ENVIRONMENTAL PROTECTION INSTRUCTION

SOIL EROSION, SEDIMENTATION & SURFACE RUN-OFF

Objectives & Targets

- Minimise erosion on site.
- No sedimentation of surrounding properties, drains, streams and water bodies.

Responsibilities

- Site Engineer &/or Supervisor are responsible for construction and maintenance of all erosion and sediment controls.
- Supervisor is responsible for cleaning out and repairing sediment controls and notifying the Environmental Representative of any failures.
- Environmental Representative is responsible for monitoring controls weekly and before and after heavy rain. They must keep a written record.

Control Measures

The following control measures must be fully operational and provide effective erosion and sediment control prior to disturbing land and starting excavation work:

Control or divert surface drainage entering the construction site:

- Site Engineer &/or Supervisor to regularly assess the need for temporary run-off controls.
- Intercept and divert surface drainage by installing bunds, drains, swales and diversion channels to keep clean and dirty water separate.
- Install cut-off drains where long cut/fill battered slopes occur to control water run-off speed and erosion.

Prevent sediment laden run-off entering surrounding areas, drains & watercourses:

- Construct silt traps (silt/super silt fences, decanting earth bunds, sediment retention ponds) as necessary.
- Ensure drain entry points are protected by filter socks or sand bags.
- Ensure silt traps are located at toe of stockpile batters.
- Protect exposed embankments using silt traps.
- Protect batter slopes with mulch, compost, geotextile fabric or sow grass.
- Seal off work areas prior to completing work each day by rolling and grading to ensure areas are free draining.
- Regularly remove accumulated debris from silt fences to ensure minimum storage capacity of 50%.
- Stockpiles must be placed clear of water courses/drains and above high-water levels.
- Do not wash trucks, vehicles, plant or equipment within 20m of drains or watercourses.

Prevent soil loss from disturbed areas through wind & water erosion:

- Stage works to minimise the amount of exposed areas.
- Strip topsoil immediately after clearing.
- Use stripped topsoil to rehabilitate other areas where possible.
- Rehabilitate cleared areas ASAP.
- Regularly water exposed surfaces where wind erosion may occur.
- Sow grass, or lay mulch/compost to exposed surfaces if exposed/untouched for an extended time (1 month).

Prevent soil loss from stockpiles through wind & water erosion:

- Regularly water exposed surfaces where wind erosion may occur.
- Construct diversion bunds/drains around stockpiles as necessary.
- Stockpile materials away from drainage lines and cleared areas.

Minimise damage & erosion by site traffic:

- Plan and establish access and haul roads with agreement of the Superintendent and Environmental Representative.
- Existing tracks or final road alignment to be used whenever possible.
- Avoid construction of parallel and multiple tracks.
- Restrict vehicle movements over cleared areas.
- Test surface water quality to ensure discharge offsite to waterways complies with contract and resource consent requirements.

Monitoring

- Inspect erosion and sediment control devices weekly and before and after heavy rain.
- Check erosion and sediment control devices daily to ensure correct function and available capacity is adequate.
- If applicable, inspect adjacent properties, waterways and drains for the presence of silt, contaminates, litter and erosion.
- Undertake water sampling when required by resource consents, contract, or regulatory authority.

Emergency Response

In the event of any significant failure of the erosion & sediment controls:

- Supervisor to reinstate the erosion and sediment controls as soon as practical.
- Environmental Representative to determine whether the failure constitutes a threat to an adjoining waterway. If not, the control measures are to be reviewed and the Site Engineer &/or Supervisor instructed on any alterations &/or additional controls to be put in place.
- If failure constitutes a threat to an adjoining waterway, the Environmental Representative is to notify the Superintendent and the Local/Regional Council as soon as practical and implement any instructions issued by them.
- Install additional or more effective erosion control devices as required.

Records

Keep written record showing:

- Date and reason for each inspection.
- Details of the condition of the erosion and sediment controls at each inspection.
- Details of any erosion or sedimentation sighted during each inspection.
- Details of any improvements or changes made or required to the erosion and sediment controls.
- Date and time of any notification of any failure of the erosion and sediment controls.
- Test monitoring reports.

ENVIRONMENTAL PROTECTION INSTRUCTION

DISTURBANCE TO TERRESTRIAL FLORA & FAUNA

Objectives

- Minimise the effect on local flora and fauna, particularly any protected vegetation and species, by construction activities.

Targets

- No impact on flora and fauna in the vicinity of the project beyond that reasonably anticipated at the design phase.

Responsibilities

- Environmental Representative is responsible for inspecting the site and the surrounding habitats before construction starts and implementing flora and fauna protection measures as required.

Resource Consents/Permits/District Plan Rules

- Environmental Representative to ensure the correct resource consents &/or permits are in place before carrying out works on or under protected vegetation.
- Environmental Representative to check regional and district plan rules before carrying out work on or under protected trees.

Control Methods

General:

- Survey areas identified in the contract and resource consents as environmentally significant.
- Mark out on site all environmentally significant areas (e.g. with flagging or fencing etc.).
- Identify any significant fauna or flora to be protected (as necessary obtain photographs).
- Ensure all workers are made aware of the environmentally significant areas and protected species at site induction.
- If required by contract/resource consent, the Environmental Representative to inspect areas to be cleared for fauna and flora prior to clearing.

Protection of flora:

- Mark out limits of clearing &/or vegetation removal.
- Environmental Representative to approval clearing and vegetation removals prior to work starting.
- Instruct machine operators and other workers on limits of clearing, special fauna and flora in the area and the importance of protecting the remaining vegetation.
- Workers to obtain approval from the Environmental Representative prior additional clearing and vegetation removal.
- Fell trees into the construction zone, not into undisturbed vegetation.
- Designate, sign and enclose site areas, traffic and haul routes.
- Instruct operators to remain on designated haul roads.
- Use approved chemical sprays only.
- Minimise the risk of uncontrolled fires in adjoining native vegetation.
- Do not burn vegetation. Chip, mulch and reuse where feasible unless otherwise stated by the contract or consent.
- Do not damage vegetation.
- Do not park or store material under tree canopies.
- Do not stockpile topsoil against trees or under the drip line of trees.
- Do not light fires or create any source of heat or noxious fumes under the dripline (branch spread) of trees.
- Do not operate any vehicles, machinery or equipment under the dripline (branch spread) of trees.
- Do not trench or excavate within the root zone of protected trees.

Protection of fauna:

- Do not deliberately harm or kill fish, birds or animals.
- If possible transport injured animals to a vet or animal refuge.
- Remove all rubbish to avoid attracting feral and introduced animals and birds.
- Provide sealed bins for waste to discourage animal pests.

Monitoring

- Environmental Representative to:
  - Observe construction zones, to confirm that the works are not extending beyond the approved limits of disturbance.
  - Inspect vegetation areas to verify vegetation health and confirm progressive re-vegetation principles are being implemented.
  - Inspect key habitat sites identified as susceptible to disturbance by construction operations on a monthly basis.

Emergency Response

In the event of a significant failure of the flora and fauna protection measures:

- The Environmental Representative is to determine whether the failure constitutes an ongoing threat to the flora and fauna in the vicinity. If not, review the effectiveness of the flora and fauna protection measures.
- If the failure constitutes an ongoing threat to flora and fauna in the vicinity notify the Project Manager and the Superintendent.

Records

Written records are to be kept showing:

- The date and reason for each inspection.
- Details of any disturbance observed.
- The date and time of notification to the Project Manager and Superintendent of any failure.
- Details on any improvements made to the flora and fauna protection measures.

ENVIRONMENTAL PROTECTION INSTRUCTION

SOCIAL IMPACT

Objectives

- Minimise the impact of the construction works on neighbours, local landowners, pedestrians and passing motorists

Targets

- Minimal disruption to normal activities of neighbours, local landowners, pedestrians and passing motorists

Responsibilities

- QSE Rep to monitor the visual amenity of the area and keep all necessary records

Control Methods

- Keep the local community and passing motorists informed through community consultation and appropriate roadside signs
- Formulate a complaints response mechanism
- Implement traffic management measures and maintain access to all properties
- Implement truck mud, dust and noise control measures

Monitoring

- Make regular contact with residents in the vicinity to obtain feedback on nuisance

Emergency Response

- The Superintendent is to immediately implement measures to minimise the disturbance

Records

In the event that a complaint is received, the following is to be recorded:

- The time, date and source of the complaint
- Details of the source of nuisance
- The date of any corrective action

ENVIRONMENTAL PROTECTION INSTRUCTION

PREVENTION OF INVASION PLANTS, WEEDS & DISEASES

Objectives

- Minimise the spread of noxious weeds, infectious plant diseases and fungal infestations within and between sites

Targets

- No spread of noxious weeds, infectious plant diseases and fungal infestations within the site or from one site to another or to adjoining land
- No importation of infectious plants or diseases from another geographic region

Responsibilities

- The Project Environmental Management Representative is responsible for:
  - QSE Rep to identify infectious plant control regulations
  - QSE Rep to inspect site and notify any breaches

Control Methods

Control of noxious weeds:

- Identify any noxious weeds and resolve treatment prior to stripping
- If required by the contract/consent, spray noxious weed infested areas in an approved manner
- Minimise disturbance of noxious weed-infected areas
- Avoid moving noxious seed infected topsoil from one site to another
- Avoid stockpiling topsoil close to waterways and drainage lines
- If required by the contract, consent and district/regional plans, control weed infestations by spraying the affected areas in an approved manner
- If noxious weed infected soil or vegetation is to be dumped off-site, only dump at a licensed waste depot
- As necessary wash down vehicles before arrival and when leaving site to remove noxious seeds
- Identify and treat noxious weeds prior to stripping

Preventing spread of infectious plant disease to other sites:

- Comply with all contractual and/or regulatory requirements for the control of infectious plant diseases within the site
- Survey and mark all locations of infections plant diseases on site
- No contaminated material is to be removed from site unless authorised by the Client and/or regulatory authority
- Dispose of affected vegetation and plant matter in accordance with requirements if needed to be removed from site
- As required by the contract all persons, vehicles, plant and machinery leaving the site may be required to be washed down and/or disinfected

Preventing spread of infectious plant disease from other sites:

- Comply with all contractual and/or regulatory requirements for the control of infectious plant diseases from other areas.
- Check vegetation and plants are free from diseases before bringing them onto site for planting
- Be aware of and comply with as necessary legislative requirements for movement of plant equipment and materials between geographic areas

Monitoring

- Day to day monitoring of movement of plant and materials and location of stockpiles
- Day to day observance of compliance with infectious plant diseases controls

Emergency Response

- In the event of any significant breach of control measures the QSE Rep is to determine whether the failure constitutes an ongoing threat to noxious weed and disease control in the vicinity of the site
- If not, review the control measures and implement them
- If the failure constitutes an ongoing threat notify the Project Manager, Client and/or regulatory authority

Records

Keep written records that show:

- Details of any nonconformity with corrective actions & control measures
- Date and time of notification to the Client and/or regulatory authority
- Inward inspections of plants and/or seeds destined for reinstatement of site
- Inspection of reinstated areas for evidence of noxious weeds and diseased plants

ENVIRONMENTAL PROTECTION INSTRUCTION

SOLID & LIQUID WASTE

Objectives

- Minimise waste
- Manage the storage of waste to prevent contamination of soil or waters on and in the vicinity of the site
- Manage the disposal of waste in accordance with legislation

Targets

- Use of recycled materials where possible.
- No contamination of the soil or water on or in the vicinity of the site.
- Disposal of waste at approved locations

Responsibilities

- QSE Rep to inspect site and report non-conformances

Control Methods

Minimise Waste

- Plan construction activities to minimise waste materials and energy
- Re-use and recycle materials wherever possible

Waste Storage

- Provide industrial bin/s of sufficient size for construction waste and empty regularly
- Collect surplus oils, grease and other hazardous materials and store separately
- Concrete trucks and bitumen sprayers must be washed-out on site into prepared containment bins/areas
- Provide bins for the collection of domestic waste
- Provide toilets at each site and ensure that they are cleaned and emptied (if chemical toilets) at regular intervals

Waste Disposal

- Dispose of waste at suitably licensed landfill sites
- Dispose of oil, grease and hazardous substances at licensed recycling facilities
- Chemical toilets to be emptied by a licensed waste collector

Monitoring

- Undertake weekly inspection of site facilities

Emergency Response

- Review control measures and implement changes as required

Records

- Keep records of weekly inspections

ENVIRONMENTAL PROTECTION INSTRUCTION

DISTURBANCE TO CULTURAL HERITAGE

Objectives

- Minimise disturbance to culturally significant sites or materials

Targets

- No disturbance to sites or materials of cultural significance

Responsibilities

- QSE Rep is responsible for:
  - Implementing cultural heritage protocols
  - Inspecting work areas prior to disturbance
  - Notifying Project Manager, client and regulatory authorities of any discoveries

Control Methods

If sites of known cultural significance are identified in the contract:

- Survey and protect any areas where disturbance is not allowed.
- If required by the contract, advise local heritage group of the works and invite them to inspect the site.
- If artefacts are located, inform the Foreman, Project Manager, QSE Manager and Superintendent immediately.
- Cease work in the area where discoveries are made until approval is given to recommence.
- Construct and maintain flagging or fencing around areas where heritage discoveries have been made.
- The discovery of significant heritage objects is to be reported to the Ministry of Environment.

Monitoring

- Undertake a visual inspection of the work areas prior to disturbance.
- Undertake visual inspections of disturbed ground as work proceeds.

Emergency Response

- In the event of any disturbance of sites or materials or cultural significance, the Project Environmental Management Representative is to immediately notify the Project Manager.
- The Project Manager is to notify the Superintendent as soon as practical and implement any instructions issued by them.
- In the event of discover of human remains, notify the Project Manager who is then to notify the police as soon as practical.

Records

Keep written records that show:

- The dates of contacting interested parties and receipt of their response.
- The dates of carrying out visual inspections of the work areas prior to disturbance, any sites of materials observed and photographs.
- The dates of advising Principal of the discovery of sites or materials and receipt of a response.
- The date of uncovering or disturbing any human remains.
- The dates of advising the police of the discovery and receipt of a response.

ENVIRONMENTAL PROTECTION INSTRUCTION

LAND CONTAMINATION

Objectives

- Minimise the potential for increased contamination of soils in the vicinity of the works due to construction operations

Targets

- No disturbance of contaminated soils
- No importation of contaminated soils
- No increase in contamination levels in soils

Responsibilities

- The Site Engineer and/or Superintendent are to verify that the source of imported fill materials is not a prescribed site or that the material is not contaminated
- The QSE Rep is to inspect containment bunds, sealed areas and waste storage areas

Control Methods

- Ensure that no contaminated fill material is imported to the site
- Undertake storage, transfer and disposal of fuels, chemicals and waste in controlled conditions
- In the event that contaminated land or land suspected to be contaminated is encountered, stop work immediately and inform the Superintendent and QSE Rep.
- Ensure that the type of contaminant is identified
- Remove all contaminated soils and dispose of off-site in a legal manner in accordance with the contract, consent and/or regulatory requirements

Monitoring

- Monitor the source and contamination status of all fill material imported to the site
- Observe the removal of any soils contaminated by the works and confirm disposal off site in a legal manner

Emergency Response

In the event of any spill or contamination:

- The Project Manager is to determine whether the incident is a potential source of long-term contamination of soils on and in the vicinity of the site.
- If not, review the land contamination prevention measures and instruct the site engineer on any alterations.
- If the Project Manager determines that the incident is a potential source of long-term contamination of soils on and in the vicinity of the site, notify the Superintendent, QSE Rep and the regulatory authority and implement any instructions issued by them

Records

Keep written records that show:

- The date and location of identification of contaminated soil or fill material
- The date of removal and destination of any contaminated material disposed of off-site
- The date and time of any notification to the Superintendent, QSE Rep and regulatory authority.

ENVIRONMENTAL PROTECTION INSTRUCTION

VISUAL AMENITY

Objectives

- Minimise the impact of the construction work on the visual amenity of the area

Targets

- No unnecessary impact on the visual amenity of the area

Responsibilities

- The QSE Rep is to monitor the visual amenity of the area and keep all necessary records

Control Methods

- Dust control measures to be implemented in work areas
- Earthworks to be revegetated as soon as possible on completion of work in each area
- Site compounds and storage areas shall be kept tidy
- Stored waste to be covered and regularly removed to minimise attraction for wildlife and vermin
- Litter to be controlled so that it does not blow onto neighbouring properties or into waterways
- Don't allow mud to accumulate on roads

Monitoring

- A weekly visual inspection of work areas from both ground level and prominent observation points if available

Emergency Response

- The supervisor is to immediately implement measures to reinstate the visual amenity of the area

Records

For a complaint / when visual amenity is reduced, record:

- The date, source, location and reason for the complaint or the observation
- Details of the source of reduction
- The date of any corrective action