes the responsible persons of Hotel Dawei representative from Byaw Taw Wa Village and General Administration Department of Dawei. Small issues will be solved at the Grievance Committee stage and other unsolved problems will be submitted to higher responsible authorities and finally the responsible person decided by the court in legal terms. The following diagram shows steps of Grievance Redress Mechanism of Proposed Project.

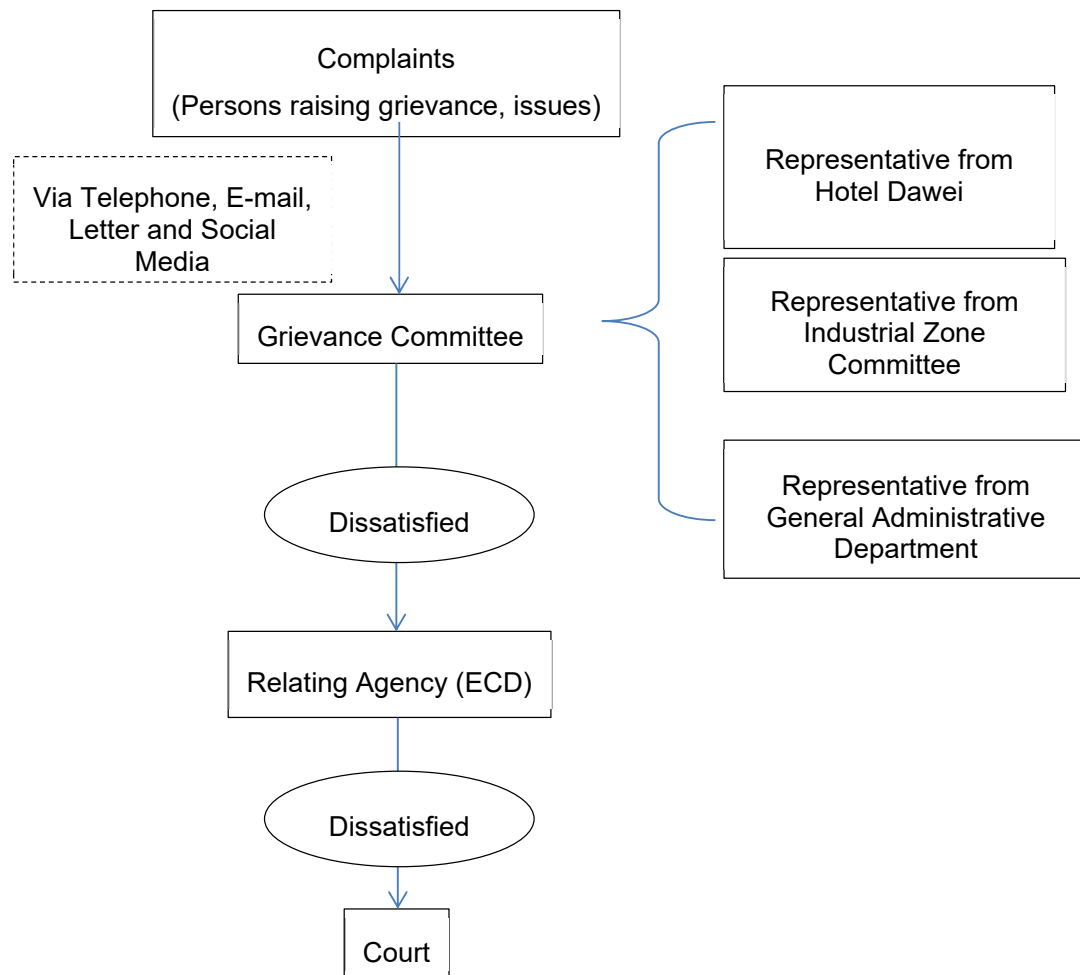


Figure 7-3 Grievance Redress Mechanism flow diagram

7.8. CORPORATE SOCIAL RESPONSIBILITY (CSR) PLAN

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

Star Sapphire Hotel Company Limited will contribute 2% of Net Profit to social welfare activities, road repairing, other donation and training for staff relating with Hotel service, F & B service programs.

CHAPTER 8

CONCLUSION AND RECOMMENDATION

8.1. CONCLUSION

IEE has been prepared for Star Sapphire Hotel Company Limited (Hotel Dawei) that is located at No. (7/A), Byaw Taw Wa Quarter, Dawei Township, Tanintharyi Region, Myanmar. The main objective of the study is focused specially on the required environmental management measures or creating environmentally friendly workplace. An IEE has been carried out for the hotel according to the requirement of the proponent as it has been made for hotel.

The hotel will have a plan to put first aid kit and medical box for the employees for who suffer injuries and accident. Toilets will be put by separating gender inside the hotel employees.

Thus, the hotel management can take proper mitigation steps against adverse environmental impacts by following this IEE.

However, all necessary implementation measures to mitigate adverse environmental, health and safety impacts have already been taken to meet National Environmental Quality (Emission) Guideline (2015). On the other, the hotel has positive impacts in terms of environmental in the operation phase an outline of IEE has been given in the present report to mitigate/enhance the impacts, which occurs during operation phase of the hotel.

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

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

8.2. RECOMMENDATION

This is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the hotel
- Solid wastes and liquid wastes need to dispose according to grid rules and regulation
- Workers should be provided proper training and it should be ensured that workers use PPE during hotel area
- Daily, monthly and annual action plan shall be formulated based on this EMP (Chapter 7) and practiced at operation level

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

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

APPENDIX A

MIC Endorsement of Proposed Project



မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်
ခွင့်ပြုမိန့်



ခွင့်ပြုမိန့် အမှတ်၊ မနသ- _____ ၉၄၆ / ၂၀၁၃ ။ ၂၀၁၃ ခုနှစ်၊ ဒီဇင်ဘာ လ ၁၃ ရက်

မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်သည် မြန်မာနိုင်ငံသားများ ရင်းနှီးမြှုပ်နှံမှု ဥပဒေပုဒ်မ ၁၂(ခ) အရ ဤခွင့်ပြုမိန့်ကို ထုတ်ပေးလိုက်သည်။

- (က) ရင်းနှီးမြှုပ်နှံသူ၏အမည် ဒေါက်တာထွန်းမင်းလတ်
- (ခ) အဘ အမည် ဦးခင်မောင်လတ်
- (ဂ) နိုင်ငံသား/ အမျိုးသားမှတ်ပုံတင်အမှတ် ၁၂/ဒဂန(နိုင်)၈၈၄၁၄
- (ဃ) နေရပ်လိပ်စာ အမှတ်(၄၅)၊ ဧယျသုခလမ်း၊ (၅၄)ရပ်ကွက်၊ သုဝဏ္ဏသမီးကျွန်းမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး၊
- (င) ဖွဲ့စည်းထားသည့် သို့မဟုတ် ဖွဲ့စည်းမည့် အဖွဲ့အစည်း Star Sapphire Hotel Co., Ltd.
- (စ) ရင်းနှီးမြှုပ်နှံမှုပြုလုပ်မည့် လုပ်ငန်းအမျိုးအစား B.O.T စနစ်ဖြင့် ဟိုတယ်ဝန်ဆောင်မှု လုပ်ငန်း
- (ဆ) ရင်းနှီးမြှုပ်နှံမှုပြုလုပ်သည့်အရပ်ဒေသ(များ) တနင်္သာရီတိုင်းဒေသကြီး၊ လားဝယ်မြို့၊ ဗျောတောစရပ်ကွက်၊ SN မြို့ကွက်သစ်၊ ဦးပိုင်အမှတ် (ရ-က)၊ မြေဧရိယာ(၃.၈၉၉) ဧက
- (ဇ) မတည်ငွေရင်းပမာဏ(ကျပ်) ၉၈၈၈.၄၈ (သန်း) (အမေရိကန်ဒေါ်လာ(၆.၄၉) သန်း အပါအဝင် စုစုပေါင်းကျပ် ကိုးထောင်ရှစ်ရာရှစ်ဆယ့်ရှစ်သန်းနှင့် လေးသိန်းရှစ်သောင်း တိတိ)

၃၈၄
မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်
ဦးကျော်

APPENDIX B

Hotel Registration License Card



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
ဒေသဆိုင်ရာခရီးသွားလုပ်ငန်းကော်မတီ
တနင်္သာရီတိုင်းဒေသကြီး





ဟိုတယ်လုပ်ငန်းလိုင်စင်

လိုင်စင်အမှတ် H(TNI) 0027 (သက်တမ်းတိုး)
ထုတ်ပေးသည့်နေ့စွဲ ၂၀ - ၁၁ - ၂၀၁၈

၁။ တနင်္သာရီတိုင်းဒေသကြီး ထားဝယ် မြို့/မြို့နယ်ရှိ ဦး/ခေါ်/အဖွဲ့အစည်း
ခေါက်တာထွန်းမင်းလက် (နိုင်ငံသားစိစစ်ရေးကတ်အမှတ်/အမျိုးသားမှတ်ပုံတင်အမှတ်/
အဖွဲ့အစည်းမှတ်ပုံတင်အမှတ် ၁၂/ဒဂန(နိုင်) ၀၀၄၁၁၄) ကို အောက်ပါလုပ်ငန်းဆောင်ရွက်နိုင်ရန်
အတွက် လုပ်ငန်းလိုင်စင် ခွင့်ပြုလိုက်သည် -

| | | | |
|-----|-------------------------------|---|-------------|
| (က) | လုပ်ငန်းအမည် ----- | Hotel Dawei | (၃၄) ခန်း |
| (ခ) | လုပ်ငန်းအမျိုးအစား ----- | ဟိုတယ်လုပ်ငန်း | |
| (ဂ) | လုပ်ငန်းဌာန/နေရပ်လိပ်စာ ----- | ဦးပိုင်အမှတ်(၇-က)၊ အာဇာနည်လမ်း၊ SN(မြို့)ကွက်သစ်၊ ဗျောတောဝရပ်၊ ထားဝယ်မြို့နယ်၊ တနင်္သာရီတိုင်းဒေသကြီး။ | |
| (ဃ) | လုပ်ငန်းရုံးခွဲလိပ်စာ ----- | | |

၂။ လိုင်စင်သက်တမ်းကုန်ဆုံးသည့်နေ့ ----- ၂၀ - ၁၁ - ၂၀၂၁

၃။ လုပ်ငန်းလိုင်စင်ရရှိသူသည် ပူးတွဲပါစည်းကမ်းချက်များကို လိုက်နာရမည်။




ဥက္ကဋ္ဌ (တိုယ်စား)
(လူထွေး၊ တိုင်းဒေသကြီးဝန်ကြီး)

ဟိုတယ်လုပ်ငန်းလိုင်စင်ဆိုင်ရာ စည်းကမ်းချက်များ

- ၁။ လုပ်ငန်းလိုင်စင်ကို ဟိုတယ်၏ ဧည့်ကြိုကောင်တာ သို့မဟုတ် ထင်ရှားမြင်သာသောနေရာတွင် ချိတ်ဆွဲတပ်ဆင်ထားရမည်။
- ၂။ ဤလိုင်စင်ဖြင့် ခွင့်ပြုသော လုပ်ငန်းကိုသာ လုပ်ကိုင်ရမည်။
- ၃။ လိုင်စင်တွင် ဖော်ပြထားသည့် အမည်မှတစ်ပါး အခြားအမည်ဖြင့် လုပ်ကိုင်ဆောင်ရွက်ခြင်း မပြုရ။
- ၄။ လိုင်စင်ကို အခြားသူအား လွှဲပြောင်းပေးခြင်း၊ ရောင်းချခြင်း၊ အပ်နှံခြင်း မပြုရ။
- ၅။ ပျက်ပြယ်သောလိုင်စင်ဖြင့် လုပ်ငန်းကို ဆက်လက်လုပ်ကိုင်ဆောင်ရွက်ခြင်း မပြုရ။
- ၆။ ဟိုတယ်ပရိဝုဏ်အတွင်း ဥပဒေနှင့်အညီ လုပ်ကိုင်ခွင့်ပြုထားသော လုပ်ငန်းများကိုသာ ဆောင်ရွက်ရမည်။
- ၇။ ဟိုတယ်ပရိဝုဏ်အတွင်း မူးယစ်ဆေးဝါးရောင်းဝယ်ခြင်း၊ သုံးစွဲခြင်းနှင့် အခြားတည်ဆဲဥပဒေများ နှင့် ငြိစွန်းသည့် ကိစ္စရပ်များပြုလုပ်ခြင်း မပြုရ။
- ၈။ ဟိုတယ်ပရိဝုဏ်အတွင်း ပြည့်တန်ဆာလုပ်ငန်းနှင့် ပတ်သက်သည့် လုပ်ငန်းရပ်အား ပြုလုပ်ခြင်း၊ အားပေးကူညီခြင်း မပြုရ။
- ၉။ နိုင်ငံခြားငွေကြေးများကို ကိုင်ဆောင်ခြင်း၊ ရောင်းဝယ်ခြင်းများအား တည်ဆဲဥပဒေနှင့်အညီ ဆောင်ရွက်ရမည်။
- ၁၀။ နိုင်ငံတော်၏ တည်ဆဲဥပဒေများကို ဖောက်ဖျက်ကျူးလွန်ခြင်း၊ ဖောက်ဖျက်ကျူးလွန်ရန်အားပေး ကူညီခြင်း မပြုရ။
- ၁၁။ မြန်မာနိုင်ငံ ခရီးသွားလုပ်ငန်းဥပဒေနှင့် နည်းဥပဒေများအရ ဖွဲ့စည်းတာဝန်ပေးထားသော စစ်ဆေးရေးအဖွဲ့၏ စစ်ဆေးခြင်းကို ခွင့်ပြုရမည်။
- ၁၂။ လုပ်ငန်းလိုင်စင်နှင့် ဟိုတယ် ဝိုင်ဆိုင်မှုအတွက် အငြင်းပွားမှုများ ဖြစ်ပွားပါက သက်ဆိုင်ရာ တရားရုံးဆုံးဖြတ်ချက်နှင့်အညီ အရေးယူဆောင်ရွက်မှုကို လိုက်နာရမည်။

APPENDIX C

Consultant Registration Certificate



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



CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10068 Date 24 MAY 2019

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

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

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



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

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

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



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

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

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

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



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



CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

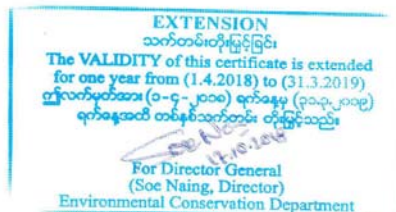
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10048 Date

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

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

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



Handwritten signature in purple ink.

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

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Geology and Soil

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

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

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

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

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

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

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)

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

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

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁.၁၂.၂၀၁၉) ရက်နေ့အထိ (၉)လ သက်တမ်းတိုးမြှင့်သည်။

Soe Naing
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 D

Environmental Quality Result

Noise result



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

| | |
|---------------------|---|
| Project Name: | STAR SAPPHIRE COMPANY LIMITED. |
| Project Location: | No.(7/A), Arzarni Road, Byaw Taw Wa Quarter, Dawei Township, Tanintharyi Region, Myanmar. |
| Sampling Date: | 27- 29 January, 2022 |
| Sampling Time: | 24 hours |
| Sampling Condition: | - |
| Sampling By: | Myanwei Environmental Solution Company Limited. |

| Instrument | Type | Sampling Rate | Point 1 | Point 2 |
|---------------------------|-------------|---------------|--------------------------------|--------------------------------|
| Digital Sound Level Meter | GM 1356 USB | 30 -130 dB | 14°04'37.45"N 98°12'36.68"E | 14°04'36.69"N 98°12'34.85"E |

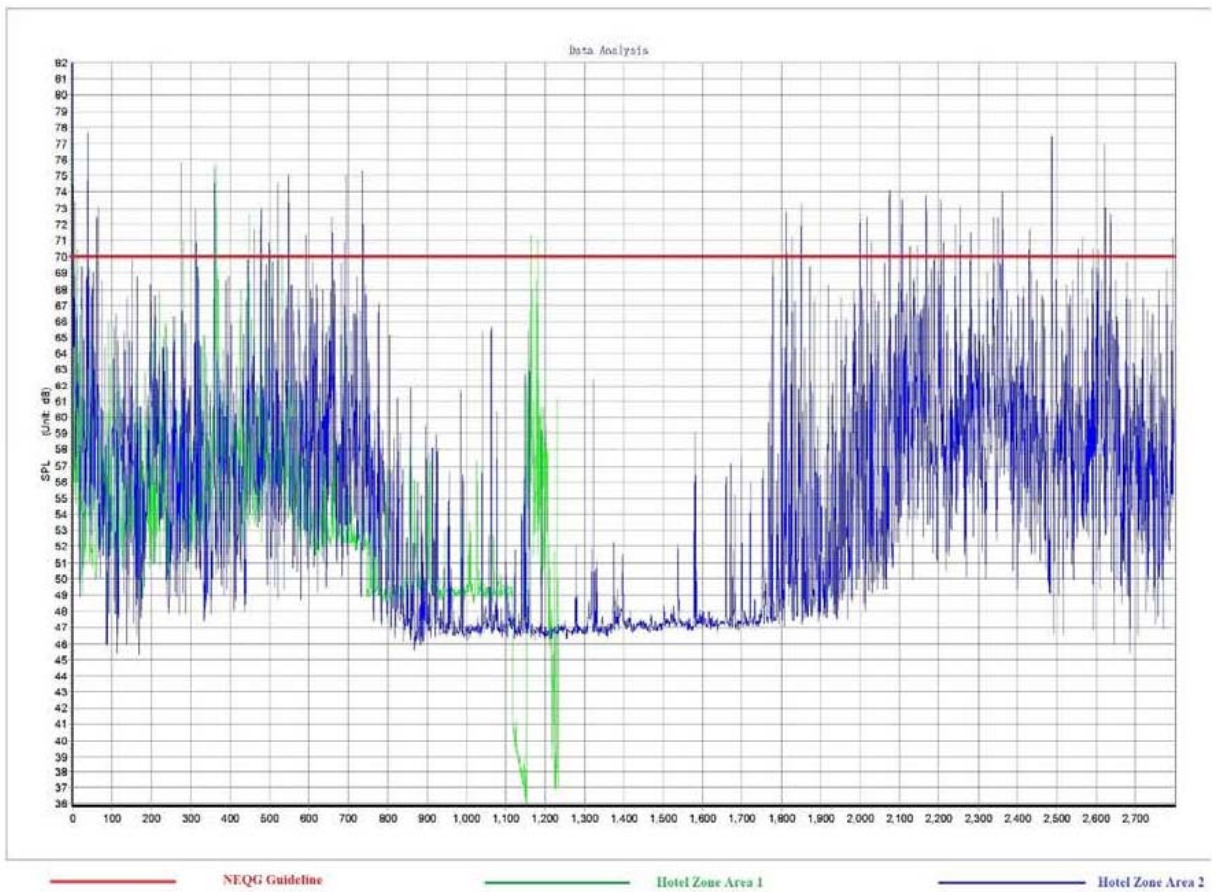
| No | Place | Unit | Result | Standard | Remark |
|----|--------------------|------|--------|----------|--------|
| 1 | Hotel Area Point 1 | dBA | 54.27 | 70 dBA | Normal |
| 2 | Hotel Area Point 2 | dBA | 53.45 | 70 dBA | Normal |

National Environmental Quality (Emission) Guideline

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

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

Noise Graph



Air Quality Result



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

| | |
|---------------------|--|
| Project Name: | STAR SAPPHIRE COMPANY LIMITED. |
| Project Location: | No. (7/A), Arzarni Road, Byaw Taw Wa Quarter, Dawei Township, Tanintharyi Region, Myanmar. |
| Sampling Date: | 27-29 January, 2022 |
| Sampling Time: | 24 hours |
| Sampling Condition: | - |
| Sampling By: | Myanwei Environmental Solution Company Limited. |

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

Monitoring Result

| No. | Parameter | Unit | Result 1 | Result 2 | Standard | Remark |
|-----|-------------------|-------------------|----------|----------|----------|-----------------|
| 1 | PM _{2.5} | µg/m ³ | 19.78 | 18.62 | 25 | Normal |
| 2 | PM ₁₀ | µg/m ³ | 24.23 | 22.97 | 50 | Normal |
| 3 | O ₃ | µg/m ³ | 446.3 | 369.2 | 100 | Slightly exceed |
| 4 | NO ₂ | µg/m ³ | 30.1 | 27.6 | 200 | Good |
| 5 | SO ₂ | µg/m ³ | 422.5 | 333.2 | 500 | Good |
| 6 | CO | ppm | 0.3 | 0.3 | 10 | Good |
| 7 | CO ₂ | ppm | 1 | 1 | 400 | Good |
| 8 | VOC | ppm | 7.89 | 6.32 | 10000 | Good |

a. Values from air quality guidelines-global update 2005: particulate matter, ozone, nitrogen dioxide and sulfur dioxide.

b. Values from air quality guidelines for Europe, 2nd edition.

National Environmental Quality (Emission) Guideline

| Parameter | Averaging Period | Guideline Value | Unit |
|-------------------|------------------|-----------------|-------------------|
| PM ₁₀ | 1-year | 20 | µg/m ³ |
| | 24-hour | 50 | |
| PM _{2.5} | 1-year | 10 | µg/m ³ |
| | 24-hour | 25 | |
| O ₃ | 8-hour | 100 | ppm |
| NO ₂ | 1-hour | 200 | µg/m ³ |
| | 1-year | 40 | |
| SO ₂ | 10-minute | 500 | µg/m ³ |
| | 24-hour | 20 | |
| CO | 8-hour | 10 | µg/m ³ |

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

Water Quality (Waste Water)



ALARM Ecological Laboratory

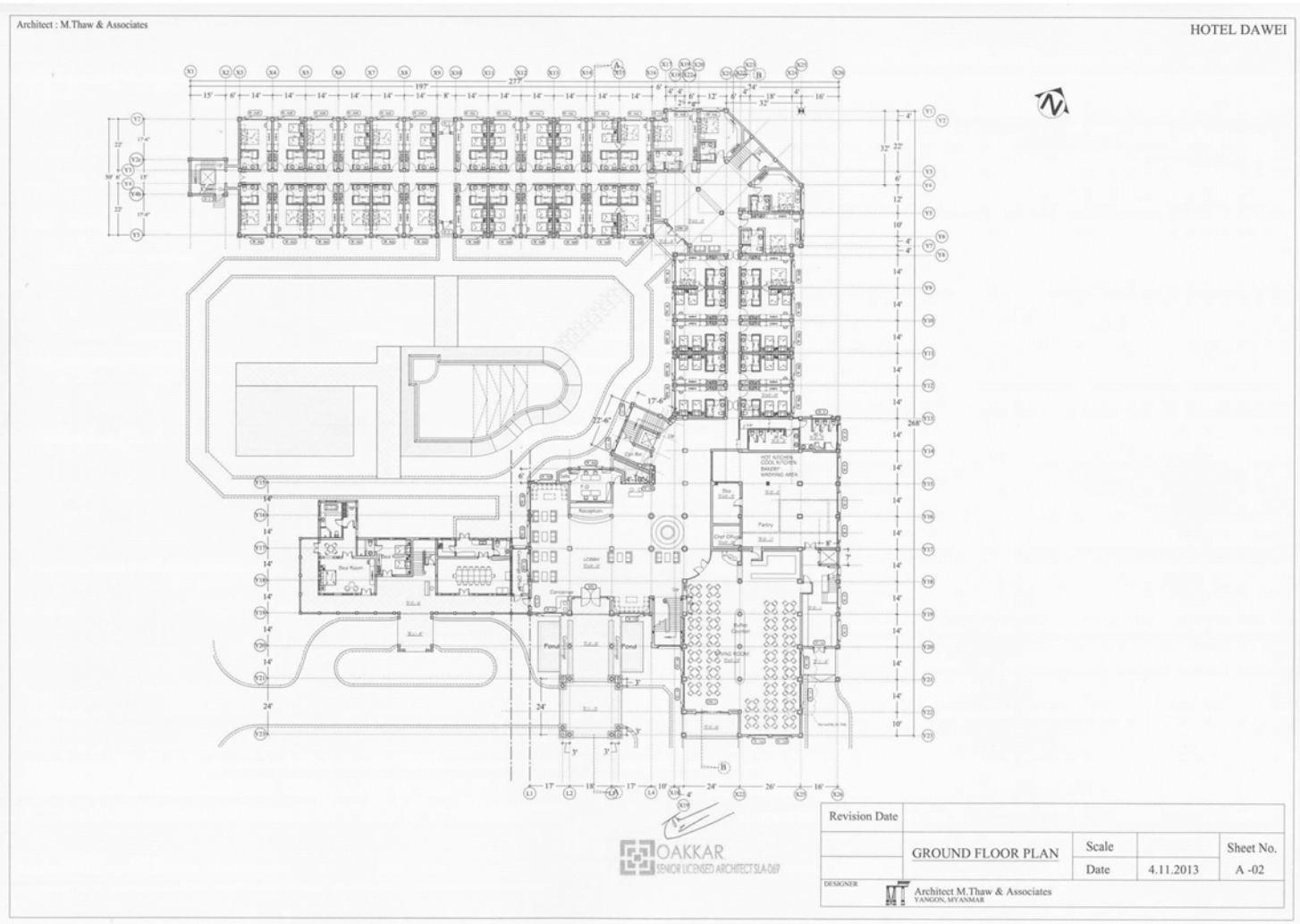
Water Testing Result Report

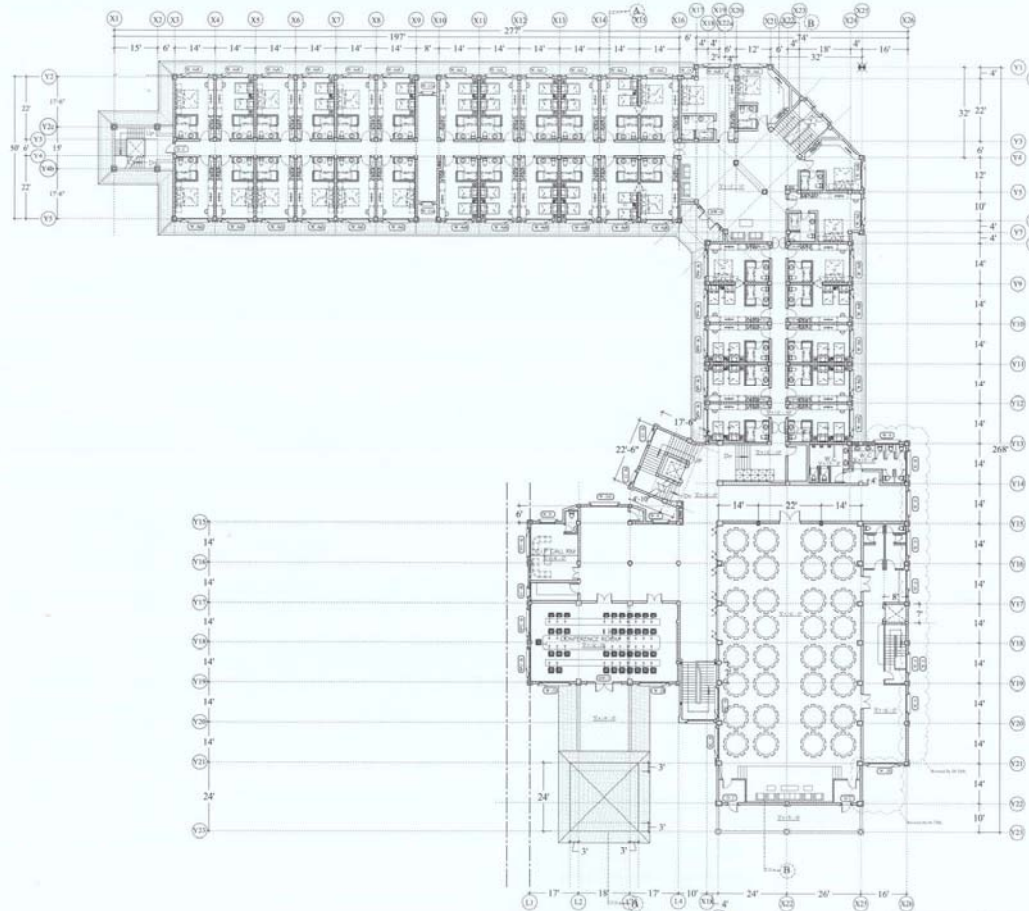


| Report Number : EL-WR-22-00063 | | Date : February 8, 2022 | | | |
|--|-------------------------------|---|-------|--|---------|
| Client Information Client Name : STAR SAPPHIRE CO.,LTD (HOTEL DAWEI PROJECT) Organization : - Client ID : - Registration Date & Time : 2.2.2022 Contact : 09-961180398 Testing Purpose : - | | Sample Information Sample ID : 7662 Sample Name : Wastewater Sample Type / Source : Waste Sampling Date & Time : 31.1.2022 Sample Location : Dawei Tsp Latitude : 14.077594 Longitude : 96.209317 | | | |
| 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 | | | | | |
| Sr. | Quality Parameters | Results | Units | Emission Standards | Remarks |
| 1 | pH ¹ | 7.5 | S.U | 6.0 – 9.0 ^d | Normal |
| 2 | Temperature ² | 24 | °C | ±3 ^a | - |
| 3 | Colour ³ | 58 | HU | - | - |
| 4 | Turbidity ³ | 6 | FAU | - | - |
| 5 | TDS ⁴ | 151 | mg/L | ≤2000 ^d | Normal |
| 6 | TSS ³ | 0 | mg/L | ≤50 ^d | Normal |
| 7 | Total Solids ^{3a} | 151 | mg/L | - | - |
| 8 | Hardness ² | 27 | mg/L | - | - |
| 9 | Dissolved Oxygen ² | 1.9 | mg/L | - | - |
| 10 | BOD ₅ ⁶ | 32 | mg/L | ≤ 50 ^d | Normal |
| 11 | COD ³ | 88 | mg/L | ≤ 250 ^d | Normal |
| 12 | Total Chlorine ³ | < 0.02 | mg/L | - | - |
| 13 | Arsenic ⁸ | 0.025 | mg/L | ≤ 0.1 ^d | Normal |
| 14 | Iron ⁷ | < 0.1 | mg/L | ≤ 3.5 ^d | Normal |
| 15 | Alkalinity ³ | 85 | mg/L | - | - |
| "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 Head Ecological Laboratory (ALARM) | |

APPENDIX E

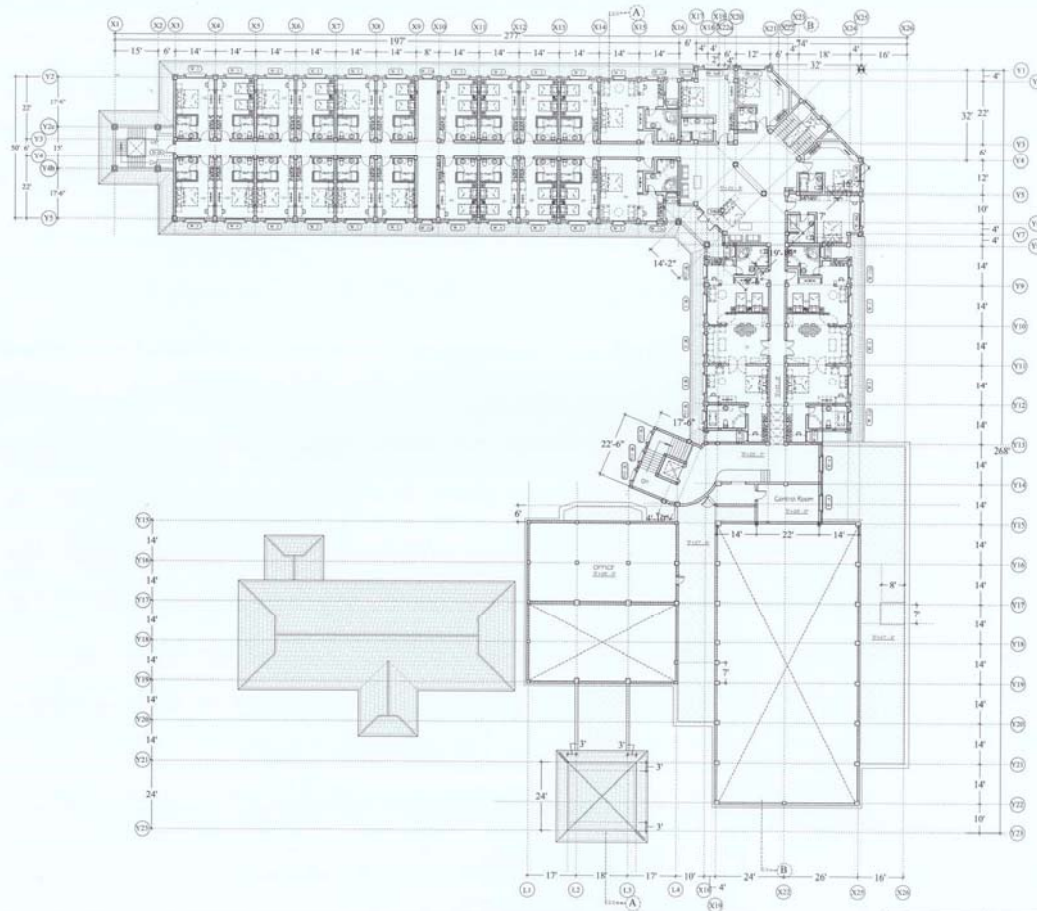
Site Drawing






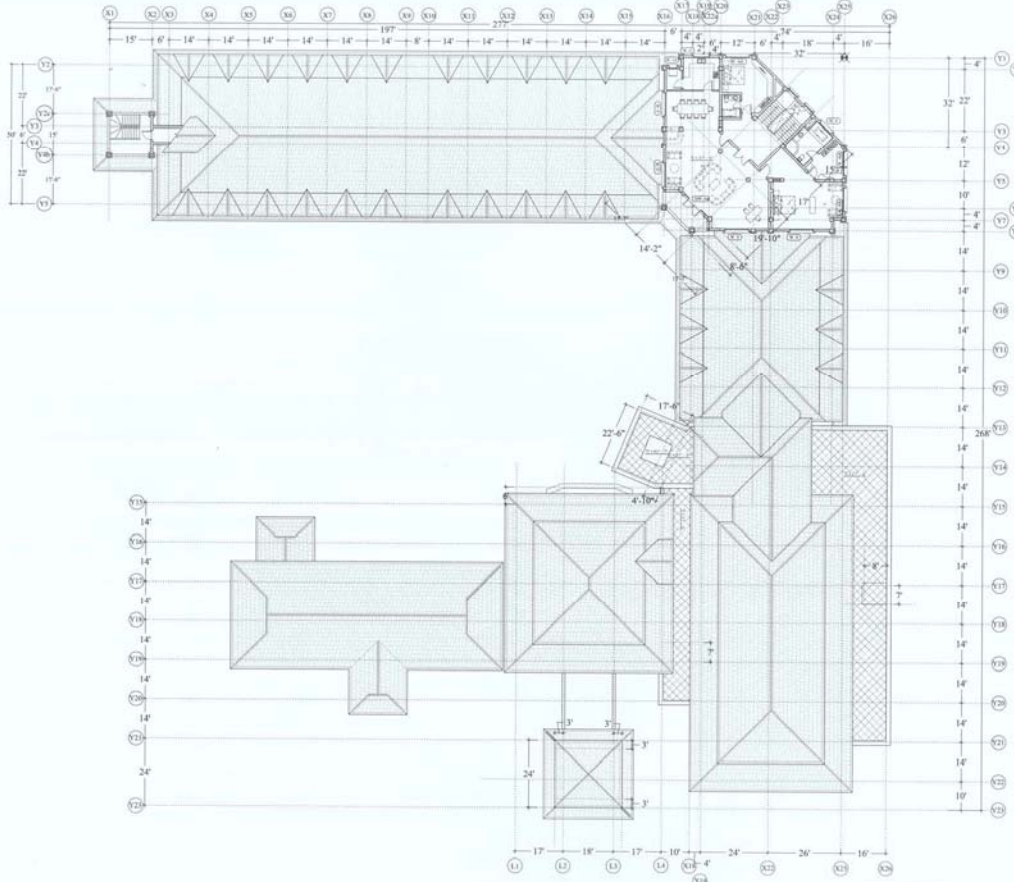
OAKKAR
SENIOR LICENSED ARCHITECT SLA-068

| | | | |
|---------------|--|-------|-----------|
| Revision Date | | | |
| | FIRST FLOOR PLAN | Scale | Sheet No. |
| | | Date | A -04 |
| DESIGNER |  Architect M.Thaw & Associates YANGON, MYANMAR | | |



OAKKAR
SENIOR LICENSED ARCHITECT S.A. (M)

| | | | | |
|---------------|--|-------|-----------|-----------|
| Revision Date | | | | |
| | SECOND FLOOR PLAN | Scale | | Sheet No. |
| | | Date | 4.11.2013 | A -05 |
| DESIGNER |  Architect M.Thaw & Associates YANGON, MYANMAR | | | |



| | | | | |
|---------------|--|-------|-----------|-----------|
| Revision Date | | | | |
| | ROOF FLOOR PLAN | Scale | | Sheet No. |
| | | Date | 4.11.2013 | A -06 |
| DESIGNER | Architect M.Thaw & Associates YANGON, MYANMAR | | | |

APPENDIX F
Land Lease Agreement

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
ပြည်ထဲရေးဝန်ကြီးဌာန

အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန

နှင့်

ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်

တို့၊

တနင်္သာရီတိုင်းဒေသကြီး၊ ကားဝယ်မြို့မြို့ မြေနှင့် ဧည့်ပိုပ်သာအား

နိုင်ငံတော်အဆင့်မီ ဟိုတယ်အဖြစ်

တည်ကောက်၊ လုပ်ဆောင်၊ လွှဲပြောင်းခြင်းဆိုင်ရာ

သဘောတူစာချုပ်

စာချုပ်အမှတ်၊ ၁/၂၀၁၃ (B.O.T)

နေပြည်တော်

၂၀၁၃ ခုနှစ်၊ ဒီဇင်ဘာလ (၂၇) ရက်



ကန့်သတ်

အပိုင်း (၂)

အာမခံခြင်းနှင့် ကိုယ်စားပြုခြင်း



၂-၁ ဦးစီးဌာနသည် ကြယ်နီလာဟိုတယ်ကုမ္ပဏီ (၃) ကွင်းဖော်ပြထားသော အပြင်အကောက်အခွန်ကို ဝိုင်ခိုင် သဖြင့်ပြီး ကြယ်နီလာဟိုတယ်ကုမ္ပဏီသည် စာချုပ်ပါလုပ်ငန်းကို အကောင်အထည်ဖော်ဆောင်ရွက်ရန် တည်ဆဲဥပဒေများအရလုပ်ပိုင်ခွင့် အခွင့်အာဏာနှင့်ပေးရေးအရ ဝိုင်မာတောင့်တင်းခြင်းရှိကြောင်း၊ စာချုပ်တွင်လက်မှတ်ရေးထိုးမည့်သူများသည် စာချုပ်တွင် လက်မှတ်ရေးထိုးရန် အခွင့်အာဏာရှိသူများ ဖြစ်ကြောင်း အာမခံပါသည်။

အပိုင်း (၃)

ငှားရမ်းသည့်ပစ္စည်းစာရင်း။

တနင်္သာရီတိုင်းဒေသကြီး၊ ထားဝယ်မြို့၊ ဗျောတောပရိယတ္တိ၊
SN မြို့ကွက်သစ်၊ ဦးပိုင်အမှတ် (၇-က)၊ မြေဧရိယာ (၃. ၈၉၉)၊
ဟုခေါ်တွင်သော အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာနပိုင်မြေနှင့်
ယင်းမြေပေါ်တွင်စွဲကပ်တည်ရှိသော အကုန်ခံစားခွင့်အရပ်ရပ်။

အပိုင်း (၄)

ငှားရမ်းသက်တမ်း

- ၄-၁ ဦးစီးဌာနသည် ကြယ်နီလာဟိုတယ်ကုမ္ပဏီကို ထားဝယ်မြို့ရှိ ဧည့်ခံရုံသာတည်ရှိသော မြေကွက်နှင့် ဧည့်ခံရုံသာအား ဟိုတယ်ထားဝယ် ၀ ရာခိုင်နှုန်းလွှဲသည့်နေ့မှစ၍ နှစ်(၃၀) ငှားရမ်းပါသည်။
- ၄-၂ အပိုင်း (၄-၁) ၌ငှားရမ်းကာလမှ နှစ်(၁၀) ဟုဖော်ပြထားသော်လည်း နောင်အခါ ပြည်ထောင်စု သမ္မတမြန်မာနိုင်ငံတော်ဆိုင်ရာ လွှတ်တော်တစ်ရပ်ရပ်မှ ရင်းနှီးမြှုပ်နှံမှုဆိုင်ရာနည်းဥပဒေသစ်များ၊ လုပ်ထုံးလုပ်နည်းများပြဋ္ဌာန်းခြင်း၊ ပြင်ဆင်ခြင်း၊ မြေလျှော့ခြင်းများရှိပါလျှင် အဆိုပါနည်းဥပဒေများ နှင့်အညီငှားရမ်းသည့်ကာလအပိုင်းအခြားအား ဌာန၏သဘောတူညီချက်ဖြင့် တိုးမြှင့်ချုပ်ဆိုခွင့်ရှိမည် ဖြစ်ပြီး စာချုပ်ပါအရ နှစ်(၁၀) နှစ်နှင့် မဆန့်ကျင်သမျှကာလပတ်လုံး အပိုင်းပင်ယိမများပါမှု ရှိမမည်။

အပိုင်း (၅)

သက်တမ်းတိုးမြှင့်ခြင်း

- ၅-၁ အကယ်၍ ကြယ်နီလာဟိုတယ်ကုမ္ပဏီသည် နှစ်(၃၀) ကုန်လွန်၍ ဟိုတယ်ထားဝယ်အား ဦးစီးဌာနသို့ လွှဲပြောင်းပြီးနောက် ဆက်လက်လုပ်ကိုင်လိုပါက ဦးစီးဌာနသည် ကြယ်နီလာဟိုတယ်ကုမ္ပဏီအား ငှားရမ်းလုပ်ကိုင်ခွင့်ပြုရန် ဦးစားပေးရမည်။ ထိုငှားရမ်းလုပ်ကိုင်ခွင့်ကာလသည် (၅) နှစ် (၃) ကြိမ်ဖြစ်ပြီး မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်၏ခွင့်ပြုချက်ရယူရမည်။ ငှားရမ်းလုပ်ကိုင်ခွင့်ပါ အချက်အလက်များကို နှစ်ဦးနှစ်ဖက်ညှိနှိုင်းရမည်။

၉

-၂-

ကန့်သတ်

mr

ကန့်သတ်

အပိုင်း (၂၉)

အထွေထွေ

၂၉-၁ နောက်ဆက်တွဲ (၁)၊ (၂)၊ (၃) တို့သည် ဤစာချုပ်၏နောက်ဆက်တွဲအစိတ်အပိုင်းတစ်ရပ်ဖြစ်ရမည်။

၂၉-၂ ဤစာချုပ်သည်သာလျှင် နှစ်ဦးနှစ်ဖက် အတည်ပြုထားသော အကျဉ်းချုပ်ချက်ဖြစ်သည်။ သဘောတူစာချုပ်သည် ယခင်သဘောတူညီချက်များနားလည်မှုများအားလုံးကို လွှမ်းမိုးသည်။

(ဤသဘောတူစာချုပ်ပါစည်းကမ်းချက်များကို စာချုပ်ဝင်နှစ်ဦးနှစ်ဖက်တို့ သိရှိသဘောပေါက်နားလည်ကြသဖြင့် စာချုပ်၏အထက်တွင် ဖော်ပြထားသော ၂၀၁၃ ခုနှစ်၊ ဒီဇင်ဘာလ၊ (၂၇) ရက်တွင် အောက်ပါအသိသက်သေများ ဧရိယာတွင် မိမိတို့၏ပုဂ္ဂိုလ်များနှင့် နှစ်ဦးနှစ်ဖက် သဘောတူလက်မှတ်ရေးထိုးကြပါသည်။)



ဦးစီးဌာန (ကိုယ်စား)

ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက် (ပုဂ္ဂိုလ်စား)

လက်မှတ်-
အမည် - ဦးထွန်းလှအောင်
ရာထူး - ညွှန်ကြားရေးမှူးချုပ်
ဌာန - အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
ပြည်ထောင်စုဝန်ကြီးဌာန။
နေ့စွဲ - ၂၇-၁၂-၂၀၁၃

လက်မှတ်-
အမည် - ဒေါက်တာထွန်းမင်းလတ်
ရာထူး - အုပ်ချုပ်မှုဒါရိုက်တာ
ဌာန - ကြယ်နီလာဟိုတယ်
ကုမ္ပဏီလီမိတက်
နေ့စွဲ - ၂၇-၁၂-၂၀၁၃
ဒေါက်တာထွန်းမင်းလတ်
အုပ်ချုပ်မှုဒါရိုက်တာ
ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်

အသိသက်သေများ။

လက်မှတ်-
အမည် - ဦးတင်မြင့်
ရာထူး - ဒုတိယညွှန်ကြားရေးမှူးချုပ်၊
ဌာန - အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
ပြည်ထောင်စုဝန်ကြီးဌာန။

လက်မှတ်-
အမည် - ဒေါက်တာဝင်းမင်းစိုး
ရာထူး - ဒါရိုက်တာ
ဌာန - ကြယ်နီလာဟိုတယ်
ကုမ္ပဏီလီမိတက်
ဒေါက်တာဝင်းမင်းစိုး
ဒါရိုက်တာ
ကြယ်နီလာဟိုတယ်ကုမ္ပဏီလီမိတက်

-၁၀-

ကန့်သတ်

APPENDIX G

Power Point Presentation

4/21/2022

STAR SAPPHIRE COMPANY LIMITED (HOTEL DAWEI)

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာအားတင်ပြခြင်း

Presented by



ရက်စွဲနှင့် နံပါတ်: ၂၀၂၂/၀၄/၆

အကြောင်းအရာ အကျဉ်းချုပ်

၀၁ Hotel Dawei တည်ဆောက်မည့် အစီအစဉ်အား တင်ပြခြင်း

၀၂ Hotel Dawei ၏ မြေပုံဆွဲချက်အား တင်ပြခြင်း

၀၃ Hotel Dawei လိုက်နာဆောင်ရွက်သွားမည့် ဥပဒေ၊ နည်းဥပဒေများ တင်ပြခြင်း

၀၄ စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ပတ်ဝန်းကျင်ဆိုင်ရာ ထိခိုက်မှုများကို ဆန်းစစ်လေ့လာခြင်းအား တင်ပြခြင်း

၀၅ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား မူတည်တင်ပြခြင်း

Hotel Dawei တည်ဆောက်မည့် အစီအစဉ်အား တင်ပြခြင်း

- မြေအကွယ်အဝန်း - ၃.၈၅၅ ဧက
- မြေအပိုင်ပိုင်ခွင့် - ဦးစွန်လှအောင်
- အသက်အရအရွက် - မြေအောက်ဆင် (၁) ထပ် နှင့် ၃ ထပ်
- စရိယာအကွယ်အဝန်း - ၇၄၂၀၆ တေလျှပ်စစ်
- အဆောက်အအုံအမျိုး - ၄၅ ဝေ
- အဆောက်အအုံအသုံးချမှု - ဟိုတယ်
- အခန့်အဝရအရွက် - ၁၂၂ ခန့်
- ကာဆေးရုံ - ၃၀ နီး
- LIFT အဝရအရွက် - ၄ နီး (Passenger ၁၆ + Firefighting ၁၆)
- လေ့ကျင့်အဝရအရွက် - ၆ နီး

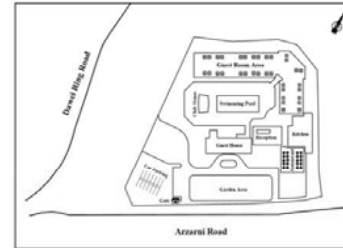
➤ တည်နေရာ - မြေပုံအမှတ် (၇/အ) အာဇာနည်လမ်း ဓမ္မစတာလမ်းကွက်၊ ထားဝယ်မြို့နယ်၊ တနင်္သာရီတိုင်းဒေသကြီး



Hotel Dawei ၏ ပိတ်ပို့စဉ်းပုံ

- ပုဂံတယ်၏ အစီအစဉ်ပေါ်မှာ အာဇာနည်လမ်းပေါ်တွင်တည်ရှိပါသည်။
- မြေအောက်အခန်းတွင် စာတည်းအခန်း၊ စီးဆင်းခန်းနှင့် ရေကန်တို့ တည်ရှိပြီး၊ ခရီးယာအကျယ်အဝန်းဖြင့် ၆၂၅၇ စတုရန်းပေရှိပါသည်။
- မြေညီထပ်တွင် ချောင်းအနီးမှာ စားသောက်ခန်း၊ နေရာပေးခန်း၊ အိပ်ခန်း၊ ခုတ်ခန်း၊ ပါရိုဗီး၊ ခရီးယာအကျယ်အဝန်းဖြင့် ၃၆၀၀၀ စတုရန်းပေရှိပါသည်။
- ပထမထပ်တွင် အစည်းအဝေးခန်း၊ နေရာပေးခန်း၊ ခရီးယာ၊ နေရာပေးခန်း၊ အိပ်ခန်း၊ ခုတ်ခန်း၊ ပါရိုဗီး၊ ခရီးယာအကျယ်အဝန်းဖြင့် ၃၅၀၀၀ စတုရန်းပေရှိပါသည်။
- ဒုတိယထပ်တွင် အိပ်ခန်း၊ ခုတ်ခန်း၊ ခရီးယာအကျယ်အဝန်းဖြင့် ၁၈၀၀၀ စတုရန်းပေရှိပါသည်။
- တတိယထပ်တွင် သမ္မတအိမ်အခန်းပါရှိပြီး၊ ခရီးယာအကျယ်အဝန်းဖြင့် ၃၃၂၈ စတုရန်းပေရှိပါသည်။
- ခုတ်ခန်းအခန်း အိပ်ခန်း၊ ခုတ်ခန်း၊ ခရီးယာအကျယ်အဝန်းပါသည်။
- Club House တွင် အာဇာနည်လမ်းနှင့် ၆၀၀ ပေရှိပြီး၊ ၂၅၀၀ စတုရန်းပေကျယ်ဝန်းပါသည်။

Hotel Dawei ၏ တည်ဆောက်မှုပုံ ပုံစံ



Stair Layout Plan of Project

Hotel Dawei ၏ ကားပါကင်စနစ် ထားရှိမည့် ပုံစံ



Pit Puzzle Parking System

Twin Parking System

Hotel Dawei ၏ ရေမြောင်းထားရှိသည့် ပုံစံ



- အကျယ် ၁ ပေ ၃ လက်မ နှင့် ၃ ပေ အနက် ရှိသော ရေမြောင်းထားရှိမည် ဖြစ်ပါသည်။
- အမြင့်ပေါ် ရေနက်မြောင်းနှင့် ချိတ်ဆက်ထားပါသည်။

Hotel Dawei ၏ ရေ ရရှိရန် ဆောင်ရွက်မည့် အစီအစဉ်



- ပင်မရေသိုမှီးမှုအား အစီအစဉ်ဆရာ ရယူမည်ဖြစ်သည်။
- ဟိုတယ်ခံနိုင်ရည်များအတွက် တစ်နေရာတွင် ၁ လီတာ ၂ ဇရ နေရာတွင်အစီအစဉ်မပါမည်။
- ဝန်ထမ်းများအတွက် တစ်နေရာတွင် သောက်ရေသန့် ၂ ဂရမ်သာ ငွေအစီအစဉ်မပါမည်။
- နေရာရေသိုမှီးမှုပမာဏ - ၅၅၀၀ ဂါလံ

Hotel Dawei ၏ မီး ရရှိရန် ဆောင်ရွက်မည့် အစီအစဉ်



- ထားသော်လည်း လျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ပြီး ပြုစုရေးလုပ်ငန်း Petro & Trans Co., Ltd. မှ တာဝန်အားအသုံးပြုမည်ဖြစ်သည်။
- ၄၀၀ KVA မီးခက်ကို အရေးအခါ အခြေအနေအတွက် အသုံးပြုရန် တပ်ဆင်မည် ဖြစ်သည်။
- ဝန်၊ မှန်၊ အိမ်အသုံးပြုမှု - ၃၇ ဂါလံ
- မီးခက်နှင့် လောင်စာကို မီသေအန္တရာယ် ကင်းရေး ဘီးသန့်ထားရမည်ဖြစ်သည်။

Hotel Dawei ၏ ရေဆိုးသန့်စင်မည့်စနစ် ဆောင်ရွက်မည့် အစီအစဉ်

- မီးခိုခရိုင်မှ ထွက်ရှိလာမည့် ဆီနှင့် အမြှုပ်များကို ဆီစစ်တန်းထဲသို့ စီစဉ်ပေးမည်ဖြစ်သည်။
- အနည်နှစ်များအား (၇) လ တစ်ကြိမ် ပုံမှန်ထပ်ယူရင်းလင်းမည်။
- မိလ္လာများကို သီးသန့် တန် (၇) နှစ်တွင် ထားရှိမည် ဖြစ်သည်။
- ရေဆိုးသန့်စင်မည့်စနစ်ကို ရွှေ့ပစ်ရေဆိုးသန့်စင်စနစ်ကို အသုံးပြုမည် ဖြစ်သည်။
- သန့်စင်ထားသော ရေများကို အများဆုံး ပြောင်းပေးသည့် စီစဉ်ပေးမည်ဖြစ်သည်။



Hotel Dawei ၏ အမှိုက်စွန့်ပစ်မည့် အစီအစဉ်

- ဟိုတယ်အတွင်းရှိ အဆောက်အအုံတစ်ခုတွင် အမှိုက်ပုံများထားရှိမည်ဖြစ်သည်။
- ရွှေ့ပစ်အမှိုက်များကိုလည်း အမှိုက်ပုံများထားရှိပြီးတော့ အနီးအနားရှိ အမှိုက်ပုံများကို အမှိုက်ပုံများထားရှိမည်ဖြစ်သည်။
- အမှိုက်ပုံများထားရှိပြီးတော့ ထားသော်လည်း အမှိုက်ပုံများထားရှိပြီးတော့ အမှိုက်ပုံများထားရှိမည်ဖြစ်သည်။



Hotel Dawei ၏ မီးဘေးအန္တရာယ်ကာကွယ်ရေး ဆောင်ရွက်မည့်အစီအစဉ်

- အဝေးမှပေါ် မီးသတ်ခံလူကား၊ မီးသတ်အစုကိုဖြို ခေါင်းလောင်းများ၊ အလုံအလောက် မီးသတ်ခနပ်များ၊ မီးခတ်နိုင်သော နံရံများ (Fire Resistant Wall) စတင်ဆင်သွားမည် ဖြစ်သည်။
- မီးသတ်ပစ္စည်းများနှင့် မီးသတ်ခနပ်များကို တားရပ်မည်ဖြစ်သည်။





Hotel Dawei လိုက်နာဆောင်ရွက်သွားမည့် ဥပဒေ၊ နည်းဥပဒေများ

| | |
|---|--|
| ၁။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၂ | ၁၇။ မြို့တည်ရှိသည့်အတွက် ဥပဒေ ၂၀၁၅ |
| ၂။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၂ | ၁၈။ လူမှုဝန်ထမ်းဥပဒေ ၂၀၁၅ |
| ၃။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၅ | ၁၉။ လူမှုဝန်ထမ်းဥပဒေ ၂၀၁၅ |
| ၄။ ဥပဒေပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ (လုပ်ငန်းစဉ်) လုပ်ငန်းစဉ်ဥပဒေ ၂၀၁၅ | ၂၀။ အလုပ်သမားဥပဒေ ၁၉၄၇ |
| ၅။ မြို့တည်ရှိ အမျိုးသားပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၅ | ၂၁။ အလုပ်သမားဥပဒေ (လုပ်ငန်းစဉ်) ဥပဒေ ၂၀၁၅ |
| ၆။ မြို့တည်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၅ | ၂၂။ အလုပ်သမားဥပဒေ (လုပ်ငန်းစဉ်) ဥပဒေ ၂၀၁၅ |
| ၇။ မြို့တည်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၅ | ၂၃။ စိုက်ပျိုးရေးဥပဒေ ၂၀၁၅ |
| ၈။ လုပ်ငန်းသမား ဥပဒေ ၂၀၁၅ | ၂၄။ မြို့တည်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ ၂၀၁၅ |
| ၉။ အလုပ်သမားဥပဒေ ၂၀၁၅ | ၂၅။ လူမှုဝန်ထမ်းဥပဒေ ၂၀၁၅ |
| ၁၀။ မြို့တည်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၅ | ၂၆။ လုပ်ငန်းသမားဥပဒေ ၂၀၁၅ |
| ၁၁။ လုပ်ငန်းသမားဥပဒေ ၂၀၁၅ | ၂၇။ လုပ်ငန်းသမားဥပဒေ ၂၀၁၅ |
| ၁၂။ မြို့တည်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၅ | ၂၈။ လုပ်ငန်းသမားဥပဒေ ၂၀၁၅ |

ပတ်ဝန်းကျင်ဆိုင်ရာ ထိန်းချုပ်မှု အစီအစဉ်

Hotel Dawei သည်

- ဓာတ်ငွေ့သော သော ပတ်ဝန်းကျင်ဆိုင်ရာ ထိန်းချုပ်မှုများဖြစ်သည့် ဥပဒေများ၊ နည်းဥပဒေများ၊ လုပ်ငန်းလုပ်ဆောင်မှုများ ညွှန်ကြားချက်များကို လိုက်နာပါမည်။
- စီမံကိန်းနှင့် စီမံကိန်းသတ်ချက်တွင် အသုံးပြုသော ပတ်ဝန်းကျင်ထိန်းချုပ်မှု ကာကွယ်ခြင်းလုပ်ငန်းများ လုပ်ဆောင်ပါမည်။
- လေထုထိန်းချုပ်ခြင်း၊ ဓာတ်ငွေ့ထိန်းချုပ်ခြင်း၊ ဓာတ်ငွေ့ထိန်းချုပ်ခြင်း စသည့် ပတ်ဝန်းကျင်ထိန်းချုပ်မှုများကို ထိန်းချုပ်ခြင်းများ ဆောင်ရွက်ပါမည်။
- ပတ်ဝန်းကျင်ဆိုင်ရာ ကာကွယ်မှုများ လိုအပ်သည့် ဝိုင်းကားများကို ဖြည့်လုပ်ပါမည်။
- ပတ်ဝန်းကျင်ထိန်းချုပ်မှုအစီအစဉ် (EMI) ကို MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED မှ တာဝန်ယူဆောင်ရွက်မည်ဖြစ်ပါသည်။

Transitional Consultant Registration Certificate of MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED



MYANWEI ENVIRONMENTAL SOLUTIONS CO., LTD မှ
ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ရှောက်သွားမည့် အစီအစဉ်များ

- > ပတ်ဝန်းကျင်ဆိုင်ရာ ထိခိုက်မှုများကို ဆန်းစစ်လေ့လာခြင်း
- > လေထုအရည်အသွေး စောင့်ရှောက်ခြင်း
- > ဓာတ်ငွေ့ထုတ်လွှတ်မှု စောင့်ရှောက်ခြင်း
- > အသံအညစ်အကြေး စောင့်ရှောက်ခြင်း
- > ရေပတ်ဝန်းကျင် စောင့်ရှောက်ခြင်း
- > မြေပုံစံအရ အရည်အသွေး စောင့်ရှောက်ခြင်း
- > ပတ်ဝန်းကျင်ဆိုင်ရာ လူမှုအကျိုးအမြတ် စောင့်ရှောက်ခြင်း
- > ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်များ ချမှတ်ခြင်း
- > မြို့ပုံစံအရ လေထုအရည်အသွေး စောင့်ရှောက်ခြင်း

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MYANWEI ENVIRONMENTAL SOLUTIONS CO., LTD မှ
ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ရှောက်သွားမည့် အခြေအနေ

လေထုဆိုင်ရာ

| No | Parameter | Unit | Result | NEQ | Remark |
|----|-------------------|-------------------|--------|-----|--------|
| 1 | PM ₁₀ | µg/m ³ | 8.53 | 50 | Good |
| 2 | PM _{2.5} | µg/m ³ | 8.17 | 25 | Good |
| 3 | CO | µg/m ³ | 22.436 | 100 | Good |
| 4 | NO ₂ | µg/m ³ | 22.43 | 200 | Good |
| 5 | SO ₂ | µg/m ³ | 16.82 | 500 | Normal |
| 6 | CO | µg/m ³ | 25 | 10 | Good |




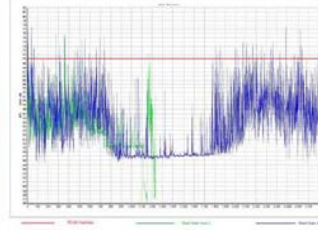
တိုင်းတာမှု ရလဒ်များအရ လေထုသည် သတ်မှတ်ထားသော ကန့်သတ်ချက်များ လက်ညှိုးထိုးရန်အထူးတော်ကြောင်း အာရုံစိုက်ပါသည်။

MYANWEI ENVIRONMENTAL SOLUTIONS CO., LTD မှ
ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ရှောက်သွားမည့် အခြေအနေ

ဆူညံသံတိုင်းတာခြင်း

| Location | GPS location | Noise Result | NEQ Guideline |
|----------------------|-----------------------------|--------------|---------------|
| Hotel Area (Point 1) | 14°04'37.45"N 98°12'36.68"E | 54.27 | 70 dB A |
| Hotel Area (Point 2) | 14°04'36.69"N 98°12'34.85"E | 53.45 | 70 dB A |

တိုင်းတာမှု ရလဒ်များအရ သတ်မှတ်ထားသော လက်ညှိုးထိုးရန်အထူးတော်ကြောင်း အာရုံစိုက်ပါသည်။

Star Signature Co., Ltd. မှ ဆူညံသံတိုင်းတာမှုကို ပြုလုပ်ခဲ့ခြင်း

| စီမံကိန်း လည်ပတ်ခြင်းအတွက် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ် | | | | | |
|---|------------------------------|------------------------------|------------------------------------|------------------------------|------------------------------|
| ပတ်ဝန်းကျင်ဆိုင်ရာ ပြဿနာများ | ကမ္ဘာမြေပုံဆွဲမှု အစီအစဉ် | ပတ်ဝန်းကျင် ဆိုင်ရာ အန္တရာယ် | စီမံကိန်း လည်ပတ်မှု အတွက် အန္တရာယ် | ပတ်ဝန်းကျင် ဆိုင်ရာ အန္တရာယ် | ပတ်ဝန်းကျင် ဆိုင်ရာ အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |

| စီမံကိန်း ပြုပြင်ဆင်ခြင်းအတွက် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ် | | | | | |
|---|------------------------------|------------------------------|------------------------------------|------------------------------|------------------------------|
| ပတ်ဝန်းကျင်ဆိုင်ရာ ပြဿနာများ | ကမ္ဘာမြေပုံဆွဲမှု အစီအစဉ် | ပတ်ဝန်းကျင် ဆိုင်ရာ အန္တရာယ် | စီမံကိန်း လည်ပတ်မှု အတွက် အန္တရာယ် | ပတ်ဝန်းကျင် ဆိုင်ရာ အန္တရာယ် | ပတ်ဝန်းကျင် ဆိုင်ရာ အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |
| အထွေထွေ ပြဿနာများ | • မြေပုံဆွဲမှုအတွက် အန္တရာယ် | အထွေထွေ ပြဿနာများ | အန္တရာယ် | အန္တရာယ် | အန္တရာယ် |

ဖတ်ရှုပေးသည့်အတွက်
ကျေးဇူးအထူးတင်ရှိပါသည်။

အချိန်မီပတ်ဝန်းကျင် ပတ်ဝန်းကျင် ဆိုင်ရာ ပြဿနာများ အကျဉ်းချုပ်ကို အောက်ပါ အချက်များ ဖော်ပြပါသည်။
 Facebook Page: Myanmar Environmental Solutions Company Limited
 Email: emv@myanwesolutions.com