Wellington Water

PORIRUA WWTP – DISCHARGE OF CONTAMINANTS TO AIR

Resource Consent Application & Assessment of Environment Effects

February 2020

Our water, our future.

Document Control

Document Information

Document Data	
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Document Sign-Off

Name	Role	Sign-off Date
April Peckham / Paul Heveldt	Report Writers	21/02/2020
Richard Peterson	Stantec Reviewer	21/02/2020
Paul Gardiner	Wellington Water Limited Approver	24/02/2020

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Form 9

Application for Resource Consent

To: Greater Wellington Regional Council
PO Box 11646
Wellington 6142
Attention: Manager Consents

From: Porirua City Council
PO Box 50218
Porirua 5240

1. Porirua City Council applies for the following type of resource consent:
   - *Discharge Permit*

2. The activity to which the application relates [proposed activity] is as follows:

   The discharge of contaminants to air from the Porirua wastewater treatment plant

3. The site at which the proposed activity is to occur is:

   - *164 Pikarere Street, Titahi Bay*
   - *Lot 1 DP 62407*
   - *Certificate of title reference WN 33A/853*
   - *Further details are included in section 2 of the supporting documentation*

4. Names and addresses of landowners / occupiers (other than the applicant) of land to which the application relates to:

   The Titahi Bay City and Riding Club (occupier)

5. The other activities that are part of the proposal to which the application relates are:

   The operation of a wastewater treatment plant and the discharge of treated wastewater to the coastal marine area.

6. The following additional resource consent are needed for the proposal to this application relates

   An application for a coastal permit for the discharge of treated wastewater will be lodged with GWRC in April 2020.

7. I attach an assessment of the proposed activity's effect on the environment that—

   (a) includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and

   (b) addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and

   (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

8 I attach an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.

9 I attach an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

10 The value of the investment of the existing consent holder is $56,427, 742 (replacement cost for the WWTP).

11 N/A

12 N/A

13 N/A.

14 Porirua City Council attaches the following further information required to be included in this application:

- Certificate of title for the WWTP site
- GWRC s214 memo
- Pikarere Farm Subdivision Scheme Plan

Signed.....
(Signature of person authorised to sign on behalf of the applicant)

Date.....25/2/20

Address for Service:

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1 Introduction

Porirua City Council is applying to replace the existing discharge to air consent for the treatment of wastewater at the Porirua Wastewater Treatment Plant (Porirua WWTP). This consent took effect in May 2000 (WGN980083(02)) and expires on 31 May 2020.

Wellington Water operates and maintains the Porirua WWTP on behalf of the Porirua City Council.

2 Site Description

2.1 Location & site characteristics

The Porirua WWTP is situated in a small valley aligned in a north-south direction near Round Point (see Figure 1). The property on which the WWTP is located is owned by Porirua City Council and is legally described as Lot 1 DP 62407 (See Figure 2).

Figure 1: Location of Porirua WWTP showing north-south orientation of the facility in an extensively forested valley

The valley sides surrounding the WWTP provide effective screening of the plant with respect to the nearest residential areas (Suburban Zone) some 500m away to the east and the recently consented rural lifestyle subdivision to the south (see further information in section 2.4 below). The extensive forest plantings around the WWTP provide screening and also induce turbulent flows in the air in the vicinity of the plant that assist with dispersion of any entrained odour. At the northern boundary of the WWTP site there is a 30m high escarpment between the valley floor and the beach below. The shoreline outfall is located around 700m further to the north-east of the WWTP.

In the south eastern corner of Lot 1 DP 62407, Porirua City Council has leased a portion of the property to the Titahi Bay City and Riding Club.

Figure 2: Aerial of the Porirua WWTP site. The boundaries of Lot 1 DP 62407, which is owned by Porirua City Council, are shown by the yellow outline. Land to the south and west of the property is zone 'rural' and is within Pikarere Farm. The nearest residential area (Suburban Zone) is at the intersection of Pikarere Street and Mako View.

2.2 Site Designation

The part of the site on which the WWTP is located is designated as K1048 under the Porirua City District Plan (PCDP). The text of the Porirua City District Plan notes that K1048 is for a designation of "Wastewater Treatment Plant" at a location south of Old Man Point and is part of Lot 1 DP 62407.

Figure 3 shows the extent of designation K1048.

Figure 3: Aerial of the Porirua WWTP designation. The boundaries of the designation (K1048) are shown by the blue outline. The designation covers part of Lot 1 DP 62407, which is shown on Figure 2.

2.3 Wind conditions and air quality

The Porirua WWTP is located near Te Korohiwa Rocks / Round Point, immediately to the west of Porirua City. Its coastal location and the nature of prevailing wind directions and speeds through the general Te Moana o Raukawa / Cook Strait area are important aspects in the effective dispersion of any odours emanating from the WWTP.

The predominant winds are from the north-west and west-north-west direction; these wind directions account for more than 80% of the recorded wind data. Wind speeds are mostly in the range between 5 and 30 knots, with the most common wind speeds being between 12 and 20 knots. These consistent winds will transport any odours emanating from the WWTP into the extensive pine forests surrounding the WWTP, where induced turbulent air movements will act to assist with dilution and dispersion.

The ambient air quality in the area of the WWTP is high quality, which reflects both the area's exposure to regular winds and the limited number of contaminant sources, including sources of odour. Odours present in the area are those consistent with its coastal location, and rural and residential land uses. None of these odour sources are dominant and none could be considered offensive or objectionable.

2.4 Adjoining land uses

The land uses surrounding the WWTP are shown on Figures 1 - 3.

The site is surrounded by land zoned for, and used for, rural activities to the west and south of the site. This land is part of Pikarere Farm, which is currently used for extensive pastoral farming. A portion of Pikarere Farm, immediately to the south of the WWTP property, has been subdivided into 5 lifestyle allotments. Each of the lifestyle allotments is approximately 5 hectares in area and contains a building platform for future dwellings and accessory buildings. All the building platforms are located a minimum of 450 m from the milli-screening building at the WWTP. These lifestyle sites and the building platforms are shown in Appendix C.

To the east of the site, an area containing approximately 77 residential houses on Pikarere and Moki Streets adjoins the eastern WWTP site boundary. This area is zoned 'suburban' in the Porirua City District Plan. The nearest properties in this residential area approximately 500 m from the treatment plant.

Stuart Park Recreation Reserve is situated to the north east of the WWTP site. A designation (K1016) for the extension of Stuart Park Recreation Reserve, runs along the northern boundary of the Lot 1 DP 62407 (i.e. the property on which the WWTP is located). Informal recreation, mainly walking, occurs on this area of the property. Access can also be obtained via the WWTP site to areas of the coastline located to the south of the property.

The coastline to the north of the WWTP is known to be used for both land based and water recreation activities, including walking, fishing, diving and shellfish gathering.

3 Proposal

As stated above, resource consent is being sought by Porirua City Council to continue to discharge contaminants to air from the Porirua WWTP. The application therefore seeks to replace the existing discharge to air consent (WGN980083(02)) that took effect in May 2000. The existing consent expires on 31 May 2020.

The existing wastewater treatment process, and associated discharges of contaminants to air, are described in section 5 of this report. It is noted that over the proposed consent duration the nature of the treatment process will likely change (both for the liquid and solid streams). Changes to the treatment process are standard practice as part of the operation, maintenance and upgrade of a WWTP. For instance, numerous changes have occurred to the Porirua WWTP during the current consent period. These will be set out in detail in the corresponding wastewater discharge consent to be lodged with GWRC in early April. Future changes to the treatment process will need to be designed, installed and managed to ensure that air discharges from the plant continue to meet the conditions that are proposed as part of this application (see Section 11), and in particular that no discharges of odour to air are offensive or objectionable at or beyond the boundary of the property.

In summary, it is noted that odour is the main contaminant that is discharged to air from the WWTP.

Under section 124 of the Resource Management Act 1991 (the Act), an application for a replacement consent must generally be lodged at least 6 months prior to the existing consent expiring if the applicant intends to rely on the existing consent while the new one is being processed. However, an application can also be made in the period ending 3 months before the existing consent expires, provided the consenting authority approves this. Greater Wellington Regional Council (GWRC) has provided approval for the application to be lodged 3 months prior to the expiry date (see Appendix B).

It is noted that a stand-by generator is located on the site. This has been assessment in relation to the relevant rule in the Proposed Natural Resources Plan (see section 4.5) and it is concluded that the operation of the generator is a permitted activity and does not require resource consent.

4 Resource Consent Requirements

4.1 Section 15 of the Act

Section 15 sets out restrictions on the discharge of contaminants into the environment as follows:

> ***15 Discharge of contaminants into environment***
> *(1) No person may discharge any—*
> *(a) contaminant or water into water; or*
> *(b) contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or*
> *(c) contaminant from any industrial or trade premises into air; or*
> *(d) contaminant from any industrial or trade premises onto or into land—*
> *unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.*

Under section 15(1)(c) of the Act no person many discharge any contaminant from any industrial or trade premises into air unless the discharge is expressly allowed by a rule in a regional plan, proposed regional plan, resource consent, or regulations. As set out below, the proposed discharges are not expressly allowed in either the Regional Air Quality Management Plan (RAQMP) or the Proposed Natural Resources Plan (PNRP) for the Wellington Region. Therefore, resource consent is required.

4.2 Regional Air Quality Management Plan

The discharge of odour from the WWTP is assessed against the relevant rules of the RAQMP in Table 1 below.

Table 1: Assessment against the relevant Rules of the RAQMP

Rule	Comments
Rule 21 Sewage and trade waste conveyance, treatment and disposal *The discharge of contaminants into air in connection with:* *(1) sewage and liquid or liquid-borne trade waste conveyance, treatment and disposal including the operation of septic tanks and soakage pits);* *is a **Permitted Activity**, provided it complies with the conditions below, and **excluding** any discharges of contaminants to air arising from processes involving:* *(a) the treatment of sewage and/or liquid or liquid-borne trade wastes off the site on*	As the discharge of contaminants to air from a WWTP is explicitly excluded from Rule 21, this rule does not apply to the proposal.

Rule	Comments
which it was generated (e.g., municipal sewage treatment).	
Rule 23 General rule (Discretionary Activities) *The discharge of contaminants into air from:* *(1) any process or activity explicitly excluded from Rules 1-22; or* *(2) any process or activity covered by Rules 1-22, but which does not meet the conditions attached to those rules; or* *(3) any process or activity on an industrial or trade premises not covered by Rules 1-22;* *is a* ***Discretionary Activity.***	The proposal must be assessed as a Discretionary Activity under Rule 23.

In conclusion, the discharge from the WWTP must be assessed as a Discretionary Activity under Rule 23 of the RAQMP.

4.3 Proposed Natural Resources Plan

The discharge from the WWTP is assessed against the relevant rules of the PNRP in Table 2 below.

Table 2: Assessment against the relevant Rules of the PNRP

Rule	Comments
5.1 Air Quality	
5.1.11 Gas, water and wastewater processes	
Rule R34: Gas, water and wastewater processes – permitted activity [1] *The discharge of contaminants into air from the enclosed storage, conveyance and pumping of gas (including natural gas), water and wastewater processes is a permitted activity, provided the following condition is met:*	It is unclear if this rule applies to the discharges from the WWTP. A conservative approach has therefore been taken and it has been assumed that it does not.

[1] Words underlined were added to the rule in the decision version of the PNRP.

Rule	Comments
(a) the discharge shall not cause offensive or objectionable odour at the boundary of a sensitive activity.	
5.1.15 All other discharges	
Rule R41: All other discharges – discretionary activity	The proposal must be assessed as a discretionary activity under R41 of the PNRP.

In conclusion, the proposal must be assessed as a Discretionary Activity under Rule 41 of the PNRP.

4.4 WWTP Discharge Rules Summary

In summary, the proposed discharge to air from the Porirua WWTP is assessed as follows:

- as a Discretionary Activity under Rule 23 of the RAQMP; and
- as a Discretionary Activity under Rule 41 of the PNRP.

4.5 Stand-by generator

A stand-by generator is installed at the eastern end of the WWTP car park. The generator has a capacity of 880 kW, is diesel fuelled and is enclosed in a container.

Rule R8 of the PNRP applies to the emissions arising from the generator. An assessment of the generator against the conditions of Rule R8 is set out in Table 3.

Table 3 – Assessment against Rule R8 of the PNRP

Rule / condition	Assessment
The discharge of contaminants into air from any **large scale generator** not exceeding a maximum generating capacity of 2MW, from the combustion of diesel or kerosene blends outside a **polluted airshed** is a permitted activity, provided the following conditions are met:	The capacity of the generator does not exceed 2MW and the WWTP is not located in a polluted airshed. Therefore, this rule applies subject to the conditions being met.
a) the discharge shall not cause noxious, dangerous, offensive or objectionable odour, dust, particulate, smoke, vapours, droplets or ash beyond the boundary of the property	None of the adverse effects listed are caused by the discharges from the generator.
b) the sulphur content of the kerosene shall not exceed 0.5% by weight	This condition is not applicable as the generator is fuelled by diesel.
c) when the maximum generating capacity is more than 1MW, the discharge shall occur via a chimney stack or chimney at least 9.5m above ground level, or at least 3m above the ridge line	The maximum generating capacity does not exceed 1 MW therefore the chimney requirements do not apply.

Rule / condition	Assessment
of the roof or building or other structure whichever is the highest, within a radius of 50m of the chimney stack or chimney	
d) the discharge shall be directed vertically into air, and shall not be impeded by any obstruction above the chimney stack or chimney that decreases the vertical efflux velocity	The discharge from the generator is directed vertically through the roof of the container in which it is enclosed.
e) rain excluders shall not impede the vertical discharge of combustion gases	Rain excluders fitted to the generator exhausts do not impede the vertical discharge of combustion gases.
f) the discharge shall not at any time increase the concentration of PM10 (calculated as a 24-hour mean) by more than 2.5µg/m3 in any part of a **polluted airshed**	The WWTP is not located in a polluted airshed.
g) the fuel burning equipment is maintained by a suitably qualified person at least once per annum, with a copy of the maintenance report held by the operator and presented to the Wellington Regional Council on request.	The generator is maintained through a series of monthly and annual test procedures. Veolia undertakes those tests. Test reports are held as part of the Veolia Asset Management System.

Based on this assessment it is considered that the generator is a permitted activity under Rule R8 of the PNRP. As we understand that there are no appeals in relation to Rule R8, there is no need to assess the generator in relation to the relevant provisions of the outgoing RAQMP.

5 Assessment of Environmental Effects

Section 88 and Schedule 4 of the RMA require the applicant to make an assessment of any actual or potential effects that the proposed activity may have on the environment and the ways in which any adverse effects may be mitigated. Schedule 4 requires that any such assessment shall be in such detail as corresponds with the scale and significance of the actual and potential effects that the activity may have on the environment.

5.1 WWTP Treatment Processes and Plant Elements Relevant to Odour

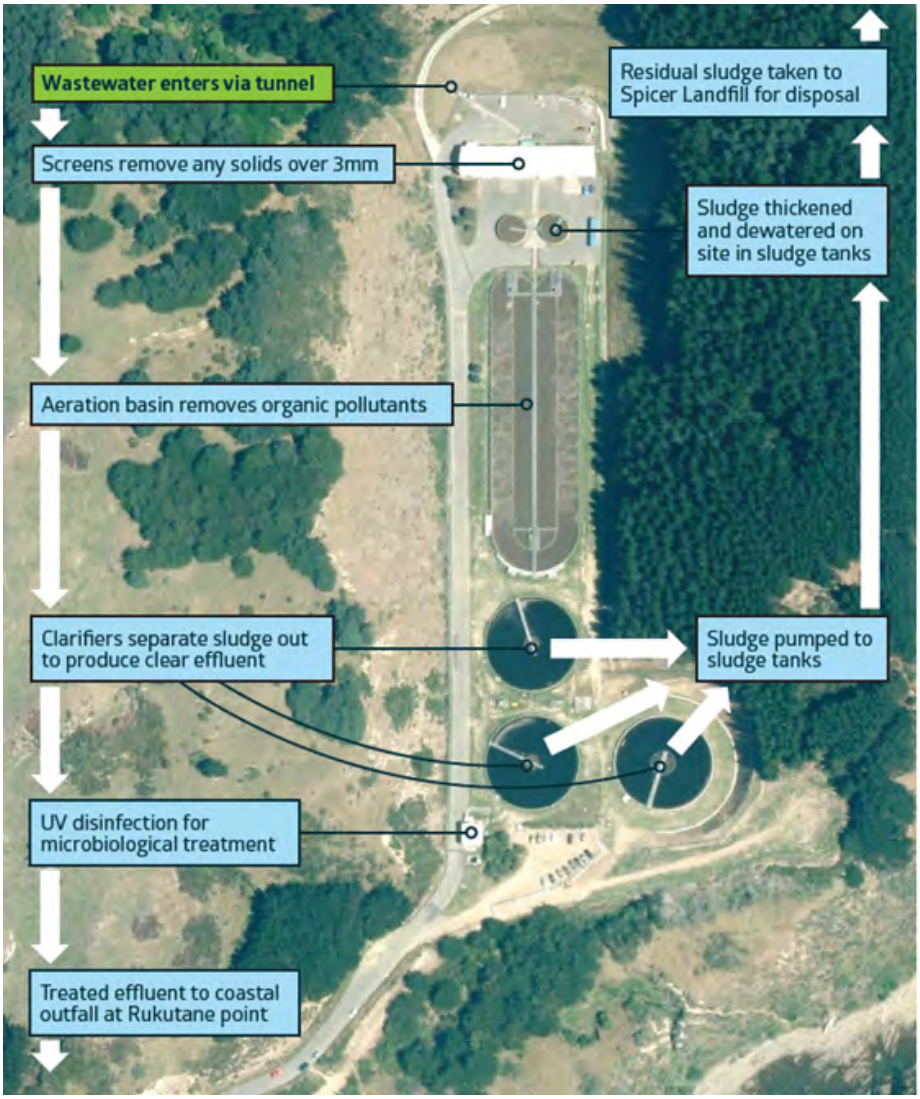

Figure 4: Porirua WWTP process diagram

The Porirua WWTP consists of an inlet works with rotary drum milliscreens, a large extended aeration basin, three clarifiers, UV disinfection and final discharge of treated wastewater via a shoreline outfall pipe that currently discharges to the shoreline at Rukutane Point some 700m to the north-east of the WWTP. The solids treatment train has two gravity thickeners with a final dewatering step using

centrifuges. The resulting biosolids are transported in covered skips and disposed of at the Spicers Landfill operated by Porirua City Council.

Each of these treatment steps has a degree of associated odour but, for the most part, this is localised in nature and has the characteristic odour of raw wastewater. This is particularly so for the aeration basin, where dissolved oxygen (DO) monitors ensure that DO levels are maintained such that the wastewater septicity is kept at a minimum. Similarly, the solids treatment train does not give rise to significant emissions of odorous compounds since this is an activated sludge plant and oxygen concentrations are maintained at elevated levels as a key requirement of the activated sludge treatment methodology. The clarifiers also do not contribute offensive or objectionable odour emissions but instead the liquid in these plant elements has the typical odour of treated wastewater; i.e. discernible and identifiable as a "wastewater" odour.

The odour from the discharge of treated wastewater at the shoreline outfall is:

- low-level and barely discernible
- remote from any residences and geographically isolated by a high escarpment.

Odour concentrations in the air within the milliscreening building can reach significant levels due to the presence of reduced sulphides in the influent wastewater flows. These compounds arise within the influent stream where oxygen concentrations in the incoming mainly domestic wastewater reaching the plant have been depleted during often lengthy residence times within the sewerage reticulation network. This represents a health and safety risk for workers within this part of the plant and the building is ventilated via a 10m discharge stack to maintain safe concentrations of hydrogen sulphide (H_2S) for workers.

An additional factor driving effective ventilation of the milliscreens building is the corrosive impact of H_2S on structural concrete and plant and equipment. Evidence of corrosion was readily apparent during a recent site visit.

Various communications, including summaries of recent visits to the site by Wellington Water staff and older reports about the plant's operational parameters, have noted that odour is noticeable around the WWTP buildings and plant elements on occasions and may also be discernible on a very limited number of occasions (1-2 times per year) at the site boundary under certain wind conditions (low wind speeds or calms). Odour that does occur at the site boundary has been assessed as not being offensive or objectionable.

In summary, it appears that the only part of the plant that may produce significant concentrations of odorous compounds is the inlet works, including the milliscreens, and that venting of the extracted air from this building could on occasions and under adverse meteorological conditions, possibly give rise to at least discernible odour at the WWTP designated boundary. It is considered very unlikely that odours at or beyond the WWTP boundary would ever be such as to be described as offensive or objectionable and the lack of any formal odour complaints, as noted below, confirms this.

5.2 Plant Description and Air Discharges

A visit was made to the site by a Stantec Air Quality Scientist in July 2019 to obtain a more detailed understanding of WWTP processes and their potential contributions to odour, the nature and extent of that odour, and the physical parameters of topography that are relevant to the site and to odour dispersion upon release at the Porirua WWTP site. The weather at the time of the visit was overcast and relatively calm, both at the WWTP itself and at the outfall location at Rukutane Point, approximately 700m to the north-east of the WWTP.

Figure 5: General View of the Porirua WWTP looking to the south east along the access road

As described elsewhere, the WWTP lies in a natural step-sided valley, as can be seen in Figure 5 above. This valley is open to the north in the direction of the ocean. In the environs of the treatment plant building housing the milliscreens and sludge treatment equipment there is little odour discernible outside the building, except in occasional wafts.

The area adjacent to the ventilation outlet from the trunk sewer conveyance tunnel is subject to low levels of odour but the spatial extent of odour impacts from this source is limited to within 20m or so of the ventilation tunnel exit. In any case, the odour at this location is spasmodic and just discernible, as a worst case, and is highly unlikely to represent a source of nuisance beyond the WWTP boundary.

The potential for odour release from the return liquors stream is high. These liquids arise from the sludge treatment train (thickeners, centrifuges) and are returned to the inlet works at the WWTP to rejoin the wastewater flow. The liquids are recirculated via pipes back to the inlet works and are released into an enclosed chamber upstream of the milliscreens, but within the milliscreen building. The agitation that necessarily occurs in this transfer process has the propensity to disperse odours through turbulent flows; however, as this occurs within the milliscreens building any odours released are captured by the milliscreen building's ventilation system.

The milliscreens themselves are enclosed by substantial GRP (fibreglass) covers (see Figure 7) and ventilation provided in the milliscreens gallery, under the milliscreens covers and for the bypass chamber is particularly effective in extracting odorous air for external discharge via the stack at the north-east corner of the milliscreens/sludge treatment building (see Figure 6). The outlet of the stack is 10 m above the ground and 4m above the north east corner of the milliscreen building.

While there is no treatment of the discharge from the stack, the mechanical ventilation system and stack do help to mitigate potential odour effects from this part of the WWTP. This mitigation is achieved by the velocity and the height of the discharges which ensures that the initial dilution and dispersion of odours is more efficient than would occur if these emissions were uncontrolled.

Figure 6: North-east corner of WWTP building showing the 10m discharge stack

A report prepared by Connect Water[2] discussed certain aspects of the performance of the key ventilation systems at the Porirua WWTP. The considerations and conclusions in the report are aimed primarily at asset condition management, particularly with respect to reducing the extent of concrete corrosion. A secondary benefit is improving health & safety for the WWTP workforce by reducing H_2S concentrations. For the Milliscreening Hall (see Figure 7) the ventilation fan was found to be providing 26 air changes per hour to the milliscreen gallery, the milliscreen covers and the bypass chamber; this is significantly in excess of the guideline value provide by NFPA 820[3] of 12 air changes per hour. The measured H_2S concentration reported by Connect Water at the outlet of the ventilation air discharge stack was in the range of 3 -12 ppm.

The Connect Water report recommended the sealing of various identified gaps in the milliscreen covers to improve ventilation efficiency. This has now been completed and has proved effective at reducing H_2S levels inside the Milliscreening Hall. Subsequent monitoring has validated the success of these works, and shown significantly reduced H_2S levels inside the Milliscreening Hall and increased concentrations in the discharge from the stack (approximately 19 ppm).

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[2] Porirua WWTP Ventilation Assessment, Connect Water, January 2017

[3] NFPA 820: Standard for Fire Protection in Wastewater Treatment and Collection Facilities. National Fire Protection Association, 2020 Edition

Figure 7: The Milliscreening Hall, with fibreglass covers over the screens to minimise H_2S/ odour release

These improvements that have resulted in an improvement (dilution) of H_2S levels in the atmosphere within this area will also further reduce the likelihood of potentially offensive or objectionable odour emissions from this part of the WWTP.

Figure 8: Sludge dewatering centrifuges

The potential for releases of odour from the sludge dewatering processes is significant; however, the centrifuges themselves are housed within the main plant building, which is itself thoroughly ventilated

as discussed earlier, with the combined extracted air discharged through the stack as shown in Figure 6 above.

As already noted, review and upgrading of the ventilation efficiency of the main plant building has been undertaken, and is standard operational practice for asset management, workforce health and safety and odour management reasons. The consequential increased rate of ventilation from the main building will result in a concomitant increase in the discharge velocity from the stack exit; in turn, this significantly assists dispersion of the plume, with the overall result being a reduction in fugitive odours from around the Milliscreening building and a further decrease in the concentrations of odorous components of the discharge.

The dewatered solids that leave the centrifuges have a soil-like consistency and are not particularly odorous when undisturbed.

Figure 9: Dewatered sludge awaiting covering and transport for landfill disposal

The material is off-loaded from the centrifuges to skips within the sludge bay and this area is thoroughly cleaned down on a weekly basis to prevent any accumulation of solids or spillages. The sludge is removed daily in covered skips to further minimise any odour releases.

The potential for offensive or objectionable odour to be emitted from the aeration basin is low. While the four elements of the basin in total have a large surface area open to the atmosphere, the on-line oxygen monitors in the aeration tank automatically control the blowers delivering air to the aerator diffusers and thus the oxygen concentration of the mixed liquor is maintained at an optimum level. Check points at low, high and maximum dissolved oxygen (DO) levels are set which, if exceeded, will produce an alarm to which the operator will respond. Any possible failure of instrumentation that controls the aeration rate also generates an alarm. In this way, the maintenance of optimal oxygen levels in the aeration basin is assured.

Anaerobic conditions leading to odour generation are thus prevented from arising in the aeration basin. Spare parts for the aeration system are retained on site to ensure the ability of the aeration basin to fulfil its role in treatment of wastewater at the Porirua WWTP.

Figure 10: Aeration basin, with turbulence from active aeration being apparent in the side channels

The potential for objectionable odour release from the three clarifiers at the WWTP is low. The clarifier tanks are desludged on a daily basis and the weirs and launders are cleaned regularly by the use of high-pressure hoses on the rotating arms on an as-needed basis. The optimum operation of the clarifiers is ensured by regular inspection followed up, as necessary, by action to prevent the accumulation of any solids and algae which might give rise to odour emissions.

As discussed above, the wasted component of the solids stream from the clarifiers is returned to the plant building where sludge thickening and dewatering via the two sludge centrifuges takes place, with ultimate transport by covered trucks to Spicers Landfill for disposal.

Figure 11: One of the three clarifiers used to settle remaining solids from the wastewater effluent prior to UV treatment and subsequent discharge via the ocean outfall

The Porirua WWTP is optimally situated in a gully that provides excellent buffering to the nearest residential areas at Pikarere Street (also known as Farm Road) and Moki Street. The surrounding heavily pine-forested ridges that enclose the plant effectively contain any odour emissions and contribute to turbulent airflows which assist with further dilution.

The photograph in Figure 12 was taken at Pikarere Street looking down-gully towards the WWTP site (screened by the trees) and shows clearly the enclosed nature of the plant, and that the wastewater treatment plant elements are not visible from Pikarere Street.

5.2.1 Summary of the existing WWTP management practices that assist to control odour

Table 4 summarises the existing management practices within each step of the treatment process that help to manage odour from the plant. It is noted that some of these practices serve multiple purposes and odour control may be a secondary purpose.

Table 4 - Summary of existing WWTP odour management practices

Treatment Stage/Plant Element	Practice	Description
Milliscreens	Improve ventilation efficiency	Seal gaps in screen covers. Possible new fan to provide make-up air from outside the building
Sludge dewatering, including return liquors	Improvements in building ventilation	Will improve the capture of odorous air from the sludge dewatering equipment
Sludge loading and off-site transportation for disposal	Skips for sludge reception and transport are covered.	Covered skips reduce fugitive odour emissions. Sludge bay is cleaned down regularly – which also minimises fugitive odour emissions.
Aeration basin	Maintain good aeration (oxygen levels). Carry adequate spare parts for aeration equipment.	Prevents anaerobic conditions developing which would otherwise exacerbate odour
Clarifiers	Desludge tanks on a daily basis.	Clean weirs and launders daily with high-pressure water hoses.
UV disinfection	UV system is enclosed in a building. The treated wastewater is transferred within an enclosed pipe to the outfall discharge point.	No changes necessary to these aspects.

Figure 12: View to the north west from hill above WWTP – the plant is screened by the extensive pine plantation in the middle distance

5.3 Complaints History

Neither the Porirua City Council (PCC) nor Greater Wellington Regional Council (GWRC) have received any formal complaints about odour with respect to the Porirua WWTP over at least the past 10 years.

Wellington Water has however met with the owner of Pikarere Farm on a limited number of occasions about individual minor odour events and recently to discuss this application (see section 8 below).

5.4 Requirement for and Content of an Odour Management Plan

On behalf of Porirua City Council, Wellington Water intends to continue to actively manage the WWTP in a manner that controls odour emissions and to put in place mitigation measures that can clearly illustrate that an effective response to odour control and mitigation is being undertaken. The best way of doing this, and one that is favoured by consent authorities around New Zealand, is an Odour Management Plan (OMP) required by a consent condition. A good OMP forms an integrated document within the overall site management plan and is used during the day-to-day management of the site to ensure that odours are minimised and properly managed as a key part of site operations. An OMP also ensures that the steps being taken to manage the odour are transparent to GWRC and neighbours. For these two reasons while a requirement to prepare and maintain an OMP will not necessarily change practices at the WWTP, it will ensure that these practices are documented and transparent.

Currently there is no formal OMP for the Porirua WWTP under the existing resource consent. Odour management is actively pursued, both for environmental compliance reasons and also to minimise, to the greatest practicable extent, concentrations of highly corrosive hydrogen sulphide within the various treatment plant elements which, if not so minimised, would lead to significant corrosion issues for equipment and plant elements.

It is a natural extension of the various measures already in place to control emissions of odorous compounds, particularly H_2S, at the WWTP and to formulate these into a cohesive and comprehensive management plan format that makes odour control transparent and with individual responsibilities allocated, operational matters that are important to odour minimisation all delineated and prescribed, and continuous improvement being the overriding principle of the OMP.

The OMP as proposed would sit alongside and would reinforce a "no offensive or objectionable odour at the designated boundary of the WWTP" consent condition.

The typical content of an Odour Management Plan includes:

- A plant description, including discussion of each individual treatment plant element and its function, supported by a layout plan
- Consent requirements with respect to odour management
- On-site odour monitoring requirements and boundary surveys
- Plant management procedures relevant to odour control
- Contingency measures to deal with plant malfunctions
- Staff responsibilities and training
- A complaints procedure, including actions on receipt of complaints and associated reporting requirements
- Provisions for review of the OMP

It is anticipated that the OMP will be required to be submitted to and certified by the Manager, Environmental Regulation, Wellington Regional Council within a specified timeframe.

5.5 Assessment of Odour

Atmospheric dispersion modelling is sometimes used when odour emanating from a wastewater treatment plant has a significant potential to give rise to odour nuisance effects for the nearby community. Such modelling has maximum utility when odour emission rates from individual treatment plant elements are well known, the topography of the receiving environment is consistent and not characterised by sudden or drastic variations, the meteorology (particularly with respect to wind effects) includes significant periods of low wind speeds and calms and the general extent of turbulent atmospheric flows is limited.

None of these circumstances in fact pertain to any significant extent at the Porirua WWTP. Therefore, dispersion modelling would include a considerable degree of uncertainty because of the issues noted above. It is proposed therefore that, for consenting purposes, a more realistic assessment process includes a semi-quantitative odour assessment of perceived odour using the FIDOL[4] factors inside, at and beyond the WWTP boundary and the development of a robust and peer-reviewed Odour Management Plan (as discussed in section 5.4 above) that includes odour-related plant management requirements, the assignment of responsibilities and detailed contingency and maintenance measures, supported by a comprehensive odour complaints receipt, investigation, response and report-back procedure.

The FIDOL factors have been applied by Stantec's odour specialist during a site visit on 19 July 2019. Odours were sniffed at various locations around the WWTP boundary, as well as within the WWTP boundary at positions adjacent to the main building and at various treatment plant elements. The

[4] FIDOL = **F**requency, **I**ntensity, **D**uration, **O**ffensiveness and **L**ocation as factors in assessing the likely impact of an odour

odour assessment was necessarily limited to accessible locations, particularly as near as practicable to the southern boundary above the WWTP site and at the northern end of the valley in the general area of the entrance gate to the plant. It is noted that the topography at and around the WWTP makes it difficult to access the boundaries to the east and west.

Weather conditions were fine, with a light to moderate breeze of up to 10km/hr from the northerly quarter. Such a breeze would provide worst possible conditions for observations of odour; i.e. limited turbulence and dilution in a relatively light breeze.

All treatment operations and equipment at the WWTP were operating normally.

The outcomes of the assessment were that no odour could be discerned at or beyond the WWTP boundary at any location; there were thus no opportunities to apply the FIDOL factors to the assessment. Furthermore, the odours observed in the south-east corner of the WWTP fenced off area, about 20 m from the Milliscreen Building were generally discernible but were only occasionally offensive or objectionable and were often transitory and variable. Such odours would not be discernible at and beyond the WWTP boundary, even under worst possible conditions as generally applied on the day of the assessment.

The FIDOL approach is endorsed by the Ministry for the Environment's Good Practice Guide for Assessing and Managing Odour in New Zealand (MfE, 2003) for application in circumstances of this nature.

5.6 Summary of Effects

In summary, it has been determined that any environmental impacts of the discharge of odour to air are less than minor at the site boundary. This assessment is based on:

- the on-going application of WWTP management practices, summarised in Table 3
- the nature of the WWTP site (located in a deeply incised valley, surrounded by trees)
- the characteristics of the receiving environment (regular strong winds, distance to sensitive receptors).

The magnitude of effect is also very unlikely to increase as inflow to the Plant increases over the life of the consent. This is because the management activities, in particular the improvements in ventilation set out in Table 4, will be sufficient to ensure that odorous compounds are more effectively dispersed in the plume that leaves the discharge stack at a significantly increased velocity.

As stated above, it is considered very unlikely that odours at or beyond the WWTP boundary would ever be offensive or objectionable. Through regular equipment maintenance, the WWTP will continue to operate appropriately and the proposed OMP will ensure that the odour management practices are formalised, documented and transparent.

6 Alternatives

The replacement of the existing Porirua WWTP consents is currently being undertaken, as described in this application document. A number of upgrade options were considered in preparation for the wastewater discharge consent application. It is noted that none of the short-listed options provided for any changes to the actual treatment processes at the WWTP itself. Therefore, none of the short-listed options are likely to have significant impacts on odour.

Table 4 sets out the reasonable range of options available to manage and mitigate the effects of the discharges to air from the Porirua WWTP.

Table 5 - Potential Alternatives

Option	Description	Comments / Evaluation
Maintain status quo	The WWTP currently has negligible impacts on the environment beyond the boundary with respect to odour emissions. Maintaining the status quo is justifiable given the lack of current off-site impacts.	If flows increase in the future this could increase the concentrations of odorous compounds; however, the improvements to ventilation described in section 5.2 above will ensure the continued and probably enhanced mitigation of any odour impacts.
Options associated with upgrades to the WWTP	Increase the discharge stack height to further assist dispersion of extracted odorous air from within the main building.	No negative connotations, apart from a relatively minor cost of the order of $10,000 or so. Given the absence of odour impacts beyond the WWTP boundary however there would be no benefits from this stack height increase.
	Pass all extracted air currently leaving the main building via the discharge stack through a suitably sized and located biofilter to treat and mitigate odorous components of the discharge.	No negative impacts, except for a significant cost (of the order of $250,000 minimum) for a new plant item that is not justified by the negligible adverse impacts currently being caused by the WWTP discharge to air.
	Improve the efficiency and effectiveness of ventilation under the milliscreen hoods in the main building, as proposed by Connect Water in their 2017 report.	Such improvements are part of good corrosion management, as well as having a positive impact on the Health & Safety environment for workers within the main building and on continuing mitigation of odour.
	Providing baffles as energy-dissipating structures to reduce turbulence in inflows or other physical measures to further limit the extent of agitation of incoming liquid flows to the WWTP and thus minimise the release of gaseous odorous compounds, particularly at the inlet works.	There may only be limited improvements of this nature that can be made and the gains in terms of enhanced moderation of turbulent flows are unlikely to lead to an appreciable further decrease in emissions of odorous compounds.
WWTP management options	As proposed in the draft consent conditions, prepare an Odour Management Plan for the operation and maintenance of all plant and equipment items and the conduct of all procedural matters at the WWTP that are relevant to odour control and mitigation.	No negative connotations – the management of odour at the WWTP is producing good results but the formal recognition of relevant procedures and operational and maintenance matters is now part of best practice in odour management at New Zealand WWTPs.
	The importance of the forested hillsides surrounding the WWTP to the creation of turbulent air flows and ensuing mitigation and dispersion of odours cannot be overstated. It is important to continue to plant replacements where natural attrition has caused damage or death of trees.	Eventually the forested slopes will need to be harvested; this should be carried out on a planned basis based on selective logging principles to maintain a healthy and effective tree cover at all times. The basis of a selective logging approach should be included for guidance as a specific section within the Odour Management Plan (and probably repeated in the site's Operations and Maintenance (O&M) Plan).

It is concluded that the combination of:

- the status quo for odour management
- the various improvements that have either been made or are currently in progress (as discussed in section 5 above)
- An Odour Management Plan, which addresses (among other things) the management of the forested hillsides surrounding the WWTP

represents the best practicable option (BPO), as defined in the RMA, of managing the discharge of odour to air from the Porirua WWTP.

None of the options associated with upgrades to the WWTP listed above have been determined to be the BPO. This is because these options go well beyond the level of mitigation that is necessary relative to the potential adverse effects of the proposal, and because the cost of these options is not commensurate with the potential adverse effects of the proposal.

7 Statutory Considerations

7.1 Section 104 of the Resource Management Act 1991

Before making a decision on a discretionary activity pursuant to Section 104B of the RMA, Council must consider the proposal in terms of Section 104 of the RMA. Section 104 of the RMA outlines the matters that the consent authority is required to have regard to when considering consent applications. The matters relevant to these applications are discussed in the following sections.

7.1.1 Section 104(1)(a) RMA: Actual and Potential Environmental Effects

The actual and potential adverse effects are assessed in Section 6 of this application. The AEE has assessed the potential effects of odour beyond the WWTP site boundary as being no more than minor. The implementation of an OMP will ensure that effects continue to be adequately mitigated.

It is considered that the effects have been assessed in a level of detail that corresponds with the scale and significance of the potential significance of the adverse effects of the proposal. It is not considered that atmospheric dispersion modelling is therefore required.

7.1.2 Section 104(1)(b)(i) RMA: National Environmental Standard(s)

The Resource Management (National Environmental Standards for Air Quality) Regulations 2004 and the Amendment Regulations 2011 set a guaranteed minimum level of health protection for all New Zealanders. The NES includes standards for banning activities that discharge significant quantities of dioxins and other toxics into the air, and standards for ambient (outdoor) air quality. However, the NES does not specifically address odour and is therefore not directly relevant to this application.

7.1.3 Section 104(1)(b)(ii) RMA: Other Regulations

There are no other regulations relevant to this application.

7.1.4 Section 104(1)(b)(iii) RMA: National Policy Statement(s)

The New Zealand Coastal Policy Statement 2010 relates to this application.

Objective 4
To maintain and enhance the public open space qualities and recreation opportunities of the coastal environment by:

- *Recognising that the coastal marine area is an extensive area of public space for the public to use and enjoy.*

Objective 6
To enable people and communities to provide for their social, economic, and cultural wellbeing and their health and safety, through subdivision, use, and development, recognising that:

…

- *The protection of the values of the coastal environment does not preclude use and development in appropriate places and forms, and within appropriate limits.*
- *Some uses and developments which depend upon the use of natural and physical resources in the coastal environment are important to the social, economic and cultural wellbeing of people and communities.*
- *Functionally some uses and developments can only be located on the coast or in the coastal marine area.*

Policy 6: Activities in the coastal environment

1. In relation to the coastal environment:
- *a. recognise that the provision of infrastructure, the supply and transport of energy including the generation and transmission of electricity, and the extraction of minerals are activities important to the social, economic and cultural well-being of people and communities;*
- *b. consider the rate at which built development and the associated public infrastructure should be enabled to provide for the reasonably foreseeable needs of population growth without compromising the other values of the coastal environment;*
- *c. encourage the consolidation of existing coastal settlements and urban areas where this will contribute to the avoidance or mitigation of sprawling or sporadic patterns of settlement and urban growth;*
- *d. recognise tangata whenua needs for papakāinga[3], marae and associated developments and make appropriate provision for them;*
- *e. consider where and how built development on land should be controlled so that it does not compromise activities of national or regional importance that have a functional need to locate and operate in the coastal marine area;*
- *f. consider where development that maintains the character of the existing built environment should be encouraged, and where development resulting in a change in character would be acceptable;*
- *g. take into account the potential of renewable resources in the coastal environment, such as energy from wind, waves, currents and tides, to meet the reasonably foreseeable needs of future generations;*
- *h. consider how adverse visual impacts of development can be avoided in areas sensitive to such effects, such as headlands and prominent ridgelines, and as far as practicable and reasonable apply controls or conditions to avoid those effects;*
- *i. set back development from the coastal marine area and other water bodies, where practicable and reasonable, to protect the natural character, open space, public access and amenity values of the coastal environment; and*
- *j. where appropriate, buffer areas and sites of significant indigenous biological diversity, or historic heritage value.*

2. Additionally, in relation to the coastal marine area:

a. *recognise potential contributions to the social, economic and cultural wellbeing of people and communities from use and development of the coastal marine area, including the potential for renewable marine energy to contribute to meeting the energy needs of future generations;*
b. *recognise the need to maintain and enhance the public open space and recreation qualities and values of the coastal marine area;*
c. *recognise that there are activities that have a functional need to be located in the coastal marine area, and provide for those activities in appropriate places;*
d. *recognise that activities that do not have a functional need for location in the coastal marine area generally should not be located there; and*
e. *promote the efficient use of occupied space, including by:*
    i. *requiring that structures be made available for public or multiple use wherever reasonable and practicable;*
    ii. *requiring the removal of any abandoned or redundant structure that has no heritage, amenity or reuse value; and*
    iii. *considering whether consent conditions should be applied to ensure that space occupied for an activity is used for that purpose effectively and without unreasonable delay.*

The discharge of odour from the WWTP does not have adverse effects on activities occurring within, and values of the coastal environment. The management of the WWTP, which minimises the generation of odour and the nature of the prevailing winds means that any adverse effects, including on recreation activities occurring near the plant are very unlikely.

7.1.5 Section 104(1)(b)(v) RMA: Wellington Regional Policy Statement

The Wellington Regional Policy Statement (RPS) sets the regional priorities for the Wellington Region.

The following provides an assessment of the activity against the relevant objectives and policies of the RPS.

3.1 Air quality

Objective 1
Discharges of odour, smoke and dust to air do not adversely affect amenity values and people's wellbeing.

The RPS policies that implement this objective are directed at the contents of regional and district plans, i.e. there is not a policy which guides the consideration of resource consent applications.

Notwithstanding the primary focus on the RPS is on plan direction, it is noted that the Porirua WWTP is optimally situated in a gully that provides excellent buffering to the nearest residential areas at Pikarere Street and Moki Street (Figure 1). The surrounding heavily pine-forested ridges that enclose the plant effectively contain any odour emissions and contribute to turbulent airflows which assist with further dilution (Figure 13).

As discussed under section 6 of this report, odours observed at the WWTP site boundary are not described as offensive or objectionable. Overall, the discharges of odour from the site do not adversely affect the amenity values or people's wellbeing in the area.

3.3 Energy, infrastructure and waste

Objective 10
The social, economic, cultural and environmental, benefits of regionally significant infrastructure are recognised and protected.

Policy 39: *Recognising the benefits from renewable energy and regionally significant infrastructure – consideration*

The Porirua WWTP is an important physical resource, which contributes to the social and economic wellbeing, and health of the Porirua community. The air discharges associated with this infrastructure, and which are the subject of this application, are integral to the wastewater treatment system.

7.1.6 Section 104(1)(b)(vi): Regional Air Quality Management Plan for the Wellington Region (RAQMP)

The following provides an assessment of the activity against the relevant objectives and policies of the RAQMP.

Objectives

4.1.1 *High quality air in the Region is maintained and protected, degraded air is enhanced, and there is no significant deterioration in ambient air quality in any part of the Region.*

4.1.2 *Discharges to air in the Region are managed in a way, or at a rate which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while ensuring that adverse effects, including any adverse effects on:*

- *local ambient air quality;*
- *human health;*
- *amenity values;*
- *resources or values of significance to tangata whenua;*
- *the quality of ecosystems, water, and soil; and*
- *the global atmosphere;*

are avoided, remedied or mitigated.

Policies – General ambient air quality management

4.2.4 *To avoid, remedy or mitigate any adverse effect of the discharge of contaminants to air that is noxious, dangerous, offensive, or objectionable.*

4.2.5 *To avoid or minimise, where appropriate and practicable, the discharge of contaminants to air at their source.*

4.2.7 *To avoid, remedy or mitigate the adverse effects of the discharge of contaminants to air on amenity values.*

4.2.9 *To give particular consideration, where relevant, to the following matters when assessing an application for a resource consent to discharge contaminants to air:*

(1) *the volume, composition and characteristics of the discharge, including the maximum ground level concentration of significant contaminants in the discharge, especially hazardous contaminants identified in Appendix 1 and any contaminants listed in Appendix 2;*

(2) *the frequency, intensity, duration, offensiveness, location and time of the discharge;*

(3) *the potential for the discharge to be reduced at source, and in particular, the desirability of minimising the emission of any of the "Hazardous Air Contaminants" identified in Appendix 1;*

(4) *any actual or potential effects of the discharge on human health and safety;*

(5) *any actual or potential effects of the discharge on amenity values, including any effects of odour or particulate matter arising from the discharge;*

(6) *any actual or potential effects of the discharge on resources or values of significance to tangata whenua;*

(7) *any actual or potential effects of the discharge on the health and functioning of ecosystems, plants and animals, including indigenous ecosystems and plants and animals of commercial significance;*

(8) *any actual or potential effects of the discharge on other environmental media;*

(9) *any actual or potential effects on the global atmosphere;*

(10) *any cumulative effects which may arise over time or in combination with other effects;*

(11) *any effects of low probability but high potential impact;*

(12) *any positive effects arising from activities associated with the discharge; and*

(13) *any other relevant matters*

The proposed replacement discharge permit will not change the existing situation on the site, maintaining the existing high-quality air in the area. The Assessment of Effects provided for in Section 5 of the report, has assessed the effects of the discharge of odour from the site and concluded that these effects will be minor. It was considered very unlikely that odours at or beyond the WWTP boundary would ever be such as to be assessed as offensive or objectionable. Through regular equipment maintenance, the WWTP will continue to operate appropriately and an OMP will be prepared to further avoid or mitigate potential effects.

There will thus be no residual adverse effect that is noxious, dangerous, offensive, or objectionable

7.1.7 Section 104(1)(b)(vi) RMA: Proposed Natural Resources Plan

The following provides an assessment of the activity against the relevant objectives and policies of the PNRP.

Objectives
3.2 Beneficial use and development

Objective 012

The social, economic, cultural and environmental benefits of regionally significant infrastructure and renewable energy generation activities are recognised.

Policy P12: Benefits of regionally significant infrastructure and renewable electricity generation facilities.

(a) The location of existing infrastructure and structures

(e) operational requirements associated with developing, operating, maintaining and upgrading regionally significant infrastructure and renewable energy generation activities.

Policy P13: Existing regionally significant infrastructure and renewable electricity generation facilities.

The use, operation, maintenance, and upgrade of existing regionally significant infrastructure and renewable energy generation activities are beneficial and generally appropriate.

The Porirua WWTP is a regionally significant piece of infrastructure. The assessment of effects demonstrates that the discharge of odour from the site is less than minor. The existing use of the plant will continue to operate in an appropriate manner to ensure any potential adverse environmental effects are avoided, remedied or mitigated.

3.8 Air Quality

Objective O39
Ambient air quality is maintained or improved to the acceptable category or better in Schedule L1 (ambient air).

Objective O40
Human health, property, and the environment are protected from the adverse effects of point source discharges of air pollutants.

Objective O41
The adverse effects of odour, smoke and dust on amenity values and people's well-being are minimised.

Policies

Policy P52: Managing ambient air quality Ambient air quality shall be managed to protect human health and safety by:

…

(c) managing the discharge of other contaminants so that the adverse effects on human health, including cumulative adverse effects, are minimised.

Policy P58: Industrial discharges: Industrial point source discharges and fugitive emissions into air will be minimised by using good management practices.

Policy P55: Managing air amenity: Air quality amenity in urban, rural and the coastal marine areas shall be managed to minimise offensive or objectionable odour, smoke and dust, particulate matter, fumes, ash and visible emissions.

As stated above, the proposed replacement discharge permit will not change the existing situation on the site. The AEE provided for in Section 6 of the report, has assessed the effects of the discharge of odour from the site and concluded that effects were minor and will be adequately mitigated through regular maintenance and through the implementation of an OMP. The lack of complaints about the WWTP is a clear indication that impacts on local amenity values and people's well-being is, and will continue to be, less than minor.

As such, the high-quality air in the region will be maintained and any potential adverse effects on human health, property and the environment are minor and human health is protected.

7.2 Section 105 of the Resource Management Act 1991

For any discharge permit, under section 105 of the RMA, Council must, in addition to the matters in section 104(1) (as assessed above) have regard to the following matters:

7.2.1 Section 105(1)(a) RMA: The nature of the discharge and the sensitivity of the receiving environment to adverse effects;

As set out in section 5 of this report, the environmental impacts of the discharge of odour to air have been assessed as less than minor. The nature of the receiving environment is that of a dynamic coastal location with consistently windy conditions, the plant itself being located in an incised gully with heavily forested side slopes, and a considerable distance of at least 500 metres to the nearest

residences. Given these circumstances it is considered very unlikely that odours at or beyond the WWTP boundary would ever be such as to be assessed as offensive or objectionable.

7.2.2 Section 105(1)(b) RMA: The applicant's reasons for the proposed choice; and

The environmental effects of the status quo have been assessed as representing the best practicable option for the discharge of odour to air, and it has been determined that any environmental impacts of the discharge of odour are minor. It is considered very unlikely that odours at or beyond the WWTP boundary would ever be such as to be assessed as offensive or objectionable. Through regular equipment maintenance, the WWTP will continue to operate appropriately and an OMP will be prepared to further mitigate any potential effects.

As such, this choice has been chosen as the preferred option.

7.2.3 Section 105(1)(c) RMA: any possible alternative methods of discharge, including discharge into any other receiving environment.

Section 6 of this report provides an assessment of alternatives to the discharge, which assess a number of options associated with upgrades to the WWTP and any consequent effects.

7.3 Part 2 of the Resource Management Act 1991

Within Part 2 of the RMA, Section 5 outlines the Act's purpose. Section 6 sets out matters of national importance, section 7 outlines 'other' matters and section 8 requires those exercising function and powers under the RMA to take into account the principles of the Treaty of Waitangi.

To meet the requirements of Schedule 4, the table below provides an assessment of how the activity aligns the requirements of Part 2 of the RMA.

Table 6: Part 2 Assessment

Provision	Assessment
Section 5	
In this Act, sustainable management means managing the use, development and protection of natural and physical resources in a way or at a rate that allows people and communities to provide for their social, economic and cultural wellbeing and for their health and safety, while….	The Porirua wastewater system is an important physical resource, which contributes to the social and economic wellbeing, and health and safety of the Porirua community. The air discharge, which is the subject of this application, is integral to the wastewater system.
Section 5(2)(a)	
Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations.	It is considered that the assessment of effects demonstrates that the discharge of odour will not adversely affect the potential of natural and physical resources from being sustained to meet the reasonably foreseeable needs of future generations.
Section 5(2)(b)	
Safeguarding the life-supporting capacity of air, water, soil, and ecosystems.	The assessment of effects demonstrated that the life-supporting capacity of the air will be safeguarded as any potential effects are minor.

Provision	Assessment
Section 5(2)(c)	
Avoiding, remedying or mitigating any adverse effects of activities on the environment.	The assessment of environmental effects determined that any environmental impacts of the discharge of air were minor and the renewal of the discharge to air permit will allow for the ongoing operation of the Porirua WWTP. It is noted that the operation of the existing discharge to air permit has not resulted in any complaints. Through regular equipment maintenance, the WWTP will continue to operate appropriately, and any potential effects on the environment will continue to be no more than minor. An OMP will be prepared to further mitigate potential effects.
Section 6(e) and Section 7(a)	
The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.	Porirua City Council and Wellington Water are working with Te Runanga o Toa Rangatira Inc to develop mechanisms to mitigate the effects of the WWTP on values of significance to Ngāti Toa Rangatira. This is likely to include a Kaitiaki Monitoring Plan.
Kaitiakitanga	It is noted that the effects of concern are directly related to the wastewater discharge and the presence of the WWTP.
Section 7(b)	
The efficient use and development of natural and physical resources.	With regard to Section 7 'Other Matters', this proposal is an efficient use of the physical environment as it is utilising existing infrastructure and continuing an existing situation, by renewing the current discharge to air consent.
Section 7(c)	
The maintenance and enhancement of amenity values.	As discussed under section 5 of this report, odours observed at the WWTP site boundary are not assessed as offensive or objectionable. The amenity values experienced in the area are not adversely impacted by the proposal. It is noted that no complaints have been received about the discharge during its operation which clearly signals that it does not adversely impact on amenity values in the surrounding area.
Section 7(f)	
Maintenance and enhancement of the quality of the environment.	The Assessment of Effects provided for in Section 5 of the report, has assessed the effects of the discharge of odour from the site and concluded that effects of granting the application will be minor. Ongoing maintenance and the implementation of an OMP will ensure that the discharge of odour from the WWTP will be minimised and mitigated through regular maintenance. The proposed renewal of the discharge to air permit will not change the existing situation on the site. It is anticipated that conditions of consent will continue to ensure any effects of odour remain minor, maintaining the existing quality of the environment.

Overall its considered that the proposed activity is consistent with the provisions of Part 2 of the Resource Management Act.

8 Consultation

Wellington Water has undertaken three elements of consultation to inform this resource consent application. These were:

1. A meeting with Dan Stevenson, owner of the rural property the adjoins the western and southern boundaries of the WWTP site
2. A street meeting to which residents and property owners from the residential area to the east of the WWTP site were invited
3. A meeting with representatives of Ngāti Toa.

8.1 Meeting with Dan Stevenson

On Tuesday the 10th of December 2019, Anna Hector (Wellington Water) Nico Robins (Veolia) and Richard Peterson (Stantec) met with Dan Stevenson at the Porirua WWTP. Key matters discussed were:

- The history of the WWTP and current resource consent conditions relating to odour
- The treatment process at the Plant, proposed capacity upgrades, and the potential sources of odour
- The infrequent and minor nature of odour currently arising from the Plant
- The possibility for odour to increase in the future as inflow increases due to population growth
- Potential mitigation measures should odour increase in the future.

In relation to these final two points, Anna Hector noted that the applicant would propose conditions requiring an Odour Management Plan and the investigation of further mitigation measures if odour effects and associated complaints increase in the future.

8.2 Street Meeting

A street meeting was held from 6 – 7 pm on the 17th of December 2019. Anna Hector (Wellington Water) and Richard Peterson (Stantec) set up on Moki Street, adjoining the entrance to the WWTP site.

Invites to the meeting were placed in letter boxes of all houses on Mako View, Moki Street, Tikati View and from 91 to 132 Pikarere Street. Letters were also sent to the owners of any of these properties for which the mailing address on Porirua City Council's database differed from the physical address. One resident attended the meeting. Key matters that were discussed in relation to this resource consent application were:

- The infrequent and minor nature of odour currently arising from the Plant
- That in the view of the resident the infrequent odour is acceptable
- The transport of sludge to and from the Plant and whether the frequency of truck movements would increase in the future
- How the potential for increased truck movements is limited by the capacity of the Spicer landfill
- The potential for a sludge drier to be installed at the Plant, which would reduce the volume of sludge generated by the Plant and therefore help to mitigate the potential increase in truck movements.

In relation to this last point, the resident was concerned that the sludge drier may generate unacceptable levels of odour. Anna Hector noted that if a drier was installed at the Plant, odour mitigation measures would need to be installed along with it.

Following the street meeting an email was received by Wellington Water from a resident who was unable to attend. The resident expressed concern about the transport of sludge to and from the Plant,

specifically that while the sludge bins are covered when the trucks leave the Plant and they are often not covered when they return. The resident is therefore concerned about the potential for residual hazardous materials and odour to leak from the bins on the return trip.

Following this email comment, and the similar comment made at the street meeting, Wellington Water has confirmed with their operator (Veolia) that the bins should be covered on the return trip. Veolia will ensure that their drivers are aware of this. In addition, a clause specifically relating to the management of the sludge bins has been included in the proposed Odour Management Plan condition.

8.3 Meeting with Ngāti Toa representatives

A draft version of this application was provided to Te Runanga o Toa Rangātira. At a meeting on February 11, 2020 representatives of the Runanga indicated that they were comfortable with the application.

9 Notification

Porirua City Council requests that this application be notified in conjunction with the application for the discharge of treated wastewater to the coastal marine area.

10 Consent Duration Considerations

Section 123 of the Act sets out the resource consent duration provisions and sets a maximum 35-year duration for resource consents such as that sought in this application.

Court decisions provide guidance on the factors that should be considered in determining consent duration. These include:

- Potential environmental risks
- Uncertainty / certainty
- Investment security

The potential adverse effects of the proposal have been assessed as being less than minor. Further, as no major changes to the treatment process are proposed as part of the corresponding wastewater discharge consent application, there is little uncertainty about the nature and magnitude of the potential adverse odour effects over the next 20 years. In this respect the assessment of effects has concluded that the magnitude of effect is very unlikely to increase as inflow to the Plant increases over the life of the consent. This is because the management activities, in particular the improvements in ventilation set out in Table 3, will be sufficient to ensure that odorous compounds are more effectively dispersed in the plume that leaves the discharge stack.

Notwithstanding this conclusion Porirua City Council also proposes that an Odour Management Plan be required as a condition of consent (see section 11 for further details) and be reviewed at five yearly intervals. This provide even greater certainty that the potential odour effects will be maintained at the levels assessed in this application.

With respect to investment security, it is noted that consideration of a replacement consent application must consider the investment in a development in accordance with Section 104(2A) of the RMA. This state:

> ***104 Consideration of applications***
> *(2A) When considering an application affected by section 124 or 165ZH(1)(c), the consent authority must have regard to the value of the investment of the existing consent holder.*

Porirua City Council is applying for a 20-year term for the discharge of contaminants to air at the Porirua WWTP. Porirua City Council and its ratepayers have invested in a substantial and significant infrastructure asset in terms of the existing WWTP. It is important that Council has financial security for this substantial infrastructural asset and is also able to provide future flexibility to accommodate domestic and business / trade waste growth.

Given these factors it is considered that a 20-year duration is appropriate for the air discharge permit.

11 Draft Consent Conditions

Porirua City Council anticipates that a suite of conditions will be imposed on the air discharge permit. The following sets out proposals for key consent conditions.

11.1 Effects compliance & monitoring

The key environmental outcome anticipated under this consent is the continued achievement of no offensive or objectional odour at or beyond the boundary of the property on which the WWTP is located. It is therefore recommended that the requirement for this is confirmed in the consent conditions.

The current corresponding condition in the existing permit includes the terms noxious and dangerous. These terms are not included in the proposed conditions below as it is considered appropriate to align the compliance requirements with commonly accepted 'FIDOL' factors for assessment. The FIDOL factors do not cover factors that are "noxious" and "dangerous", and those terms are not considered necessary in relation to the known effects of the activity.

Note conditions 3 and 4 below are linked to the content of the proposed Odour Management Plan addressed in the following section.

1. *There shall be no discharges of odour to air that are offensive or objectionable at or beyond the boundary of the property on land whose legal description is Lot 1 DP 62407.*

2. *If Lot 1 DP 62407 is subdivided, there shall be no discharges to air that are offensive or objectionable at or beyond the boundary of that land owned by the permit holder wherein the Porirua Wastewater Treatment Plant is located.*

3. *The permit holder shall keep a record of any complaints received. The complaints will be forwarded to the Manager, Environmental Regulation, Wellington Regional Council, within twenty-four hours of the complaint being received by the permit holder. The permit holder shall endeavour to record the complainants name, time of the incident, wind direction and speed, as well as the plant operating conditions at the time of the complaint.*

4. *Any incident that may cause or has caused adverse effects on the environment at or beyond the site boundary shall be notified to the Manager, Environmental Regulation, Wellington Regional Council, within twenty-four hours. This includes any incidents that result in complaints. A written report detailing the reasons for the incident, measures to mitigate the incident and measures to prevent recurrence shall be forwarded to the Manager, Environmental Regulation, Wellington Regional Council, within seven working days.*

11.2 Odour Management Plan

A key part of the proposal, and a key amendment from the conditions on the existing consent, is the development and implementation of an Odour Management Plan (OMP). The following proposed condition sets out the objective for, and required contents of, the OMP. The proposed condition identifies GWRC's role in certifying that the Plan meets the requirements of the condition and also sets out a review process. In relation to this review process it is noted that OMP reviews are proposed at set five yearly intervals and when there is a material change to the plant operation or equipment, which could have implications for the management of odour.

The consent holder shall prepare an Odour Management Plan (OMP). The objective of the OMP shall be to provide a framework for the operation and management of the wastewater

treatment plant to ensure that odours are minimised and properly managed to ensure compliance with the conditions of this consent. The contents of the OMP shall include:

i. *A plant description, including discussion of each individual treatment plant element and its function, supported by a layout plan*

ii. *On-site odour monitoring requirements and boundary surveys*

iii. *Plant management procedures relevant to odour control, including procedure relevant to the transport of potentially odorous material to and from the WWTP*

iv. *Contingency measures to deal with plant malfunctions*

v. *A framework for the management and / or selective harvesting of the forested slopes surrounding the WWTP to maintain a healthy and effective tree cover at all times.*

vi. *Staff responsibilities and training*

vii. *A complaints procedure, including actions on receipt of complaints and associated reporting requirements*

viii. *The requirements of the consent conditions with respect to odour management, including requirements to review and update the Odour Management Plan.*

Within 3 months of the granting of this consent, the Odour Management Plan shall be lodged with the Wellington Regional Council. The OMP shall be reviewed and an updated version lodged with Wellington Regional Council on the 5th, 10th and 15th anniversary of the consent being granted, or otherwise in advance of any material change to the operation of the plant, or upgrades to or addition of treatment plant elements, which could have implications for management of odour from the WWTP.

The Plant shall be operated in accordance with the Odour Management Plan.

12 Conclusion

Porirua City Council is applying for resource consent to renew the discharge to air permit at the Porirua WWTP. A 20-year term is being applied for due to the minor nature of potential adverse effects, and due to there being a high degree of certainty that these effects will not change over a 20-year timeframe. The time frame also provides certainty for the management of this regionally significant infrastructure. It is also considered to be consistent with planning instruments.

The proposal requires resource consent under the RAQMP and PNRP as a discretionary activity.

Any actual or potential adverse environmental effects of the proposal have been determined to be less than minor and a positive effect will allow for the ongoing operation of the WWTP. The proposal is consistent with the objectives and policies of the relevant planning documents, including Part 2 of the RMA.

Appendix A: **Certificate of title**

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **WN33A/853**
Land Registration District **Wellington**
Date Issued 30 September 1988

Prior References
WN20B/479 WN809/27

Estate Fee Simple
Area 50.6630 hectares more or less
Legal Description Lot 1 Deposited Plan 62407

Registered Owners
The Porirua City Council

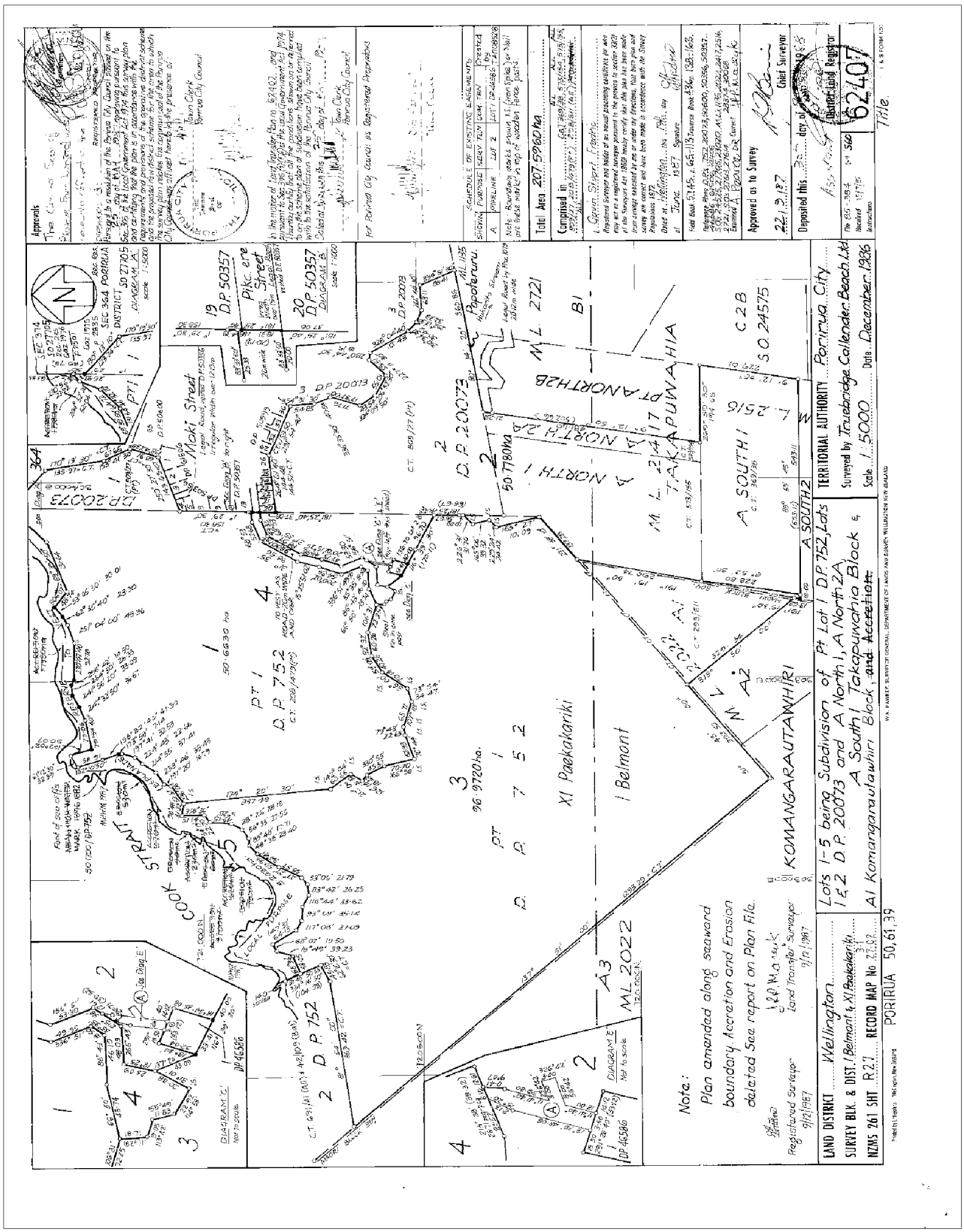
Interests

Subject to Section 5 Coal Mines Act 1979 (affects land formerly in CT WN20B/479)

Subject to Section 8 Mining Act 1971 (affects land formerly in CT WN20B/479)

9099232.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - 19.6.2012 at 12:36 pm

Identifier **WN33A/853**



Appendix B: **GWRC s124 Memo**

MEMO

TO	Jude Chittock
FROM	Hugh Dixon-Paver
DATE	3 May 2019
FILE NUMBER	WGN980083

Approval of receipt of application between 6 and 3 months prior to consent expiry – Porirua Wastewater Treatment Plant – renewal of consent WGN980083 – section 124 of the RMA

Background

Wellington Water Limited (WWL) operate the Porirua Wastewater Treatment Plant (WWTP) on behalf of Porirua City Council, under consent suite WGN980083. Two of the consents expire in 2020 (see table 1 below). Section 124(1)(d) of the Act requires the consent renewal application required to be lodged 6 months prior to consent expiry, unless the consent authority exercises its discretion to allow the application to be lodged during the period 6 months prior to expiry to 3 months prior to expiry per section 124(2) of the Act.

WWL are currently engaged with GWRC (and others) in an extensive collaborative project regarding the entire wastewater network and the WWTP.

Following discussion with GWRC and based on the volume and complexity of information required for this application; WWL have formally applied to GWRC for approval to lodge the consent renewal application within the period 6-3 months prior to the expiry of the current consent, in accordance with section 124(2) of the Act, specifically section 124(2)(d).

Under section 124(2)(e) of the Act, GWRC may, at its discretion, allow the consent holder to continue to operate under the existing consent during this period until a new consent is either granted or declined, and all appeals are determined.

Table 1. Existing consents with expiry dates and proposed lodgement dates

Consent number	Purpose	Expiry date	Proposed lodgement date
980083 [33805]	To discharge treated wastewater to the Coastal Marine Area	6 July 2020	**By 6 April 2020**
980083 [1536]	To discharge contaminants to air	31 May 2020	**By 28 February 2020**

Pursuant to section 124(2)(e) of the Act, GWRC hereby exercises its discretion to allow the consent holder to continue to operate under the existing consent WGN980083 [33805] and [1536] during this period until a new consent is either granted or declined, and all appeals are determined.

Lodgement of the application(s) shall occur no later than the proposed lodgement date referred to in Table 1 above.

By way of approving the recommendations of this memorandum, please sign below.

Hugh Dixon-Paver
Resource Advisor
Environment Management

Jude Chittock
Team Leader
Environment Management

Appendix C: **Pikarere Farm Subdivision Scheme Plan**

SCHEDULE OF EXISTING EASEMENTS

PURPOSE	SHOWN AS	SERVIENT TENEMENT	DOMINANT TENEMENT	INSTRUMENT DOCUMENT
ROW	A on DP 373530	LOT 7 DP 373530 ON CFR 296897	LOT 1 DP 373530 CFR 296892	8309921.7

SCHEDULE OF EASEMENTS TO BE DISCHARGED

PURPOSE	SHOWN AS	SERVIENT TENEMENT	DOMINANT TENEMENT	INSTRUMENT DOCUMENT
ROW	A on DP 62408	Lot 3 DP 62408 WN33A/859	Lot 4 DP 62408 WN334/857; LOT 4 DP 62408 - SCENIC RESERVE	EI 8309921-6
ROW	B on DP 62408	Lot 3 DP 62408 WN33A/859	Lot 4 DP 62408 - SCENIC RESERVE	ENC 5316108.6
ROW	B on DP 373530	Lot 3 DP 62408 WN33A/859	Lots 1 CFR 296892; Lot 2 DP 373530 CFR 296893; Lot 3 DP 373530 CFR 296894; Lot 4 DP 373530 CFR 296895; Lot 7 DP 373530 CFR 296897	EI 8309921.7
ROW	C on DP 373530	Lot 7 DP 373530 CFR 296897	Lot 1 DP 373530 CFR 296892; Lot 2 DP 373530 CFR 296893; Lot 3 DP 373530 CFR 296894; Lot 4 DP 373530 CFR 396895	EI 8309921.7

PROPOSED SCHEDULE OF EASEMENTS

		STAGE 1		STAGE 2	
PURPOSE	SHOWN AS	SERVIENT TENEMENT	DOMINANT TENEMENT	SERVIENT TENEMENT	DOMINANT TENEMENT
ROW, TELECOMMUNICATIONS, POWER	I	Lot 4	Lot 5	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	J	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 4 (in respect of telecommunications and power only), 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 3, 4 (in respect of telecommunications and power only), 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	K	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	L	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	M	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 (Stage 2), 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	N	Lots 1, 9, 10 & 13	Lots 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER	O	Lot 7 DP 373530 and Lots 11 & 12	Lot 6 and Lots 1, 2 & 4 on DP 373530	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER	P	Lot 7 DP 373530 and Lots 11 & 12	Lots 1, 2 & 4 on DP 373530	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER	Q	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530

AMALGAMATION SCHEDULE

	"AMALGAMATION CONDITION"
Lot 1 (Stage 1) and Lots 9, 10 & 13	"That Lots 1, 9, 10 & 13 are held together in one CFR"
Lots 3 & 8 (Stage 1)	"That Lots 3 & 8 are held together in one CFR"
Lot 7 DP 373530 and Lots 11 & 12 (Stage 1)	"That Lot 7 DP 373530 and Lots 11 & 12 are held together in one CFR"
"REQUEST NUMBER IS 1383375 AND THIS SHALL BE RECORDED ON THE TRANSFER PLAN FOR THIS STAGE UNDER 5.223 OF THE RESOURCE MANAGEMENT ACT"	

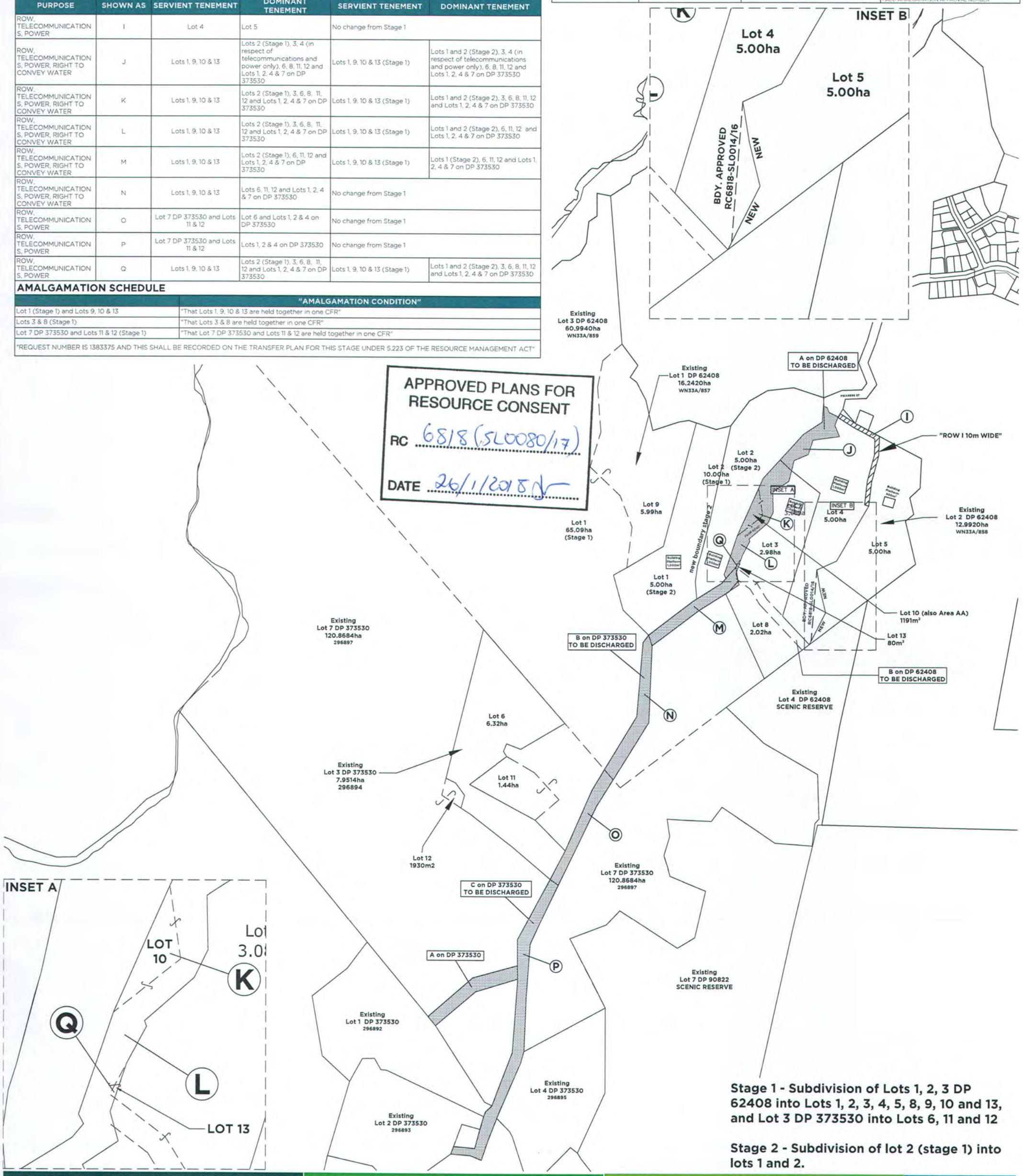
AMENDMENTS TO DATE

TYPE	PLAN REFERENCE	PLAN NAME	COMMENTS
SCHEME	DP PIK 1 REV 06 04/07/16	DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION, DATE STAMPED "FINAL APPROVED PLAN RC6818 5/03/15"	LODGED WITH DP PIK1 - REV 05
AERIAL OVER SCHEME	DP PIK 1 REV 06B 24/10/17	"LODGED AS ISA" DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION.	LODGED WITH DP PIK1 - REV 05B
AERIAL OVER SCHEME	DP PIK 1 REV 06C 09/11/17	DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION.	- CORRECT SCHEDULE OF EASEMENTS SHOWING STAGING WHICH WAS APPROVED UNDER ORIGINAL COUNCIL DECISION RC6818 AND SUBSEQUENT VARIATION - MINOR CHANGES TO CORRECT ERRORS TO SCHEDULE OF EXISTING EASEMENTS AND PROPOSED EASEMENTS - ADD AMALGAMATION SCHEDULE AS PER ORIGINAL FINAL SCHEDULE PLAN WITH CHANGES MADE BY VARIATION
SCHEDULE CORRECTION	DP PIK 1 REV 06C 09/11/17		MINOR CHANGES TO CORRECT ERRORS TO AMALGAMATION SCHEDULE AND IN ROW O & P TO SHOW LOTS 11 & 12 AS HAVING SERVIENT TENEMENT RIGHTS
ADDITIONS & TITLE CHANGE	DP PIK 1 REV 06D 15/12/17	SCHEME	- ADD TABLE "SCHEDULE OF EASEMENTS TO BE DISCHARGED" - ADD TITLE REFERENCES TO LOTS - CHANGE TITLE OF "SUBDIVISION PLAN" TO "SCHEME PLAN" - CORRECT EASEMENT M - DOMINANT TENEMENT RIGHTS - ADD EASEMENT 'Q' FOR LOT 13 - ADD AMALGAMATION APPROVAL NUMBER

APPROVED PLANS FOR RESOURCE CONSENT

RC 6818 (SL0080/17)

DATE 26/1/2018



Stage 1 - Subdivision of Lots 1, 2, 3 DP 62408 into Lots 1, 2, 3, 4, 5, 8, 9, 10 and 13, and Lot 3 DP 373530 into Lots 6, 11 and 12

Stage 2 - Subdivision of lot 2 (stage 1) into lots 1 and 2.

PREPARED BY LANDMATTERS

CLIENT: PIKARERE FARM LIMITED

PROJECT: SCHEME PLAN
RURAL RESIDENTIAL SUBDIVISION
AND BOUNDARY ADJUSTMENT

DATE 15/12/17 | PROJECT NO. J271

SCALE 1:4,000 @ A1
1:8,000 @ A3

DRAWING NO. DP PIK1 - 06 | REV [D]

SCHEDULE OF EXISTING EASEMENTS

PURPOSE	SHOWN AS	SERVIENT TENEMENT	DOMINANT TENEMENT	INSTRUMENT DOCUMENT
ROW	A on DP 373530	LOT 7 DP 373530 ON CFR 296897	LOT 1 DP 373530 CFR 296892	8309921.7

SCHEDULE OF EASEMENTS TO BE DISCHARGED

PURPOSE	SHOWN AS	SERVIENT TENEMENT	DOMINANT TENEMENT	INSTRUMENT DOCUMENT
ROW	A on DP 62408	Lot 3 DP 62408 WN33A/859	Lot 4 DP 62408 WN334/857; LOT 4 DP 62408 - SCENIC RESERVE	EI 8309921-6
ROW	B on DP 62408	Lot 3 DP 62408 WN33A/859	Lot 4 DP 62408 - SCENIC RESERVE	ENC 5316108.6
ROW	B on DP 373530	Lot 3 DP 62408 WN33A/859	Lots 1 CFR 296892; Lot 2 DP 373530 CFR 296893; Lot 3 DP 373530 CFR 296894; Lot 4 DP 373530 CFR 296895; Lot 7 DP 373530 CFR 296897	EI 8309921.7
ROW	C on DP 373530	Lot 7 DP 373530 CFR 296897	Lot 1 DP 373530 CFR 296892; Lot 2 DP 373530 CFR 296893; Lot 3 DP 373530 CFR 296894; Lot 4 DP 373530 CFR 396895	EI 8309921.7

PROPOSED SCHEDULE OF EASEMENTS

		STAGE 1		STAGE 2	
PURPOSE	SHOWN AS	SERVIENT TENEMENT	DOMINANT TENEMENT	SERVIENT TENEMENT	DOMINANT TENEMENT
ROW, TELECOMMUNICATIONS, POWER	I	Lot 4	Lot 5	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	J	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 4 (in respect of telecommunications and power only), 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 3, 4 (in respect of telecommunications and power only), 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	K	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	L	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	M	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1(Stage 2), 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530
ROW, TELECOMMUNICATIONS, POWER, RIGHT TO CONVEY WATER	N	Lots 1, 9, 10 & 13	Lots 6, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER	O	Lot 7 DP 373530 and Lots 11 & 12	Lot 6 and Lots 1, 2 & 4 on DP 373530	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER	P	Lot 7 DP 373530 and Lots 11 & 12	Lots 1, 2 & 4 on DP 373530	No change from Stage 1	
ROW, TELECOMMUNICATIONS, POWER	Q	Lots 1, 9, 10 & 13	Lots 2 (Stage 1), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530	Lots 1, 9, 10 & 13 (Stage 1)	Lots 1 and 2 (Stage 2), 3, 6, 8, 11, 12 and Lots 1, 2, 4 & 7 on DP 373530

AMALGAMATION SCHEDULE

	"AMALGAMATION CONDITION"
Lot 1 (Stage 1) and Lots 9, 10 & 13	"That Lots 1, 9, 10 & 13 are held together in one CFR"
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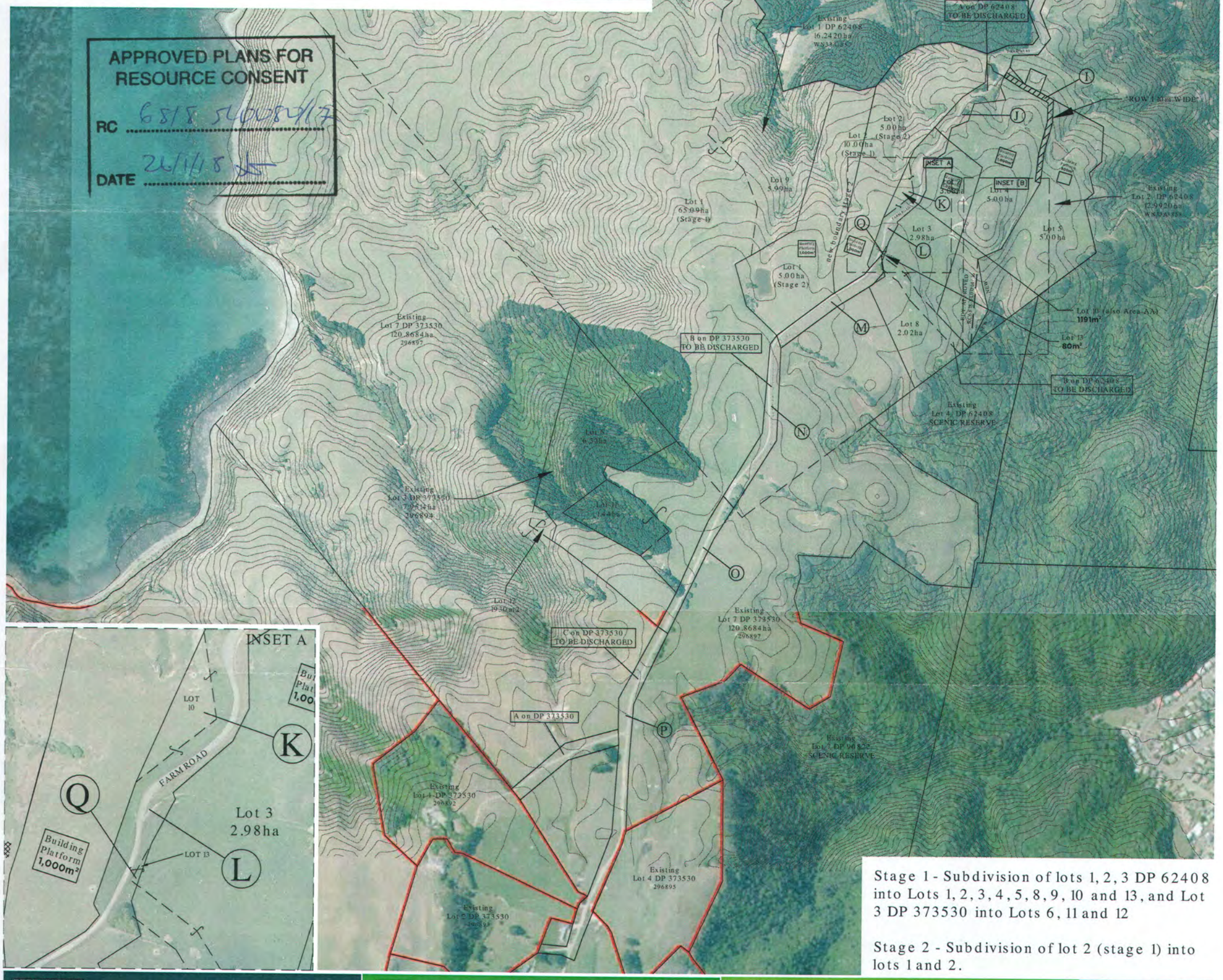
Lot 7 DP 373530 and Lots 11 & 12 (Stage 1)	"That Lot 7 DP 373530 and Lots 11 & 12 are held together in one CFR"

"REQUEST NUMBER IS 1383375 AND THIS SHALL BE RECORDED ON THE TRANSFER PLAN FOR THIS STAGE UNDER 5.223 OF THE RESOURCE MANAGEMENT ACT"

AMENDMENTS TO DATE

TYPE	PLAN REFERENCE	PLAN NAME	COMMENTS
SCHEME	DP PIK 1 REV 05 04/07/16	DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION. DATE STAMPED "FINAL APPROVED PLAN RC6818 5/03/15"	LODGED WITH DP PIK1 - REV 06
AERIAL OVER SCHEME	DP PIK 1 REV 05B 24/10/17	"LODGED AS ICA" DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION.	LODGED WITH DP PIK1 - REV 06B
AERIAL OVER SCHEME	DP PIK 1 REV 05C 09/11/17	DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION.	- CORRECT SCHEDULE OF EASEMENTS SHOWING STAGING WHICH WAS APPROVED UNDER ORIGINAL COUNCIL DECISION RC6818 AND SUBSEQUENT VARIATION - MINOR CHANGES TO CORRECT ERRORS TO SCHEDULE OF EXISTING EASEMENTS AND PROPOSED EASEMENTS - ADD AMALGAMATION SCHEDULE AS PER ORIGINAL FINAL SCHEDULE PLAN WITH CHANGES MADE BY VARIATION
SCHEDULE CORRECTION	DP PIK 1 REV 05C 09/11/17		MINOR CHANGES TO CORRECT ERRORS TO AMALGAMATION SCHEDULE AND IN ROW O & P TO SHOW LOTS 11 & 12 AS HAVING SERVIENT TENEMENT RIGHTS
ADDITIONS	DP PIK 1 REV 05D 15/12/17		- ADD TABLE "SCHEDULE OF EASEMENTS TO BE DISCHARGED" - ADD TITLE REFERENCES TO LOTS - CHANGE TITLE OF "SUBDIVISION PLAN" TO "SCHEME PLAN" - CORRECT EASEMENT M - DOMINANT TENEMENT RIGHTS - ADD EASEMENT 'Q' FOR LOT B - ADD AMALGAMATION APPROVAL NUMBER
ADDITIONS	DP PIK 1 REV 05E 21/12/17	DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION AND BOUNDARY ADJUSTMENT	ADD CONTOURS



Stage 1 - Subdivision of lots 1, 2, 3 DP 62408 into Lots 1, 2, 3, 4, 5, 8, 9, 10 and 13, and Lot 3 DP 373530 into Lots 6, 11 and 12

Stage 2 - Subdivision of lot 2 (stage 1) into lots 1 and 2.

PREPARED BY LANDMATTERS

CLIENT: PIKARERE FARM LIMITED

PROJECT: DEVELOPMENT PLAN RURAL RESIDENTIAL SUBDIVISION AND BOUNDARY ADJUSTMENT

DATE 21/12/17 | PROJECT NO. J271

SCALE 1:4,000 @ A1, 1:8,000 @ A3

DRAWING NO. DP PIK1 - 05 [E] | REV