



IN THE MATTER OF THE

Resource Management Act 1991

AND

IN THE MATTER OF

Resource Consent application
CRC980298 by McAlpines Limited .
Rangiora for a discharge permit to
discharge stormwater into land (in
circumstances where it may enter
water) at Jacks Pass Road Hanmer.

**DECISION OF THE HEARING COMMISSIONER
18 APRIL 2011**

COMMISSIONER:

Craig Shearer

Date of Decision: 18 April 2011

Representations: the following provided information to assist in this decision:

Applicant: McAlpines Hanmer Limited

- Rachael Larken (URS), Senior Environmental Scientist
- Allen Ingles (URS), Principal Engineer
- Ian Fraser (URS), Senior Principal Hydrogeologist

(Canterbury Regional Council):

- Tim Mallett, Principal Consents Officer
- Brett Mongillo, Principal Contaminated Sites Officer
- Philip Ross, Consultant, former Investigating Officer ECan

Decision

For the reasons set out in the following report it is the decision of the Canterbury Regional Council, pursuant to sections 104, 105, 107 and 108, and Part 2 of the Resource Management Act 1991, that McAlpines Limited Rangiora be granted consent to discharge stormwater to ground and into water at Jacks Pass Road Hanmer, as referred to in resource consent application CRC980298, for a duration of 35 years, subject to the conditions set out in Schedule A to this decision.

1. INTRODUCTION

This is a decision by Commissioner Craig Shearer appointed by Canterbury Regional Council (CRC) in December 2010, to if necessary hear, and decide on an application for resource consent by McAlpines Limited . Rangiora for a discharge permit to discharge stormwater into ground and into water at Jacks Pass Road Hanmer.

A decision was taken to not undertake a hearing. This was considered to be a lengthy and expensive process when there were no submitters wishing to be heard, and it was

apparent there was agreement on many of the technical issues and a fair degree of goodwill between the applicant and the reporting officers from CRC. Instead, with the approval of both parties the applicant's consultants and the S42A reporting officers were interviewed in person or by telephone by myself as Commissioner to clarify the facts of the case prior to making my decision. I then proceeded to make my decision based on the written information submitted to me and that information provided during the interview process.

This report presents my decision, as the independent Commissioner, on this application.

2. THE APPLICATION

McAlpines applied for consent in late 1997, with the application being notified on 26 February 2000. The notification was as follows:¹

To discharge water and contaminants to land in circumstances which may result in these contaminants (or others emanating as a result of natural processes from these contaminants) entering water (groundwater and the Chatterton River) from a former timber treatment facility now used for the storage of timber treated products. Potential contaminants in the discharge include copper, chromium, arsenic and pentachlorophenol compounds. The site is on Jack's Pass Road, Hanmer, at or about map reference NZMS 260 N32: 9465-5479.

It must be noted that, as this application was applied for in 1997 and notified in 2000, evaluation must be undertaken applying the Resource Management Act as it existed at that time, and by applying other statutory documents as they existed then. For example the Transitional Regional Plan . Stormwater was the operative plan at that time.

In terms of the type of activity applied for, there appears to be some confusion between the two officers providing reports for CRC. Mr Ross, in his original S42A report dated 16 June 2000, states as follows:²

¹ S 3 Section 42A Officer's Report 16 June 2000

² S13 Section 42A Officer's Report 16 June 2000

“the Transitional Regional Plan (TRP) authorises stormwater discharge into surface waters from all existing buildings, structures, hardstanding surfaces and roading. Unpaved contaminated areas on a former industrial site are not covered by this authorisation. Consequently, the discharge is a non-complying activity and required authorisation under by a rule in a plan or consent.”

Although stormwater can be discharged, there is however no provision for the discharge of contaminants (associated with stormwater) to land. Under Section 15 of the RM Act, no person may discharge any contaminant into land or water unless the discharge is expressly allowed by a rule of a regional plan or a resource consent. In the Explanatory Notes to the Transitional Regional Plan (the ~~%~~General Authorisation for the Discharge of Stormwater~~+~~), it is stated:

*“discharges that do not meet the conditions of this general authorization are Discretionary Activities, and specific discharge permits are required”.*³

Thus I agree with reporting officer Tim Mallett that this is a discretionary application.⁴ I can only assume that stormwater, in 2000, was not considered to be ~~%~~contaminated~~+~~ and this is the reason why Mr Ross did not believe a consent was required for discharge off impermeable surfaces. I note also that Mr Ross refers to unpaved areas. This confirms the intent at the time for the application to cover discharges off the entire site.

3. BACKGROUND

The site was used as a sawmill and timber treatment facility between 1965 and 1995. Copper, chrome and arsenic (CCA) were used in the treatment process. Antisapstain treatment using pentachlorophenol was also conducted on the site from 1965 to 1978.

In March 1997 ECan wrote to McAlpines requiring them to apply for a stormwater discharge permit. Subsequent soil sampling required as a result of the consent process, revealed elevated concentrations of the above chemicals in some areas of the site.

³ Explanatory Note 6, CRC General Authorisation for the Discharge of Stormwater

⁴ S 29 Section 42A Officers Report 13 November 2010

Three submissions were received to the application, although these were subsequently withdrawn.

Since the application was lodged the timber treatment plant has been removed and approximately 75m² of the area where the plant was located has been sealed. A hardware retail outlet with a sealed carpark area in front of it has been built on the site in 2005. The site is now used only for the storage of treated timber products, and no treatment takes place.

Over the past 10 years the application has been the subject of numerous discussions between representatives of the applicant and CRC officers on issues around the measurement of and procedures for mitigation of the effects of the above contaminants on the environment in and around the site. The parties have had difficulty agreeing various aspects of the application and potential conditions, and so a decision was made to delegate responsibility to an independent Commissioner in December 2010 to break the impasse and decide on the application.

4. SITE VISIT

I undertook a site visit on Saturday 5 February 2011 to familiarise myself with the site and the layout of the proposals. This was undertaken with the approval of McAlpines and was undertaken by myself with one of the Mitre 10 staff, independent of the application, accompanying me for part of the inspection.

I noted in particular that a stormwater system has already partly been constructed on the site. This collects water from the carpark, the Mitre 10 retail outlet roof. The 75m² sealed area covering the old treatment plant did not yet appear to be connected. A 300mm pipe carrying the stormwater runs along the southern boundary of the site and discharges via a concrete outlet structure into the ground through dense vegetation. This discharges via an outlet onto the middle terrace on the south western side of the site. None of this water discharges directly to surface water, nor is it likely to do so. I noted the balance of the unsealed component of the site was compacted metal and to the west, dense grass/blackberry and other scrub on undulating and impenetrable land.

I noted that there is a drop of approximately 2 metres from the working area of the site down into the first terrace, and thereafter the land drops approximately 8 metres down to the floodplain of the Chatterton River. I also noted the River channel was currently approximately 50 metres from the boundary of the applicant's site.

5. THE APPLICANT'S PROPOSAL

The proposal is best summed up in the report accompanying the application and prepared by Kingston Morrison in 1997;

Canterbury Regional Council has requested applications for a Resource Consent to discharge stormwater to surface water and groundwater where a property has historically been used for timber treatment if there is evidence of residual contamination in the soil. This application is for a resource consent for the discharge of stormwater from the whole site to land and surface water. The geology of the site indicates there is likely to be a discharge of stormwater to the shallow groundwater likely to be underlying the site.⁵

Stormwater was in 1997 proposed to be discharged through two open drains, one along the southern boundary, and one from the retail outlet (this building is no longer used for this purpose). It is understood that these drains both existed at that time.

The report identified stormwater discharges from the site with a peak flow rate of 212 litres per second in a 50 year return period storm (10 min duration) and a maximum volume of 2756m³ (72 hour duration).⁶

Subsequent to the time of the application and notification of it in February 2000, there have been changes to the activities carried out on the site, and to the stormwater discharge arrangements. The former timber treatment plant was decommissioned in 1995 and the old hardware store replaced by a new, large hardware building and associated car parking on the south-east corner of the site in 2005.

⁵ p 1, Kingston Morrison August 2007

⁶ s 3.2.2, p 7-8 Kingston Morrison 2007

The proposal is to collect stormwater from the sealed carpark, the roof of the new Mitre 10 building, and the sealed area covering the old former treatment plant site, which the applicant also proposes to extend. The stormwater will be discharged via an infiltration basin into the ground. For the balance of the site, which is mainly compacted gravel with some old buildings, and which has no reticulated stormwater system, the applicant is proposing to continue with the current arrangements. Any rainfall will percolate into the soil, albeit at a slow rate, with the occasional overland flow in times of high intensity rainfall.

The applicant has supplied two plans, Figure 1 and Figure 2, which are attached as Schedule B to this decision, setting out the general detail of the stormwater flows on the site, the location of the reticulated stormwater system, and the general design of the infiltration basin.

6. EVIDENCE

6.1 Kingston Morrison Report

The applicant's proposals were first presented in a report prepared by consultants Kingston Morrison (KM) in August 1997. I find this report to be limited because it is over 13 years old, the use of the site has changed since it was prepared, the monitoring information conflicts with that prepared more recently, and contamination assessment standards used are no longer applicable.

KM undertook a sampling programme to determine the presence of contaminants on the site. Results of soil sampling at that time showed elevated levels of arsenic and chromium adjacent to the former drip pad and at one area between the garage and the shop. This latter area was sampled again and slightly elevated levels of chromium (slightly above the Draft Health and Environmental Guidelines for Selected Timber Treatment Chemicals) were found adjacent to the garage on the western side of the site.

Stormwater was also sampled at that time with results showing contaminants are present but not at elevated levels.

KM undertook an assessment of effects as required under section 88 of RMA. In respect of groundwater KM believe the threat of groundwater contamination is low because of low leachability of heavy metals associated with CCA sites. They also consider the high organic content of the reclaimed land into which the stormwater is discharged would be expected to fix any metal contamination present in the stormwater discharge.

For surface water, the assessment has been undertaken on the effects on the Chatterton River. Although there were elevated contaminant levels within the drains on the property, Kingston Morrison expect that as stormwater from the site passes through approximately 100 metres of dense scrub land before reaching the river, contaminants will largely be filtered by an area acting as a natural adsorption medium before reaching the River. Sampling in the River showed contaminants being within the aquatic guideline levels.

KM accepts there are elevated levels of soil contamination which in some instances exceed the guidelines for use as an unpaved industrial site but concludes it does not present a potential adverse effect as guideline values are for contamination at the level over the entire site. The area with elevated concentrations represents only 5-10% of the site.

6.2 URS Site Assessment Report

Subsequently URS was engaged by the applicant to carry out further site investigations in response to CRC concerns regarding potential contaminants and their implication for stormwater disposal at the site. The URS report Site Assessment was prepared in February 2010 and submitted to CRC. The investigation reported on were carried out to assess potential site contaminants, their implications for stormwater disposal at the site, and in particular the potential for impacts upon groundwater and surface water.

URS carried out the following sampling:

- 3 shallow soil samples in the stormwater flow path
- 4 shallow soil samples from the old antisapstain area, for PCP
- Pit sampling (one at surface and one at the groundwater interface, generally about 1 metre deep, for each site) at 3 sites on the lower terrace
- 2 shallow soil samples at potential swale locations on the lower terrace

- Groundwater sampling at the three test pit sites on the lower terrace

The results were presented in the report of 11 February 2010. The Health and Environmental Guidelines for Selected Timber Treatment Chemicals, produced by the Ministry of Health and the Ministry for the Environment in June 1997 were used as the standard when determining effects.

Results of the investigations showed:

- Arsenic was found close to the old treatment site at the southern boundary in the stormwater flow path and exceeded the Timber Treatment Guidelines.
- Low levels of PCP in the antisapstain area, below the Guidelines. This varied considerably from the KM report referred to above.
- One of the two samples collected in the vicinity of the proposed stormwater discharge area exceeded the Timber Treatment Guidelines for arsenic. For comparison the CCA levels were also compared with trigger limits for other CRC consented swale based stormwater disposal systems. This one site had arsenic, chromium and copper concentrations which exceeded the standards applied by CRC to other consents . the Goldpine Ashburton consent trigger level and the Mitchell Bros consent trigger level.
- The groundwater sampling on the lower terrace recorded exceedances above the NZ drinking Water Standards (NZDWS, 2000) for arsenic and chromium, and arsenic, chromium and copper also exceeded the ANZECC 95% Guidelines for fresh water (ANZECC,2000).

URS concluded there are concentrations of copper, chrome and arsenic on the lower terrace, both in the soil and in the groundwater. The levels vary, but there are levels exceeding the guidelines they have used for both soils and for groundwater. The report indicates the high concentrations of these contaminants may be derived from concentrated stormwater flows from the upper terrace, especially around the area (sample SS04) where timber treatment previously occurred or alternatively the area may have received timber treatment wastes.

It is noted that URS have concluded the northernmost test pits on the lower terrace have copper, chrome and arsenic in the soils which are indicative of background levels only.

The groundwater results however suggest such contaminants are entering groundwater, and potentially may be discharging towards the adjacent Chatterton River.

In the report, URS recommends a number of measures as follows:⁷

- *Soils between the old treatment site sealed area and the edge of the terrace including soil sampling location SS04 should be sealed with concrete or asphalt to isolate soil contaminants and prevent mobilisation of contaminants with stormwater.*
- *Further soil sampling in the upper yard be carried out to delineate areas of copper, chromium and arsenic contamination which may be contributing to stormwater contamination.*
- *Soils in the area of the proposed swale should be replaced with clean soils (with validation testing) and contaminated soil either placed under seal on the upper terrace or disposed of appropriately off-site.*
- *Removal of the contaminated soil in the area of the proposed swale (and potentially in the area of Test Pit 1), in conjunction with isolation of sources on the upper terrace, may reduce/eliminate shallow groundwater contamination and potential discharges of contamination to the Chatterton River.*

Note that reference to the ~~swale~~ is the infiltration basin referred to elsewhere in this report.

URS also provided a response in January 2011 to the Section 42A report of Mr Mallett (Draft: 13 November 2010). URS also recommends in this letter:⁸

- *An additional four monitoring wells are installed downgradient of the existing temporary monitoring wells to confirm the groundwater contaminant conditions and hydraulic gradient in the vicinity of the proposed swale.*

⁷ Conclusions, URS Site Assessment Report 11 February 2010

⁸ P 3 URS letter to Environment Canterbury 14 January 2011

6.3 The Regional Council Section 42A Reports

Two reports have been prepared by CRC staff. The first was prepared by Mr Philip Ross in June 2000, and the second, in November 2010 by Mr Tim Mallett.

Mr Ross carried out an assessment of the application against Part II of the Resource Management Act, the Canterbury Regional Policy Statement, and referred to the Transitional Regional Plan, the relevant plan at the time of the application.

At the time two open swales were proposed for the discharge of water from the site. Mr Ross identified a number of potential effects as follows:⁹

- *Adverse effects of the discharge of contaminants on surface water quality.*
- *Cumulative adverse effects with other discharges on surface water quality.*
- *Adverse effects of the dissipation of energy at point of entry into surface water.*
- *Adverse effects of the discharge of contaminants including hazardous substances on groundwater quality.*
- *Adverse effects on land from infiltration rate of stormwater into groundwater.*
- *Adverse effects of localised changes in groundwater levels.*
- *Adverse effects of the discharge of contaminants in wind blown dust.*

Within the limitations of the information provided by the applicant at that time, the main effects appear to be those set out in the 4th and 5th bullet points above. With many of the other effects the lack of information provided by the applicant made it difficult for Mr Ross to evaluate the effects with any certainty. Although Mr Ross identified there is a lack of groundwater quality data provided, he recommended granting the application. He concluded however that because of the limitations on the data, the effects are not well understood, and also advised that mitigation technology is advancing. He recommended granting the application or a term of 10 years. I note that it is more than 10 years since the report was produced.

Mr Mallett provided an updated Section 42A report. Of note is his view that there are two aspects to the application¹⁰:

⁹ S 17 Section 42A Officers Report 16 June 2000

“the “active” discharge of stormwater from the roof and hardstanding areas of the site (which is unlikely to contain timber treatment chemicals), and the “passive” discharges of existing timber treatment chemicals from the site due to leaching. Since the application was lodged Ecan has modified its position on passive discharges, and now takes the view that such discharges do fall under s15 of the RMA, and hence they require authorisation.

Mr Mallett in his report also says there is the potential for contaminants in the soil or groundwater to be mobilised by stormwater discharges.¹¹

A number of potential effects are referred to by Mr Mallett as follows:¹²

- (i) Effects of copper, chromium, and arsenic, and PCP in the soils on site on the health of on-site workers, and*
- (ii) Effects of these contaminants on groundwater quality, and*
- (iii) Effects of these contaminants on surface water quality (the Chatterton River).*
- (iv) Effects of sediment discharge on surface water quality*
- (v) Effects of petroleum hydrocarbons on surface water quality*
- (vi) Effects of stormwater flow on flooding*
- (vii) Effects of CCA in wind-blown dust on neighbouring properties.*

It is acknowledged in his report that the erection of the large retail building and the sealing of some car parking areas, together with the removal of the treatment building and tank, are likely to have reduced the movement of contaminants off site, and the risk of exposure to people on site. The construction of the building and the sealing of some surfaces will have effectively capped those areas, preventing rainfall entering and preventing human contact with the soil.

¹⁰ S 16 Section 42A Officers Report 13 November 2010

¹¹ S 17 Section 42A Officers Report 13 November 2010

¹² S 34-35 Section 42A Officers Report 13 November 2010

In commenting on the Site Assessment report from URS Mr Mallett makes the point the guidelines used and the standards applied are aimed at protecting on-site workers, not groundwater. Although accepting the need to protect the health of workers at the site he makes the point that the protection of groundwater is of importance, that groundwater may be a more sensitive receiving environment, and thus it may be the controlling factor for discharges. Mr Mallett believes the Guidelines used by URS are inadequate, and their views on concentrations of contaminants being %below guideline+ could be misleading.

Mr Mallett believes there are elevated concentrations of CCA on the site and also in groundwater which he considers are inappropriate and a threat to the environment. He also discusses mitigation methods. He believes a sampling programme should be aimed at finding an area with uncontaminated groundwater upon which to build a swale to discharge the reticulated stormwater into. Once an acceptable site is found for the swale and assuming the soil in it is replaced as necessary then he believes this should provide a very good level of treatment for roof and car park stormwater leaving the site.

Mr Mallett believes that wind blown contaminated dust will not be an issue if areas of contaminants, based on residential guidelines are capped. He also considers the sampling results for PCP are at levels below residential guidelines.

He supports the URS suggestion of further sampling in the upper yard to determine the areas of contamination, He questions how much additional sampling may be needed to adequately identify areas of contamination so they can be managed.

In conclusion Mr Mallett recommends as follows:¹³

Seek further information from McAlpines, including a proposal for safe disposal of the stormwater and additional soil and groundwater monitoring, and specify a date by which the information is to be supplied, before making a decision.

Require that a hearing be held, with McAlpines invited to attend, at which time McAlpines could propose further monitoring and remediation, and provide information on the cost implications.

¹³ S 13 Section 42A Officers Report 13 November 2010

Mr Mallett submitted a set of draft conditions for my consideration if I decided the application should be granted.

6.4 Interviews

Environment Canterbury officers

I interviewed representatives of both the applicant and CRC on the evidence presented to me. The purpose of these interviews was to clarify the issues around some of the evidence and to ascertain if there was common ground with these issues.

Brett Mongillo at CRC advised me that the Health and Environmental Guidelines for Selected Timber Treatment Chemicals, produced by the Ministry of Health and the Ministry for the Environment in June 1997 are only appropriate for use for the protection of human health. They are not appropriate for the protection of environmental values and in particular groundwater. ECan uses the Synthetic Precipitation Leaching Procedure (SPLP) to evaluate the effects of timber treatment chemicals on the environment.

Mr Mongillo considers the issues of main concern at the site relate to the concentration of surface water from the impermeable surfaces . the carpark, the roofs, and other sealed areas - and its concentration at the discharge location via the reticulated stormwater system. He believes there is the potential for this stormwater to gather and transport contaminants and discharge them at the discharge point. Further, this stormwater may dislodge contaminants present at the discharge point, either in the soil or in the groundwater. He does not consider rain related discharges to ground (the passive discharges referred to by Mr Mallett) from permeable surfaces to be significant due to the low annual rainfall in the area. He acknowledged that in high rainfall areas of New Zealand such discharges may be significant.

He believes the following conditions should be applied if the consent is granted:

- Sealing and capping of known contaminated areas on the site as proposed by URS in their evidence.
- Plans showing the stormwater design being supplied by the applicant including identification of the areas to be drained and details of the discharge swale.

- The discharge point where the swale is to be located should be a clean site, free from all contaminants in the soil of the swale and in the groundwater. This will prevent transport of any contaminants into the adjacent Chatterton River.
- He agreed with the five recommendations of URS referred to in section 2 above.

URS officers

I also spoke with Rachael Larkin, Allen Ingles, and Ian Fraser of URS. They were in agreement with the technical advice provided by Mr Mongillo and in particular his view that the SPLP should be used to evaluate the effects of timber treatment chemicals on the environment. They advised the MOH/MFE guidelines are useful in identifying if any areas of the site potentially posing a threat to public health, thus necessitating for sealing of areas.

The URS staff agreed with the approach outlined by Mr Mongillo above.

Mr Ingles provided a site plan and design of the stormwater system to me on 4 February 2011. These are attached to this decision as Schedule B.

7. PRINCIPAL ISSUES IN CONTENTION

Section 113 of the RMA directs me to state the reasons for my decision. In carrying out my evaluation and in writing this decision I have adopted the more comprehensive requirements set out in the most recent version (as amended October 2009) of section 113 of the RMA. I am satisfied this assessment fulfils the requirements of section 113 as it existed at the time of the application.

After consideration of the application and accompanying information, undertaking a site visit, reviewing the Council staff reports and expert advice and information from the interviews I have undertaken, I record the following as the Principal Issues in Contention:

- Discharge of contaminants from the reticulated stormwater system.
- Effects of reticulated stormwater discharges on contaminated groundwater plume and surface water (the Chatterton River).
- Discharges from area without a reticulated stormwater system

- Contaminants and the health of on-site workers
- Conditions

Other issues were raised in the officers reports. These included contaminated dust affecting neighbouring properties and the potential for exacerbation of flooding. I did not receive any technical evidence from either party on these other issues and as a consequence they have been set aside.

8. MAIN FINDINGS ON THE PRINCIPAL ISSUES IN CONTENTION

8.1 Discharge of contaminants from the reticulated stormwater system

When the original application was made in 1997, no reticulated stormwater system was present on the site. I am informed that in 2005 the current Mitre 10 hardware store, and associated sealed carpark was constructed. I have not been provided evidence on when the reticulated stormwater system leading from these structures was build, but I assume it was also at that time.

CRC officers have advised that stormwater from roofs and carparking areas contain contaminants such as hydrocarbons and heavy metals and have the potential to adversely affect the environment unless treated. Mr Mallett discusses treatment of carpark stormwater in his report and states:¹⁴

I understand the existing treatment is a sump with a submerged outlet. Provided this is maintained regularly (i.e. cleaned), this will capture some of the coarse sediment and any hydrocarbons present. However McAlpines have also proposed discharging the stormwater to an infiltration swale. Once an acceptable site is found for this swale, and assuming the soil in it is monitored and replaced as necessary, then this should provide a very good level of treatment for roof and car park stormwater leaving the site.

Mr Mallett advised there is also potential for contaminants such, as zinc, to be discharged from roofs on the site, and there is the potential for contaminants to be discharged from other impermeable areas where materials, such as treated timber are

¹⁴ cl 53 Mallett S42A report Nov 2010

stored and from which concentrated stormwater will be discharged. For example, the site of the former timber treatment plant is now sealed and used for the storage of timber.

URS staff accept the evidence and agree with the advice of Mr Mallett.

A number of stormwater conditions have been recommended to ensure contaminants are not discharged from these areas. These include the fitting of sumps in the system and the regular cleaning of them, the insertion of shut off valves in the event of a spill, and the discharge through an infiltration basin. I accept that with the imposition of these measures the effects of contaminants derived from the reticulated stormwater system will be no more than minor.

8.2 Effects of reticulated stormwater discharges on contaminated groundwater plume and surface water (the Chatterton River)

I received evidence that the concentration via the reticulated system of stormwater at discharge points has the potential to have adverse effects on the environment. This was a particular concern of Mr Mongillo when I interviewed him, and Mr Mallett also referred to this issue. Mr Mongillo informed me there is the potential for concentrated stormwater flows to firstly dislodge contaminants which may already be in the soil it is discharged into (assuming the stormwater is received by an infiltration basin). Secondly, Mr Mongillo proffered advice that once the stormwater entered groundwater below the infiltration basin, there is the potential for contaminants already existing in the groundwater to be mobilised. This could lead to adverse effects upon the aquifer itself, or any connected surface water system such as the adjacent Chatterton River.

The original Kingston Morrison report identified the potential for adverse effects when it stated:¹⁵

This stormwater discharge has potential to affect the water quality of the receiving environment, both surface and groundwater.

In respect of groundwater contamination, the Kingston Morrison report considers the threat is low¹⁶. This view is contrary to that provided through reports and discussions

¹⁵ s 5.4.1 Kingston Morrison August 1997

with CRC officers referred to above, and also with URS staff. Mr Ingles and Mr Fraser agreed with Mr Mallett¹⁶ and Mr Mongillo¹⁷ views that without mitigation there is the potential for adverse effects to occur. I accept this view.

The issue is how best to avoid, remedy or mitigate these potential adverse effects. Mr Mongillo and Mr Mallett of CRC have advised that they believe there should be three important features of the stormwater discharge structures to ensure the effects on groundwater and surface water are less than minor.

Firstly, the infiltration basin into which the discharge enters should contain clean soil . that is uncontaminated. They accepted there may be clean soil at the proposed discharge location but the applicant would need to demonstrate that it is clean. If the soil is not clean, as stated above, it may be that stormwater dislodges and mobilises contaminants in the soil. In their view if the soil is not clean then it would need to be removed to an appropriate location and replaced with clean soil. URS staff have agreed with this view (see recommended measure 3 in section 6.2 above), and consent conditions have been imposed to ensure stormwater discharges from the proposed infiltration basin are into uncontaminated soil. I concur with this approach, which I consider will avoid adverse effects.

Secondly, their advice was that any discharges from the infiltration basin should be into uncontaminated groundwater. Preliminary investigations undertaken by URS¹⁷ have shown that contaminants are present in the groundwater in the general location of the proposed discharge area. In the opinion of Mr Mongillo the applicant should be required to carry out investigations to identify a discharge point to groundwater where there are no contaminants in the groundwater. Any increased flows of water will serve to mobilise any contaminants which are existing in the groundwater below the discharge point and it would be preferable to locate the discharge where there was no contamination in the groundwater. Mr Mongillo believes it is possible to find such a site. Again, URS staff agree with this view as referred to in section 6.2 above, and a suite of conditions have been imposed to ensure this happens and thus avoid adverse effects on the environment.

Thirdly, CRC officers have advised a rapid soakage chamber, designed to absorb all stormwater in excess of the design capacity of the infiltration basin, should also be

¹⁶ s 5.4.2 Kingston Morrison August 1997

¹⁷ Table 3-6 URS Site Assessment Report 11 February 2010

located above soil which is ~~clean~~. Given that it will be located next to the infiltration basin this should not be difficult to achieve. I accept, for the same reasons as identified above that this is appropriate and will avoid, remedy of mitigate effects on the environment. Accordingly conditions have been imposed which require a relatively simple soil sampling programme be undertaken to ensure no contaminants are present at the discharge site.

I accept the advice that there is the potential for contaminants to impact upon the quality of surface water and in particular on the adjacent Chatterton River. Mr Mongillo from ECan in particular stressed that reticulated stormwater concentrated in its discharge is likely to adversely impact upon groundwater and this in turn may enter the adjacent River. He points to already elevated levels of copper, chrome and arsenic in the groundwater samples produced by URS as evidence. URS staff agreed. I accept this view. As discussed in the paragraph above, Mr Mongillo considers it is critical to find a location for the proposed infiltration basin which is free from groundwater contamination.

In respect of the potential for contaminants to be discharged into the Chatterton River, all parties accept that with good design and monitoring this can be averted. The evidence I received from Mr Ingles and Mr Fraser of URS was that the stormwater outfall structures - the infiltration basin and the rapid soakage chamber will be designed to prevent any contaminants entering into groundwater and their discharge into ~~clean~~ groundwater as discussed above, will mean that contaminants being discharged into surface water will be avoided. I accept this evidence, and the conditions imposed will ensure effects on the Chatterton River are avoided.

8.3 Discharges from area without a reticulated stormwater system

This issue was raised by Mr Ross and Mr Mallett. Mr Mallett considers there is potential for what he terms ~~passive~~ (see footnote 10 above) discharges of contaminants into groundwater in areas where the surface is permeable . that is unsealed . via percolation through the permeable soils. Evidence from URS staff is that the remaining permeable areas on the site have not been shown to have significant levels of contaminants and thus will have negligible impact upon groundwater. I acknowledge, as pointed out by Messrs Mallett and Mongillo, and confirmed by Mr Fraser that the standards applied by URS in their report of February 2010 are not for environmental protection (and in this case groundwater protection) but for human health. It was Mr

Mallett's view that further sampling should be undertaken across the site to determine if there are significant levels of contaminants in the soil in other locations.

Whereas I can agree with Mr Mallett's views that a cautious approach should often be taken to such issues, I am influenced by the evidence from Mr Mongillo that rain related discharges are unlikely to cause discharges to ground which will dislodge contaminants. He bases this view on the low annual rainfall and intensities of the North Canterbury area. I accept his view but am also mindful of the advice from Mr Ingles that there is the potential in some high intensity rainfalls for water to flow overland and off the compacted gravel areas of the site. This may be more in the form of sheet flow as the site is flat, without channels.

In respect of the advice from Mr Ingles, it is noted that this decision does not authorise the discharge or mobilisation of any contaminants off the site. Apart from the reticulated discharges referred to in 8.2 above, this equally applies to the balance of the site which is not served by a reticulated stormwater system. Although the evidence before me shows that this is unlikely, I am mindful of the evidence of CRC staff on the inadequacy of past investigations, and that more investigations of the soil and groundwater should be undertaken on the site to determine if there are unsafe levels of contaminants derived from the former timber treatment processes undertaken on the site. Such information may lead to a different view in the future of the potential for stormwater discharges to mobilise contaminants.

URS staff accept the need for further soil sampling of the upper yard and the need for groundwater monitoring wells and have recommended these be undertaken (see section 6.2). Accordingly I have imposed condition (41) aimed at carrying out this sampling.

I find on the evidence before me that the potential adverse effects of ~~passive~~ stormwater discharges from the site will be no more than minor, although I accept that future and more detailed investigations may lead to a different conclusion and require amendments to the conditions via the standard review clause condition applied.

8.4 Contaminants and the health of on-site workers

This was raised as an issue by Mr Mallett in his report (see section 6.3 above). The applicant accepts the health of workers on the site must be protected from the potentially damaging effects of timber treatment chemicals on the site. Advice provided to me was

that the most appropriate way on this site to ensure there is no danger to health of workers from such chemicals is to ensure they are sealed by an impermeable surface.

URS has recommended further soil sampling in the upper yard be carried (see section 6.2 above) out to delineate areas of copper, chromium and arsenic contamination which may be contributing to stormwater contamination, and that soils between the old treatment site sealed area and the edge of the terrace including soil sampling location SS04 should be sealed with concrete or asphalt to isolate soil contaminants and prevent mobilisation of contaminants with stormwater. CRC staff agree with this view and I accept that this is appropriate. I have applied conditions to the consent to ensure this is achieved, and on this basis I find that potential adverse effects on the health of on-site workers can be appropriately avoided, remedied or mitigated.

8.5 Conditions

Mr Mallett and Mr Mongillo helpfully produced a draft set of conditions aimed at assisting me if I decided the application could be granted. These were forwarded to URS staff acting for the applicant to comment on and as a result of that process a set of conditions have been largely finalized. There are a few issues where agreement was not able to be reached and I attend to those now.

Scope of the discharge – conditions 3 and 4

CRC consider the consent would only authorize collected stormwater from impervious areas. The original application however is for discharges from the ~~whole~~ site, as referred to in the Kingston Morrison report in section 5 above and also by Mr Ross as referred to in page 4 of this decision report. I have no discretion to at this stage deal with any modification of the application and thus I accept that the application deals with the entire site.

Infiltration basin design – samples exceeding the trigger concentrations – condition 19

The applicant has indicated there is no need for the action to be taken and a copy of the results of relevant analyses to be notified to CRC in the event of soil samples exceeding trigger concentration in the infiltration basin. Conversely CRC staff do not consider this proposed condition onerous as the report could be brief. I consider there is merit in

ensuring the CRC is informed as proposed by CRC staff, but in line with the applicant's suggestion the 5 working days should be extended to 10 working days.

Monitoring Wells – condition 21

The applicant has suggested there is no need to refer to the additional monitoring wells being hydraulically down gradient for the existing temporary monitoring wells. On the other hand CRC staff have emphasized the importance of the monitoring wells providing information on any existing plume. The point of these wells is to monitor whether or not there are any contaminants present in the groundwater at that location. Both the applicant and the CRC staff agree the need for them. I therefore find that the location of these wells should be determined in consultation with CRC and I have amended condition 21 accordingly.

Infiltration Basin/Rapid Soakage Chamber – condition 11

CRC staff suggested the infiltration basin should be designed to capture all stormwater up to and including the 2% AEP event. The applicant has in turn suggested this be modified to the capture of the first 25mm of rain, equivalent to the 20% AEP event, which will capture any contaminants in the first flush of rain. CRC staff have problems with this approach as they are concerned it will lead to more water leading into the rapid soakage basin than expected. Mr Mallett for CRC has said that does not believe the first 25mm will contain all contaminants, unlike a more urban, tar sealed catchment. I find that the amendment as suggested by the applicant is appropriate as the characteristics of the catchment leading to the infiltration basin and rapid soakage chamber are urban in nature and thus agree with the applicant's view that contaminants should be flushed out in the first 25mm of rain.

Mr Mallett is concerned that there is no on-going monitoring proposed of sediment in the rapid soakage chamber. I do not consider this necessary as the evidence before me is that contaminants will be filtered out in any first flush through the infiltration basin.

8.2.6 Terms of Consents

The applicant has requested a 35 year term for the consent. This term has been supported by Mr Mallett, provided the proposed monitoring regime is appropriately

protective and robust¹⁸. I have heard no contrary view and thus accept the applicant and Mr Mallett's views in this regard.

The lapsing date for the purposes of section 125 of the RM Act shall be 31 March 2016.

9. STATUTORY PROVISIONS CONSIDERED

In respect of statutory plans, this case is unusual in that the application was lodged in 1997 and notified in 2000. Any evaluation against statutory provisions, including the legislation and relevant policies and plans, must be against the documents that existed at that time. I find the evidence of Mr Ross most useful in this regard, as his report was completed in June 2000. I do not intend to repeat his assessment but state that I accept his evidence.

My overall broad judgement is that there are no particular Part 2 matters I need to address.

In considering these applications I am obliged to have had regard to the matters set out in section 104 of the RMA. I am also required to have regard to Part II of the RMA, and to have regard to any actual and potential effects of allowing the activity before exercising my overall judgement whether or not to grant the application. I have had regard to these matters.

Section 107 is also relevant to this proposal and I am satisfied that the discharge of stormwater from the site would not give rise to any of the adverse effects listed in section 107 subject to consent conditions imposed under section 108 being complied with.

10. DECISION OF CANTERBURY REGIONAL COUNCIL AND REASONS

Pursuant to the powers delegated to me by Environment Canterbury under Section 34 of the Resource Management Act 1991 and having read the application documents, the officer reports, the submissions received, and having listened to all of the evidence presented, and considered the various requirements of the Act I am satisfied that:

¹⁸ S 66 Mallett S42A report Nov 2010

- Any actual and potential adverse effects on the environment associated with the proposal are able to appropriately avoided, remedied or mitigated through the imposition of conditions on the resource consent so as to be no more than minor;
- The proposal is consistent with the relevant provisions of the various statutory documents; and
- The proposal is consistent with the purpose and principles of the Resource Management Act 1991.

I record that further more detailed reasons relevant to particular potential adverse effects and other section 104 matters are set out in the section of this decision entitled ~~the~~ Main Findings on the Principal Issues in Contention+.

Accordingly it is the decision of the Canterbury Regional Council, pursuant to sections 104, 105, 107 and 108, and Part 2 of the Resource Management Act 1991, that McAlpines Limited Rangiora be granted consent to discharge stormwater into land (in circumstances where it may enter water) at Jacks Pass Road Hanmer, as referred to in resource consent application CRC980298, for a duration of 35 years, subject to the conditions set out in Schedule A to this decision.

DATED this 15th day of April 2011



Craig Shearer (Commissioner)

SCHEDULE A: CONDITIONS

Record No: CRC980298

Proposed conditions of consent

GENERAL

1. For the purpose of this resource consent:
 - (a) any reference to ~~the site~~ shall be a reference to the consent holder's property at Jacks Pass Road, Hanmer, being 2.1283 hectares legally described as Lot 1 DP75364 contained in Certificate of Title 41D822.
 - (b) any reference to a ~~senior~~ qualified person shall mean a person with a post-graduate degree in environmental science, chemistry, biology, geology, engineering or similar field, or sufficient technical experience that is at least equivalent, and at least five years professional experience involving environmental quality investigations.
 - (c) any reference to a ~~technical officer~~ shall mean a person with a tertiary science or engineering qualification that required the equivalent of at least one year of full-time study and has at least two years professional work experience post-qualification that has involved environmental investigations or monitoring.

2. Within six months of the grant of this consent or otherwise prior to the exercise of this consent a covenant shall be entered into in favour of the Canterbury Regional Council in a registerable form under Section 108(2)(d) and Section 109 of the Resource Management Act 1991 to be registered against Lot 3 DP 58380, being the land to which this consent relates, binding the grantee and successors in title for the duration of this consent to the performance of the conditions of this consent. Such a covenant shall provide that where the land is owned jointly the owners shall be jointly and severally responsible.

3. The discharge authorised by this resource consent shall be from:
 - (a) Stormwater from roofs, carpark and hardstands on the site;
 - (b) The discharge of sediment laden stormwater generated during the construction of the stormwater collection and disposal system on the site;

For the purposes of this consent ~~stormwater~~ is defined as the runoff from land or hard surfaces that is a result of precipitation events. It excludes discharges from spilled or deliberately released contaminants or hazardous substances and wash down of such spills or releases onto and into land.

4. The discharge authorised in Condition 3 shall be from the area shown on Figure 1 in Schedule B to this consent.

5. There shall be no discharge from areas where any of the activities listed in Schedule WQL3 of Chapter Four of the Natural Resources Regional Plan are being carried out apart from the storage of treated timber for retail at the site.
6. The handling, storage and use of hazardous substances, excluding gas containers and vehicle and equipment fuel tanks, shall not occur on areas that contribute runoff to the stormwater system. %hazardous substance+is defined as:
 - a) a substance which, when present at sufficient concentration in water, sediment or air, would cause the minimum degree of hazard for that substance specified in regulations under the Hazardous Substances and New Organisms Act 1996, to be exceeded, and
 - b) A substance which has one or more of the following intrinsic properties:
 - i. explosiveness;
 - ii. flammability;
 - iii. a capacity to oxidise;
 - iv. corrosiveness;
 - v. toxicity (including chronic toxicity);
 - vi. ecotoxicity, with or without bioaccumulation; or
 - c) A substance which, on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased), generates a substance with any one or more of the properties specified in paragraph (a) of this definition.

STORMWATER SYSTEM

7. The discharge point for the reticulated stormwater system shall be located in an area of the site shown by pre-construction investigation to be where the infiltration of the stormwater shall not mobilize contaminants from soil to groundwater, or cause the existing groundwater contamination to be mobilized off site.
8. At least one month prior to the construction of the stormwater system, the Consent holder shall submit to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, detailed design plans of the stormwater system to be installed.
9. Reticulated stormwater from roofs, the carpark areas, the old treatment site now sealed, and the extension of paving (which will be sealed with concrete or asphalt), as shown on Figure 1 in Schedule B shall be collected in sumps and conveyed via an impervious system that is sealed to prevent leakage and discharged into land via an infiltration basin. The infiltration basin shall be located in accordance with the conditions of this consent.
10. All sumps shall be fitted with:
 - (a) Trapped or submerged outlets that are capable of trapping hydrocarbons;
 - (b) A shut-off valve at the outlet that can be closed in the event of a spill to prevent discharge to the infiltration basin.
11. The infiltration basin shall:

- (a) Be located at least 200 metres from any Community Drinking Water Supply well;
 - (b) Be sized to contain and treat the first 25mm of all stormwater generated from the paved surfaces and buildings from the retail area.
 - (c) Be lined with a layer at least 150 millimetres thick designed to achieve the infiltration rate required by Condition (26)(e);
 - (d) Have side batters that no steeper than one vertical to four horizontal;
 - (e) Be uniformly vegetated with grass and/or groundcover plants;
 - (f) Have an infiltration rate:
 - (i) Not exceeding 140 millimetres per hour and not less than 30 millimetres per hour as determined using a double ring infiltrometer test; or
 - (ii) Not exceeding 100 millimetres per hour and not less than 20 millimetres per hour as determined using a flooded basin test.
 - (g) Be located in an area that does not contain any wells, including wells established for monitoring or investigation purposes.
12. Stormwater in excess of the capacity of the infiltration basin from any event up to and including a 1 in 100 year rainfall event of any duration shall be directed to rapid soakage chambers located outside the infiltration basin.
13. A certificate signed by the person responsible for designing the stormwater system, or by a Chartered Professional Engineer (CPEng), shall be submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of construction being completed, and prior to commissioning certifying that stormwater discharge systems have been constructed and installed in accordance with the conditions of this consent.

INFILTRATION BASIN DESIGN

14. Infiltration Basin Soils
- (a) Following excavations associated with the infiltration basin, validation sampling shall be undertaken in general accordance with Ministry for the Environment (2004) ~~Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils~~ and specifically discrete soil samples shall be collected by a technical officer from the exposed surface soils within the base of the excavation with one discrete sample collected per 200 square metres of basin floor, with an additional two samples collected at approximately 0.5 metres below ground level from the exposed surface soils on the basin walls adjacent to the base sample. This sampling shall be supervised by a senior qualified person.
 - (b) The validation soil samples collected from the base and sides of the infiltration basin shall be analysed for the following contaminants by a laboratory accredited by International Accreditation New Zealand or an equivalent accreditation body. The method detection limit shall be at least 10 times less than the trigger concentrations for a commercial/industrial land use, set out in Condition 34 Table 1:
 - i. Total Arsenic (mg/kg)
 - ii. Total Copper (mg/kg)
 - iii. Total Chromium (mg/kg)

- iv. Total Boron (mg/kg)
 - (c) The 3 samples with the highest contaminant concentrations collected in accordance with Condition 14(a) shall also be analysed for the contaminants specified in Condition 14(b) using the Synthetic Precipitation Leaching Procedure (SPLP, USEPA Method 1312) using reagent water and the leachate extract analysed for the contaminants specified in Condition (14)(b), by a laboratory accredited for that method by International Accreditation New Zealand or an equivalent accreditation body. The method detection limit shall be at least 10 times less than the trigger concentration specified in Condition 15.
15. If any of the samples analysed in accordance with Condition 14 exhibit contaminants that
- (a) exceed the trigger concentrations in the leachate extract set out below:

Contaminant	Trigger Concentrations (mg/L)
SPLP Arsenic	0.2
SPLP Copper	40
SPLP Chromium	1.0
SPLP Boron	28
 - (b) or, exceed the trigger concentrations for a commercial/industrial land use, set out in Condition 34 Table 1, then the soils will be considered to be contaminated. Further sampling of the infiltration basin base shall be carried out in general accordance with Ministry for the Environment (2004) ~~Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils~~ and shall determine the lateral and vertical extent of the contamination. Further analysis of the samples taken shall be carried out in accordance with Condition 14.
16. When the lateral and vertical extent of the contamination that does not comply with the trigger concentrations specified in Condition 15 has been determined, excavation shall be carried out to remove all contaminated soil that does not comply with the trigger concentrations specified in Condition 15.
17. Excavated Soil
- (a) Any soil excavated shall be sampled prior to re-distribution on site by a technical officer in general accordance with Ministry for the Environment (2004) ~~Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils~~ and analysed in accordance with Condition 14(b).
 - (b) If any of the contaminants analysed in accordance with Condition 21(a) exceed the trigger concentrations for a commercial/industrial land use, set out in Condition 34 Table 1 then the soils shall be placed on site beneath a durable impervious cover that prevents the exposure of on-site staff to the underlying soils or disposed of at an appropriately licensed facility.
18. Any soils imported to replace excavated soils shall not be sourced from a site where the activities specified in Schedule WQL3 of Chapter Four of the Natural Resources Regional Plan, have occurred or are occurring.
19. A senior qualified person shall:

- (a) supervise the sampling undertaken in conditions 26-27 and 14-17 and any soil placement or replacement undertaken in accordance with conditions 16-17,
- (b) provide a written report to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within ten working days of the consent holder being informed of any soil samples exceeding the trigger concentrations specified in conditions 27 or 15 outlining the action to be taken together with a copy of the results of the relevant analyses, and
- (c) provide a certificate to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of completion of the works undertaken to comply with conditions 26 . 27 and 14-17 certifying that the requirements of those conditions have been complied with.

DISCHARGE FROM THE INFILTRATION BASIN

- 20. The consent holder shall carry out investigation works to demonstrate that condition 7 can be complied with.
- 21. The consent holder shall install no less than four (4) investigative monitoring wells in addition to the on site temporary monitoring wells known as TP01, TP02 and TP03 as depicted on Figure 1 in Schedule B, which forms part of this consent. The location of these wells will be determined in consultation with the Compliance and Enforcement Manager, Canterbury Regional Council.
- 22. All of the investigative monitoring wells installed in accordance with Condition 21 shall be constructed such that the bottom of the well screen is located no less than 0.5 metres below the lowest anticipated groundwater level for the respective well location;
- 23. The following applies in the monitoring programme:
 - (a) Groundwater monitoring shall be undertaken at all of the investigative monitoring wells in a single synoptic monitoring event.
 - (b) Sampling of groundwater shall take place not less than 30 calendar days after the installation of the monitoring wells, to allow the wells to recover from the impact of well construction.
 - (c) The following field parameters shall be monitored during the groundwater monitoring:
 - i. Relative depth to groundwater
 - ii. Temperature
 - iii. pH
 - iv. Turbidity
 - (d) Each groundwater sample taken shall be analysed for the following contaminants:
 - i. Trace Level Total Arsenic
 - ii. Trace Level Dissolved Arsenic
 - iii. Trace Level Total Copper
 - iv. Trace Level Dissolved Copper

- v. Trace Level Total Chromium
- vi. Trace Level Dissolved Chromium
- vii. Trace Level Total Boron
- viii. Trace Level Dissolved Boron

24. At least one month prior to the construction of the stormwater system, the Consent Holder shall submit to Canterbury Regional Council, Attention RMA Compliance and Enforcement Manager, a report detailing the results of groundwater monitoring undertaken at the site in accordance with Condition 23.
25. The report prepared and submitted in accordance with Condition 24 shall include at a minimum:
- (a) Text describing the methods employed to collect the groundwater samples;
 - (b) Summary data tables presenting the results of all sample analyses with comparison to applicable and relevant New Zealand drinking water standards;
 - (c) Summary data tables presenting results of all field monitoring measurements;
 - (d) A figure presenting groundwater relative elevation contours for the site based on the field data collected;
 - (e) A figure presenting the extent of groundwater contamination at the site in excess of New Zealand drinking water standards for each of the contaminants listed in Condition 23;
 - (f) An analysis and recommendation for the appropriate acceptable location for placement of the stormwater discharge point based on the data collected in accordance with Condition 23.

RAPID SOAKAGE CHAMBER

26. Discharge
- (a) Following excavation for any rapid soakage chamber used to dispose of stormwater in excess of the capacity of the infiltration basin validation soil sampling shall be undertaken by a technical officer in accordance with the requirements of this consent. One discrete soil sample shall be taken from the exposed soils within the base of each rapid soakage chamber excavation.
Each Sample shall be analysed using the Synthetic Precipitation Leaching Procedure (SPLP, USEPA Method 1312) using reagent water and the leachate extract analysed for the following contaminants: Arsenic, Copper, Chromium, and Boron
 - (b) The analysis shall be undertaken by a laboratory accredited for that method by International Accreditation New Zealand or an equivalent accreditation body. The method detection limit shall be at least 10 times less than the trigger concentration specified in Condition 27.
27. If any of the samples analysed in accordance with Condition 26 exhibit contaminants that exceed the trigger concentrations in the leachate extract set out below:

Contaminant	Trigger Concentrations (mg/L)
SPLP Arsenic	0.2
SPLP Copper	40
SPLP Chromium	1.0
SPLP Boron	28

then the soils will be considered to be contaminated. Further sampling of the rapid soakage chamber base shall be carried out in general accordance with Ministry for the Environment (2004) Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils and shall determine the lateral and vertical extent of the contamination. Further analysis of the samples taken shall be carried out in accordance with Condition 26.

INSPECTIONS AND MAINTENANCE

28. a) Within three months of the commencement of this consent, the consent holder shall prepare a Contaminated Site Environmental Management Plan. The Plan shall describe how the consent holder will ensure that the conditions of this consent will be complied with at all times, and detailing any inspections, maintenance, and sampling requirements of this consent.
b) A copy of the plan shall be provided to Environment Canterbury on request.
29. Inspections and maintenance shall be undertaken on the infiltration basin at six monthly intervals and shall include the following:
- grass or vegetation maintained in a healthy and uniform state;
 - grass or vegetation replanted where erosion or die-off has resulted in bare or patchy soil cover;
 - grass or vegetation mowed regularly or maintained at a minimum length of 50 millimetres.
 - any visible hydrocarbons and debris or litter removed within five working days of the inspection.
 - any accumulated sediment in the infiltration basin removed within five working days of the inspection.
 - any scour or erosion repaired within five working days of the inspection.
30. Inspections and maintenance shall be undertaken on the sumps at six monthly intervals and shall include the following:
- Any accumulated sediment in the sumps removed when the sediment occupies more than one quarter of the storage volume below the invert of the outlet pipe.
 - Any visible hydrocarbons and debris or litter within the sumps removed within five working days of the inspection.
31. Inspections and maintenance shall be undertaken on the infiltration basin and rapid infiltration chamber(s) at six monthly intervals and any accumulated

sediment, visible hydrocarbons and debris or litter removed within five working days of the inspection.

MONITORING

32. Representative soil samples shall be taken from the infiltration basin
- (a) at least once every five years;;
 - (b) from a depth of between zero and 50 millimetres below the ground surface at the point of lowest elevation and directly below each discharge point into the infiltration basin; and
 - (c) By a technical officer.
 - (d) In general accordance with Ministry for the Environment (2004) Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils
33. Soil samples collected under Condition 32 or Condition 34 shall be analysed using a total matrix method by a laboratory accredited for that method by International Accreditation New Zealand or an equivalent accreditation body, for the following contaminants:
- Total Lead
 - Total Copper
 - Total Zinc
 - Benzo(a)Pyrene (equivalent concentration)
 - Total petroleum hydrocarbons C₇-C₉
 - Total petroleum hydrocarbons C₁₀-C₁₄
 - Total petroleum hydrocarbons C₁₅-C₃₆
 - Total Chromium
 - Total Arsenic
 - Total Boron

The method detection limit shall be at least 10 times less than the relevant trigger concentration specified in Condition 34 Table 1, except for total petroleum hydrocarbons which shall be as follows:

	Method detection limit	
	mg/kg dry weight	mg/l
TPH C ₇ -C ₉	10	0.10
TPH C ₁₀ -C ₁₄	20	0.20
TPH C ₁₅ -C ₃₆	30	0.40

34. If any of the contaminants analysed in accordance with Condition 33 exceed the trigger concentrations for a residential land use listed in Table 1 then:
- (a) The soil sample(s) shall be re-analysed for the contaminants that have exceeded the trigger levels by preparing a leachate from the soil using the USEPA method 1312, Synthetic Precipitation Leaching Procedure (SPLP), using reagent water.

- (b) The leachate shall then be tested using method APHA 3125 B 21st edition 2005 for metals, method USEPA 8270 (modified) for Benzo[a]pyrene and hexane extraction, GC-FID for banded TPH, or any subsequent APHA updates of these analytical methods, and the results compared against the Leachate Trigger Concentrations, as listed in Table 1.

Table 1: Trigger concentrations

	Residential land use (mg/kg dry weight soil)	Commercial/Industrial land use (mg/kg dry weight soil)	Leachate Trigger Concentration (mg/L)
Arsenic	30	500	0.2 ¹
Copper	370	210,000	40 ¹
Chromium (Total)	230	510	1.0 ¹
Lead	300	700	0.2 ¹
Zinc	7,000	340,000	60 ²
Boron	30	10,000	28 ¹
Benzo(a)pyrene (equivalent concentration)	7.5	35	0.014 ^{1,4}
TPH C ₇ -C ₉	500	500	360 ³
TPH C ₁₀ -C ₁₄	510	31,000	7 ³
TPH C ₁₅ -C ₃₆	20,000	20,000	14

- (1) 20 x MAV (Maximum Acceptable Value) for determinand of health significance
 - (2) 20 x GV (Guideline Value) for aesthetic determinand
 - (3) 20 x Adopted guideline value sourced from MfE Oil Industry Guidelines 1999 (Table 5.2)
 - (4) Leachate Trigger Value relates to Benzo[a]pyrene only (not Benzo[a]pyrene equivalent concentration).
35. If any leachate results analysed in accordance with Condition 34 exceed the trigger concentrations listed in Table 1, Condition 34, then;
- (a) The soils shall be considered to be contaminated and additional sampling shall be carried out in general accordance with Ministry for the Environment (2004) Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils to determine the lateral and vertical extent of the contamination, and
 - (b) Further analysis of the samples collected in Condition 35(a) shall be carried out in accordance with Condition 34, and
 - (c) When the lateral and vertical extent of the contamination has been determined, excavation shall be carried out to remove all contaminated soils until contaminant concentrations in the remaining soils, as determined by a repeat of the sampling and analysis methodology in accordance with Condition 34 are less than or equal to the Leachate Trigger Concentrations specified in Table 1, Condition 34.

36.

- (a) Any soil excavated in accordance with Condition 35(c) shall be tested in general accordance with Ministry for the Environment (2004) Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils and analysed for any contaminants found to exceed the relevant trigger concentrations in Condition 34, by a laboratory accredited for that method by International Accreditation New Zealand or an equivalent accreditation body.
- (b) The method detection limit shall be at least 10 times less than the relevant trigger concentration specified in Condition 34 table 1, except for total petroleum hydrocarbons which shall be as follows:

	Method detection limit	
	mg/kg dry weight	mg/l
TPH C7-C9	10	0.10
TPH C10-C14	20	0.20
TPH C15-C36	30	0.40

- (c) If any of the contaminants analysed in accordance with this condition exceed the trigger levels for a commercial/industrial land use listed in Table 1, Condition 34, then the soils shall be placed beneath a durable impervious cover that prevents the exposure of on-site workers to the soil or disposed of to an appropriately licensed facility.
37. Any soils imported to replace those excavated under Condition 35 for use on the site shall not be sourced from a site where any of the activities listed in Schedule WQL3 of Chapter Four of the Natural Resources Regional Plan has occurred or is occurring.
38. Following importation of soil the affected area shall be re-vegetated in accordance with Condition 11.
39. The excavation of material within the areas to be used for the stormwater system shall be carried out under the supervision of a Chartered Professional Engineer (CPEng) or a senior qualified person.
40. A certificate signed by a senior qualified person, shall be submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two months of completion of the stormwater infiltration basin to certify that the stormwater basin construction complies with the conditions of this consent.
41. Within twelve months of the commencement of this consent, discrete soil samples shall be collected from all unpaved areas of the upper terrace of the site in general accordance with Ministry for the Environment (2004) Contaminated Land Management Guidelines - Site Investigation and Analysis of Soils, and analysed for the following contaminants:
- Total Arsenic
 - Total Copper

- Total Chromium
- Total Boron
- Pentachlorophenol

SPILLS

- 42.
- (a) The Consent Holder shall take all practicable measures to avoid spills of fuel or any other contaminant within the site.
 - (b) A spill kit, that is capable of absorbing the quantity of oil and petroleum products that may be spilled on site at any one time, shall be kept on site at all times.
 - (c) The contents of the spill kit shall be checked by the Consent Holder at three monthly intervals to ensure that they are complete, clearly labelled and easily accessible.
 - (d) The Consent Holder shall ensure that all staff undergo spill training and that an up to date copy of emergency procedures is available to all staff
 - (e) A written spill response plan shall be developed and communicated to all persons undertaking activities authorised by this resource consent and a copy kept on site at all times.
 - (f) In the event of a spill of fuel or any other contaminant in excess of 5 litres, the spill shall be cleaned up as soon as practicable in accordance with the spill response plan detailed in Condition (59)(e), the stormwater system inspected and cleaned, and appropriate measures taken to prevent a recurrence.
 - (g) Within 24 hours of a spill event, Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be informed and provided the following information:
 - (i) The date, time, location and estimated volume of the spill;
 - (ii) The cause of the spill;
 - (iii) The type of contaminants spilled;
 - (iv) Clean up procedures undertaken;
 - (h) The RMA Compliance and Enforcement Manager, Canterbury Regional Council shall be provided within 10 working days:
 - (i) Details of the steps taken to control and remediate the effects of the spill on the receiving environment;
 - (ii) An assessment of any potential effects of the spill; and
 - (iii) Measures to be undertaken to prevent a recurrence.

GENERAL

43. Any materials disposed of off-site in accordance with the conditions of this consent shall be disposed of at a facility authorised to receive such materials.
44. The Consent Holder shall provide all tenants on the site with a copy of this resource consent and the Individual Tenant Responsibilities Document that is included in the attached Stormwater Management Plan that is part of this consent. The Consent Holder shall take all reasonable and practicable steps to ensure that the tenants comply with this resource consent and the Stormwater Management Plan.

45. The Consent Holder shall keep records of all inspections, maintenance, and monitoring undertaken in accordance with the conditions of this consent). These records shall be made available to the Canterbury Regional Council on request.
46. In the event of any conflict between any provision of any management plan referred to in this resource consent and any condition of this resource consent, the condition has compliance priority.
47. The results of all soil analyses undertaken in accordance with this consent shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within three months of sampling.

ADMINISTRATION

48. The lapsing date for the purposes of Section 125 of the Resource Management Act 1991 shall be the 31 March 2016.
49. The Canterbury Regional Council may, once per year, on any of the last five days of April or October, 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 which may arise from the exercise of this resource consent and which it is appropriate to deal with at a later stage; or
 - (b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment; or
 - (c) Requiring the consent holder to carry out monitoring and reporting instead of, or in addition to, that required by the resource consent.

DURATION

50. This consent shall expire 35 years after the date of commencement of this consent.

SCHEDULE B: FIGURES 1 AND 2



