



Environmental Management Plan

For

Offsite Storage Yard, Dunstan
Road

May 2011

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1 INTRODUCTION

1.1 BACKGROUND

Eastland Port Limited (EPL) has developed a site at Dunstan Road to provide short term storage for cargo to be shipped over the Gisborne Port. The yard will be finished with a metaled surface capable of supporting the heavy vehicles and equipment that will use the site. It is anticipated that a significant component of the yard will be the storage of logs awaiting shipment when the port log storage areas are full. However it is possible that there will be a need to store other cargo and accordingly the consent is expressed broadly to cover this possibility.

Stormwater will be discharged to the Awapuni Drain via new pipes which will operate independently of the existing drainage network (including the existing culvert drain beneath the rail line). In addition, the site has a number of neighboring properties that are sensitive to traffic, noise, vibration and dust effects.

The offsite storage yard at Dunstan Road has been built in a manner that achieves the required environmental outcomes as specified in the granted regional and district resource consents WP-2011-104292-01, WP-2011-104234-01, DW-2011-104235-01, and PR-2010-104230-00.

1.2 ENVIRONMENT MANAGEMENT PLAN SCOPE

The purpose of this Environmental Management Plan (EMP) is to detail the general environmental management activities to ensure compliance with the requirements of consents, contractual requirements and Eastland Port's environmental objectives.

As prescribed by the Resource Consents General Conditions, this management plan includes:

- A detailed description of the operation and maintenance of the surface stormwater runoff, treatment and disposal system including 'as built' drawings.
- A detailed description of log yard practices to be undertaken to reduce or remove bark debris and sediment that may become suspended within log yard runoff and which may reduce the capacity of the stormwater treatment and retention systems or which may contaminate the stormwater discharged from the site.
- Associated site management plans prescribing detailed measures to regulate the operation of the cargo storage facility including;
 - i. A spill minimisation/response plan
 - ii. A dust management plan
 - iii. Measures to deal with hazardous materials;
 - iv. A traffic management plan
 - v. A noise management plan
 - vi. An archaeological response plan.
- Monitoring programmes and measures to ensure compliance with conditions.
- Management responsibilities for implementing the plan, document holders, and document control;
- Complaints procedure

A copy of the most up to date version of this EMP will be kept onsite and will be adhered to at all times

2 COMPANY, SITE, AND ENVIRONMENT

2.1 COMPANY DESCRIPTION AND SITE LOCATION

Eastland Port 'is a regionally significant transport and commercial operation with complex infrastructure and continuing development needs'¹. It provides for the export of logs, processed timber products, and food products. It also provides port facilities for coastal vessels including; Royal NZ Navy ships, cement carriers, and fishing vessels.

Log exports, in particular, are a significant and growing part of the Eastland Port operation. In 2009, log exports increased to over 1 million tonnes per year making Eastland Port the second busiest log export port in New Zealand. Forecasts show that these volumes are to more than double from the current 1.2 million JAS exported in 2009/2010 year to approximately 3 million JAS in 2020/21, moving on to peak around 2029/30 at approximately 4 million JAS.

A storage yard site has been developed to provide short term storage for cargo awaiting shipping out of Eastland Port. The yard will be finished with a metalled surface capable of supporting the heavy vehicles and equipment that will use the site. No buildings are proposed at this stage, but could be erected in the future. The need for the yard arises because of limited storage areas within the Port and there is a need for developments to occur here. The yard will therefore operate primarily as an overflow storage area and the use will be subsequently being sporadic. On occasions it will be vacant, while at other times there will be high levels of activity.

The storage yard is located at Dunstan Rd, Matawhero (Figure 2-1). The site is to be accessed off State Highway 35 via MacDonal Road and adjoining Dunstan Road. The land is freehold land owned by Eastland Infrastructure and has the legal titles Lot 3 and 4 Deposited Plan 6770.



FIGURE 2-1 DUNSTAN RD STORAGE YARD

¹ Proposed Regional Coastal Plan, Chapter 4, Section 4.4.1, page 231

2.2 SITE ACTIVITIES, FACILITIES, AND STORES

The storage yard consists of 3.1 hectares of pavement and road way built for temporary storage of products destined for export via Eastland Port. Although consented as a generic storage yard this facility will primarily be used to store export logs awaiting shipment. There is to be no processing of products on site.

When handling and storing export, logs bark breaks away and becomes a by-product left behind on the pavement. Historical data from Eastland Port has shown bark accumulates at a rate of 0.018 cubic metres per JAS (approximately 0.9 cubic metre of wood) exported. Given this and the storage yard forecast to store approximately 25,000 JAS per annum; 450 cubic metres of bark can be expected to accumulate on site per annum. The bark will be recovered mechanically using log handling plant on site and stock piled on the pavement. Once enough bark for a truck unit has been accumulated it will be carted off to the Port's consented clean fill.

2.3 SITE LAYOUT AND DRAINAGE

The storage yard is located on Lot 3 and 4 Deposited Plan 6770 (Appendix A).

The yard pavement and associated storm water treatment is situated entirely on Lot 4 DP 6770 occupying approximately 70% of this. The pavement boundaries the adjacent properties on the north-eastern, south-eastern, and south-western sides; leaving the north-western side unoccupied. To enable an appropriate all weather pavement, the site has been raised and surface shaped to provide a minimum cross fall of 2.5%. Two ridges have been formed which run northwest-southeast to enable stormwater to be shed to one central and two side swale drains. This series of swale drains then channels water into two storm water ponds located in the southern corner (Appendix B).

The ponds are sized to treat storm water up to a 1 in 10 year ARI rainfall event, however for larger events bypass drains will allow the diversion of water direct to the drainage network. In addition to the existing 300mm diameter piped drain serving the site, two new 315mm diameter pipe drains have been installed to discharge directly into a small tributary of the Awapuni Moana (Appendix B).

2.4 SITE RECEIVING ENVIRONMENTS

Given the large area of continuous pavement formed and the by-products produced by storage of logs, there is a need to capture any stormwater to trap any sediment and detritus entrained in the storm water flows from the yard surface so as to avoid the offsite discharge of material.

2.4.1 IMMEDIATE RECEIVING ENVIRONMENT

All stormwater collected on the pavement will be channelled through the swale drains to the two stormwater ponds. The ponds have been designed in accordance with the Auckland Regional Council publication TP90: Erosion and Sediment Control. The swale drains and ponds will be regularly inspected (particularly after significant rain fall events) and cleaned to maintain the efficiency and capacity of the system to entrap sediment and other detritus and to prevent its discharge offsite. Inspection and maintenance of the stormwater system is detailed in section 4.1.

2.4.2 ULTIMATE RECEIVING ENVIRONMENT

After collection in the two storm water ponds, water will be moved via twin 315mmØ pipes to a small tributary of Awapuni Moana. Awapuni Moana is tidal water course modified to drain the adjacent agricultural land. Awapuni Moana migrates west into the Waipaoa River which then flows into Poverty Bay.

2.5 AUTHORISATIONS, CONSENTS AND PERMITS

The following consents were granted and must be complied with in order to manage and mitigate the potential effects of the storage yard. Consents are filed in Appendix C of this EMP.

2.5.1 WATER PERMIT WP-2011-104292-01 AND WP-2011-104234-01

A Regional Water Permit was granted to divert floodwaters resulting from raised ground levels, discharge treated storm water from works site surface as a result of establishment activities.

This is granted under the following Regional Plan functions:

TABLE 2-1 RESOURCE CONSENTS GRANTED FOR ESTABLISHMENT ACTIVITIES

Instrument	Category	Status
Resource Management Act (S14(1))	Diversion of floodwaters	Innominate (Discretionary Activity)
Regional Discharges Plan (Rule 6.5.3)	Other liquid discharges	Discretionary
Part Operative District Plan (Rule 5.20.3.4)	Alteration of ground level in F4 Flood Hazard Overlay	Restricted Discretionary

2.5.2 WATER PERMIT DW-2011-104235-01

A Regional Water Permit was granted to discharge treated storm water shed from the pavement surface to Awapuni Moana, drain and onto and into ground water and ground water, and obstruct more than 33% of the floodway width over site.

This is granted under the following Regional Plan functions:

TABLE 2-2 RESOURCE CONSENTS GRANTED FOR ESTABLISHMENT AND OPERATION ACTIVITIES

Instrument	Category	Status
Resource Management Act (S14(1))	Diversion of floodwaters	Innominate (Discretionary Activity)
Regional Discharges Plan (Rule 6.5.3)	Other liquid discharges	Discretionary
Part Operative District Plan (Rule 5.20.3.4)	Alteration of ground level in F4 Flood Hazard Overlay	Restricted Discretionary
Part Operative District Plan (Rule 5.20.3.5)	Obstruction of F4 Floodway	Restricted Discretionary

2.5.3 DISTRICT LAND USE CONSENT PR-2010-104230-00

A District Land Use Consent was granted to establish and operate a cargo storage yard on Lot 4 Deposited plan 6770, and Lot 3 Deposited Plan 6770 (access only), within the Rural B Industrial Zone located at Dunstan Road, Gisborne, including Dispensations from rules for landscaping, yards and sealing of the access way, Operation of heavy vehicles during the day and night.

This is granted under the following District Plan functions:

TABLE 2-3 RESOURCE CONSENTS GRANTED FOR ESTABLISHMENT AND OPERATION ACTIVITIES

Instrument	Category	Status
Yard Reduction	19.4.8	Restricted Discretionary
Outdoor Storage	19.14.9	Restricted Discretionary
Heavy Vehicles	19.14.11(a)	Restricted Discretionary
Landscaping	19.14.13 32.1(a) 32.4(h)	Restricted Discretionary
Activity classification	19.17.2.1	Controlled
Access way	15.3.4(d)	Restricted Discretionary

3 RISKS AND CONTROLS

3.1 RISKS

The establishment and operation of the storage yard on this site presents several pollution or nuisance risks which have been addressed in the granted resource consents and subsequently control measures and/or response plans have been put in place.

Specifically the environmental risks associated with the operation of this storage yard are:

- impact on the water quality of natural water bodies through stormwater discharge or spillage of hazardous substances,
- impact on the water quality of groundwater through drainage of stormwater,
- dust nuisance effects on neighbouring properties,
- traffic impact on local roads,
- noise nuisance effects on neighbouring properties, and
- disturbance of archaeologically significant features.

SURFACE WATER AND GROUNDWATER QUALITY

Possible contaminants in the stormwater and the sources of these contaminants include:

- Bulk material from log handling (bark and wood chips).
- Organic load from log handling and breakdown of this material.
- Hydrocarbons from vehicle and machinery use.
- Heavy metals from vehicle use.
- Suspended solids (clay, silt, gravel, sand) from log handling and processing and vehicle tyres.

As the stormwater is discharged to the Awapuni Drain and drains into groundwater, these contaminants have the potential to impact the water quality of these features.

DUST NUISANCE EFFECTS

Dust has the potential to impact on human health and the amenity of property in the neighbouring vicinity.

Activities such as truck movements, log handling and storage may lead to the deposition of sediment on the yard surface. Sediment deposited on sealed public roads can also result in a dust nuisance. This sediment has the potential to be entrained in wind creating dust. There are five major factors which influence the potential for dust to be generated. These are:

- **Wind speed across the surface.** Dust emissions from exposed surfaces generally increase with increasing wind speed. However dust pick up by winds is only significant at wind speeds above 5 m/s.
- **Moisture content of the material.** Moisture binds particles together preventing them from being disturbed by winds or vehicle movements. Similarly, vegetated surfaces are less prone to wind erosion than bare surfaces.

- **The area of exposed surface.** The larger the areas of exposed surfaces the more potential there will be for dust emissions.
- **The percentage of fine particles in the material on the surface.** The smaller the particle size of material on an exposed surface the more easily the particles are able to be picked up and entrained in the wind.
- **Disturbances such as truck movements and unloading of logs.** Trucks travelling over exposed surfaces tend to pulverise any surface particles. Particles are lifted and dropped from rolling wheels and the surface. Dust is also sucked into the turbulent wake created behind moving vehicles.

To maintain compliance with consents, mitigation measures will be implemented to prevent dust emissions as detailed in section 0.

TRAFFIC NUISANCE EFFECTS

Excessive smoke and odour from diesel-fuelled trucks and other machinery could cause nuisance to neighbours under adverse meteorological conditions if vehicles and machinery are not well maintained. Failure to maintain air filters, fuel filters, and fuel injectors to manufacturers' specifications may cause excessive black smoke and objectionable odour.

Complaints could be generated by trucks traveling at excessive speed, using air breaks or using routes which create a noise disturbance to neighbours. The deposition of bark litter and other material on surrounding roads, specifically from trucks using the storage site, has the potential to impact on amenity and the environmental quality of the area.

NOISE NUISANCE EFFECTS

Noise will be generated on site by logging trucks transporting logs to and from the storage site, machinery used to handle the logs, and the use of chainsaws and other such machinery. Primary effects of noise relate to the annoyance and disturbance of people residing in neighbouring properties; this effect is increased at night.

Through the implementation of noise management controls detailed in section 0, EPL will keep the noise created from the onsite activities to a practicable minimum.

ARCHAEOLOGICAL IMPACTS

No archaeological sites have been recorded at the Dunstan Rd offsite storage yard and no sites were identified during construction. However there is the potential for the exposure of unrecorded archaeological sites that are below the ground surface. All archaeological sites, whether recorded or not, are protected under the Historic Places Act 1993 (HPA), and may not be damaged or destroyed unless an Authority has first been obtained from the NZ Historic Places Trust (NZHPT).

To minimise any impact on archaeological sites, the archaeological response plan set out in section 0 will be followed if subsurface archaeological remains, human remains or taonga are exposed during the operation of the site.

3.2 ENVIRONMENTAL MANAGEMENT CONTROLS

The following section details the measures to be implemented in order to avoid remedy or mitigate the effects on the surrounding environment from the operation of the storage yard.

STORMWATER AND GROUNDWATER MANAGEMENT

Stormwater management will be implemented on site to prevent or minimise any adverse effects of the discharge on any water body beyond the boundaries of the site. The below measures will also be sufficient to ensure there is no significant detrimental effect on freshwater biological communities and the aquatic life of the receiving waters beyond the mixing zone boundary.

Regular inspection and maintenance, especially after rainfall events is important for the performance of the stormwater system and is detailed in detailed in section 4.1.

SOURCE CONTROL

As much as practicable, it is preferable to reduce contaminants at source. The following source control measures will be implemented on site:

- Provision of positive drainage to minimize opportunities for ponding (and formation of leachate).
- Regular recovery of bark and sediment from pavement to minimise the potential for entry into the stormwater system.
- Use of bunds to isolate and treat runoff from machinery permanently located in log yard
- Bunded refueling facilities.
- Implementation of the spill response plan detailed in section 0

Bark and sediment will be recovered from the pavement surface when required following inspection by the Site Manager. This will be undertaken by a loader which will scrape accessible areas. In the instance the storage site becomes empty of logs; a thorough bark recovery operation will take place.

SWALES

As runoff passes through the grassed swales onsite, contaminants are removed by the combined effects of filtration, infiltration, adsorption, and biological uptake. Vegetation also decreases the velocity of flow and allows for particulates to settle. The swale drains and ponds will be regularly inspected (particularly after significant rain events) and cleaned to maintain the efficiency and capacity of the system to entrap sediment and other detritus and to prevent its discharge offsite.

To minimize impacts on groundwater, swale maintenance and site management practices are important measures as stormwater will drain through the swales into the groundwater system.

SEDIMENT RETENTION PONDS

The swale drains will discharge into two ponds located at the south west corner. The ponds have been installed onsite to provide for the capture of sediments and detritus (log bark etc.) shed from the surface of the site as well as attenuating the effects of the discharge of stormwater generated by a 1:10 year storm event. The ponds will ensure that the volume of stormwater discharged from the site in a 1 in 10 year rain event is the same as the pre-development (current) discharge volume for a rain event of the same intensity.

For larger events bypass drains will allow the diversion of water direct to the drainage network. The base of the ponds and the pond inlet have been lined to prevent erosion and water infiltration into the groundwater system.

OUTLETS

In addition to the existing 300mm \varnothing piped drain serving the site, two new 315mm \varnothing pipe drains have been installed to discharge directly into a small tributary of the Awapuni Drain. The outlets have been armoured to prevent any erosion at or downstream of the discharge point and will be inspected annually to ensure this function is being maintained. If erosion is present, the Site Manager will undertake remediation works.

Site Operations

To maintain compliance with resource consents, when practicable, the following practices will be implemented:

- The existing drainage easements within Lot 4 DP6770 serving Lot 2 DP7967 and Lot 2 DP6770 will be maintained. Operational activities shall be undertaken at all times to maintain the effectiveness of the tile drainage system. Damage (if any) or modification to the drainage system will be repaired or reinstated to an appropriate standard in consultation and agreement with the owners of the dominant tenements.
- Should the Council's Emergency Management or Rivers Control and Land Drainage Section provide sufficient warning of a significant rainfall event with potential to result in loose logs being carried offsite by floodwaters, all loose logs shall be secured onsite to minimise the potential for this.
- The storage site may be used for the storage of hazardous substances including fuels and oils for the machinery used on site. These substances can become a pollutant if discharged to ground or water. Any use, storage, transportation and disposal of hazardous substances will be carried out in accordance with the Hazardous Substances and New Organisms (HSNO) Act 1996.

EMERGENCY SPILL RESPONSE PLAN

In the instance onsite activities lead to the discharge of wastes or a potential contaminant to the natural water body offsite, the operator needs to take the immediate action to avoid, prevent or mitigate any adverse effects. These mitigation procedures allow the avoidance of any further or actual potential adverse effects to any downstream water body. The mitigation procedure is as follows:

1. Stop the spillage of waste or offending discharge at the source.
2. Isolate the spill from the drainage system via temporarily bunding of surfaces and blocking drains.
3. Utilise the emergency spill kit.
4. Clean up the spill using methods appropriate to the spill material.
5. If the spill enters the treatment ponds, block off the outlet and drain the pond using a sucker truck and appropriately dispose of contaminated water offsite.
6. Sample water quality if the spill has entered the drain.
7. Check the spill is totally cleaned up.
8. Remove temporary blocks from the drainage system.
9. Restock the spill kit.
10. Complete an SF-1000 incident investigation (filed in Appendix I).
11. Notify the GDC within 24 hours of the escape of the wastes or discharges.

12. GDC 24 hour pollution hot line 027 652 7919.
13. Complete an SF-800 Continuous Improvement Form (filed in Appendix J), within 24 hours of the incident.
14. Send copies of a written report to the GDC within seven days of the escape along with forms SF-800 and SF-1000. Detail the manner and cause of the escape and steps taken to control and prevent its reoccurrence.

DUST MANAGEMENT

To maintain compliance with consent, dust management controls will be implemented to ensure there is no creation of dust or particulate discharge from the site which is offensive or objectionable at or beyond the boundary of the site.

To minimise sediment available for entrainment in wind and therefore dust emissions, regular sweeping of the vehicle access ways and the storage yard, where bare surfaces are available, will be carried out to pick up debris, bark and soil.

Watering of exposed surfaces and materials that may be disturbed is another method of control. Watering of surfaces is most effective when the water is applied prior to strong winds occurring and prior to particularly dusty activities commencing. The Site Manager is to take account of the daily forecast wind speed, wind direction and soil conditions before commencing an operation that has a high wind potential. Onsite stormwater ponds can be used source of water for dust suppression; otherwise water will need to be sourced offsite.

Bark stockpiles will have a limited height (<3m) and slope to reduce wind entrainment and will be orientated to maximise wind sheltering. Stockpiles are to be dampened or covered if they are producing visible dust emissions. If inactive for more than six months, the stockpiles will be vegetated and supplied adequate water to support optimum vegetation growth.

Wherever practical, exposed surfaces will be re-vegetated and existing vegetation will be maintained providing a natural barrier to wind entrainment of dust.

In the unforeseen event that the above measures are ineffective and dust is emitted beyond the site, the site manager shall inform the Councils Chief Environmental Health Officer within 24 hours of the dust emission.

WASTE MANAGEMENT

In the first instance, EPL shall reduce, reuse, or recycle waste to lessen the amount of waste requiring permanent disposal. If disposal is required the waste product is to be disposed of to an approved disposal facility as soon as practicably possible. If the waste remains on site for any period of time and has the potential to contaminate stormwater it must be contained through bunding. If the waste has the potential to create a dust nuisance the waste must be dampened down or covered.

TRAFFIC MANAGEMENT

The heads of agreement (or equivalent) with cartage and service operators and staff addressing traffic use of MacDonald road and Dunstan road is filed in Appendix D.

To minimise noise generated by traffic accessing the storage site via MacDonald and Dunstan Roads the following controls will be implemented:

- Speed limit of 30km/hr. on site for all vehicles;
- Non-use of air brakes; and
- Non-use of Willows Road by heavy vehicles visiting or departing the site.

Bark litter deposited by trucks using the storage site, within the road reserves of MacDonald and Dunstan Road, will be minimised through general onsite housekeeping including regular sweeping of onsite bark debris.

Mobile plant, both owned by Eastland Port and storage yard service providers, are required to have regular maintenance programmes to help mitigate any environmental risks they may pose including the emission of black smoke, odour and excessive noise. To prompt timely repairs and maintenance daily fleet checks are performed and recorded on all plant. This check list is shown in Appendix E.

NOISE & VIBRATION MANAGEMENT

Noise onsite will be kept at a practical minimum through the implementation of the following controls:

- Noisy activities including the use of chainsaws to be programmed for daytime.
- All plant operating onsite during night-time shall be fitted with alternatives to tonal reversing alarms.
- Training of staff to work in least disruptive manner.
- Maintenance of yard seal to minimise surface roughness.
- Retention of vegetation on site where possible to provide natural noise barriers.
- Traffic management measures including:
 - Speed limits
 - Vehicle maintenance
 - Non use of airbrakes
 - Fixed truck routes on surrounding roads

In addition, mitigation listed in Condition 2, 3 and 4 of consent PR-2010-104230-00, has been implemented by EPL to further minimise the impact of noise and vibration on neighbouring properties.

ARCHAEOLOGICAL RESPONSE PLAN

In the instance that archaeological features or deposits are exposed the following response plan will be implemented:

1. Operations shall cease in the immediate vicinity while an archaeologist is consulted to establish whether the remains are part of an archaeological site as defined under the Historic Places Act 1993.

2. If the archaeologist confirms that it is an archaeological site, the area of the site will be defined by the archaeologist and excluded from the operational area.
3. The NZHPT, the GDC and, if the site relates to Maori occupation, the designated tangata whenua representative(s) will be informed of the discovery.
4. The archaeological remains will be investigated and recorded using standard archaeological techniques in accordance with the conditions of an Authority granted by the NZHPT.
5. Operations can resume when the project archaeologist confirms that investigation and recording are completed.

3.3 ROLES AND RESPONSIBILITIES

Each person involved in the site operation has equal responsibility to strive to avoid, remedy or mitigate adverse environmental effects. There are three key groups with responsibility for environmental management of the site:

- Eastland Port as the site owner and holder of the resource consents;
- The contractors utilising the site; and
- The Gisborne District Council who audits the works and monitors compliance with resource consent conditions.

The environmental responsibilities for the site are allocated to the Site Manager. The Site Manager is responsible for directing activities and contractual relationships occurring within the Cargo Yard (see Figure 4.1) and therefore is responsible for the compliance of the resource consents filed in Appendix C.

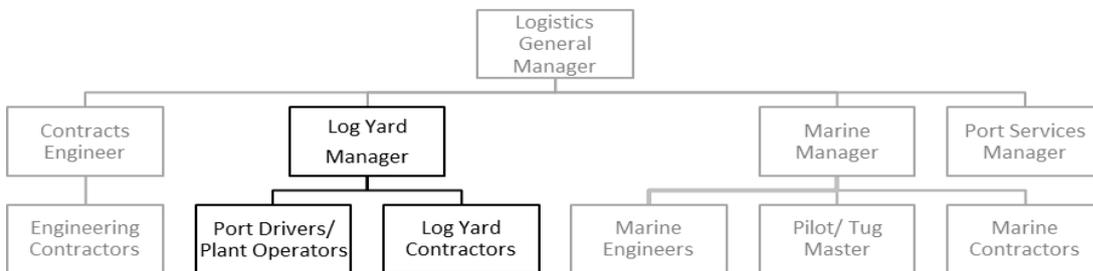


FIGURE 3-1 EASTLAND PORT MANAGEMENT STRUCTURE

The Site Managers contact details are as follows:

Site Manager Name: Marty Bayley	
Phone number: 027 544 2525	Email: marty.bayley@eastland.co.nz

In the instance the Site Manager cannot be contacted, contact the Eastland Port office on (06) 868 5129.

The environmental responsibilities are to be conveyed through education and training of Port procedures, and enforced through contractual obligations on all Eastland Port employees, contracted service providers, and port users.

All parties, Port employees, contracted service providers, and cargo yard users, will be aware of the emergency response procedures through employment inductions, education, and training if required.

It will be the Site Manager's responsibility to monitor and direct this environmental management programme for the storage yard. This will include inspection and maintenance programmes of both the storage yard and stormwater system, and monitoring the stormwater quality.

The Site Manager will facilitate the access of Council representatives to the relevant parts of the site for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.

4 PROGRAMMES AND SYSTEMS

4.1 INSPECTION AND MAINTENANCE PROGRAMME

Weekly inspections of the site shall be undertaken to check that the facility is operating efficiently and complying with resource consents. A program that lists weekly and bimonthly maintenance procedures is included in Appendix E.

Regular maintenance of the stormwater system is important to check that the facilities are operating efficiently. The site manager shall utilise stormwater management inspection forms filed in Appendix F.

INSPECTIONS FOLLOWING RAINFALL EVENTS

As soon as practicable after any rainfall events exceeding **25mm in a 24 hour period**, the Site Manager shall inspect the stormwater retention pond and culvert outlets to ascertain if a discharge from the site is occurring.

Rainfall data will be taken from reported values of the GDC Waipaoa River/ Matawhero Bridge gauge (<http://www.gdc.govt.nz/site-report/#rainfall>). This gauge is located approximately 4.2 km from the site.

Should a discharge be apparent into the tributary leading to the Awapuni Drain the discharge shall be assessed for all of the following characteristics:

- Production of any conspicuous change in the colour or clarity of the receiving waters after reasonable mixing;
- Any conspicuous floatable or suspended materials;
- Scums or foams on receiving waters;
- Any emission of objectionable odour in the receiving waters; and

Should any of these characteristics be detected, the Site Manager shall:

- a) Inspect the cargo storage yard, and associated stormwater infrastructure to determine the possible cause; and
- b) Identify those steps required to rectify those effects; and then
- c) within 2 working days, liaise with the Council's Water Conservation Section and provide, to its satisfaction, the following information:
 - I. The extent of the apparent effects;
 - II. The inferred cause of the apparent effects;
 - III. The means that EPL proposes to rectify the situation (including the possible mitigation involving construction and operation of the reed bed on the south-eastern boundary as identified in the rebuttal evidence of Mr Appleby dated 4/08/10;
 - IV. Any additional monitoring requirements;
 - V. Frequency of reporting on rectifying the situation.

The Site Manager shall implement the agreed rectification measures, and continue to liaise with the Council until all steps in the rectification process have been fully completed to its satisfaction.

Any procedures identified to avoid remedy or mitigate the effects of any fugitive discharge, or to minimise the potential for any further fugitive discharge, shall be fully implemented and shall remain in force for such time as the actual and potential effects of the discharge are rendered no more than minor.

To maintain compliance with condition 32 of consent WP-2011-104234-01, subsequent to significant rainfall events the facilities infrastructure including the stormwater retention ponds, yard drainage and culverts shall be inspected and reinstated as necessary to achieve the same protective levels and dimensions as were in place prior to the event.

4.2 ENVIRONMENTAL MONITORING PROGRAMME

4.2.1 STORMWATER QUALITY MONITORING

A stormwater quality monitoring programme will be put in place to ascertain whether the discharge from the site may be causing an adverse effect on any water body beyond the boundaries of the site. The monitoring programme involves the collection and examination of stormwater samples to be carried out once every two months.

In the event that one or more of the concentrations of the contaminants exceeds a set allowable limit, a source identification investigation will be undertaken in order to ascertain the part of the site that is causing the elevated concentrations.

FREQUENCY

The stormwater quality monitoring programme will be undertaken throughout the operation of the cargo storage yard. Regular monitoring will consist of collecting water samples on a two monthly basis. Samples are to be taken when runoff generated from the cargo storage yard is being discharged to the Awapuni Drain. Should environmental conditions exist where no significant runoff is generated from the cargo storage yard enabling a sample to be taken within the two month period, an addition sample shall be taken during the next sampling period.

The frequency of monitoring may be reviewed annually, following receipt by the Council of Eastland Port's report results of the previous year's monitoring results.

SAMPLING METHODOLOGY

A stormwater sample will be collected at the stormwater retention ponds culvert outlets prior to it entering the Awapuni Drain. A second sample shall be collected in the Awapuni Drain 10 metres downstream of the confluence within the tributary drain (the mixing zone boundary and surface water compliance point). A third sample shall be taken 10 metres upstream of the confluence of the tributary in the Awapuni Drain.

The water samples must be collected and handled according to established procedures. Appropriate sample bottles must be used to collect the water samples. These should be acquired from the testing laboratory (where the samples are to be analysed) prior to each sampling event. Care should be taken such that no cross contamination occurs during both handling and storage of the sample bottles. During the sampling event, care must also be taken to minimise personal contact with the rim of the sampling bottle and its interior, including the lid.

FIELD SHEETS

An appropriate field sheet should be filled in during each sampling event in order to have a direct record of information which will assist in interpretation of the results. A sample field sheet is given in Appendix I. These should record the following information:

- Sample site location/site identification
- Date, time sample is taken
- Sample identification number
- Samplers name
- Any other relevant information or observations (i.e. changes in water colour, any visible sediment plumes in the receiving environment, the presence of debris or conspicuous objects etc.)

Each sample collected should be assigned a unique identification number which should be noted on the field sheet. Each sample bottle should be marked on the outside (with a waterproof marker) with the date and time when the sample was taken, the sample site location and an assigned unique sample identification number.

SAMPLING SITE LOCATIONS

Each two monthly sampling event will be undertaken by collecting samples at the following three locations:

- Stormwater retention ponds culvert outlets prior to it entering the Awapuni Drain.
- 10m downstream of the confluence of the tributary in the Awapuni Drain.
- 10m upstream of the confluence of the tributary in the Awapuni Drain.

STORMWATER SAMPLE ANALYSIS

The water samples must be sent to an IANZ accredited laboratory or equivalent for analysis. The operator must request bottles from the testing laboratory for the collection of the stormwater samples prior to sampling. All sampling must be collected and handled according to the testing laboratories established procedures which shall be in accordance with Standard Methods for the examination of Water and Wastewater prepared and published jointly by:

- American Public Health Association
- American Water Works Association
- Water Pollution Control Federation (21st or newer edition)

MONITORED PARAMETERS

The analyses undertaken on the samples collected as part of this stormwater monitoring programme are to include pH, total suspended solids, total petroleum hydrocarbons (TPH), total tannins, total nitrogen, biological oxygen demand (BOD₅), dissolved oxygen (DO), conductivity and total resin acids. These required indicators are to be analysed to determine whether elevated levels of contaminants are present in the stormwater runoff. The logs stored and stockpiled on site are untreated so copper and zinc levels are not analysed.

TRIGGER VALUES

The results of the stormwater sample analyses are to be compared against the limits at the 10m downstream surface water compliance point ('compliance sample') given in Table 4-1

TABLE 4-1 PARAMETER TRIGGER VALUES FOR THE 10M DOWNSTREAM SURFACE WATER COMPLIANCE POINT

Parameter	Limit (10m below confluence)	Units
pH	6.5 – 8.5	-log (H ⁺)
Suspended solids	100 mg/l above background site	g/m ³
BOD ₅	20	g/m ³
TPH	15	g/m ³
Total Tannins	*	g/m ³
Total Nitrogen	0.4	g/m ³
DO	Not less than 80%	total saturation
Conductivity	0.3	mS/cm
Total Resin Acids	0.06	g/m ³

INTERPRETATION OF THE RESULTS

The operator should compare the test results against the applicable trigger values for the compliance sample, identify any exceeded levels and take appropriate action where required. In addition, a test report must be provided to GDC no later than 21 working days after the sample collection has occurred.

SOURCE IDENTIFICATION INVESTIGATION MONITORING PROGRAMME

If a sampling result shows a parameter limit is exceeded at the receiving environment compliance sampling point the Council shall be immediately notified of that exceeded levels and the results of the water sampling shall be forwarded in writing to the Council within 24 hours. A further sample shall be taken for the failed test parameter at the next available time that there is sufficient runoff to enable sampling to occur unless otherwise directed by the Council.

The Site Manager shall also:

- a) Immediately inspect the cargo storage yard, stormwater retention ponds and culverts for any signs that may identify possible causes of non-compliance,
- b) If the second sample results also exceed a parameter limit then carry out another sampling and analysis for that parameter at the next available discharge event.
- c) Re-inspect the cargo storage yard, stormwater retention ponds and culverts immediately for any signs of the possible cause of the contamination.

Eastland Port shall also liaise with the Council and shall:

- (i) Identify and provide the extent of the non-compliance;
- (ii) Identify and provide the inferred cause of the non-compliance;
- (iii) Develop proposals for on-going monitoring;
- (iv) Develop proposals to rectify the non-compliance,
- (v) Implement any necessary modifications to the treatment system or other remedial action required by the Council within agreed timeframes.

4.2.2 GROUNDWATER QUALITY MONITORING

A groundwater monitoring programme will be put in place to ascertain whether the discharge from the site onto and into the ground and groundwater has had a significant adverse effect on the receiving groundwater environment. The monitoring programme involves the collection and examination of groundwater samples twice annually and comparison with background groundwater quality samples taken prior to onsite construction.

In the event that one or more of the concentrations of the contaminants exceeds a set allowable limit, a source identification investigation will be undertaken in order to ascertain the part of the site that is causing the elevated concentrations.

SAMPLING METHODOLOGY

The groundwater quality monitoring programme will be undertaken twice annually throughout the operation of the cargo storage yard. Groundwater (background) samples shall be taken from each monitoring bore within the site and also at the sump tile drainage outlet from beneath the site once during the month of February and the other during the month of August.

Initially background groundwater quality samples of the sump tile drainage shall be taken on at least 3 separate occasions prior to commencement of any onsite construction.

The water samples must be collected and handled according to established procedures. Appropriate sample bottles must be used to collect the water samples. These should be acquired from the testing laboratory (where the samples are to be analysed) prior to each sampling event. Care should be taken such that no cross contamination occurs during both handling and storage of the sample bottles. During the sampling event, care must also be taken to minimise personal contact with the rim of the sampling bottle and its interior, including the lid.

FIELD SHEETS

An appropriate field sheet should be filled in during each sampling event in order to have a direct record of information which will assist in interpretation of the results. A sample field sheet is given in Appendix I. These should record the following information:

- Sample site location/site identification
- Date, time sample is taken
- Sample identification number
- Samplers name
- Any other relevant information or observations (i.e. water colour, any visible sediment, conspicuous odour etc.)

Each sample collected should be assigned a unique identification number which should be noted on the field sheet. Each sample bottle should be marked on the outside (with a waterproof marker) with the date and time when the sample was taken, the sample site location and an assigned unique sample identification number.

SAMPLING SITE LOCATIONS

Groundwater samples will be taken from two groundwater monitoring bores which have been installed into the water table. The two bore locations have been marked on a plan filed in Appendix B. The bores are located within the cargo storage yard site at the most practical south-easterly point; and the other at the most practical north-westerly point. A sample from the tile drainage sump located on the south-eastern boundary is also required.

GROUNDWATER SAMPLE ANALYSIS

The water samples must be sent to an IANZ accredited laboratory or equivalent for analysis. The operator must request bottles from the testing laboratory for the collection of the groundwater samples prior to sampling. All sampling must be collected and handled according to the testing laboratories established procedures which shall be in accordance with Standard Methods for the examination of Water and Wastewater prepared and published jointly by:

- American Public Health Association
- American Water Works Association
- Water Pollution Control Federation (21st or newer edition)

MONITORED PARAMETERS

The analyses undertaken on the samples collected as part of this groundwater monitoring programme are to include pH, conductivity, total petroleum hydrocarbons (TPH), total nitrogen, and total resin acids. These indicators are to be analysed to determine whether elevated levels of contaminants are present in groundwater.

TRIGGER VALUES

Compliance with parameter limits shall be measured in the receiving groundwater after reasonable mixing (deemed to be at the sump tile drainage outlet, as measured against the limits in the following table). Groundwater samples shall be measured for the parameters as given in Table 4-2.

Table 4-2 Parameter trigger values as measured at sump tile drainage outlet

Groundwater Parameter	Limit (as measured at sump tile drainage outlet)	Units
pH	6.5 – 8.5	-log (H ⁺)
Conductivity	0.3 above background	mS/cm
TPH	15	g/m ³
Total Nitrogen	0.6 above background	g/m ³
Total Resin Acids	0.06 above background	g/m ³

INTERPRETATION OF THE RESULTS

The operator should compare the test results against the applicable trigger values for the compliance sample, identify any exceedances and take appropriate action where required. In addition, a test report must be provided to GDC no later than 21 working days after the sample collection has occurred and fulfil any requirements of this EMP and conditions of the Regional Consent to discharge treated stormwater onto or into ground and groundwater.

SOURCE IDENTIFICATION INVESTIGATION MONITORING PROGRAMME

If a sampling result shows a parameter limit is exceeded at the receiving environment compliance sampling point the Council shall be immediately notified of that exceedance; and the results of the water sampling shall be forwarded in writing to the Council within 24 hours. A further sample shall be taken for the failed test parameter at the next available time that there is sufficient runoff to enable sampling to occur unless otherwise directed by the Council.

The Site Manager shall also:

- a) Immediately inspect the cargo storage yard, stormwater retention ponds, swales, and culverts for any signs that may identify possible causes of non-compliance.
- b) If the second sample results also exceed a parameter limit then another sample analysis for that parameter shall be carried out at the next available time that there is sufficient discharge from the sump to enable sampling to occur. The cargo storage yard, stormwater retention ponds, swale drains and culverts shall be re-inspected immediately for any signs of the possible cause of the contamination.

Eastland Port shall also liaise with the Council and shall

- i. Identify and provide the extent of the non-compliance;
- ii. Identify and provide the inferred cause of the non-compliance;
- iii. Develop proposals for ongoing monitoring;
- iv. Develop proposals to rectify the non-compliance.
- v. Implement any necessary modifications to the treatment system or other remedial action required by the Council within agreed timeframes

4.3 TRAINING PROGRAMME

The objectives of training the operators of the off-site storage yard are:

- To train staff in emergency response procedures;
- To train staff on the implementation of the storm water management plans and standard operating procedures;
- To train staff on the inspection and maintenance regimes;
- To maintain a training record for all staff;
- To review staff training requirements as needed

Environmental awareness training includes:

- Inductions: Documented procedures listing environmental issues that employees need to be aware of. Inductions are specific to the overall site, floor areas, and tasks that employees will primarily undertake.
- Updates: Provide general awareness tools such as visual displays of the environmental policy, emergency spill or other procedures, company newsletters, drills, and verbal instructions.

IDENTIFICATION OF TRAINING REQUIREMENTS

The Site Manager is responsible for the identification and updating of training requirements. The training process is illustrated below

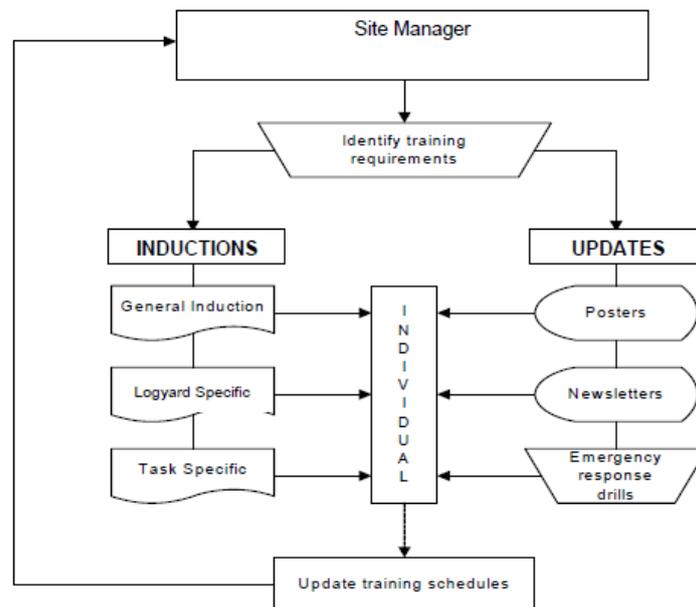


FIGURE 4-1 AWARENESS TRAINING PROCESS

The Site Manager is responsible for all inductions for EPL staff and contractors. Ongoing environmental training is the responsibility of the Site Manager and is for all staff on an as needed basis.

4.4 COMPLAINTS PROCEDURE

Complaints may be referred by the GDC, a member of the public or a member of staff using the storage yard. Eastland Port shall keep a record of all complaints and action taken and will be submitted to the Council annually and also immediately upon written request. It is the responsibility of the Site Manager to respond to and follow up all complaints and maintain the complaint register.

Actions to be taken as soon as possible by the Site Manager:

1. Fill out an Environmental Complaint Form (Appendix H to the EMP).
2. Note the time and date of the complaints and (unless the complainant refuses to provide them) the identity and contact details of complainant. Ask complainant to describe their concern; is it a constant or Intermittent nuisance, how long has it been going on for, is it worse at any time of day, does it come from an identifiable source. Wind direction and strength and weather conditions are to be recorded. Note if the complaint has been referred from the GDC.
3. As soon as possible after receipt of a complaint, undertake a site inspection. Note all activities taking place relating to the complaint and the associated mitigation methods that are being used. If the complaint was related to an event in the recent past, note any activities that were underway at that time, if possible. Order any remedial action necessary.
4. As soon as possible (preferably within 2 hours), visit the area from where the complaint originated to ascertain if the item of concern is still a problem.
5. If it becomes apparent if the item of concern is not caused by activities at the storage site, it is important to verify this. If possible, photograph the source of the activity causing concern.
6. As soon as possible after the initial investigations have been completed, contact the complainant to explain any problems found and remedial actions taken.
7. If necessary update any relevant procedures to prevent any recurrence of problems and record any remedial action taken.
8. Complete a complaint form and file on the complaint register.

Follow up Actions:

- Advise the Environmental Manager and Regulatory Authority as soon as practical that a complaint has been received and what the findings of the investigation were and any remedial actions taken.

4.5 RECORD KEEPING

Records will be kept as follows:

- Inspection and Maintenance Forms Appendix E
- Stormwater Management System Inspection Form Appendix F
- Environmental Incident Report Appendix G
- Environmental Complaint Register Appendix H
- Environmental Monitoring Field Sheets, Results and Reports Appendix I
- Continuous Improvement Records Appendix J

4.6 REPORTING REQUIREMENTS

EPL shall report the following to the GDC in compliance with conditions of consent:

- In the instance of non-compliance with any condition of this consent. EPL will immediately notify the council in writing and shall keep a record of the non-compliance and the action taken to remedy the situation on an Environment Incident Report (Appendix G). These records shall be submitted to the Council annually and upon request.
- In the instance a complaint is made. EPL will keep a record of the complaint and the action taken to remedy the situation on the complaint (Appendix H). These records shall be submitted to the Council annually and upon request.
- At least one month prior to any cargo other than untreated logs first being stored at the site. EPL will give notice in writing to the Council to allow an assessment of potential effects to be carried out.
- Verbally within 24 hours, and in written report format within 7 days, in the instance that wastes or discharges associated with the operation escape to natural water.
- Verbally within 2 days in the instance that a rainfall event exceeding 25mm in a 24 hour period resulted in a discharge from the sediment retention ponds that has conspicuous colour change, floatable materials, suspended sediments, scum, foams, emissions or objectionable odours.
- Bi-monthly stormwater and twice annual groundwater sample analysis results no later than 21 working days after the sample collection has occurred.
- If water quality testing results in a failed test parameter. The results shall be forwarded in writing within 24 hours.
- Annually all records of monitoring analyses and inspections results undertaken in accordance with resource consents. These records shall be submitted to the Council and also immediately upon written request.

5 PLAN REVIEW

This plan will be reviewed in December 2011 and every five years thereafter, provided that the Manager: Environment and Planning may request, or EPL may offer, a review of the plan at any time to deal with any particular issues that may arise in connection with the operation of the storage yard site which may require an amendment to the EMP.

The review will take into consideration:

- Input from the EPL and contractor personnel;
- Site personnel comments;
- Environmental monitoring records;
- Environmental complaints, incidents and emergencies;
- Details of corrective and preventative actions;
- Environmental non compliances;
- Changes to organisational structure;
- On-going compliance with objectives, conditions and targets; and
- Possible changes in legislation and standards.

The review process will include looking at the environmental controls and procedures to make sure they are still applicable to the activities being carried out. The ability to make changes to the EMP is an important aspect of continually improving the effectiveness of the EMP.

Reasons for making changes to the EMP will be documented. A copy of the original EMP document and subsequent versions will be kept for EPL records, and marked as obsolete. Each new/updated version of the EMP documentation will be issued with a version number and date to eliminate obsolete EMP documentation being used.

Revised EMP's will be submitted to the Council's Manager: Environment and Planning and amended as necessary until certified by him or her as meeting the conditions of consent filed in Appendix C.

Appendix A

Site Location

Appendix B

Drainage System & Groundwater Bore Locations

Appendix C

Resource Consents

WP-2011-104292-01

WP-2011-104234-01

DW-2011-104235-01

PR-2010-104230-00

Appendix D

Cartage Operators Heads of Agreement

Appendix E

Inspection and Maintenance Schedule

Appendix F

Stormwater Management System Inspection Forms

- Swale Inspection form
- Pond Inspection form
- Outlet Inspection form

Appendix G

Environmental Incident Report

- SF 1000 Incident Investigation – Action Record

Appendix H

Environmental Complaint Register

- SF 813C Environmental Complaint Form

Appendix I

Environmental Monitoring Field Sheets, Results and Reports

Appendix J

Continuous Improvement Records

- SF 800 Continuous improvement Form