DRAFT Construction Environmental Management Plan

Southland Wind Farm, Southland

RILEY

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0.1	First Draft	8 June 2025
0.2	Final Draft	24 June 2025

Contents

Appendices

Attached Separately

Appendix A: Earthworks Management Plan incl Erosion and Sediment Control Plan
Appendix B: Flocculant Management Plan (FMP)

Other Appendices (provided by others / attached separately):

Appendix C: Construction Noise Management Plan
Appendix D: Construction Traffic Management Plan
Appendix E: Resource Consent Conditions

DRAFT Construction Environmental Management Plan

PART A Introduction

1.0 Scope and Structure of the Plan

This Construction Environmental Management Plan (CEMP) provides for the environmental management, through the establishment of appropriate management procedures, for all activities associated with the construction of the Southland Wind Farm (SWF) (the Project).

The CEMP is structured as follows:

- ***Part A – Introduction.*** This part of the CEMP introduces, and establishes, the context for the CEMP. It also:
  - Provides an overview of the scope and structure of the Plan.
  - Provides an overview of the Project.
  - Establishes environmental objectives for the construction of the SWF.
  - Outlines the manner in which the CEMP will be implemented.
  - Identifies key project personnel and responsibilities.
  - Outline Hours of Work.
  - Outlines Regulatory Approvals.

- ***Part B – Construction Environmental Management Plan Main Body.*** The main body of the CEMP provides management procedures for construction related activities (not covered by the separate management plans in Part C), that have the potential to affect the environment.
- ***Part C – Appendices –Separate Management Plans.***

This CEMP has been prepared in accordance with the requirements of the resource consent conditions.

2.0 Objective of the CEMP

The objective of the CEMP is to describe the measures that shall be implemented to comply with the relevant conditions of consent and to appropriately avoid, remedy, or mitigate any adverse environmental effects of the construction works authorised by the resource consents for the Project.

This CEMP is to be submitted to Environment Southland (ES) for certification at least 15 working days prior to works starting on site. Works shall not commence on-site until certification of the Management Plans has been received by the consent holder.

Relevant regional and district plans, guidelines, and applicable resource consents have been considered when preparing this plan.

3.0 Supporting Documentation

As required by the conditions of consent, additional management plans are attached to this CEMP. These are:

- Earthworks Management Plan (EMP). The EMP includes a number of sections, with the most significant being the Erosion and Sediment Control Plan (ESCP).
- Flocculation Management Plan (FMP) (enhancement of sediment treatment devices)
- Construction Noise Management Plan
- Construction Traffic Management Plan
- Site Development Plan [to be inserted at a later date]

3.1 Site Location and Description

The Southland Wind Farm comprises two main components - a Wind Farm, where the wind turbines, wind farm substation, and wind farm roads are located - and the Grid Connection works – being the infrastructure required to connect the wind farm to the Transpower National Grid. This comprises a high voltage (220kV) overhead transmission line and a switching station, also known as the grid injection point ("**GIP**"). From a property perspective, these two project aspects are described as follows:

- **Wind Farm Site**: the land upon which the wind turbines, wind farm substation, wind farm roads and surplus fill disposal sites are located. This area is entirely in the Southland District and the Southland Region.
- **Project Site**: the Wind Farm Site, plus the land also required for the grid connection works (i.e. the transmission line and the GIP) and the main construction access route to the Wind Farm Site, through the Port Blakely Forest. This area is partly in the Southland District and partly within the Gore District, and entirely in the Southland Region.

The following provides a description of the existing site and surrounding areas:

- The Wind Farm Site is located in eastern Southland and covers approximately 5,800 hectares of privately owned land, half of which is farmland (Jedburgh and Glencoe Stations) and half of which is plantation forestry, owned by Matariki (named Venlaw Forest). The closest wind turbine generator ("**WTG**") within the wind farm is located approximately 12km east of Wyndham.

- The Wind Farm Site is located on north-west facing dip-slope. The southern (up-slope) margin of the Wind Farm Site is adjacent to a strike-ridge (highest peak, Mokoreta – RL 713m). The dip-slopes are generally inclined between 10° and 15° to the north-west.
- Glencoe Station and the northern (lower hillslopes) of Jedburgh Station are predominantly cleared pasture with regenerating scrub (manuka/kanuka) in numerous relatively shallow gullies. The southern part of Jedburgh Station has a dense cover of regenerating native bush (mainly manuka/kanuka), while the plateau-like area in the south (covering approximately 530ha) generally has a veronica-odora and inaka dominated scrub and sub-alpine vegetation cover.
- The main dip-slope on Jedburgh Station is incised and eroded by varying sized gullies/valleys and streams. A prominent gully bisects Jedburgh Station and is notable for its dominant southern- rata and kamahi vegetation.
- Remnant dip-slopes, which are generally more incised and dissected, by streams and gullies, are evident in the middle and north-east end of the Wind Farm Site (Matariki's Venlaw Forest) – being generally incised by the splaying heads-gullies of the Mimihau Stream North and South Branches.
- Matariki's Venlaw Forest, in the north-east half of the Wind Farm Site, is predominantly planted with Douglas Fir and pine trees and low-elevation scrub and secondary native regrowth in the base of gullies. Well-maintained roads provide ready vehicle access throughout the forest.
- To the south of the Wind Farm Site is the Catlins Conservation Park, and to the south-west is the Slopedown Conservation Area, both administered by the Department of Conservation (DoC).

Figure 1 shows the Wind Farm Site layout and boundary extents.

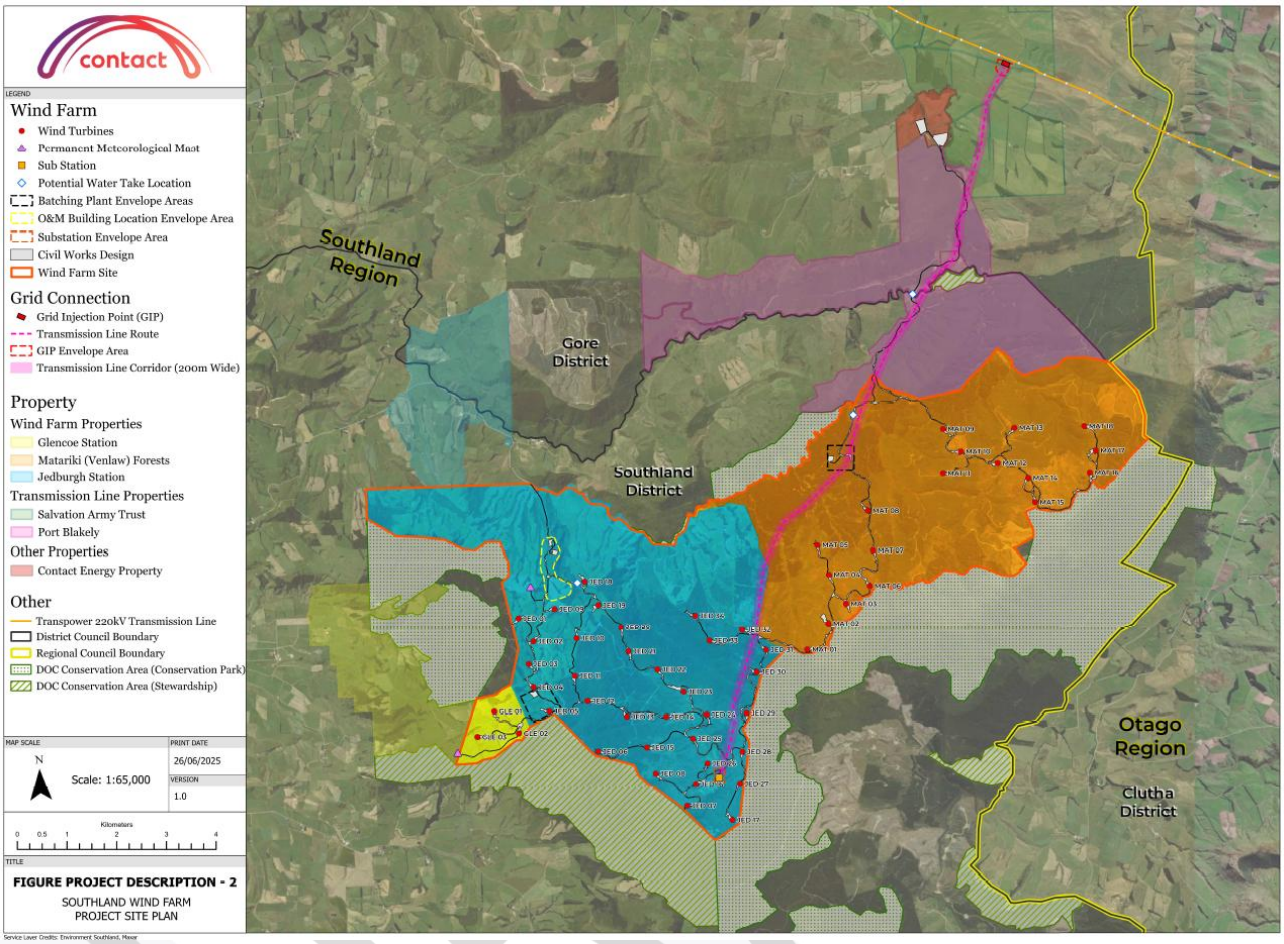

Figure 1: Wind Farm Layout (Source: Contact)

4.0 Proposed Development

The SWF comprises of approximately 5,800 hectares of land located in eastern Southland approximately 12km east of Wyndham. The construction of the SWF will entail the establishment of the following components:

- SWF will consist of a total of up to 55 wind turbine generators (WTG), each up to 220m in height (measured to tip of turbine blade). Tracks will be formed to provide construction and ongoing maintenance access to the WTG sites.
- SWF will include a permanent wind farm substation and operations and maintenance building located within the Wind Farm Site and a permanent Switching Station (or Grid Injection Point) within the wider Project Site.
- Earthworks are required to construct the access tracks - with a typical maximum paved width of approximately 8m for the internal wind farm roads and a paved width of approximately 6.5m for the construction access track to the site. Access tracks serving two turbines or fewer may be reduced to 6.5m in paved width.

- Earthworks are required to form hardstands and laydown areas at each WTG location for storage and assembly of each WTG, including space for the crane assembly and the WTG foundations.
- Two entrances to the Wind Farm Site are proposed:
    - From the west of the Wind Farm Site, from the end of Thornhill Road (off Venlaw Road).
    - From the north of the Wind Farm Site, through the Port Blakely Forest (off Davidson Road West/Kaiwera Downs Road).

In addition to the above, construction of the wind farm will involve, amongst other activities, the following:

- The movement of vehicles, including heavy vehicles, to, from and throughout the site;
- Machinery use, including heavy machinery, at the site;
- Establishment of fill disposal areas;
- The establishment and operation of an on-site concrete batching plant/s;
- Pavement construction;
- Water management, treatment and disposal systems for all contaminated water generated at the site;
- Reinstatement of disturbed areas.

This document is the CEMP which establishes management procedures for all parties to follow when undertaking activities associated with the construction of the SWF.

5.0 Plan Implementation

5.1 Overview

Contact Energy as the consent holder, is responsible for ensuring the overall implementation of the CEMP.

The day-to-day operation, implementation, and thus compliance with the CEMP, is the responsibility of the Contractor in accordance with the construction contract. The Contractor is to ensure compliance with the resource consents issued by Environment Southland (ES) and/or Southland District Council (SDC), and the effective implementation of the CEMP.

5.2 Plan Induction Procedure

All site personnel (i.e. contractor and subcontractors) at the SWF site, as well as visitors, are required to have completed an induction programme, where the scope is appropriate for the tasks and/or role of individual/s, covering the requirements of the CEMP. The purpose of the induction programme will be to ensure that personnel play an effective role in ensuring that the requirements of the CEMP are complied with.

Where visitors or other personnel to site have not completed an induction programme, they shall be accompanied at all times by personnel who have.

The induction programme is to be conducted by the Environmental Officer/s, or other personnel delegated and trained to undertake the task.

5.3 Construction Programme

[Stages of work and estimated start date and durations to be inserted at future date – as an Appendix]

5.4 Construction Site Infrastructure

[The final confirmed location and details of construction site infrastructure including fencing, site offices, site amenities, construction yards, laydown area, construction access locations, construction lighting, refuelling areas and fuel and oil storage areas to be inserted at a later date – as an Appendix to this CEMP, to be shown on the Site Development Plan that will be prepared]

5.5 Key Project Personnel Contact Details

[to be inserted at future date]

5.6 Roles and Responsibilities

Example of key management roles of project staff relevant to environmental management for the Project [final details to be confirmed at future date]:

Table 1: Project Regulatory Approvals

Role	Responsibility
Project Director/Manager	• Ensure the CEMP is prepared and certified prior to the commencement of construction activities.
	• Monitors the implementation of the plan and the achievement of objectives; • Takes ultimate responsibility for compliance with the specification and regulatory requirements (i.e. resource consent or archaeological authority conditions); • Ensures employees and subcontractors are adequately inducted and trained in site environmental and sustainability procedures including emergency procedures; • Ensures adequate resources are available to meet environmental and stakeholder obligations; • Provides leadership to ensure all employees and subcontractors comply with the project management plans; • Coordinates environmental and sustainability management interfaces with BU Environmental Manager, external agencies and stakeholders, and • Notifies the Client's Representative and regulatory authorities of any non-compliances.

Environmental Officer (Project Engineer/Supervisor/ Foreman)	• Ensures that all site personnel have undertaken induction training in relation to environmental and sustainability issues and procedures prior to works commencing; • Ensure the timely closeout of all environmental incident reports and audit reports; • Ensure that all complaints in relation to environmental performance are followed up in a timely manner with corrective action undertaken, as appropriate, maintain complaints risk register; • Ensures environmental control works are installed and maintained; • Follows environmental procedures in all activities undertaken, and • Leads the emergency response crew.
Environmental Representative	• Undertake/co-ordinate environmental monitoring and inspections as required; • Tracks and records compliance with regulatory requirements; • Maintain environmental risk register; • Stocking of spill kits, and • Environmental champion at share meetings and other site opportunities.
All Employees and Subcontractors	• Report all environmental incidents and observations promptly to supervisory staff; • Carry out routine maintenance and emergency work when directed; • Care for all environmental controls; • Follows environmental procedures and sustainability practices in all activities undertaken, and • Ensure the site is kept tidy and litter is placed in bins.

5.7 Hours of Work

General work hours will be between [xxx am - xxx pm Monday to Saturday – to be confirmed in line with the Construction Noise Management Plan] in accordance with the conditions of consent. Work outside of these hours may also be undertaken where required as permitted by the conditions. Examples of early morning and late-night activities may include:

- Significant concrete pours
- Erection and dismantling of temporary plant and equipment (e.g. Cranes, site facilities)
- Work that has been accelerated
- Planned shift work including turbine installation
- Delivery of over dimensional loads (such as turbine components).

Construction noise will be appropriately addressed for all works undertaken outside general working hours to ensure potential adverse effects are managed appropriately. Refer to the Construction Noise Management Plan (CNMP) at Appendix C for additional information.

6.0 Project Regulatory Approvals

[To be completed at a later date]

Table 2: Project Regulatory Approvals

Consent Holder	Regulatory Authority	Consent Number	Consent Type	Purpose

Table 3: Key Consent Requirements Relevant to Construction Phase

Consent Number	Condition Number	Requirement	Timeframe

The full set of consent conditions are included as Appendix E.

PART B Construction Environmental Management Plan

1.0 Introduction

1.1 Purpose

Construction activities associated with the SWF, which are covered under Part B of this report, are as follows:

- Establishment of site controls.
- Construction water and potable water supply.
- Wash down water from site facilities.
- Air quality management.
- Solid waste and ablution management.
- Management of hazardous substances.
- Stormwater and Water Quality.

1.2 Scope and Structure

Part B provides for the management, through the establishment of management procedures, for a number of activities associated with the construction of SWF and is structured as follows:

- **Section 1 – Introduction**. This section introduces the CEMP and establishes the context for the management procedures that follow.
- **Section 2 – Management Procedures.** This section consists of a number of subsections covering site extent controls, water supply, wash down water, air quality management, solid waste and ablution management, stormwater management and management of hazardous substances. Within each section the management procedures are provided for the establishment, activity and rehabilitation phases of the activity, where appropriate.
- **Section 3 – Contingencies.** This section identifies the types of events relating to earthworks activities, that may occur which require emergency urgent actions to be carried out, and provides details on the procedures in dealing with these issues

2.0 Management Procedures

2.1 Site Controls

To ensure that the potential effects associated with the construction of the SWF are contained within the defined project area and remain outside of exclusion zones to the extent practicable, the following procedures shall be followed:

2.1.1 Establishment Phase

Establishment phase management procedures, which are to be completed at the commencement of the construction activities, and/or any subsequent phase of the construction activities, are as follows:

A. Identify and mark on-site exclusion zones (such as wetlands located outside the approved earthworks footprint), including buffer areas. Markings shall be of a suitable quality so that it presents a visible barrier to any contractors or machinery. The project boundary shall be identified on all relevant site drawings and plans.
B. Earthworks machinery fitted with GPS guidance systems shall have the exclusion/buffer zones loaded into the software.

2.1.2 Activity Phase

Activity phase management procedures, which are to take place throughout the construction of the SWF, are as follows:

A. The exclusion/buffer zones are to be clearly identified at all times. Should any temporary fencing or 'markings' defining these zones be removed or damaged at any time during construction they are to be reinstated, in the correct position, immediately.
B. No construction activity, including the movement of vehicles and the storage of materials, is to extend within the exclusion zones.

2.1.3 Rehabilitation Phase

A. Following completion of the project (or project stage) the boundary markers shall be removed.

2.2 Water Supply

Onsite water will be used for earthworks, concrete batching, dust suppression and general activities. The typical maximum daily demand is calculated as 250-350m³/day, peaking 500m³/day on days when WTG concrete foundations pours are occurring.

Water will be extracted from one or both of two location (streams), both located within the Mimihau Stream South Branch catchment, named Site M1 and Site M2 (refer Figure 2 for locations):

(a) M1: Mimihau South Branch tributary (near WTG JED18, Jedburgh Station)
(b) M2: Mimihau South Branch upper bridge (Venlaw Forest)

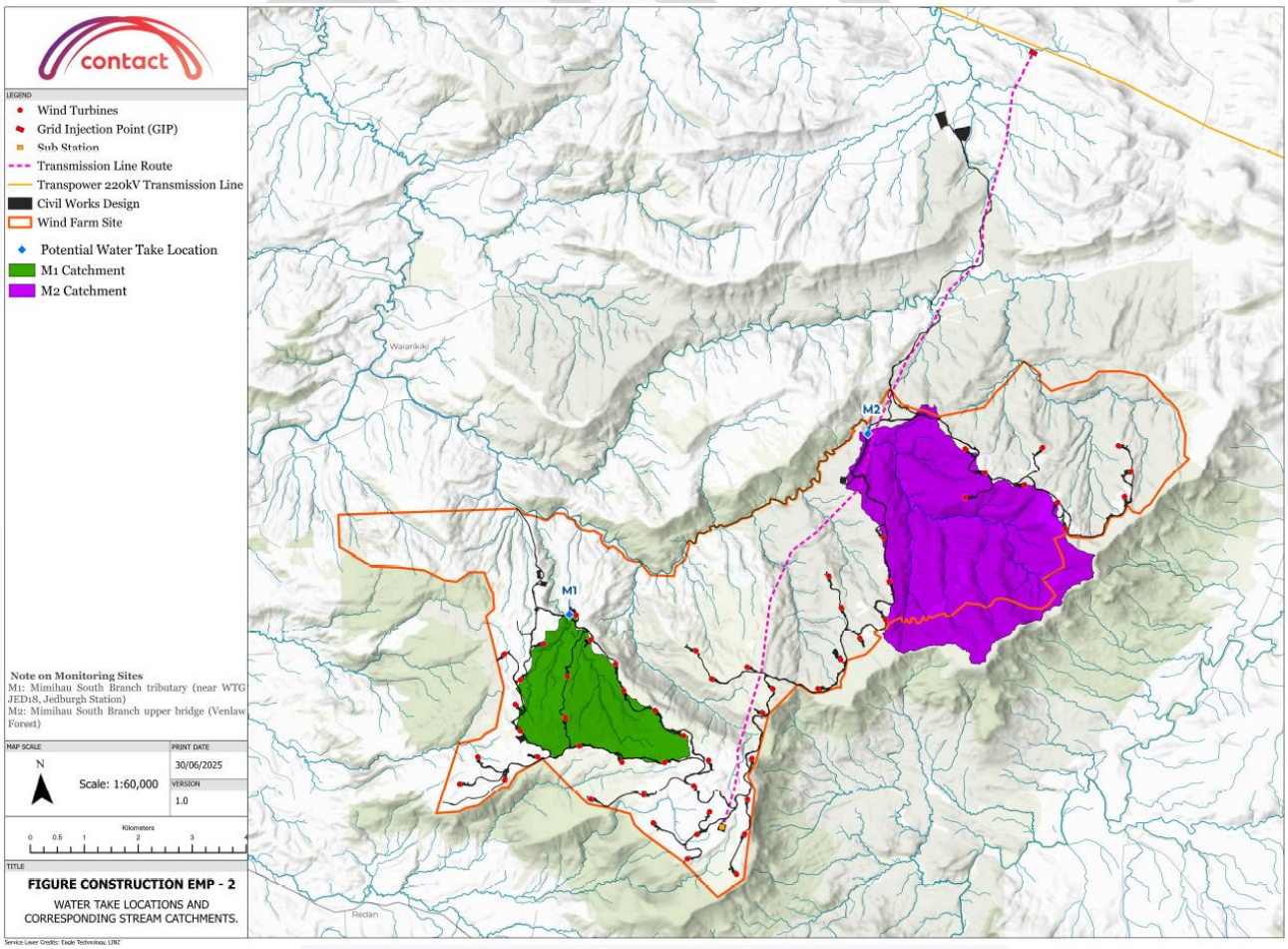

Figure 2 : Monitoring Sites Location Map (Source: Contact)

On 29 March 2023, Riley established stream water level data loggers at the proposed water take locations (i.e. sites M1 and M2). Summary flow information from the analysis of this stream flow record is provided in Table 4.

Table 4: Mimihau Stream flow statistics. Period of record from 29 March 2023 to 10 March 2025 (Excerpt from Riley Repot 220372-H dated 5 June 2025)

Location	Catchment Area (km^2)	Mean Flow (l/s)	Median Flow (l/s)	95 Percentile Flow (l/s)
Site M1	4.6	153	115	65
Site M2	12.9	377	269	92

The conditions of consent provide for the water take from each of these sites (M1 and M2) as follows:

(a) A maximum (continuous) take of 5 l/s at each site, at a volume not exceeding $432m^3$ per day, but restricted when the minimum flow of the stream is Q95 (or lower), at which point the water take shall comply with the permitted activity limits set in Rule 49(a) or 49(ab) (whichever is applicable) in the Southland Water and Land Plan (SWLP).

The following procedures shall be followed to ensure the effective management of surface water resources in respect to the extraction of water for construction uses, such that adverse effects on the environment are avoided:

2.2.1 Establishment Phase

Establishment phase outlines management procedures, which are to be completed at the commencement of the construction activity, and/or any subsequent phase of the construction activity, are as follows:

A. The Contractor is to review any water take permit conditions of consent or permitted activity rules.

B. Pumps installed for abstraction from streams shall be housed in an above ground or below ground locked enclosure, for access by approved personnel only.

C. Intake pipes within the streams shall be fitted with appropriate fish screens that comply with Appendix R of the Southland Water and Land Plan, notable:

   a. Mesh size not exceeding 3mm

   b. Average through screen velocity does not exceed 0.12 metres per second

D. To address the issue of not having enough water to meet construction demands during periods of low stream flow (i.e. Q95 or lower), water storage tanks or ponds will be constructed so that the stored water can be used during periods of high demand that coincide with periods of low stream flow.

2.2.2 Activity Phase

Activity phase management procedures, which are to take place throughout the construction of the SWF, are as follows:

A. Prior to commencing pumping from the streams, the Contractor shall appoint personnel to record the Stream flow data loggers to determine if the Q95 flow water take restrictions apply.

B. During periods of sufficient stream flow, water will be pumped from the stream at Sites M1 and Site M2, to preliminary water tanks located close to the site of abstraction. Water trucks may be filled from these tanks (for dust suppression and earthwork activities). From these water tanks, water will then again be pumped to the water storage ponds. These ponds (which would have a maximum capacity of 10,000 m3) will be located within a 'water storage and concrete batching facility' area – to be used for concrete batching.

C. The Contractor shall appoint personnel to monitor and record the water usage of the pumps, and to ensure water usage does not exceed consented volumes/flow rates or flow rates agreed with landowner or farm operator.

D. The Environmental Officer or other appropriate personnel shall monitor any drawdown effects on water levels within the streams during water take for dust suppression activities or concrete production.

E. Alternatively, batching plant water could be sourced from off-site, delivered to the on-site storage facilities via tankers.

2.3 Wash Down Water

To ensure the discharge of any potential contaminants into waterbodies is avoided/minimised, the following procedures shall be followed:

2.3.1 Establishment Phase

Establishment phase management procedures, which are to be completed at the commencement of the construction activity, and/or any subsequent phase of the construction activity, are as follows:

A. Planning of wash down water control measures from site facilities shall occur prior to the commencement of activities requiring wash down (i.e. the concrete batching plant and the vehicle wash down station). The measures shall ensure that:

- Wash down water is intercepted and treated, wherever practicable.
- The design of wash down water treatment facilities is to provide appropriate capacity and level of treatment as reflected by best practice.
- Wash down of concrete trucks shall be undertaken within the batching plant compound and all runoff is to be directed straight into a lined containment area (refer Section 3.1 below for further details).
- Treated wash down water is to be discharged to land and not directly into waterbodies.
- All wash down water control measures, and associated discharges shall be undertaken so as not to cause erosion.

The above planning shall be undertaken for each staged component of the earthworks.

2.3.2 Activity Phase

Activity phase management procedures, which are to take place throughout the construction of the SWF, are as follows:

A. Installation of the planned wash down water control measures prior to the wash down of any site facilities commencing.

B. Daily inspection of the control measures and surrounding vicinity in order to confirm that the measures are achieving their purpose. This includes determining that there are no uncontrolled discharges to waterbodies.

C. If following any daily inspection, or at any other time, it is evident that the control measures are not working appropriately, immediately undertake any necessary maintenance and/or other appropriate measure in order to ensure the ongoing and future effectiveness of the control measure.

D. Remove contaminated water and/or solids to an appropriate off-site facility if/when capacity of the containment area is nearing capacity.

2.3.3 Rehabilitation Phase

Rehabilitation phase management procedures are to be undertaken upon completion of the construction of the SWF and/or as specific phases of construction - where water wash down takes place - are completed.

These procedures can also be undertaken progressively, if appropriate. The management procedures are:

A. Decommission and remove from the area all wash down water control measures that are not permanent features of the facility, once they are no longer required.

B. Ensure that the areas affected by the decommissioning of the wash down water control measures are rehabilitated.

2.4 Air Quality Management

To mitigate the risk of potential discharge of contaminants to the air beyond the Project Site during batching plant operations, the following procedures shall be followed:

2.4.1 Establishment and Activity Phase

Mitigation measures to be incorporated into the batching plant design/construction/and operational procedures shall include but not be limited to:

- Stockpiles of sand and aggregates shall be managed to ensure they do not become a source of dust. This may be achieved by storing them in bunkers shielded from three sides, and/or keeping them in a moist condition via sprinklers.
- Ensure trafficked surfaces do not become a source of dust by keeping in a moist condition.

- Cement shall be stored in sealed silos. Delivery of cement to the silos will be via pneumatic transfer from the delivery vehicles.
- Silos and weigh hoppers shall incorporate fabric filter dust collection systems to control dust emissions during filling operations.
- Conveyor transfer points and hopper discharge points should be covered or enclosed.
- If following any daily inspection, or at any other time, it is evident that the control measures are not working appropriately, immediately undertake any necessary maintenance and/or other appropriate measure in order to ensure the ongoing and future effectiveness of the control measure.

2.5 Solid Waste and Ablution Management

The following procedures shall be followed to manage all solid waste and ablution associated with the construction activity, such that adverse effects on the environment are avoided:

2.5.1 Establishment Phase

Establishment phase management procedures, which are to be completed at the commencement of the construction activity, and/or any subsequent phase of the construction activity, are as follows:

A. Planning of solid waste management measures shall occur prior to the construction commencing. The measures shall ensure that:
   - Reduction, reusing, recovering, recycling of materials is provided for.
   - Disposal methods for all unwanted solid waste are identified.
   - Identification of appropriate receptacles, all of which are to be covered, and associated site signage, for various materials.
   - Identification of appropriate locations for these receptacles.
   - All unwanted solid waste is disposed of at appropriate facilities and not at the SWF site.

B. Undertake training, as part of the CEMP induction programme, of all site personnel about the appropriate methods of solid waste management for all components of the waste stream.

C. Portable toilet facilities will be set up around the site, to be used during construction. On site wastewater treatment and disposal for permanent ablution facilities located in areas such as the substation and operation and maintenance buildings will be constructed as per the relevant resource consent conditions.

2.5.2 Activity Phase

Activity phase management procedures, which are to take place throughout the construction of the SWF, are as follows:

A. Installation of the planned solid waste management measures, including signage providing instruction on how to use the facilities, prior to construction commencing. The

location of these facilities may need to be moved to accommodate the movement of the construction activity.

B. Littering of any material is not to occur. All material is to be deposited at the facilities provided and in the receptacle, which is appropriate for the nature of the material.

C. Daily and/or weekly inspection of the control measures, as appropriate and in the surrounding vicinity in order to confirm that the measures are achieving their purpose. This includes determining that the receptacles are being used for the appropriate waste, that sufficient facilities are being provided and that the receptacles are being cleaned out, as appropriate.

D. If following any inspection, or at any other time, it is evident that the control measures are not working appropriately, immediately undertake any necessary maintenance and/or other appropriate measure in order to ensure the ongoing and future effectiveness of the control measure.

E. All solid waste material is to be disposed of off-site at an appropriate facility.

F. Waste from portable toilets is to be removed from the project site at regular intervals. Waste from permanent ablution facilities within areas such as the substation and operation and maintenance buildings shall be treated via a suitably designed and consented on-site wastewater treatment system and discharged to land in a way that untreated wastewater cannot enter receiving streams or other nearby water bodies.

G. On-site wastewater treatment systems for permanent ablution facilities are to be regularly inspected and maintained as per the manufacturer's operations and maintenance manual. Regular inspections and maintenance procedures are to continue, even after construction has been completed.

2.5.3 Rehabilitation Phase

Rehabilitation phase management procedures are to be undertaken upon completion of the construction of the SWF and/or as specific phases of construction - where solid waste management facilities are used - are completed. These procedures can also be undertaken progressively, if appropriate. The management procedures are:

A. Decommission and remove from the area all control measures that are not permanent features of the facility once they are no longer required. Ensure that all unwanted solid waste material has been removed from the site.

2.6 Hazardous Substances

To prevent unplanned or uncontrolled releases to the environment, the following procedures shall be followed:

2.6.1 Establishment Phase

Establishment phase management procedures, which are to be completed at the commencement of the construction activity, and/or any subsequent phase of the construction activity, are as follows:

A. The Contractor shall construct a secure enclosed facility for the storage of hazardous substances. This store shall meet all the legislative requirements for such facilities. It will also ensure that the surrounding environment is protected should there be any spillages within the facility.

B. Prior to any hazardous substances being brought to site, the Environmental Officer shall review and retain a copy of the relevant Material Safety Data Sheet (MSDS). Any specific requirements in relation to the storage, use and disposal of the substances, as identified in the MSDS, shall be provided for at the site prior to the arrival of substance.

C. For all hazardous substances to be used during the construction of the SWF, contingency planning is to take place. The purpose of this planning will be to ensure that best practice is incorporated into all aspects of its storage, use and disposal. An example of best practice during the use of such substances includes ensuring that containment facilities are provided should there be an unplanned spill (e.g. bunding or during temporary use, the use of a protective barrier such as polythene sheet or bin).

D. The Contractor shall ensure that all personnel using hazardous substances are trained and qualified to do so. This training shall also ensure that appropriate personnel are trained in the storage as well as disposal of such substances.

2.6.2 Activity Phase

Activity phase management procedures, which are to take place throughout the construction of the SWF, are as follows:

A. MSDS are to be readily accessible for all site personnel using hazardous substances.

B. Any hazardous substances stored on site shall be appropriately stored in a bunded location (if required due to the nature of the substance), in accordance with the Hazardous Substances and New Organisms Act 1996, and any refuelling of machinery shall take place at least 20m away from a stream.

C. Daily and/or weekly inspection of the hazardous substance control measures as appropriate and in the surrounding vicinity in order to confirm that the measures are achieving their purpose.

D. If following any inspection, or at any other time, it is evident that the control measures are not working appropriately, immediately undertake any necessary maintenance and/or other appropriate measure in order to ensure the ongoing and future effectiveness of the control measure.

E. All unwanted hazardous substances, including empty containers are to be disposed of off-site at an approved facility and/or in an approved manner.

F. Should spillage occur or container rupture, the Contractor will ensure that all spilled material and/or any contamination is contained, pumped and/or removed into suitable holding containers. All this material shall be removed from the site as soon as practicable and disposed of at an approved facility. Spilled material is not to be placed in the receptacles being utilised for solid waste. An incident report is to be prepared if any such event occurs.

2.6.3 Rehabilitation Phase

Rehabilitation phase management procedures are to be undertaken upon completion of the construction of the SWF. The management procedures are:

A. Decommission and remove from the area all hazardous substance facilities that are not permanent features of the facility, once they are no longer required. Ensure that any contamination of the surrounding area is remediated in accordance with best practice.

2.7 Stormwater

To minimise the adverse effects on existing stormwater runoff patterns within the receiving surface water bodies, the following stormwater infrastructure, controls and monitoring measures are to be constructed and maintained throughout the construction and operation phases of the SWF.

2.7.1 Establishment Phase

Stormwater infrastructure shall be designed by a suitably qualified civil engineer, to maintain stormwater runoff patterns within the project site. The finalised Stormwater drawings and supporting design calculations shall be submitted to the relevant District Council(s) and ES (in accordance with conditions of consent).
The stormwater drawings shall form part of the SSMP's to be certified by ES.

Key design principles employed in the design of the access tracks and hardstands and stormwater infrastructure are:

(a) Tracks and hardstands will be located along ridgelines where practicable to avoid impact on natural flow paths.

(b) Conserve the natural flow paths to natural streams and wetlands downstream. This will be achieved through the use of stormwater culverts where tracks and hardstands intercept the flow paths to maintain the existing catchments and hydrology.

(c) Where practicable, stormwater is allowed to sheet flow from access tracks across the natural topography – thus reducing the number of culverts. Transmission line access tracks are designed to enable runoff to head up/sheet flow across the pavement to avoid the need for culvert - noting the temporary nature of those tracks.

(d) Where stormwater is collected, mitigation of potential erosion along drains and at outlets is managed through energy dissipation achieved through rock lined channels (table drains) along moderate to steep gradients (>5%) and rock aprons at culvert outlets.

(e) Protection of proposed infrastructure from erosion or overtopping with adequately sized culverts to convey flow beneath fill embankments

In order to meet the design principles stated above during construction, works will be staged in a manner such that the stormwater culverts are installed concurrently with the formation of tracks

and hardstands. This will ensure that the earthworks do not create temporary obstructions to the existing topography's natural flow paths.

Temporary culverts may also be utilised to maintain existing flow paths during earthworks construction. These will be detailed in the Site or Activity-Specific Management Plan (SSMP) – prepared in accordance with the EMP.

The permanent stormwater culverts are broken down into five main types:

1. Type A culverts – to be located within natural flow paths/ephemeral streams (where there is no fish habitat) beneath access track fill embankments.

2. Type B and C culverts – to be located at various locations along the access track and WTG hardstand table drains, to convey flow beneath the tracks and hardstands where they cross natural flow paths. Positions are determined relative to the location of downstream watercourse/wetlands, i.e. to maintain surface flow to those water bodies. Type B culvert outlets terminate on earthwork fill embankment and thus incorporate a rock lined flume section to direct flows to a riprap apron at the toe of the embankment. Type C culvert outlets terminate directly to the embankment toe (with a riprap apron).

3. Type D culverts – to be located at locations along access track and turbine platforms, to connect flow from one U/V ditch drain to another, conveying flow beneath tracks and hardstands where they cross natural flow paths or where a sag point is located along the road alignment.

4. Stream Culverts – to be located within intermittent or perennial streams which will be crossed by a track fill embankment, requiring a culvert size >=1,200mm dia. (a trigger for consent under SWLP Rule 59b). These include the replacement of existing culverts and fords at existing farm/forestry track crossings. Fish passage to be provided except where fish passage has been identified as being detrimental to upstream habitats – in which case specific fish barrier measures have been designed.

5. Wetland culverts - designed to maintain hydrological connectivity between/to nearby wetlands. These culverts are broken into 3 sub types:

- Type I – connecting segregated sections of wetland beneath a handstand or track in cut
- Type II - connecting segregated sections of wetland beneath a track fill embankment
- Type III – directing flow beneath tracks or hardstands to maintain flow to nearby wetlands downstream.

2.7.2 Activity Phase

Activity phase management procedures, which are to take place throughout any construction activity, are as follows:

A. Installation, as early as practicable, of the planned erosion and sediment control measures – in accordance with the SSMP's.

B. Inspection, during and following rainfall events, of the control measures and surrounding vicinity in order to confirm that the measures are achieving their purpose.

C. Culverts shall be constructed in accordance with the approved drawings (which form part of the SSMP's), and under the supervision of a suitably qualified Civil Engineer.

D. The permanent stormwater culverts and energy dissipation structures (detailed on the approved stormwater drawings) shall be constructed as part of earthwork construction to maintain flow to downstream water bodies. Appropriate sediment control measures shall be employed at culverts to prevent the transportation of sediment laden water downstream – in accordance with the EMP and SSMP's. Refer to Section 4.0 of the EMP for control measures for the installation of culverts within streams.

E. Stabilise earthwork surfaces progressively so that sediment retention measures can be removed, and pre-existing stormwater processes can be restored in a timely fashion.

F. Undertake monitoring, at regular intervals during construction (in accordance with the ESCP) to confirm that Mataura 3 receiving water standards are being met in accordance with the EMP.

G. If it is evident that the water quality standards are not being met, immediately undertake any necessary maintenance and/or other appropriate measure to ensure the ongoing and future effectiveness of water quality controls.

2.7.3 Rehabilitation Phase

Rehabilitation phase management procedures are to be undertaken upon the completion of installation of every stormwater control measure. The management procedures are:

A. Until all construction works have been completed and ground stabilised and sediment control measures removed, the stormwater control measures shall be monitored to ensure appropriate performance and/or to identify any signs of erosion. If it is evident that the control measures are not working appropriately, immediately undertake any necessary maintenance and/or other appropriate measure to ensure the ongoing and future effectiveness of the control measure.

B. As-built plans of all stormwater infrastructure shall be prepared by the Contractor, certified by the Civil Engineer, and submitted to Council for approval.

C. Upon completion, the stormwater culvert operation and maintenance procedures as prescribed in the CEMP shall be followed.

2.8 Invasive Plants and Animals

Please refer to the Vegetation Management Plan, Biosecurity Management Plan (prepared by others) and the EMP for further detail.

3.0 Contingencies

There is potential for unforeseen events to occur that can have adverse effects on the environment, resulting in urgent action being required. With respect to the CEMP, the following events have been identified as having potential to cause adverse effects during construction of the SWF:

- Natural hazard events such as floods or seismic events.
- Extreme rainfall events.
- Operational errors.
- Failure of equipment.
- Vandalism.

Potential outcomes of these events include:

- Discharge of sediment laden stormwater, fuels, lubricants, cement, or hazardous materials to surface waters.
- Air discharges.
- Excessive noise discharge.

3.1 Discharges of Hazardous Materials

The nature of the risk posed from discharges of hazardous materials and substances will vary dependant on the magnitude of the discharge and also the location relative to more sensitive receiving environments. Section 2.6 identifies the procedures to be taken to minimise the potential for discharge of hazardous materials. In the event of a spill, the following procedure shall be followed (to the extent applicable):

- Take immediate corrective measures to halt the spill if appropriate/safe to do so.
- Determine the type and volume of material being spilled and evaluate the nature of the risk posed.
- Report spillage to Environment Officer or person in charge who will then:
    - arrange to stop all operations in the immediate area and shut off any ignition sources;
    - with the appropriate protective clothing shall isolate the source of the spillage by closing off valves, sealing leaks, etc.;

- contain the spill by using a spill kit and/or forming a perimeter bund;
- call Environment Southland /Southland District Council;
- inform Contact Energy;
- remove all contaminated soil to an approved waste disposal facility and reinstate the affected area;
- replenish the spill kits if used;
- review contingency plans and procedures in terms of their effectiveness in managing the spill; and
- amend site operational procedures, as necessary.

The following is a description of the measures to be undertaken to minimise the potential adverse effects in the unlikely event of cement spillage at the concrete batching plant(s):

- The batching plant(s) shall be founded on compacted hardfill material to create a competent working platform and reduce the perviousness of the area.
- The batching plant(s) are to have a stabilised earth bund constructed around its perimeter to divert clean water runoff and contain sediment laden runoff.
- A containment area (sediment pond) shall be constructed to capture runoff and provide sufficient settlement of sediments prior to discharge to the downstream environment. The containment area shall be lined to prevent any water seepage into the natural ground. The pond shall be designed in accordance with GD05.
- The outlet to the pond shall be controlled by a manually operated valve; if there is spilling of cement in the concrete batching plant area the valve will be shut.
- Following significant rainfall events, the Environmental Officer will arrange for the water in the pond to be tested and pH measured. Best practice guidelines state that a pH of between 6.0 and 9.0 is acceptable for discharge. If required, the water will be chemically treated to reduce the pH to acceptable levels such that clean water can be discharged. Discharge should also be visually inspected to ensure no significant discolouration of receiving waters. If required, the outlet valve should be shut and remedial actions identified and implemented.
- Regularly clean out solids that accumulate in the pond and remove to an appropriate off-site disposal facility.

3.2 Air Discharges

In the event of an unacceptable level of contaminants or pollutants being discharged into the air beyond the project site, the first action will be to stop the discharge by shutting off the cause of the contaminant.

Once the discharge has ceased, actions will be taken to avoid, mitigate or eliminate the risk of re-occurrence. This may involve repairing/replacing the vehicle/or machinery which is generating the discharge.

3.3 Review

Immediately following any event requiring contingency actions to be carried out, the Environment Officer shall establish the causes of the event and review the effectiveness of the response. Based upon the outcome of the review, the CEMP may be updated.

4.0 Records, Reporting, and Inspections

The consent holder shall keep records and respond to incidents and public enquiries/complaints and report to the relevant District or Regional Council in accordance with consent conditions.

4.1 Incidents

An incident register will be maintained to record any incidents on-site that may be considered to have potential for adverse environmental effects and cause a non-compliance with the consent conditions. Such incidents shall be reported to the relevant District or Regional Council in accordance with the consent conditions. Such incidents may include:

- discharges from un-stabilised areas not serviced by erosion and sediment controls measures;
- failure of erosion and sediment control measures;
- any material unforeseen adverse effect to the environment due to concrete batching plant activities;
- any spill of fuel or hazardous substances; and
- any other incident which either directly or indirectly causes, or is likely to cause, adverse environmental effects not authorised by the resource consents for the SWF.

The incident will be reported directly to the Environmental Officer, who shall determine if the scale of the incident warrants the notification of Council(s) or other agencies. If it does, the Environmental Officer will then:

- Liaise with the relevant Council(s), to establish what remediation or rehabilitation works are required to be implemented to prevent further similar incidents occurring.
- Carry out remedial actions as required to the satisfaction of Council(s).
- Maintain a permanent record of the details of the incident and the steps taken to remedy the adverse environmental effects. A copy of this record shall be provided to the Council(s) within an agreed timeframe.

4.2 Public Feedback

All employees of the main contractor and sub-contractors shall be informed during their site inductions, to report any feedback from site visitors, neighbouring property owners, or the general public.

All public feedback received in respect of the construction works shall be officially recorded, this record is to be maintained by the Environmental Officer [contact details to be added at a later date]. In respect of a complaint, the Environmental Officer will be responsible for managing the implementation of remedial actions if applicable and follow up communications with the complainant.

The feedback record will detail, where possible:

- Name, address, and contact details of the person.
- Explanation of the inquiry/complaint.
- Date and time of the inquiry and event or action.
- Weather conditions at the time of the event.
- Outcome of any investigations into the event.
- In respect of a complaint, any measures taken to ensure that such an event does not occur again.
- Any follow up communications with the complainant.

4.3 Inspections

A number of inspections are required to ensure compliance with resource consent conditions and this CEMP. Inspection will be undertaken by the Environmental Officer or Representative who will note any instances of non-compliance.

The inspections will include but are not limited to:

- Checking all earthworks and sediment control devices.
- Checking all stormwater culverts have been installed in accordance with the approved drawings.
- Checking culverts for debris and blockages.
- Checking the worksite for any spills.
- Ensuring earthworks are confined to designated areas.
- Exclusion areas (including buffers) are clearly identified and left undisturbed.
- Fuel and hazardous material storage.

Earthworks activities and associated controls will be checked on a daily basis during excavation stages, or on a weekly basis during the stabilisation period (or following significant rainfall).

The Environmental Officer or Representative will ensure a weekly visual inspection of the concrete batching plant equipment and activities is carried out prior to weekly use. The inspection will be carried out by the concrete batching plant supervisor or other persons familiar with the plant's operation. Outcomes of the inspection shall be recorded for auditing purposes.

Depending on the duration of the project, audits by environmental and sustainability staff external to the project will be undertaken. Audits are a good way of identifying areas for improvement. Audit results must be communicated to staff and action items closed out in a timely manner.

The Project Manager is responsible for ensuring environmental monitoring and inspections are undertaken.

This Management Plan will be reviewed throughout the project to ensure that any changes in the project scope, environmental effects and learnings from incidents have been adequately addressed.

4.4 Reports

The Environmental Officer will report to Council compliance personnel monthly on environmental management of the site and compliance with resource consent conditions and this CEMP.

4.5 Records

Example of records that will be maintained in the Site Offices:

- Daily/weekly inspections.
- Monthly Reports.
- Incident Reports.
- Public Feedback Records.
- Site Induction Register.
- Training records.
- A record of all bulk deliveries to and dispatches from the concrete batching plant.
- A record of bulk fuel deliveries to fuel storage facilities on-site.
- Hazardous Materials Register.
- Material Safety Data Sheets.
- Maintenance records and inspections of the concrete batching plant.

4.6 Documentation

The following documentation will be kept in the site offices as reference material:

- The final 'overall' CEMP including appended separate Management Plans, and any stage specific SSMP's, including subsequent approved updates.
- Copies of resource consents, water permits, and any other relevant Council Consents.

4.7 Stakeholder Liaison

It is important that stakeholders are kept informed of project progress where this may affect them. Typical issues which may affect the community include:

- Night works
- Works on or close to property boundaries
- Works affecting property access
- Works with a human nuisance factor such as noise or vibration, and
- Services interruptions.

Methods of communication may include letters, mailbox drops, newspaper advertising and website or email updates.

The consent holder is responsible for establishing a community consultation group who shall meet at least six-monthly during construction. The objective of the group will be to facilitate information flow between the consent holder's management team and the community and will be an ongoing point of contact between the consent holder and the community. The functions of the group shall also include acting as a forum for relaying community concerns about the construction of the project.

5.0 Training and Awareness

Training and awareness programmes are critical to ensure that there is an appropriate level of environmental knowledge for those staff and subcontractors involved in the project.

Training of site staff will be provided through project inductions, toolbox meetings, information posters such as spill response plans and any site-specific training considered necessary such as archaeological discovery protocols, spill kit training, erosion and sediment control training and waste reduction/recycling training. Environmental and sustainability issues will form a regular part of toolbox meetings to ensure all workers are aware of the key issues. Opportunities will also be made available for selected staff members to attend industry training programmes where they would benefit from further training.

[Details of environmental awareness training procedures, cultural induction and cultural monitoring requirements to be included at a later date]

6.0 Corrective and Preventative Actions

Corrective and preventative actions resulting from compliance monitoring, routine inspections, internal and external audits and regulatory compliance monitoring will be undertaken in a timely manner. Ultimate responsibility for this sits with the Project Manager, however this will be appropriately delegated to the Project Team.

Corrective and preventative actions will also be developed following the identification of root causes during an incident investigation. Once the corrective and preventative actions have been successfully implemented, future incidents of a similar nature should be prevented from reoccurring.

PART C Appendices – Separate Management Plans

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