BEFORE THE BAY OF PLENTY REGIONAL COUNCIL

UNDER	the Resource Management Act 1991
AND	
IN THE MATTER OF	resource consent applications by the Western Bay of Plenty District Council for the continued operation of, and discharge of treated wastewater from, the Te Puke Wastewater Treatment Plant

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STATEMENT OF EVIDENCE OF KELVIN HILL
ON BEHALF OF WESTERN BAY OF PLENTY DISTRICT COUNCIL

Operations

29 March 2019

Introduction

1. My name is Kelvin Philip Hill and I am the Utilities Manager for Western Bay of Plenty District Council (**WBOPDC**), a position I have held since 2006. I am a civil and mechanical engineer with over 38 years of experience which includes the design and construction of wastewater collection, pumping, treatment and disposal systems. I hold a NZCE (Civil) qualification (1981) from Waikato Technical Institute and completed an MBA in 2013 at Waikato University.

2. My previous employment includes a number of engineering, management and project management positions within the private sector, undertaking works in the wastewater, pulp and paper and petrochemical industries. These include Contracts Manager (McConnell Dowell), Project Manager and General Manager (Hawkins Construction / HGM) Project Manager (Petronas / HGM, Malaysia) and Project Manager (Duffill Watts and King).

3. My experience includes investigations, issues and options studies, the design and construction of several wastewater and stormwater pump stations, reticulation and collection systems and various wastewater equipment. I have managed the design and construction of a number of wastewater upgrade systems in New Zealand. These include Tokoroa WWTP, Putaruru WWTP (South Waikato District Council), Te Awamutu WWTP (Waipa District Council), Taupo Wastewater Plant upgrades and sludge thickening unit (Taupo District Council) and Omokoroa Wastewater Project (WBOPDC).

4. I have been involved in investigations and issues and option study reviews for various wastewater schemes and wastewater treatment systems proposed for WBOPDC since 2006, especially on the Omokoroa and Maketu/Little Waihi, Te Puna Westand Ongare Point Wastewater Schemes. These studies have included different wastewater treatment and wastewater collection systems, public presentations and the preparation of public brochures explaining the different options.

Code of Conduct for Expert Witnesses

5. I have read and am familiar with the Code of Conduct for Expert Witnesses in the current (2014) Environment Court Practice Note. I agree to comply with this Code of Conduct in giving evidence at this hearing and have done so in preparing this written brief. The evidence I am giving is within my area of expertise, except where I state that I am relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

6. I also acknowledge that as an expert expressing opinions my duty is to impartially assist the Court. In particular I am not an advocate for my employer.

Scope of evidence

7. I have been a member of the Te Puke Wastewater Treatment Plant (**Te Puke WWTP**) consent renewal project team since the project first started in 2015.

8. As the designated Project Manager for the project team I have been involved with all aspects of the consent renewal, including providing information to the technical experts relevant to the Te Puke WWTP performance and WBOPDC's planned upgrades. I have been involved with all consultation meetings including discussions with stakeholders and iwi.

9. I confirm that I have read and am familiar with the submissions, Officer's Report and proposed consent conditions. I also confirm that I have carried out a site visit, having visited the site on numerous occasions as part of my role as Utilities Manager. My last visit to the site was on 25 March 2019.

10. My evidence will cover:

    (a) Operation/performance of the plant;
    (b) Inflow and infiltration;

(c) Odour;

(d) The Wastewater Advisory Group (**WWAG**) process and outcomes;

(e) Wetlands decommission and rock filter;

(f) Wetland enhancements adjacent to the Te Puke WWTP;

(g) Waiari water take;

(h) Officer's Report; and

(i) Conditions.

Executive summary

11. The Te Puke WWTP is an important asset for the Te Puke community having served the community's treatment requirements for the last 40 years. The plant operators have maximised the operational capacity of the plant over this time period and continue to set good standards of discharge.

12. WBOPDC has invested significant expenditure into the plant and are committed to further expenditure in WBOPDC's 2018-2028 Long Term Plan (**LTP**) to specifically cater for future growth and improved plant performance. I believe there is good justification for a new consent to be issued for a 35 year term based on WBOPDC's track record and the planned works going forward to meet growth demands.

Operation / Performance of the plant

13. The Te Puke township has had a public wastewater system since the late 1980s when the Te Puke WWTP was constructed. In 1998 the Te Puke WWTP was upgraded to increase its capacity and the network was extended to service industry at the northern end of the town. The Te Puke WWTP was further upgraded in 2002 to improve its performance and reliability. Since this time, further capital expenditure has seen improvements to the Ultra Violet (**UV**) disinfection unit and inlet screening station in 2011/12, and more recently the treatment plant blowers have been replaced in 2015. Currently in the 2018/19 financial year an upgrade to the brush clarifier is underway.

14. The existing RC 24889 allows for the discharge of up to 9000m^3/day of treated wastewater to a constructed wetland and under RC 24891 for the diffuser seepage of treated wastewater to a riparian wetland along the banks of the Waiari Stream.

15. A further RC 30135 covers the discharge of contaminants to air (odour) from the Te Puke WWTP.

Operational process

16. Wastewater in Te Puke is mostly conveyed through a pipe network by gravity to the Te Puke WWTP, which is located at Gordon Street, Te Puke. In areas where it is not possible to feed directly by gravity, pump stations are used to pump wastewater to the Te Puke WWTP. There are a total of 7 wastewater pump stations in the network.

17. When the wastewater reaches the Te Puke WWTP, it first passes through a step screen (primary treatment) which removes any large solids such as rags or nappies. The screen is a vital part of treatment to ensure downstream equipment is not damaged. The screened solids are taken to an approved (consented) landfill where they are disposed of. The remaining wastewater then flows through to the next phase of treatment.

18. The Te Puke WWTP uses an activated sludge process (secondary treatment). Wastewater enters one of two activated sludge aeration tanks where the wastewater is mixed with micro-organisms and oxygen. The micro-organisms effectively “eat” the organic matter in the wastewater. The solids and micro-organisms are then settled out of the water in a second clarifier. A large portion of the micro-organisms are then returned to the aeration tanks, while treated wastewater is piped through a UV facility (tertiary treatment) and wetlands before finally being discharged into the Waiari Stream.

Bio-solids disposal

19. Sludge from the clarifier is dried mechanically on site and then transported to a vermicomposting farm operation in Kawerau. The Kawerau vermicomposting operation was granted a resource consent for land application applied in accordance with the Guidelines for the Safe Application of biosolids to Land in New Zealand (NZWWA, 2003). The vermicomposting operation is fully fenced and grazing is limited to dry stock only.

20. The Te Puke WWTP receives wastewater from the Te Puke township. The average inflow during the winter period is 550 – 650 m^3/day and during the summer around 1800m^3/day. The maximum discharge rate ever recorded is 4,752m3/day.

21. Mr Zhuo Chen will present the detailed process overview in his statement of evidence.

Inflow and Infiltration

22. Inflow means rainwater entering the wastewater system through building downpipes that are directly connected to the wastewater system. Inflow can also come from gulley traps which are low to the ground and manholes located in gullies where rainwater can flow directly into the network. This means that when it rains, the volume of water entering the wastewater network is much higher than during dry weather. Groundwater can also enter the network through faulty joints. This is known as infiltration and, as with inflow, it increases the overall volume of wastewater flowing into the system.

23. An increase in volume leads to an increase in operational costs (due to pumping and treatment) for the wastewater network and can cause problems at the treatment plant. Excessive volumes going through the plant can reduce the effectiveness of the treatment process and reduce the quality of the final

discharge, which can compromise the plant's ability to meet its resource consent conditions.

24. The additional stormwater entering the system can also lead to the overflow of wastewater. Overflows occur when the flow exceeds the capacity of the pipes, causing some to spill out of manholes or pump stations. Overflows are a potential hazard to public health and the environment.

25. WBOPDC has been actively carrying out investigations and targeting various catchments that have high infiltration. By monitoring the flows through various pump stations WBOPDC is able to pick up on areas that are pumping high flows during rainfall events. WBOPDC staff prioritise catchments based on areas experiencing the greatest infiltration and inflow and carry out further field investigations at individual property owners' sites.

26. Infiltration and inflow is an ongoing project that requires monitoring on a yearly basis. In 2012 a study was carried out on a number of the wastewater catchment areas that had exhibited high pumping rates during significant wet weather flows.

27. As with most gravity systems the collection pump stations are located at the lowest point of the network. Investigations looked at each of the manholes in this catchment area and listed the works required. Common issues included leakage around wastewater pipes that enter the manholes and manhole lids lower than the surrounding receiving environment, which gives rise to water ponding over the manhole and water draining into the chamber.

28. During heavy rainfall events residential and business basements can flood. Wastewater gulley traps provide a drainage solution to this problem, preventing wastewater from flowing back into the buildings themselves. The inundation of stormwater into the wastewater network causes waste pipes to backup and manhole lids to uplift as the pipe system cannot cope with the flows. This results in wastewater overflowing onto roadways or green spaces.

29. WBOPDC recognise that there are a number of activities that can be used to quantify the level of inflow and infiltration. Such investigations require a structured approach as the causes of inflow and infiltration can vary from a single point source to a wide distribution of sources.

30. Flow monitoring is planned to be undertaken in 2019 / 20 and 2020 / 21. A sum of $72,000 has been included in the LTP budgets to undertake this work. Flow monitoring normally records the flows through the wastewater network by strategically placing meters at key points and collecting the results over a 12-month period to recognise seasonal weather changes.

31. Inflow and infiltration reduction programme implementation includes source detection and can include:

- CCTV surveys;
- Manhole inspections;
- Isolating testing;
- Salinity testing(conductivity);
- Dye and smoke testing; and
- Jetting.

32. Solutions to infiltration and inflow fall into two areas: rehabilitation and / or replacement. Previous experiences from undertaking flow monitoring in WBOPDC networks have revealed that private drainage can be one of the major sources of infiltration and inflow into the network. As such, onsite investigations have revealed gulley traps require raising, stormwater drainage needs redirecting away from the wastewater system and illegally connected stormwater pipes into sewer system and damaged/ cracked private pipelines.

Odour

33. Resource consent C30135 covers the discharge of contaminants to air (odour) from the Te Puke WWTP.

34. The Te Puke WWTP site is located within a rural environment with a buffer zone around the entire plant. The site is bounded by the Waiari Stream on the southern side, a railway line on the eastern side with fertile farm land on the western side. The nearest private property is some 155m meters from the Te Puke WWTP site at its closest point, in a northerly direction. A designation in the WBOPDC's District Plan 170 denotes the location of the treatment plant and surrounding land parcels, and designates a 150m buffer around the Te Puke WWTP.

35. There are a number of potential processes at the Te Puke WWTP that can create odour, including:

Screening station

Wastewater enters the treatment plant via a screening station which is designed to remove any untreatable objects such as rags, paper, plastics and metals to prevent damage and clogging of downstream equipment and piping. These objects are collected in disposable plastic bags and are disposed of by trailer to a registered landfill site. The operation is completely enclosed behind plastic curtains on the trailer to prevent odour issues. Odour may only be detected during the bag change-over which is normally completed within a few minutes. The plastic bags are sealed before leaving the wastewater site.

Activated sludge area

Wastewater enters one of two activated sludge aeration tanks where the wastewater is mixed with micro-organisms and oxygen. The micro-organisms effectively "eat" the organic matter in the wastewater. The solids and micro-organisms are then settled out in the water in a secondary clarifier. The concentration of the activated sludge solids and

the condition of those biological solids determines the effectiveness of the activated sludge process.

To maintain a viable biological population and maintain the proper concentration of solids, the system requires continuous observation and monitoring by the operators. The oxygen levels in the aeration basin are monitored on a continuous basis to ensure optimum conditions are maintained.

In extreme circumstances normally beyond the control of the operators (shock loading) it is possible that odour could be generated. Such situations have not occurred in the last 15 years of operation. Some larger treatment plants around New Zealand have experienced greater issues with odour which have resulted in the aeration tanks being permanently covered. Air containments from the tank are then filtered through an odour treatment system.

Bio solids area

Sludge from the clarifier is dried mechanically on-site using a centrifuge. This is a high speed process that uses the force from the rapid rotation of a cylindrical bowl to separate wastewater solids from liquid. The operation discharges the bio-solids into a purpose built truck trailer. The sludge generated at the WWTP can require up to two truck trailer loads to be transported to Kawerau‘s vermicomposting operation each week.

Plastic drop curtains provide a seal around the trailer and the trailer has a permanent cover that is closed when the bio-solids are transported to the vermicomposting operation in Kawerau. Under certain weather conditions odour emissions can escape into the atmosphere while the trailer is prepared for transport.

36. WBOPDC's customer service records indicate that no complaints have been received in relation to odour being generated from the treatment plant process in the last 5 years of operation. The nearest odour complainant with respect to the Te Puke WWTP location was approximately 1.1km in a straight line in 2017, which was in response to a blocked chamber in the network.

37. Peter Stacey of AECOM prepared an Air Quality Assessment for WBOPDC dated 19 May 2016 (the **AQ Assessment**), which is attached as Appendix D to the resource consent application.[1] The AQ Assessment assessed the potential for odour nuisance from the Te Puke WWTP against the FIDOL factors and concluded that off-site odour from normal operation would not be offensive or objectionable, which I agree with.

38. The AQ Assessment recommend that biosolids loads are covered to further reduce the potential for off-site odour and that the buffer area is retained. The AQ Assessment also recommended that odour conditions be included in the consent, including that vehicles transporting biosolids off-site are to be covered with a tight-fitting tarpaulin.

39. WBOPDC has proposed odour conditions, which largely reflect the proposed conditions contained in the Officer's Report and include emission limits and controls (including that wastes removed from the site are to be transferred in covered trucks), Odour Management Plan (**OMP**) conditions, and signage conditions. I consider that the proposed conditions are appropriate to manage odour.

40. WBOPDC has addressed minor odour issues in the past by either improving the performance of the plant's operation by carrying out continuous adjustments or in some cases by undertaking upgrades. For example, WBOPDC installed a full-length curtain around the screening station in 2014.

[1] Peter Stacey has a BSc, GradDip (Bus) and was the Principal Air Quality Scientist at AECOM, now the Compliance Services Team Leader, with over 14 years' experience and specialist knowledge in the field of Air Quality.

41. As set out above, the Te Puke WWTP site is located within a rural environment with a buffer zone around the entire plant. The opening of the Te Ara Kahikatea community walking track in 2018, located around the perimeter of the Te Puke WWTP, now brings the general public much closer to security fences surrounding the plant and within WBOPDC's District Plan buffer zone.

42. During discussions with the community groups prior to allowing the walking track, WBOPDC explained the reasons for the buffer zone. However, given the minimal odour issues received to date from the plant's operation, WBOPDC determined that it should not be an issue.

43. WBOPDC decided to incorporate a number of signs around the perimeter fencing advising the public of the Te Puke WWTP and that access is granted on the basis that they have entered a designated wastewater treatment area.

WWAG process and outcomes

44. Council have acknowledged that a comprehensive study is required to explore alternative options for treated wastewater disposal, which should involve representation from key stakeholders from the community and wider environmental organisations.

45. Iwi are considered an important stakeholder, with Tapuika and Waitaha being the recognised guardians of the Waiari Stream. WWAG was formed in September 2016 as part of a review to look at alternative disposal options for treated wastewater. The Alternative Disposal Options Assessment process is described in detail in the evidence of Mr Robert Shaw.

Wetlands decommission and rock filter

46. WBOPDC's Long Term Plan (**LTP**) 2018-2028 outlines planned upgrades to the Te Puke WWTP to improve the performance of the plant and cater for future growth. This will result in a higher and more stable discharge quality. The

proposed upgrades are discussed in the evidence of Ms Coral-Lee Ertel however my evidence will provide detail around the decommissioning of the existing wetland and construction of a rock filter.

47. The discharge quality from the Te Puke WWTP is monitored directly after the **UV** disinfection system. However, the quality of the treated wastewater deteriorates upon entering the wetlands and subsequent discharge into the Waiari Stream, which I believe is predominantly caused by bird life within the wetlands.

48. WBOPDC proposes to construct a rock filter passage system that would span from the discharge point of the UV system out to the existing bank discharge system on the Waiari Stream. The approximate dimensions of the trench are 2.5 m wide x 1.5 m deep x 20 m in length and will discharge into a bank side perforated diffuser pipe. Rock-lined filter channel discharge points have been used at the following treatment plants locations in New Zealand: Putararu, Te Awamutu, Templeview and Meremere.

49. A rock-lined channel structure will provide land contact for treated wastewater prior to discharge to the final receiving environment. This was developed in consultation with local iwi; WBOPDC understood that it could mitigate cultural concerns with the discharge. The cultural relevance of this is discussed in more detail in the evidence of Mr Richard Harkness.

50. Decommissioning the constructed wetlands will also remove the current contact with bird life thereby improving the quality of treated wastewater entering the Waiari Stream. The rock filter also disperses the energy of the discharge and minimises the risk of scouring of the bankside.

51. A budget of $220,000 is provided in the LTP for the 2022/23 financial year for the construction of a rock filter/channel and for decommissioning the wetlands.

Wetlands enhancements adjacent to WWTP

Comprehensive stormwater consents

52. WBOPDC is looking at opportunities to reduce contamination of waterways and this includes applying for comprehensive stormwater consents for the eastern catchment area.

53. The Bay of Plenty Regional Stormwater Strategy was published in 2005 as a collaborative approach between the regional and district councils within the Bay of Plenty to better manage urban stormwater in the region and improve the water quality of discharges into streams and rivers, Tauranga Harbour and the Maketu Estuary. Actions within the strategy include district councils obtaining Comprehensive Stormwater Consents for urban areas in each district.

54. WBOPDC has decided to split its district into three distinct areas for the purpose of applying for comprehensive stormwater consents. These include the western, central and eastern catchments. Catchment Management Plans are being prepared for each area.

55. The eastern comprehensive stormwater catchment consent includes the existing and planned urban areas including Maketu, Pukehina, Paengaroa and Te Puke town ship. The consent application for the eastern catchment was re-lodged December 2018 and is being processed by the Bay of Plenty Regional Council (**BOPRC**). Funding of $2.3million is allocated in the LTP over the ten year period to cover the costs for the preparation and implementation of the resource consent.

Wetland decommissioning and enhancement work

56. The Te Puke Steering Group (**Steering Group**) was established in 2015 with iwi representation from Tapuika, Waitaha, Ngati Whakaue Ki Maketu and Ngati Pikiao. The purpose of the Steering Group was to provide a platform for WBOPDC

and Māori (and eventually other community stakeholders) to agree on what the resource consent application would eventually look like. There were a number of key themes that arose from the group discussions and Cultural Impact Assessment (**CIA**) documents received from iwi regarding wetlands and the importance of improving the quality of surrounding drainage channels. These were:

(a) Improving the water quality;
(b) Promoting of ecosystems; and
(c) Providing habitat for native fish and birds.

57. As noted in the previous section treated wastewater is currently piped through a UV disinfectant facility (tertiary treatment) into the wetlands before finally being discharged into the Waiari Stream.

58. Once the rock filter has been constructed and commissioned, the existing wetlands will be retired from service and monitored over the next two years. These wetlands will be converted into fresh water wetlands in consultation with iwi, consenting authorities and the community. There will be an opportunity to provide a natural habitat for promoting wildlife and educational and learning experiences for the community. Further, the wetlands will help to provide a treatment solution to assist in improving the water quality of the existing water courses that traverse the treatment plant site.

59. A constructed wetland has three primary components: an impermeable layer (generally clay), a gravel layer that provides a substrate (i.e. an area that provides nutrients and support) for the root zone, and an above–surface vegetation zone. The impermeable layer prevents infiltration of waste down into lower aquifers. The gravel layer and root zone is where water flows and bioremediation and denitrification take place. The above ground vegetative layer contains the plant material. Both aerobic and anaerobic systems (i.e. systems with and without oxygen) exist within the wetland, and these can be divided into separate cells.

60. A constructed wetland uses natural geochemical and biological processes in a wetland ecosystem to prevent contaminants in the groundwater and stormwater from flowing through water courses. Discussion with Tapuika is continuing, with a memorandum of understanding currently being developed between Tapuika and WBOPDC. This would provide a platform for community groups to become involved in the community project.

61. A memorandum of understanding is seen as a more appropriate way to incorporate the direct input about this project from iwi, hapu and other key stakeholders in the community. There is also a requirement for external funding from third parties in relation to the scope of works which is still to be finalised at this point. The memorandum of understanding will encompass the following activities:

(a) A plan to clean up the existing wastewater wetlands and remove any redundant structures or fittings from the original wastewater process.
(b) Replant the area with appropriate native plantings and vegetation.
(c) Create artificial wetlands to double the size of the existing wetlands.
(d) Construct a pathway system to allow access for general public.
(e) Provide a major habitat for native freshwater fish, invertebrates, frogs, eels and native birds.

62. The draft memorandum of understanding document is being prepared for the wetlands project and will be discussed further in consultation with Tapuika and is expected to be agreed and signed off before the end of 2019.

63. The wetlands project will take a minimum of 5 years to be totally established and will be completed in stages. Stage 1 will be to allow the conversion of the existing wetlands to freshwater wetlands and is expected to take 2 years. The expansion of the wetlands can happen in parallel with the conceptual plans being developed ready for construction once stage 1 is completed.

64. Funding for the project will come from a variety of sources and final costings are yet to be finalised. Stage 1 is part of Council's ongoing operational costs. BOPRC has shown interest in contributing funding towards the project and various stakeholder community groups are also committed to providing resources for this project.

65. As part of the resource consent application, the Council is committed to improving the water quality of the drainage channels that enter into the Council's wastewater treatment site. Suitable plants and vegetation will be installed along the banks of the drainage channels to assist in improving the water quality.

66. The site around the Te Puke WWTP has recently been opened up to allow the community to develop the Te Ara Kahikatea cycling and walking trail. It is envisaged that this trail would extend into the freshwater wetlands. The project has received positive merit and support from BOPRC.

Waiari water take

67. The Te Puke WWTP has been in operation since the 1980's and has continued to discharge treated wastewater into the Waiari Stream under the existing resource consent. Tauranga City Council and WBOPDC have a joint resource consent to take water from the Waiari Stream. The resource consent 65637 allows for the Councils to take a maximum of 60ML of water out of the Waiari Stream per day .

68. The Wairai water supply scheme involves developing:

- A water abstraction facility on the Waiari Stream.
- Raw water pipelines feeding water from the abstraction point to the treatment plant.
- A microfiltration water treatment plant located on No 1 Road.
- A treated water reservoir.
- A waste / residuals handling plant.

- An underground water pipeline from the plant to distribute water to service reservoirs.

69. The new plant will be initially designed to manage a (30ML) 30,000m^3 per day demand and can be expanded as demand requires up to (60ML). The term of the consent expires on 31st July 2044.

70. Resource conditions limit the maximum take from the Waiari Stream to 20 per cent of the low-flow water volume under maximum demand (60ML). This is anticipated to not reach this level until 2071.

71. The purpose of the Waiari water take is to service the Papamoa coastal strip / Te Tumu growth areas developments and will provide Tauranga City Council with a projected capacity to service the next 50 years of growth. This equates to approximately 35,000 homes.

72. WBOPDC has the opportunity to also draw from this water supply up to 25% (15ML) to accommodate for future development in the district and to provide a backup supply to the current bore water capacity.

73. The Waiari water take is located approximately 3.2km along No 1 Road, Te Puke and is approximately 6km upstream from the discharge point at the Te Puke WWTP.

74. The project commenced construction in late 2018 and is expected to be operational by mid-2021. Components of the project currently underway include the water intake structure and various pipework sections along the route. Preliminary site investigations are underway on the Te Puke WWTP.

75. Regular ecological monitoring of the Waiari Stream is currently undertaken to provide a baseline to the project and will continue both during and after the plant is operational to enable Councils to carefully manage the health of the Waiari Stream.

76. The relevance of the Waiari water take to the Te Puke WWTP is assessed in the evidence of Mr Zhuo Chen, Ms Fiona Davis and Mr Richard Harkness.

Officer's Report

77. I have read the Officer's Report and will discuss the conclusions with respect to odour. Except where stated otherwise below, I agree with the proposed air discharge conditions contained in the Officer's Report, including the Emission Limits and Controls and these have been incorporated into WBOPDC's proposed conditions.

78. As set out above, the opening of the Te Ara Kahikatea community walking track in 2018, located around the perimeter of the Te Puke WWTP, brings the general public much closer to the security fences surrounding the plant and within the buffer zone. WBOPDC will put up a number of signs on the perimeter fencing advising the public that access is granted on the basis that they have entered a designated wastewater treatment area.

79. I therefore do not think it is reasonable to require (under the Officer's Report condition 7) immediate action by WBOPDC for complaints made within the designated buffer zone.

Conditions

80. The proposed consent conditions are included in the evidence of Mr Richard Harkness, and incorporate most of the conditions proposed in the Officer's Report.

81. The conditions authorising works on the riparian wetland along the Waiari Stream associated with installing and maintaining the discharge diffuser pipe infrastructure and associated riparian planting are appropriate.

82. The proposed conditions associated with decommissioning the wetland and installing the rock chamber do not include conditions for wetland enhancement. I agree with this approach as having a memorandum of understanding with tangata whenua is a more appropriate way to incorporate direct input from iwi, hapu and other key stakeholders in the community with this project.

Conclusion

83. The Te Puke WWTP has demonstrated a good track record of operation over the last 40 years. The plant operators have maximised the operational capacity of the plant over this time period and continue to set good standards of discharge based on the reporting data after the UV disinfection process. A recent Compliance Audit undertaken by BOPRC on 22 January 2019 (inspection number 289305) confirmed that the Te Puke WWTP is operating within its resource consent conditions.

84. It is noted that the plant is due to have a significant number of capital upgrades over the next few years to manage the future growth. Notwithstanding the implementation of works, I believe there is good justification for a new consent to be issued for a 35 year term based on the Council's track record and the planned works going forward to meet growth demands.

Name Kelvin Hill

Date: 29 March 2019