

## **Recommended conditions CRC215098 for a s9 land use consent to undertake earthworks over an aquifer, within a riparian margin, and within 10 metres of a natural wetland**

Duration: five years

### Limits

1. The works authorised by this consent shall be limited to:
  - a. earthworks over aquifers; and
  - b. earthworks and the clearance of vegetation within five metres of the bed (within the riparian margin) of the Cam / Ruataniwha River, including for the purpose of constructing a re-aligned channel for the river and removing contaminated soil; and
  - c. Works within 10 metres of a natural wetland;for the purpose of the development of a residential subdivision at 52 and 76 Kippenberger Avenue, legally identified as Part RS 267 and Lot 1 DP 22674, and shown as "Stage 1" on Plan CRC215098A [plan showing site location and extent of development] attached to and forming part of this consent.
2. The extent of earthworks and vegetation clearance in the riparian margin shall be undertaken in general accordance with Plan CRC215098B [indicative cut/fill plan], attached to and forming part of this consent.
3. Planting in the riparian margin shall be undertaken for landscaping purposes and to stabilise the riparian margin following the completion of earthworks. The extent of the planting shall be undertaken in general accordance with Plan CRC215098C [indicative landscape plan] attached to and forming part of this consent.

### Pre-commencement requirements

4. The consent holder shall notify the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance in writing not less than five working days prior to the commencement of works.
5. Prior to the commencement of any works described in Condition (1), personnel working in the development area shall be made aware of, and have access to, the following:
  - a. A copy of this resource consent;
  - b. Construction Management Plan;
  - c. Spill Response Plan;
  - d. Dust Management Plan; and
  - e. Consent documents CRC215099 (s13), CRC215100 (s14) and CRC215101 (s15), any associated documents, and any variation thereof.
6. Prior to commencement of works, a pre-construction meeting shall be conducted between the Canterbury Regional Council - Monitoring and Compliance Officer and all relevant parties, including the primary contractor. At a minimum, the following shall be covered at the meeting:
  - a. Scheduling and staging of the works;
  - b. Responsibilities of all relevant parties;
  - c. Contact details for all relevant parties;

- d. Expectations regarding the communication between all relevant parties;
  - e. Procedures for implementing any amendments;
  - f. Site inspection;
  - g. Confirming that all relevant parties have copies of the contents of this resource consent document and all associated plans, including:
    - i. The Construction Management Plan
    - ii. The Spill Response Plan; and
7. Prior to works commencing, a lizard management plan (LMP) shall be provided for the works covered by this consent. The LMP shall:
- a. Be prepared by a suitably qualified and experienced ecologist;
  - b. Be prepared in accordance with the Canterbury Regional Council's Guidelines for Lizard Management, 2018;
  - c. Describe the measures to be taken to identify and protect lizards in the area covered by this consent from the effects of the works;
  - d. Be consistent with the conditions of this resource consent; and
  - e. Be submitted to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, and Science Team Leader, Land Ecology at least ten working days before works commence, for certification that it complies with clauses (a) to (d) of this condition.

#### Construction Management Plans

8. Prior to the works authorised by Condition (1) commencing, a construction management plan shall be prepared. The construction management plan shall contain details of how works authorised by this consent will be undertaken to minimise the environmental effects of these works. The construction plan shall be prepared in accordance with the Canterbury Regional Council's Erosion and Sediment Control Toolbox, the recommendations of the suitably qualified ecologist (SQE) advising on the works, the recommendations of a suitably qualified and experienced contaminated land practitioner (SQEP) advising on the works, and the conditions of this consent. The construction management plan shall include, but not be limited to:
- a. Details of the proposed works, including the locations and depths of excavations, and the locations of contaminated soil that requires remediation;
  - b. Details of ecological habitats and species within the works area, and how these will be protected;
  - c. Methods that will be used to stabilise the works area at the completion of works;
  - d. Details of inspections and monitoring that shall be undertaken during the works to confirm the conditions of this consent are being complied with, including water clarity monitoring; and
  - e. Measures that will be in place to avoid accidental artesian aquifer interception, and details of measures that will be implemented in the event that unexpected artesian aquifer interception occurs.

**Advice note:** *The requirement for a construction management plan is also included on the associated resource consents for this site CRC215099, CRC215100, CRC215101 and CRC215102. The matters listed in the condition above are specific to the matters covered by this consent, but it is anticipated that one construction management plan will be*

*prepared which encompasses the entire project and the requirements of all relevant consents. Furthermore, details of the remediation of contaminated material are required in the Remedial Action Plan. Details of the erosion and sediment controls are required in the erosion and sediment control plan, and the use of water treatment chemicals is required by the chemical treatment plan. The construction management plan should contain or cross reference to, and be consistent with, the requirements of these other management plans for the site and works.*

9. An Erosion and Sediment Control Plan (ESCP) shall be prepared for the works.
  - a. The ESCP shall detail the sediment control measures that will be taken to ensure compliance with this consent.
  - b. The ESCP shall be prepared in accordance with:
    - i. Environment Canterbury's "Erosion and Sediment Control Toolbox for the Canterbury Region" (ESCT) <http://escscanterbury.co.nz/>; or
    - ii. An equivalent industry guideline. If an alternative guideline is used, the ESCP shall provide details of the relevant alternative methods used and an explanation of why they are more appropriate than the ESCT.
10. The ESCP shall include, but not be limited to:
  - a. A map showing the location of all works;
  - b. Detailed plans showing the location of sediment control measures, on-site catchment boundaries, and sources and pathways for runoff;
  - c. Details of staging of the proposed works;
  - d. Drawings and specifications of designated sediment control measures;
  - e. A programme of works, which includes but is not limited to, a proposed timeframe for the works;
  - f. Inspection and maintenance of the sediment control measures;
  - g. Sampling procedures and protocols;
  - h. Defined discharge points where stormwater leaves the site;
  - i. The methodology for stabilising the site if works are abandoned; and
  - j. The methodology for stabilising the site and decommissioning erosion and sediment control measures after works have been completed.
11. The removal of contaminated material shall be undertaken in accordance with the remedial action plans prepared for the site titled "Soil Contamination Risk Detailed Site Investigation Report and Remediation Action Plan, 52 Kippenberger Avenue, Rangiora" (RAP) and dated July 2021

#### Certification and revision of management plans

12. The Construction Management Plan and ESCP shall be submitted to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, at least ten working days prior to works commencing, for certification that it complies with the conditions of this consent.
  - a. The works shall not commence until certification has been received from the Canterbury Regional Council that the Construction Management Plan and ESCP are consistent with the conditions of this resource consent.

- b. Notwithstanding Condition (12)(a), if no correspondence has been received regarding the adequacy of the Construction Management Plan and / or ESCP within ten working days of the Regional Leader – Monitoring and Compliance receiving the ESCP, the works may commence.
13. The Construction Management Plan, ESCP and / or RAP may be amended at any time. Any amendments shall be:
- a. Only for the purpose of improving the efficiency or effectiveness of the environmental protection measures and shall not result in reduced efficacy of the environmental management;
  - b. Consistent with the conditions of this resource consent; and
  - c. Submitted in writing to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, prior to any amendment being implemented.

#### During Works

14. All works undertaken under this consent shall be undertaken in accordance with the management plans required by Conditions (7) to (11) of this consent, and:
- a. The recommendations of the SQEP, for the management of any contaminated or potentially contaminated soil; and
  - b. The recommendations of the SQE relating to the management of ecological values in the Cam / Ruataniwha River.
15. All practicable measures shall be taken to:
- a. Minimise soil disturbance and prevent soil erosion, including by:
    - i. limiting exposed areas;
    - ii. stabilising disturbed ground and soil stockpiles with mulch, soil stabilisers, geotextile fabric or biodegradable fabric such as jute or wool, or vegetation cover;
  - b. Prevent sediment from entering surface water; and
  - c. Avoid placing excavated material or cut vegetation in a position where it may enter surface water.
16. Erosion and sediment control measures shall be inspected at least once per day, as well as following any rainfall event that results in more than five millimetres of rainfall at the site. Any accumulated sediment that may impair the functioning of the erosion or sediment control measure shall be removed, and repairs made, as necessary, to ensure effective functioning of devices.
17. If the consent holder abandons work on-site, adequate preventative and remedial measures shall be taken to prevent erosion of, or sediment discharges from exposed or unconsolidated surfaces. These measures shall be maintained for so long as necessary to prevent sediment discharges from the earth worked areas.
18. The erosion and sediment control measures shall not be decommissioned until the site is stabilised and the stormwater system for the developed site is functioning. Decommissioning measures shall be undertaken in the following order:
- a. All disturbed areas shall be stabilised and/or re-vegetated as soon as practicable following completion of the works;
  - b. Any visible debris, litter, sediment and hydrocarbons shall be removed from all sediment control measures; and
  - c. Erosion and sediment control measures shall be removed.

19. Contaminated material removed to remediate contaminated areas, or re-located as part of the site earthworks shall either be disposed of to a facility authorised to receive the material or re-used on site in accordance with the recommendations of the SQEP. Contaminated material re-used on-site shall only be placed in locations where it is not a risk to the environment, including the Cam / Ruataniwha River and groundwater quality.

#### Spills

20. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery entering waterbodies, including but not limited to:
  - a. Construction vehicles to be kept clean, maintained and checked for fluid leaks;
  - b. Refuelling and maintaining vehicles or machinery at least 20 metres from any surface waterbody, open excavation or exposed groundwater;
  - c. Ensuring that no fluids from wash-down shall enter a watercourse, including via land drainage networks; and
  - d. Storing fuel securely at least 20 metres from any waterbody or exposed groundwater or removing fuel from the site overnight.
21. All practicable measures shall be taken to avoid spills of fuel or any other hazardous substances within the site. In the event of a spill of fuel or any other hazardous substance: All practicable measures shall be taken to avoid spills of fuel or any other hazardous substances within the site:
  - a. A spill response plan shall be produced and communicated to all persons on site prior to work commencing;
  - b. A spill kit shall be kept on site that is capable of absorbing the quantity of oil and petroleum products that may be spilt on site at any one time. The spill kit shall remain on site at all times;
  - c. In the event of a spill of fuel or any other hazardous substance, the spill shall be cleaned up as soon as practicable, erosion and sediment control measures shall be inspected and cleaned, and measures taken to prevent a recurrence;
  - d. The Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, shall be informed within 24 hours of a spill event exceeding five litres and the following information provided:
    - i. The date, time, location and estimated volume of the spill;
    - ii. The cause of the spill;
    - iii. The type of hazardous substance(s) spilled;
    - iv. Clean up procedures undertaken;
    - v. Details of the steps taken to control and remediate the effects of the spill on the receiving environment;
    - vi. An assessment of any potential effects of the spill; and
    - vii. Measures to be undertaken to prevent a recurrence.
22. A spill kit shall be kept on site at all times. The spill kit shall be capable of absorbing the quantity of oil and petroleum products that may be spilt on site at any one time.

#### Unexpected aquifer interception

23. Excavations shall not be deeper than six metres below ground level.
- Depth to reduce the potential for aquifer interception – depth of any confined strata to be confirmed.*
24. In the event of an accidental interception or unanticipated levels of artesian flows:
- a. All practicable measures shall be undertaken to remedy or mitigate any change in aquifer pressure, water quality or temperature. This shall include, but not be limited to:
    - i. The contractor shall immediately cease all works within the immediate area of excavation that caused the interception of the artesian flows;
    - ii. The contractor shall:
      1. Determine whether the flow is constant or increasing, and document the artesian flows;
      2. Determine if the turbidity is constant or increasing; and
    - iii. Determine if the flow is confined to the well-point/ pumping well or excavation;
  - b. The consent holder shall implement emergency measures required to arrest the artesian flow, including seepage beneath excavated and backfilled areas. Emergency measures may include:
    - i. The installation of a layer of impermeable material to the extent required to reform a capping layer over the aquifer to prevent the upward movement of groundwater through the confining layer; or
    - ii. Inserting a vertical pipe in the aquifer interception point (if practicable) and providing for a secure seal against the pipe to enable the stabilisation of the artesian flow in the pipe, and to determine the above ground water level to assess any further measures.
  - c. Appropriate erosion and sediment control measures shall be implemented to prevent erosion, scour or sediment laden run-off from occurring due to unexpected artesian flow.
  - d. The Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance shall be notified as soon as practicable but no later than two working days after the interception; and
  - e. Upon remediation and arresting of flow from the aquifer interception, the design of the proposed excavations shall be reconsidered and, if required, revised.

#### Tangata Whenua

25. In the event of any discovery of archaeological material:
- a. The Consent Holder shall immediately:
    - i. Cease earthmoving operations in the affected area and mark off the affected area; and
    - ii. Advise the Canterbury Regional Council of the disturbance; and
    - iii. Advise the New Zealand Heritage New Zealand Pouhere Taonga of the disturbance.
  - b. If the archaeological material is determined to be Koiwi Tangata (human bones) or taonga (treasured artefacts) by Heritage New Zealand Pouhere Taonga, the consent holder shall immediately advise the office of the appropriate Runanga

(office contact information can be obtained from the Canterbury Regional Council) of the discovery.

- c. If the archaeological material is determined to be Koiwi Tangata (human bones) by the New Zealand Historic Places Trust, the consent holder shall immediately advise the New Zealand Police of the disturbance.
- d. Work may recommence if Heritage New Zealand Pouhere Taonga (following consultation with Runanga if the site is of Maori origin) provides a statement in writing to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance that appropriate action has been undertaken in relation to the archaeological material discovered. The Canterbury Regional Council shall advise the consent holder on written receipt from Heritage New Zealand Pouhere Taonga that work can recommence.

**Advice Note:** *This may be in addition to any agreements that are in place between the consent holder and the Papatipu Runanga. (Cultural Site Accidental Discovery Protocol).*

**Advice Note:** *Under the Heritage New Zealand Pouhere Taonga Act 2014 an archaeological site is defined as any place associated with pre-1900 human activity, where there is material evidence relating to the history of New Zealand. For sites solely of Maori origin, this evidence may be in the form of accumulations of shell, bone, charcoal, burnt stones, etc. In later sites, artefacts such as bottles or broken glass, ceramics, metals, etc, may be found or evidence of old foundations, wells, drains, tailings, races or other structures. Human remains/koiwi may date to any historic period. It is unlawful for any person to destroy, damage, or modify the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga. This is the case regardless of the legal status of the land on which the site is located, whether the activity is permitted under the District or Regional Plan or whether a resource or building consent has been granted. The Heritage New Zealand Pouhere Taonga Act 2014 provides for substantial penalties for unauthorised damage or destruction.*

#### Wetland

26. No soil disturbance or removal of vegetation shall be undertaken within the natural wetland shown on Plan CRC215098B [plan showing wetland extent and location] attached to and forming part of this consent. There shall be no discharge to the natural wetland.
27. A restoration planting plan shall be prepared for the natural wetland shown on plan CRC215098B by a suitably qualified ecologist with experience in wetland restoration. The restoration planting plan shall be provided to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, at least ten working days prior to restoration planting being undertaken.
28. Restoration planting of the natural wetland shown on plan CRC215098B shall be completed within the first year of the completion of bulk earthworks in the riparian margin of the Cam / Ruataniwha River, in accordance with the restoration planting plan.
29. For the first five years following restoration planting the consent holder shall undertake inspections to confirm that the restoration planting has not been overtaken by weed vegetation. Maintenance shall be undertaken to maintain the restoration planting in a healthy state, such that it is not overtaken or encroached on by weed species.

#### After Completion of Works

30. All exposed surfaces shall be stabilised once works in that area are completed or if they are not to be worked for a period of 14 days or more.

31. Within three months of the completion of the earthworks authorised by this consent, the SQEP shall prepare a site validation report, which shall include at a minimum:
- a. Details of the results of any additional testing undertaken to delineate the extent of contaminated material prior to its removal;
  - b. Details of the location and extent of remedial excavations;
  - c. A summary of the volumes of contaminated soil re-used onsite and/or disposed of offsite;
  - d. Details of the locations of on-site re-use and off-site disposal of contaminated soil; and
  - e. Weighbridge receipts or completed soil manifest forms for soil disposed of off-site.

The site validation report shall be provided to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance within one month of its completion.

32. The Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance shall be notified within ten working days after the completion of any works authorised by this consent.

#### Administration

33. The Canterbury Regional Council may, on the last five working days of May or November each year, service notice of its intention to review the conditions of this consent for the purposes of:
- a. Dealing with any adverse effect on the environment which may arise from the exercise of this consent; or
  - b. Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the consent.



## **Recommended conditions CRC215099 for a s13 land use consent to reclaim, disturb and remove vegetation and install structures in the bed of a surface waterbody**

Duration: 35 years

### Limits

1. The works authorised by this consent shall be limited to:
  - a. The reclamation of portions of the Cam / Ruataniwha River associated with the realignment of a stretch of the river as shown on Plan CRC215099A [plan showing realignment and area of reclamation] attached to and forming part of this consent;
  - b. The removal of material from the bed of the Cam / Ruataniwha River for the purposes of removing contaminated soil;
  - c. The installation, use and ongoing maintenance of culverts to provide crossings over the Cam / Ruataniwha River, as shown on Plan CRC215099B, attached to and forming part of this consent; and  
  
at 52 and 76 Kippenberger Avenue, legally identified as Part RS 267 and Lot 1 DP 22674, and shown as "Stage 1" on Plan CRC215099A [plan showing site location and extent of development] attached to and forming part of this consent
2. The reclamation and disturbance of the Cam / Ruataniwha River channel shall be undertaken in accordance with Plan CRC215099A [plan showing the extent of the reclamation and works needed in the bed of the river], attached to and forming part of this consent.

### Pre-commencement requirements

3. The consent holder shall notify the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance in writing not less than five working days prior to the commencement of works.
4. Prior to the commencement of any works described in Condition (1), personnel working in the development area shall be made aware of, and have access to, the following:
  - a. A copy of this resource consent;
  - b. Construction Management Plan;
  - c. Spill Response Plan;
  - d. Dust Management Plan; and
  - e. Consent documents CRC215098 (s9), CRC215100 (s14) and CRC215101 (s15), any associated documents, and any variation thereof.

### Construction Management Plans

5. Prior to the works authorised by Condition (1) commencing, a construction management plan shall be prepared. The construction management plan shall contain details of how works in the bed of the Cam / Ruataniwha River will be undertaken to minimise the environmental effects of these works. The construction plan shall be prepared in accordance with the Canterbury Regional Council's Erosion and Sediment Control Toolbox, the recommendations of the suitably qualified ecologist (SQE) advising on the works, the recommendations of a suitably qualified and experienced contaminated land practitioner (SQEP) advising on the works, and the conditions of this consent. The construction management plan shall include, but not be limited to:

- a. The locations of the structures and proposed works, including the locations of contaminated soil that requires remediation;
- b. Details of the methodology for the installation of structures in the bed of the river including staging and timing of the works;
- c. Methods of erosion and sediment control to be implemented during the works specific to works in the river bed to minimise sediment mobilisation into flowing water;
- d. Details of ecological habitats and species within the works area, and how these will be protected;
- e. In the event fish rescue and relocation are required during the works, details of how fish recovery and release shall be undertaken;
- f. Methods that will be used to stabilise the works area at the completion of works; and
- g. Details of inspections and monitoring that shall be undertaken during the works to confirm the conditions of this consent are being complied with, including water clarity monitoring.

**Advice note:** *The requirement for a construction management plan is also included on the associated resource consents for this site CRC215098, CRC215100, CRC215101 and CRC215102. The matters listed in the condition above are specific to the matters covered by this consent, but it is anticipated that one construction management plan will be prepared which encompasses the entire project and the requirements of all relevant consents. Furthermore, details of the remediation of contaminated material are required in the Remedial Action Plan. Details of the erosion and sediment controls are required in the erosion and sediment control plan, and the use of water treatment chemicals is required by the chemical treatment plan. The construction management plan should contain or cross reference to, and be consistent with, the requirements of these other management plans for the site and works*

**Advice note:** *The conditions of this consent require that works in the Cam / Ruataniwha River channel be undertaken when flows are not present. Assessment for the presence of fish is included as a precaution in the event that fish have been previously stranded in pools or other isolated locations due to low flows.*

6. An Erosion and Sediment Control Plan (ESCP) shall be prepared for the works.
  - a. The ESCP shall detail the sediment control measures that will be taken to ensure compliance with this consent.
  - b. The ESCP shall be prepared in accordance with:
    - i. Environment Canterbury's "Erosion and Sediment Control Toolbox for the Canterbury Region" (ESCT) <http://escscanterbury.co.nz/>; or
    - ii. An equivalent industry guideline. If an alternative guideline is used, the ESCP shall provide details of the relevant alternative methods used and an explanation of why they are more appropriate than the ESCT.
7. The ESCP shall include, but not be limited to:
  - a. A map showing the location of all works;
  - b. Detailed plans showing the location of sediment control measures, on-site catchment boundaries, and sources and pathways for runoff;
  - c. Details of staging of the proposed works;
  - d. Drawings and specifications of designated sediment control measures;

- e. A programme of works, which includes but is not limited to, a proposed timeframe for the works;
  - f. Inspection and maintenance of the sediment control measures;
  - g. Sampling procedures and protocols;
  - h. Defined discharge points where stormwater leaves the site;
  - i. The methodology for stabilising the site if works are abandoned; and
  - j. The methodology for stabilising the site and decommissioning erosion and sediment control measures after works have been completed.
8. The remediation of contaminated material shall be undertaken in accordance with the remedial action plan prepared for the site titled and "Soil Contamination Risk Detailed Site Investigation Report and Remediation Action Plan Cam River (Coldstream), 52 Kippenberger Avenue, Rangiora" February 2021 (RAP) .

#### Certification and revision of management plans

9. The Construction Management Plan and ESCP shall be submitted to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, at least ten working days prior to works commencing, for certification that it complies with the conditions of this consent.
- a. The works shall not commence until certification has been received from the Canterbury Regional Council that the Construction Management Plan and ESCP are consistent with the conditions of this resource consent.
  - b. Notwithstanding Condition (9)(a), if no correspondence has been received regarding the adequacy of the Construction Management Plan and / or ESCP within ten working days of the Regional Leader – Monitoring and Compliance receiving the ESCP, the works may commence.
10. The Construction Management Plan, ESCP and / or RAP may be amended at any time. Any amendments shall be:
- a. Only for the purpose of improving the efficiency or effectiveness of the environmental protection measures and shall not result in reduced efficacy of the environmental management;
  - b. Consistent with the conditions of this resource consent; and
  - c. Submitted in writing to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, prior to any amendment being implemented.

#### During works

11. All works undertaken under this consent shall be undertaken in accordance with the management plans required by Conditions (5) to (8) of this consent, and:
- a. The recommendations of the SQEP, for the management of any contaminated or potentially contaminated soil; and
  - b. The recommendations of the SQE relating to the management of ecological values in the Cam / Ruataniwha River.
12. Prior to the commencement of disturbance or filling, or the installation of structures in the Cam / Ruataniwha River channel the SQE shall inspect the Cam / Ruataniwha River channel where the works are to be undertaken and confirm whether fish rescue and relocation are required prior to undertaking the work.
13. Works in the bed of the Cam / Ruataniwha River shall only be undertaken during a time when there is no flowing water within the channel.

All practicable measures shall be taken to:

- a. Minimise soil disturbance and prevent soil erosion, including by:
    - i. limiting exposed areas;
    - ii. stabilising disturbed ground and soil stockpiles with mulch, soil stabilisers, geotextile fabric or biodegradable fabric such as jute or wool, or vegetation cover;
  - b. Prevent sediment from entering surface water; and
  - c. Avoid placing excavated material or cut vegetation in a position where it may enter surface water.
14. Erosion and sediment control measures shall be inspected at least once per day, as well as following any rainfall event that results in more than five millimetres of rainfall at the site. Any accumulated sediment that may impair the functioning of the erosion or sediment control measure shall be removed, and repairs made, as necessary, to ensure effective functioning of devices.
15. If the consent holder abandons work on-site, adequate preventative and remedial measures shall be taken to prevent erosion of, or sediment discharges from exposed or unconsolidated surfaces. These measures shall be maintained for so long as necessary to prevent sediment discharges from the earth worked areas.
16. The erosion and sediment control measures shall not be decommissioned until the site is stabilised and the stormwater system for the developed site is functioning. Decommissioning measures shall be undertaken in the following order:
- a. All disturbed areas shall be stabilised and/or re-vegetated as soon as practicable following completion of the works;
  - b. Any visible debris, litter, sediment and hydrocarbons shall be removed from all sediment control measures; and
  - c. Erosion and sediment control measures shall be removed.
17. Contaminated material removed to remediate contaminated areas, or relocated as part of the site earthworks shall either be disposed of to a facility authorised to receive the material or re-used on site in accordance with the recommendations of the SQEP. Contaminated material re-used on-site shall only be placed in locations where it is not a risk to the environment, including the Cam / Ruataniwha River and groundwater quality.

#### Spills

18. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery including but not limited to the following:
- a. There shall be no storage of fuel or refuelling of vehicles or machinery within 20 metres of surface waterbodies or open excavations; and
  - b. Fuel shall be stored securely or removed from site overnight.
19. All practicable measures shall be taken to avoid spills of fuel or any other hazardous substances within the site. In the event of a spill of fuel or any other hazardous substance:
- a. The spill shall be cleaned up as soon as practicable, any contaminated soils shall be removed, and measures shall be taken to prevent a recurrence;
  - b. Where the spill exceeds five litres, the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, shall be informed within 24 hours of a spill event and the following information provided:

- i. The date, time, location and estimated volume of the spill;
  - ii. The cause of the spill;
  - iii. The type of hazardous substance(s) spilled;
  - iv. Clean up procedures undertaken;
  - v. Details of the steps taken to control and remediate the effects of the spill on the receiving environment;
  - vi. An assessment of any potential effects of the spill; and
  - vii. Measures to be undertaken to prevent a recurrence.
20. A spill kit shall be kept on site at all times. The spill kit shall be capable of absorbing the quantity of oil and petroleum products that may be spilt on site at any one time.

#### After Completion of Works

21. All exposed surfaces shall be stabilised once works in that area are completed or if they are not to be worked for a period of 14 days or more.
22. Within three months of the completion of the earthworks authorised by this consent, the SQEP shall prepare a site validation report, which shall include at a minimum:
  - a. Details of the results of any additional testing undertaken to delineate the extent of contaminated material prior to its removal;
  - b. Details of the location and extent of remedial excavations;
  - c. A summary of the volumes of contaminated soil re-used onsite and/or disposed of offsite;
  - d. Details of the locations of on-site re-use and off-site disposal of contaminated soil; and
  - e. Weighbridge receipts or completed soil manifest forms for soil disposed of off-site.

The site validation report shall be provided to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance within one month of its completion.

23. The Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance shall be notified within ten working days after the completion of any works authorised by this consent.

#### Structures

24. Culverts shall be designed and positioned so that:
  - a. They do not present a barrier to flood waters;
  - b. They do not cause or exacerbate flooding, erosion or scour.
25. The culverts shall be designed and constructed in accordance with Plan CRC215099B [design plan showing culvert details including length, width, shape, embeddedness, alignment in riverbed], attached to and forming part of this consent.
26. All structures installed in accordance with this consent shall be maintained for the duration of the consent or shall be removed from the waterbody.

#### Provision of information

27. The following information shall be provided to the Canterbury Regional Council within 20 working days of the completion of the construction of the culverts:
  - a. the culvert's asset identification number, if known:

- b. whether the culvert's ownership is—
  - i. held by the Crown (for example, the Department of Conservation), a regional council, a territorial authority, the New Zealand Transport Agency, or KiwiRail Holdings Limited; or
  - ii. held publicly by another person or organisation; or
  - iii. held privately; or
  - iv. unknown:
- c. the number of barrels that make up the culvert:
- d. the culvert's shape:
- e. the culvert's length:
- f. the culvert's diameter or its width and height:
- g. the height of the drop (if any) from the culvert's outlet:
- h. the length of the undercut or erosion (if any) from the culvert's outlet:
- i. the material from which the culvert is made:
- j. the mean depth of the water through the culvert:
- k. the mean water velocity in the culvert:
- l. whether there are low-velocity zones downstream of the culvert:
- m. the type of bed substrate that is in most of the culvert:
- n. whether there are any remediation features (for example, baffles or spat rope) in the culvert:
- o. whether the culvert has wetted margins:
- p. the slope of the culvert:
- q. the alignment of the culvert:
- r. the numbers of wingwalls or screens, on the culvert.

#### Administration

- 28. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
  - a. Dealing with any adverse effect on the environment that may arise from the exercise of the consent or
  - b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment
- 29. If this consent is not exercised before 31 March 2027 it shall lapse in accordance with section 125 of the Resource Management Act 1991.

## **Recommended conditions CRC215100 for a s14 water permit to take groundwater for dewatering and the permanent diversion of a surface waterbody**

Duration: 35 years

### Limits

1. The take and diversion of water shall be only:
  - a. The take of groundwater for the purposes of site dewatering during construction; and
  - b. The diversion of the Cam / Ruataniwha River via a realigned stream channel, as shown on Plan CRC215100A [plan showing realigned channel] attached to and forming part of this consent;

at the development at 52 and 76 Kippenberger Avenue, legally identified as Part RS 267 and Lot 1 DP 22674, as shown on Plan CRC215100A [plan showing site location and extent of development] attached to and forming part of this consent.

**Advice note:** *This resource consent does not authorise the diversion of flows during construction, as works will be undertaken during times when there is no flow in the Cam / Ruataniwha River channel on the site.*

### Pre-commencement requirements

2. The consent holder shall notify the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance in writing not less than five working days prior to the commencement of works.
3. Prior to the commencement of any works described in Condition (1), personnel working in the development area shall be made aware of, and have access to, the following:
  - a. A copy of this resource consent;
  - b. Construction Management Plan;
  - c. Spill Response Plan;
  - d. Dust Management Plan; and
  - e. Consent documents CRC215099 (s13), CRC215100 (s14) and CRC215101 (s15), any associated documents, and any variation thereof.

### Dewatering

4. The rate of take of groundwater for dewatering purposes shall not exceed 425 litres per second.
5. The duration of the take of groundwater for dewatering shall not exceed six weeks.
6. During the dewatering, either:
  - a. The water level in bore M35/0370 shall be monitored continuously, or using daily inspections. If water levels reduce to a level that will prevent water from being taken:
    - i. dewatering shall cease until alterations to the dewatering method are implemented to avoid interference effects that prevent water from being taken; or
    - ii. an alternative water supply shall be provided;

or

- b. an alternative water supply shall be provided to bore users from the outset until the completion of dewatering.

#### Diversion of the Cam / Ruataniwha River

7. Water shall be diverted to a newly constructed open channel realignment that has equal to or greater flow capacity than the existing alignment.
8. The diversion shall not cause erosion of the bed or banks of the Cam / Ruataniwha River.
9. Water shall only be diverted into the newly constructed channel of the Cam / Ruataniwha River once the channel bed and banks have been stabilised.

#### Administration

10. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
  - a. Dealing with any adverse effect on the environment that may arise from the exercise of the consent or
  - b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.
11. If this consent is not exercised before 31 March 2027 it shall lapse in accordance with section 125 of the Resource Management Act 1991.



## **Recommended conditions CRC215101 for a s15 discharge permit to – discharge dewatering water, construction phase, diverted water and residual water treatment chemicals**

### Limits

1. The discharges shall be limited to:
  - a. Construction phase stormwater, including residual water treatment chemicals;
  - b. Groundwater abstracted by dewatering during construction;

The discharge of the diverted flow of the Cam / Ruataniwha River back into the Cam / Ruataniwha River channel shown on Plan CRC215101A [plan showing diversion] attached to and forming part of this consent; associated with the construction and operation of the residential subdivision at 52 and 76 Kippenberger Avenue, legally identified as Part RS 267 and Lot 1 DP 22674, and as shown on Plan CRC215101B [plan showing site location and extent] attached to and forming part of this consent.

### Pre-commencement requirements

2. The consent holder shall notify the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance in writing not less than five working days prior to the commencement of works.
3. Prior to the commencement of any works described in Condition (1), personnel working in the development area shall be made aware of, and have access to, the following:
  - a. A copy of this resource consent;
  - b. Construction Management Plan;
  - c. Spill Response Plan;
  - d. Dust Management Plan; and
  - e. Consent documents CRC215099 (s13), CRC215100 (s14) and CRC215101 (s15), any associated documents, and any variation thereof.

### Construction Management Plans

4. Prior to the works authorised by Condition (1) commencing, a construction management plan shall be prepared. The construction management plan shall contain details of how works authorised by this consent will be undertaken to minimise the environmental effects of these works. The construction plan shall be prepared in accordance with the Canterbury Regional Council's Erosion and Sediment Control Toolbox, the recommendations of the suitably qualified ecologist (SQE) advising on the works, the recommendations of a suitably qualified and experienced contaminated land practitioner (SQEP) advising on the works, and the conditions of this consent. The construction management plan shall include, but not be limited to:
  - a. Details of the proposed works, including the locations and depths of excavations, and the locations of contaminated soil that requires remediation;
  - b. Details of ecological habitats and species within the works area, and how these will be protected;
  - c. Methods that will be used to stabilise the works area at the completion of works;
  - d. Details of inspections and monitoring that shall be undertaken during the works to confirm the conditions of this consent are being complied with, including water clarity monitoring;

- e. Measures that will be in place to manage the use of water treatment chemicals; and
- f. Measures that will be in place to manage the treatment and discharge of dewatering water; and
- g. The methodology for dewatering;
  - i. a map showing the location of dewatering points; and
  - ii. a description of how the pump rate will be monitored; and
  - iii. A programme of works for the dewatering, including an indicative timeframe.

**Advice note:** *The requirement for a construction management plan is also included on the associated resource consents for this site CRC215098, CRC215099, and CRC215100. The matters listed in the condition above are specific to the matters covered by this consent, but it is anticipated that one construction management plan will be prepared which encompasses the entire project and the requirements of all relevant consents. Furthermore, details of the remediation of contaminated material are required in the Remedial Action Plan. Details of the erosion and sediment controls are required in the erosion and sediment control plan, and the use of water treatment chemicals is required by the chemical treatment plan. The construction management plan should contain or cross reference to, and be consistent with, the requirements of these other management plans for the site and works.*

- 5. An Erosion and Sediment Control Plan (ESCP) shall be prepared for the works.
  - a. The ESCP shall detail the sediment control measures that will be taken to ensure compliance with this consent.
  - b. The ESCP shall be prepared in accordance with:
    - i. Environment Canterbury's "Erosion and Sediment Control Toolbox for the Canterbury Region" (ESCT) <http://escscanterbury.co.nz/>; or
    - ii. An equivalent industry guideline. If an alternative guideline is used, the ESCP shall provide details of the relevant alternative methods used and an explanation of why they are more appropriate than the ESCT.
- 6. The ESCP shall include, but not be limited to:
  - a. A map showing the location of all works;
  - b. Detailed plans showing the location of sediment control measures, on-site catchment boundaries, and sources and pathways for runoff;
  - c. Details of staging of the proposed works;
  - d. Drawings and specifications of designated sediment control measures;
  - e. A programme of works, which includes but is not limited to, a proposed timeframe for the works;
  - f. Inspection and maintenance of the sediment control measures;
  - g. Sampling procedures and protocols;
  - h. Defined discharge points where stormwater leaves the site;
  - i. The methodology for stabilising the site if works are abandoned; and
  - j. The methodology for stabilising the site and decommissioning erosion and sediment control measures after works have been completed.
- 7. Prior to the commissioning of any chemical treatment of construction-phase stormwater and/or dewatering water, a Chemical Treatment Plan (CTP) shall be provided to the Canterbury Regional Council, Attention: Regional Leader - Compliance Monitoring, at

least ten days prior to works commencing, for certification that it complies with the Erosion and Sediment Control Toolbox for Canterbury (2017);

- a. The CTP shall include, but not be limited to, the following information:
  - i. Bench testing requirements to determine the optimal dosing rates of treatment chemicals;
  - ii. Specific design details of the flocculation system;
  - iii. Details of optimum dosage (including assumptions);
  - iv. Monitoring, maintenance (including post-storm) and contingency programme (including a Record Sheet);
  - v. Results of the initial flocculation trial;
- b. The CTP may be amended at any time. Any amendments to the CTP shall be provided to the Canterbury Regional Council, Attention: Regional Leader - Compliance Monitoring, in writing prior to implementation.

**Advice Note:** *The broad range of options available shall be considered when choosing water treatment chemicals (flocculants/coagulants) that are appropriate for local conditions.*

**Advice Note:** *The broad range of options available shall be considered when choosing water treatment chemicals (flocculants/coagulants) that are appropriate for local conditions*

8. The remediation of contaminated material shall be undertaken in accordance with the remedial action plan prepared for the site titled "Soil Contamination Risk Detailed Site Investigation Report and Remediation Action Plan, 52 Kippenberger Avenue, Rangiora" (RAP) and dated July 2021 [most up to date revision to be used].

#### Certification and revision of management plans

9. The Construction Management Plan, ESCP and CTP shall be submitted to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, at least ten working days prior to works commencing, for certification that they comply with the conditions of this consent.
  - a. The works shall not commence until certification has been received from the Canterbury Regional Council that the Construction Management Plan, ESCP and CTP are consistent with the conditions of this resource consent.
  - b. Notwithstanding Condition (9)(a), if no correspondence has been received regarding the adequacy of the Construction Management Plan, ESCP and / or CTP within ten working days of the Regional Leader – Monitoring and Compliance receiving the ESCP, the works may commence.
10. The Construction Management Plan, ESCP, CTP and / or RAP may be amended at any time. Any amendments shall be:
  - a. Only for the purpose of improving the efficiency or effectiveness of the environmental protection measures and shall not result in reduced efficacy of the environmental management;
  - b. Consistent with the conditions of this resource consent; and
  - c. Submitted in writing to the Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance, prior to any amendment being implemented.

#### Construction phase

11. Sediment laden stormwater, including residual water treatment chemicals, shall be discharged into land within the site or to the Cam / Rutaniwha River, in accordance with the requirements of this resource consent. All practicable measures shall be

undertaken to minimise discharges of sediment-laden stormwater and dewatering water to the Cam / Ruataniwha River.

12. Water treatment chemicals shall be applied in accordance with product specifications and the methods described in the CTP prepared in accordance with Condition (7) of this consent.
13. Erosion and sediment control measures shall be inspected at least once per day, as well as following any rainfall event that results in more than five millimetres of rainfall at the site. Any accumulated sediment that may impair the functioning of the erosion or sediment control measure shall be removed, and repairs made, as necessary, to ensure effective functioning of devices.
14. If the consent holder abandons work on-site, adequate preventative and remedial measures shall be taken to prevent erosion of, or sediment discharges from exposed or unconsolidated surfaces. These measures shall be maintained for so long as necessary to prevent sediment discharges from the earth worked areas.
15. The erosion and sediment control measures shall not be decommissioned until the site is stabilised and the stormwater system for the developed site is functioning. Decommissioning measures shall be undertaken in the following order:
  - a. All disturbed areas shall be stabilised and/or re-vegetated as soon as practicable following completion of the works;
  - b. Any visible debris, litter, sediment and hydrocarbons shall be removed from all sediment control measures; and
  - c. Erosion and sediment control measures shall be removed.
16. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery, including but not limited to the following:
  - a. There shall be no storage of fuel or refuelling of vehicles or machinery within 20 metres of open excavations, including areas where topsoil has been stripped, or surface water bodies; and
  - b. Fuel shall be stored securely or removed from site overnight.
17. During construction, all practicable measures shall be taken to prevent spills of hazardous substances. In the event of a spill of fuel or any other hazardous substance, the consent holder shall:
  - a. Clean up the spill as soon as practicable, inspect and clean the affected area and take measures to prevent a recurrence.
  - b. Inform the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within 24 hours of a spill event and shall provide the following information:
  - c. Record of the date, time, location and estimated volume of the spill;
  - d. Record of the cause of the spill and the type of hazardous substance(s) spilled;
  - e. Detail of the clean-up procedures undertaken and steps taken to control and remediate the effects of the spill on the receiving environment;
  - f. An assessment of any potential effects of the spill; and
  - g. Measures to be undertaken to prevent a recurrence

#### After Completion of Works

18. All exposed surfaces shall be stabilised once works in that area are completed or if they are not to be worked for a period of 14 days or more.

19. The Canterbury Regional Council, Attention: Regional Leader – Monitoring and Compliance shall be notified within ten working days after the completion of any works authorised by this consent.

#### Dewatering

20. The discharge of dewatering water shall be only water abstracted in accordance with resource consent CRC215100.
21. The rate of discharge of dewatering water shall not exceed 425 litres per second.
22. All practicable measures shall be undertaken to minimise discharges of dewatering water to the Cam / Ruataniwha River. If dewatering water is discharged to the Cam / Ruataniwha River it shall not:
  - a. Contain a Total Suspended Solids (TSS) concentration of more than 50 milligrams per litre;
  - b. Cause scour, erosion or instability to the bed or banks of the Cam / Ruataniwha River.
23. During works:
  - a. When a discharge of dewatering water is occurring to the Cam / Ruataniwha River; or
  - b. When there is flow in the Cam / Ruataniwha River channel on the site;The dewatering discharge point and downstream point where the Cam / Ruataniwha River leaves the site shall be visually assessed, and observations photographed and recorded at least twice a day for any discharge of sediment. Records of visual assessments including photographs shall be kept and provided to Canterbury Regional Council on request.
24. If the visual assessment and observations undertaken in accordance with condition (23) indicate an increase in sediment, the consent holder shall undertake water quality monitoring in accordance with Conditions (25) and (26) to confirm compliance with condition (22.a).
25. Water quality monitoring of the dewatering water, in order to monitor the TSS concentrations in Condition (22.a) shall be undertaken using a water quality meter or comparison to visual water quality standards. If the visual water quality standard comparison is used then the following measures shall apply:
  - a. Prior to the discharge of dewatering water, samples in bottles shall be made up containing the following concentrations of total suspended solids:
    - i. 25 milligrams per litre;
    - ii. 50 milligrams per litre;
    - iii. 100 milligrams per litre;
  - b. The samples shall either be prepared using soils collected from the site or shall be calibrated to the unique combination of soil types and discharge quality likely expected at the site.
  - c. When shaken, the samples will provide a benchmark to enable visual comparison with the samples as required by Condition (26).
  - d. The trial water samples shall be held on site.
26. Samples of sediment laden dewatering water shall:
  - a. Be taken by a suitably qualified person and in accordance with best practicable sampling methodology

- b. For dewatering water discharges, be collected:
    - i. if assessment is via visual comparison to standards, each sample of the discharge shall be visibly compared to the standards prepared in accordance with Condition (25). If assessment is via a water quality meter, the discharge shall be assessed in accordance with Condition (27).
    - ii. one, two, four, and 24 hours after discharge has commenced, and once per day thereafter if discharge exceeds one working day; and
    - iii. twice per day thereafter if discharge exceeds five working days
  - c. In clean containers at the outlet of the discharge treatment device prior to discharge
  - d. If assessment is via visual comparison to standards, each sample of the discharge shall be visibly compared to the standards prepared in accordance with Condition (25). If assessment is via a water quality meter, the discharge shall be assessed in accordance with Condition (27).
27. A water quality meter or any other recognised measuring device to measure concentration of TSS may be used to determine the concentration of TSS in the discharge, provided the water quality sampling is undertaken by a suitably qualified person with water quality sampling experience and the water quality meter or recognized measuring device is:
- a. Used in accordance with the manufacturer manual specific to the device used;
  - b. Calibrated to the soil and environmental conditions found on the site; and
  - c. Used in general accordance with the Erosion and Sediment Control Toolbox.
28. If it becomes apparent at any stage during water quality monitoring detailed in Conditions (24) to (27) indicates that a TSS concentration of 50 milligrams per litre in the discharge will not, or is unlikely to be achieved then:
- a. The discharge shall cease immediately;
  - b. The discharge shall only recommence once amendments have been made to the treatment process such that a TSS concentration of 50 milligrams per litre in the treated discharge is achieved.

#### Administration

29. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
- a. Dealing with any adverse effect on the environment that may arise from the exercise of the consent or
  - b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.
30. If this consent is not exercised before 31 December 2026 it shall lapse in accordance with section 125 of the Resource Management Act 1991.

## **Recommended conditions CRC215102 for a s15 discharge permit to – discharge operational phase stormwater**

### Limits

1. The discharge shall be only stormwater generated from:
  - a. Building roofs;
  - b. Roads;
  - c. Hardstand areas; and
  - d. Pervious areas

associated with the residential subdivision at 52 and 76 Kippenberger Avenue, legally identified as Part RS 267 and Lot 1 DP 22674, and as shown on Plan CRC215098A [plan showing site location and extent] attached to and forming part of this consent.

2. Stormwater shall only be discharged onto and into land within the area shown on the attached Plan CRC215102A via the stormwater system described under Conditions (3) to (6) of this consent.

### Stormwater system

3. Stormwater shall be discharged to land via the following stormwater system:
  - a. Stormwater from roofs shall be discharged into land via a soakpit or soakpits located on that lot;
  - b. Stormwater from roads and hardstand areas, as well as secondary overflows from roof soakpits, shall be directed to a first flush infiltration basins and attenuation basins underlain by soakage pits;
4. Stormwater in excess of a two percent annual exceedance probability event shall be directed via secondary flow paths away from buildings to the Cam / Ruataniwha River.
5. The stormwater system for the site shall be designed and constructed to:
  - a. Treat and infiltrate stormwater from the site from the first 25 millimetres of rainfall;
  - b. Dispose of rainfall events up to and including a two percent annual exceedance probability event into land; and
  - c. To provide hydraulic neutrality for the developed site compared to the pre-development site in a two percent annual exceedance probability event.
6. The roof soak pits shall:
  - a. Be designed and constructed to store and dispose of all stormwater from the contributing catchment for up to and including a 10 percent annual exceedance probability rainfall event;
  - b. Have a base that extends into free draining soil strata; and
  - c. Be constructed in accordance with Clause E1 of the New Zealand Building Code or the Christchurch City Council's Waterways, Wetland and Drainage Guide.

7. Stormwater shall not pond in the first flush infiltration basin and rapid soakage basin for longer than 48 hours following any rainfall event.
8. The first flush infiltration basin shall be designed and constructed to:
  - a. Have a minimum volume of 1,730 cubic metres for first flush basin 1 and 600 cubic metres for first flush basin 2;
  - b. Be lined with a layer of sandy loam topsoil at least 150 millimetres thick;
  - c. Have an infiltration rate:
    - i. Not exceeding 112 millimetres per hour and not less than 18 millimetres per hour as determined using a double ring infiltrometer test; or
    - ii. Not exceeding 75 millimetres per hour and not less than 12 millimetres per hour as determined using a flooded basin test;
  - d. Be uniformly vegetated;
  - e. Be underlain by a gravel filled soakage pit which extends at least 0.3 metres into free draining gravel strata; and
  - f. Overflow via a spillway to the rapid soakage basin.
9. The detention basins shall:
  - a. Have a minimum capacity of 3,330 cubic metres for facility 1 and 2,100 cubic metres for facility 2;
  - b. Be underlain by a rapid soakage pit which extends at least 0.5 metres into the free draining gravel strata; and
  - c. Be uniformly vegetated.
10. The first flush infiltration basin and soakage pits shall have at least 0.8 metres separation from the base of the soakage pit and the highest recorded groundwater level.
11. Secondary overflows shall not cause scour, erosion or instability to the bed or banks of the Cam / Ruataniwha River.

#### Plans and Certification

12. Within 20 working days of the installation of the stormwater, a certificate signed by a Chartered Professional Engineer (CPEng) with stormwater system construction experience shall be submitted to the Canterbury Regional Council, Attention: Regional Leader – Compliance Delivery, to certify that the stormwater system has been constructed in accordance with Conditions (3) to (10) of this consent. This CPEng shall also sign a statement confirming that they are competent to certify the engineering work.

#### Inspections and Maintenance

13. The first flush infiltration basin and rapid soakage basin shall be inspected at least once every six months.
  - a. Any visible hydrocarbons, and debris or litter shall be removed within ten working days of the inspection.



- b. Any accumulated sediment in the basins shall be removed within ten working days of the inspection.
  - c. Any scour or erosion shall be repaired within ten working days of the inspection.
14. The vegetation in the first flush and rapid infiltration basins shall be maintained so that vegetation is in a healthy state, with the exception of seasonal browning off.
15. Representative soil samples shall be taken from the first flush infiltration basin:
- a. At least once every ten years;
  - b. From a depth of between zero and 50 millimetres below the ground surface at the point of lowest elevation;
  - c. By a person who has at least a tertiary science or engineering qualification that required the equivalent of at least one year of full-time study or a National Certificate in Water and wastewater Treatment and has at least two years environmental investigation professional work experience post-qualification; and
  - d. In general accordance with Ministry for the Environment (2004) 'Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils'.
16. Soil samples shall be analysed by a laboratory accredited for that method by International Accreditation New Zealand or an equivalent accreditation body:
- a. For:
    - Copper
    - Lead
    - Zinc

in milligrams per litre (mg/L) using the United States Environmental Protection Agency method 1312, Synthetic Precipitation Leaching Procedure (SPLP), using reagent water; and

- b. For:
  - Benzo(a)pyrene
  - Naphthalene
  - Pyrene

in milligrams per kilogram (mg/kg) using total matrix method.

17. The analyses undertaken in accordance with Condition (14) shall be carried out with detection limits of a maximum of 10 percent of the trigger levels set out in Condition 17.
18. The results of analyses undertaken in accordance with Condition (14) shall be compared against the following trigger concentrations:

Contaminant Leachate Trigger Concentration (milligrams per litre)	
Total Copper	40(1)
Total Lead	0.2(1)
Total Zinc	30(2)

Contaminant concentration (milligrams per kilogram)

Naphthalene	0.28(3) mg/kg
Pyrene	7.9(3) mg/kg
Benzo(a)pyrene	5.7(3,4) mg/kg

- (a) 20 x MAV (Maximum Acceptable Value) for determinand of health significance
  - (b) 20 x GV (Guideline Value) for aesthetic determinand
  - (c) Guideline value from MfE Oil Industry Guidelines 1999 (Table 4.20)
  - (d) Benzo[a]pyrene refers to Benzo[a]pyrene only (not Benzo[a]pyrene equivalent concentration).
19. If any of the trigger concentrations listed in Condition (17) are exceeded, the soils shall be considered to be contaminated. Within 60 working days of the consent holder receiving the results of analyses undertaken in accordance with Condition (14) showing contaminated soils:
- a. Additional sampling shall be carried out to determine the lateral and vertical extent of contamination, with respect only to the contaminant(s) that exceeded a trigger concentration, in accordance with Conditions (14) to (16);
  - b. All contaminated soils identified shall be removed; and
  - c. The first flush infiltration basin shall be reconstructed in accordance with Condition 7.
20. Any material removed from the devices in accordance with Conditions (12) or (18) shall be disposed of at a location authorised to receive such materials.

Groundwater Quality Monitoring

21. Unless bores used for domestic purposes within 160 metres down-gradient of the stormwater basins (being M35/0350, M35/7780 and M35/2051) are confirmed to have treatment installed to remove microbial contaminants then, prior to the construction of the stormwater basins, a groundwater monitoring bore shall be installed within 20 metres down hydraulic gradient of each of the northern and southern stormwater basin locations shown on Plan CRC215101C [plan showing stormwater basins and direction of hydraulic gradient] attached to and forming part of this consent. Both groundwater monitoring bores shall be screened across the water table in that location, allowing for the full range of water level fluctuations.
22. Groundwater quality monitoring shall be undertaken at the monitoring bores installed in accordance with Condition (21):
- a. within 24 hours of rainfall occurring, and following a rainfall event of at least 20 millimetres of rainfall within 24 hours as measured at Christchurch Airport;
  - b. prior to stormwater discharge occurring from the basins, to provide a baseline;
  - c. following 80 percent of the lots on site being developed, monitoring shall be undertaken for two years, with samples collected at least four times per year provided suitable rainfall events consistent with Condition (22)(a) have occurred;

- d. by a person suitably qualified and experienced in groundwater sampling.
23. The groundwater samples collected in accordance with Condition (22) shall be analysed by an IANZ accredited laboratory for *Escherichia coli*.
24. The results of the analysis in accordance with Condition (23) shall be compared to the following trigger values:
- a. For the southern basin, 9 colony forming unit per 100 millilitres; and
  - b. For the northern basin, 22 colony forming units per 100 millilitres.
25. If the results of the sampling undertaken in accordance with Condition (22)(c) exceed one or more of the trigger values in Condition (24) then:
- a. Within one working day of the results being received, the users of bores within 160 metres down-gradient of the stormwater basin where an exceedance has been identified shall be advised of the exceedance and offered an alternative drinking water supply; and
  - b. Investigations shall be undertaken to confirm whether *Escherichia coli* levels in the affected bores are elevated, and whether the elevated levels are more likely than not to have originated from the stormwater treatment basins.
  - c. If elevated concentrations of *Escherichia coli* are confirmed to be present and more likely than not a result of discharges from the stormwater basins then actions shall be taken by the consent holder within two months of the elevated results being identified to provide a long term secure drinking water supply to the users of the affected bore(s).

#### Administration

26. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
- a. Dealing with any adverse effect on the environment that may arise from the exercise of the consent or
  - b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.
27. If this consent is not exercised before 31 March 2027 it shall lapse in accordance with section 125 of the Resource Management Act 1991.