**OPERATION ENVIRONMENT MANAGEMENT PLAN**

**(OEMP)**

**Scaling up the Soasoa Drainage System, Labasa, Fiji**



**MINISTRY OF WATERWAYS & ENVIRONMENT**

APPENDIX 2

Contents

**STATEMENT OF RESPONSIBILITY…………………………………………………….…………….……………………3**

[1. INTRODUCTION 4](#_Toc65611060)

[2. STAKE-HOLDERS IN THE OEMP 5](#_Toc65611061)

[2.1. MOWE 5](#_Toc65611062)

[2.2. Labasa Rural Local Authority 5](#_Toc65611063)

[2.3. Contractors 6](#_Toc65611064)

[3. PROJECT FEATURES 6](#_Toc65611065)

[3.1. Proposed Development & Locality 6](#_Toc65611066)

[3.2. Operational phase of Development 6](#_Toc65611067)

[3.3. Environmental Issues 7](#_Toc65611068)

[4. CONTRACT/MOU 8](#_Toc65611069)

[5. ENVIRONMENTAL MANAGEMENT 8](#_Toc65611070)

[5.1. Access & Working Hours 8](#_Toc65611071)

[5.2. Management Structures 9](#_Toc65611072)

[5.2.1. Complaints 11](#_Toc65611073)

[5.3. Security Fencing & Gates 11](#_Toc65611074)

[5.4. Signage 12](#_Toc65611075)

[5.5. Protection site/Work Station 12](#_Toc65611076)

[5.6. Equipment Management 13](#_Toc65611077)

[5.7. Fuel Transportation & Storage Management 14](#_Toc65611078)

[5.8. Spill Control 15](#_Toc65611079)

[5.9. Noise Control 15](#_Toc65611080)

[5.10. Wastewater Management 16](#_Toc65611081)

[5.11. Solid waste management & Litter Control 17](#_Toc65611082)

[5.12. Waste and Hazardous Materials Handling, Storage and Disposal 17](#_Toc65611083)

[5.13. Vector Control & Nuisance 18](#_Toc65611084)

[5.14. Safety at the Workplace 19](#_Toc65611085)

[5.15. Emergency Procedures 20](#_Toc65611086)

[5.16. Water Quality Monitoring 21](#_Toc65611087)

[5.17. Fisheries Resource Monitoring 22](#_Toc65611088)

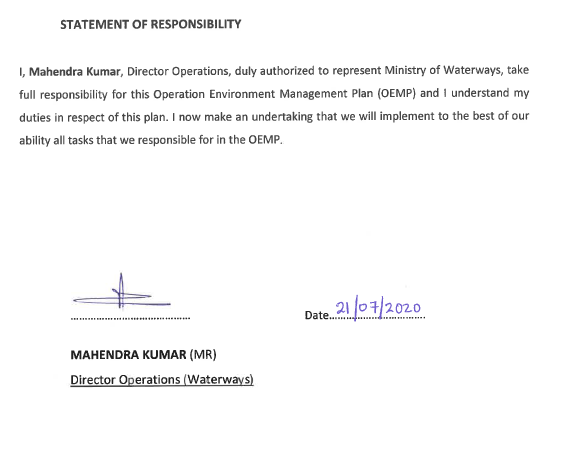
[5.18. Rehabilitation Programme 23](#_Toc65611089)

[5.19. Future Development 24](#_Toc65611090)

[5.20. Complaint Register 24](#_Toc65611091)

[5.21. Reporting Procedures 25](#_Toc65611092)

[6. APPENDIX 26](#_Toc65611093)



**APPENDIX**

Appendix A: Further Details on CEMP Activities

Appendix B: Complaint Form

Appendix C: Daily Inspection Form

Appendix D: Monthly Inspection Form

Appendix E: Weekly Report Form

Appendix F: Incident Report Form

Appendix G: Induction Record Sheet

Appendix H: Process Overview

Appendix I: Emergency Response Contact

Appendix J: Contractor’s Acknowledgment Form

**ACRONYMS**

CHARM - Comprehensive Hazard and Risk Management

DoEnv - Department of Environment

DTCP - Department of Town and Country Planning

EIA - Environmental Impact Assessment

EMP - Environment Management Plan

EFL - Energy Fiji Limited

LTA - Land Transport Authority

MOWE - MOWE

MRD - Mineral Resources Department

MOU - Memorandum of Understanding

OEMP - Operation Environment Management & Monitoring Plan

PWD - Public Works Department

LRLA - Labasa Rural Local Authority

WAF - Water Authority of Fiji

# INTRODUCTION

This is the Operation Environmental Management Plan (OEMP) for the scaling up of the Soasoa drainage system in Labasa. Department of Environment (DoEnv), in its conditions on the waiver of EIA on drainage system, works at the Soasoa area stated that “an Operational Environment Management Plan (OEMP) must be developed”. Whilst a Operational Environmental Management Plan (OEMP) has been developed to ensure the protection of the environment and the public at large is safeguarded against adverse impacts during the construction phase of the project, the OEMP covers the management of activities occurring during the Operation Phase of the proposed up scaling of the existing drainage system and flood mitigation structures.

The purpose and the key outcomes of the Operation Environmental Management Plan (OEMP) is to fully define how the proposed upgrading of the drainage system at Soasoa in Labasa work is going to be operated and managed during the Operation phase of the development.

# STAKE-HOLDERS IN THE OEMP

## MOWE

MOWE is the development owner. The developer is referred to throughout this document hereafter as “MOWE” and scaling up the Soasoa drainage system Works as “Flood Protection” MOWE is responsible for and supervises all approved flood protections on all Fiji Rivers and streams.

MOWE at this point in time has not entered into a work agreement with Contractors through a Memorandum of Understanding (MOU). MOWE, however, has identified that protection and enhancement of the environment is a priority for the project.

MOWE has also put into place an Operation Environmental Management Plan (OEMP) to fully define the way the flood protection development is going to be operated and managed.

## Labasa Rural Local Authority

The Labasa Rural Local Authority supervises the conditions of permitting for the development under the provisions of the Subdivision of Lands and Town & Country Planning Acts, the Public Health Building Regulations and the National Building codes.

## Contractors

A contractor will be engaged in future developments within the proposed project area. It will be their responsibility to ensure that their activities and those of their sub-contractors comply with the OEMP.

MOWE will be the Project Manager. To this end, the MOWE being the Project Manager is to ensure the workers understand and implement the provisions of the OEMP.

As MOWE and Contractors will be jointly responsible for the management of the operation phase of development, it will be their responsibility to ensure that contractors bounded to them are aware of and implement provisions of the OEMP relating to their contracts.

# PROJECT FEATURES

## Proposed Development & Locality

The overall flood protection works will include the upgrading of the flood gate, flap gate, levee and the spillway as per the locality map. The drainage system is located in lower Soasoa area of Macuata Province. The drainage system needs to be upgraded in order to mitigate flooding and to prevent damage to arable farm lands and nearby communities of Soasoa.

## Operational phase of Development

After all construction works in the Construction phase are completed satisfactorily the Operation phase, will be effected. The main categories of Activities of the Operation Phase are:

* + 1. Mobilization and demobilization
    2. Actual upgrading Works

This Document is the Operation Management Plan for the Operation Phase of the development. When all the activities are implemented and monitored appropriately as described in this OEMP all potential impacts on the environment and community around the development area are ensured to be prevented and minimized.



Figure 1: Development Area.

## Environmental Issues

There are environmental issues needed to be addressed in this Operation Environment Management Plan (OEMP). These include:

* Management Structures
* Signage
* Work Station
* Equipment Management
* Fuel Transportation & Storage Management
* Noise Control
* Water Supply Management
* Wastewater treatment and disposal
* Solid waste management
* Handling, Storage and Disposal of Solid Waste and Hazardous Materials
* Storm water & Drainage Management
* Vector Control
* Safety
* Emergency management
* Spoil Dump and Coastline Management
* Water Quality Monitoring
* Fisheries Resource Monitoring
* Rehabilitation & Re-vegetation
* Future Development

Appropriate Environmental monitoring conditions will be developed as part of the OEMP.

# CONTRACT/MOU

The contract or MOU between MOWE and hired contractors will ensure the requirements of the OEMP are clearly understood.

To ensure that the contracted company/person understands its/his obligations it/he will be asked to sign a form stating that it had read the OEMP and its obligation.

A flow diagram version of the OEMP process is presented in Appendix H followed by the Acknowledgement Form to be signed by the Contractor at Appendix J.

# ENVIRONMENTAL MANAGEMENT

MOWE with its Contractors are committed to protecting the environment in the development area and its vicinity. They, therefore, put forward a proactive and pragmatic environmental management of the operation works. This section identifies theapproach they wish to adopt in the environmental management of the works, through a programme that ensures specific environmental management activities.

## Access & Working Hours

Access to the site will be controlled by the erection of a security fence around the site with only one point of access. Only authorized people will be allowed on site. Watchman will be used at nights and weekends.

The working hours for the project shall be:

|  |  |
| --- | --- |
| **Operation** | **Working Hours** |
| 1. Normal Working Hours | (Monday-Friday) 0700-1700 |
|  | Critical tasks could be done outside these times. |

## Management Structures

The operational phase of development will be fully attended operations with the attendants being responsible for duties and responsibilities. This development will be managed by MOWE. It will ensure day to day operations are carried out smoothly, satisfactorily and on schedule at the same time the satisfactory implementation of the OEMP.

It will also ensure contract obligations are fulfilled. Likewise, it will ensure that all equipment and machines used for flood protection are in the best of working conditions to result in sustainable operation within the development area. Further, it will also ensure that commodities like potable water and electricity are available on-site at all times and all activities OHS Compliance.

Contractors are to carryout relevant services and appropriate to the development will also be present on site. MOWE has indicated that it would adopt this structure. The structure spells out clearly who will manage the activities of the site and who supervises the work.

The management structures are shown in Table 1: Operation Management outlined below.

|  |  |  |
| --- | --- | --- |
| **Position** | **Company** | **Role** |
| Project Manager: | MOWE | Developer’s Representatives: Overall responsibility for the project and site management. |
| Project Manager | Contractors | Ensuring OEMP induction is given Monitoring progress to ensure contract and OEMP obligations are being achieved  Revisions of OEMP  Ensuring regular inspection of operational activities Delineating work areas  Maintain complaints register  Weekly & Monthly reports  Management of Common areas |
| Contractor: | Will be engaged when required | Ensuring contract obligations fulfilled |
| Environmental Auditor: | DO Environment/ | Monthly Audit Inspection  Preparation of Monthly Report |

*Table 1: Operation Management*

All people working on the site shall be briefed on the OEMP by a suitably qualified person prior to constructional works commencing. Induction and training requirements will be directed by the Project Manager. Key elements of the induction that will be covered include:

|  |  |
| --- | --- |
| ♣ | Environmental issues on site |
| ♣ | Key site managers and authorities |
| ♣ | OEMP and procedures |
| ♣ | Procedures if things go wrong – discharge, cyclones, fuel spills etc. |

A record of all inductions shall be kept using the record Induction Sheet (see Appendix: G)

### Complaints

All complaints are to be directed to the Project Manager in the first instance who shall maintain a Complaint Register.

On receiving a complaint in respect of the operation activities, he shall record all details of the complaint on a Record Form. An initial response to the complainant will be provided within 24 hours of receiving a complaint by the Project Manager and copied to the Labasa Rural Local Authority

#### 5.2.2.1 Complaints Resolution

Any complaint not satisfactorily resolved by the Project Manager is to be brought to the attention of the Labasa Rural Local Authority.

#### 5.2.2.2 Revising the Document

In response to experience gained or at the Project Manager’s instruction, this plan may require revision. Revisions will be issued by the Project Manager. It is the responsibility of the person to whom the document is issued to ensure it is revised and the sheet following the cover page is correctly anointed. Revisions will have the footer changed to show the revision.

## Security Fencing & Gates

A security fence, 2m high will be installed around protection sites. This fence will be checked weekly. The Project Manager will be informed of any fence damage.

Likewise security fence will also be installed around the storage areas and graveyards or isolated graves on land beside project site

The site is to be supervised at all times while open.

Further details of avoiding, minimizing occurrence of this activity is provided in APPENDIX A: FURTHER DETAIL TABLES — TABLE 1

MOWE/Contractor is to ensure that this part of OEMP is implemented and strictly adhered to.

## Signage

Adequate signage needs to be in place to inform who has access to the site (the public prohibited), where key locations are, and fundamental rules for the operation of the site etc. By ensuring adequate signing misunderstandings and misuse of the site are avoided.

**A sign at the entrance should be included;**

* Name of developer
  + - * who does/who does not have access
      * Hours of operation
      * Emergency contact phone number
      * On the land and access roads temporary signs must clearly mark the roads, direct vehicles to the office of the Project Manager.

Further details of avoiding, minimizing occurrence of this activity is provided in APPENDIX A: FURTHER DETAIL TABLES — TABLE 1. MOWE /Contractor is to ensure that this part of OEMP is implemented and strictly adhered to.

## Protection site/Work Station

The following will be at the project site:

* Digger
* Other necessary equipment’s

**Objective/Purpose**

To ensure that there are no adverse environmental effects from poorly maintained work station on-site during the operation phase of development.

**Avoidance**

Entry to the above facilities will be permitted to staff and guests at the discretion of the Project Manager the Digger and other necessary equipment will be maintained in their original condition subject to normal wear & tear and to the following conditions:

* All the mentioned facilities must be kept securely locked at all times if unattended.
* All will be kept in a clean and tidy condition.
* All associated services will be maintained in a fully operative condition.
* Any damage to the facilities or associated services resulting from the staff actions or negligence shall be repaired immediately.
* Any damage done to the facilities or associated services resulting from the original design and construction will be the responsibility of MOWE/Contractor.

**Monitoring**

The conditions of the facilities mentioned above and compound are monitored as part of the daily and weekly monitoring process. MOWE /Contractors are to ensure that this part of OEMP is implemented and strictly adhered to.

## Equipment Management

It must be clearly understood that poorly maintained equipment can result in:

* Unacceptable noise discharge
* Unacceptable air discharge
* Leaks of fuel, oil and hydraulic fuel

**Objective**

To ensure that there are no adverse environmental effects from poorly maintained or operated equipment & machines and engines on-site during the operation phase of development.

**Avoidance**

Adverse effects from poorly maintained or operated equipment are avoidable. Machinery in poor conditions or operated incorrectly will be shut down and not operated until the MOWE/ Contractor has undertaken repairs.

**Minimizing**

To minimize the potential of any unacceptable discharge from work equipment, MOWE/ Contractor will ensure all equipment, machines, generators and vehicles operated by them are in a good state of repair, regularly serviced and used. MOWE/Contractor will also ensure this requirement is imposed on all equipment and vehicles, not under their control.

**Monitoring**

The condition of generators and equipment is monitored as part of the daily and weekly monitoring process. MOWE/Contractor is to ensure that this part of OEMP is implemented and strictly adhered to.

## Fuel Transportation & Storage Management

There is the potential for significant adverse effects to result from poor storage and handling of fuel, oil, lubricants and similar substances during transportation to the site or on-site. This section of the OEMP provides for the same.

**Objective**

To ensure that there are no adverse environmental effects from the transportation storage and handling fuel, oil and lubricants and similar substances.

**Avoidance**

Adverse effects from the storage and handling of fuel, etc., can be avoided by ensuring transportation, appropriate storage and handling procedures. Only approved vehicles will be used for transportation of fuel to the site. The location of bulk fuel tanks will be approved by MOWE.

The bulk storage tanks will be bunded. The capacity of the storage formed by the bund will be equal or greater than the storage capacity of the tank. Lubricants and oil, etc. will be stored in the container or equivalent covered structure.

All used oil must be stored in secure containers and must be disposed of off-site in an appropriate manner. The transportation, storage and handling of fuels, etc. are monitored as part of the daily and weekly monitoring process. MOWE is to ensure that this part of OEMP is implemented and strictly adhered to.

## Spill Control

The spillage of oil and other chemicals may contaminate surface, river or ground waters.

**Objective**

To identify the areas and activities where an accidental spill could occur and set up the procedures to avoid, minimize, prevent and control spills.

**Avoidance**

Ensuring that accidental fuel spill is not to occur during the transportation of fuel by fuel tankers on roads.

Ensuring that accidental fuel spill is not to occur at the project site areas on the refueling of digger and standby generator. Ensuring that other chemicals accidental spills (thinners, paints, lubricants etc.) are not to occur in the storage area or while the chemicals are being used.

**Minimizing**

Measures to minimize fuel spill risk will include mobile fuel tankers to cut off fuelling if the reservoir is full. The mobile fuel tankers will be maintained to high standards, and the drivers will be given comprehensive training in spill control, accident and emergency procedures defined by this plan.

Measures to minimize other (thinners, paints, lubricants etc.) spill risk will includethinners, paints, lubricants etc. are stored within the fully enclosed container at the main Work Station and taken in quantity when required to Project site without the possibility of leakage being drained to the storm water system. The storage areas should be inspected weekly for any leaks on the floor.

**Monitoring**

The spills and leakages are monitored as part of the daily and weekly monitoring process. MOWE/Contractor is to ensure that this part of OEMP is implemented and strictly adhered to.

## Noise Control

Noise from the development site is not anticipated to be a concern during the operation phase of development. Through the strategic placement of silencers of digger engine chimney, suitable limits will be achieved during the operation phase of development.

Further details of avoiding, minimizing the occurrence of this activity are provided in APPENDIX A: FURTHER DETAIL TABLES — TABLE 2. MOWE is to ensure that this part of OEMP is implemented and strictly adhered to.

## Wastewater Management

Untreated wastewater containing contaminants if discharged from the development area on to land and gain access to the waterways will impact severely on the water environment and the people using it. Likewise, if wash water from the project site is allowed to flow out in an unacceptable condition will impact severely on the river environment and the living things in it as well as on those residents that live near and around it.

**Objective**

To ensure that there are no adverse effects from wastewater generated from workplaces within the development area.

To ensure that the methods employed in disposing of wash water from the Project site are safe and sound for drainage and creek structures, drainage and creek habitats and the residents living near and around it.

**Avoidance**

Adverse effects of wastewater generated from the Project site in the development area to include discharge wash waters for the cleansing of the digger or other necessary equipment’s are avoidable.

Avoid discharging directly to the creek.

**Minimizing**

Provide an appropriately and suitably designed Pour Flush system on land for the treatment and final disposal of wastewater generated by people working at the Project site in the development area.

**Monitoring**

The provisions of treatment facilities for wastewater on-site and how they function are monitored as part of the daily and weekly monitoring process. MOWE /Contractors are to ensure that this part of OEMP is implemented and strictly adhered to.

## Solid waste management & Litter Control

Litter control is to ensure that the site is clean and tidy. It will be checked weekly. The Project Manager will be informed of any fence damage.

General surveillance of the project site and surroundings for illegal dumpers are recommended. Litter control will cease once construction Operations cease.

During operation, solid waste from the project site will be stored in refuse bins and skip bins and removed by MOWE/Contractor to the nearest landfill regularly, twice/three times a week.

Further details of avoiding, minimizing the occurrence of this activity are provided in APPENDIX A: FURTHER DETAIL TABLES — TABLE 3. MOWE /Contractor is to ensure that this part of OEMP is implemented and strictly adhered to.

## Waste and Hazardous Materials Handling, Storage and Disposal

**Objectives**

To ensure that there is no impact from the handling, storage and disposal of Wastes and Hazardous Substances within the project area.

**Management Action**

**Before Protection Work Commences:**

Ensure hazardous substances and wastes have been allocated safe and secure storage areas at the site.

**During Protection Work Operation**

Clearly defined areas for storage of tyres, lead-acid batteries, inert solids, waste oil, and hazardous wastes. Clearly defined areas and procedures for storage of hazardous substances used at the site, vehicle fuelling station, fuel tanks. Require Materials Safety Data Sheets (MSDS) from suppliers.

Construct and maintain a bund for waste oil storage according to Australian Standard 1940. Construct and maintain Pour Flush system at the Site to receive wastewater generated by workers on the Project site.

Ensure correct labeling and adequate separation between different types of hazardous materials. Reduce, reuse, recycle, treat or dispose of waste in that order of preference.

**Decommissioning**

Remove all hazardous wastes from the sites.

Remove all storage tanks such as fuel and waste oils from the site.

Fill pit of pour-flush with soil and sand and safely remove structures.

**Monitoring**

Conduct daily/weekly/monthly monitoring of hazardous goods and waste handling and storage. Conduct monthly reviews of waste and hazardous goods management.

**Deliverable/Compliance Criteria**

All storage in accordance with the relevant Australian Standard.

Ensure hazardous substances are transported in accordance with the Australian Code for the transport of Dangerous Goods by road and Barge

**Corrective Action**

Formulate and Emergency Response Plan. Comprehensive maintenance program for storage and associated pipe workaround dangerous substance storage

## Vector Control & Nuisance

Mosquitoes and flies have known vectors for carrying diseases to human. Mosquitoes breed in stagnant water and fly in dirty places where rubbish is dumped indiscriminately.

**Objective**

To avoid creating and providing breeding places for mosquitoes and flies and minimize their numbers in the development area hence minimizing potential public health impacts on the people living around the development area.

**Avoidance**

The presence of Vector in large numbers in the development area will pose potentially significant risks for the spread of communicable diseases within the development area and Soasoa community as a whole. It is crucial therefore that their breeding is discouraged and breeding places destroyed.

**Minimizing**

Possible breeding areas for mosquitoes would be minimized if the development area and its surroundings have effectual drainage and the water not allowed being stagnant over time. Main drains and small collective drains at the sites and their surroundings should be regularly cleaned and made to be free of overgrowth at all times.

Possible breeding areas for flies would be minimized if indiscriminate dumping of solid and other forms of wastes in the development area and its surroundings is avoided and all refuse and waste are properly buried in the soil.

**Monitoring**

Mosquito breeding places and mosquitoes in abundance are monitored as part of the daily and weekly monitoring process.

MOWE /Contractors who will be responsible during the operation phase are to ensure that this part of the OEMP is strictly adhered to.

## Safety at the Workplace

Working on the development site can be dangerous, particularly when precautions are not taken. The most frequent reported hazards are:

1. Direct exposure/contact with hazardous substances.
2. Accident injury through collision of heavy vehicles.
3. Inadequate maintenance of technical equipment.
4. Vibration from heavy machinery.
5. Accidental contact with a sharp object or pointed objects.
6. Physical body stresses imposed by dust, rain, cold and heat.
7. Overexposure to the sun.
8. Working too close to loud noise without precautions.
9. Fires and gas explosions.

Constant supervision of the site is required even though the general public is not allowed on the majority of the site. This is to ensure that vehicles are in the correct place, are able to tip safely and reverse safely. It is also vital to know if people are at safe locations when on the worksite.

Inhalation of dust is an important health consideration. A few simple measures can reduce the dust in the area see dust control. From an occupational view, dust filters should be fitted to machinery cab air-conditioning inlets or the wearing of masks considered.

Adequate protection against noise for staff and operators working near or on loud machinery should be ensured.

It is essential that all staff and operators undertake training programs thereby ensuring the transfer of responsibility when people are unavailable, such as on leave. The standby operators should also attend this program. First Aid kits must be provided on-site at the worksite and be properly maintained. Several staff members will be trained in First Aid, and a safety officer is appointed. In addition, appropriate access for emergency vehicles should be maintained.

It is the responsibility of the Project Manager of MOWE and the contractors to ensure that all personnel working on the development site and equipment are OHS compliance.

Further details of avoiding, minimizing the occurrence of this activity are provided in APPENDIX A: FURTHER DETAIL TABLES — TABLE 4 . MOWE /Contractors are to ensure that this part of OEMP is implemented and strictly adhered to.

## Emergency Procedures

**Purpose**

The purpose of an emergency plan is to provide a system for emergencies that may occur at the protection work development area.

**Probable Causes**

* Fire
* Storm / cyclone/ flood & Earthquake.
* Chemical, fuel, or Leachate spill. & Gas Leak.
* Explosion
* Structure collapse
* Equipment failure.
* Accident.
* Armed Hold-up
* Landslide

**General Procedures**

* Vacate danger area immediately.
* Assess the situation, without endangering your life.
* Isolate, disconnect or contain danger.
* The person in charge to ensure all personnel is clear of the danger area and accounted for.
* Provide first aid to injured personnel
* The accident scene is not to be interfered with unless absolutely necessary to save life, property etc.
* Advise your Project Manager as soon as all the other details have been attended to.
* For emergency services, obtain an outside line and **telephone 911.**

**Emergency Equipment**:

Staff must know where fire extinguishers/absorbent materials etc. are, how to use them and are to report immediately any interference or damage.

**Exits**:

Staff and contractors must know where exits to buildings are and must not allow them to be obstructed so that rapid exit would be prevented or hazardous.

**Assembly Area:**

The assembly area in the event of an emergency **is in front of the Work Site.** However, only proceed to the agreed meeting point if it is safe to do so.

**Procedures for Specific causes**

Emergency procedures for some probable causes listed above are outlined in APPENDIX: J (J1 — J6) MOWE /Contractors are to ensure that this part of OEMP is implemented and strictly adhered to.

## Water Quality Monitoring

**Objectives**

To develop a database of water quality data for the lower Soasoa area

* To continuously collect and review water quality data to determine the impact on water quality of the riverbank protection operation
* To ensure the operational impact on water quality are negligible

**Management Actions**

**Before Protection Work Commences:**

* Physically locate the 5 established sampling sites.

**During Protection Work:**

Monitor water quality of the Nasuva Creek and Qawa River at the 5 sampling stations using all physical parameters mentioned in this report

* Regularly review spill contingency procedures and equipment
* Monitor riverbank protection activity to ensure minimum disturbance to waterways

**Decommissioning:**

* Maintain monitoring of water quality
* Monitor decommissioning activity to ensure minimum disturbance to waterways

**Monitoring**

* Continue surface water quality monitoring; during operation phase on a six-monthly frequency
* Continue surface water quality on a six month period following decommissioning or as determined by the results

**Deliverables/Compliance Criteria**

Adapt compliance criteria as required by regulatory authorities

* Water quality to comply with appropriate guidelines, taking into account sites specific factors.
* Report water quality trends to operational/environmental staff and regulators.

**Corrective Action**

* Where the impact is identified, recommend corrective changes to be made.
* When no impact is identified, recommend appropriate changes to the monitoring program to reduce the frequency and/or perimeters without compromising the integrity of the program. E.g. monitoring frequency is reduced to 1 per year.

## Fisheries Resource Monitoring

**Objectives**

* To monitor fisheries resource such as seawater prawn and determine the impact of the flood protection operation.
* To ensure the operational impact on the prawn fisheries is negligible.

**Management Actions**

**During Protection Work:**

* Monitor and review riverbank protection and dumping activity to ensure minimum disturbance to the prawn fishery on the foreshore area**.**
* Ensure free access to the foreshore for the fisher folk.
* Ensure all dump traps are secure.

**Decommissioning:**

* Ensure access to the foreshore for the fisher folk is maintained.
* Ensure dump traps are secure.

**Monitoring**

* MOWE or the Department of Fisheries to undertake a fishing survey at the end of each year and review information.

**Deliverables/Compliance Criteria**

Report any significant changes, such a drop in prawn population to the depart department of fisheries with recommendations.

**Corrective Action**

Where impact on prawn fishery is significant, recommend corrective changes to be made. This includes immediate shifting or dumping to other dumpsites.

* Where no impacts identified, recommend appropriate changes to the monitoring program to reduce the frequency, e.g. 1 fisheries survey every 2 years.

## Rehabilitation Programme

The need to rehabilitate and re-vegetate to bring back land to its original status is crucial. Land areas and river banks affected by the flood protection area to be repaired and put back into its original status. Vegetation should be re-planted where disturbance has been caused through preparation for the upgrading works.

Effects of scaling up the Soasoa drainage system Works will be highly considered in this programme. Though mitigation measures may have been put into place for flood control before flood protection starts it may not be found adequate to address flooding during the stabilization period.

On the other hand, it is critical that all exposed areas are re-vegetated upon completion of de-silting works, as the vegetation:

* assists in screening battered site from public viewing
* softens the general appearance of the operation
* stabilizes the areas against erosion
* hastens the opportunity to convert the site into the selected end

At times the areas being disturbed are left bare and not re-vegetated long after construction works have been completed. It then becomes the cause of landslides and erosion and weakening of infrastructures foundations on site.

If certain varieties of trees/shrubs are seen to be not performing, then new types should be trialed. MOWE /Contractors are to ensure that this part of OEMP is implemented and strictly adhered to.

## Future Development

The MOWE shall obtain approvals from appropriate authorities for all future development. An OEMP is to be used to guide constructional and operational work phases of all major developments. MOWE /Contractors are to ensure that this part of OEMP is implemented and strictly adhered to.

## Complaint Register

The Project Manager shall record all complaints made about the flood protection development during the phases. Generally, it would be the Project Manager or in his absence the Care-taker who receives the initial complaint.

The Project Manager is responsible for dealing with all complaints and organizing the appropriate action to be taken, assess the level of urgency and check the validity of the complaint.

He is also responsible for informing the party who complained by letter of the outcome of their complaint.

The Complaint register applies to many of the aspects addressed in the OEMP, such as noise, smell & odor, dust, litter, water adequacy & quality water discharge & flooding and so on.

The weather station can be used to verify odor, dust and even noise complaint to some extent by interpreting the wind direction recorded at the time of the complaint. MOWE /Contractors are to ensure that this part of OEMP is implemented and strictly adhered to.

## Reporting Procedures

The Project Manager will be responsible for all day-to-day activities and will provide a weekly or monthly report on all aspects of the OEMP, including complaints and monitoring results. MOWE will consolidate the reports and forward copies of the same to the Department of Environment and the Labasa Rural Local Authority immediately and not later than the second day of the week forth-coming for weekly reports and not later than seven days after month-end for monthly reports.

MOWE /Contractors are to ensure that this part of OEMP is implemented.

# APPENDIX

**APPENDIX CONTENTS**

Appendix A: OEMP Summary Table of activities

Appendix B: Complaint Form

Appendix C: Daily Inspection Form

Appendix D: Monthly Inspection Form

Appendix E: Weekly Report Form

Appendix F: Incident Report Form

Appendix G: Induction Record Sheet

Appendix H: Process Overview

Appendix I: Emergency Response Contact

Appendix J: Emergency Procedures

Appendix: J1 Spill Response Plans

Appendix: J2 Emergency Procedures - Fire

Appendix: J3 Emergency Procedures - Cyclone & Flood

Appendix: J4 Emergency Procedures - Earthquake

Appendix: J5 Emergency Procedures - Emergency Warden Register

Appendix K: Acknowledgment Form (MOWE)

Appendix L: Contractor’s Acknowledgment Form

**APPENDIX A: FURTHER DETAIL TABLES**

**APPENDIX A: TABLE: 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Policy** | **Performance Objective** | **Monitoring** | **Corrective Action** |
| 5.3 Signage | To enhance all aspects of the land development operation, including safety and environmental performance. | To keep the site functioning in a manner that increases productivity through people being in the correct place. | 1. Staff should make sure that all signs are in good condition. 2. Daily inspection of direction signs. 3. Monthly inspection of general signage. | 1. Substandard signs shall be fixed or replaced. 2. Signs shall be kept up to date with the current working on site. 3. Irrelevant signs should be removed and new signs installed where required. |

**APPENDIX A: TABLE 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Policy** | **Performance Objective** | **Monitoring** | **Corrective Action** |
| 5.8 Noise Control | To prevent excessive noise at the land development site. | Noise recorded at residences should not be greater than 40dB(A)\*  The sound level impact should be reassessed immediately before each stage of land off cut developed. The above criteria are based on a 5dB (A) increases over a nominal background. | 1. Monitoring of noise at nearest dwellings during critical early morning and evening hours, upon receipt of complaints. 2. Noise assessments during critical phases of the land developed operation, such as when commencing a new stage. 3. Reassess the background noise impacts, such as the commencement of other local development. | 1. Check the maintenance of vehicles. 2. Monitoring noise more frequently (AM/PM) at nearest residences and any complaints dwelling. 3. Reduce the number of vehicles operating or their operating times. 4. Reassess the noise levels both from other sources. 5. Reassess permitted noise level. |

**APPENDIX A: TABLE 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Policy** | **Performance Objective** | **Monitoring** | **Corrective Action** |
| 5.10 Solid Waste Management & litter control | To keep site and surrounding areas clean, tidy and free of litter. | Minimize litter formation and prevent litter on site or from leaving the site. | 1. Daily appraisal of amount of litter on site. | 1. Place litter bins around work areas 2. Litter bins are to be cleaned on a daily basis. |

**APPENDIX A: TABLE 4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Policy** | **Performance Objective** | **Monitoring** | **Corrective Action** |
| 5.13 Safety at Workplace | To operate the site in accordance with the Workplace Health and Safety standards and Government Regulations. | To operate in a safe working environment. | 1. Monthly statistics recording accidents. 2. Investigate the cause of any accidents that may have occurred. | 1. Ensure that the accident cannot be repeated. 2. Train workforce in any skills that may have been identified as lacking. 3. Train junior workforce to be able to takeover safety responsibilities when senior members are absent. |

**APPENDIX B: COMPLAINT FORM**

|  |  |
| --- | --- |
| Date & Time of Complaint | Recorded by: |
| Name of Event:  Date and Time |  |
| Name of Complainant |  |
| Contact Details of Complainant |  |
| Details of Complaint  (Include weather) |  |
| Action Required |  |
| Notification (tick box & note date & time) |  |
| Labasa Rural Local Authority | Fax: |
| Others: | Fax |

**APPENDIX C: DAILY INSPECTION FORM**

|  |  |
| --- | --- |
| Date: | Inspected by: |
| Current Operation Activities: |  |
| Weather Conditions: |  |
| Security, Fencing & Gates , Signage & Buildings | Confirm all in good order and working effectively |
| Machinery & Equipment | Confirm machinery on site in good condition |
| Confirm equipment being operated correctly |
| Fuel, Lubricants, Storage | Confirm storage and handling as per OEMP |
| Spill Control | Confirm implementation of avoidance and minimization measures as per OEMP. Confirm spill response equipment are in good order and effective conditions. |
| Noise: | Identify any noise problem and action taken |
| Water Supply | Confirm adequacy of water for domestic purposes  Confirm adequacy of water for WTP purposes—water level at weir, creek blockages, leaking main etc. |
| Sewage system: | Confirm sewage system operation |
| Waste Water | Discharge water timing & volume of discharge. Receiving Creek status, blockage free etc., capability to cope |
| Solid Waste | Confirm availability of waste bin and method of disposal as per OEMP |

|  |  |
| --- | --- |
| Date: | Inspected by: |
| Storm water Control System: | Confirm guttering & downpipes operational. Confirm storm water drains in good conditions |
| Vector Control | Confirm water in ponds made to flow Drains cleared of overgrowth |
| Protected vegetation | Confirm vegetation protection measures adequate |
| Fire | Confirm firefighting equipment in place, adequacy of water for firefighting and other requirement of OEMP |
| Emergency Procedures | Ensure Emergency procedures are in place. Employers trained in procedures. Confirm equipment in Good and workable conditions |
| Overall Comment: |  |
|  | |
| (Signed) | |
| Corrective or Preventive action required? | |
| Confirmation of completion preventive actions identified in previous inspections. | |
| Confirmed by | |

**APPENDIX D:** **MONTHLY INSPECTION FORM**

|  |  |  |
| --- | --- | --- |
| Date: | | Inspected by: |
| Weather Conditions: | |  |
| Site Condition: | |  |
| Status of records: | | Comment: |
| Complaints Register | |  |
|  | Training |  |
| OEMP Update | |  |
| Daily Inspection | |  |
| Incident Reports | |  |
| Environment Effects Register | |  |
| Weekly Reports | |  |
| Security, Fencing & Gates Signage | | Comment: |
| Effectiveness of measures | |  |
| Buildings | |  |
| Effectiveness of measures  Machinery & Equipment | | Comments: |
| Conditions | |  |
| Operations | |  |
| Fuel, Lubricants & Hazardous Goods | | Comments |
| Confirm storage location | |  |

|  |  |  |
| --- | --- | --- |
| Date: | | Inspected by: |
|  |  |  |
|  | Spill | Comment |
|  |  |  |
|  | Spill checks |  |
|  |  |  |
|  | Leakage checks |  |
|  |  |  |
|  | Noise | Comment |
|  |  |  |
|  | Water Supply Adequacy & Protection | Comment |
|  |  |  |
|  | Effectiveness of measures |  |
|  | |  |
| Weir & Surrounding area blockage free | |  |
|  |  |  |
|  | Penstock (leakage etc.) |  |
|  | |  |
| Power House domestic supplies | |  |
|  |  |  |
|  | Wastewater treatment | Comment: |
|  |  |  |
|  | Effectiveness of measures |  |
|  |  |  |
|  | Sewerage system |  |
|  |  |  |
|  | Wash water discharge |  |
|  |  |  |

|  |  |
| --- | --- |
| Solid Waste Management: | Comments: |
| Check availability of litter bins. |  |
| Comment on litter and waste disposal |  |
| Storm water control | Comments: |
| Measures in place |  |
| Vector Control | Comments: |
| Measures in Place |  |
| Vegetation Protection | Comments: |
| Measures in Place |  |
| Deliveries to site | Comments: |
| Conforms with OEMP |  |
| Contingency: |  |
| Confirm contingency measures can be met. |  |
| Overall Observations and Recommendations: |  |
| Corrective actions: |  |
| Identified Completed |  |
| For:  MoWE | Print Name:  Signature: |

**APPENDIX E:** **WEEKLY REPORT FORM**

|  |  |
| --- | --- |
| To: Project Manager | Fax no. |
| Prepared by: |  |
| Period Covered: |  |
| Current Construction Activities: |  |
| **OEMP Compliance:** | **Confirm compliance or action taken** |
| Security, Fencing, Gate & Signage: |  |
| Buildings: |  |
| Machineries, Generators & Equipment: |  |
| Fuel & Lubricant Storage & Handling: |  |
| Spill: |  |
| Noise: |  |
| Water Supply: |  |
| Sewage System: |  |
| Solid waste |  |
| Storm water |  |
| Vector |  |
| Vegetation |  |
| Record Keeping: |  |
| Delivery Vehicles to site: |  |
| Comments: |  |
| Summary of corrective actions undertaken. |  |
| Signature: |  |

**APPENDIX F: INCIDENT REPORT FORM**

|  |  |  |  |
| --- | --- | --- | --- |
| Nature of Incident [Tick Box] Noise | Dust | Discharge on ground | Other |
| (if Others, state) |  |  |  |
|  |  |  |  |
| Locations: |  |  |  |
|  |  |  |  |
| Weather Condition: |  |  |  |
|  |  | |  |
| Reported by: | When Reported: Date | | Time: |
|  |  |  |  |
| Details of Incident: |  |  |  |
|  |  |  |  |
| Action to be undertaken to remedy: |  |  |  |
|  |  |  |  |
| Parties notified: |  |  |  |
|  |  |  |  |
| Signed by: |  | Date signed: |  |
|  |  |  |  |

|  |
| --- |
| Follow Up: |
| Future action required to prevent similar incident: |
| Confirmation that preventive measure(s) completed: |
| Confirmed by: Signature:  Date: |

**APPENDIX G:** **INDUCTION RECORD SHEET**

|  |  |
| --- | --- |
| Date: |  |
| Purpose of Induction: |  |
| Induction Undertaken by: |  |
| Attendees Signatures/Names |  |

**Induction Outcomes:** To make contractors/ subcontractors aware of site risks, the inspections required,

contacts if inspections highlight issues, typical actions if there are problems.

**Risks:** Discuss the issues of working adjacent to creeks and seas, hazardous substances storage and handling, waste management, vehicle condition.

**Inspections:** Cover by whom and when the daily inspections or monthly audits are done.

**Report:** By whom and when the weekly and monthly reports are done. Monthly report to Labasa Rural Local Authority

**What to do if there is a spill, noncompliance:** Run through the contingencies

**Key Contacts:** List the key people on site and where they are, their phone numbers

**Ask if there are any questions:** Try to get a few questions from the group

**APPENDIX H: PROCESS OVERVIEW**

Sewage

Hazardous Substance

Storage & Handling

Solid Waste

Noise

Vector

Discharge to water course

Water Wastewater

**INDUCTION**

**EMERGENCIES**

**Daily Inspection Sheets (prepared by Project Manager and Contractor)**

**COMPLAINTS**

**INCIDENTS**

**On File at Site Office –**

**Soasoa**

**Department Of Environment**

**Labasa Rural Local Authority**

**Monthly Report**

**(Prepared by Project Manager)**

**APPENDIX I: EMERGENCY RESPONSE CONTACTS**

|  |  |  |
| --- | --- | --- |
| **Name** | **Office Phone** | **Home Phone** |
| **Police Station Officers** |  |  |
| Labasa Police Station |  |  |
| **Ambulance** |  |  |
| Labasa Hospital |  |  |
| Doctors |  |  |
| **Labasa Hospital** |  |  |
| Private Doctors |  |  |
| **Provincial Office, Macuata** |  |  |
| Assistant Roko Tui, Macuata |  |  |
| PA Admin Office, Macuata |  |  |
| **Special Administrator-LRLA** |  |  |
| Labasa Rural Health Officer |  |  |
| Labasa Rural Local Authority |  |  |
| **Fire** |  |  |
| NFA - Labasa |  |  |
| **Lease** |  |  |
| Lands Department, Labasa |  |  |

**APPENDIX J**

**EMERGENCY PROCEDURES**

**APPENDIX J1:** **SPILL RESPONSE PLANS**

**Fuel Spill Control Procedures**

The person that first notices that the spill occurred should immediately alert the Fire/Spill Warden of the extent of the spill and the exact site of the spill. Call emergency services if there is a fire, if anybody has been injured or affected by the spill and for a major spill.

The Fire/Spill Warden shall immediately organize adequate spill containment, absorption materials and safety equipment are brought to the site.

The site should be sealed off to stop vehicles and people moving through the section involved. All the equipment should be turned off to ensure that there are no naked flames. Do not operate any cell phone or radios within 8m of the spill.

Every effort should be made to contain the spill in the local area by blocking the leakage from the tank and to prevent fuel discharge to the storm-water system. If it reaches the storm-water system then every effort will be made to contain a spill within the local drainage system. When the containment of the spill has been completed successfully the clean-up may begin.

The spilled fuel shall be absorbed by sorbent material. The contaminated sorbent and soil shall be disposed of at the appropriate disposal facility. The equipment used should be cleaned and replaced. If the company’s resources are unable to contain the spill within the local drainage, Fire Brigade, Police, Ministry of Environment shall be advised immediately.

**Other Chemicals Spill Procedures**

The person that first notices that the spill occurred should immediately alert the Fire/Spill Warden of the spill and the exact site of the spill. Call emergency services if there is a fire, if anybody has been injured or affected by the spill and for a major spill.

Secure the area to stop vehicles and people moving through the section. All the equipment shall be turned off to ensure that there are no naked flames. Do not use cellular phones and radios in the same room. The Fire/Spill Warden will identify the spilled chemical and define the personal protective equipment that should be used in dealing with the spill.

All efforts shall be made to contain the spill in the local area. The spilled chemical will be absorbed with adequate absorbents from the floors of the workshop and the liquid from the leaking container should be transferred to a safe container.

Contaminated absorbent should be disposed of at the appropriate disposal facility.

**Responsibility for Implementation**

MOWE/Project Manager/Contractors are to ensure that all workers undergo comprehensive and thorough training in spill response operations defined by this plan.

MOWE/Project Manager/Contractors is to ensure that this part of OEMP is implemented and strictly adhered to.

**APPENDIX J2:** **EMERGENCY PROCEDURES — FIRE**

**Emergency Evacuation Procedures in Case of Fire**

**Alarm:**

The person discovering the fire must act quickly and raise the alarm. Always be aware of the location of the fire extinguishers or water hose.

If the fire extinguishers or water hose cannot control the blaze, move to a safe distance away from the fire and report the danger immediately by phoning the emergency fire service number 911, and asking for "Fire Services".

Once you have made the phone call try to notify the person in charge of the operation who will decide what further appropriate action is necessary to contain the fire.

**Staff Responsibilities:**

The prime responsibility is the safety of contractors, visitors and staff, and then to fight the fire if safe.

Once the alarm is given, the evacuation procedures must be carried out.

**Fire Warden Duties: (Managers/Supervisors)**

Specific Staff are allocated Fire Warden Duties. *See APPENDIX J8 Warden Register.*

* + Ensure that all persons have evacuated the building by checking all areas. Close all doors as you check the area.
  + Do not turn off lights.
  + Do not allow any persons to enter or re-enter the building until authorized by the Fire Brigade or Fire Fighting Team.
  + Ensure that all persons are accounted for and are clear of the area if fire breaks out in the open. When the area that you are responsible for is clear, proceed to the Assembly Point.

**Responsibility for Implementation**

MOWE/Project Manager/Contractors are to ensure that all workers undergo comprehensive and thorough training in the Fire emergency procedure defined by this plan. MOWE/Project Manager/Contractors is to ensure that this part of OEMP is implemented and strictly adhered to.

**APPENDIX J3:**

**EMERGENCY PROCEDURES — CYCLONE & FLOOD**

**Emergency Procedures in Case of Storm/ Cyclone/ Flood**

**Storm/Cyclone Damage**:

The main danger from storms is from flying debris such as glass, roofing sheets, lightning, floodwaters etc. Take care to keep yourself safe. If a cyclone/ storm warning is received the following procedures should be adhered to:

1. Batten down hatches
2. Move all equipment to high grounds and secure
3. Check fuel tanks are on high grounds and secure
4. Keep clear of Power Lines
5. Disconnect all electrical appliances especially computers and take backup tapes of the site
6. Allow staff to return home—Keep emergency standby crew only on site.
7. Shut power if deemed necessary

**Responsibility for Implementation**

MOWE/Project Manager/Contractors are to ensure that all workers undergo comprehensive and thorough training in the cyclone and flood procedures defined by this plan. MOWE/Project Manager/Contractors is to ensure that this part of OEMP is implemented and strictly adhered to.

**APPENDIX J4:** **EMERGENCY PROCEDURES — EARTHQUAKE**

**Emergency Evacuation Procedures in Case of Earthquake**

Most casualties from earthquakes are caused by falling objects, collapsing debris, moving furniture and after-effects like fire.

Take action at the first indication of the ground shaking.

**If Indoors:**

Take shelter under a solid structure e.g. doorframe or desk. Keep away from shelves with heavy objects and from windows that may break. If there is no suitable cover, the following procedure should be used:

* Drop to knees away from windows. Knees together.
* Clasp both hands firmly behind the head bowing the neck. Bury the face in arms protecting the head.
* Children are to stay down in position, until they are told that it is safe to move.

**If Outside:**

If outside at the time of an earthquake you should take the best shelter you can:

* Move to an open space away from buildings, trees, power lines etc. Lie down or crouch low to the ground.
* Move away from the steep landfill face/move away from the edge of benches.

**When the Shaking Stops:**

Major earthquakes are often followed by after-shocks. Normally these are of lesser magnitude. When the shaking stops stay inside unless you are confident that it is safe to move outside. If safe to do so, turn off power sources. Persons outside must stay outside.

**Fire Resulting from the Earthquake:**

Staff should put the fire out if possible. Other occupiers likely to be affected should be warned and the building cleared if necessary.

**Responsibility for Implementation**

MOWE/Project Manager/Contractors are to ensure that all workers undergo comprehensive and thorough training in earthquake emergency procedures defined by this plan.

MOWE/Project Manager/Contractors is to ensure that this part of OEMP is implemented and strictly adhered to.

**APPENDIX J5:** **EMERGENCY WARDEN REGISTER**

|  |  |
| --- | --- |
| **LOCATION:** | **WARDEN(S):** |
|  |  |
|  |  |
| **Work Station/ Operation Site** | **Project Manager/ Contractor** |
|  |  |
| **Night** | **Project Manager/ Developer Representative** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**APPENDIX K: ACKNOWLEDGEMENT FORM—MOWE**

I acknowledge that I have read the Operation Environment Plan (OEMP) and that I understand my responsibilities In respect of this plan. I now make an undertaking that we will implement to the best of my ability all tasks that I am responsible for in the OEMP.

**APPENDIX L: CONTRACTOR’S ACKNOWLEDGEMENT FORM**

I acknowledge that I have read the Operation Environment Plan (OEMP) and that understand my responsibilities, in respect to this plan.

**Contractors Name**:……………………………………

**Contractors Signature:**……………………………..

**Date:**………………………………………………………..