Before the Independent Commissioner Hearing Panel

Under	the Resource Management Act 1991 (**RMA**)
In the matter of	an application by **Dunedin City Council** to develop a landfill at Smooth Hill, Dunedin.

Statement of evidence of Anthony Hans Peter Kirk

29 April 2022

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Qualifications and experience

1 My name is Anthony Hans Peter Kirk.

2 I am currently employed by GHD as an environmental scientist, specialising in hydrogeology, groundwater-surface water interactions and water quality.

3 I have over 20 years' experience in chemistry, hydrogeology and water quality, with particular expertise in assessing the influence of landfills on groundwater and surface water, and in supporting landfill design and remediation through assessment of outcomes and requirements for leachate generation and water management. I have the following qualifications and relevant experience:

(a) Bachelor of Science in Earth Science and Chemistry, and Master of Science in Chemistry from Massey University;

(b) I led the assessment of effects to groundwater for consenting of Burwood Landfill's Christchurch earthquake waste cells and prepared annual monitoring reports for the broader landfill for many years;

(c) I led the assessment of effects to groundwater and surface water for the Puke Coal MSW landfill; extension of Wellington's Southern Landfill, and have carried out confidential sitting studies for landfills in the Auckland and Waikato Regions;

(d) I have led the assessment of effects to groundwater and surface for the development of Auckland's regional biosolids monofill and additional monofills in the Waikato Region. I have also led assessment of New Zealand Aluminium Smelters industrial monofill at Tiwai Point and provided assessments of effects, contaminant transport assessment and derivation of soil acceptance criteria for a range of managed fill facilities in the Auckland, Waikato and Canterbury Regions.

(e) I also provide technical peer review for fill resource consent applications for Waikato Regional Council, peer review for biosolids monofill development for Auckland Council and peer review of technical hydrogeological documents for Bay of Plenty Regional Council. I have co-authored updates to Ministry for the Environment's Contaminated land management guidelines No 5, have developed landfill guidance for the Secretariat of the Pacific Regional Environment Programme and co-authored Auckland Regional guidance on wastewater discharges.

(f) I have led and continue to lead assessment and remedial design of Auckland's closed landfills for more than 10 years, working closely with the councils closed landfill team, and have worked on over 20 closed landfills over this period.

(g) Outside of landfill assessment, I provide assessment of effects to groundwater, surface water and water quality for a range of activities, such as wastewater and stormwater discharges to land and water, mining and quarrying, contaminated land assessment and construction dewatering. I provide catchment management assessment, water supply assessment and groundwater protection zone delineation. During both landfill and the above-mentioned assessments, I undertake a range of water and contaminant transport modelling to assist in decision making.

4 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of evidence

5 I have been asked to prepare evidence in relation to the effects of the proposed Smooth Hill landfill on groundwater and surface water. This includes:

(a) Existing groundwater and surface water conditions;

(b) Landfill performance and leachate generation;

(c) Shallow groundwater and surface water levels and flow;

(d) Deep groundwater system levels and flow; and

(e) Groundwater and surface water quality.

Executive summary

6 The current understanding of groundwater and surface water at the proposed Smooth Hill landfill site is that a localised shallow groundwater system is present as a function of the distribution of permeable alluvium and weathered Henley Breccia within the topographical lows of the valleys. This shallow system supports groundwater levels near the surface in the valley floor. Low rates of infiltration through the loess and seepage from the shallow system to the deeper low permeability unweathered Henley Breccia occurs, with this slow downward percolation constituting the deep

groundwater system. I consider it likely that deep groundwater does not provide baseflow to any streams, instead flowing southeast and discharging to the Pacific Ocean. Elevated concentrations of inorganic nitrogen species have been recorded in both groundwater and surface water samples collected from the site demonstrating an influence from existing and historical forestry and other land use operations.

7 Landfill leachate will be generated where rainfall percolates through waste that is decomposing. The landfill operation, liner and leachate collection system is designed to minimise leachate generation and leakage from the landfill. I estimate that leachate discharge to the leachate collection system will peak at approximately 46,300 m^3/year during Stage 4 of landfill development, reducing to 38,600 m^3/year after closure. I also estimate that leachate leakage will increase during landfill development to a peak of 1.4 m^3/year during both Stage 4 and after closure. During landfill development, and after closure, clean stormwater runoff will be diverted through the sediment retention ponds (SRP) or the attenuation basin before discharge to the Ōtokia Creek catchment. Monitoring during operation and after closure of the landfill will be undertaken at various locations to assess whether water is impacted by leachate leakage.

8 Following placement of the landfill I predict that shallow groundwater flow within the Ōtokia Creek sub catchment within the landfill designation will reduce from approximately 3,000 m^3/year to 2,200 m^3/year, with a reduction in shallow groundwater levels by less than 1 m immediately down gradient of the landfill. Under a scenario which assumes no soakage of stormwater to ground, I predict this will result in reduced discharge to the Ōtokia Creek. When moderation of stormwater flows and soakage to ground from the attenuation basin is considered, I believe this is likely to mitigate the loss of groundwater flow and provide a more consistent source of flow to the wetland.

9 I predict recharge to the deep groundwater system is likely to reduce from approximately 3,000 m^3/year to 2,200 m^3/year following placement of the landfill. I consider that the reduction in recharge, and an associated reduction in groundwater levels, will not result in an adverse effect as the deep groundwater does not currently support any registered groundwater takes and is unlikely to provide baseflow to any streams.

10 I estimate that for the majority of water quality parameters the flux (quantity or mass load of a given parameter discharging over a given time period) within shallow groundwater will reduce with landfill development. The exception to this is iron, lead, dissolved reactive phosphorus (DRP), ammoniacal nitrogen, chromium and total kjeldahl nitrogen (TKN). Lead,

DRP and chromium are not predicted to exceed relevant groundwater quality criteria, and iron and TKN are not considered to be at concentrations of concern when assessed in the context of the existing environment. With respect to ammoniacal nitrogen, I believe total inorganic nitrogen, which includes both ammoniacal and nitrate nitrogen, to be a more appropriate measure considering the transformation between the inorganic nitrogen species that naturally occur. The flux of total inorganic nitrogen is estimated to reduce within the shallow groundwater system in comparison to existing conditions following placement of the landfill.

Existing groundwater and surface water conditions

11 Existing land use comprises forestry. A Radiata Pine plantation with a stand of Macrocarpa was harvested prior to 2019 with site cover at the time of assessment, considered as 'existing conditions', comprising a mixture of scrub, bare earth, forestry waste and newly planted pine seedlings. Areas of remnant vegetation were present in the bottom of the valleys. It is understood that the pine seedlings have now established and are growing.

12 Most of the site is dry but the ground is typically wet and boggy at the base of the gullies in the northern parts of the site where standing or flowing water has been observed associated with near-surface groundwater levels, upwards vertical hydraulic gradients and diffuse seepage. Intermittent flow occurs in the wetland within the designation during periods of rainfall across the site. The site is part of the Ōtokia / McColl Creek surface water catchment that flows to the Pacific Ocean near Brighton.

13 Average annual rainfall across the region is low and measured between 652 mm at Dunedin International Airport and 968 mm at the Botanical Gardens, Dunedin[1]. Mean potential evapotranspiration is relatively high and can exceed rainfall, being measured at 856 mm/year at Musselburgh, Dunedin[1].

14 The geology comprises topsoil and loess overlying Henley Breccia, which was encountered during the site investigation as sandstone, siltstone, conglomerate and breccia.

15 The loess is of low permeability, having a high silt content. Weathering of the Henley Breccia decreases with depth and corresponds to a decrease in permeability with depth. A silt layer, notable by its distinctive reddish-brown colouration, was intermittently identified within the Henley Breccia across the catchment. This material is considered to be of lower permeability than

[1] NIWA, 2015. The climate and weather of Otago. Second edition. NIWA science and technology series No. 67.

the bulk Henley Breccia and influences water infiltration and was encountered within borehole BH301, drilled in August 2021 in the proposed footprint of the landfill.

16 Alluvium and colluvium is present within the base of the gullies where loess has been eroded away, with these materials being more permeable than the undisturbed geology. Disturbed soils associated with forestry land use are also present in various locations.

17 Groundwater recharge is from direct rainfall over the low permeability loess. I have estimated groundwater recharge to be less than 2% of total rainfall. This relatively low rate of recharge is evidenced in the limited groundwater response to rainfall and is consistent with the low permeability of soils, steep topography and dry climate.

18 The hydrogeology of the catchment can be broadly described as comprising a shallow groundwater system, which discharges to the gullies, and a deep groundwater system which contributes to regional groundwater.

19 The shallow groundwater system is present within the alluvium, colluvium and shallow permeable Henley Breccia, in the base of the gullies. Groundwater levels are near ground surface in the base of the gullies and greater than 22 metres below ground level at the elevated ridges (BH05B). In places, the shallow groundwater system is supported by the reddish-brown fine-grained low permeability layer within the Henley Breccia, which limits groundwater percolation to the deeper groundwater system. This layer also promotes some horizontal flow of shallow groundwater, which I interpret to generally follow topography, with discharge to the wetland where groundwater levels are above the base of the wetland. I consider it likely that all valleys in the vicinity of the site that host intermittent streams will have their own localised shallow system.

20 Downward vertical hydraulic gradients to the deep groundwater system are apparent across the majority of the catchment. These vertical gradients (differences in relative groundwater levels with increasing depth) between the shallow and deep groundwater systems are greatest where the reddish-brown low permeability layer limits percolation, creating separation between shallow and deep groundwater systems.

21 Recharge to the deep groundwater system, present within low permeability un-weathered Henley Breccia, occurs as seepage from the shallow system and is estimated to be less than 1% of total rainfall.

22 Groundwater monitoring, including at additional location BH301 drilled in 2021, indicates that deep groundwater is dominated by downwards vertical

hydraulic gradients, as water percolates deep beneath the hills and flows southeast to the coast. I consider it likely that deep groundwater does not provide baseflow to any streams, instead discharging directly to the Pacific Ocean via a long flow path of greater than 3 km. The rates of deep groundwater flow are very slow, with travel times to the coast expected to be thousands of years. I consider that the deep groundwater system does not constitute a viable groundwater resource, due to low potential yield. Further, I consider that the contribution of deep groundwater to the ocean and the potential to influence sea water quality, is negligible. The groundwater assessment has therefore focussed on the interaction of the shallow groundwater system with the surface water receiving environment.

23 Existing nutrient concentrations in groundwater exceeded the Otago Regional Plan discharge threshold (Schedule 16A Area 2 catchments) in a number of shallow and deep monitoring wells across the site for nitrate-N, ammoniacal-N and dissolved reactive phosphorus. I consider this likely to be a result of existing and historical forestry operations. The greatest nitrate-N concentration was recorded within the shallow alluvium (BH01A) and is likely to be from runoff recharging shallow groundwater. I consider elevated inorganic-N in deep groundwater indicates that this influence has been present for an extended period of time given the low permeability and percolation rates of the Henley Breccia. Trace metals were also measured at concentrations above Australia and New Zealand Guidelines for Fresh and Marine Water Quality 2018 (ANZG) water quality criteria for cadmium, copper, nickel, zinc and manganese at a number of shallow and deep groundwater monitoring wells. I consider this to be a function of anaerobic groundwater conditions at these locations. All water quality results are attached to my evidence.

24 Surface water samples have exceeded the ANZG water quality criteria for cadmium, copper, chromium, arsenic, lead, nickel, manganese and zinc. Surface water samples have also exceeded the Otago Regional Plan receiving water limit for achieving good water quality (Schedule 15 Receiving Water Group 2) for nitrate as nitrogen. As elevated ammoniacal nitrogen is recorded within the shallow groundwater system (paragraph 23), but nitrate nitrogen is present within the surface water samples, I expect that nitrification of ammoniacal nitrogen to nitrate nitrogen is occurring.

25 I believe that the steep topography and recent deforestation is likely to have resulted in periods of high sediment load within runoff discharging to the gullies, with potential for forestry related chemicals, such as copper sprays, to influence both sediment and water quality. Stormwater runoff from the localised catchment is attenuated within the wetland, with the intermittent streams returning to dry conditions, or stagnant disconnected pools, shortly

after rain events. Perennial flow occurs further downstream, beyond the McLaren Gully Road culvert. Mr Ingles discusses this further in his evidence.

Landfill performance and leachate generation

26 Subsequent to preparation of the Assessment of Effects to Groundwater (dated May 2021), the modelling of landfill performance was updated to reflect the most up to date liner design. The updated modelling reflects the landfill liner design as described in the evidence of Mr. Coombe. The landfill liner design includes a "Type 1" from the WasteMINZs Landfill technical guidelines with no geosynthetic clay liner (GCL) on the landfill slopes and a permeability of the underlying clay layer of $1x10^{-9}$ m/s on the landfill slopes. The base of the landfill is a "Type 2" liner with inclusion of a GCL and an underlying clay layer with a permeability of $1x10^{-8}$ m/s. Richard Coombe explains the liner design philosophy. The design continues to include a flexible membrane liner (FML) on both the landfill slopes and base.

27 Landfill leachate will be generated where rainfall percolates through waste, and due to decomposition of the waste. The landfill operation is designed to minimise leachate generation by reducing the exposure of waste using cover material when landfill areas are not in use and on closure. I estimate leachate discharge to the leachate collection system will peak at approximately 46,300 m^3/year during Stage 4 of landfill development, reducing to 38,600 m^3/year after closure.

28 The landfill liner and leachate collection system is designed to minimise leakage of leachate. The liner material is effectively impermeable, however, the groundwater assessment allows for minor defects in the plastic FML, that are likely to occur during installation. These assumed defects allow small volumes of leachate to infiltrate through the base of the landfill. The GCL is intended to reduce the potential flow from these defects, by providing a second low permeability barrier to leachate infiltration. The underlying clay layer provides a third low permeability barrier. Modelling of the landfill and liner was undertaken using the industry standard approaches using the Hydrologic Evaluation of Landfill Performance software, referred to as HELP. From my assessment I estimate that leachate leakage for Smooth Hill will increase during landfill development to a peak of approximately 1.4 m^3/year during both Stage 4 and after closure. Contaminant concentrations in the leachate are likely to be greatest when waste is exposed during operation and will then decrease after closure.

29 A subsoil drain network beneath the landfill liner and at the toe of the landfill will provide groundwater dewatering during landfill construction and in the long term. Water recovered will either be used on-site as a non-potable water supply or be discharged to the Ōtokia Creek catchment via an access manhole which allows for monitoring.

30 During landfill development and after closure clean stormwater runoff will be diverted through the SRPs or the attenuation basin before discharge into the Ōtokia Creek catchment. When surface water flows occur within the attenuation basin, water will either soak to ground or discharge via a low-level pipe or over a spillway. Up to approximately 18,000 m^3/year of rainfall runoff is predicted to report to the attenuation basin during landfill operation, with this increasing to approximately 21,000 m^3/year after landfill closure.

31 Monitoring during operation and after closure of the landfill will be undertaken to assess whether water is impacted by leachate leakage. Groundwater in the subsoil drainage system, water within the attenuation basin and down hydraulic gradient groundwater monitoring wells will be monitored to provide identification of potential leachate influence. If meaningful leachate influence is detected, water will be diverted to the leachate treatment system.

Shallow groundwater and surface water levels and flow

32 Owing to placement of the landfill and reduction in groundwater recharge across its footprint, I predict that shallow groundwater flow contribution to the Ōtokia Creek sub catchment within the landfill designation will reduce from approximately 3,000 m^3/year during current conditions to 2,200 m^3/year on completion of the landfill liner. Or if I represent this another way, it equates to a reduction of approximately 0.025 L/s. This excludes the soakage of stormwater to ground. I estimate that the reduction in groundwater flow will reduce shallow groundwater levels by less than 1 m immediately down gradient of the landfill, and localised decrease in groundwater gradient to the wetland. This has the potential to result in a very small reduction of water levels in wetlands immediately downstream of the landfill.

33 I estimate that groundwater intercepted by the sub-soil drainage system will initially be up to 87 m^3/day during construction, but will rapidly decrease due to the loss of recharge and lowering of groundwater levels. I expect that long-term groundwater discharge through the sub-soil drains will be negligible. Abstracted groundwater will be used as part of the non-potable water supply for the site or discharged to the Ōtokia Creek catchment.

34 Following placement of the landfill, higher infiltration rates through the landfill cover and waste, compared to existing groundwater recharge rates, are predicted to reduce run-off to the stream from on average 336,000 m^3/year during existing conditions up to approximately 268,000 m^3/year during landfill operation and 271,000 m^3/year after landfill closure within the Ōtokia Creek sub catchment within the landfill designation. Surface water infiltrating the landfill will create leachate within the landfill which will be removed from site and disposed of via the Dunedin City wastewater system.

35 Evapotranspiration is predicted to increase as a function of this change in water balance within the Ōtokia Creek sub catchment within the landfill designation, from approximately 218,000 m^3/year up to 241,000 m^3/year during landfill operation and 246,000 m^3/year after landfill closure. I consider that the predicted change is partly due to a relative increase in soil moisture retention within the landfill cover soils compared to the existing environment. In addition, a grass cover is assumed for the final landfill cap which allows for increased surface transpiration when compared to existing conditions. These predicted changes do not allow for changes in catchment water balance over time as a function of the forestry land-use, which is discussed in detail by Mr Ingles.

36 Currently the shallow groundwater levels down gradient of the landfill are at, or close to, the ground surface. There, the opportunity for stormwater soakage to ground is limited as there is no storage capacity in the shallow aquifer. I consider it likely that lowering of groundwater levels as a result of landfill development will provide some capacity for soakage of stormwater in this area. The attenuation basin also provides the means to capture a significantly greater volume of stormwater for soakage or release to the wetland than is estimated to presently flow as groundwater to the wetland. I expect this to greatly mitigate loss of groundwater flow through the bottom of the gullies and the loss of stream baseflow.

37 Given this mitigation I expect the potential long-term change in groundwater contribution to the wetland and associated changes in groundwater level are likely to be indiscernible in the context of seasonal fluctuation and year on year differences in rainfall.

38 The impact on surface flows and the catchment influence is discussed by Mr Ingles in his evidence.

Deep groundwater system levels and flow

39 Recharge to the deep groundwater system is also predicted to reduce from approximately 3,000 m^3/year to 2,200 m^3/year due to placement of the landfill footprint.

40 I consider that the reduction in recharge to the deep groundwater, and any associated reduction in groundwater levels, will not result in an adverse environmental effect as the deep groundwater does not currently support any registered groundwater takes and is unlikely to do so in the future. I also consider it is unlikely to provide baseflow to any streams.

Groundwater and surface water quality

41 Subsequent to preparation of the Assessment of Effects to Groundwater (dated May 2021), the water quality assessment was updated to reflect the most up to date landfill liner design (paragraph 26). The updated results are presented in Table 1 and Table 2 attached to my evidence. I estimate that for the majority of water quality parameters the flux (mass load of a given parameter discharging over a given time period) within shallow groundwater will reduce with landfill development, even when considering the predicted leachate leakage rate. This is because groundwater currently demonstrates elevated concentrations for a range of parameters as a result of current and historical land-uses. As discussed earlier in my evidence, a small reduction in flow of this currently impacted water is predicted with landfill development which will also reduce the flux of these parameters in shallow groundwater. Even when allowing for the very small addition of leachate via leakage, for most parameters the net result is a decrease in flux.

42 The parameters that are expected to increase in the shallow groundwater system following landfill development include: iron, lead, DRP, ammoniacal nitrogen, chromium and total TKN.

43 Concentrations of lead and chromium within the shallow groundwater system down gradient of the landfill are not anticipated to exceed the ANZG water quality criteria for 95% freshwater species protection.

44 No applicable criteria are available for assessment of iron, however, I believe that this is not a parameter of concern given concentrations greater than those predicted after landfill development have been recorded in the existing shallow groundwater system.

45 Predicted concentrations of DRP within the shallow groundwater system down gradient of the landfill are not anticipated to exceed the Otago

Regional Council Schedule 16A discharge threshold or the Schedule 15 receiving water limit.

46 Predicted concentrations of ammoniacal nitrogen within the shallow groundwater system down gradient of the landfill have the potential to exceed the Otago Regional Council Schedule 16A discharge threshold and the Schedule 15 receiving water limit. Although a decrease in the flux of nitrate is predicted within the shallow groundwater system following landfill development, concentrations down gradient of the landfill are predicted to also exceed the Otago Regional Council Schedule 16A discharge threshold and Schedule 15 receiving water limit. However, the discharge of total inorganic nitrogen is predicted to reduce within the shallow groundwater system following development of the landfill when compared to existing conditions, with a reduction is also expected within the surface water of the Ōtokia Creek. Considering nutrient transformation between the ammoniacal and nitrate nitrogen species (paragraph 24), this decreasing total inorganic nitrogen is considered to provide a more appropriate measure for assessing potential changes in nitrogen load resulting from landfill development.

47 No applicable criteria are available for assessment of TKN, however I believe that this is not a parameter of concern given concentrations greater than those predicted after landfill development have been recorded in both the existing shallow groundwater system and surface water samples.

48 I believe the water quality assessment results to be conservative as it assumes instantaneous mixing of leachate with shallow groundwater and does not allow for dispersion, flow paths, travel times or dilution within surface water. Further, geochemical equilibrium reactions, microbial reactions and adsorption within the groundwater system are not considered. Such reactions remove contaminant mass through precipitation of minerals and binding of contaminants to aquifer materials. I expect that the reduction in contaminant mass by attenuation reactions will be significant, due to leachate leakage rates likely being low and widely distributed, the liner layers, the significant thickness of unsaturated material below the landfill liner and slow rates of groundwater flow. As such, I consider the potential adverse effects to groundwater quality to be less than minor.

49 I anticipate that the impact on surface water and deep groundwater quality to be likewise negligible and that the estimated long-term improvements in water quality are likely to be greater than suggested by this assessment.

50 A detailed programme of baseline water quality monitoring will be undertaken over a period of 36 months prior to landfill development, as required by condition 30 of the consent. The information from this to be used to develop water quality trigger levels protective of the environment and determine the long-term monitoring requirements. Automated water quality monitoring is also proposed to provide highly detailed understanding of the variability in water quality. This is discussed further in my responses to concerns raised in the section 42A report.

Summary of Issues and Conclusions

51 In assessing the potential influence of the proposed landfill on groundwater, I focussed on a number of key fundamentals, such as:

(a) Identifying the areas of groundwater recharge and discharge, characterising the groundwater flow paths.

(b) The rate of groundwater recharge, movement and discharge, water quality and how groundwater contributes to the hydrology of the wetlands.

(c) The influence the landfill design has on the immediate catchment hydrology, the rate of leachate generation and impacts of the design on groundwater levels and recharge.

52 The hydrogeological conditions identified are dominated by the low permeability of the geology, such that groundwater recharge is very small and predicted to be only 2% of rainfall. The permeability was found to generally decrease with depth, which together with topography and a dipping silt layer promotes lateral flow of some groundwater recharge to the wetland. In total, I predict that only about 1% rainfall would recharge groundwater and flow to the wetland. This minimal contribution to the water balance of the wetland is reflected in the groundwater levels adjacent to the wetland being stable throughout the year.

53 That percolating water which flows to the deeper groundwater system, beneath the silt layer, is predicted to have a very long and slow flow path, ultimately discharging to the sea. Such flow paths do not contribute to terrestrial hydrology groundwater travel times to the coast will be in the order of thousands of years.

54 The influence of plantation forestry land-use is evident with elevated contaminant concentrations in groundwater and surface water. This includes exceedance of exceedance of water quality criteria and the relevant Otago Regional Council Schedule 16A discharge threshold and

Schedule 15 receiving water limit. It is my opinion that the forestry land-use is impacting upon wetland water quality and hydrology of the catchment.

55 Construction of the landfill will influence groundwater recharge and groundwater levels immediately downgradient of the landfill. However, given the low rate of groundwater recharge, and its minimal contribution to the wetland water balance, I do not consider that loss of flow to the wetland estimated to be 800 m^3/yr, will have a meaningful influence on the wetland hydrology. This reduction in flow will however, be mitigated through gradual release of water stored in the attenuation basin following rain events. This will provide the means of prolonging saturation of the wetland following run-off events and is also predicted to greatly mitigate the influence on wetland saturation which may result from reduced run-off due to the landfill development. This is discussed further by Mr Ingles in his evidence and in my responses to concerns raised in the section 42A report from paragraph 69.

56 The design of the landfill, which includes modern and comprehensive containment of leachate, and the low permeability of the ground conditions precludes extensive impacts to water quality. Rates of landfill leachate leakage are exceedingly low and estimated to be in the order of 1.4 $m^{3/}$year. I consider this to constitute effective containment.

57 The highly conservative assessment of potential effects reflects an improbable prediction of potential effects to water quality, assuming that all discharged leachate will mix with groundwater flowing to the wetland without any contaminant attenuation in the underlying low permeability geology. Even under such conservative assumptions the predicted water quality will generally improve from current conditions as a result on the landfill. This is due to the potential contaminant contribution from the landfill being less for most contaminants than introduced from the historical land-use. Where increased contaminant concentrations have been conservatively predicted to increase, they do not exceed relevant water quality criteria. Notably, this analysis does not allow for dilution with the large volume of catchment run-off that drives wetland flow.

58 Based on the assessment undertaken I consider that effects associated with changes in wetland hydrology due to a reduction in groundwater flow will be negligible and indiscernible from natural variations in conditions. Also, I consider that impacts to surface water quality will be negligible or result in improvement of existing conditions. This is expanded upon in my following response to ORC peer reviewers comments and the Section 42A report.

Response to ORC peer review

59 The peer reviewer raised concerns regarding the conceptual groundwater model, in particular the definition and extent of the shallow and deep groundwater systems and deep groundwater flow direction. The peer reviewer also indicated that the lateral extent and effectiveness of the fine-grained low permeability layer to act as an aquitard was not fully understood. To support response to these concerns, borehole BH301 shown in Figure 1 and Figure 2 attached to my evidence, was drilled in 2021.

60 The reddish-brown, fine-grained, low permeability layer was encountered in BH301 at approximately 115 mRL and 108 mRL as shown in Figure 2 attached to my evidence. This unit has previously been encountered at BH03, BH04, BH05 and BH211 between 95 mRL and 103 mRL. A reddish-brown layer was also observed during wash drilling of BH201, however, no approximate depth was recorded. This layer is therefore widespread across the site and likely to be present beneath the majority of the landfill footprint. The layer appears to dip gently towards the base of the gullies where it appears to have been eroded (BH01 and BH02). While the unit is considered discontinuous, where it is present I consider it is impeding the percolation of recharge. This is supported by strong downwards vertical hydraulic gradients and differences in groundwater chemistry in nested piezometers installed above and below this layer (including BH04 and BH211). As groundwater flow above and below the layer is in different lateral directions I consider this unit largely separates the shallow and deep groundwater systems at the site.

61 Groundwater levels were monitored at the proposed landfill site on 17 February 2022 to verify deep groundwater flow directions shown in Figure 3 attached to my evidence). Groundwater levels at BH301 were measured and compared to groundwater levels in screens of similar elevation (including BH201, BH202, BH211B). A horizontal groundwater flow in a southeast direction towards the Pacific Ocean is indicated by these levels measured. This is consistent with previous groundwater monitoring results.

62 The peer reviewer noted that limited groundwater and surface water sampling had been completed at the time of review. Surface water and groundwater sampling has been undertaken since 2019. Groundwater sampling has been undertaken on five occasions (November 2019, March 2021, August 2021, October 2021 and January 2022). Surface water sampling has also been undertaken on five occasions (July 2020, August 2021, October 2021, December 2021 and January 2022). The findings of

this monitoring have been considered in context of previous results and have been used to inform the conclusions I outlined earlier in my evidence. The dates of the monitoring rounds are presented alongside rainfall in Figure 3 attached to my evidence. As the groundwater system responds very slowly to external influences, monitoring at a quarterly frequency is considered to be appropriate.

Response section 42A report

63 In the section 42A report, Mr Cochrane and Ms Lochhead raised a number of concerns regarding the characterisation of the shallow groundwater system, prediction of effects on the wetland and the proposed monitoring of groundwater and surface water. I provide the following responses related to groundwater and effects on water quality:

Responses to key concerns raised by Ms Lochhead

64 Ms Lochhead has suggested that the frequency of monitoring of groundwater is not sufficient during the baseline period to understand the variability of groundwater quality. To provide additional groundwater information to inform the baseline and align with surface water monitoring baseline period, the baseline groundwater monitoring will be extended to quarterly monitoring for 36 months, providing 12 data points for each location. This is adequate for statistical analysis and trend evaluation methods used to develop trigger levels. It is my opinion that the quarterly frequency of monitoring remains appropriate, given the typically low permeability of the geology present and the resulting slow response of groundwater that has been seen in monitoring data to date. For long-term monitoring I also believe quarterly monitoring is appropriate given the slow relatively slow rate of landfill development period and the potential contaminant transport rates in the low permeability geology underlying the landfill.

65 Ms Lochhead also had concerns regarding the characterisation of the shallow groundwater system in terms of water quality. I note that the presence of existing impacts to groundwater and potential variability of concentrations over time does not add to the risk associated with landfill development. Instead, the landfill will prohibit the current source of contaminants within its footprint from impacting groundwater quality. The assessment considers cumulative contaminant load, with the current contaminant load typically higher than predicted following development of the landfill. For this situation underestimation of current contaminant concentrations in groundwater would mean that greater improvement would

be realised for the majority of parameters. Whereas, underestimation of current conditions would see lower net concentrations than predicted.

66 Ms Lochhead also comments that the shallow groundwater extent and depth of the shallow groundwater system is not well understood. In particular, the extent and influence of the low permeability silt layer which has been inferred to separate the shallow and deep systems. Significant effort could be put into confirming the extent and water balance of the shallow aquifer. However, I do not believe this would contribute significantly to understanding the potential effects of the landfill for the following reasons:

(a) The estimates of groundwater flow from the vicinity of the landfill to the wetland are based groundwater levels and aquifer conditions identified at the landfill toe and at the wetland; effectively the shallow groundwater flow from the landfill footprint. As this groundwater flow is a function of the upgradient conditions, including rates of infiltration, shallow groundwater extent and degree of connectedness beneath the landfill footprint, the nature of the shallow groundwater system is inherently considered in the assessment.

(b) The geology of the deeper groundwater system is of very low permeability and groundwater movement in this part of the total system has been shown to be highly constrained. This constraint on deeper flow means that regardless of the presence of the low permeability silt layer, the distribution of groundwater flow between shallow flow to the wetland area and the deep groundwater flows is unlikely to change significantly.

(c) The loss of groundwater recharge due to landfill liner placement is a reliable assumption and in the context of the larger catchment groundwater contributions to the wetland it provides a reliable basis for predicting change in groundwater flows. This volume is replaced by a very much smaller amount of leachate leakage.

(d) The assessment of effects to groundwater conservatively considers net downgradient impacts to groundwater quality which is more meaningful for understanding outcomes on surface water than being able to describe spatially distinct differences in impacts to groundwater beneath the landfill. The effects are limited by the very small volume of leachate predicted to discharge from the landfill. However, it is assumed that all of this leachate would migrate to the wetland without any attenuation or loss to the deeper system.

(e) Any refined understanding of groundwater flow paths and areas of more or less potential influence of leachate on groundwater would provide the means of reducing the level of conservatism in the current assumptions and I expect the predicted effects would be less than currently presented.

67 Nonetheless, I am now recommending a transect of four additional boreholes and shallow groundwater monitoring wells be installed within the landfill footprint and extending downgradient to the edge of the wetland. These will provide further site information regarding the shallow groundwater system and the dynamic relationship between groundwater and the wetland. Where possible these will be aligned with existing or proposed locations for longer term monitoring (described in paragraph 68) to make best use of available information. These transect monitoring locations will be monitored during the baseline period, and information collected will contribute to the review of the site conceptual model following the baseline monitoring period.

68 Ms Lochhead has requested additional groundwater monitoring wells and in discussion with Ms Lochhead, these have been included as Condition 27. These locations are outlined in drawing C309 attached to my evidence and includes:

(a) An additional deep groundwater monitoring well (GW1) in a location suggested as more truly downgradient than the location of existing monitoring well BH201.

(b) An additional deep groundwater monitoring at an upgradient location (GW5) to provide further information regarding interactions between shallow and deep groundwater.

(c) An additional monitoring well for shallow groundwater immediately downgradient of the landfill (GW7)

69 Ms Lochhead has requested additional information regarding units of measures and analyte fraction of sample for analysis be included on Table 1 of Attachment 1 of the conditions. This additional information has been added. Further, the additional parameters Kjeldahl nitrogen and organic carbon requested by Ms Lochhead have also been added to the analyte suite for groundwater and surface water. Total phosphorous has been introduced to the surface water suite, but I do not consider it to be appropriate to include total phosphorous in the groundwater monitoring requirements due to the potential for sediment in monitoring wells to preclude reliable use of the resulting concentration. Instead, use of the dissolved phosphorous concentration is considered to be adequate for the

purposes of monitoring effects of leachate discharges or changing redox conditions on groundwater quality.

Responses to concerns raised by Mr Cochrane

70 Mr Cochrane has expressed concerns that the purpose of the trigger levels is to protect water quality from adverse effects compared to the current conditions. This wording has been changed in condition 34 and it now correctly indicates that the purpose is to protect water quality from adverse effects. The proposed approach for water quality trigger levels, which comprises trend analysis, does not provide a single threshold for water quality. Instead, it compares values and trends over time, which allows improvements in conditions over the long term to be accommodated. Such trend based trigger levels are a more reliable means of identifying changing conditions than fixed value limits.

71 The response of resampling the monitoring location from which a water sample provided a trigger level exceedance was suggested by Mr Cochrane as being a blunt approach to responding to such trigger level exceedances and may do little to understand or monitor the exceedance. I note that this is not the only response proposed to occur when trigger levels are exceeded, with the range of responses outlined in condition 38. Where the potential to mitigate adverse outcomes exists the response also includes immediate action. The monitoring proposed is better considered as re-sampling to confirm the integrity of the original sample and the trigger level exceedance. This is a common first step before investigation of the cause of the exceedance and is to identify incorrect trigger level exceedance such as resulting from sampling error, laboratory error, or cross contamination during transit.

72 Mr Cochrane also raised concerns regarding the lack of quantitative assessment of the influence of groundwater and surface water reductions on wetland hydrology. This included the need for wetland monitoring to identify adverse effects. To provide context for the predicted rates of reduction in flow to the wetland, the predicted reduction in groundwater flow is estimated to be in the order of 2-3 m^3/day or 0.3% of the calculated average water flow to the wetland. I consider that such a decrease in inflow and wetland saturation would most likely be unmeasurable in the context of the natural variability.

73 The relatively consistent degree of base wetland saturation is reflected by groundwater levels, both within the wetland and hydraulically connected alluvium. Monitoring at location BH01 adjacent to the wetland indicates that groundwater levels have limited response to rainfall, varying within a narrow

range of no more than 0.3 m between November 2019, July 2020 and March 2021. This period includes a notable drought, over the summer 2019-2020, demonstrating the relative stability of groundwater levels within the wetland.

74 The relative stability of the groundwater levels within the wetland are expected to be the result of:

(a) The low permeability of the underlying geology which does not allow for meaningful underdrainage of the wetland. This limits the rate of water loss from the wetland, with water having to dissipate as flow along its length.

(b) The relatively shallow grade of the wetland, where any excess water from catchment run-off generates flows. This is discussed in more detail by Mr Ingles.

75 Rather than fluctuations in groundwater inflow, I consider that variability in wetland saturation results from the occurrence and variability of run-off from rain events. Saturation of the wetland from the surrounding catchment will continue to occur and Mr Ingles discusses the variability of this in his evidence. Mitigation of effects, if any, of reduced inflow to the wetland from the landfill area is proposed to be provided by the attenuation basin, which I understand will have a minimum useable volume for wetland water supplement of 500 m^3.

76 To allow for potential variability of soakage from the basin to ground over time, due to blinding of the base, it is proposed that a floating decant will be installed to allow discharge of the stored volume following run-off events. Distributing the stored volume, via soakage and/or floating decant at rates in the order of 25 m3/day, or three times total estimated groundwater inflow, will more than offset any loss of groundwater flow to the wetland. More importantly, due to the constrained nature of water loss from the wetland, this increased flow will promote prolonged saturation of wetland sediments following rain events.

77 Mr Cochrane has requested monitoring of water levels within the wetland to provide baseline information regarding the variability of conditions, and this is now reflected in the proposed conditions. Monitoring locations WT1 to WT5 as indicated in Drawing C309 attached to my evidence provide the means monitoring water levels in the wetland. Monitoring at location WT6 will provide supporting background information for wetland water levels.

78 To provide further characterisation of the wetland, surface water and groundwater conditions prior to development of the landfill it is proposed

that high-frequency automated monitoring be used in select locations during the baseline monitoring period, with this required under condition 31. The additional information will supplement the manual monitoring provided for under condition 30. The automated monitoring includes:

79 The use of continuous water level monitoring in groundwater and the wetland monitoring locations.

80 The use of continuous water level and velocity monitoring at location SW3, SW7 and, where access allows, at SW8. These locations are indicated in drawing C309 attached to my evidence.

81 The use of a continuous water quality monitoring station at location SW8 if access allows, and at location SW7 to provide at least daily measurement of key parameters, including nitrate and ammoniacal nitrogen, when water is flowing. In the event that access to SW8 cannot be secured for the monitoring period, that water quality station will be installed at location SW3.

82 The baseline monitoring and development of trigger levels will also provide an opportunity to refine the understanding of where and how to best monitor for adverse effects associated with the landfill construction and operation. The potential for such refinement is proposed to be accommodated through development of a Receiving Water Environment Management Plan following the baseline monitoring, which is proposed to be required under Conditions 34 and 35. This will clearly describe the long-term requirements for wetland, surface water and groundwater monitoring, use of the trigger levels and any required response to exceedances.

83 The further understanding of variability in the wetland saturation from baseline monitoring will also allow refinement of how the attenuation basins stored volume can be beneficially used. In the event that further mitigation is needed to avoid adverse effects to the wetland, options exist for changes to stormwater the management and landfill cover, as well as interventions within the wetlands, which are discussed by Jaz Morris.

Response to matters raised in submissions

84 Brighton Surf lifesaving club, R Aburn, Saddle Hill Community Board, A. Hutchinson and S. Weatherell raised concerns in their submissions regarding water quality within the Ōtokia Creek and the potential for landfill leachate discharges to influence ecology, stock drinking water and human health along the length of the stream and at Brighton beach.

85 My assessment has evaluated the potential impact on shallow groundwater downstream of the landfill site. If I conservatively assume that other than

during periods of rainfall and runoff the shallow groundwater feeds the wetlands and intermittent stream immediately downstream of the landfill it is my opinion that the water quality assessment, from which I conclude that potential adverse effects to water quality will be less than minor, is conservative and likely overestimates the potential for adverse effects. In this regard, I consider that some changes in water quality may be evident as a function of the changing recharge environment immediately downstream of the landfill, but contaminant concentrations are unlikely to increase meaningfully. The conservatism in my assessment is evident in the following assumptions that have been made:

(a) The maximum leachate leakage rate was adopted from the landfill closure stage (1.4 m^3/year). However, contaminant concentrations are typically highest when waste is exposed during operation.

(b) Comparison of predicted groundwater quality to relevant water quality criteria has made no allowance for mixing with surface water or soakage / discharge from the SRPs and attenuation basin. Such mixing provides significant dilution of groundwater discharges to the stream, which would coincide with periods of high water levels.

(c) No geochemical equilibrium reactions, microbial reactions, adsorption or other contaminant attenuation reactions in the groundwater system were considered in predicting groundwater quality. Such reactions greatly remove contaminant mass through precipitation of minerals and retard contaminant transport by binding to aquifer materials.

86 A. Hutchinson raised concerns in their submission regarding the potential impact of landfill leachate during periods of low rainfall where no surface water dilution is occurring. It is my opinion that the water quality assessment appropriately addresses these concerns, as it considered dilution within groundwater only and did not consider dilution with surface water or the influence of additional soakage from the attenuation basin. Mr Ingles will discuss the surface water and the downstream effects in the unnamed tributary of Ōtokia Creek in his evidence. I also note that minimal discharge of groundwater to the streams in the vicinity of the landfill is unlikely to occur during extended dry periods. Instead, groundwater flow to streams will occur during periods when groundwater levels are elevated and most likely coinciding with periods of rainfall.

87 Big Stone Forest Ltd., A. Ramsey and S. Hart raised concerns in their submissions regarding the limited sampling of surface water and groundwater and that the results may not be representative of the existing

environment. Since submission of the application additional groundwater and surface water sampling has been undertaken as outlined in paragraph 62 and the findings of this monitoring considered in my assessment.

88 Big Stone Forest Ltd., A Ramsey, and Ōtokia Creek and Marsh Habitat Trust and South Coast Neighbourhood Society Incorporated raised concerns in their submissions regarding the potential risk associated with persistent organic pollutants (POPs). This includes a broad range of contaminants that were historically common in industrial applications, electrical equipment and associated with a broad range of plastics and agricultural and horticultural chemicals. Examples include PCPs, PCBs, Dioxins and DDT.

89 Such contaminants are persistent because they have limited susceptibility to degradation, but also because they are predominantly insoluble in water. These contaminants predominantly have a very high affinity to bind to soils and so demonstrate very low mobility in the environment. Health effects are most commonly associated with occupational exposure, with exposure via ingestion of food grown in soils directly affected by such contaminants. In the context of the proposed landfill, the primary means of controlling water and soil quality effects associated with POPs is:

(a) dust management, thereby limited areal re-distribution to areas around the landfill;

(b) leachate controls and minimising the loss of any soluble POP components; and

(c) landfill closure, thereby separating future users of the area from residual POP in the deposited waste.

90 With the very small volume of leachate predicted to leak from the landfill and the predominantly limited mobility of POPs, I consider it very unlikely that POPs would influence water quality downgradient of the landfill.

91 Of the group of known POPs, Perfluorooctanesulfonic acid (PFOS) and similar salts demonstrate notably different properties, being mobile in the environment. The occurrence of such POPs is widespread and known to occur in municipal landfill leachate at modest concentrations. The global body of science needed to provide robust understanding of the toxicity of this group of contaminants is still developing. At present New Zealand has no water quality criteria for this group of contaminants, but the Australian Drinking Water Guidelines maximum allowable values are proposed to be incorporated into the Drinking Water Standards of New Zealand under the Water Services Act 2021.

92 I consider that the risks associated with this contaminant remain less than minor, given the various controls proposed and the environmental setting. However, I recommend that analysis of leachate and surface water for this group of contaminants be included in the landfill monitoring programme as a cautionary measure and to develop a long-term data set should the understanding of this contaminant change in the future. Conditions to capture this are addressed in Mr Dale's evidence.

93 A. Hutchinson and Saddle Hill Community Board raised concerns in their submissions regarding leachate monitoring, including that monitoring may not provide timely warning to those downstream of the landfill and that monitoring does not guarantee there are no leakages. Given the network of proposed monitoring and slow travel times within groundwater, it is my opinion that the pre-cursors of leachate leakage will be detected within a sufficient timeframe for actions to be undertaken to prevent significant effects to surface water quality associated with landfill leachate.

94 Such actions could include more extensive investigation to confirm whether contaminants will enter the wetland in adverse amounts, diversion of groundwater captured by drainage to the leachate treatment system, installation of further infrastructure to intercept impacted groundwater downgradient of the landfill.

Summary and Conclusion of Responses

95 It is my understand that the key concerns of the technical reviewers relate to the effects on the wetlands, the potential to mitigate adverse effects on the wetlands, and ensuring that monitoring and trigger levels are adequate to protect against adverse effects. In response to those concerns, I have provided additional information regarding the use of the attenuation basin and how the discharges from this will more than offset the predicted reduction in groundwater flow to the wetland. This mitigation approach will be refined through the baseline monitoring and detailed design. However, I consider that the use of the attenuation basin to promote saturation of the wetland is a viable and appropriate means of mitigating effects of reduced water flow to the wetland and will also greatly mitigate effects, if they were discernible from background variation, of reductions in catchment run-off due to the landfill. Additional mitigation options are available in the event that the influence of the landfill on the wetland only becomes apparent in the long term.

96 The potential to discern any change in wetland hydrology resulting from the landfill against a background or natural variation and within a broader catchment of forestry influence is discussed in detail by Mr Ingles.

97 Extensive baseline monitoring of groundwater, surface water, wetlands and water quality is proposed including the use of sophisticated automated monitoring solutions. The three-year monitoring period will provide a high resolution understanding of environmental variability and dynamic catchment relationships, which will be used to develop robust trigger levels to detect any trends in water conditions. I consider the proposed approach to be both reliable and intensive in its approach to collecting data and understanding the site. The trigger level development proposed also provides for sophisticated use of baseline information which will allow careful management of the environment under both current and improving environmental conditions.

98 The approach to using the any learnings from baseline monitoring to review the conceptual site model and refining approaches to long term monitoring and management of the environment, accommodated through development of a Receiving Water Environment Management Plan, I consider to be current best practice for the management of any significant infrastructure discharges. This approach makes use of an adaptive methodology to respond to uncertainty and allows better environmental and social outcomes to be achieved from the operation of our infrastructure.

Anthony Kirk

29 April 2022

Table 1 Predicted contaminant concentration within shallow groundwater system down gradient of landfill (results updated from Assessment of Effects to Groundwater (dated May 2021) to account for additional groundwater quality sampling and the most up to date landfill liner design).

Parameter	Flux (kg/year)			
	Existing shallow groundwater system in landfill sub-catchment (800 m^3/year)	Existing shallow groundwater system (69.2 ha Otokia Creek catchment - 3,000 m^3/year)	Leachate leakage (closed landfill - 1.4 m^3/year)	Predicted shallow groundwater down-gradient of landfill (2,200 m^3/year)
Aluminium	-	-	0.011	-
Arsenic	0.00026	0.00097	0.00024	0.00095
Boron	-	-	0.017	-
Cadmium	0.000050	0.00019	0.0000087	0.00015
Calcium	117.9	447.4	0.52	330.0
Chloride	56.3	212.6	2.4	158.7
Chromium	0.00010	0.00037	0.00024	0.00051
Iron	0.019	0.071	0.25	0.31
Lead	0.000021	0.000081	0.00018	0.00024
Magnesium	40.4	153.2	0.27	113.1
Manganese	0.26	0.97	0.0074	0.72
Nickel	0.0031	0.012	0.00027	0.0090
Potassium	4.9	18.4	0.88	14.4
Silica	-	-	0.050	
Sodium	66.9	253.0	1.6	187.6
Sulphate	87.2	331.2	0.41	244.4
Zinc	0.0042	0.016	0.0017	0.014
Total VOC			0.0090	
Total SVOC			0.0062	
Total Kjeldahl Nitrogen	0.25	0.93	1.70	2.390
Dissolved Reactive Phosphorus	0.0013	0.0048	0.0048	0.0083
Ammoniacal Nitrogen	0.0087	0.032	0.98	1.0
Nitrate Nitrogen	8.23	31.3	0.0012	23.0
Total Inorganic Nitrogen	8.24	31.3	0.98	24.0

Table 2 Predicted key contaminant concentrations within shallow groundwater system down gradient of landfill (results updated from Assessment of Effects to Groundwater (dated May 2021) to account for additional groundwater quality sampling and the most up to date landfill liner design).

Parameter	Water Quality Criteria (mg/L)	Predicted concentration (mg/L)	Predicted increase / decrease in shallow groundwater flux
Iron	-	0.14	Increase
Lead	0.0034 (1)	0.00011	Increase
Cadmium	0.0002 (1)	0.000068	Decrease
Chromium	0.001 (1)	0.00023	Increase
Nickel	0.011 (1)	0.0041	Decrease
Zinc	0.008 (1)	0.0062	Decrease
Dissolved reactive phosphorus	0.035 (2) / 0.01 (3)	0.0038	Increase
Nitrate nitrogen	1.0 (2) / 0.075 (3)	10.5	Decrease
Ammoniacal nitrogen	0.2 (2) / 0.1 (3)	0.46	Increase
Total kjeldahl nitrogen (TKN)	-	1.1	Increase

1) ANZG (2018). Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Default criteria values for freshwater – protection: 95% of species.
2) ORC (2016). Otago Regional Council. Regional Plan: Water for Otago. Schedule 16A: Discharge Thresholds for Discharge Threshold Area 2.
3) ORC (2016). Otago Regional Council. Regional Plan: Water for Otago. Schedule 15: Receiving water numerical limits for achieving good water quality for Receiving Water Group 2[ZP1]. (The limits are achieved when 80% of samples collected at a site, when flows are at or below median flow, over a rolling 5-year period, meet or are better than the limits in Schedule 15).

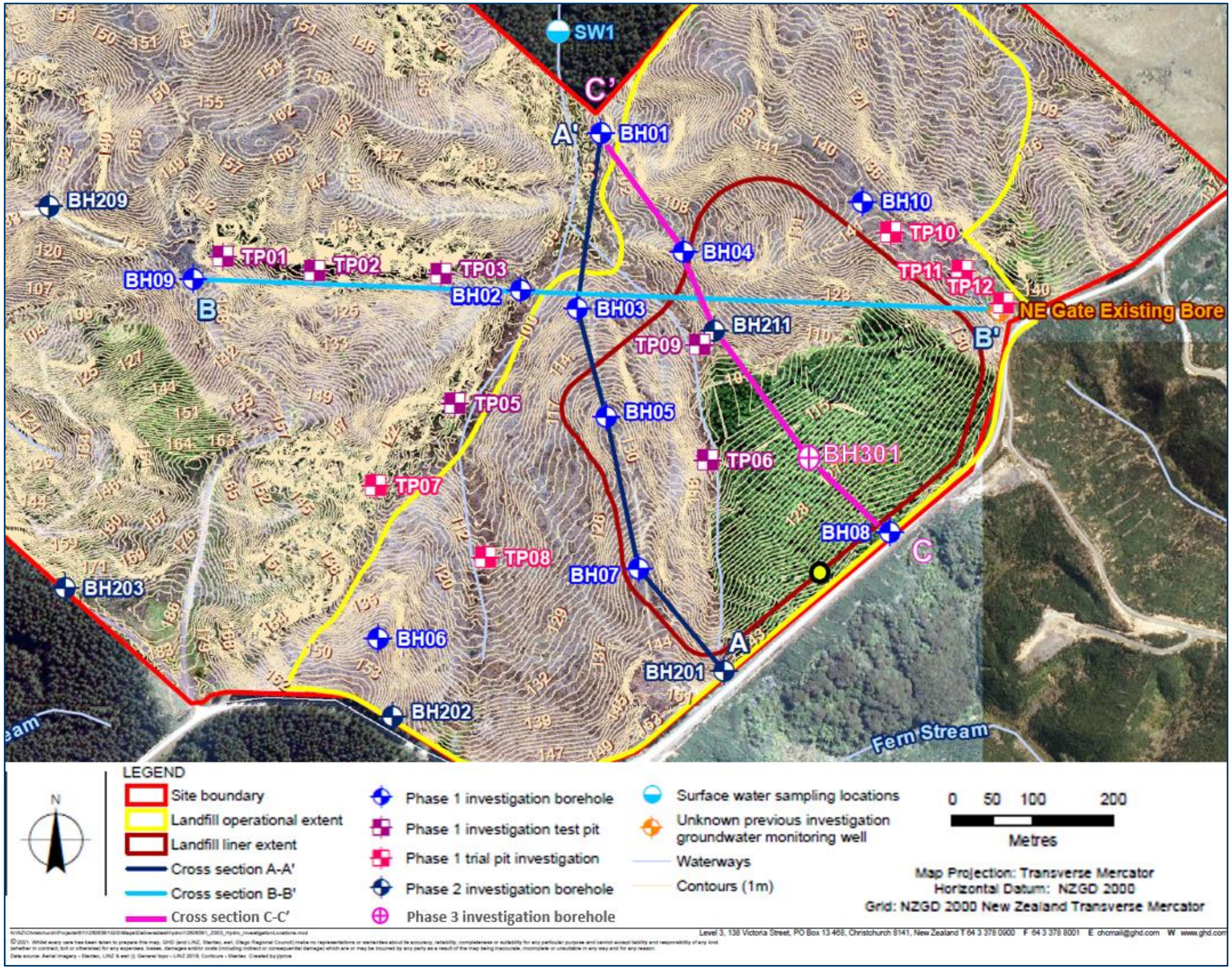

Figure 1 *Cross section and site investigation locations*

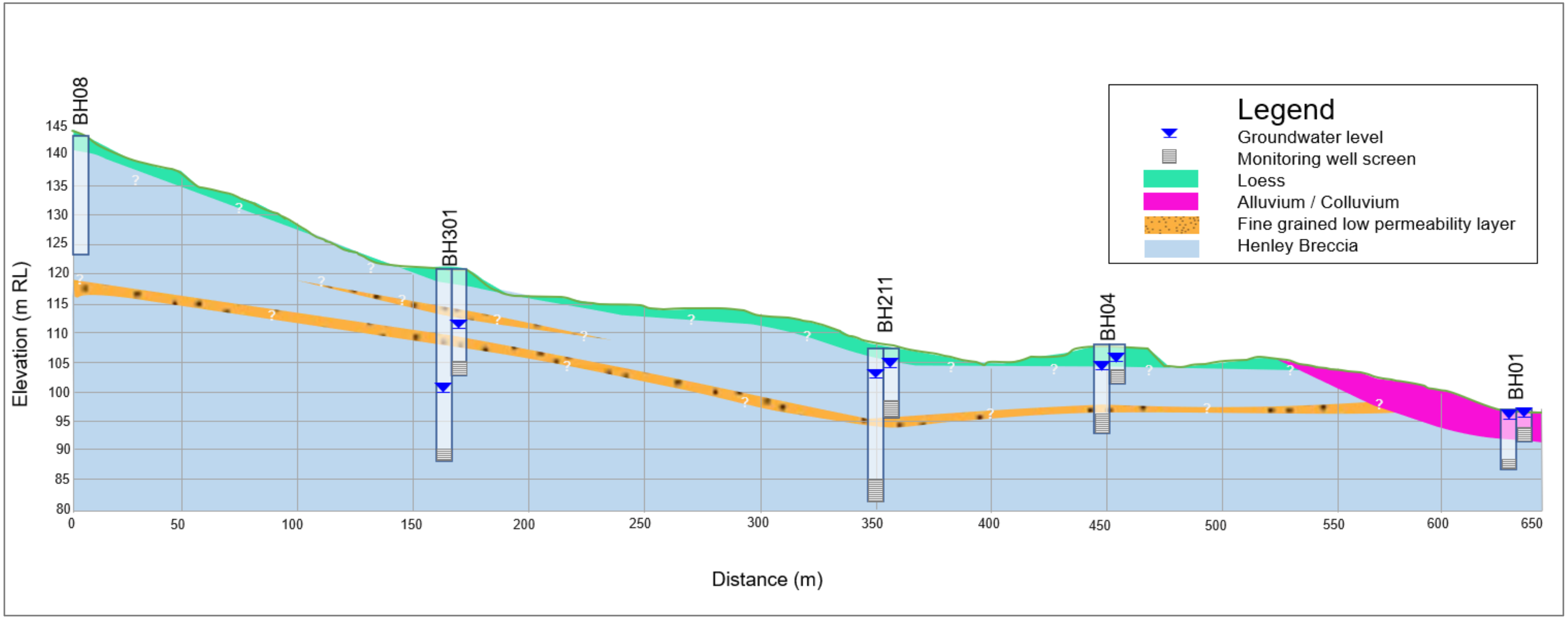

Figure 2 *Cross Section C (drawing not to scale). Groundwater levels recorded 18 January 2022 (BH01 & BH04) and 17 February 2022 (BH301 and BH211).*

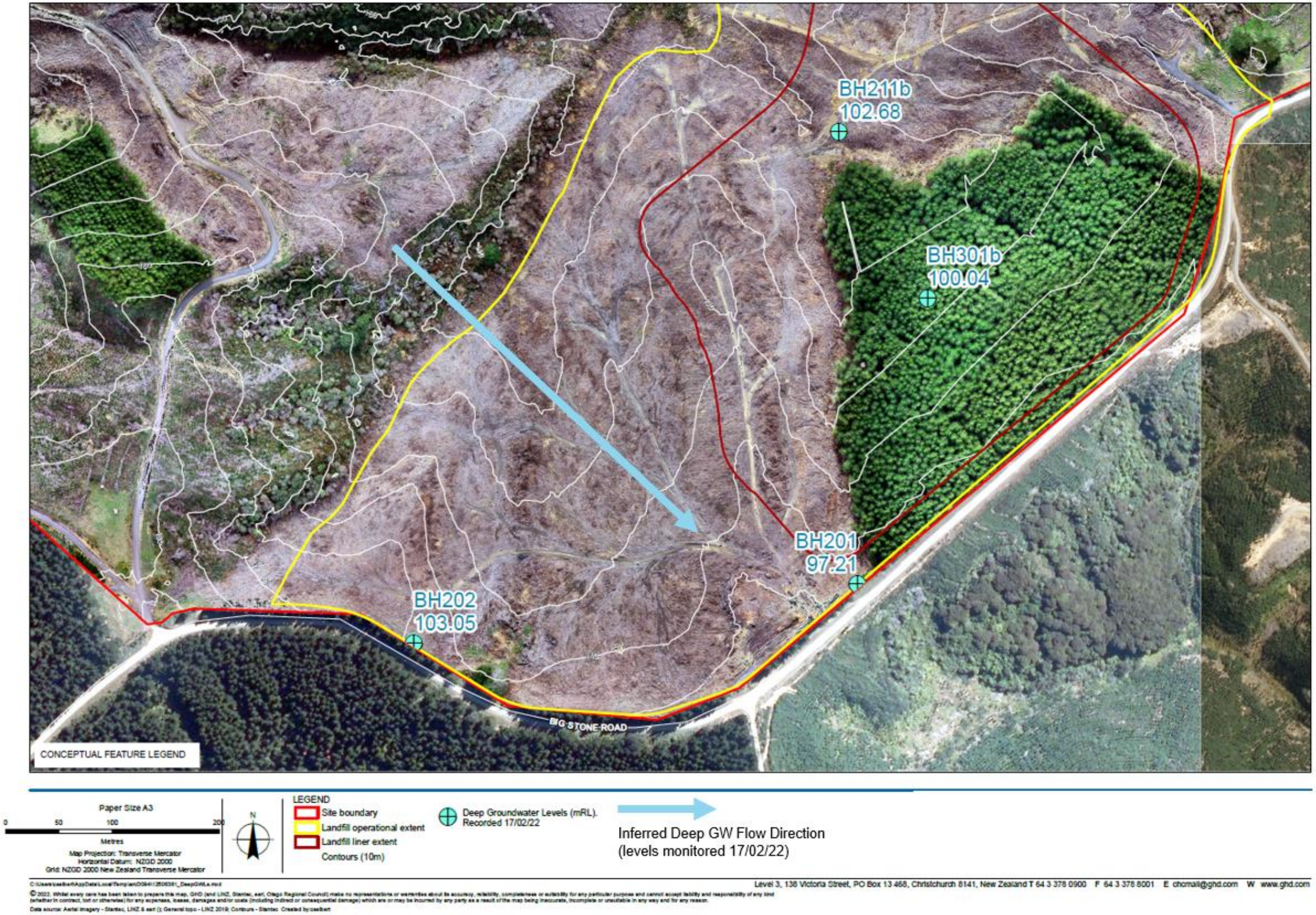

Figure 3 ***Inferred deep groundwater flow direction (17/02/2022)***

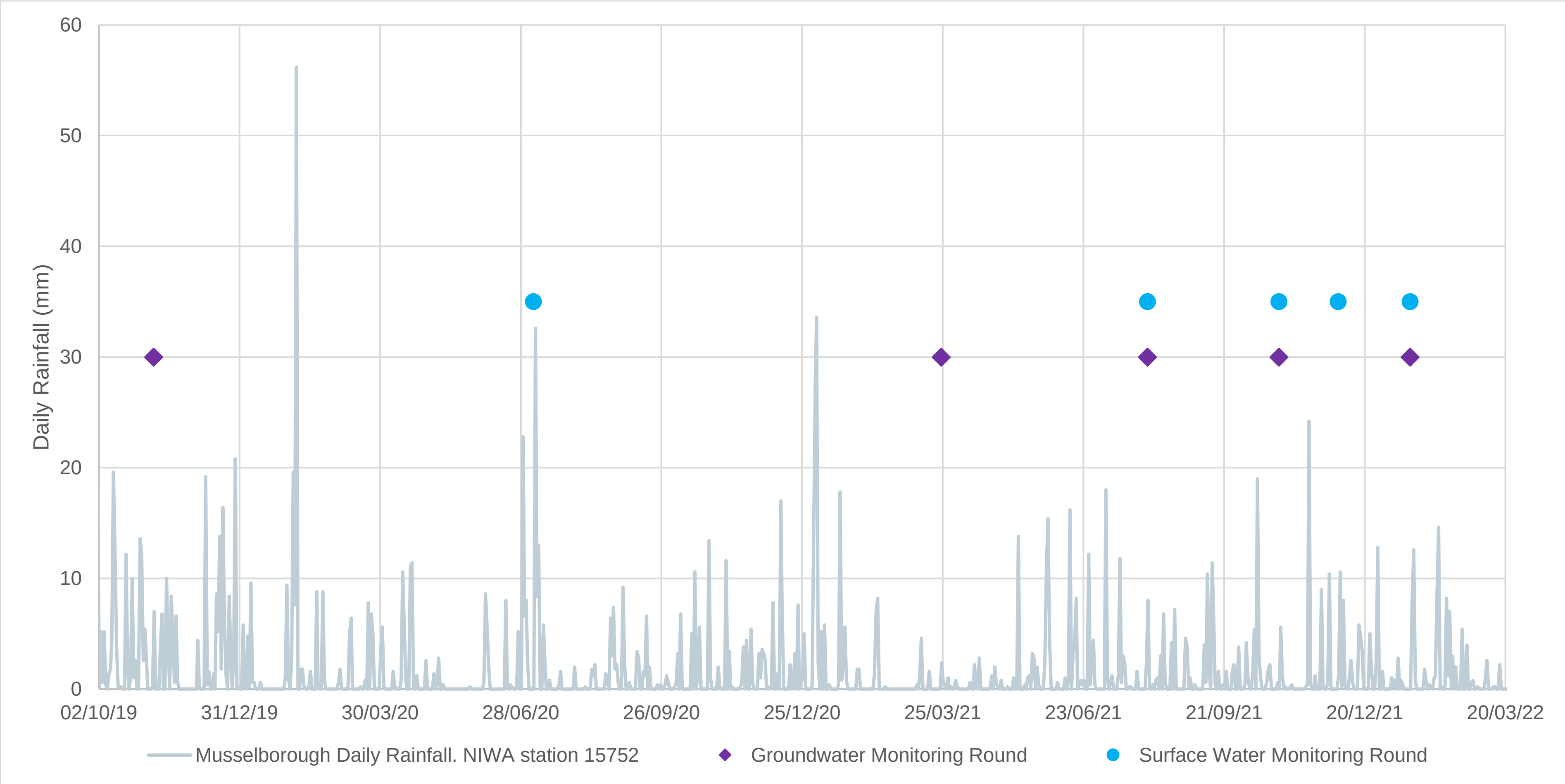

Figure 4 ***Daily rainfall and water quality sampling events.***

Table 3 Rainfall in 7 days preceding water quality sampling event

Groundwater Monitoring Round	Rainfall in preceding 7 days (mm)	Surface Water monitoring Round	Rainfall in preceding 7 days (mm)
6/11/2019	11.4	6/07/2020	39.8
24/03/2021	0	3/08/2021	3.8
3/08/2021	3.8	26/10/2021	4.6
26/10/2021	4.6	3/12/2021	11.0
18/01/2022	1.2	18/01/2022	1.2

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH01A	GW5A	18/01/2022	2832272_7	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	450		
BH01A	GW5A	18/01/2022	2832272_7	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH01A	GW5A	6/11/2019	19-40125-1	Alkalinity (total) as CaCO3	g CaCO3/m3	324		
BH01A	GW5A	23/03/2021	21-12139-1	Alkalinity (total) as CaCO3	g CaCO3/m3	437		
BH01A	GW5A	5/08/2021	21-34713-6	Alkalinity (total) as CaCO3	g CaCO3/m3	466		
BH01A	GW5A	27/10/2021	21-45163-3	Alkalinity (total) as CaCO3	g CaCO3/m3	454		
BH01A	GW5A	18/01/2022	2832272_7	Alkalinity (total) as CaCO3	g CaCO3/m3	450		
BH01A	GW5A	6/11/2019	19-40125-1	Ammonia as N	mg/L	0.03		
BH01A	GW5A	23/03/2021	21-12139-1	Ammonia as N	mg/L	< 0.005		
BH01A	GW5A	5/08/2021	21-34713-6	Ammonia as N	mg/L	< 0.005		
BH01A	GW5A	27/10/2021	21-45163-3	Ammonia as N	mg/L	< 0.005		
BH01A	GW5A	18/01/2022	2832272_7	Anions Total	meq/L	17.1		
BH01A	GW5A	6/11/2019	19-40125-1	Arsenic	mg/L	< 0.0005		
BH01A	GW5A	23/03/2021	21-12139-1	Arsenic	mg/L	< 0.0005		
BH01A	GW5A	5/08/2021	21-34713-6	Arsenic	mg/L	< 0.0005		
BH01A	GW5A	27/10/2021	21-45163-3	Arsenic	mg/L	< 0.0005		
BH01A	GW5A	18/01/2022	2832272_7	Arsenic	mg/L	< 0.001		
BH01A	GW5A	23/03/2021	21-12139-1	Bicarbonate	g CaCO3/m3	436		
BH01A	GW5A	5/08/2021	21-34713-6	Bicarbonate	g CaCO3/m3	465		
BH01A	GW5A	27/10/2021	21-45163-3	Bicarbonate	g CaCO3/m3	454		
BH01A	GW5A	18/01/2022	2832272_7	Bicarbonate	g CaCO3/m3	550		
BH01A	GW5A	6/11/2019	19-40125-1	Cadmium	mg/L	0.000026		
BH01A	GW5A	23/03/2021	21-12139-1	Cadmium	mg/L	0.000086		
BH01A	GW5A	5/08/2021	21-34713-6	Cadmium	mg/L	0.0001		
BH01A	GW5A	27/10/2021	21-45163-3	Cadmium	mg/L	0.000095		
BH01A	GW5A	18/01/2022	2832272_7	Cadmium	mg/L	0.00008		
BH01A	GW5A	6/11/2019	19-40125-1	Calcium	mg/L	138		
BH01A	GW5A	23/03/2021	21-12139-1	Calcium	mg/L	178		
BH01A	GW5A	5/08/2021	21-34713-6	Calcium	mg/L	178		
BH01A	GW5A	27/10/2021	21-45163-3	Calcium	mg/L	179		
BH01A	GW5A	18/01/2022	2832272_7	Calcium	mg/L	172		
BH01A	GW5A	23/03/2021	21-12139-1	Carbonate	g CaCO3/m3	< 1		
BH01A	GW5A	5/08/2021	21-34713-6	Carbonate	g CaCO3/m3	< 1		
BH01A	GW5A	27/10/2021	21-45163-3	Carbonate	g CaCO3/m3	< 1		
BH01A	GW5A	18/01/2022	2832272_7	Carbonate	g CaCO3/m3	1.4		
BH01A	GW5A	18/01/2022	2832272_7	Cations Total	meq/L	17.6		
BH01A	GW5A	6/11/2019	19-40125-1	Chloride	mg/L	145		
BH01A	GW5A	23/03/2021	21-12139-1	Chloride	mg/L	108		
BH01A	GW5A	5/08/2021	21-34713-6	Chloride	mg/L	9.56		
BH01A	GW5A	27/10/2021	21-45163-3	Chloride	mg/L	100		
BH01A	GW5A	18/01/2022	2832272_7	Chloride	mg/L	94		
BH01A	GW5A	6/11/2019	19-40125-1	Chromium (III+VI)	mg/L	< 0.0002		
BH01A	GW5A	23/03/2021	21-12139-1	Chromium (III+VI)	mg/L	< 0.0002		
BH01A	GW5A	5/08/2021	21-34713-6	Chromium (III+VI)	mg/L	< 0.0002		
BH01A	GW5A	27/10/2021	21-45163-3	Chromium (III+VI)	mg/L	< 0.0002		
BH01A	GW5A	18/01/2022	2832272_7	Chromium (III+VI)	mg/L	< 0.0005		
BH01A	GW5A	23/03/2021	21-12139-1	CO2 (Free)	g/m3	36.5		
BH01A	GW5A	5/08/2021	21-34713-6	CO2 (Free)	g/m3	59.2		
BH01A	GW5A	27/10/2021	21-45163-3	CO2 (Free)	g/m3	125		
BH01A	GW5A	18/01/2022	2832272_7	CO2 (Free)	g/m3	28		
BH01A	GW5A	23/03/2021	21-12139-1	Conductivity (1:5 aqueous extract)	µS/cm	148000		
BH01A	GW5A	6/11/2019	19-40125-1	Copper	mg/L	0.0025		yes
BH01A	GW5A	23/03/2021	21-12139-1	Copper	mg/L	0.00063		
BH01A	GW5A	5/08/2021	21-34713-6	Copper	mg/L	0.0016		yes
BH01A	GW5A	27/10/2021	21-45163-3	Copper	mg/L	0.00051		
BH01A	GW5A	18/01/2022	2832272_7	Copper	mg/L	0.0008		
BH01A	GW5A	5/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	28.7		
BH01A	GW5A	27/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	6.1		
BH01A	GW5A	23/03/2021	21-12139-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH01A	GW5A	5/08/2021	21-34713-6	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH01A	GW5A	27/10/2021	21-45163-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH01A	GW5A	18/01/2022	2832272_7	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.004		
BH01A	GW5A	5/08/2021		Electrical Conductivity (Field)	µS/cm	1001		
BH01A	GW5A	27/10/2021		Electrical Conductivity (Field)	µS/cm	1506		
BH01A	GW5A	6/11/2019	19-40125-1	Electrical conductivity *(lab)	µS/cm	1610		
BH01A	GW5A	18/01/2022	2832272_7	Electrical conductivity *(lab)	µS/cm	156100		
BH01A	GW5A	23/03/2021	21-12139-1	Hardness as CaCO3	g CaCO3/m3	690		
BH01A	GW5A	5/08/2021	21-34713-6	Hardness as CaCO3	g CaCO3/m3	700		
BH01A	GW5A	27/10/2021	21-45163-3	Hardness as CaCO3	g CaCO3/m3	700		
BH01A	GW5A	18/01/2022	2832272_7	Hardness as CaCO3	g CaCO3/m3	690		
BH01A	GW5A	23/03/2021	21-12139-1	Hydroxide	g CaCO3/m3	< 1		
BH01A	GW5A	5/08/2021	21-34713-6	Hydroxide	g CaCO3/m3	< 1		
BH01A	GW5A	27/10/2021	21-45163-3	Hydroxide	g CaCO3/m3	< 1		
BH01A	GW5A	6/11/2019	19-40125-1	Iron	mg/L	0.12		
BH01A	GW5A	23/03/2021	21-12139-1	Iron	mg/L	< 0.005		
BH01A	GW5A	5/08/2021	21-34713-6	Iron	mg/L	0.0074		
BH01A	GW5A	27/10/2021	21-45163-3	Iron	mg/L	< 0.005		
BH01A	GW5A	6/11/2019	19-40125-1	Kjeldahl Nitrogen Total	mg/L	0.81		
BH01A	GW5A	23/03/2021	21-12139-1	Kjeldahl Nitrogen Total	mg/L	0.18		
BH01A	GW5A	5/08/2021	21-34713-6	Kjeldahl Nitrogen Total	mg/L	0.31		
BH01A	GW5A	27/10/2021	21-45163-3	Kjeldahl Nitrogen Total	mg/L	0.24		
BH01A	GW5A	18/01/2022	2832272_7	Kjeldahl Nitrogen Total	mg/L	0.15		
BH01A	GW5A	6/11/2019	19-40125-1	Lead	mg/L	< 0.00005		
BH01A	GW5A	23/03/2021	21-12139-1	Lead	mg/L	< 0.00005		
BH01A	GW5A	5/08/2021	21-34713-6	Lead	mg/L	< 0.00005		
BH01A	GW5A	27/10/2021	21-45163-3	Lead	mg/L	< 0.00005		
BH01A	GW5A	18/01/2022	2832272_7	Lead	mg/L	< 0.0001		
BH01A	GW5A	6/11/2019	19-40125-1	Magnesium	mg/L	44.6		
BH01A	GW5A	23/03/2021	21-12139-1	Magnesium	mg/L	58.9		
BH01A	GW5A	5/08/2021	21-34713-6	Magnesium	mg/L	62.3		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH01A	GW5A	27/10/2021	21-45163-3	Magnesium	mg/L	61.7		
BH01A	GW5A	18/01/2022	2832272_7	Magnesium	mg/L	64		
BH01A	GW5A	6/11/2019	19-40125-1	Manganese	mg/L	0.159		
BH01A	GW5A	23/03/2021	21-12139-1	Manganese	mg/L	0.376		
BH01A	GW5A	5/08/2021	21-34713-6	Manganese	mg/L	0.367		
BH01A	GW5A	27/10/2021	21-45163-3	Manganese	mg/L	0.353		
BH01A	GW5A	6/11/2019	19-40125-1	Nickel	mg/L	0.0061		
BH01A	GW5A	23/03/2021	21-12139-1	Nickel	mg/L	0.0036		
BH01A	GW5A	5/08/2021	21-34713-6	Nickel	mg/L	0.0039		
BH01A	GW5A	27/10/2021	21-45163-3	Nickel	mg/L	0.0037		
BH01A	GW5A	18/01/2022	2832272_7	Nickel	mg/L	0.004		
BH01A	GW5A	6/11/2019	19-40125-1	Nitrate (as N)	mg/L	26.7	yes	
BH01A	GW5A	23/03/2021	21-12139-1	Nitrate (as N)	mg/L	10.8	yes	
BH01A	GW5A	5/08/2021	21-34713-6	Nitrate (as N)	mg/L	10.6	yes	
BH01A	GW5A	27/10/2021	21-45163-3	Nitrate (as N)	mg/L	11.2	yes	
BH01A	GW5A	18/01/2022	2832272_7	Nitrate (as N)	mg/L	8.4	yes	
BH01A	GW5A	6/11/2019	19-40125-1	Nitrite (as N)	mg/L	0.05		
BH01A	GW5A	23/03/2021	21-12139-1	Nitrite (as N)	mg/L	0.058		
BH01A	GW5A	5/08/2021	21-34713-6	Nitrite (as N)	mg/L	0.04		
BH01A	GW5A	27/10/2021	21-45163-3	Nitrite (as N)	mg/L	0.049		
BH01A	GW5A	18/01/2022	2832272_7	Nitrite (as N)	mg/L	0.047		
BH01A	GW5A	6/11/2019	19-40125-1	Nitrogen (Total)	mg/L	28		
BH01A	GW5A	23/03/2021	21-12139-1	Nitrogen (Total)	mg/L	11		
BH01A	GW5A	5/08/2021	21-34713-6	Nitrogen (Total)	mg/L	11		
BH01A	GW5A	27/10/2021	21-45163-3	Nitrogen (Total)	mg/L	12		
BH01A	GW5A	18/01/2022	2832272_7	Nitrogen (Total)	mg/L	8.6		
BH01A	GW5A	5/08/2021		pH (Field)	pH_Units	6.59		
BH01A	GW5A	27/10/2021		pH (Field)	pH_Units	6.59		
BH01A	GW5A	6/11/2019	19-40125-1	pH (Lab)	pH_Units	7.3		
BH01A	GW5A	23/03/2021	21-12139-1	pH (Lab)	pH_Units	7.4		
BH01A	GW5A	18/01/2022	2832272_7	pH (Lab)	pH_Units	7.5		
BH01A	GW5A	6/11/2019	19-40125-1	Potassium	mg/L	5.41		
BH01A	GW5A	23/03/2021	21-12139-1	Potassium	mg/L	6.32		
BH01A	GW5A	5/08/2021	21-34713-6	Potassium	mg/L	6.9		
BH01A	GW5A	27/10/2021	21-45163-3	Potassium	mg/L	7.01		
BH01A	GW5A	18/01/2022	2832272_7	Potassium	mg/L	6.9		
BH01A	GW5A	5/08/2021		Redox	mV	-2.5		
BH01A	GW5A	27/10/2021		Redox	mV	35.9		
BH01A	GW5A	6/11/2019	19-40125-1	Sodium	mg/L	79.9		
BH01A	GW5A	23/03/2021	21-12139-1	Sodium	mg/L	84.5		
BH01A	GW5A	5/08/2021	21-34713-6	Sodium	mg/L	82		
BH01A	GW5A	27/10/2021	21-45163-3	Sodium	mg/L	83.1		
BH01A	GW5A	18/01/2022	2832272_7	Sodium	mg/L	84		
BH01A	GW5A	6/11/2019	19-40125-1	Sulphate	mg/L	182		
BH01A	GW5A	23/03/2021	21-12139-1	Sulphate	mg/L	202		
BH01A	GW5A	5/08/2021	21-34713-6	Sulphate	mg/L	20.6		
BH01A	GW5A	27/10/2021	21-45163-3	Sulphate	mg/L	216		
BH01A	GW5A	18/01/2022	2832272_7	Sulphate	mg/L	230		
BH01A	GW5A	5/08/2021		Temperature (Field)	oC	7.5		
BH01A	GW5A	27/10/2021		Temperature (Field)	oC	10.8		
BH01A	GW5A	18/01/2022	2832272_7	Total Ammoniacal-N	g/m3	< 0.1		
BH01A	GW5A	23/03/2021	21-12139-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	10.8		
BH01A	GW5A	5/08/2021	21-34713-6	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	10.6		
BH01A	GW5A	27/10/2021	21-45163-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	11.3		
BH01A	GW5A	18/01/2022	2832272_7	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	8.4		
BH01A	GW5A	23/03/2021	21-12139-1	Total Phosphorus	mg/L	0.022		
BH01A	GW5A	5/08/2021	21-34713-6	Total Phosphorus	mg/L	0.023		
BH01A	GW5A	27/10/2021	21-45163-3	Total Phosphorus	mg/L	0.007		
BH01A	GW5A	18/01/2022	2832272_7	Total Phosphorus	mg/L	0.006		
BH01A	GW5A	18/01/2022	2832272_7	Total Suspended Solids	mg/L	15		
BH01A	GW5A	18/01/2022	2832272_7	Turbidity	NTU	6.8		
BH01A	GW5A	6/11/2019	19-40125-1	Zinc	mg/L	0.0078		
BH01A	GW5A	23/03/2021	21-12139-1	Zinc	mg/L	0.0048		
BH01A	GW5A	5/08/2021	21-34713-6	Zinc	mg/L	0.0096		yes
BH01A	GW5A	27/10/2021	21-45163-3	Zinc	mg/L	0.0049		
BH01A	GW5A	18/01/2022	2832272_7	Zinc	mg/L	0.004		
BH01B	GW5B	18/01/2022	2832272_8	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	280		
BH01B	GW5B	18/01/2022	2832272_8	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH01B	GW5B	9/11/2019	19-40125-2	Alkalinity (total) as CaCO3	g CaCO3/m3	277		
BH01B	GW5B	23/03/2021	21-12139-2	Alkalinity (total) as CaCO3	g CaCO3/m3	290		
BH01B	GW5B	5/08/2021	21-34713-7	Alkalinity (total) as CaCO3	g CaCO3/m3	283		
BH01B	GW5B	27/10/2021	21-45163-4	Alkalinity (total) as CaCO3	g CaCO3/m3	282		
BH01B	GW5B	18/01/2022	2832272_8	Alkalinity (total) as CaCO3	g CaCO3/m3	280		
BH01B	GW5B	9/11/2019	19-40125-2	Ammonia as N	mg/L	0.15		
BH01B	GW5B	23/03/2021	21-12139-2	Ammonia as N	mg/L	0.02		
BH01B	GW5B	5/08/2021	21-34713-7	Ammonia as N	mg/L	< 0.005		
BH01B	GW5B	27/10/2021	21-45163-4	Ammonia as N	mg/L	< 0.005		
BH01B	GW5B	18/01/2022	2832272_8	Anions Total	meq/L	7.7		
BH01B	GW5B	9/11/2019	19-40125-2	Arsenic	mg/L	0.00088		
BH01B	GW5B	23/03/2021	21-12139-2	Arsenic	mg/L	< 0.0005		
BH01B	GW5B	5/08/2021	21-34713-7	Arsenic	mg/L	< 0.0005		
BH01B	GW5B	27/10/2021	21-45163-4	Arsenic	mg/L	< 0.0005		
BH01B	GW5B	18/01/2022	2832272_8	Arsenic	mg/L	< 0.001		
BH01B	GW5B	23/03/2021	21-12139-2	Bicarbonate	g CaCO3/m3	285		
BH01B	GW5B	5/08/2021	21-34713-7	Bicarbonate	g CaCO3/m3	281		
BH01B	GW5B	27/10/2021	21-45163-4	Bicarbonate	g CaCO3/m3	281		
BH01B	GW5B	18/01/2022	2832272_8	Bicarbonate	g CaCO3/m3	340		
BH01B	GW5B	9/11/2019	19-40125-2	Cadmium	mg/L	0.000023		
BH01B	GW5B	23/03/2021	21-12139-2	Cadmium	mg/L	< 0.00002		
BH01B	GW5B	5/08/2021	21-34713-7	Cadmium	mg/L	0.000023		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH01B	GW5B	27/10/2021	21-45163-4	Cadmium	mg/L	< 0.00002		
BH01B	GW5B	18/01/2022	2832272_8	Cadmium	mg/L	< 0.00005		
BH01B	GW5B	9/11/2019	19-40125-2	Calcium	mg/L	69.9		
BH01B	GW5B	23/03/2021	21-12139-2	Calcium	mg/L	68.5		
BH01B	GW5B	5/08/2021	21-34713-7	Calcium	mg/L	68.1		
BH01B	GW5B	27/10/2021	21-45163-4	Calcium	mg/L	68.7		
BH01B	GW5B	18/01/2022	2832272_8	Calcium	mg/L	63		
BH01B	GW5B	23/03/2021	21-12139-2	Carbonate	g CaCO3/m3	4.9		
BH01B	GW5B	5/08/2021	21-34713-7	Carbonate	g CaCO3/m3	2		
BH01B	GW5B	27/10/2021	21-45163-4	Carbonate	g CaCO3/m3	< 1		
BH01B	GW5B	18/01/2022	2832272_8	Carbonate	g CaCO3/m3	2.6		
BH01B	GW5B	18/01/2022	2832272_8	Cations Total	meq/L	7.9		
BH01B	GW5B	9/11/2019	19-40125-2	Chloride	mg/L	76.9		
BH01B	GW5B	23/03/2021	21-12139-2	Chloride	mg/L	63.1		
BH01B	GW5B	5/08/2021	21-34713-7	Chloride	mg/L	593		
BH01B	GW5B	27/10/2021	21-45163-4	Chloride	mg/L	59.8		
BH01B	GW5B	18/01/2022	2832272_8	Chloride	mg/L	61		
BH01B	GW5B	9/11/2019	19-40125-2	Chromium (III+VI)	mg/L	0.00023		
BH01B	GW5B	23/03/2021	21-12139-2	Chromium (III+VI)	mg/L	< 0.0002		
BH01B	GW5B	5/08/2021	21-34713-7	Chromium (III+VI)	mg/L	< 0.0002		
BH01B	GW5B	27/10/2021	21-45163-4	Chromium (III+VI)	mg/L	< 0.0002		
BH01B	GW5B	18/01/2022	2832272_8	Chromium (III+VI)	mg/L	< 0.0005		
BH01B	GW5B	23/03/2021	21-12139-2	CO2 (Free)	g/m3	3.1		
BH01B	GW5B	5/08/2021	21-34713-7	CO2 (Free)	g/m3	7.6		
BH01B	GW5B	27/10/2021	21-45163-4	CO2 (Free)	g/m3	15		
BH01B	GW5B	18/01/2022	2832272_8	CO2 (Free)	g/m3	5.5		
BH01B	GW5B	23/03/2021	21-12139-2	Conductivity (1:5 aqueous extract)	µS/cm	75000		
BH01B	GW5B	9/11/2019	19-40125-2	Copper	mg/L	0.001		
BH01B	GW5B	23/03/2021	21-12139-2	Copper	mg/L	0.0028		yes
BH01B	GW5B	5/08/2021	21-34713-7	Copper	mg/L	0.0089		yes
BH01B	GW5B	27/10/2021	21-45163-4	Copper	mg/L	0.0031		yes
BH01B	GW5B	18/01/2022	2832272_8	Copper	mg/L	0.004		yes
BH01B	GW5B	5/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	54		
BH01B	GW5B	27/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	27		
BH01B	GW5B	23/03/2021	21-12139-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH01B	GW5B	5/08/2021	21-34713-7	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH01B	GW5B	27/10/2021	21-45163-4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH01B	GW5B	18/01/2022	2832272_8	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.004		
BH01B	GW5B	5/08/2021		Electrical Conductivity (Field)	µS/cm	498.5		
BH01B	GW5B	27/10/2021		Electrical Conductivity (Field)	µS/cm	753		
BH01B	GW5B	9/11/2019	19-40125-2	Electrical conductivity *(lab)	µS/cm	876		
BH01B	GW5B	18/01/2022	2832272_8	Electrical conductivity *(lab)	µS/cm	74900		
BH01B	GW5B	23/03/2021	21-12139-2	Hardness as CaCO3	g CaCO3/m3	250		
BH01B	GW5B	5/08/2021	21-34713-7	Hardness as CaCO3	g CaCO3/m3	240		
BH01B	GW5B	27/10/2021	21-45163-4	Hardness as CaCO3	g CaCO3/m3	250		
BH01B	GW5B	18/01/2022	2832272_8	Hardness as CaCO3	g CaCO3/m3	230		
BH01B	GW5B	23/03/2021	21-12139-2	Hydroxide	g CaCO3/m3	< 1		
BH01B	GW5B	5/08/2021	21-34713-7	Hydroxide	g CaCO3/m3	< 1		
BH01B	GW5B	27/10/2021	21-45163-4	Hydroxide	g CaCO3/m3	< 1		
BH01B	GW5B	9/11/2019	19-40125-2	Iron	mg/L	0.021		
BH01B	GW5B	23/03/2021	21-12139-2	Iron	mg/L	0.06		
BH01B	GW5B	5/08/2021	21-34713-7	Iron	mg/L	0.026		
BH01B	GW5B	27/10/2021	21-45163-4	Iron	mg/L	< 0.005		
BH01B	GW5B	9/11/2019	19-40125-2	Kjeldahl Nitrogen Total	mg/L	0.7		
BH01B	GW5B	23/03/2021	21-12139-2	Kjeldahl Nitrogen Total	mg/L	0.22		
BH01B	GW5B	5/08/2021	21-34713-7	Kjeldahl Nitrogen Total	mg/L	0.19		
BH01B	GW5B	27/10/2021	21-45163-4	Kjeldahl Nitrogen Total	mg/L	0.17		
BH01B	GW5B	18/01/2022	2832272_8	Kjeldahl Nitrogen Total	mg/L	0.17		
BH01B	GW5B	9/11/2019	19-40125-2	Lead	mg/L	0.00013		
BH01B	GW5B	23/03/2021	21-12139-2	Lead	mg/L	< 0.00005		
BH01B	GW5B	5/08/2021	21-34713-7	Lead	mg/L	< 0.00005		
BH01B	GW5B	27/10/2021	21-45163-4	Lead	mg/L	< 0.00005		
BH01B	GW5B	18/01/2022	2832272_8	Lead	mg/L	< 0.0001		
BH01B	GW5B	9/11/2019	19-40125-2	Magnesium	mg/L	18.3		
BH01B	GW5B	23/03/2021	21-12139-2	Magnesium	mg/L	18.4		
BH01B	GW5B	5/08/2021	21-34713-7	Magnesium	mg/L	18.1		
BH01B	GW5B	27/10/2021	21-45163-4	Magnesium	mg/L	18.3		
BH01B	GW5B	18/01/2022	2832272_8	Magnesium	mg/L	18.8		
BH01B	GW5B	9/11/2019	19-40125-2	Manganese	mg/L	1.66		
BH01B	GW5B	23/03/2021	21-12139-2	Manganese	mg/L	1.41		
BH01B	GW5B	5/08/2021	21-34713-7	Manganese	mg/L	1.13		
BH01B	GW5B	27/10/2021	21-45163-4	Manganese	mg/L	0.0023		
BH01B	GW5B	9/11/2019	19-40125-2	Nickel	mg/L	0.005		
BH01B	GW5B	23/03/2021	21-12139-2	Nickel	mg/L	0.0027		
BH01B	GW5B	5/08/2021	21-34713-7	Nickel	mg/L	0.0058		
BH01B	GW5B	27/10/2021	21-45163-4	Nickel	mg/L	0.00063		
BH01B	GW5B	18/01/2022	2832272_8	Nickel	mg/L	< 0.0005		
BH01B	GW5B	9/11/2019	19-40125-2	Nitrate (as N)	mg/L	0.0591		
BH01B	GW5B	23/03/2021	21-12139-2	Nitrate (as N)	mg/L	0.227		
BH01B	GW5B	5/08/2021	21-34713-7	Nitrate (as N)	mg/L	0.319		
BH01B	GW5B	27/10/2021	21-45163-4	Nitrate (as N)	mg/L	0.328		
BH01B	GW5B	18/01/2022	2832272_8	Nitrate (as N)	mg/L	0.35		
BH01B	GW5B	9/11/2019	19-40125-2	Nitrite (as N)	mg/L	0.00563		
BH01B	GW5B	23/03/2021	21-12139-2	Nitrite (as N)	mg/L	< 0.001		
BH01B	GW5B	5/08/2021	21-34713-7	Nitrite (as N)	mg/L	< 0.001		
BH01B	GW5B	27/10/2021	21-45163-4	Nitrite (as N)	mg/L	< 0.001		
BH01B	GW5B	18/01/2022	2832272_8	Nitrite (as N)	mg/L	< 0.002		
BH01B	GW5B	9/11/2019	19-40125-2	Nitrogen (Total)	mg/L	0.76		
BH01B	GW5B	23/03/2021	21-12139-2	Nitrogen (Total)	mg/L	0.45		
BH01B	GW5B	5/08/2021	21-34713-7	Nitrogen (Total)	mg/L	0.51		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH01B	GW5B	27/10/2021	21-45163-4	Nitrogen (Total)	mg/L	0.49		
BH01B	GW5B	18/01/2022	2832272_8	Nitrogen (Total)	mg/L	0.51		
BH01B	GW5B	5/08/2021		pH (Field)	pH_Units	7.59		
BH01B	GW5B	27/10/2021		pH (Field)	pH_Units	7.46		
BH01B	GW5B	9/11/2019	19-40125-2	pH (Lab)	pH_Units	7.8		
BH01B	GW5B	23/03/2021	21-12139-2	pH (Lab)	pH_Units	8.3		
BH01B	GW5B	18/01/2022	2832272_8	pH (Lab)	pH_Units	8		
BH01B	GW5B	9/11/2019	19-40125-2	Potassium	mg/L	6.3		
BH01B	GW5B	23/03/2021	21-12139-2	Potassium	mg/L	5.14		
BH01B	GW5B	5/08/2021	21-34713-7	Potassium	mg/L	5.57		
BH01B	GW5B	27/10/2021	21-45163-4	Potassium	mg/L	5.96		
BH01B	GW5B	18/01/2022	2832272_8	Potassium	mg/L	5.9		
BH01B	GW5B	5/08/2021		Redox	mV	2		
BH01B	GW5B	27/10/2021		Redox	mV	30.7		
BH01B	GW5B	9/11/2019	19-40125-2	Sodium	mg/L	67.8		
BH01B	GW5B	23/03/2021	21-12139-2	Sodium	mg/L	68		
BH01B	GW5B	5/08/2021	21-34713-7	Sodium	mg/L	66.6		
BH01B	GW5B	27/10/2021	21-45163-4	Sodium	mg/L	68.1		
BH01B	GW5B	18/01/2022	2832272_8	Sodium	mg/L	70		
BH01B	GW5B	9/11/2019	19-40125-2	Sulphate	mg/L	59.7		
BH01B	GW5B	23/03/2021	21-12139-2	Sulphate	mg/L	17.6		
BH01B	GW5B	5/08/2021	21-34713-7	Sulphate	mg/L	161		
BH01B	GW5B	27/10/2021	21-45163-4	Sulphate	mg/L	16.2		
BH01B	GW5B	18/01/2022	2832272_8	Sulphate	mg/L	17.7		
BH01B	GW5B	5/08/2021		Temperature (Field)	oC	8		
BH01B	GW5B	27/10/2021		Temperature (Field)	oC	11.3		
BH01B	GW5B	18/01/2022	2832272_8	Total Ammoniacal-N	g/m3	< 0.01		
BH01B	GW5B	23/03/2021	21-12139-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.228		
BH01B	GW5B	5/08/2021	21-34713-7	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.32		
BH01B	GW5B	27/10/2021	21-45163-4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.328		
BH01B	GW5B	18/01/2022	2832272_8	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.35		
BH01B	GW5B	23/03/2021	21-12139-2	Total Phosphorus	mg/L	0.03		
BH01B	GW5B	5/08/2021	21-34713-7	Total Phosphorus	mg/L	0.028		
BH01B	GW5B	27/10/2021	21-45163-4	Total Phosphorus	mg/L	0.011		
BH01B	GW5B	18/01/2022	2832272_8	Total Phosphorus	mg/L	0.007		
BH01B	GW5B	18/01/2022	2832272_8	Total Suspended Solids	mg/L	6		
BH01B	GW5B	18/01/2022	2832272_8	Turbidity	NTU	2.5		
BH01B	GW5B	9/11/2019	19-40125-2	Zinc	mg/L	0.0068		
BH01B	GW5B	23/03/2021	21-12139-2	Zinc	mg/L	0.0041		
BH01B	GW5B	5/08/2021	21-34713-7	Zinc	mg/L	0.008		
BH01B	GW5B	27/10/2021	21-45163-4	Zinc	mg/L	< 0.001		
BH01B	GW5B	18/01/2022	2832272_8	Zinc	mg/L	0.004		
BH02A	GW2A	18/01/2022	2832272_3	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	174		
BH02A	GW2A	18/01/2022	2832272_3	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH02A	GW2A	9/11/2019	19-40125-3	Alkalinity (total) as CaCO3	g CaCO3/m3	238		
BH02A	GW2A	25/03/2021	21-14269-1	Alkalinity (total) as CaCO3	g CaCO3/m3	233		
BH02A	GW2A	4/08/2021	21-34713-2	Alkalinity (total) as CaCO3	g CaCO3/m3	214		
BH02A	GW2A	26/10/2021	21-44970-2	Alkalinity (total) as CaCO3	g CaCO3/m3	182		
BH02A	GW2A	18/01/2022	2832272_3	Alkalinity (total) as CaCO3	g CaCO3/m3	175		
BH02A	GW2A	9/11/2019	19-40125-3	Ammonia as N	mg/L	0.11		
BH02A	GW2A	25/03/2021	21-14269-1	Ammonia as N	mg/L	0.15		
BH02A	GW2A	4/08/2021	21-34713-2	Ammonia as N	mg/L	0.06		
BH02A	GW2A	26/10/2021	21-44970-2	Ammonia as N	mg/L	0.24	yes	
BH02A	GW2A	18/01/2022	2832272_3	Anions Total	meq/L	4.5		
BH02A	GW2A	9/11/2019	19-40125-3	Arsenic	mg/L	0.0092		
BH02A	GW2A	25/03/2021	21-14269-1	Arsenic	mg/L	0.00093		
BH02A	GW2A	4/08/2021	21-34713-2	Arsenic	mg/L	< 0.0005		
BH02A	GW2A	26/10/2021	21-44970-2	Arsenic	mg/L	< 0.0005		
BH02A	GW2A	18/01/2022	2832272_3	Arsenic	mg/L	< 0.001		
BH02A	GW2A	25/03/2021	21-14269-1	Bicarbonate	g CaCO3/m3	233		
BH02A	GW2A	4/08/2021	21-34713-2	Bicarbonate	g CaCO3/m3	213		
BH02A	GW2A	26/10/2021	21-44970-2	Bicarbonate	g CaCO3/m3	182		
BH02A	GW2A	18/01/2022	2832272_3	Bicarbonate	g CaCO3/m3	210		
BH02A	GW2A	9/11/2019	19-40125-3	Cadmium	mg/L	< 0.00001		
BH02A	GW2A	25/03/2021	21-14269-1	Cadmium	mg/L	< 0.00002		
BH02A	GW2A	4/08/2021	21-34713-2	Cadmium	mg/L	< 0.00002		
BH02A	GW2A	26/10/2021	21-44970-2	Cadmium	mg/L	< 0.00002		
BH02A	GW2A	18/01/2022	2832272_3	Cadmium	mg/L	< 0.00005		
BH02A	GW2A	9/11/2019	19-40125-3	Calcium	mg/L	36.3		
BH02A	GW2A	25/03/2021	21-14269-1	Calcium	mg/L	38.6		
BH02A	GW2A	4/08/2021	21-34713-2	Calcium	mg/L	30.3		
BH02A	GW2A	26/10/2021	21-44970-2	Calcium	mg/L	33.4		
BH02A	GW2A	18/01/2022	2832272_3	Calcium	mg/L	30		
BH02A	GW2A	25/03/2021	21-14269-1	Carbonate	g CaCO3/m3	< 1		
BH02A	GW2A	4/08/2021	21-34713-2	Carbonate	g CaCO3/m3	< 1		
BH02A	GW2A	26/10/2021	21-44970-2	Carbonate	g CaCO3/m3	< 1		
BH02A	GW2A	18/01/2022	2832272_3	Carbonate	g CaCO3/m3	< 1		
BH02A	GW2A	18/01/2022	2832272_3	Cations Total	meq/L	4.7		
BH02A	GW2A	9/11/2019	19-40125-3	Chloride	mg/L	39.3		
BH02A	GW2A	25/03/2021	21-14269-1	Chloride	mg/L	37		
BH02A	GW2A	4/08/2021	21-34713-2	Chloride	mg/L	35.4		
BH02A	GW2A	26/10/2021	21-44970-2	Chloride	mg/L	34.9		
BH02A	GW2A	18/01/2022	2832272_3	Chloride	mg/L	34		
BH02A	GW2A	9/11/2019	19-40125-3	Chromium (III+VI)	mg/L	0.00024		
BH02A	GW2A	25/03/2021	21-14269-1	Chromium (III+VI)	mg/L	< 0.0002		
BH02A	GW2A	4/08/2021	21-34713-2	Chromium (III+VI)	mg/L	0.00023		
BH02A	GW2A	26/10/2021	21-44970-2	Chromium (III+VI)	mg/L	< 0.0002		
BH02A	GW2A	18/01/2022	2832272_3	Chromium (III+VI)	mg/L	< 0.0005		
BH02A	GW2A	25/03/2021	21-14269-1	CO2 (Free)	g/m3	15.3		
BH02A	GW2A	4/08/2021	21-34713-2	CO2 (Free)	g/m3	32.1		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH02A	GW2A	26/10/2021	21-44970-2	CO2 (Free)	g/m3	83.6		
BH02A	GW2A	18/01/2022	2832272_3	CO2 (Free)	g/m3	13.2		
BH02A	GW2A	25/03/2021	21-14269-1	Conductivity (1:5 aqueous extract)	µS/cm	53000		
BH02A	GW2A	9/11/2019	19-40125-3	Copper	mg/L	0.00052		
BH02A	GW2A	25/03/2021	21-14269-1	Copper	mg/L	0.00041		
BH02A	GW2A	4/08/2021	21-34713-2	Copper	mg/L	0.00069		
BH02A	GW2A	26/10/2021	21-44970-2	Copper	mg/L	< 0.0002		
BH02A	GW2A	18/01/2022	2832272_3	Copper	mg/L	< 0.0005		
BH02A	GW2A	4/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	5.3		
BH02A	GW2A	26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	2.1		
BH02A	GW2A	25/03/2021	21-14269-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH02A	GW2A	4/08/2021	21-34713-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.008		
BH02A	GW2A	26/10/2021	21-44970-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH02A	GW2A	18/01/2022	2832272_3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.06	yes	
BH02A	GW2A	4/08/2021		Electrical Conductivity (Field)	µS/cm	326.5		
BH02A	GW2A	26/10/2021		Electrical Conductivity (Field)	µS/cm	442		
BH02A	GW2A	9/11/2019	19-40125-3	Electrical conductivity *(lab)	µS/cm	538		
BH02A	GW2A	18/01/2022	2832272_3	Electrical conductivity *(lab)	µS/cm	44800		
BH02A	GW2A	25/03/2021	21-14269-1	Hardness as CaCO3	g CaCO3/m3	150		
BH02A	GW2A	4/08/2021	21-34713-2	Hardness as CaCO3	g CaCO3/m3	120		
BH02A	GW2A	26/10/2021	21-44970-2	Hardness as CaCO3	g CaCO3/m3	130		
BH02A	GW2A	18/01/2022	2832272_3	Hardness as CaCO3	g CaCO3/m3	122		
BH02A	GW2A	25/03/2021	21-14269-1	Hydroxide	g CaCO3/m3	< 1		
BH02A	GW2A	4/08/2021	21-34713-2	Hydroxide	g CaCO3/m3	< 1		
BH02A	GW2A	26/10/2021	21-44970-2	Hydroxide	g CaCO3/m3	< 1		
BH02A	GW2A	9/11/2019	19-40125-3	Iron	mg/L	3.4		
BH02A	GW2A	25/03/2021	21-14269-1	Iron	mg/L	4.69		
BH02A	GW2A	4/08/2021	21-34713-2	Iron	mg/L	2.6		
BH02A	GW2A	26/10/2021	21-44970-2	Iron	mg/L	4.27		
BH02A	GW2A	9/11/2019	19-40125-3	Kjeldahl Nitrogen Total	mg/L	0.57		
BH02A	GW2A	25/03/2021	21-14269-1	Kjeldahl Nitrogen Total	mg/L	1.5		
BH02A	GW2A	4/08/2021	21-34713-2	Kjeldahl Nitrogen Total	mg/L	0.43		
BH02A	GW2A	26/10/2021	21-44970-2	Kjeldahl Nitrogen Total	mg/L	0.42		
BH02A	GW2A	18/01/2022	2832272_3	Kjeldahl Nitrogen Total	mg/L	0.31		
BH02A	GW2A	9/11/2019	19-40125-3	Lead	mg/L	0.000052		
BH02A	GW2A	25/03/2021	21-14269-1	Lead	mg/L	< 0.00005		
BH02A	GW2A	4/08/2021	21-34713-2	Lead	mg/L	0.000055		
BH02A	GW2A	26/10/2021	21-44970-2	Lead	mg/L	< 0.00005		
BH02A	GW2A	18/01/2022	2832272_3	Lead	mg/L	< 0.0001		
BH02A	GW2A	9/11/2019	19-40125-3	Magnesium	mg/L	12.2		
BH02A	GW2A	25/03/2021	21-14269-1	Magnesium	mg/L	12.7		
BH02A	GW2A	4/08/2021	21-34713-2	Magnesium	mg/L	10.8		
BH02A	GW2A	26/10/2021	21-44970-2	Magnesium	mg/L	11.2		
BH02A	GW2A	18/01/2022	2832272_3	Magnesium	mg/L	11.3		
BH02A	GW2A	9/11/2019	19-40125-3	Manganese	mg/L	1.05		
BH02A	GW2A	25/03/2021	21-14269-1	Manganese	mg/L	1.06		
BH02A	GW2A	4/08/2021	21-34713-2	Manganese	mg/L	1.13		
BH02A	GW2A	26/10/2021	21-44970-2	Manganese	mg/L	1.03		
BH02A	GW2A	9/11/2019	19-40125-3	Nickel	mg/L	0.0032		
BH02A	GW2A	25/03/2021	21-14269-1	Nickel	mg/L	0.0017		
BH02A	GW2A	4/08/2021	21-34713-2	Nickel	mg/L	0.0018		
BH02A	GW2A	26/10/2021	21-44970-2	Nickel	mg/L	0.0008		
BH02A	GW2A	18/01/2022	2832272_3	Nickel	mg/L	0.0006		
BH02A	GW2A	9/11/2019	19-40125-3	Nitrate (as N)	mg/L	0.0919		
BH02A	GW2A	25/03/2021	21-14269-1	Nitrate (as N)	mg/L	0.0223		
BH02A	GW2A	4/08/2021	21-34713-2	Nitrate (as N)	mg/L	0.0255		
BH02A	GW2A	26/10/2021	21-44970-2	Nitrate (as N)	mg/L	3.71	yes	
BH02A	GW2A	18/01/2022	2832272_3	Nitrate (as N)	mg/L	0.002		
BH02A	GW2A	9/11/2019	19-40125-3	Nitrite (as N)	mg/L	0.0013		
BH02A	GW2A	25/03/2021	21-14269-1	Nitrite (as N)	mg/L	< 0.001		
BH02A	GW2A	4/08/2021	21-34713-2	Nitrite (as N)	mg/L	0.0012		
BH02A	GW2A	26/10/2021	21-44970-2	Nitrite (as N)	mg/L	0.003		
BH02A	GW2A	18/01/2022	2832272_3	Nitrite (as N)	mg/L	0.003		
BH02A	GW2A	9/11/2019	19-40125-3	Nitrogen (Total)	mg/L	0.66		
BH02A	GW2A	25/03/2021	21-14269-1	Nitrogen (Total)	mg/L	1.5		
BH02A	GW2A	4/08/2021	21-34713-2	Nitrogen (Total)	mg/L	0.45		
BH02A	GW2A	26/10/2021	21-44970-2	Nitrogen (Total)	mg/L	4.1		
BH02A	GW2A	18/01/2022	2832272_3	Nitrogen (Total)	mg/L	0.32		
BH02A	GW2A	4/08/2021		pH (Field)	pH_Units	6.49		
BH02A	GW2A	26/10/2021		pH (Field)	pH_Units	6.43		
BH02A	GW2A	9/11/2019	19-40125-3	pH (Lab)	pH_Units	7.2		
BH02A	GW2A	25/03/2021	21-14269-1	pH (Lab)	pH_Units	7.5		
BH02A	GW2A	18/01/2022	2832272_3	pH (Lab)	pH_Units	7.4		
BH02A	GW2A	9/11/2019	19-40125-3	Potassium	mg/L	2		
BH02A	GW2A	25/03/2021	21-14269-1	Potassium	mg/L	1.8		
BH02A	GW2A	4/08/2021	21-34713-2	Potassium	mg/L	1.4		
BH02A	GW2A	26/10/2021	21-44970-2	Potassium	mg/L	1.7		
BH02A	GW2A	18/01/2022	2832272_3	Potassium	mg/L	1.76		
BH02A	GW2A	4/08/2021		Redox	mV	55.7		
BH02A	GW2A	26/10/2021		Redox	mV	-7.1		
BH02A	GW2A	9/11/2019	19-40125-3	Sodium	mg/L	56.9		
BH02A	GW2A	25/03/2021	21-14269-1	Sodium	mg/L	59.7		
BH02A	GW2A	4/08/2021	21-34713-2	Sodium	mg/L	65		
BH02A	GW2A	26/10/2021	21-44970-2	Sodium	mg/L	46.4		
BH02A	GW2A	18/01/2022	2832272_3	Sodium	mg/L	51		
BH02A	GW2A	9/11/2019	19-40125-3	Sulphate	mg/L	0.68		
BH02A	GW2A	25/03/2021	21-14269-1	Sulphate	mg/L	0.55		
BH02A	GW2A	4/08/2021	21-34713-2	Sulphate	mg/L	0.39		
BH02A	GW2A	26/10/2021	21-44970-2	Sulphate	mg/L	< 0.15		
BH02A	GW2A	18/01/2022	2832272_3	Sulphate	mg/L	< 0.5		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH02A	GW2A	4/08/2021		Temperature (Field)	oC	7.6		
BH02A	GW2A	26/10/2021		Temperature (Field)	oC	9.9		
BH02A	GW2A	18/01/2022	2832272_3	Total Ammoniacal-N	g/m3	0.13		
BH02A	GW2A	25/03/2021	21-14269-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0231		
BH02A	GW2A	4/08/2021	21-34713-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0266		
BH02A	GW2A	26/10/2021	21-44970-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	3.72		
BH02A	GW2A	18/01/2022	2832272_3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.005		
BH02A	GW2A	25/03/2021	21-14269-1	Total Phosphorus	mg/L	0.14		
BH02A	GW2A	4/08/2021	21-34713-2	Total Phosphorus	mg/L	0.19		
BH02A	GW2A	26/10/2021	21-44970-2	Total Phosphorus	mg/L	0.31		
BH02A	GW2A	18/01/2022	2832272_3	Total Phosphorus	mg/L	0.26		
BH02A	GW2A	18/01/2022	2832272_3	Total Suspended Solids	mg/L	28		
BH02A	GW2A	18/01/2022	2832272_3	Turbidity	NTU	26		
BH02A	GW2A	9/11/2019	19-40125-3	Zinc	mg/L	0.0091		yes
BH02A	GW2A	25/03/2021	21-14269-1	Zinc	mg/L	0.0025		
BH02A	GW2A	4/08/2021	21-34713-2	Zinc	mg/L	0.0018		
BH02A	GW2A	26/10/2021	21-44970-2	Zinc	mg/L	0.0032		
BH02A	GW2A	18/01/2022	2832272_3	Zinc	mg/L	0.0011		
BH02B	GW2B	18/01/2022	2832272_4	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	300		
BH02B	GW2B	18/01/2022	2832272_4	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH02B	GW2B	9/11/2019	19-40125-4	Alkalinity (total) as CaCO3	g CaCO3/m3	275		
BH02B	GW2B	25/03/2021	21-14269-2	Alkalinity (total) as CaCO3	g CaCO3/m3	366		
BH02B	GW2B	4/08/2021	21-34713-3	Alkalinity (total) as CaCO3	g CaCO3/m3	295		
BH02B	GW2B	26/10/2021	21-44970-3	Alkalinity (total) as CaCO3	g CaCO3/m3	301		
BH02B	GW2B	18/01/2022	2832272_4	Alkalinity (total) as CaCO3	g CaCO3/m3	300		
BH02B	GW2B	9/11/2019	19-40125-4	Ammonia as N	mg/L	0.14		
BH02B	GW2B	25/03/2021	21-14269-2	Ammonia as N	mg/L	0.27	yes	
BH02B	GW2B	4/08/2021	21-34713-3	Ammonia as N	mg/L	0.17		
BH02B	GW2B	26/10/2021	21-44970-3	Ammonia as N	mg/L	0.4	yes	
BH02B	GW2B	18/01/2022	2832272_4	Anions Total	meq/L	8.8		
BH02B	GW2B	9/11/2019	19-40125-4	Arsenic	mg/L	0.0012		
BH02B	GW2B	25/03/2021	21-14269-2	Arsenic	mg/L	0.0011		
BH02B	GW2B	4/08/2021	21-34713-3	Arsenic	mg/L	0.0013		
BH02B	GW2B	26/10/2021	21-44970-3	Arsenic	mg/L	0.0013		
BH02B	GW2B	18/01/2022	2832272_4	Arsenic	mg/L	0.0013		
BH02B	GW2B	25/03/2021	21-14269-2	Bicarbonate	g CaCO3/m3	357		
BH02B	GW2B	4/08/2021	21-34713-3	Bicarbonate	g CaCO3/m3	290		
BH02B	GW2B	26/10/2021	21-44970-3	Bicarbonate	g CaCO3/m3	296		
BH02B	GW2B	18/01/2022	2832272_4	Bicarbonate	g CaCO3/m3	360		
BH02B	GW2B	9/11/2019	19-40125-4	Cadmium	mg/L	0.00013		
BH02B	GW2B	25/03/2021	21-14269-2	Cadmium	mg/L	0.00006		
BH02B	GW2B	4/08/2021	21-34713-3	Cadmium	mg/L	0.00014		
BH02B	GW2B	26/10/2021	21-44970-3	Cadmium	mg/L	0.00018		
BH02B	GW2B	18/01/2022	2832272_4	Cadmium	mg/L	< 0.00005		
BH02B	GW2B	9/11/2019	19-40125-4	Calcium	mg/L	25.7		
BH02B	GW2B	25/03/2021	21-14269-2	Calcium	mg/L	31.6		
BH02B	GW2B	4/08/2021	21-34713-3	Calcium	mg/L	23.9		
BH02B	GW2B	26/10/2021	21-44970-3	Calcium	mg/L	24.3		
BH02B	GW2B	18/01/2022	2832272_4	Calcium	mg/L	22		
BH02B	GW2B	25/03/2021	21-14269-2	Carbonate	g CaCO3/m3	8.7		
BH02B	GW2B	4/08/2021	21-34713-3	Carbonate	g CaCO3/m3	4.2		
BH02B	GW2B	26/10/2021	21-44970-3	Carbonate	g CaCO3/m3	4.7		
BH02B	GW2B	18/01/2022	2832272_4	Carbonate	g CaCO3/m3	7.4		
BH02B	GW2B	18/01/2022	2832272_4	Cations Total	meq/L	9.4		
BH02B	GW2B	9/11/2019	19-40125-4	Chloride	mg/L	89.3		
BH02B	GW2B	25/03/2021	21-14269-2	Chloride	mg/L	101		
BH02B	GW2B	4/08/2021	21-34713-3	Chloride	mg/L	101		
BH02B	GW2B	26/10/2021	21-44970-3	Chloride	mg/L	102		
BH02B	GW2B	18/01/2022	2832272_4	Chloride	mg/L	98		
BH02B	GW2B	9/11/2019	19-40125-4	Chromium (III+VI)	mg/L	0.00054		
BH02B	GW2B	25/03/2021	21-14269-2	Chromium (III+VI)	mg/L	< 0.0002		
BH02B	GW2B	4/08/2021	21-34713-3	Chromium (III+VI)	mg/L	< 0.0002		
BH02B	GW2B	26/10/2021	21-44970-3	Chromium (III+VI)	mg/L	< 0.0002		
BH02B	GW2B	18/01/2022	2832272_4	Chromium (III+VI)	mg/L	< 0.0005		
BH02B	GW2B	25/03/2021	21-14269-2	CO2 (Free)	g/m3	2.8		
BH02B	GW2B	4/08/2021	21-34713-3	CO2 (Free)	g/m3	3.7		
BH02B	GW2B	26/10/2021	21-44970-3	CO2 (Free)	g/m3	3.5		
BH02B	GW2B	18/01/2022	2832272_4	CO2 (Free)	g/m3	2.2		
BH02B	GW2B	25/03/2021	21-14269-2	Conductivity (1:5 aqueous extract)	µS/cm	94000		
BH02B	GW2B	9/11/2019	19-40125-4	Copper	mg/L	0.0033		yes
BH02B	GW2B	25/03/2021	21-14269-2	Copper	mg/L	< 0.0002		
BH02B	GW2B	4/08/2021	21-34713-3	Copper	mg/L	< 0.0002		
BH02B	GW2B	26/10/2021	21-44970-3	Copper	mg/L	< 0.0002		
BH02B	GW2B	18/01/2022	2832272_4	Copper	mg/L	< 0.0005		
BH02B	GW2B	4/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	5.7		
BH02B	GW2B	26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	2.7		
BH02B	GW2B	25/03/2021	21-14269-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH02B	GW2B	4/08/2021	21-34713-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH02B	GW2B	26/10/2021	21-44970-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.027		
BH02B	GW2B	18/01/2022	2832272_4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.004		
BH02B	GW2B	4/08/2021		Electrical Conductivity (Field)	µS/cm	583		
BH02B	GW2B	26/10/2021		Electrical Conductivity (Field)	µS/cm	892		
BH02B	GW2B	9/11/2019	19-40125-4	Electrical conductivity *(lab)	µS/cm	772		
BH02B	GW2B	18/01/2022	2832272_4	Electrical conductivity *(lab)	µS/cm	89300		
BH02B	GW2B	25/03/2021	21-14269-2	Hardness as CaCO3	g CaCO3/m3	120		
BH02B	GW2B	4/08/2021	21-34713-3	Hardness as CaCO3	g CaCO3/m3	94		
BH02B	GW2B	26/10/2021	21-44970-3	Hardness as CaCO3	g CaCO3/m3	95		
BH02B	GW2B	18/01/2022	2832272_4	Hardness as CaCO3	g CaCO3/m3	90		
BH02B	GW2B	25/03/2021	21-14269-2	Hydroxide	g CaCO3/m3	< 1		
BH02B	GW2B	4/08/2021	21-34713-3	Hydroxide	g CaCO3/m3	< 1		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH02B	GW2B	26/10/2021	21-44970-3	Hydroxide	g CaCO3/m3	< 1		
BH02B	GW2B	9/11/2019	19-40125-4	Iron	mg/L	0.24		
BH02B	GW2B	25/03/2021	21-14269-2	Iron	mg/L	0.25		
BH02B	GW2B	4/08/2021	21-34713-3	Iron	mg/L	0.27		
BH02B	GW2B	26/10/2021	21-44970-3	Iron	mg/L	0.47		
BH02B	GW2B	9/11/2019	19-40125-4	Kjeldahl Nitrogen Total	mg/L	1.65		
BH02B	GW2B	25/03/2021	21-14269-2	Kjeldahl Nitrogen Total	mg/L	3.4		
BH02B	GW2B	4/08/2021	21-34713-3	Kjeldahl Nitrogen Total	mg/L	0.98		
BH02B	GW2B	26/10/2021	21-44970-3	Kjeldahl Nitrogen Total	mg/L	1.06		
BH02B	GW2B	18/01/2022	2832272_4	Kjeldahl Nitrogen Total	mg/L	0.77		
BH02B	GW2B	9/11/2019	19-40125-4	Lead	mg/L	0.00023		
BH02B	GW2B	25/03/2021	21-14269-2	Lead	mg/L	< 0.00005		
BH02B	GW2B	4/08/2021	21-34713-3	Lead	mg/L	< 0.00005		
BH02B	GW2B	26/10/2021	21-44970-3	Lead	mg/L	< 0.00005		
BH02B	GW2B	18/01/2022	2832272_4	Lead	mg/L	< 0.0001		
BH02B	GW2B	9/11/2019	19-40125-4	Magnesium	mg/L	8.26		
BH02B	GW2B	25/03/2021	21-14269-2	Magnesium	mg/L	10.9		
BH02B	GW2B	4/08/2021	21-34713-3	Magnesium	mg/L	8.41		
BH02B	GW2B	26/10/2021	21-44970-3	Magnesium	mg/L	8.31		
BH02B	GW2B	18/01/2022	2832272_4	Magnesium	mg/L	8.7		
BH02B	GW2B	9/11/2019	19-40125-4	Manganese	mg/L	0.141		
BH02B	GW2B	25/03/2021	21-14269-2	Manganese	mg/L	0.435		
BH02B	GW2B	4/08/2021	21-34713-3	Manganese	mg/L	0.199		
BH02B	GW2B	26/10/2021	21-44970-3	Manganese	mg/L	0.206		
BH02B	GW2B	9/11/2019	19-40125-4	Nickel	mg/L	0.0238		yes
BH02B	GW2B	25/03/2021	21-14269-2	Nickel	mg/L	0.0063		
BH02B	GW2B	4/08/2021	21-34713-3	Nickel	mg/L	0.0012		
BH02B	GW2B	26/10/2021	21-44970-3	Nickel	mg/L	0.0015		
BH02B	GW2B	18/01/2022	2832272_4	Nickel	mg/L	0.0006		
BH02B	GW2B	9/11/2019	19-40125-4	Nitrate (as N)	mg/L	< 0.002		
BH02B	GW2B	25/03/2021	21-14269-2	Nitrate (as N)	mg/L	0.0246		
BH02B	GW2B	4/08/2021	21-34713-3	Nitrate (as N)	mg/L	< 0.002		
BH02B	GW2B	26/10/2021	21-44970-3	Nitrate (as N)	mg/L	0.0029		
BH02B	GW2B	18/01/2022	2832272_4	Nitrate (as N)	mg/L	< 0.002		
BH02B	GW2B	9/11/2019	19-40125-4	Nitrite (as N)	mg/L	< 0.001		
BH02B	GW2B	25/03/2021	21-14269-2	Nitrite (as N)	mg/L	< 0.001		
BH02B	GW2B	4/08/2021	21-34713-3	Nitrite (as N)	mg/L	< 0.001		
BH02B	GW2B	26/10/2021	21-44970-3	Nitrite (as N)	mg/L	< 0.001		
BH02B	GW2B	18/01/2022	2832272_4	Nitrite (as N)	mg/L	< 0.002		
BH02B	GW2B	9/11/2019	19-40125-4	Nitrogen (Total)	mg/L	1.7		
BH02B	GW2B	25/03/2021	21-14269-2	Nitrogen (Total)	mg/L	3.4		
BH02B	GW2B	4/08/2021	21-34713-3	Nitrogen (Total)	mg/L	0.98		
BH02B	GW2B	26/10/2021	21-44970-3	Nitrogen (Total)	mg/L	1.1		
BH02B	GW2B	18/01/2022	2832272_4	Nitrogen (Total)	mg/L	0.77		
BH02B	GW2B	4/08/2021		pH (Field)	pH_Units	8.42		
BH02B	GW2B	26/10/2021		pH (Field)	pH_Units	8.39		
BH02B	GW2B	9/11/2019	19-40125-4	pH (Lab)	pH_Units	8		
BH02B	GW2B	25/03/2021	21-14269-2	pH (Lab)	pH_Units	8.4		
BH02B	GW2B	18/01/2022	2832272_4	pH (Lab)	pH_Units	8.4		
BH02B	GW2B	9/11/2019	19-40125-4	Potassium	mg/L	8.72		
BH02B	GW2B	25/03/2021	21-14269-2	Potassium	mg/L	4.8		
BH02B	GW2B	4/08/2021	21-34713-3	Potassium	mg/L	4.3		
BH02B	GW2B	26/10/2021	21-44970-3	Potassium	mg/L	4.8		
BH02B	GW2B	18/01/2022	2832272_4	Potassium	mg/L	4.8		
BH02B	GW2B	4/08/2021		Redox	mV	30		
BH02B	GW2B	26/10/2021		Redox	mV	-24.6		
BH02B	GW2B	9/11/2019	19-40125-4	Sodium	mg/L	120		
BH02B	GW2B	25/03/2021	21-14269-2	Sodium	mg/L	172		
BH02B	GW2B	4/08/2021	21-34713-3	Sodium	mg/L	160		
BH02B	GW2B	26/10/2021	21-44970-3	Sodium	mg/L	164		
BH02B	GW2B	18/01/2022	2832272_4	Sodium	mg/L	171		
BH02B	GW2B	9/11/2019	19-40125-4	Sulphate	mg/L	4.91		
BH02B	GW2B	25/03/2021	21-14269-2	Sulphate	mg/L	0.7		
BH02B	GW2B	4/08/2021	21-34713-3	Sulphate	mg/L	0.34		
BH02B	GW2B	26/10/2021	21-44970-3	Sulphate	mg/L	< 0.15		
BH02B	GW2B	18/01/2022	2832272_4	Sulphate	mg/L	< 0.5		
BH02B	GW2B	4/08/2021		Temperature (Field)	oC	8.6		
BH02B	GW2B	26/10/2021		Temperature (Field)	oC	10.6		
BH02B	GW2B	18/01/2022	2832272_4	Total Ammoniacal-N	g/m3	0.095		
BH02B	GW2B	25/03/2021	21-14269-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0253		
BH02B	GW2B	4/08/2021	21-34713-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	< 0.002		
BH02B	GW2B	26/10/2021	21-44970-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0034		
BH02B	GW2B	18/01/2022	2832272_4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	< 0.002		
BH02B	GW2B	25/03/2021	21-14269-2	Total Phosphorus	mg/L	0.096		
BH02B	GW2B	4/08/2021	21-34713-3	Total Phosphorus	mg/L	0.052		
BH02B	GW2B	26/10/2021	21-44970-3	Total Phosphorus	mg/L	0.085		
BH02B	GW2B	18/01/2022	2832272_4	Total Phosphorus	mg/L	0.093		
BH02B	GW2B	18/01/2022	2832272_4	Total Suspended Solids	mg/L	39		
BH02B	GW2B	18/01/2022	2832272_4	Turbidity	NTU	23		
BH02B	GW2B	9/11/2019	19-40125-4	Zinc	mg/L	0.0018		
BH02B	GW2B	25/03/2021	21-14269-2	Zinc	mg/L	< 0.001		
BH02B	GW2B	4/08/2021	21-34713-3	Zinc	mg/L	< 0.001		
BH02B	GW2B	26/10/2021	21-44970-3	Zinc	mg/L	0.002		
BH02B	GW2B	18/01/2022	2832272_4	Zinc	mg/L	< 0.001		
BH03A		9/11/2019	19-40125-5	Alkalinity (total) as CaCO3	g CaCO3/m3	461		
BH03A		25/03/2021	21-14269-3	Alkalinity (total) as CaCO3	g CaCO3/m3	551		
BH03A		9/11/2019	19-40125-5	Ammonia as N	mg/L	< 0.005		
BH03A		25/03/2021	21-14269-3	Ammonia as N	mg/L	0.04		
BH03A		9/11/2019	19-40125-5	Arsenic	mg/L	< 0.0005		
BH03A		25/03/2021	21-14269-3	Arsenic	mg/L	< 0.0005		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH03A		25/03/2021	21-14269-3	Bicarbonate	g CaCO3/m3	550		
BH03A		9/11/2019	19-40125-5	Cadmium	mg/L	0.000039		
BH03A		25/03/2021	21-14269-3	Cadmium	mg/L	0.000059		
BH03A		9/11/2019	19-40125-5	Calcium	mg/L	135		
BH03A		25/03/2021	21-14269-3	Calcium	mg/L	170		
BH03A		25/03/2021	21-14269-3	Carbonate	g CaCO3/m3	1.4		
BH03A		9/11/2019	19-40125-5	Chloride	mg/L	109		
BH03A		25/03/2021	21-14269-3	Chloride	mg/L	85.4		
BH03A		9/11/2019	19-40125-5	Chromium (III+VI)	mg/L	< 0.0002		
BH03A		25/03/2021	21-14269-3	Chromium (III+VI)	mg/L	< 0.0002		
BH03A		25/03/2021	21-14269-3	CO2 (Free)	g/m3	42		
BH03A		25/03/2021	21-14269-3	Conductivity (1:5 aqueous extract)	µS/cm	130000		
BH03A		9/11/2019	19-40125-5	Copper	mg/L	0.00097		
BH03A		25/03/2021	21-14269-3	Copper	mg/L	0.0012		
BH03A		25/03/2021	21-14269-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH03A		9/11/2019	19-40125-5	Electrical conductivity *(lab)	µS/cm	1800		
BH03A		25/03/2021	21-14269-3	Hardness as CaCO3	g CaCO3/m3	600		
BH03A		25/03/2021	21-14269-3	Hydroxide	g CaCO3/m3	< 1		
BH03A		9/11/2019	19-40125-5	Iron	mg/L	0.018		
BH03A		25/03/2021	21-14269-3	Iron	mg/L	0.057		
BH03A		9/11/2019	19-40125-5	Kjeldahl Nitrogen Total	mg/L	0.53		
BH03A		25/03/2021	21-14269-3	Kjeldahl Nitrogen Total	mg/L	1.2		
BH03A		9/11/2019	19-40125-5	Lead	mg/L	< 0.00005		
BH03A		25/03/2021	21-14269-3	Lead	mg/L	< 0.00005		
BH03A		9/11/2019	19-40125-5	Magnesium	mg/L	34.1		
BH03A		25/03/2021	21-14269-3	Magnesium	mg/L	42.7		
BH03A		9/11/2019	19-40125-5	Manganese	mg/L	0.909		
BH03A		25/03/2021	21-14269-3	Manganese	mg/L	1.09		
BH03A		9/11/2019	19-40125-5	Nickel	mg/L	0.0054		
BH03A		25/03/2021	21-14269-3	Nickel	mg/L	0.0055		
BH03A		9/11/2019	19-40125-5	Nitrate (as N)	mg/L	4.32	yes	
BH03A		25/03/2021	21-14269-3	Nitrate (as N)	mg/L	0.233		
BH03A		9/11/2019	19-40125-5	Nitrite (as N)	mg/L	0.0193		
BH03A		25/03/2021	21-14269-3	Nitrite (as N)	mg/L	0.00563		
BH03A		9/11/2019	19-40125-5	Nitrogen (Total)	mg/L	4.9		
BH03A		25/03/2021	21-14269-3	Nitrogen (Total)	mg/L	1.4		
BH03A		9/11/2019	19-40125-5	pH (Lab)	pH_Units	7.4		
BH03A		25/03/2021	21-14269-3	pH (Lab)	pH_Units	7.4		
BH03A		9/11/2019	19-40125-5	Potassium	mg/L	14.1		
BH03A		25/03/2021	21-14269-3	Potassium	mg/L	16.3		
BH03A		9/11/2019	19-40125-5	Sodium	mg/L	53.3		
BH03A		25/03/2021	21-14269-3	Sodium	mg/L	52.4		
BH03A		9/11/2019	19-40125-5	Sulphate	mg/L	57.8		
BH03A		25/03/2021	21-14269-3	Sulphate	mg/L	68.6		
BH03A		25/03/2021	21-14269-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.239		
BH03A		25/03/2021	21-14269-3	Total Phosphorus	mg/L	0.006		
BH03A		9/11/2019	19-40125-5	Zinc	mg/L	0.0063		
BH03A		25/03/2021	21-14269-3	Zinc	mg/L	0.0045		
BH03B		9/11/2019	19-40125-6	Alkalinity (total) as CaCO3	g CaCO3/m3	497		
BH03B		25/03/2021	21-14269-4	Alkalinity (total) as CaCO3	g CaCO3/m3	601		
BH03B		9/11/2019	19-40125-6	Ammonia as N	mg/L	0.07		
BH03B		25/03/2021	21-14269-4	Ammonia as N	mg/L	0.36	yes	
BH03B		9/11/2019	19-40125-6	Arsenic	mg/L	< 0.0005		
BH03B		25/03/2021	21-14269-4	Arsenic	mg/L	< 0.0005		
BH03B		25/03/2021	21-14269-4	Bicarbonate	g CaCO3/m3	599		
BH03B		9/11/2019	19-40125-6	Cadmium	mg/L	< 0.00001		
BH03B		25/03/2021	21-14269-4	Cadmium	mg/L	< 0.00002		
BH03B		9/11/2019	19-40125-6	Calcium	mg/L	144		
BH03B		25/03/2021	21-14269-4	Calcium	mg/L	171		
BH03B		25/03/2021	21-14269-4	Carbonate	g CaCO3/m3	2.4		
BH03B		9/11/2019	19-40125-6	Chloride	mg/L	106		
BH03B		25/03/2021	21-14269-4	Chloride	mg/L	86.9		
BH03B		9/11/2019	19-40125-6	Chromium (III+VI)	mg/L	0.00021		
BH03B		25/03/2021	21-14269-4	Chromium (III+VI)	mg/L	< 0.0002		
BH03B		25/03/2021	21-14269-4	CO2 (Free)	g/m3	27.7		
BH03B		25/03/2021	21-14269-4	Conductivity (1:5 aqueous extract)	µS/cm	133000		
BH03B		9/11/2019	19-40125-6	Copper	mg/L	0.0011		
BH03B		25/03/2021	21-14269-4	Copper	mg/L	0.00072		
BH03B		25/03/2021	21-14269-4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.004		
BH03B		9/11/2019	19-40125-6	Electrical conductivity *(lab)	µS/cm	1310		
BH03B		25/03/2021	21-14269-4	Hardness as CaCO3	g CaCO3/m3	630		
BH03B		25/03/2021	21-14269-4	Hydroxide	g CaCO3/m3	< 1		
BH03B		9/11/2019	19-40125-6	Iron	mg/L	< 0.005		
BH03B		25/03/2021	21-14269-4	Iron	mg/L	0.015		
BH03B		9/11/2019	19-40125-6	Kjeldahl Nitrogen Total	mg/L	0.69		
BH03B		25/03/2021	21-14269-4	Kjeldahl Nitrogen Total	mg/L	< 0.8		
BH03B		9/11/2019	19-40125-6	Lead	mg/L	< 0.00005		
BH03B		25/03/2021	21-14269-4	Lead	mg/L	< 0.00005		
BH03B		9/11/2019	19-40125-6	Magnesium	mg/L	38		
BH03B		25/03/2021	21-14269-4	Magnesium	mg/L	49.1		
BH03B		9/11/2019	19-40125-6	Manganese	mg/L	1.45		
BH03B		25/03/2021	21-14269-4	Manganese	mg/L	1.42		
BH03B		9/11/2019	19-40125-6	Nickel	mg/L	0.0056		
BH03B		25/03/2021	21-14269-4	Nickel	mg/L	0.0247		yes
BH03B		9/11/2019	19-40125-6	Nitrate (as N)	mg/L	4.35	yes	
BH03B		25/03/2021	21-14269-4	Nitrate (as N)	mg/L	0.0948		
BH03B		9/11/2019	19-40125-6	Nitrite (as N)	mg/L	0.0194		
BH03B		25/03/2021	21-14269-4	Nitrite (as N)	mg/L	< 0.001		
BH03B		9/11/2019	19-40125-6	Nitrogen (Total)	mg/L	5.1		
BH03B		25/03/2021	21-14269-4	Nitrogen (Total)	mg/L	< 0.1		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH03B		9/11/2019	19-40125-6	pH (Lab)	pH_Units	7.5		
BH03B		25/03/2021	21-14269-4	pH (Lab)	pH_Units	7.6		
BH03B		9/11/2019	19-40125-6	Potassium	mg/L	13.5		
BH03B		25/03/2021	21-14269-4	Potassium	mg/L	11.2		
BH03B		9/11/2019	19-40125-6	Sodium	mg/L	65.2		
BH03B		25/03/2021	21-14269-4	Sodium	mg/L	70.6		
BH03B		9/11/2019	19-40125-6	Sulphate	mg/L	59.8		
BH03B		25/03/2021	21-14269-4	Sulphate	mg/L	62.3		
BH03B		25/03/2021	21-14269-4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0952		
BH03B		25/03/2021	21-14269-4	Total Phosphorus	mg/L	0.01		
BH03B		9/11/2019	19-40125-6	Zinc	mg/L	0.0097		yes
BH03B		25/03/2021	21-14269-4	Zinc	mg/L	0.0033		
BH04A	GW3A	18/01/2022	2832272_5	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	350		
BH04A	GW3A	18/01/2022	2832272_5	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH04A	GW3A	9/11/2019	19-40125-7	Alkalinity (total) as CaCO3	g CaCO3/m3	248		
BH04A	GW3A	25/03/2021	21-14269-5	Alkalinity (total) as CaCO3	g CaCO3/m3	455		
BH04A	GW3A	4/08/2021	21-34713-4	Alkalinity (total) as CaCO3	g CaCO3/m3	425		
BH04A	GW3A	27/10/2021	21-45163-1	Alkalinity (total) as CaCO3	g CaCO3/m3	239		
BH04A	GW3A	18/01/2022	2832272_5	Alkalinity (total) as CaCO3	g CaCO3/m3	350		
BH04A	GW3A	9/11/2019	19-40125-7	Ammonia as N	mg/L	0.03		
BH04A	GW3A	25/03/2021	21-14269-5	Ammonia as N	mg/L	0.05		
BH04A	GW3A	4/08/2021	21-34713-4	Ammonia as N	mg/L	0.02		
BH04A	GW3A	27/10/2021	21-45163-1	Ammonia as N	mg/L	0.02		
BH04A	GW3A	18/01/2022	2832272_5	Anions Total	meq/L	12.3		
BH04A	GW3A	9/11/2019	19-40125-7	Arsenic	mg/L	< 0.0005		
BH04A	GW3A	25/03/2021	21-14269-5	Arsenic	mg/L	< 0.0005		
BH04A	GW3A	4/08/2021	21-34713-4	Arsenic	mg/L	< 0.0005		
BH04A	GW3A	27/10/2021	21-45163-1	Arsenic	mg/L	< 0.0005		
BH04A	GW3A	18/01/2022	2832272_5	Arsenic	mg/L	< 0.001		
BH04A	GW3A	25/03/2021	21-14269-5	Bicarbonate	g CaCO3/m3	454		
BH04A	GW3A	4/08/2021	21-34713-4	Bicarbonate	g CaCO3/m3	424		
BH04A	GW3A	27/10/2021	21-45163-1	Bicarbonate	g CaCO3/m3	239		
BH04A	GW3A	18/01/2022	2832272_5	Bicarbonate	g CaCO3/m3	420		
BH04A	GW3A	9/11/2019	19-40125-7	Cadmium	mg/L	0.00019		
BH04A	GW3A	25/03/2021	21-14269-5	Cadmium	mg/L	< 0.00002		
BH04A	GW3A	4/08/2021	21-34713-4	Cadmium	mg/L	0.000066		
BH04A	GW3A	27/10/2021	21-45163-1	Cadmium	mg/L	0.00017		
BH04A	GW3A	18/01/2022	2832272_5	Cadmium	mg/L	0.00006		
BH04A	GW3A	9/11/2019	19-40125-7	Calcium	mg/L	63		
BH04A	GW3A	25/03/2021	21-14269-5	Calcium	mg/L	86.9		
BH04A	GW3A	4/08/2021	21-34713-4	Calcium	mg/L	77.9		
BH04A	GW3A	27/10/2021	21-45163-1	Calcium	mg/L	39.1		
BH04A	GW3A	18/01/2022	2832272_5	Calcium	mg/L	75		
BH04A	GW3A	25/03/2021	21-14269-5	Carbonate	g CaCO3/m3	1.3		
BH04A	GW3A	4/08/2021	21-34713-4	Carbonate	g CaCO3/m3	< 1		
BH04A	GW3A	27/10/2021	21-45163-1	Carbonate	g CaCO3/m3	< 1		
BH04A	GW3A	18/01/2022	2832272_5	Carbonate	g CaCO3/m3	1.1		
BH04A	GW3A	18/01/2022	2832272_5	Cations Total	meq/L	13.8		
BH04A	GW3A	9/11/2019	19-40125-7	Chloride	mg/L	301		
BH04A	GW3A	25/03/2021	21-14269-5	Chloride	mg/L	274		
BH04A	GW3A	4/08/2021	21-34713-4	Chloride	mg/L	255		
BH04A	GW3A	27/10/2021	21-45163-1	Chloride	mg/L	199		
BH04A	GW3A	18/01/2022	2832272_5	Chloride	mg/L	186		
BH04A	GW3A	9/11/2019	19-40125-7	Chromium (III+VI)	mg/L	0.00023		
BH04A	GW3A	25/03/2021	21-14269-5	Chromium (III+VI)	mg/L	< 0.0002		
BH04A	GW3A	4/08/2021	21-34713-4	Chromium (III+VI)	mg/L	< 0.0002		
BH04A	GW3A	27/10/2021	21-45163-1	Chromium (III+VI)	mg/L	< 0.0002		
BH04A	GW3A	18/01/2022	2832272_5	Chromium (III+VI)	mg/L	< 0.0005		
BH04A	GW3A	25/03/2021	21-14269-5	CO2 (Free)	g/m3	28.9		
BH04A	GW3A	4/08/2021	21-34713-4	CO2 (Free)	g/m3	36.5		
BH04A	GW3A	27/10/2021	21-45163-1	CO2 (Free)	g/m3	119		
BH04A	GW3A	18/01/2022	2832272_5	CO2 (Free)	g/m3	21		
BH04A	GW3A	25/03/2021	21-14269-5	Conductivity (1:5 aqueous extract)	µS/cm	165000		
BH04A	GW3A	9/11/2019	19-40125-7	Copper	mg/L	0.0016		yes
BH04A	GW3A	25/03/2021	21-14269-5	Copper	mg/L	0.0009		
BH04A	GW3A	4/08/2021	21-34713-4	Copper	mg/L	0.00051		
BH04A	GW3A	27/10/2021	21-45163-1	Copper	mg/L	0.00044		
BH04A	GW3A	18/01/2022	2832272_5	Copper	mg/L	0.001		
BH04A	GW3A	4/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	24.5		
BH04A	GW3A	27/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	12.1		
BH04A	GW3A	25/03/2021	21-14269-5	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.032		
BH04A	GW3A	4/08/2021	21-34713-4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.034		
BH04A	GW3A	27/10/2021	21-45163-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.022		
BH04A	GW3A	18/01/2022	2832272_5	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.037	yes	
BH04A	GW3A	4/08/2021		Electrical Conductivity (Field)	µS/cm	1125		
BH04A	GW3A	27/10/2021		Electrical Conductivity (Field)	µS/cm	1161		
BH04A	GW3A	9/11/2019	19-40125-7	Electrical conductivity *(lab)	µS/cm	1430		
BH04A	GW3A	18/01/2022	2832272_5	Electrical conductivity *(lab)	µS/cm	128900		
BH04A	GW3A	25/03/2021	21-14269-5	Hardness as CaCO3	g CaCO3/m3	330		
BH04A	GW3A	4/08/2021	21-34713-4	Hardness as CaCO3	g CaCO3/m3	300		
BH04A	GW3A	27/10/2021	21-45163-1	Hardness as CaCO3	g CaCO3/m3	160		
BH04A	GW3A	18/01/2022	2832272_5	Hardness as CaCO3	g CaCO3/m3	290		
BH04A	GW3A	25/03/2021	21-14269-5	Hydroxide	g CaCO3/m3	< 1		
BH04A	GW3A	4/08/2021	21-34713-4	Hydroxide	g CaCO3/m3	< 1		
BH04A	GW3A	27/10/2021	21-45163-1	Hydroxide	g CaCO3/m3	< 1		
BH04A	GW3A	9/11/2019	19-40125-7	Iron	mg/L	0.36		
BH04A	GW3A	25/03/2021	21-14269-5	Iron	mg/L	< 0.005		
BH04A	GW3A	4/08/2021	21-34713-4	Iron	mg/L	0.014		
BH04A	GW3A	27/10/2021	21-45163-1	Iron	mg/L	0.0079		
BH04A	GW3A	9/11/2019	19-40125-7	Kjeldahl Nitrogen Total	mg/L	0.45		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH04A	GW3A	25/03/2021	21-14269-5	Kjeldahl Nitrogen Total	mg/L	< 0.8		
BH04A	GW3A	4/08/2021	21-34713-4	Kjeldahl Nitrogen Total	mg/L	0.33		
BH04A	GW3A	27/10/2021	21-45163-1	Kjeldahl Nitrogen Total	mg/L	0.23		
BH04A	GW3A	18/01/2022	2832272_5	Kjeldahl Nitrogen Total	mg/L	0.16		
BH04A	GW3A	9/11/2019	19-40125-7	Lead	mg/L	< 0.00005		
BH04A	GW3A	25/03/2021	21-14269-5	Lead	mg/L	< 0.00005		
BH04A	GW3A	4/08/2021	21-34713-4	Lead	mg/L	< 0.00005		
BH04A	GW3A	27/10/2021	21-45163-1	Lead	mg/L	< 0.00005		
BH04A	GW3A	18/01/2022	2832272_5	Lead	mg/L	< 0.0001		
BH04A	GW3A	9/11/2019	19-40125-7	Magnesium	mg/L	24.5		
BH04A	GW3A	25/03/2021	21-14269-5	Magnesium	mg/L	28.5		
BH04A	GW3A	4/08/2021	21-34713-4	Magnesium	mg/L	25.3		
BH04A	GW3A	27/10/2021	21-45163-1	Magnesium	mg/L	14.7		
BH04A	GW3A	18/01/2022	2832272_5	Magnesium	mg/L	25		
BH04A	GW3A	9/11/2019	19-40125-7	Manganese	mg/L	1.68		
BH04A	GW3A	25/03/2021	21-14269-5	Manganese	mg/L	0.649		
BH04A	GW3A	4/08/2021	21-34713-4	Manganese	mg/L	0.713		
BH04A	GW3A	27/10/2021	21-45163-1	Manganese	mg/L	0.421		
BH04A	GW3A	9/11/2019	19-40125-7	Nickel	mg/L	0.0344		yes
BH04A	GW3A	25/03/2021	21-14269-5	Nickel	mg/L	0.0044		
BH04A	GW3A	4/08/2021	21-34713-4	Nickel	mg/L	0.0058		
BH04A	GW3A	27/10/2021	21-45163-1	Nickel	mg/L	0.01		
BH04A	GW3A	18/01/2022	2832272_5	Nickel	mg/L	0.0071		
BH04A	GW3A	9/11/2019	19-40125-7	Nitrate (as N)	mg/L	0.0672		
BH04A	GW3A	25/03/2021	21-14269-5	Nitrate (as N)	mg/L	0.0173		
BH04A	GW3A	4/08/2021	21-34713-4	Nitrate (as N)	mg/L	0.062		
BH04A	GW3A	27/10/2021	21-45163-1	Nitrate (as N)	mg/L	0.378		
BH04A	GW3A	18/01/2022	2832272_5	Nitrate (as N)	mg/L	0.086		
BH04A	GW3A	9/11/2019	19-40125-7	Nitrite (as N)	mg/L	0.0163		
BH04A	GW3A	25/03/2021	21-14269-5	Nitrite (as N)	mg/L	0.001		
BH04A	GW3A	4/08/2021	21-34713-4	Nitrite (as N)	mg/L	< 0.001		
BH04A	GW3A	27/10/2021	21-45163-1	Nitrite (as N)	mg/L	< 0.001		
BH04A	GW3A	18/01/2022	2832272_5	Nitrite (as N)	mg/L	< 0.002		
BH04A	GW3A	9/11/2019	19-40125-7	Nitrogen (Total)	mg/L	0.54		
BH04A	GW3A	25/03/2021	21-14269-5	Nitrogen (Total)	mg/L	< 0.1		
BH04A	GW3A	4/08/2021	21-34713-4	Nitrogen (Total)	mg/L	0.39		
BH04A	GW3A	27/10/2021	21-45163-1	Nitrogen (Total)	mg/L	0.61		
BH04A	GW3A	18/01/2022	2832272_5	Nitrogen (Total)	mg/L	0.25		
BH04A	GW3A	4/08/2021		pH (Field)	pH_Units	6.67		
BH04A	GW3A	27/10/2021		pH (Field)	pH_Units	6.58		
BH04A	GW3A	9/11/2019	19-40125-7	pH (Lab)	pH_Units	7.2		
BH04A	GW3A	25/03/2021	21-14269-5	pH (Lab)	pH_Units	7.5		
BH04A	GW3A	18/01/2022	2832272_5	pH (Lab)	pH_Units	7.5		
BH04A	GW3A	9/11/2019	19-40125-7	Potassium	mg/L	4.6		
BH04A	GW3A	25/03/2021	21-14269-5	Potassium	mg/L	5.16		
BH04A	GW3A	4/08/2021	21-34713-4	Potassium	mg/L	4.3		
BH04A	GW3A	27/10/2021	21-45163-1	Potassium	mg/L	3.6		
BH04A	GW3A	18/01/2022	2832272_5	Potassium	mg/L	4.5		
BH04A	GW3A	4/08/2021		Redox	mV	50.2		
BH04A	GW3A	27/10/2021		Redox	mV	78		
BH04A	GW3A	9/11/2019	19-40125-7	Sodium	mg/L	161		
BH04A	GW3A	25/03/2021	21-14269-5	Sodium	mg/L	222		
BH04A	GW3A	4/08/2021	21-34713-4	Sodium	mg/L	222		
BH04A	GW3A	27/10/2021	21-45163-1	Sodium	mg/L	167		
BH04A	GW3A	18/01/2022	2832272_5	Sodium	mg/L	183		
BH04A	GW3A	9/11/2019	19-40125-7	Sulphate	mg/L	9.28		
BH04A	GW3A	25/03/2021	21-14269-5	Sulphate	mg/L	5.01		
BH04A	GW3A	4/08/2021	21-34713-4	Sulphate	mg/L	4.82		
BH04A	GW3A	27/10/2021	21-45163-1	Sulphate	mg/L	3.04		
BH04A	GW3A	18/01/2022	2832272_5	Sulphate	mg/L	4.1		
BH04A	GW3A	4/08/2021		Temperature (Field)	oC	10.6		
BH04A	GW3A	27/10/2021		Temperature (Field)	oC	10.9		
BH04A	GW3A	18/01/2022	2832272_5	Total Ammoniacal-N	g/m3	0.015		
BH04A	GW3A	25/03/2021	21-14269-5	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0183		
BH04A	GW3A	4/08/2021	21-34713-4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0625		
BH04A	GW3A	27/10/2021	21-45163-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.379		
BH04A	GW3A	18/01/2022	2832272_5	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.088		
BH04A	GW3A	25/03/2021	21-14269-5	Total Phosphorus	mg/L	0.017		
BH04A	GW3A	4/08/2021	21-34713-4	Total Phosphorus	mg/L	0.056		
BH04A	GW3A	27/10/2021	21-45163-1	Total Phosphorus	mg/L	0.044		
BH04A	GW3A	18/01/2022	2832272_5	Total Phosphorus	mg/L	0.048		
BH04A	GW3A	18/01/2022	2832272_5	Total Suspended Solids	mg/L	14		
BH04A	GW3A	18/01/2022	2832272_5	Turbidity	NTU	8.1		
BH04A	GW3A	9/11/2019	19-40125-7	Zinc	mg/L	0.027		yes
BH04A	GW3A	25/03/2021	21-14269-5	Zinc	mg/L	0.0014		
BH04A	GW3A	4/08/2021	21-34713-4	Zinc	mg/L	0.0045		
BH04A	GW3A	27/10/2021	21-45163-1	Zinc	mg/L	0.0089		yes
BH04A	GW3A	18/01/2022	2832272_5	Zinc	mg/L	0.0048		
BH04B	GW3B	18/01/2022	2832272_6	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	1000		
BH04B	GW3B	18/01/2022	2832272_6	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH04B	GW3B	9/11/2019	19-40125-8	Alkalinity (total) as CaCO3	g CaCO3/m3	1088		
BH04B	GW3B	23/03/2021	21-12139-3	Alkalinity (total) as CaCO3	g CaCO3/m3	1169		
BH04B	GW3B	4/08/2021	21-34713-5	Alkalinity (total) as CaCO3	g CaCO3/m3	1070		
BH04B	GW3B	27/10/2021	21-45163-2	Alkalinity (total) as CaCO3	g CaCO3/m3	1062		
BH04B	GW3B	18/01/2022	2832272_6	Alkalinity (total) as CaCO3	g CaCO3/m3	1010		
BH04B	GW3B	9/11/2019	19-40125-8	Ammonia as N	mg/L	0.28	yes	
BH04B	GW3B	23/03/2021	21-12139-3	Ammonia as N	mg/L	0.37	yes	
BH04B	GW3B	4/08/2021	21-34713-5	Ammonia as N	mg/L	0.4	yes	
BH04B	GW3B	27/10/2021	21-45163-2	Ammonia as N	mg/L	0.36	yes	
BH04B	GW3B	18/01/2022	2832272_6	Anions Total	meq/L	22		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH04B	GW3B	9/11/2019	19-40125-8	Arsenic	mg/L	0.00086		
BH04B	GW3B	23/03/2021	21-12139-3	Arsenic	mg/L	0.0024		
BH04B	GW3B	4/08/2021	21-34713-5	Arsenic	mg/L	0.0025		
BH04B	GW3B	27/10/2021	21-45163-2	Arsenic	mg/L	0.0022		
BH04B	GW3B	18/01/2022	2832272_6	Arsenic	mg/L	0.0025		
BH04B	GW3B	23/03/2021	21-12139-3	Bicarbonate	g CaCO3/m3	1161		
BH04B	GW3B	4/08/2021	21-34713-5	Bicarbonate	g CaCO3/m3	1067		
BH04B	GW3B	27/10/2021	21-45163-2	Bicarbonate	g CaCO3/m3	1061		
BH04B	GW3B	18/01/2022	2832272_6	Bicarbonate	g CaCO3/m3	1220		
BH04B	GW3B	9/11/2019	19-40125-8	Cadmium	mg/L	0.000032		
BH04B	GW3B	23/03/2021	21-12139-3	Cadmium	mg/L	< 0.00002		
BH04B	GW3B	4/08/2021	21-34713-5	Cadmium	mg/L	< 0.00002		
BH04B	GW3B	27/10/2021	21-45163-2	Cadmium	mg/L	< 0.00002		
BH04B	GW3B	18/01/2022	2832272_6	Cadmium	mg/L	< 0.00005		
BH04B	GW3B	9/11/2019	19-40125-8	Calcium	mg/L	169		
BH04B	GW3B	23/03/2021	21-12139-3	Calcium	mg/L	137		
BH04B	GW3B	4/08/2021	21-34713-5	Calcium	mg/L	144		
BH04B	GW3B	27/10/2021	21-45163-2	Calcium	mg/L	146		
BH04B	GW3B	18/01/2022	2832272_6	Calcium	mg/L	135		
BH04B	GW3B	23/03/2021	21-12139-3	Carbonate	g CaCO3/m3	7.2		
BH04B	GW3B	4/08/2021	21-34713-5	Carbonate	g CaCO3/m3	2.9		
BH04B	GW3B	27/10/2021	21-45163-2	Carbonate	g CaCO3/m3	1.4		
BH04B	GW3B	18/01/2022	2832272_6	Carbonate	g CaCO3/m3	5.4		
BH04B	GW3B	18/01/2022	2832272_6	Cations Total	meq/L	22		
BH04B	GW3B	9/11/2019	19-40125-8	Chloride	mg/L	80.3		
BH04B	GW3B	23/03/2021	21-12139-3	Chloride	mg/L	55.7		
BH04B	GW3B	4/08/2021	21-34713-5	Chloride	mg/L	54.2		
BH04B	GW3B	27/10/2021	21-45163-2	Chloride	mg/L	51.9		
BH04B	GW3B	18/01/2022	2832272_6	Chloride	mg/L	51		
BH04B	GW3B	9/11/2019	19-40125-8	Chromium (III+VI)	mg/L	< 0.0002		
BH04B	GW3B	23/03/2021	21-12139-3	Chromium (III+VI)	mg/L	0.00048		
BH04B	GW3B	4/08/2021	21-34713-5	Chromium (III+VI)	mg/L	< 0.0002		
BH04B	GW3B	27/10/2021	21-45163-2	Chromium (III+VI)	mg/L	< 0.0002		
BH04B	GW3B	18/01/2022	2832272_6	Chromium (III+VI)	mg/L	< 0.0005		
BH04B	GW3B	23/03/2021	21-12139-3	CO2 (Free)	g/m3	35		
BH04B	GW3B	4/08/2021	21-34713-5	CO2 (Free)	g/m3	73.5		
BH04B	GW3B	27/10/2021	21-45163-2	CO2 (Free)	g/m3	149		
BH04B	GW3B	18/01/2022	2832272_6	CO2 (Free)	g/m3	35		
BH04B	GW3B	23/03/2021	21-12139-3	Conductivity (1:5 aqueous extract)	µS/cm	203000		
BH04B	GW3B	9/11/2019	19-40125-8	Copper	mg/L	0.00047		
BH04B	GW3B	23/03/2021	21-12139-3	Copper	mg/L	< 0.0002		
BH04B	GW3B	4/08/2021	21-34713-5	Copper	mg/L	< 0.0002		
BH04B	GW3B	27/10/2021	21-45163-2	Copper	mg/L	< 0.0002		
BH04B	GW3B	18/01/2022	2832272_6	Copper	mg/L	< 0.0005		
BH04B	GW3B	4/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	3.9		
BH04B	GW3B	27/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	7.5		
BH04B	GW3B	23/03/2021	21-12139-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH04B	GW3B	4/08/2021	21-34713-5	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH04B	GW3B	27/10/2021	21-45163-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH04B	GW3B	18/01/2022	2832272_6	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.004		
BH04B	GW3B	4/08/2021		Electrical Conductivity (Field)	µS/cm	1363		
BH04B	GW3B	27/10/2021		Electrical Conductivity (Field)	µS/cm	1875		
BH04B	GW3B	9/11/2019	19-40125-8	Electrical conductivity *(lab)	µS/cm	2060		
BH04B	GW3B	18/01/2022	2832272_6	Electrical conductivity *(lab)	µS/cm	190200		
BH04B	GW3B	23/03/2021	21-12139-3	Hardness as CaCO3	g CaCO3/m3	580		
BH04B	GW3B	4/08/2021	21-34713-5	Hardness as CaCO3	g CaCO3/m3	570		
BH04B	GW3B	27/10/2021	21-45163-2	Hardness as CaCO3	g CaCO3/m3	580		
BH04B	GW3B	18/01/2022	2832272_6	Hardness as CaCO3	g CaCO3/m3	560		
BH04B	GW3B	23/03/2021	21-12139-3	Hydroxide	g CaCO3/m3	< 1		
BH04B	GW3B	4/08/2021	21-34713-5	Hydroxide	g CaCO3/m3	< 1		
BH04B	GW3B	27/10/2021	21-45163-2	Hydroxide	g CaCO3/m3	< 1		
BH04B	GW3B	9/11/2019	19-40125-8	Iron	mg/L	0.879		
BH04B	GW3B	23/03/2021	21-12139-3	Iron	mg/L	7.11		
BH04B	GW3B	4/08/2021	21-34713-5	Iron	mg/L	8.78		
BH04B	GW3B	27/10/2021	21-45163-2	Iron	mg/L	9.55		
BH04B	GW3B	9/11/2019	19-40125-8	Kjeldahl Nitrogen Total	mg/L	0.93		
BH04B	GW3B	23/03/2021	21-12139-3	Kjeldahl Nitrogen Total	mg/L	0.56		
BH04B	GW3B	4/08/2021	21-34713-5	Kjeldahl Nitrogen Total	mg/L	0.66		
BH04B	GW3B	27/10/2021	21-45163-2	Kjeldahl Nitrogen Total	mg/L	0.61		
BH04B	GW3B	18/01/2022	2832272_6	Kjeldahl Nitrogen Total	mg/L	0.48		
BH04B	GW3B	9/11/2019	19-40125-8	Lead	mg/L	< 0.00005		
BH04B	GW3B	23/03/2021	21-12139-3	Lead	mg/L	< 0.00005		
BH04B	GW3B	4/08/2021	21-34713-5	Lead	mg/L	< 0.00005		
BH04B	GW3B	27/10/2021	21-45163-2	Lead	mg/L	< 0.00005		
BH04B	GW3B	18/01/2022	2832272_6	Lead	mg/L	< 0.0001		
BH04B	GW3B	9/11/2019	19-40125-8	Magnesium	mg/L	57.3		
BH04B	GW3B	23/03/2021	21-12139-3	Magnesium	mg/L	56.7		
BH04B	GW3B	4/08/2021	21-34713-5	Magnesium	mg/L	50.7		
BH04B	GW3B	27/10/2021	21-45163-2	Magnesium	mg/L	53		
BH04B	GW3B	18/01/2022	2832272_6	Magnesium	mg/L	55		
BH04B	GW3B	9/11/2019	19-40125-8	Manganese	mg/L	1.32		
BH04B	GW3B	23/03/2021	21-12139-3	Manganese	mg/L	0.71		
BH04B	GW3B	4/08/2021	21-34713-5	Manganese	mg/L	0.571		
BH04B	GW3B	27/10/2021	21-45163-2	Manganese	mg/L	0.552		
BH04B	GW3B	9/11/2019	19-40125-8	Nickel	mg/L	0.0268		yes
BH04B	GW3B	23/03/2021	21-12139-3	Nickel	mg/L	0.0029		
BH04B	GW3B	4/08/2021	21-34713-5	Nickel	mg/L	0.0017		
BH04B	GW3B	27/10/2021	21-45163-2	Nickel	mg/L	0.0011		
BH04B	GW3B	18/01/2022	2832272_6	Nickel	mg/L	0.0016		
BH04B	GW3B	9/11/2019	19-40125-8	Nitrate (as N)	mg/L	0.029		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH04B	GW3B	23/03/2021	21-12139-3	Nitrate (as N)	mg/L	0.0024		
BH04B	GW3B	4/08/2021	21-34713-5	Nitrate (as N)	mg/L	< 0.002		
BH04B	GW3B	27/10/2021	21-45163-2	Nitrate (as N)	mg/L	0.1		
BH04B	GW3B	18/01/2022	2832272_6	Nitrate (as N)	mg/L	< 0.002		
BH04B	GW3B	9/11/2019	19-40125-8	Nitrite (as N)	mg/L	0.00609		
BH04B	GW3B	23/03/2021	21-12139-3	Nitrite (as N)	mg/L	< 0.001		
BH04B	GW3B	4/08/2021	21-34713-5	Nitrite (as N)	mg/L	< 0.001		
BH04B	GW3B	27/10/2021	21-45163-2	Nitrite (as N)	mg/L	< 0.001		
BH04B	GW3B	18/01/2022	2832272_6	Nitrite (as N)	mg/L	< 0.002		
BH04B	GW3B	9/11/2019	19-40125-8	Nitrogen (Total)	mg/L	0.96		
BH04B	GW3B	23/03/2021	21-12139-3	Nitrogen (Total)	mg/L	0.56		
BH04B	GW3B	4/08/2021	21-34713-5	Nitrogen (Total)	mg/L	0.66		
BH04B	GW3B	27/10/2021	21-45163-2	Nitrogen (Total)	mg/L	0.71		
BH04B	GW3B	18/01/2022	2832272_6	Nitrogen (Total)	mg/L	0.49		
BH04B	GW3B	4/08/2021		pH (Field)	pH_Units	6.86		
BH04B	GW3B	27/10/2021		pH (Field)	pH_Units	6.92		
BH04B	GW3B	9/11/2019	19-40125-8	pH (Lab)	pH_Units	7.2		
BH04B	GW3B	23/03/2021	21-12139-3	pH (Lab)	pH_Units	7.8		
BH04B	GW3B	18/01/2022	2832272_6	pH (Lab)	pH_Units	7.8		
BH04B	GW3B	9/11/2019	19-40125-8	Potassium	mg/L	9.08		
BH04B	GW3B	23/03/2021	21-12139-3	Potassium	mg/L	8.43		
BH04B	GW3B	4/08/2021	21-34713-5	Potassium	mg/L	9.32		
BH04B	GW3B	27/10/2021	21-45163-2	Potassium	mg/L	8.97		
BH04B	GW3B	18/01/2022	2832272_6	Potassium	mg/L	9.2		
BH04B	GW3B	4/08/2021		Redox	mV	-0.9		
BH04B	GW3B	27/10/2021		Redox	mV	68.2		
BH04B	GW3B	9/11/2019	19-40125-8	Sodium	mg/L	202		
BH04B	GW3B	23/03/2021	21-12139-3	Sodium	mg/L	301		
BH04B	GW3B	4/08/2021	21-34713-5	Sodium	mg/L	264		
BH04B	GW3B	27/10/2021	21-45163-2	Sodium	mg/L	242		
BH04B	GW3B	18/01/2022	2832272_6	Sodium	mg/L	230		
BH04B	GW3B	9/11/2019	19-40125-8	Sulphate	mg/L	44.9		
BH04B	GW3B	23/03/2021	21-12139-3	Sulphate	mg/L	15.6		
BH04B	GW3B	4/08/2021	21-34713-5	Sulphate	mg/L	12.7		
BH04B	GW3B	27/10/2021	21-45163-2	Sulphate	mg/L	16.7		
BH04B	GW3B	18/01/2022	2832272_6	Sulphate	mg/L	24		
BH04B	GW3B	4/08/2021		Temperature (Field)	oC	11.1		
BH04B	GW3B	27/10/2021		Temperature (Field)	oC	12.2		
BH04B	GW3B	18/01/2022	2832272_6	Total Ammoniacal-N	g/m3	0.35	yes	
BH04B	GW3B	23/03/2021	21-12139-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0025		
BH04B	GW3B	4/08/2021	21-34713-5	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	< 0.002		
BH04B	GW3B	27/10/2021	21-45163-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.1		
BH04B	GW3B	18/01/2022	2832272_6	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.002		
BH04B	GW3B	23/03/2021	21-12139-3	Total Phosphorus	mg/L	0.032		
BH04B	GW3B	4/08/2021	21-34713-5	Total Phosphorus	mg/L	0.048		
BH04B	GW3B	27/10/2021	21-45163-2	Total Phosphorus	mg/L	0.039		
BH04B	GW3B	18/01/2022	2832272_6	Total Phosphorus	mg/L	0.037		
BH04B	GW3B	18/01/2022	2832272_6	Total Suspended Solids	mg/L	37		
BH04B	GW3B	18/01/2022	2832272_6	Turbidity	NTU	117		
BH04B	GW3B	9/11/2019	19-40125-8	Zinc	mg/L	0.0095		yes
BH04B	GW3B	23/03/2021	21-12139-3	Zinc	mg/L	< 0.001		
BH04B	GW3B	4/08/2021	21-34713-5	Zinc	mg/L	0.0013		
BH04B	GW3B	27/10/2021	21-45163-2	Zinc	mg/L	< 0.001		
BH04B	GW3B	18/01/2022	2832272_6	Zinc	mg/L	< 0.001		
BH05B		25/03/2021	21-14269-8	Alkalinity (total) as CaCO3	g CaCO3/m3	429		
BH05B		25/03/2021	21-14269-8	Ammonia as N	mg/L	< 0.005		
BH05B		25/03/2021	21-14269-8	Arsenic	mg/L	< 0.0005		
BH05B		25/03/2021	21-14269-8	Bicarbonate	g CaCO3/m3	426		
BH05B		25/03/2021	21-14269-8	Cadmium	mg/L	< 0.00002		
BH05B		25/03/2021	21-14269-8	Calcium	mg/L	116		
BH05B		25/03/2021	21-14269-8	Carbonate	g CaCO3/m3	3.1		
BH05B		25/03/2021	21-14269-8	Chloride	mg/L	49.5		
BH05B		25/03/2021	21-14269-8	Chromium (III+VI)	mg/L	< 0.0002		
BH05B		25/03/2021	21-14269-8	CO2 (Free)	g/m3	11.1		
BH05B		25/03/2021	21-14269-8	Conductivity (1:5 aqueous extract)	µS/cm	99000		
BH05B		25/03/2021	21-14269-8	Copper	mg/L	0.0051		yes
BH05B		25/03/2021	21-14269-8	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH05B		25/03/2021	21-14269-8	Hardness as CaCO3	g CaCO3/m3	390		
BH05B		25/03/2021	21-14269-8	Hydroxide	g CaCO3/m3	< 1		
BH05B		25/03/2021	21-14269-8	Iron	mg/L	0.013		
BH05B		25/03/2021	21-14269-8	Kjeldahl Nitrogen Total	mg/L	< 0.8		
BH05B		25/03/2021	21-14269-8	Lead	mg/L	0.00016		
BH05B		25/03/2021	21-14269-8	Magnesium	mg/L	25.1		
BH05B		25/03/2021	21-14269-8	Manganese	mg/L	0.326		
BH05B		25/03/2021	21-14269-8	Nickel	mg/L	0.0072		
BH05B		25/03/2021	21-14269-8	Nitrate (as N)	mg/L	0.589		
BH05B		25/03/2021	21-14269-8	Nitrite (as N)	mg/L	< 0.001		
BH05B		25/03/2021	21-14269-8	Nitrogen (Total)	mg/L	0.59		
BH05B		25/03/2021	21-14269-8	pH (Lab)	pH_Units	7.9		
BH05B		25/03/2021	21-14269-8	Potassium	mg/L	10.6		
BH05B		25/03/2021	21-14269-8	Sodium	mg/L	68.4		
BH05B		25/03/2021	21-14269-8	Sulphate	mg/L	45.9		
BH05B		25/03/2021	21-14269-8	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.589		
BH05B		25/03/2021	21-14269-8	Total Phosphorus	mg/L	0.84		
BH05B		25/03/2021	21-14269-8	Zinc	mg/L	0.0096		yes
BH09	GW6	18/01/2022	2832272_9	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	144		
BH09	GW6	18/01/2022	2832272_9	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH09	GW6	3/08/2021	21-34713-8	Alkalinity (total) as CaCO3	g CaCO3/m3	172		
BH09	GW6	26/10/2021	21-44970-4	Alkalinity (total) as CaCO3	g CaCO3/m3	148		
BH09	GW6	18/01/2022	2832272_9	Alkalinity (total) as CaCO3	g CaCO3/m3	145		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH09	GW6	3/08/2021	21-34713-8	Ammonia as N	mg/L	0.14		
BH09	GW6	26/10/2021	21-44970-4	Ammonia as N	mg/L	0.15		
BH09	GW6	18/01/2022	2832272_9	Anions Total	meq/L	4.3		
BH09	GW6	3/08/2021	21-34713-8	Arsenic	mg/L	0.0035		
BH09	GW6	26/10/2021	21-44970-4	Arsenic	mg/L	0.0024		
BH09	GW6	18/01/2022	2832272_9	Arsenic	mg/L	0.0035		
BH09	GW6	3/08/2021	21-34713-8	Bicarbonate	g CaCO3/m3	172		
BH09	GW6	26/10/2021	21-44970-4	Bicarbonate	g CaCO3/m3	147		
BH09	GW6	18/01/2022	2832272_9	Bicarbonate	g CaCO3/m3	176		
BH09	GW6	3/08/2021	21-34713-8	Cadmium	mg/L	0.00257		yes
BH09	GW6	26/10/2021	21-44970-4	Cadmium	mg/L	0.0024		yes
BH09	GW6	18/01/2022	2832272_9	Cadmium	mg/L	< 0.00005		
BH09	GW6	3/08/2021	21-34713-8	Calcium	mg/L	12.3		
BH09	GW6	26/10/2021	21-44970-4	Calcium	mg/L	9.76		
BH09	GW6	18/01/2022	2832272_9	Calcium	mg/L	9.1		
BH09	GW6	3/08/2021	21-34713-8	Carbonate	g CaCO3/m3	< 1		
BH09	GW6	26/10/2021	21-44970-4	Carbonate	g CaCO3/m3	< 1		
BH09	GW6	18/01/2022	2832272_9	Carbonate	g CaCO3/m3	< 1		
BH09	GW6	18/01/2022	2832272_9	Cations Total	meq/L	4.6		
BH09	GW6	3/08/2021	21-34713-8	Chloride	mg/L	30.4		
BH09	GW6	26/10/2021	21-44970-4	Chloride	mg/L	30.6		
BH09	GW6	18/01/2022	2832272_9	Chloride	mg/L	31		
BH09	GW6	3/08/2021	21-34713-8	Chromium (III+VI)	mg/L	< 0.0002		
BH09	GW6	26/10/2021	21-44970-4	Chromium (III+VI)	mg/L	< 0.0002		
BH09	GW6	18/01/2022	2832272_9	Chromium (III+VI)	mg/L	< 0.0005		
BH09	GW6	3/08/2021	21-34713-8	CO2 (Free)	g/m3	17		
BH09	GW6	26/10/2021	21-44970-4	CO2 (Free)	g/m3	25.2		
BH09	GW6	18/01/2022	2832272_9	CO2 (Free)	g/m3	6.5		
BH09	GW6	3/08/2021	21-34713-8	Copper	mg/L	0.0011		
BH09	GW6	26/10/2021	21-44970-4	Copper	mg/L	0.0014		
BH09	GW6	18/01/2022	2832272_9	Copper	mg/L	0.0009		
BH09	GW6	3/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	21.6		
BH09	GW6	26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	27		
BH09	GW6	3/08/2021	21-34713-8	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH09	GW6	26/10/2021	21-44970-4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH09	GW6	18/01/2022	2832272_9	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.004		
BH09	GW6	3/08/2021		Electrical Conductivity (Field)	µS/cm	476.4		
BH09	GW6	26/10/2021		Electrical Conductivity (Field)	µS/cm	361.7		
BH09	GW6	18/01/2022	2832272_9	Electrical conductivity *(lab)	µS/cm	44600		
BH09	GW6	3/08/2021	21-34713-8	Hardness as CaCO3	g CaCO3/m3	61		
BH09	GW6	26/10/2021	21-44970-4	Hardness as CaCO3	g CaCO3/m3	47		
BH09	GW6	18/01/2022	2832272_9	Hardness as CaCO3	g CaCO3/m3	48		
BH09	GW6	3/08/2021	21-34713-8	Hydroxide	g CaCO3/m3	< 1		
BH09	GW6	26/10/2021	21-44970-4	Hydroxide	g CaCO3/m3	< 1		
BH09	GW6	3/08/2021	21-34713-8	Iron	mg/L	0.27		
BH09	GW6	26/10/2021	21-44970-4	Iron	mg/L	0.23		
BH09	GW6	3/08/2021	21-34713-8	Kjeldahl Nitrogen Total	mg/L	1.5		
BH09	GW6	26/10/2021	21-44970-4	Kjeldahl Nitrogen Total	mg/L	0.35		
BH09	GW6	18/01/2022	2832272_9	Kjeldahl Nitrogen Total	mg/L	0.47		
BH09	GW6	3/08/2021	21-34713-8	Lead	mg/L	0.00015		
BH09	GW6	26/10/2021	21-44970-4	Lead	mg/L	0.00016		
BH09	GW6	18/01/2022	2832272_9	Lead	mg/L	0.00022		
BH09	GW6	3/08/2021	21-34713-8	Magnesium	mg/L	7.27		
BH09	GW6	26/10/2021	21-44970-4	Magnesium	mg/L	5.55		
BH09	GW6	18/01/2022	2832272_9	Magnesium	mg/L	6.1		
BH09	GW6	3/08/2021	21-34713-8	Manganese	mg/L	0.208		
BH09	GW6	26/10/2021	21-44970-4	Manganese	mg/L	0.179		
BH09	GW6	3/08/2021	21-34713-8	Nickel	mg/L	0.0041		
BH09	GW6	26/10/2021	21-44970-4	Nickel	mg/L	0.004		
BH09	GW6	18/01/2022	2832272_9	Nickel	mg/L	0.0038		
BH09	GW6	3/08/2021	21-34713-8	Nitrate (as N)	mg/L	0.174		
BH09	GW6	26/10/2021	21-44970-4	Nitrate (as N)	mg/L	0.12		
BH09	GW6	18/01/2022	2832272_9	Nitrate (as N)	mg/L	0.102		
BH09	GW6	3/08/2021	21-34713-8	Nitrite (as N)	mg/L	0.0031		
BH09	GW6	26/10/2021	21-44970-4	Nitrite (as N)	mg/L	0.0044		
BH09	GW6	18/01/2022	2832272_9	Nitrite (as N)	mg/L	0.015		
BH09	GW6	3/08/2021	21-34713-8	Nitrogen (Total)	mg/L	1.7		
BH09	GW6	26/10/2021	21-44970-4	Nitrogen (Total)	mg/L	0.47		
BH09	GW6	18/01/2022	2832272_9	Nitrogen (Total)	mg/L	0.59		
BH09	GW6	3/08/2021		pH (Field)	pH_Units	7.08		
BH09	GW6	26/10/2021		pH (Field)	pH_Units	6.91		
BH09	GW6	18/01/2022	2832272_9	pH (Lab)	pH_Units	7.6		
BH09	GW6	3/08/2021	21-34713-8	Potassium	mg/L	15.5		
BH09	GW6	26/10/2021	21-44970-4	Potassium	mg/L	11.6		
BH09	GW6	18/01/2022	2832272_9	Potassium	mg/L	14		
BH09	GW6	3/08/2021		Redox	mV	101.9		
BH09	GW6	26/10/2021		Redox	mV	65.1		
BH09	GW6	3/08/2021	21-34713-8	Sodium	mg/L	81.9		
BH09	GW6	26/10/2021	21-44970-4	Sodium	mg/L	63.6		
BH09	GW6	18/01/2022	2832272_9	Sodium	mg/L	76		
BH09	GW6	3/08/2021	21-34713-8	Sulphate	mg/L	36.8		
BH09	GW6	26/10/2021	21-44970-4	Sulphate	mg/L	20.9		
BH09	GW6	18/01/2022	2832272_9	Sulphate	mg/L	26		
BH09	GW6	3/08/2021		Temperature (Field)	oC	11.1		
BH09	GW6	26/10/2021		Temperature (Field)	oC	11.3		
BH09	GW6	18/01/2022	2832272_9	Total Ammoniacal-N	g/m3	0.181		
BH09	GW6	3/08/2021	21-34713-8	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.177		
BH09	GW6	26/10/2021	21-44970-4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.124		
BH09	GW6	18/01/2022	2832272_9	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.117		
BH09	GW6	3/08/2021	21-34713-8	Total Phosphorus	mg/L	0.34		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH09	GW6	26/10/2021	21-44970-4	Total Phosphorus	mg/L	0.13		
BH09	GW6	18/01/2022	2832272_9	Total Phosphorus	mg/L	0.105		
BH09	GW6	18/01/2022	2832272_9	Total Suspended Solids	mg/L	280		
BH09	GW6	18/01/2022	2832272_9	Turbidity	NTU	141		
BH09	GW6	3/08/2021	21-34713-8	Zinc	mg/L	0.014		yes
BH09	GW6	26/10/2021	21-44970-4	Zinc	mg/L	0.026		yes
BH09	GW6	18/01/2022	2832272_9	Zinc	mg/L	0.0077		
BH10B		26/03/2021	21-14269-9	Alkalinity (total) as CaCO3	g CaCO3/m3	403		
BH10B		26/03/2021	21-14269-9	Ammonia as N	mg/L	0.02		
BH10B		26/03/2021	21-14269-9	Arsenic	mg/L	0.00069		
BH10B		26/03/2021	21-14269-9	Bicarbonate	g CaCO3/m3	398		
BH10B		26/03/2021	21-14269-9	Cadmium	mg/L	0.000066		
BH10B		26/03/2021	21-14269-9	Calcium	mg/L	104		
BH10B		26/03/2021	21-14269-9	Carbonate	g CaCO3/m3	4.2		
BH10B		26/03/2021	21-14269-9	Chloride	mg/L	28.9		
BH10B		26/03/2021	21-14269-9	Chromium (III+VI)	mg/L	< 0.0002		
BH10B		26/03/2021	21-14269-9	CO2 (Free)	g/m3	7.2		
BH10B		26/03/2021	21-14269-9	Conductivity (1:5 aqueous extract)	µS/cm	81000		
BH10B		26/03/2021	21-14269-9	Copper	mg/L	0.0025		yes
BH10B		26/03/2021	21-14269-9	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH10B		26/03/2021	21-14269-9	Hardness as CaCO3	g CaCO3/m3	360		
BH10B		26/03/2021	21-14269-9	Hydroxide	g CaCO3/m3	< 1		
BH10B		26/03/2021	21-14269-9	Iron	mg/L	0.013		
BH10B		26/03/2021	21-14269-9	Kjeldahl Nitrogen Total	mg/L	< 0.8		
BH10B		26/03/2021	21-14269-9	Lead	mg/L	0.000088		
BH10B		26/03/2021	21-14269-9	Magnesium	mg/L	23.3		
BH10B		26/03/2021	21-14269-9	Manganese	mg/L	0.346		
BH10B		26/03/2021	21-14269-9	Nickel	mg/L	0.0046		
BH10B		26/03/2021	21-14269-9	Nitrate (as N)	mg/L	0.0898		
BH10B		26/03/2021	21-14269-9	Nitrite (as N)	mg/L	0.0017		
BH10B		26/03/2021	21-14269-9	Nitrogen (Total)	mg/L	< 0.1		
BH10B		26/03/2021	21-14269-9	pH (Lab)	pH_Units	8		
BH10B		26/03/2021	21-14269-9	Potassium	mg/L	6.74		
BH10B		26/03/2021	21-14269-9	Sodium	mg/L	43.3		
BH10B		26/03/2021	21-14269-9	Sulphate	mg/L	35.3		
BH10B		26/03/2021	21-14269-9	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0915		
BH10B		26/03/2021	21-14269-9	Total Phosphorus	mg/L	0.2		
BH10B		26/03/2021	21-14269-9	Zinc	mg/L	0.058		yes
BH201	GW1	21/01/2022	2835216_6	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	300		
BH201	GW1	21/01/2022	2835216_6	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH201	GW1	24/03/2021	21-12139-4	Alkalinity (total) as CaCO3	g CaCO3/m3	284		
BH201	GW1	3/08/2021	21-34713-1	Alkalinity (total) as CaCO3	g CaCO3/m3	304		
BH201	GW1	26/10/2021	21-44970-1	Alkalinity (total) as CaCO3	g CaCO3/m3	300		
BH201	GW1	21/01/2022	2835216_6	Alkalinity (total) as CaCO3	g CaCO3/m3	300		
BH201	GW1	24/03/2021	21-12139-4	Ammonia as N	mg/L	1.61	yes	
BH201	GW1	3/08/2021	21-34713-1	Ammonia as N	mg/L	1.26	yes	
BH201	GW1	26/10/2021	21-44970-1	Ammonia as N	mg/L	1.51	yes	
BH201	GW1	21/01/2022	2835216_6	Ammonia as N	mg/L	1.61	yes	
BH201	GW1	21/01/2022	2835216_6	Anions Total	meq/L	8.6		
BH201	GW1	24/03/2021	21-12139-4	Arsenic	mg/L	0.0056		
BH201	GW1	3/08/2021	21-34713-1	Arsenic	mg/L	0.0059		
BH201	GW1	26/10/2021	21-44970-1	Arsenic	mg/L	0.003		
BH201	GW1	21/01/2022	2835216_6	Arsenic	mg/L	0.0011		
BH201	GW1	24/03/2021	21-12139-4	Bicarbonate	g CaCO3/m3	279		
BH201	GW1	3/08/2021	21-34713-1	Bicarbonate	g CaCO3/m3	303		
BH201	GW1	26/10/2021	21-44970-1	Bicarbonate	g CaCO3/m3	299		
BH201	GW1	21/01/2022	2835216_6	Bicarbonate	g CaCO3/m3	360		
BH201	GW1	24/03/2021	21-12139-4	Cadmium	mg/L	< 0.00002		
BH201	GW1	3/08/2021	21-34713-1	Cadmium	mg/L	< 0.00002		
BH201	GW1	26/10/2021	21-44970-1	Cadmium	mg/L	< 0.00002		
BH201	GW1	21/01/2022	2835216_6	Cadmium	mg/L	< 0.00005		
BH201	GW1	24/03/2021	21-12139-4	Calcium	mg/L	57.3		
BH201	GW1	3/08/2021	21-34713-1	Calcium	mg/L	65.7		
BH201	GW1	26/10/2021	21-44970-1	Calcium	mg/L	61		
BH201	GW1	21/01/2022	2835216_6	Calcium	mg/L	53		
BH201	GW1	24/03/2021	21-12139-4	Carbonate	g CaCO3/m3	4.7		
BH201	GW1	3/08/2021	21-34713-1	Carbonate	g CaCO3/m3	1.5		
BH201	GW1	26/10/2021	21-44970-1	Carbonate	g CaCO3/m3	< 1		
BH201	GW1	21/01/2022	2835216_6	Carbonate	g CaCO3/m3	1.7		
BH201	GW1	21/01/2022	2835216_6	Cations Total	meq/L	8.7		
BH201	GW1	24/03/2021	21-12139-4	Chloride	mg/L	91.1		
BH201	GW1	3/08/2021	21-34713-1	Chloride	mg/L	110		
BH201	GW1	26/10/2021	21-44970-1	Chloride	mg/L	100		
BH201	GW1	21/01/2022	2835216_6	Chloride	mg/L	91		
BH201	GW1	24/03/2021	21-12139-4	Chromium (III+VI)	mg/L	< 0.0002		
BH201	GW1	3/08/2021	21-34713-1	Chromium (III+VI)	mg/L	0.00079		
BH201	GW1	26/10/2021	21-44970-1	Chromium (III+VI)	mg/L	0.00091		
BH201	GW1	21/01/2022	2835216_6	Chromium (III+VI)	mg/L	0.0008		
BH201	GW1	24/03/2021	21-12139-4	CO2 (Free)	g/m3	3.1		
BH201	GW1	3/08/2021	21-34713-1	CO2 (Free)	g/m3	11.8		
BH201	GW1	26/10/2021	21-44970-1	CO2 (Free)	g/m3	19.3		
BH201	GW1	21/01/2022	2835216_6	CO2 (Free)	g/m3	9.9		
BH201	GW1	24/03/2021	21-12139-4	Conductivity (1:5 aqueous extract)	µS/cm	79000		
BH201	GW1	24/03/2021	21-12139-4	Copper	mg/L	0.00028		
BH201	GW1	3/08/2021	21-34713-1	Copper	mg/L	0.00027		
BH201	GW1	26/10/2021	21-44970-1	Copper	mg/L	0.00036		
BH201	GW1	21/01/2022	2835216_6	Copper	mg/L	0.0007		
BH201	GW1	3/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	28.3		
BH201	GW1	26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	14.1		
BH201	GW1	24/03/2021	21-12139-4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH201	GW1	3/08/2021	21-34713-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH201	GW1	26/10/2021	21-44970-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH201	GW1	21/01/2022	2835216_6	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.004		
BH201	GW1	3/08/2021		Electrical Conductivity (Field)	µS/cm	723		
BH201	GW1	26/10/2021		Electrical Conductivity (Field)	µS/cm	1045		
BH201	GW1	21/01/2022	2835216_6	Electrical conductivity *(lab)	µS/cm	86000		
BH201	GW1	24/03/2021	21-12139-4	Hardness as CaCO3	g CaCO3/m3	240		
BH201	GW1	3/08/2021	21-34713-1	Hardness as CaCO3	g CaCO3/m3	280		
BH201	GW1	26/10/2021	21-44970-1	Hardness as CaCO3	g CaCO3/m3	250		
BH201	GW1	21/01/2022	2835216_6	Hardness as CaCO3	g CaCO3/m3	220		
BH201	GW1	24/03/2021	21-12139-4	Hydroxide	g CaCO3/m3	< 1		
BH201	GW1	3/08/2021	21-34713-1	Hydroxide	g CaCO3/m3	< 1		
BH201	GW1	26/10/2021	21-44970-1	Hydroxide	g CaCO3/m3	< 1		
BH201	GW1	24/03/2021	21-12139-4	Iron	mg/L	0.846		
BH201	GW1	3/08/2021	21-34713-1	Iron	mg/L	1.71		
BH201	GW1	26/10/2021	21-44970-1	Iron	mg/L	0.77		
BH201	GW1	24/03/2021	21-12139-4	Kjeldahl Nitrogen Total	mg/L	2.2		
BH201	GW1	3/08/2021	21-34713-1	Kjeldahl Nitrogen Total	mg/L	1.68		
BH201	GW1	26/10/2021	21-44970-1	Kjeldahl Nitrogen Total	mg/L	2.13		
BH201	GW1	21/01/2022	2835216_6	Kjeldahl Nitrogen Total	mg/L	2.5		
BH201	GW1	24/03/2021	21-12139-4	Lead	mg/L	< 0.00005		
BH201	GW1	3/08/2021	21-34713-1	Lead	mg/L	0.00039		
BH201	GW1	26/10/2021	21-44970-1	Lead	mg/L	0.00038		
BH201	GW1	21/01/2022	2835216_6	Lead	mg/L	< 0.0001		
BH201	GW1	24/03/2021	21-12139-4	Magnesium	mg/L	23.9		
BH201	GW1	3/08/2021	21-34713-1	Magnesium	mg/L	27.7		
BH201	GW1	26/10/2021	21-44970-1	Magnesium	mg/L	24.1		
BH201	GW1	21/01/2022	2835216_6	Magnesium	mg/L	21		
BH201	GW1	24/03/2021	21-12139-4	Manganese	mg/L	0.124		
BH201	GW1	3/08/2021	21-34713-1	Manganese	mg/L	0.114		
BH201	GW1	26/10/2021	21-44970-1	Manganese	mg/L	0.143		
BH201	GW1	24/03/2021	21-12139-4	Nickel	mg/L	0.0014		
BH201	GW1	3/08/2021	21-34713-1	Nickel	mg/L	0.0042		
BH201	GW1	26/10/2021	21-44970-1	Nickel	mg/L	0.002		
BH201	GW1	21/01/2022	2835216_6	Nickel	mg/L	0.0014		
BH201	GW1	24/03/2021	21-12139-4	Nitrate (as N)	mg/L	3.37	yes	
BH201	GW1	3/08/2021	21-34713-1	Nitrate (as N)	mg/L	0.0153		
BH201	GW1	26/10/2021	21-44970-1	Nitrate (as N)	mg/L	0.0172		
BH201	GW1	21/01/2022	2835216_6	Nitrate (as N)	mg/L	0.032		
BH201	GW1	24/03/2021	21-12139-4	Nitrite (as N)	mg/L	0.0039		
BH201	GW1	3/08/2021	21-34713-1	Nitrite (as N)	mg/L	0.002		
BH201	GW1	26/10/2021	21-44970-1	Nitrite (as N)	mg/L	0.0012		
BH201	GW1	21/01/2022	2835216_6	Nitrite (as N)	mg/L	0.002		
BH201	GW1	24/03/2021	21-12139-4	Nitrogen (Total)	mg/L	5.6		
BH201	GW1	3/08/2021	21-34713-1	Nitrogen (Total)	mg/L	1.7		
BH201	GW1	26/10/2021	21-44970-1	Nitrogen (Total)	mg/L	2.2		
BH201	GW1	21/01/2022	2835216_6	Nitrogen (Total)	mg/L	2.5		
BH201	GW1	3/08/2021		pH (Field)	pH_Units	7.21		
BH201	GW1	26/10/2021		pH (Field)	pH_Units	7.51		
BH201	GW1	24/03/2021	21-12139-4	pH (Lab)	pH_Units	8.3		
BH201	GW1	21/01/2022	2835216_6	pH (Lab)	pH_Units	7.8		
BH201	GW1	24/03/2021	21-12139-4	Potassium	mg/L	12.4		
BH201	GW1	3/08/2021	21-34713-1	Potassium	mg/L	11.6		
BH201	GW1	26/10/2021	21-44970-1	Potassium	mg/L	12.9		
BH201	GW1	21/01/2022	2835216_6	Potassium	mg/L	14		
BH201	GW1	3/08/2021		Redox	mV	101.5		
BH201	GW1	26/10/2021		Redox	mV	31.6		
BH201	GW1	24/03/2021	21-12139-4	Sodium	mg/L	86.1		
BH201	GW1	3/08/2021	21-34713-1	Sodium	mg/L	96		
BH201	GW1	26/10/2021	21-44970-1	Sodium	mg/L	88.3		
BH201	GW1	21/01/2022	2835216_6	Sodium	mg/L	88		
BH201	GW1	24/03/2021	21-12139-4	Sulphate	mg/L	15.6		
BH201	GW1	3/08/2021	21-34713-1	Sulphate	mg/L	16.4		
BH201	GW1	26/10/2021	21-44970-1	Sulphate	mg/L	8.02		
BH201	GW1	21/01/2022	2835216_6	Sulphate	mg/L	3.3		
BH201	GW1	3/08/2021		Temperature (Field)	oC	10.2		
BH201	GW1	26/10/2021		Temperature (Field)	oC	11.5		
BH201	GW1	24/03/2021	21-12139-4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	3.37		
BH201	GW1	3/08/2021	21-34713-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0173		
BH201	GW1	26/10/2021	21-44970-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0184		
BH201	GW1	21/01/2022	2835216_6	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.035		
BH201	GW1	24/03/2021	21-12139-4	Total Phosphorus	mg/L	0.31		
BH201	GW1	3/08/2021	21-34713-1	Total Phosphorus	mg/L	0.12		
BH201	GW1	26/10/2021	21-44970-1	Total Phosphorus	mg/L	0.089		
BH201	GW1	21/01/2022	2835216_6	Total Phosphorus	mg/L	0.039		
BH201	GW1	21/01/2022	2835216_6	Total Suspended Solids	mg/L	98		
BH201	GW1	21/01/2022	2835216_6	Turbidity	NTU	50		
BH201	GW1	24/03/2021	21-12139-4	Zinc	mg/L	0.0053		
BH201	GW1	3/08/2021	21-34713-1	Zinc	mg/L	0.036		yes
BH201	GW1	26/10/2021	21-44970-1	Zinc	mg/L	0.026		yes
BH201	GW1	21/01/2022	2835216_6	Zinc	mg/L	0.0084		yes
BH202	BH202	21/01/2022	2835216_7	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	290		
BH202	BH202	21/01/2022	2835216_7	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH202	BH202	24/03/2021	21-12139-5	Alkalinity (total) as CaCO3	g CaCO3/m3	285		
BH202	BH202	3/08/2021	21-34713-9	Alkalinity (total) as CaCO3	g CaCO3/m3	323		
BH202	BH202	26/10/2021	21-44970-5	Alkalinity (total) as CaCO3	g CaCO3/m3	278		
BH202	BH202	21/01/2022	2835216_7	Alkalinity (total) as CaCO3	g CaCO3/m3	290		
BH202	BH202	24/03/2021	21-12139-5	Ammonia as N	mg/L	0.14		
BH202	BH202	3/08/2021	21-34713-9	Ammonia as N	mg/L	0.18		
BH202	BH202	26/10/2021	21-44970-5	Ammonia as N	mg/L	0.11		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH202	BH202	21/01/2022	2835216_7	Ammonia as N	mg/L	0.13		
BH202	BH202	21/01/2022	2835216_7	Anions Total	meq/L	8.2		
BH202	BH202	24/03/2021	21-12139-5	Arsenic	mg/L	0.0038		
BH202	BH202	3/08/2021	21-34713-9	Arsenic	mg/L	0.00072		
BH202	BH202	26/10/2021	21-44970-5	Arsenic	mg/L	0.00055		
BH202	BH202	21/01/2022	2835216_7	Arsenic	mg/L	< 0.001		
BH202	BH202	24/03/2021	21-12139-5	Bicarbonate	g CaCO3/m3	283		
BH202	BH202	3/08/2021	21-34713-9	Bicarbonate	g CaCO3/m3	320		
BH202	BH202	26/10/2021	21-44970-5	Bicarbonate	g CaCO3/m3	277		
BH202	BH202	21/01/2022	2835216_7	Bicarbonate	g CaCO3/m3	350		
BH202	BH202	24/03/2021	21-12139-5	Cadmium	mg/L	0.00003		
BH202	BH202	3/08/2021	21-34713-9	Cadmium	mg/L	0.000039		
BH202	BH202	26/10/2021	21-44970-5	Cadmium	mg/L	0.00019		
BH202	BH202	21/01/2022	2835216_7	Cadmium	mg/L	< 0.00005		
BH202	BH202	24/03/2021	21-12139-5	Calcium	mg/L	88.2		
BH202	BH202	3/08/2021	21-34713-9	Calcium	mg/L	72.7		
BH202	BH202	26/10/2021	21-44970-5	Calcium	mg/L	61		
BH202	BH202	21/01/2022	2835216_7	Calcium	mg/L	59		
BH202	BH202	24/03/2021	21-12139-5	Carbonate	g CaCO3/m3	2.8		
BH202	BH202	3/08/2021	21-34713-9	Carbonate	g CaCO3/m3	2.1		
BH202	BH202	26/10/2021	21-44970-5	Carbonate	g CaCO3/m3	< 1		
BH202	BH202	21/01/2022	2835216_7	Carbonate	g CaCO3/m3	2.2		
BH202	BH202	21/01/2022	2835216_7	Cations Total	meq/L	8.3		
BH202	BH202	24/03/2021	21-12139-5	Chloride	mg/L	70		
BH202	BH202	3/08/2021	21-34713-9	Chloride	mg/L	94.5		
BH202	BH202	26/10/2021	21-44970-5	Chloride	mg/L	57.9		
BH202	BH202	21/01/2022	2835216_7	Chloride	mg/L	71		
BH202	BH202	24/03/2021	21-12139-5	Chromium (III+VI)	mg/L	< 0.0002		
BH202	BH202	3/08/2021	21-34713-9	Chromium (III+VI)	mg/L	0.00044		
BH202	BH202	26/10/2021	21-44970-5	Chromium (III+VI)	mg/L	0.00078		
BH202	BH202	21/01/2022	2835216_7	Chromium (III+VI)	mg/L	0.001		
BH202	BH202	24/03/2021	21-12139-5	CO2 (Free)	g/m3	5.3		
BH202	BH202	3/08/2021	21-34713-9	CO2 (Free)	g/m3	9.3		
BH202	BH202	26/10/2021	21-44970-5	CO2 (Free)	g/m3	14.9		
BH202	BH202	21/01/2022	2835216_7	CO2 (Free)	g/m3	7.1		
BH202	BH202	24/03/2021	21-12139-5	Conductivity (1:5 aqueous extract)	µS/cm	75000		
BH202	BH202	24/03/2021	21-12139-5	Copper	mg/L	< 0.0002		
BH202	BH202	3/08/2021	21-34713-9	Copper	mg/L	< 0.0002		
BH202	BH202	26/10/2021	21-44970-5	Copper	mg/L	0.00035		
BH202	BH202	21/01/2022	2835216_7	Copper	mg/L	0.0008		
BH202	BH202	3/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	35		
BH202	BH202	26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	19.2		
BH202	BH202	24/03/2021	21-12139-5	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH202	BH202	3/08/2021	21-34713-9	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH202	BH202	26/10/2021	21-44970-5	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH202	BH202	21/01/2022	2835216_7	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.004		
BH202	BH202	3/08/2021		Electrical Conductivity (Field)	µS/cm	622		
BH202	BH202	26/10/2021		Electrical Conductivity (Field)	µS/cm	698		
BH202	BH202	21/01/2022	2835216_7	Electrical conductivity *(lab)	µS/cm	81700		
BH202	BH202	24/03/2021	21-12139-5	Hardness as CaCO3	g CaCO3/m3	370		
BH202	BH202	3/08/2021	21-34713-9	Hardness as CaCO3	g CaCO3/m3	290		
BH202	BH202	26/10/2021	21-44970-5	Hardness as CaCO3	g CaCO3/m3	240		
BH202	BH202	21/01/2022	2835216_7	Hardness as CaCO3	g CaCO3/m3	250		
BH202	BH202	24/03/2021	21-12139-5	Hydroxide	g CaCO3/m3	< 1		
BH202	BH202	3/08/2021	21-34713-9	Hydroxide	g CaCO3/m3	< 1		
BH202	BH202	26/10/2021	21-44970-5	Hydroxide	g CaCO3/m3	< 1		
BH202	BH202	24/03/2021	21-12139-5	Iron	mg/L	2.46		
BH202	BH202	3/08/2021	21-34713-9	Iron	mg/L	0.38		
BH202	BH202	26/10/2021	21-44970-5	Iron	mg/L	0.12		
BH202	BH202	24/03/2021	21-12139-5	Kjeldahl Nitrogen Total	mg/L	0.9		
BH202	BH202	3/08/2021	21-34713-9	Kjeldahl Nitrogen Total	mg/L	0.75		
BH202	BH202	26/10/2021	21-44970-5	Kjeldahl Nitrogen Total	mg/L	1		
BH202	BH202	21/01/2022	2835216_7	Kjeldahl Nitrogen Total	mg/L	0.96		
BH202	BH202	24/03/2021	21-12139-5	Lead	mg/L	< 0.00005		
BH202	BH202	3/08/2021	21-34713-9	Lead	mg/L	< 0.00005		
BH202	BH202	26/10/2021	21-44970-5	Lead	mg/L	0.000075		
BH202	BH202	21/01/2022	2835216_7	Lead	mg/L	< 0.0001		
BH202	BH202	24/03/2021	21-12139-5	Magnesium	mg/L	35.2		
BH202	BH202	3/08/2021	21-34713-9	Magnesium	mg/L	26.8		
BH202	BH202	26/10/2021	21-44970-5	Magnesium	mg/L	21.8		
BH202	BH202	21/01/2022	2835216_7	Magnesium	mg/L	24		
BH202	BH202	24/03/2021	21-12139-5	Manganese	mg/L	0.448		
BH202	BH202	3/08/2021	21-34713-9	Manganese	mg/L	0.456		
BH202	BH202	26/10/2021	21-44970-5	Manganese	mg/L	0.324		
BH202	BH202	24/03/2021	21-12139-5	Nickel	mg/L	0.00092		
BH202	BH202	3/08/2021	21-34713-9	Nickel	mg/L	0.0025		
BH202	BH202	26/10/2021	21-44970-5	Nickel	mg/L	0.0026		
BH202	BH202	21/01/2022	2835216_7	Nickel	mg/L	0.0018		
BH202	BH202	24/03/2021	21-12139-5	Nitrate (as N)	mg/L	0.0082		
BH202	BH202	3/08/2021	21-34713-9	Nitrate (as N)	mg/L	0.0056		
BH202	BH202	26/10/2021	21-44970-5	Nitrate (as N)	mg/L	0.0364		
BH202	BH202	21/01/2022	2835216_7	Nitrate (as N)	mg/L	0.018		
BH202	BH202	24/03/2021	21-12139-5	Nitrite (as N)	mg/L	< 0.001		
BH202	BH202	3/08/2021	21-34713-9	Nitrite (as N)	mg/L	0.0015		
BH202	BH202	26/10/2021	21-44970-5	Nitrite (as N)	mg/L	0.0015		
BH202	BH202	21/01/2022	2835216_7	Nitrite (as N)	mg/L	0.004		
BH202	BH202	24/03/2021	21-12139-5	Nitrogen (Total)	mg/L	0.91		
BH202	BH202	3/08/2021	21-34713-9	Nitrogen (Total)	mg/L	0.75		
BH202	BH202	26/10/2021	21-44970-5	Nitrogen (Total)	mg/L	1		
BH202	BH202	21/01/2022	2835216_7	Nitrogen (Total)	mg/L	0.98		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH202	BH202	3/08/2021		pH (Field)	pH_Units	7.45		
BH202	BH202	26/10/2021		pH (Field)	pH_Units	7.46		
BH202	BH202	24/03/2021	21-12139-5	pH (Lab)	pH_Units	8		
BH202	BH202	21/01/2022	2835216_7	pH (Lab)	pH_Units	7.9		
BH202	BH202	24/03/2021	21-12139-5	Potassium	mg/L	11.4		
BH202	BH202	3/08/2021	21-34713-9	Potassium	mg/L	12.5		
BH202	BH202	26/10/2021	21-44970-5	Potassium	mg/L	14		
BH202	BH202	21/01/2022	2835216_7	Potassium	mg/L	13.5		
BH202	BH202	3/08/2021		Redox	mV	75.4		
BH202	BH202	26/10/2021		Redox	mV	51.8		
BH202	BH202	24/03/2021	21-12139-5	Sodium	mg/L	87.9		
BH202	BH202	3/08/2021	21-34713-9	Sodium	mg/L	69.8		
BH202	BH202	26/10/2021	21-44970-5	Sodium	mg/L	61.9		
BH202	BH202	21/01/2022	2835216_7	Sodium	mg/L	70		
BH202	BH202	24/03/2021	21-12139-5	Sulphate	mg/L	26.4		
BH202	BH202	3/08/2021	21-34713-9	Sulphate	mg/L	28.7		
BH202	BH202	26/10/2021	21-44970-5	Sulphate	mg/L	19.3		
BH202	BH202	21/01/2022	2835216_7	Sulphate	mg/L	19.5		
BH202	BH202	3/08/2021		Temperature (Field)	oC	10.7		
BH202	BH202	26/10/2021		Temperature (Field)	oC	11.6		
BH202	BH202	24/03/2021	21-12139-5	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0092		
BH202	BH202	3/08/2021	21-34713-9	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0071		
BH202	BH202	26/10/2021	21-44970-5	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.0379		
BH202	BH202	21/01/2022	2835216_7	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.022		
BH202	BH202	24/03/2021	21-12139-5	Total Phosphorus	mg/L	0.41		
BH202	BH202	3/08/2021	21-34713-9	Total Phosphorus	mg/L	1.05		
BH202	BH202	26/10/2021	21-44970-5	Total Phosphorus	mg/L	0.14		
BH202	BH202	21/01/2022	2835216_7	Total Phosphorus	mg/L	0.068		
BH202	BH202	21/01/2022	2835216_7	Total Suspended Solids	mg/L	135		
BH202	BH202	21/01/2022	2835216_7	Turbidity	NTU	91		
BH202	BH202	24/03/2021	21-12139-5	Zinc	mg/L	< 0.001		
BH202	BH202	3/08/2021	21-34713-9	Zinc	mg/L	0.0046		
BH202	BH202	26/10/2021	21-44970-5	Zinc	mg/L	0.0033		
BH202	BH202	21/01/2022	2835216_7	Zinc	mg/L	0.0028		
BH209		24/03/2021	21-12139-7	Alkalinity (total) as CaCO3	g CaCO3/m3	229		
BH209		24/03/2021	21-12139-7	Ammonia as N	mg/L	0.3	yes	
BH209		24/03/2021	21-12139-7	Arsenic	mg/L	0.0036		
BH209		24/03/2021	21-12139-7	Bicarbonate	g CaCO3/m3	228		
BH209		24/03/2021	21-12139-7	Cadmium	mg/L	0.00447		yes
BH209		24/03/2021	21-12139-7	Calcium	mg/L	16.5		
BH209		24/03/2021	21-12139-7	Carbonate	g CaCO3/m3	< 1		
BH209		24/03/2021	21-12139-7	Chloride	mg/L	31.2		
BH209		24/03/2021	21-12139-7	Chromium (III+VI)	mg/L	< 0.0002		
BH209		24/03/2021	21-12139-7	CO2 (Free)	g/m3	9.9		
BH209		24/03/2021	21-12139-7	Conductivity (1:5 aqueous extract)	µS/cm	67000		
BH209		24/03/2021	21-12139-7	Copper	mg/L	0.00054		
BH209		24/03/2021	21-12139-7	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH209		24/03/2021	21-12139-7	Hardness as CaCO3	g CaCO3/m3	83		
BH209		24/03/2021	21-12139-7	Hydroxide	g CaCO3/m3	< 1		
BH209		24/03/2021	21-12139-7	Iron	mg/L	0.32		
BH209		24/03/2021	21-12139-7	Kjeldahl Nitrogen Total	mg/L	< 0.8		
BH209		24/03/2021	21-12139-7	Lead	mg/L	0.000082		
BH209		24/03/2021	21-12139-7	Magnesium	mg/L	10.2		
BH209		24/03/2021	21-12139-7	Manganese	mg/L	0.27		
BH209		24/03/2021	21-12139-7	Nickel	mg/L	0.0052		
BH209		24/03/2021	21-12139-7	Nitrate (as N)	mg/L	0.139		
BH209		24/03/2021	21-12139-7	Nitrite (as N)	mg/L	0.0044		
BH209		24/03/2021	21-12139-7	Nitrogen (Total)	mg/L	0.14		
BH209		24/03/2021	21-12139-7	pH (Lab)	pH_Units	7.7		
BH209		24/03/2021	21-12139-7	Potassium	mg/L	19.3		
BH209		24/03/2021	21-12139-7	Sodium	mg/L	105		
BH209		24/03/2021	21-12139-7	Sulphate	mg/L	67.2		
BH209		24/03/2021	21-12139-7	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.143		
BH209		24/03/2021	21-12139-7	Total Phosphorus	mg/L	0.94		
BH209		24/03/2021	21-12139-7	Zinc	mg/L	0.0083		yes
BH211A		29/01/2020	20-03471-1	Alkalinity (total) as CaCO3	g CaCO3/m3	238		
BH211A		26/03/2021	21-14269-6	Alkalinity (total) as CaCO3	g CaCO3/m3	371		
BH211A		29/01/2020	20-03471-1	Ammonia as N	mg/L	0.009		
BH211A		26/03/2021	21-14269-6	Ammonia as N	mg/L	0.03		
BH211A		29/01/2020	20-03471-1	Arsenic	mg/L	< 0.005		
BH211A		26/03/2021	21-14269-6	Arsenic	mg/L	0.00089		
BH211A		29/01/2020	20-03471-1	Bicarbonate	g CaCO3/m3	237		
BH211A		26/03/2021	21-14269-6	Bicarbonate	g CaCO3/m3	365		
BH211A		29/01/2020	20-03471-1	Cadmium	mg/L	< 0.0002		
BH211A		26/03/2021	21-14269-6	Cadmium	mg/L	< 0.00002		
BH211A		29/01/2020	20-03471-1	Calcium	mg/L	30.4		
BH211A		26/03/2021	21-14269-6	Calcium	mg/L	40		
BH211A		29/01/2020	20-03471-1	Carbonate	g CaCO3/m3	< 1		
BH211A		26/03/2021	21-14269-6	Carbonate	g CaCO3/m3	5.7		
BH211A		29/01/2020	20-03471-1	Chloride	mg/L	71.1		
BH211A		26/03/2021	21-14269-6	Chloride	mg/L	50.3		
BH211A		29/01/2020	20-03471-1	Chromium (III+VI)	mg/L	< 0.002		yes
BH211A		26/03/2021	21-14269-6	Chromium (III+VI)	mg/L	< 0.0002		
BH211A		29/01/2020	20-03471-1	CO2 (Free)	g/m3	41.1		
BH211A		26/03/2021	21-14269-6	CO2 (Free)	g/m3	4.4		
BH211A		26/03/2021	21-14269-6	Conductivity (1:5 aqueous extract)	µS/cm	84000		
BH211A		29/01/2020	20-03471-1	Copper	mg/L	< 0.002		yes
BH211A		26/03/2021	21-14269-6	Copper	mg/L	0.0017		yes
BH211A		26/03/2021	21-14269-6	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH211A		29/01/2020	20-03471-1	Electrical conductivity *(lab)	µS/cm	562		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH211A		26/03/2021	21-14269-6	Hardness as CaCO3	g CaCO3/m3	150		
BH211A		29/01/2020	20-03471-1	Hydroxide	g CaCO3/m3	< 1		
BH211A		26/03/2021	21-14269-6	Hydroxide	g CaCO3/m3	< 1		
BH211A		29/01/2020	20-03471-1	Iron	mg/L	70.1		
BH211A		26/03/2021	21-14269-6	Iron	mg/L	0.065		
BH211A		29/01/2020	20-03471-1	Kjeldahl Nitrogen Total	mg/L	3.16		
BH211A		26/03/2021	21-14269-6	Kjeldahl Nitrogen Total	mg/L	1.3		
BH211A		29/01/2020	20-03471-1	Lead	mg/L	0.00071		
BH211A		26/03/2021	21-14269-6	Lead	mg/L	< 0.00005		
BH211A		29/01/2020	20-03471-1	Magnesium	mg/L	16.4		
BH211A		26/03/2021	21-14269-6	Magnesium	mg/L	12.5		
BH211A		29/01/2020	20-03471-1	Manganese	mg/L	27.4		yes
BH211A		26/03/2021	21-14269-6	Manganese	mg/L	0.176		
BH211A		29/01/2020	20-03471-1	Nickel	mg/L	0.0023		
BH211A		26/03/2021	21-14269-6	Nickel	mg/L	0.0037		
BH211A		29/01/2020	20-03471-1	Nitrate (as N)	mg/L	< 0.002		
BH211A		26/03/2021	21-14269-6	Nitrate (as N)	mg/L	0.464		
BH211A		29/01/2020	20-03471-1	Nitrite (as N)	mg/L	0.0112		
BH211A		26/03/2021	21-14269-6	Nitrite (as N)	mg/L	0.00662		
BH211A		29/01/2020	20-03471-1	Nitrogen (Total)	mg/L	3.2		
BH211A		26/03/2021	21-14269-6	Nitrogen (Total)	mg/L	1.8		
BH211A		29/01/2020	20-03471-1	pH (Lab)	pH_Units	7.1		
BH211A		26/03/2021	21-14269-6	pH (Lab)	pH_Units	8.2		
BH211A		29/01/2020	20-03471-1	Potassium	mg/L	4.3		
BH211A		26/03/2021	21-14269-6	Potassium	mg/L	5.03		
BH211A		29/01/2020	20-03471-1	Sodium	mg/L	41		
BH211A		26/03/2021	21-14269-6	Sodium	mg/L	137		
BH211A		29/01/2020	20-03471-1	Sulphate	mg/L	0.95		
BH211A		26/03/2021	21-14269-6	Sulphate	mg/L	16.8		
BH211A		26/03/2021	21-14269-6	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.47		
BH211A		26/03/2021	21-14269-6	Total Phosphorus	mg/L	0.024		
BH211A		29/01/2020	20-03471-1	Zinc	mg/L	0.019		yes
BH211A		26/03/2021	21-14269-6	Zinc	mg/L	0.0044		
BH211B		26/03/2021	21-14269-7	Alkalinity (total) as CaCO3	g CaCO3/m3	274		
BH211B		26/03/2021	21-14269-7	Ammonia as N	mg/L	0.36	yes	
BH211B		26/03/2021	21-14269-7	Arsenic	mg/L	0.0006		
BH211B		26/03/2021	21-14269-7	Bicarbonate	g CaCO3/m3	268		
BH211B		26/03/2021	21-14269-7	Cadmium	mg/L	0.000035		
BH211B		26/03/2021	21-14269-7	Calcium	mg/L	22.7		
BH211B		26/03/2021	21-14269-7	Carbonate	g CaCO3/m3	6.1		
BH211B		26/03/2021	21-14269-7	Chloride	mg/L	46		
BH211B		26/03/2021	21-14269-7	Chromium (III+VI)	mg/L	< 0.0002		
BH211B		26/03/2021	21-14269-7	CO2 (Free)	g/m3	2.2		
BH211B		26/03/2021	21-14269-7	Conductivity (1:5 aqueous extract)	µS/cm	64000		
BH211B		26/03/2021	21-14269-7	Copper	mg/L	< 0.0002		
BH211B		26/03/2021	21-14269-7	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	0.005		
BH211B		26/03/2021	21-14269-7	Hardness as CaCO3	g CaCO3/m3	87		
BH211B		26/03/2021	21-14269-7	Hydroxide	g CaCO3/m3	< 1		
BH211B		26/03/2021	21-14269-7	Iron	mg/L	0.083		
BH211B		26/03/2021	21-14269-7	Kjeldahl Nitrogen Total	mg/L	1.1		
BH211B		26/03/2021	21-14269-7	Lead	mg/L	< 0.00005		
BH211B		26/03/2021	21-14269-7	Magnesium	mg/L	7.42		
BH211B		26/03/2021	21-14269-7	Manganese	mg/L	0.177		
BH211B		26/03/2021	21-14269-7	Nickel	mg/L	0.00031		
BH211B		26/03/2021	21-14269-7	Nitrate (as N)	mg/L	0.0026		
BH211B		26/03/2021	21-14269-7	Nitrite (as N)	mg/L	< 0.001		
BH211B		26/03/2021	21-14269-7	Nitrogen (Total)	mg/L	1.1		
BH211B		26/03/2021	21-14269-7	pH (Lab)	pH_Units	8.4		
BH211B		26/03/2021	21-14269-7	Potassium	mg/L	7.27		
BH211B		26/03/2021	21-14269-7	Sodium	mg/L	107		
BH211B		26/03/2021	21-14269-7	Sulphate	mg/L	1.27		
BH211B		26/03/2021	21-14269-7	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.003		
BH211B		26/03/2021	21-14269-7	Total Phosphorus	mg/L	0.015		
BH211B		26/03/2021	21-14269-7	Zinc	mg/L	< 0.001		
BH301A		2/03/2022	2901348_1	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	480		
BH301A		2/03/2022	2901348_1	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH301A		2/03/2022	2901348_1	Alkalinity (total) as CaCO3	g CaCO3/m3	400		
BH301A		2/03/2022	2901348_1	Anions Total	meq/L	11.3		
BH301A		2/03/2022	2901348_1	Arsenic	mg/L	0.0011		
BH301A		2/03/2022	2901348_1	Cadmium	mg/L	< 0.00005		
BH301A		2/03/2022	2901348_1	Calcium	mg/L	97		
BH301A		2/03/2022	2901348_1	Cations Total	meq/L	12		
BH301A		2/03/2022	2901348_1	Chloride	mg/L	112		
BH301A		2/03/2022	2901348_1	Chromium (III+VI)	mg/L	< 0.0005		
BH301A		2/03/2022	2901348_1	CO2 (Free)	g/m3	13.7		
BH301A		2/03/2022	2901348_1	Copper	mg/L	0.0019		yes
BH301A		1/03/2022		Dissolved Oxygen (% saturated) (Field)	%S	30.3		
BH301A		1/03/2022		Dissolved Oxygen (Field)	mg/L	3.12		
BH301A		2/03/2022	2901348_1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH301A		1/03/2022		Electrical Conductivity (Field)	µS/cm	943		
BH301A		2/03/2022	2901348_1	Electrical conductivity *(lab)	µS/cm	109600		
BH301A		2/03/2022	2901348_1	Hardness as CaCO3	g CaCO3/m3	390		
BH301A		2/03/2022	2901348_1	Iron	mg/L	< 0.02		
BH301A		2/03/2022	2901348_1	Kjeldahl Nitrogen Total	mg/L	0.6		
BH301A		2/03/2022	2901348_1	Lead	mg/L	< 0.0001		
BH301A		2/03/2022	2901348_1	Magnesium	mg/L	36		
BH301A		2/03/2022	2901348_1	Manganese	mg/L	0.68		
BH301A		2/03/2022	2901348_1	Nickel	mg/L	0.0177		yes
BH301A		2/03/2022	2901348_1	Nitrate (as N)	mg/L	0.058		
BH301A		2/03/2022	2901348_1	Nitrite (as N)	mg/L	0.022		

Initial investigation ID	Consent condition monitoring ID	Sample Date	Laboratory sample code	Parameter	Unit	Concentration	Schedule 16 exceedance?	ANZG (2018) exceedance?
BH301A		2/03/2022	2901348_1	Nitrogen (Total)	mg/L	0.68		
BH301A		1/03/2022		pH (Field)	pH_Units	6.83		
BH301A		2/03/2022	2901348_1	pH (Lab)	pH_Units	7.8		
BH301A		2/03/2022	2901348_1	Potassium	mg/L	13.4		
BH301A		1/03/2022		Redox	mV	33.4		
BH301A		2/03/2022	2901348_1	Sodium	mg/L	89		
BH301A		2/03/2022	2901348_1	Sulphate	mg/L	6.1		
BH301A		1/03/2022		Temperature (Field)	oC	12.4		
BH301A		2/03/2022	2901348_1	Total Ammoniacal-N	g/m3	0.29	yes	
BH301A		2/03/2022	2901348_1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.08		
BH301A		2/03/2022	2901348_1	Total Phosphorus	mg/L	0.125		
BH301A		2/03/2022	2901348_1	Zinc	mg/L	0.04		yes
BH301B		2/03/2022	2901348_2	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	360		
BH301B		2/03/2022	2901348_2	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	< 1		
BH301B		2/03/2022	2901348_2	Alkalinity (total) as CaCO3	g CaCO3/m3	300		
BH301B		2/03/2022	2901348_2	Anions Total	meq/L	9.9		
BH301B		2/03/2022	2901348_2	Arsenic	mg/L	0.0014		
BH301B		2/03/2022	2901348_2	Cadmium	mg/L	< 0.00005		
BH301B		2/03/2022	2901348_2	Calcium	mg/L	65		
BH301B		2/03/2022	2901348_2	Cations Total	meq/L	10.5		
BH301B		2/03/2022	2901348_2	Chloride	mg/L	120		
BH301B		2/03/2022	2901348_2	Chromium (III+VI)	mg/L	< 0.0005		
BH301B		2/03/2022	2901348_2	CO2 (Free)	g/m3	6.6		
BH301B		2/03/2022	2901348_2	Copper	mg/L	0.0046		yes
BH301B		1/03/2022		Dissolved Oxygen (% saturated) (Field)	%S	39.9		
BH301B		1/03/2022		Dissolved Oxygen (Field)	mg/L	3.87		
BH301B		2/03/2022	2901348_2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	< 0.002		
BH301B		1/03/2022		Electrical Conductivity (Field)	µS/cm	981		
BH301B		2/03/2022	2901348_2	Electrical conductivity *(lab)	µS/cm	98700		
BH301B		2/03/2022	2901348_2	Hardness as CaCO3	g CaCO3/m3	280		
BH301B		2/03/2022	2901348_2	Iron	mg/L	0.33		
BH301B		2/03/2022	2901348_2	Kjeldahl Nitrogen Total	mg/L	0.49		
BH301B		2/03/2022	2901348_2	Lead	mg/L	0.0005		
BH301B		2/03/2022	2901348_2	Magnesium	mg/L	30		
BH301B		2/03/2022	2901348_2	Manganese	mg/L	0.59		
BH301B		2/03/2022	2901348_2	Nickel	mg/L	0.0115		yes
BH301B		2/03/2022	2901348_2	Nitrate (as N)	mg/L	0.097		
BH301B		2/03/2022	2901348_2	Nitrite (as N)	mg/L	< 0.002		
BH301B		2/03/2022	2901348_2	Nitrogen (Total)	mg/L	0.59		
BH301B		1/03/2022		pH (Field)	pH_Units	7.17		
BH301B		2/03/2022	2901348_2	pH (Lab)	pH_Units	8		
BH301B		2/03/2022	2901348_2	Potassium	mg/L	13.5		
BH301B		1/03/2022		Redox	mV	30.9		
BH301B		2/03/2022	2901348_2	Sodium	mg/L	103		
BH301B		2/03/2022	2901348_2	Sulphate	mg/L	22		
BH301B		1/03/2022		Temperature (Field)	oC	12.3		
BH301B		2/03/2022	2901348_2	Total Ammoniacal-N	g/m3	0.122		
BH301B		2/03/2022	2901348_2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	0.097		
BH301B		2/03/2022	2901348_2	Total Phosphorus	mg/L	0.191		
BH301B		2/03/2022	2901348_2	Zinc	mg/L	0.22		yes

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW1		21/01/2022	2835216_1	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	T	48		
SW1		21/01/2022	2835216_1	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	T	< 1		
SW1		3/12/2021	21-50599-1	Alkalinity (total) as CaCO3	g CaCO3/m3	T	22.3		
SW1		21/01/2022	2835216_1	Alkalinity (total) as CaCO3	g CaCO3/m3	T	48		
SW1		3/12/2021	21-50599-1	Ammonia as N	mg/L	F	0.03		
SW1		21/01/2022	2835216_1	Ammonia as N	mg/L	F	< 0.01		
SW1		21/01/2022	2835216_1	Anions Total	meq/L	T	3		
SW1		3/12/2021	21-50599-1	Arsenic	mg/L	F	< 0.0005		
SW1		3/12/2021	21-50599-1	Arsenic	mg/L	T	0.00052		
SW1		21/01/2022	2835216_1	Arsenic	mg/L	F	< 0.001		
SW1		21/01/2022	2835216_1	Arsenic	mg/L	T	0.0048		
SW1		3/12/2021	21-50599-1	Bicarbonate	g CaCO3/m3	F	22		
SW1		21/01/2022	2835216_1	Bicarbonate	g CaCO3/m3	T	59		
SW1		3/12/2021	21-50599-1	Cadmium	mg/L	F	< 0.00002		
SW1		3/12/2021	21-50599-1	Cadmium	mg/L	T	< 0.00002		
SW1		21/01/2022	2835216_1	Cadmium	mg/L	F	< 0.00005		
SW1		21/01/2022	2835216_1	Cadmium	mg/L	T	0.000066		
SW1		3/12/2021	21-50599-1	Calcium	mg/L	F	10.3		
SW1		3/12/2021	21-50599-1	Calcium	mg/L	T	9.92		
SW1		21/01/2022	2835216_1	Calcium	mg/L	F	9.3		
SW1		21/01/2022	2835216_1	Calcium	mg/L	T	12.9		
SW1		3/12/2021	21-50599-1	Carbonate	g CaCO3/m3	F	< 1		
SW1		21/01/2022	2835216_1	Carbonate	g CaCO3/m3	T	< 1		
SW1		21/01/2022	2835216_1	Cations Total	meq/L	F	2.3		
SW1		3/12/2021	21-50599-1	Chloride	mg/L	F	55.9		
SW1		21/01/2022	2835216_1	Chloride	mg/L	F	59		
SW1		3/12/2021	21-50599-1	Chromium (III+VI)	mg/L	F	0.00035		
SW1		3/12/2021	21-50599-1	Chromium (III+VI)	mg/L	T	0.00082		
SW1		21/01/2022	2835216_1	Chromium (III+VI)	mg/L	F	< 0.0005		
SW1		21/01/2022	2835216_1	Chromium (III+VI)	mg/L	T	0.0075		yes
SW1		3/12/2021	21-50599-1	CO2 (Free)	g/m3	T	15.2		
SW1		21/01/2022	2835216_1	CO2 (Free)	g/m3	T	22		
SW1		3/12/2021	21-50599-1	Copper	mg/L	F	0.0015		yes
SW1		3/12/2021	21-50599-1	Copper	mg/L	T	0.0013		
SW1		21/01/2022	2835216_1	Copper	mg/L	F	< 0.0005		
SW1		21/01/2022	2835216_1	Copper	mg/L	T	0.0157		yes
SW1		3/12/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	55.1		
SW1		3/12/2021	21-50599-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW1		21/01/2022	2835216_1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	0.007		
SW1		3/12/2021		Electrical Conductivity (Field)	µS/cm	T	312.9		
SW1		21/01/2022	2835216_1	Electrical conductivity *(lab)	µS/cm	T	31200		
SW1		3/12/2021	21-50599-1	Hardness as CaCO3	g CaCO3/m3	F	50		
SW1		3/12/2021	21-50599-1	Hydroxide	g CaCO3/m3	F	< 1		
SW1		3/12/2021	21-50599-1	Iron	mg/L	F	0.595		
SW1		3/12/2021	21-50599-1	Iron	mg/L	T	1.43		
SW1		21/01/2022	2835216_1	Iron	mg/L	T	31		
SW1		3/12/2021	21-50599-1	Kjeldahl Nitrogen Total	mg/L	T	0.85		
SW1		21/01/2022	2835216_1	Kjeldahl Nitrogen Total	mg/L	T	40		
SW1		3/12/2021	21-50599-1	Lead	mg/L	F	0.00019		
SW1		3/12/2021	21-50599-1	Lead	mg/L	T	0.00061		
SW1		21/01/2022	2835216_1	Lead	mg/L	F	< 0.0001		
SW1		21/01/2022	2835216_1	Lead	mg/L	T	0.0081		yes
SW1		3/12/2021	21-50599-1	Magnesium	mg/L	F	6		
SW1		3/12/2021	21-50599-1	Magnesium	mg/L	T	6		
SW1		21/01/2022	2835216_1	Magnesium	mg/L	F	5.3		
SW1		21/01/2022	2835216_1	Magnesium	mg/L	T	7.1		
SW1		3/12/2021	21-50599-1	Manganese	mg/L	F	0.278		
SW1		3/12/2021	21-50599-1	Manganese	mg/L	T	0.322		
SW1		21/01/2022	2835216_1	Manganese	mg/L	T	1.52		
SW1		3/12/2021	21-50599-1	Nickel	mg/L	F	0.0018		
SW1		3/12/2021	21-50599-1	Nickel	mg/L	T	0.002		
SW1		21/01/2022	2835216_1	Nickel	mg/L	F	0.0037		
SW1		21/01/2022	2835216_1	Nickel	mg/L	T	0.0123		yes
SW1		3/12/2021	21-50599-1	Nitrate (as N)	mg/L	F	0.101	yes	
SW1		21/01/2022	2835216_1	Nitrate (as N)	mg/L	T	< 0.002		
SW1		3/12/2021	21-50599-1	Nitrite (as N)	mg/L	F	0.0018		
SW1		21/01/2022	2835216_1	Nitrite (as N)	mg/L	F	0.004		
SW1		3/12/2021	21-50599-1	Nitrogen (Total)	mg/L	T	0.95		
SW1		21/01/2022	2835216_1	Nitrogen (Total)	mg/L	T	40		
SW1		3/12/2021		pH (Field)	pH_Units	T	5.91		
SW1		21/01/2022	2835216_1	pH (Lab)	pH_Units	T	6.6		
SW1		3/12/2021	21-50599-1	Phosphorus	mg/L	T	0.036		
SW1		21/01/2022	2835216_1	Phosphorus	mg/L	T	1.79		
SW1		3/12/2021	21-50599-1	Potassium	mg/L	F	3		
SW1		3/12/2021	21-50599-1	Potassium	mg/L	T	3		
SW1		21/01/2022	2835216_1	Potassium	mg/L	F	4		
SW1		21/01/2022	2835216_1	Potassium	mg/L	T	4.4		
SW1		3/12/2021		Redox	mV	T	56.8		
SW1		3/12/2021	21-50599-1	Sodium	mg/L	F	30.3		
SW1		3/12/2021	21-50599-1	Sodium	mg/L	T	29		
SW1		21/01/2022	2835216_1	Sodium	mg/L	F	29		
SW1		21/01/2022	2835216_1	Sodium	mg/L	T	31		
SW1		3/12/2021	21-50599-1	Sulphate	mg/L	F	10.5		
SW1		21/01/2022	2835216_1	Sulphate	mg/L	F	15.9		
SW1		3/12/2021		Temperature (Field)	oC	T	13.4		
SW1		3/12/2021	21-50599-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.106		
SW1		21/01/2022	2835216_1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.004		
SW1		3/12/2021	21-50599-1	Total Suspended Solids	mg/L	T	27		
SW1		21/01/2022	2835216_1	Total Suspended Solids	mg/L	T	940		
SW1		3/12/2021	21-50599-1	Turbidity	NTU	T	17.3	yes	
SW1		21/01/2022	2835216_1	Turbidity	NTU	T	340	yes	
SW1		3/12/2021	21-50599-1	Zinc	mg/L	F	0.012		yes

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW1		3/12/2021	21-50599-1	Zinc	mg/L	T	0.01		yes
SW1		21/01/2022	2835216_1	Zinc	mg/L	F	0.0061		
SW1		21/01/2022	2835216_1	Zinc	mg/L	T	0.062		yes
SW1A		18/01/2022	2832272_1	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	T	55		
SW1A		18/01/2022	2832272_1	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	T	< 1		
SW1A		3/08/2021	21-34657-1	Alkalinity (total) as CaCO3	g CaCO3/m3	T	6.9		
SW1A		26/10/2021	21-44984-1	Alkalinity (total) as CaCO3	g CaCO3/m3	T	14.9		
SW1A		3/12/2021	21-50599-5	Alkalinity (total) as CaCO3	g CaCO3/m3	T	14.6		
SW1A		18/01/2022	2832272_1	Alkalinity (total) as CaCO3	g CaCO3/m3	T	55		
SW1A		3/08/2021	21-34657-1	Ammonia as N	mg/L	F	< 0.005		
SW1A		26/10/2021	21-44984-1	Ammonia as N	mg/L	F	0.03		
SW1A		3/12/2021	21-50599-5	Ammonia as N	mg/L	F	0.01		
SW1A		18/01/2022	2832272_1	Anions Total	meq/L	T	2.5		
SW1A		3/08/2021	21-34657-1	Arsenic	mg/L	F	< 0.0005		
SW1A		3/08/2021	21-34657-1	Arsenic	mg/L	T	< 0.0005		
SW1A		26/10/2021	21-44984-1	Arsenic	mg/L	F	0.00053		
SW1A		26/10/2021	21-44984-1	Arsenic	mg/L	T	0.00067		
SW1A		3/12/2021	21-50599-5	Arsenic	mg/L	F	0.0006		
SW1A		3/12/2021	21-50599-5	Arsenic	mg/L	T	0.0013		
SW1A		18/01/2022	2832272_1	Arsenic	mg/L	T	0.0024		
SW1A		18/01/2022	2832272_1	Arsenic	mg/L	F	0.002		
SW1A		3/08/2021	21-34657-1	Bicarbonate	g CaCO3/m3	F	6.9		
SW1A		26/10/2021	21-44984-1	Bicarbonate	g CaCO3/m3	F	15		
SW1A		3/12/2021	21-50599-5	Bicarbonate	g CaCO3/m3	F	15		
SW1A		18/01/2022	2832272_1	Bicarbonate	g CaCO3/m3	T	67		
SW1A		3/08/2021	21-34657-1	Cadmium	mg/L	F	< 0.00002		
SW1A		3/08/2021	21-34657-1	Cadmium	mg/L	T	< 0.00002		
SW1A		26/10/2021	21-44984-1	Cadmium	mg/L	F	< 0.00002		
SW1A		26/10/2021	21-44984-1	Cadmium	mg/L	T	< 0.00002		
SW1A		3/12/2021	21-50599-5	Cadmium	mg/L	F	< 0.00002		
SW1A		3/12/2021	21-50599-5	Cadmium	mg/L	T	< 0.00002		
SW1A		18/01/2022	2832272_1	Cadmium	mg/L	T	< 0.000053		
SW1A		18/01/2022	2832272_1	Cadmium	mg/L	F	< 0.000053		
SW1A		3/08/2021	21-34657-1	Calcium	mg/L	F	8.9		
SW1A		3/08/2021	21-34657-1	Calcium	mg/L	T	9.11		
SW1A		26/10/2021	21-44984-1	Calcium	mg/L	F	9.1		
SW1A		26/10/2021	21-44984-1	Calcium	mg/L	T	9.02		
SW1A		3/12/2021	21-50599-5	Calcium	mg/L	F	9		
SW1A		3/12/2021	21-50599-5	Calcium	mg/L	T	8.35		
SW1A		18/01/2022	2832272_1	Calcium	mg/L	F	12.9		
SW1A		3/08/2021	21-34657-1	Carbonate	g CaCO3/m3	F	< 1		
SW1A		26/10/2021	21-44984-1	Carbonate	g CaCO3/m3	F	< 1		
SW1A		3/12/2021	21-50599-5	Carbonate	g CaCO3/m3	F	< 1		
SW1A		18/01/2022	2832272_1	Carbonate	g CaCO3/m3	T	< 1		
SW1A		18/01/2022	2832272_1	Cations Total	meq/L	F	2.5		
SW1A		3/08/2021	21-34657-1	Chloride	mg/L	F	43		
SW1A		26/10/2021	21-44984-1	Chloride	mg/L	F	42.7		
SW1A		3/12/2021	21-50599-5	Chloride	mg/L	F	43.4		
SW1A		18/01/2022	2832272_1	Chloride	mg/L	F	46		
SW1A		3/08/2021	21-34657-1	Chromium (III+VI)	mg/L	F	0.00027		
SW1A		3/08/2021	21-34657-1	Chromium (III+VI)	mg/L	T	0.00024		
SW1A		26/10/2021	21-44984-1	Chromium (III+VI)	mg/L	F	0.00051		
SW1A		26/10/2021	21-44984-1	Chromium (III+VI)	mg/L	T	0.00059		
SW1A		3/12/2021	21-50599-5	Chromium (III+VI)	mg/L	F	0.00054		
SW1A		3/12/2021	21-50599-5	Chromium (III+VI)	mg/L	T	0.0017		yes
SW1A		18/01/2022	2832272_1	Chromium (III+VI)	mg/L	T	0.00055		
SW1A		18/01/2022	2832272_1	Chromium (III+VI)	mg/L	F	< 0.00053		
SW1A		3/08/2021	21-34657-1	CO2 (Free)	g/m3	T	6.9		
SW1A		26/10/2021	21-44984-1	CO2 (Free)	g/m3	T	7		
SW1A		3/12/2021	21-50599-5	CO2 (Free)	g/m3	T	8.9		
SW1A		18/01/2022	2832272_1	CO2 (Free)	g/m3	T	4.4		
SW1A		3/08/2021	21-34657-1	Copper	mg/L	F	0.0013		
SW1A		3/08/2021	21-34657-1	Copper	mg/L	T	0.0014		
SW1A		26/10/2021	21-44984-1	Copper	mg/L	F	0.0013		
SW1A		26/10/2021	21-44984-1	Copper	mg/L	T	0.0018		yes
SW1A		3/12/2021	21-50599-5	Copper	mg/L	F	0.0012		
SW1A		3/12/2021	21-50599-5	Copper	mg/L	T	0.0021		yes
SW1A		18/01/2022	2832272_1	Copper	mg/L	T	0.00088		
SW1A		18/01/2022	2832272_1	Copper	mg/L	F	0.00121		
SW1A		3/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	83.7		
SW1A		26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	134.9		
SW1A		3/12/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	80.3		
SW1A		3/08/2021	21-34657-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW1A		26/10/2021	21-44984-1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW1A		3/12/2021	21-50599-5	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	0.002		
SW1A		18/01/2022	2832272_1	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	0.006		
SW1A		3/08/2021		Electrical Conductivity (Field)	µS/cm	T	140.7		
SW1A		26/10/2021		Electrical Conductivity (Field)	µS/cm	T	248.1		
SW1A		3/12/2021		Electrical Conductivity (Field)	µS/cm	T	224.6		
SW1A		18/01/2022	2832272_1	Electrical conductivity *(lab)	µS/cm	T	28500		
SW1A		3/08/2021	21-34657-1	Hardness as CaCO3	g CaCO3/m3	F	44		
SW1A		26/10/2021	21-44984-1	Hardness as CaCO3	g CaCO3/m3	F	43		
SW1A		3/12/2021	21-50599-5	Hardness as CaCO3	g CaCO3/m3	F	43		
SW1A		18/01/2022	2832272_1	Hardness as CaCO3	g CaCO3/m3	T	59		
SW1A		3/08/2021	21-34657-1	Hydroxide	g CaCO3/m3	F	< 1		
SW1A		26/10/2021	21-44984-1	Hydroxide	g CaCO3/m3	F	< 1		
SW1A		3/12/2021	21-50599-5	Hydroxide	g CaCO3/m3	F	< 1		
SW1A		3/08/2021	21-34657-1	Iron	mg/L	F	0.39		
SW1A		3/08/2021	21-34657-1	Iron	mg/L	T	0.583		
SW1A		26/10/2021	21-44984-1	Iron	mg/L	F	0.902		
SW1A		26/10/2021	21-44984-1	Iron	mg/L	T	1.66		
SW1A		3/12/2021	21-50599-5	Iron	mg/L	F	0.91		

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW1A		3/12/2021	21-50599-5	Iron	mg/L	T	3.62		
SW1A		18/01/2022	2832272_1	Iron	mg/L	T	10.1		
SW1A		3/08/2021	21-34657-1	Kjeldahl Nitrogen Total	mg/L	T	0.71		
SW1A		26/10/2021	21-44984-1	Kjeldahl Nitrogen Total	mg/L	T	1.42		
SW1A		3/12/2021	21-50599-5	Kjeldahl Nitrogen Total	mg/L	T	1.06		
SW1A		18/01/2022	2832272_1	Kjeldahl Nitrogen Total	mg/L	T	4.6		
SW1A		3/08/2021	21-34657-1	Lead	mg/L	F	0.00018		
SW1A		3/08/2021	21-34657-1	Lead	mg/L	T	0.00024		
SW1A		26/10/2021	21-44984-1	Lead	mg/L	F	0.00023		
SW1A		26/10/2021	21-44984-1	Lead	mg/L	T	0.00043		
SW1A		3/12/2021	21-50599-5	Lead	mg/L	F	0.00023		
SW1A		3/12/2021	21-50599-5	Lead	mg/L	T	0.0014		
SW1A		18/01/2022	2832272_1	Lead	mg/L	T	0.00067		
SW1A		18/01/2022	2832272_1	Lead	mg/L	F	0.00054		
SW1A		3/08/2021	21-34657-1	Magnesium	mg/L	F	5.18		
SW1A		3/08/2021	21-34657-1	Magnesium	mg/L	T	5.3		
SW1A		26/10/2021	21-44984-1	Magnesium	mg/L	F	4.99		
SW1A		26/10/2021	21-44984-1	Magnesium	mg/L	T	5.29		
SW1A		3/12/2021	21-50599-5	Magnesium	mg/L	F	4.95		
SW1A		3/12/2021	21-50599-5	Magnesium	mg/L	T	5.11		
SW1A		18/01/2022	2832272_1	Magnesium	mg/L	F	6.4		
SW1A		3/08/2021	21-34657-1	Manganese	mg/L	F	0.0599		
SW1A		3/08/2021	21-34657-1	Manganese	mg/L	T	0.0663		
SW1A		26/10/2021	21-44984-1	Manganese	mg/L	F	0.108		
SW1A		26/10/2021	21-44984-1	Manganese	mg/L	T	0.29		
SW1A		3/12/2021	21-50599-5	Manganese	mg/L	F	0.0521		
SW1A		3/12/2021	21-50599-5	Manganese	mg/L	T	0.108		
SW1A		18/01/2022	2832272_1	Manganese	mg/L	T	5.5		yes
SW1A		3/08/2021	21-34657-1	Nickel	mg/L	F	0.0015		
SW1A		3/08/2021	21-34657-1	Nickel	mg/L	T	0.0016		
SW1A		26/10/2021	21-44984-1	Nickel	mg/L	F	0.002		
SW1A		26/10/2021	21-44984-1	Nickel	mg/L	T	0.0023		
SW1A		3/12/2021	21-50599-5	Nickel	mg/L	F	0.0019		
SW1A		3/12/2021	21-50599-5	Nickel	mg/L	T	0.0028		
SW1A		18/01/2022	2832272_1	Nickel	mg/L	T	0.0028		
SW1A		18/01/2022	2832272_1	Nickel	mg/L	F	0.0026		
SW1A		3/08/2021	21-34657-1	Nitrate (as N)	mg/L	F	< 0.002		
SW1A		26/10/2021	21-44984-1	Nitrate (as N)	mg/L	F	0.273	yes	
SW1A		3/12/2021	21-50599-5	Nitrate (as N)	mg/L	F	0.186	yes	
SW1A		18/01/2022	2832272_1	Nitrate (as N)	mg/L	T	< 0.02		
SW1A		3/08/2021	21-34657-1	Nitrite (as N)	mg/L	F	0.0023		
SW1A		26/10/2021	21-44984-1	Nitrite (as N)	mg/L	F	0.0039		
SW1A		3/12/2021	21-50599-5	Nitrite (as N)	mg/L	F	0.0026		
SW1A		18/01/2022	2832272_1	Nitrite (as N)	mg/L	F	< 0.02		
SW1A		3/08/2021	21-34657-1	Nitrogen (Total)	mg/L	T	0.71		
SW1A		26/10/2021	21-44984-1	Nitrogen (Total)	mg/L	T	1.7		
SW1A		3/12/2021	21-50599-5	Nitrogen (Total)	mg/L	T	1.2		
SW1A		18/01/2022	2832272_1	Nitrogen (Total)	mg/L	T	4.6		
SW1A		3/08/2021		pH (Field)	pH_Units	T	6.37		
SW1A		26/10/2021		pH (Field)	pH_Units	T	6.84		
SW1A		3/12/2021		pH (Field)	pH_Units	T	6.61		
SW1A		18/01/2022	2832272_1	pH (Lab)	pH_Units	T	7.4		
SW1A		3/08/2021	21-34657-1	Phosphorus	mg/L	T	0.045		
SW1A		26/10/2021	21-44984-1	Phosphorus	mg/L	T	0.13		
SW1A		3/12/2021	21-50599-5	Phosphorus	mg/L	T	0.17		
SW1A		18/01/2022	2832272_1	Phosphorus	mg/L	T	0.3		
SW1A		3/08/2021	21-34657-1	Potassium	mg/L	F	2.6		
SW1A		3/08/2021	21-34657-1	Potassium	mg/L	T	2.9		
SW1A		26/10/2021	21-44984-1	Potassium	mg/L	F	1.6		
SW1A		26/10/2021	21-44984-1	Potassium	mg/L	T	2.1		
SW1A		3/12/2021	21-50599-5	Potassium	mg/L	F	1.3		
SW1A		3/12/2021	21-50599-5	Potassium	mg/L	T	1.5		
SW1A		18/01/2022	2832272_1	Potassium	mg/L	F	3.7		
SW1A		3/08/2021		Redox	mV	T	59.5		
SW1A		26/10/2021		Redox	mV	T	-24.4		
SW1A		3/12/2021		Redox	mV	T	41.4		
SW1A		3/08/2021	21-34657-1	Sodium	mg/L	F	24.7		
SW1A		3/08/2021	21-34657-1	Sodium	mg/L	T	25.6		
SW1A		26/10/2021	21-44984-1	Sodium	mg/L	F	25.7		
SW1A		26/10/2021	21-44984-1	Sodium	mg/L	T	26.6		
SW1A		3/12/2021	21-50599-5	Sodium	mg/L	F	27.1		
SW1A		3/12/2021	21-50599-5	Sodium	mg/L	T	26.7		
SW1A		18/01/2022	2832272_1	Sodium	mg/L	F	29		
SW1A		3/08/2021	21-34657-1	Sulphate	mg/L	F	21.1		
SW1A		26/10/2021	21-44984-1	Sulphate	mg/L	F	13.7		
SW1A		3/12/2021	21-50599-5	Sulphate	mg/L	F	14.1		
SW1A		18/01/2022	2832272_1	Sulphate	mg/L	F	4.6		
SW1A		3/08/2021		Temperature (Field)	oC	T	6.5		
SW1A		26/10/2021		Temperature (Field)	oC	T	10.3		
SW1A		3/12/2021		Temperature (Field)	oC	T	14.1		
SW1A		18/01/2022	2832272_1	Total Ammoniacal-N	g/m3	F	< 0.01		
SW1A		3/08/2021	21-34657-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.0021		
SW1A		26/10/2021	21-44984-1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.277		
SW1A		3/12/2021	21-50599-5	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.189		
SW1A		18/01/2022	2832272_1	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	< 0.02		
SW1A		3/08/2021	21-34657-1	Total Suspended Solids	mg/L	T	31		
SW1A		26/10/2021	21-44984-1	Total Suspended Solids	mg/L	T	57		
SW1A		3/12/2021	21-50599-5	Total Suspended Solids	mg/L	T	249		
SW1A		18/01/2022	2832272_1	Total Suspended Solids	mg/L	T	45		
SW1A		3/08/2021	21-34657-1	Turbidity	NTU	T	11.8	yes	
SW1A		26/10/2021	21-44984-1	Turbidity	NTU	T	36.6	yes	
SW1A		3/12/2021	21-50599-5	Turbidity	NTU	T	133	yes	

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SW1A		18/01/2022	2832272_1	Turbidity	NTU	T	29	yes	
SW1A		3/08/2021	21-34657-1	Zinc	mg/L	F	0.0052		
SW1A		3/08/2021	21-34657-1	Zinc	mg/L	T	0.0038		
SW1A		26/10/2021	21-44984-1	Zinc	mg/L	F	0.0084		yes
SW1A		26/10/2021	21-44984-1	Zinc	mg/L	T	0.0067		
SW1A		3/12/2021	21-50599-5	Zinc	mg/L	F	0.011		yes
SW1A		3/12/2021	21-50599-5	Zinc	mg/L	T	0.0079		
SW1A		18/01/2022	2832272_1	Zinc	mg/L	T	0.0037		
SW1A		18/01/2022	2832272_1	Zinc	mg/L	F	0.0022		
SW2		21/01/2022	2835216_2	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	T	44		
SW2		21/01/2022	2835216_2	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	T	< 1		
SW2		4/08/2021	21-34657-2	Alkalinity (total) as CaCO3	g CaCO3/m3	T	6.1		
SW2		26/10/2021	21-44984-2	Alkalinity (total) as CaCO3	g CaCO3/m3	T	13.7		
SW2		3/12/2021	21-50599-2	Alkalinity (total) as CaCO3	g CaCO3/m3	T	21.3		
SW2		21/01/2022	2835216_2	Alkalinity (total) as CaCO3	g CaCO3/m3	T	44		
SW2		4/08/2021	21-34657-2	Ammonia as N	mg/L	F	0.02		
SW2		26/10/2021	21-44984-2	Ammonia as N	mg/L	F	0.03		
SW2		3/12/2021	21-50599-2	Ammonia as N	mg/L	F	0.04		
SW2		21/01/2022	2835216_2	Ammonia as N	mg/L	F	0.014		
SW2		21/01/2022	2835216_2	Anions Total	meq/L	T	3.3		
SW2		4/08/2021	21-34657-2	Arsenic	mg/L	F	< 0.0005		
SW2		4/08/2021	21-34657-2	Arsenic	mg/L	T	< 0.0005		
SW2		26/10/2021	21-44984-2	Arsenic	mg/L	F	< 0.0005		
SW2		26/10/2021	21-44984-2	Arsenic	mg/L	T	< 0.0005		
SW2		3/12/2021	21-50599-2	Arsenic	mg/L	F	0.00072		
SW2		3/12/2021	21-50599-2	Arsenic	mg/L	T	0.002		
SW2		21/01/2022	2835216_2	Arsenic	mg/L	F	< 0.001		
SW2		21/01/2022	2835216_2	Arsenic	mg/L	T	0.0025		
SW2		4/08/2021	21-34657-2	Bicarbonate	g CaCO3/m3	F	6.1		
SW2		26/10/2021	21-44984-2	Bicarbonate	g CaCO3/m3	F	14		
SW2		3/12/2021	21-50599-2	Bicarbonate	g CaCO3/m3	F	21		
SW2		21/01/2022	2835216_2	Bicarbonate	g CaCO3/m3	T	54		
SW2		4/08/2021	21-34657-2	Cadmium	mg/L	F	< 0.00002		
SW2		4/08/2021	21-34657-2	Cadmium	mg/L	T	0.000024		
SW2		26/10/2021	21-44984-2	Cadmium	mg/L	F	< 0.00002		
SW2		26/10/2021	21-44984-2	Cadmium	mg/L	T	< 0.00002		
SW2		3/12/2021	21-50599-2	Cadmium	mg/L	F	< 0.00002		
SW2		3/12/2021	21-50599-2	Cadmium	mg/L	T	0.000035		
SW2		21/01/2022	2835216_2	Cadmium	mg/L	F	< 0.00005		
SW2		21/01/2022	2835216_2	Cadmium	mg/L	T	< 0.000053		
SW2		4/08/2021	21-34657-2	Calcium	mg/L	F	13.5		
SW2		4/08/2021	21-34657-2	Calcium	mg/L	T	13.6		
SW2		26/10/2021	21-44984-2	Calcium	mg/L	F	13.7		
SW2		26/10/2021	21-44984-2	Calcium	mg/L	T	13.2		
SW2		3/12/2021	21-50599-2	Calcium	mg/L	F	13.7		
SW2		3/12/2021	21-50599-2	Calcium	mg/L	T	14.4		
SW2		21/01/2022	2835216_2	Calcium	mg/L	F	15.7		
SW2		21/01/2022	2835216_2	Calcium	mg/L	T	18.4		
SW2		4/08/2021	21-34657-2	Carbonate	g CaCO3/m3	F	< 1		
SW2		26/10/2021	21-44984-2	Carbonate	g CaCO3/m3	F	< 1		
SW2		3/12/2021	21-50599-2	Carbonate	g CaCO3/m3	F	< 1		
SW2		21/01/2022	2835216_2	Carbonate	g CaCO3/m3	T	< 1		
SW2		21/01/2022	2835216_2	Cations Total	meq/L	F	2.9		
SW2		4/08/2021	21-34657-2	Chloride	mg/L	F	75.2		
SW2		26/10/2021	21-44984-2	Chloride	mg/L	F	71.7		
SW2		3/12/2021	21-50599-2	Chloride	mg/L	F	72.2		
SW2		21/01/2022	2835216_2	Chloride	mg/L	F	71		
SW2		4/08/2021	21-34657-2	Chromium (III+VI)	mg/L	F	0.00025		
SW2		4/08/2021	21-34657-2	Chromium (III+VI)	mg/L	T	< 0.0002		
SW2		26/10/2021	21-44984-2	Chromium (III+VI)	mg/L	F	< 0.0002		
SW2		26/10/2021	21-44984-2	Chromium (III+VI)	mg/L	T	< 0.0002		
SW2		3/12/2021	21-50599-2	Chromium (III+VI)	mg/L	F	< 0.0002		
SW2		3/12/2021	21-50599-2	Chromium (III+VI)	mg/L	T	0.0016		yes
SW2		21/01/2022	2835216_2	Chromium (III+VI)	mg/L	F	< 0.0005		
SW2		21/01/2022	2835216_2	Chromium (III+VI)	mg/L	T	0.00079		
SW2		4/08/2021	21-34657-2	CO2 (Free)	g/m3	T	15.3		
SW2		26/10/2021	21-44984-2	CO2 (Free)	g/m3	T	14.9		
SW2		3/12/2021	21-50599-2	CO2 (Free)	g/m3	T	35.4		
SW2		21/01/2022	2835216_2	CO2 (Free)	g/m3	T	30		
SW2		4/08/2021	21-34657-2	Copper	mg/L	F	0.00074		
SW2		4/08/2021	21-34657-2	Copper	mg/L	T	0.0013		
SW2		26/10/2021	21-44984-2	Copper	mg/L	F	0.00054		
SW2		26/10/2021	21-44984-2	Copper	mg/L	T	0.00067		
SW2		3/12/2021	21-50599-2	Copper	mg/L	F	0.00037		
SW2		3/12/2021	21-50599-2	Copper	mg/L	T	0.0016		yes
SW2		21/01/2022	2835216_2	Copper	mg/L	F	< 0.0005		
SW2		21/01/2022	2835216_2	Copper	mg/L	T	0.00136		
SW2		4/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	20.6		
SW2		26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	59.6		
SW2		3/12/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	29.1		
SW2		4/08/2021	21-34657-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW2		26/10/2021	21-44984-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW2		3/12/2021	21-50599-2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	0.002		
SW2		21/01/2022	2835216_2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.004		
SW2		4/08/2021		Electrical Conductivity (Field)	µS/cm	T	211		
SW2		26/10/2021		Electrical Conductivity (Field)	µS/cm	T	326.3		
SW2		3/12/2021		Electrical Conductivity (Field)	µS/cm	T	326.1		
SW2		21/01/2022	2835216_2	Electrical conductivity *(lab)	µS/cm	T	36900		
SW2		4/08/2021	21-34657-2	Hardness as CaCO3	g CaCO3/m3	F	61		
SW2		26/10/2021	21-44984-2	Hardness as CaCO3	g CaCO3/m3	F	62		
SW2		3/12/2021	21-50599-2	Hardness as CaCO3	g CaCO3/m3	F	63		
SW2		4/08/2021	21-34657-2	Hydroxide	g CaCO3/m3	F	< 1		

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SW2		26/10/2021	21-44984-2	Hydroxide	g CaCO3/m3	F	< 1		
SW2		3/12/2021	21-50599-2	Hydroxide	g CaCO3/m3	F	< 1		
SW2		4/08/2021	21-34657-2	Iron	mg/L	F	0.36		
SW2		4/08/2021	21-34657-2	Iron	mg/L	T	0.556		
SW2		26/10/2021	21-44984-2	Iron	mg/L	F	0.46		
SW2		26/10/2021	21-44984-2	Iron	mg/L	T	1.64		
SW2		3/12/2021	21-50599-2	Iron	mg/L	F	4.24		
SW2		3/12/2021	21-50599-2	Iron	mg/L	T	25.1		
SW2		21/01/2022	2835216_2	Iron	mg/L	T	24		
SW2		4/08/2021	21-34657-2	Kjeldahl Nitrogen Total	mg/L	T	0.56		
SW2		26/10/2021	21-44984-2	Kjeldahl Nitrogen Total	mg/L	T	0.99		
SW2		3/12/2021	21-50599-2	Kjeldahl Nitrogen Total	mg/L	T	2.36		
SW2		21/01/2022	2835216_2	Kjeldahl Nitrogen Total	mg/L	T	4.6		
SW2		4/08/2021	21-34657-2	Lead	mg/L	F	0.00011		
SW2		4/08/2021	21-34657-2	Lead	mg/L	T	0.00037		
SW2		26/10/2021	21-44984-2	Lead	mg/L	F	< 0.00005		
SW2		26/10/2021	21-44984-2	Lead	mg/L	T	0.00017		
SW2		3/12/2021	21-50599-2	Lead	mg/L	F	0.000051		
SW2		3/12/2021	21-50599-2	Lead	mg/L	T	0.0014		
SW2		21/01/2022	2835216_2	Lead	mg/L	F	< 0.0001		
SW2		21/01/2022	2835216_2	Lead	mg/L	T	0.00065		
SW2		4/08/2021	21-34657-2	Magnesium	mg/L	F	6.7		
SW2		4/08/2021	21-34657-2	Magnesium	mg/L	T	6.76		
SW2		26/10/2021	21-44984-2	Magnesium	mg/L	F	6.79		
SW2		26/10/2021	21-44984-2	Magnesium	mg/L	T	6.94		
SW2		3/12/2021	21-50599-2	Magnesium	mg/L	F	6.91		
SW2		3/12/2021	21-50599-2	Magnesium	mg/L	T	7.58		
SW2		21/01/2022	2835216_2	Magnesium	mg/L	F	7.6		
SW2		21/01/2022	2835216_2	Magnesium	mg/L	T	8.6		
SW2		4/08/2021	21-34657-2	Manganese	mg/L	F	0.631		
SW2		4/08/2021	21-34657-2	Manganese	mg/L	T	0.613		
SW2		26/10/2021	21-44984-2	Manganese	mg/L	F	0.497		
SW2		26/10/2021	21-44984-2	Manganese	mg/L	T	0.54		
SW2		3/12/2021	21-50599-2	Manganese	mg/L	F	2.03		yes
SW2		3/12/2021	21-50599-2	Manganese	mg/L	T	2.08		yes
SW2		21/01/2022	2835216_2	Manganese	mg/L	T	4.3		yes
SW2		4/08/2021	21-34657-2	Nickel	mg/L	F	0.0011		
SW2		4/08/2021	21-34657-2	Nickel	mg/L	T	0.0026		
SW2		26/10/2021	21-44984-2	Nickel	mg/L	F	0.0014		
SW2		26/10/2021	21-44984-2	Nickel	mg/L	T	0.0015		
SW2		3/12/2021	21-50599-2	Nickel	mg/L	F	0.002		
SW2		3/12/2021	21-50599-2	Nickel	mg/L	T	0.003		
SW2		21/01/2022	2835216_2	Nickel	mg/L	F	0.0011		
SW2		21/01/2022	2835216_2	Nickel	mg/L	T	0.0028		
SW2		4/08/2021	21-34657-2	Nitrate (as N)	mg/L	F	0.0915	yes	
SW2		26/10/2021	21-44984-2	Nitrate (as N)	mg/L	F	0.0971	yes	
SW2		3/12/2021	21-50599-2	Nitrate (as N)	mg/L	F	0.0282		
SW2		21/01/2022	2835216_2	Nitrate (as N)	mg/L	T	0.009		
SW2		4/08/2021	21-34657-2	Nitrite (as N)	mg/L	F	0.0014		
SW2		26/10/2021	21-44984-2	Nitrite (as N)	mg/L	F	0.0013		
SW2		3/12/2021	21-50599-2	Nitrite (as N)	mg/L	F	0.002		
SW2		21/01/2022	2835216_2	Nitrite (as N)	mg/L	F	< 0.002		
SW2		4/08/2021	21-34657-2	Nitrogen (Total)	mg/L	T	0.65		
SW2		26/10/2021	21-44984-2	Nitrogen (Total)	mg/L	T	1.1		
SW2		3/12/2021	21-50599-2	Nitrogen (Total)	mg/L	T	2.4		
SW2		21/01/2022	2835216_2	Nitrogen (Total)	mg/L	T	4.7		
SW2		4/08/2021		pH (Field)	pH_Units	T	6.16		
SW2		26/10/2021		pH (Field)	pH_Units	T	6.48		
SW2		3/12/2021		pH (Field)	pH_Units	T	5.85		
SW2		21/01/2022	2835216_2	pH (Lab)	pH_Units	T	6.5		
SW2		4/08/2021	21-34657-2	Phosphorus	mg/L	T	0.027		
SW2		26/10/2021	21-44984-2	Phosphorus	mg/L	T	0.052		
SW2		3/12/2021	21-50599-2	Phosphorus	mg/L	T	0.69		
SW2		21/01/2022	2835216_2	Phosphorus	mg/L	T	0.91		
SW2		4/08/2021	21-34657-2	Potassium	mg/L	F	2.3		
SW2		4/08/2021	21-34657-2	Potassium	mg/L	T	2.6		
SW2		26/10/2021	21-44984-2	Potassium	mg/L	F	0.8		
SW2		26/10/2021	21-44984-2	Potassium	mg/L	T	0.9		
SW2		3/12/2021	21-50599-2	Potassium	mg/L	F	0.92		
SW2		3/12/2021	21-50599-2	Potassium	mg/L	T	1		
SW2		21/01/2022	2835216_2	Potassium	mg/L	F	1.88		
SW2		21/01/2022	2835216_2	Potassium	mg/L	T	1.67		
SW2		4/08/2021		Redox	mV	T	62.4		
SW2		26/10/2021		Redox	mV	T	-36.5		
SW2		3/12/2021		Redox	mV	T	56		
SW2		4/08/2021	21-34657-2	Sodium	mg/L	F	35.8		
SW2		4/08/2021	21-34657-2	Sodium	mg/L	T	36.8		
SW2		26/10/2021	21-44984-2	Sodium	mg/L	F	35		
SW2		26/10/2021	21-44984-2	Sodium	mg/L	T	35.5		
SW2		3/12/2021	21-50599-2	Sodium	mg/L	F	34.1		
SW2		3/12/2021	21-50599-2	Sodium	mg/L	T	35.2		
SW2		21/01/2022	2835216_2	Sodium	mg/L	F	34		
SW2		21/01/2022	2835216_2	Sodium	mg/L	T	35		
SW2		4/08/2021	21-34657-2	Sulphate	mg/L	F	18.6		
SW2		26/10/2021	21-44984-2	Sulphate	mg/L	F	15.7		
SW2		3/12/2021	21-50599-2	Sulphate	mg/L	F	10.2		
SW2		21/01/2022	2835216_2	Sulphate	mg/L	F	19.5		
SW2		4/08/2021		Temperature (Field)	oC	T	7		
SW2		26/10/2021		Temperature (Field)	oC	T	11.2		
SW2		3/12/2021		Temperature (Field)	oC	T	13.7		
SW2		4/08/2021	21-34657-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.093		
SW2		26/10/2021	21-44984-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.0984		

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW2		3/12/2021	21-50599-2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.0302		
SW2		21/01/2022	2835216_2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.01		
SW2		4/08/2021	21-34657-2	Total Suspended Solids	mg/L	T	8		
SW2		26/10/2021	21-44984-2	Total Suspended Solids	mg/L	T	21		
SW2		3/12/2021	21-50599-2	Total Suspended Solids	mg/L	T	923		
SW2		21/01/2022	2835216_2	Total Suspended Solids	mg/L	T	250		
SW2		4/08/2021	21-34657-2	Turbidity	NTU	T	8.11	yes	
SW2		26/10/2021	21-44984-2	Turbidity	NTU	T	8.73	yes	
SW2		3/12/2021	21-50599-2	Turbidity	NTU	T	37.5	yes	
SW2		21/01/2022	2835216_2	Turbidity	NTU	T	155	yes	
SW2		4/08/2021	21-34657-2	Zinc	mg/L	F	0.019		yes
SW2		4/08/2021	21-34657-2	Zinc	mg/L	T	0.018		yes
SW2		26/10/2021	21-44984-2	Zinc	mg/L	F	0.011		yes
SW2		26/10/2021	21-44984-2	Zinc	mg/L	T	0.0067		
SW2		3/12/2021	21-50599-2	Zinc	mg/L	F	0.011		yes
SW2		3/12/2021	21-50599-2	Zinc	mg/L	T	0.014		yes
SW2		21/01/2022	2835216_2	Zinc	mg/L	F	0.0082		yes
SW2		21/01/2022	2835216_2	Zinc	mg/L	T	0.0182		yes
SW3		18/01/2022	2832272_2	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	T	143		
SW3		18/01/2022	2832272_2	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	T	< 1		
SW3		3/12/2021	21-50599-3	Alkalinity (total) as CaCO3	g CaCO3/m3	T	32.8		
SW3		18/01/2022	2832272_2	Alkalinity (total) as CaCO3	g CaCO3/m3	T	143		
SW3		3/12/2021	21-50599-3	Ammonia as N	mg/L	F	0.01		
SW3		18/01/2022	2832272_2	Anions Total	meq/L	T	9.1		
SW3		3/12/2021	21-50599-3	Arsenic	mg/L	F	< 0.0005		
SW3		3/12/2021	21-50599-3	Arsenic	mg/L	T	0.00052		
SW3		18/01/2022	2832272_2	Arsenic	mg/L	F	< 0.001		
SW3		18/01/2022	2832272_2	Arsenic	mg/L	T	< 0.0011		
SW3		3/12/2021	21-50599-3	Bicarbonate	g CaCO3/m3	F	33		
SW3		18/01/2022	2832272_2	Bicarbonate	g CaCO3/m3	T	174		
SW3		3/12/2021	21-50599-3	Cadmium	mg/L	F	< 0.00002		
SW3		3/12/2021	21-50599-3	Cadmium	mg/L	T	< 0.00002		
SW3		18/01/2022	2832272_2	Cadmium	mg/L	F	< 0.00005		
SW3		18/01/2022	2832272_2	Cadmium	mg/L	T	< 0.000053		
SW3		3/12/2021	21-50599-3	Calcium	mg/L	F	20.6		
SW3		3/12/2021	21-50599-3	Calcium	mg/L	T	21		
SW3		18/01/2022	2832272_2	Calcium	mg/L	F	85		
SW3		18/01/2022	2832272_2	Calcium	mg/L	T	85		
SW3		3/12/2021	21-50599-3	Carbonate	g CaCO3/m3	F	< 1		
SW3		18/01/2022	2832272_2	Carbonate	g CaCO3/m3	T	< 1		
SW3		18/01/2022	2832272_2	Cations Total	meq/L	F	9.3		
SW3		3/12/2021	21-50599-3	Chloride	mg/L	F	60.9		
SW3		18/01/2022	2832272_2	Chloride	mg/L	F	72		
SW3		3/12/2021	21-50599-3	Chromium (III+VI)	mg/L	F	0.00026		
SW3		3/12/2021	21-50599-3	Chromium (III+VI)	mg/L	T	0.00087		
SW3		18/01/2022	2832272_2	Chromium (III+VI)	mg/L	F	< 0.0005		
SW3		18/01/2022	2832272_2	Chromium (III+VI)	mg/L	T	< 0.00053		
SW3		3/12/2021	21-50599-3	CO2 (Free)	g/m3	T	11.9		
SW3		18/01/2022	2832272_2	CO2 (Free)	g/m3	T	6.4		
SW3		3/12/2021	21-50599-3	Copper	mg/L	F	0.00072		
SW3		3/12/2021	21-50599-3	Copper	mg/L	T	0.00091		
SW3		18/01/2022	2832272_2	Copper	mg/L	F	0.0006		
SW3		18/01/2022	2832272_2	Copper	mg/L	T	0.00055		
SW3		3/12/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	44.6		
SW3		3/12/2021	21-50599-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW3		18/01/2022	2832272_2	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.004		
SW3		3/12/2021		Electrical Conductivity (Field)	µS/cm	T	1286		
SW3		18/01/2022	2832272_2	Electrical conductivity *(lab)	µS/cm	T	90700		
SW3		3/12/2021	21-50599-3	Hardness as CaCO3	g CaCO3/m3	F	91		
SW3		18/01/2022	2832272_2	Hardness as CaCO3	g CaCO3/m3	T	360		
SW3		3/12/2021	21-50599-3	Hydroxide	g CaCO3/m3	F	< 1		
SW3		3/12/2021	21-50599-3	Iron	mg/L	F	0.54		
SW3		3/12/2021	21-50599-3	Iron	mg/L	T	1.59		
SW3		18/01/2022	2832272_2	Iron	mg/L	T	2.2		
SW3		3/12/2021	21-50599-3	Kjeldahl Nitrogen Total	mg/L	T	0.92		
SW3		18/01/2022	2832272_2	Kjeldahl Nitrogen Total	mg/L	T	0.65		
SW3		3/12/2021	21-50599-3	Lead	mg/L	F	0.000063		
SW3		3/12/2021	21-50599-3	Lead	mg/L	T	0.00033		
SW3		18/01/2022	2832272_2	Lead	mg/L	F	< 0.0001		
SW3		18/01/2022	2832272_2	Lead	mg/L	T	< 0.00011		
SW3		3/12/2021	21-50599-3	Magnesium	mg/L	F	9.7		
SW3		3/12/2021	21-50599-3	Magnesium	mg/L	T	9.99		
SW3		18/01/2022	2832272_2	Magnesium	mg/L	F	36		
SW3		18/01/2022	2832272_2	Magnesium	mg/L	T	34		
SW3		3/12/2021	21-50599-3	Manganese	mg/L	F	0.707		
SW3		3/12/2021	21-50599-3	Manganese	mg/L	T	0.796		
SW3		18/01/2022	2832272_2	Manganese	mg/L	T	3		yes
SW3		3/12/2021	21-50599-3	Nickel	mg/L	F	0.002		
SW3		3/12/2021	21-50599-3	Nickel	mg/L	T	0.0033		
SW3		18/01/2022	2832272_2	Nickel	mg/L	F	0.0035		
SW3		18/01/2022	2832272_2	Nickel	mg/L	T	0.0036		
SW3		3/12/2021	21-50599-3	Nitrate (as N)	mg/L	F	0.141	yes	
SW3		18/01/2022	2832272_2	Nitrate (as N)	mg/L	T	< 0.002		
SW3		3/12/2021	21-50599-3	Nitrite (as N)	mg/L	F	0.0026		
SW3		18/01/2022	2832272_2	Nitrite (as N)	mg/L	F	< 0.002		
SW3		3/12/2021	21-50599-3	Nitrogen (Total)	mg/L	T	1.1		
SW3		18/01/2022	2832272_2	Nitrogen (Total)	mg/L	T	0.65		
SW3		3/12/2021		pH (Field)	pH_Units	T	6.47		
SW3		18/01/2022	2832272_2	pH (Lab)	pH_Units	T	7.7		
SW3		3/12/2021	21-50599-3	Phosphorus	mg/L	T	0.036		
SW3		18/01/2022	2832272_2	Phosphorus	mg/L	T	0.026		
SW3		3/12/2021	21-50599-3	Potassium	mg/L	F	1.2		

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW3		3/12/2021	21-50599-3	Potassium	mg/L	T	1.3		
SW3		18/01/2022	2832272_2	Potassium	mg/L	F	2.1		
SW3		18/01/2022	2832272_2	Potassium	mg/L	T	2.2		
SW3		3/12/2021		Redox	mV	T	54.7		
SW3		3/12/2021	21-50599-3	Sodium	mg/L	F	31.5		
SW3		3/12/2021	21-50599-3	Sodium	mg/L	T	33.3		
SW3		18/01/2022	2832272_2	Sodium	mg/L	F	48		
SW3		18/01/2022	2832272_2	Sodium	mg/L	T	48		
SW3		3/12/2021	21-50599-3	Sulphate	mg/L	F	37.7		
SW3		18/01/2022	2832272_2	Sulphate	mg/L	F	200		
SW3		3/12/2021		Temperature (Field)	oC	T	13.3		
SW3		18/01/2022	2832272_2	Total Ammoniacal-N	g/m3	F	< 0.01		
SW3		3/12/2021	21-50599-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.144		
SW3		18/01/2022	2832272_2	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.004		
SW3		3/12/2021	21-50599-3	Total Suspended Solids	mg/L	T	11		
SW3		18/01/2022	2832272_2	Total Suspended Solids	mg/L	T	12		
SW3		3/12/2021	21-50599-3	Turbidity	NTU	T	11	yes	
SW3		18/01/2022	2832272_2	Turbidity	NTU	T	12.1	yes	
SW3		3/12/2021	21-50599-3	Zinc	mg/L	F	0.0079		
SW3		3/12/2021	21-50599-3	Zinc	mg/L	T	0.01		yes
SW3		18/01/2022	2832272_2	Zinc	mg/L	F	0.0014		
SW3		18/01/2022	2832272_2	Zinc	mg/L	T	0.0021		
SW4A		3/12/2021	21-50599-4	Alkalinity (total) as CaCO3	g CaCO3/m3	T	25		
SW4A		3/12/2021	21-50599-4	Ammonia as N	mg/L	F	0.23	yes	
SW4A		3/12/2021	21-50599-4	Arsenic	mg/L	F	0.00063		
SW4A		3/12/2021	21-50599-4	Arsenic	mg/L	T	0.012		
SW4A		3/12/2021	21-50599-4	Bicarbonate	g CaCO3/m3	F	25		
SW4A		3/12/2021	21-50599-4	Cadmium	mg/L	F	0.000044		
SW4A		3/12/2021	21-50599-4	Cadmium	mg/L	T	0.00103		yes
SW4A		3/12/2021	21-50599-4	Calcium	mg/L	F	11.1		
SW4A		3/12/2021	21-50599-4	Calcium	mg/L	T	30		
SW4A		3/12/2021	21-50599-4	Carbonate	g CaCO3/m3	F	< 1		
SW4A		3/12/2021	21-50599-4	Chloride	mg/L	F	50.4		
SW4A		3/12/2021	21-50599-4	Chromium (III+VI)	mg/L	F	0.00022		
SW4A		3/12/2021	21-50599-4	Chromium (III+VI)	mg/L	T	0.0318		yes
SW4A		3/12/2021	21-50599-4	CO2 (Free)	g/m3	T	52.3		
SW4A		3/12/2021	21-50599-4	Copper	mg/L	F	0.0019		yes
SW4A		3/12/2021	21-50599-4	Copper	mg/L	T	0.0461		yes
SW4A		3/12/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	110.1		
SW4A		3/12/2021	21-50599-4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	0.005		
SW4A		3/12/2021		Electrical Conductivity (Field)	µS/cm	T	0.5		
SW4A		3/12/2021	21-50599-4	Hardness as CaCO3	g CaCO3/m3	F	52		
SW4A		3/12/2021	21-50599-4	Hydroxide	g CaCO3/m3	F	< 1		
SW4A		3/12/2021	21-50599-4	Iron	mg/L	F	1.18		
SW4A		3/12/2021	21-50599-4	Iron	mg/L	T	60.8		
SW4A		3/12/2021	21-50599-4	Kjeldahl Nitrogen Total	mg/L	T	31.1		
SW4A		3/12/2021	21-50599-4	Lead	mg/L	F	0.00082		
SW4A		3/12/2021	21-50599-4	Lead	mg/L	T	0.0515		yes
SW4A		3/12/2021	21-50599-4	Magnesium	mg/L	F	5.87		
SW4A		3/12/2021	21-50599-4	Magnesium	mg/L	T	16.2		
SW4A		3/12/2021	21-50599-4	Manganese	mg/L	F	0.539		
SW4A		3/12/2021	21-50599-4	Manganese	mg/L	T	4.33		yes
SW4A		3/12/2021	21-50599-4	Nickel	mg/L	F	0.0018		
SW4A		3/12/2021	21-50599-4	Nickel	mg/L	T	0.0341		yes
SW4A		3/12/2021	21-50599-4	Nitrate (as N)	mg/L	F	1.08	yes	
SW4A		3/12/2021	21-50599-4	Nitrite (as N)	mg/L	F	0.0353		
SW4A		3/12/2021	21-50599-4	Nitrogen (Total)	mg/L	T	32		
SW4A		3/12/2021		pH (Field)	pH_Units	T	6.83		
SW4A		3/12/2021	21-50599-4	Phosphorus	mg/L	T	4.55		
SW4A		3/12/2021	21-50599-4	Potassium	mg/L	F	2.1		
SW4A		3/12/2021	21-50599-4	Potassium	mg/L	T	5.91		
SW4A		3/12/2021		Redox	mV	T	36.2		
SW4A		3/12/2021	21-50599-4	Sodium	mg/L	F	27.1		
SW4A		3/12/2021	21-50599-4	Sodium	mg/L	T	29.5		
SW4A		3/12/2021	21-50599-4	Sulphate	mg/L	F	22.3		
SW4A		3/12/2021		Temperature (Field)	oC	T	15.1		
SW4A		3/12/2021	21-50599-4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	1.11		
SW4A		3/12/2021	21-50599-4	Total Suspended Solids	mg/L	T	12110		
SW4A		3/12/2021	21-50599-4	Turbidity	NTU	T	5610	yes	
SW4A		3/12/2021	21-50599-4	Zinc	mg/L	F	0.014		yes
SW4A		3/12/2021	21-50599-4	Zinc	mg/L	T	0.221		yes
SW5A		21/01/2022	2835216_3	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	T	124		
SW5A		21/01/2022	2835216_3	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	T	< 1		
SW5A		21/01/2022	2835216_3	Alkalinity (total) as CaCO3	g CaCO3/m3	T	124		
SW5A		21/01/2022	2835216_3	Ammonia as N	mg/L	F	0.3	yes	
SW5A		21/01/2022	2835216_3	Anions Total	meq/L	T	3.6		
SW5A		21/01/2022	2835216_3	Arsenic	mg/L	F	< 0.001		
SW5A		21/01/2022	2835216_3	Arsenic	mg/L	T	0.0173		yes
SW5A		21/01/2022	2835216_3	Bicarbonate	g CaCO3/m3	T	151		
SW5A		21/01/2022	2835216_3	Cadmium	mg/L	F	< 0.00005		
SW5A		21/01/2022	2835216_3	Cadmium	mg/L	T	0.00078		yes
SW5A		21/01/2022	2835216_3	Calcium	mg/L	F	6.9		
SW5A		21/01/2022	2835216_3	Calcium	mg/L	T	28		
SW5A		21/01/2022	2835216_3	Carbonate	g CaCO3/m3	T	< 1		
SW5A		21/01/2022	2835216_3	Cations Total	meq/L	F	1.85		
SW5A		21/01/2022	2835216_3	Chloride	mg/L	F	33		
SW5A		21/01/2022	2835216_3	Chromium (III+VI)	mg/L	F	< 0.0005		
SW5A		21/01/2022	2835216_3	Chromium (III+VI)	mg/L	T	0.021		yes
SW5A		21/01/2022	2835216_3	CO2 (Free)	g/m3	T	57		
SW5A		21/01/2022	2835216_3	Copper	mg/L	F	0.0012		
SW5A		21/01/2022	2835216_3	Copper	mg/L	T	0.034		yes
SW5A		21/01/2022	2835216_3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	0.007		

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW5A		21/01/2022	2835216_3	Electrical conductivity *(lab)	µS/cm	T	27600		
SW5A		21/01/2022	2835216_3	Iron	mg/L	T	159		
SW5A		21/01/2022	2835216_3	Kjeldahl Nitrogen Total	mg/L	T	57		
SW5A		21/01/2022	2835216_3	Lead	mg/L	F	0.00018		
SW5A		21/01/2022	2835216_3	Lead	mg/L	T	0.04		yes
SW5A		21/01/2022	2835216_3	Magnesium	mg/L	F	4.2		
SW5A		21/01/2022	2835216_3	Magnesium	mg/L	T	12.1		
SW5A		21/01/2022	2835216_3	Manganese	mg/L	T	14.1		yes
SW5A		21/01/2022	2835216_3	Nickel	mg/L	F	0.0023		
SW5A		21/01/2022	2835216_3	Nickel	mg/L	T	0.041		yes
SW5A		21/01/2022	2835216_3	Nitrate (as N)	mg/L	T	0.008		
SW5A		21/01/2022	2835216_3	Nitrite (as N)	mg/L	F	0.006		
SW5A		21/01/2022	2835216_3	Nitrogen (Total)	mg/L	T	57		
SW5A		21/01/2022	2835216_3	pH (Lab)	pH_Units	T	6.6		
SW5A		21/01/2022	2835216_3	Phosphorus	mg/L	T	4.9		
SW5A		21/01/2022	2835216_3	Potassium	mg/L	F	4.9		
SW5A		21/01/2022	2835216_3	Potassium	mg/L	T	9.1		
SW5A		21/01/2022	2835216_3	Sodium	mg/L	F	23		
SW5A		21/01/2022	2835216_3	Sodium	mg/L	T	25		
SW5A		21/01/2022	2835216_3	Sulphate	mg/L	F	6.9		
SW5A		21/01/2022	2835216_3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.014		
SW5A		21/01/2022	2835216_3	Total Suspended Solids	mg/L	T	4000		
SW5A		21/01/2022	2835216_3	Turbidity	NTU	T	2300	yes	
SW5A		21/01/2022	2835216_3	Zinc	mg/L	F	0.0047		
SW5A		21/01/2022	2835216_3	Zinc	mg/L	T	0.33		yes
SW7	SW3	21/01/2022	2835216_4	Alkalinity (Bicarbonate as CaCO3)	g CaCO3/m3	T	91		
SW7	SW3	21/01/2022	2835216_4	Alkalinity (Hydroxide) as CaCO3	g CaCO3/m3	T	< 1		
SW7	SW3	3/08/2021	21-34657-3	Alkalinity (total) as CaCO3	g CaCO3/m3	T	8.6		
SW7	SW3	26/10/2021	21-44984-3	Alkalinity (total) as CaCO3	g CaCO3/m3	T	37.5		
SW7	SW3	3/12/2021	21-50599-6	Alkalinity (total) as CaCO3	g CaCO3/m3	T	54.5		
SW7	SW3	21/01/2022	2835216_4	Alkalinity (total) as CaCO3	g CaCO3/m3	T	91		
SW7	SW3	6/07/2020	20-24885-3	Ammonia as N	mg/L	F	0.02		
SW7	SW3	3/08/2021	21-34657-3	Ammonia as N	mg/L	F	0.005		
SW7	SW3	26/10/2021	21-44984-3	Ammonia as N	mg/L	F	0.03		
SW7	SW3	3/12/2021	21-50599-6	Ammonia as N	mg/L	F	0.01		
SW7	SW3	21/01/2022	2835216_4	Ammonia as N	mg/L	F	< 0.01		
SW7	SW3	21/01/2022	2835216_4	Anions Total	meq/L	T	2.7		
SW7	SW3	6/07/2020	20-24885-3	Arsenic	mg/L	F	< 0.0005		
SW7	SW3	3/08/2021	21-34657-3	Arsenic	mg/L	F	< 0.0005		
SW7	SW3	3/08/2021	21-34657-3	Arsenic	mg/L	T	< 0.0005		
SW7	SW3	3/08/2021	21-34657-4	Arsenic	mg/L	F	< 0.0005		
SW7	SW3	3/08/2021	21-34657-4	Arsenic	mg/L	T	< 0.0005		
SW7	SW3	26/10/2021	21-44984-3	Arsenic	mg/L	F	0.00053		
SW7	SW3	26/10/2021	21-44984-3	Arsenic	mg/L	T	< 0.0005		
SW7	SW3	3/12/2021	21-50599-6	Arsenic	mg/L	F	0.0006		
SW7	SW3	3/12/2021	21-50599-6	Arsenic	mg/L	T	0.00061		
SW7	SW3	21/01/2022	2835216_4	Arsenic	mg/L	F	< 0.001		
SW7	SW3	21/01/2022	2835216_4	Arsenic	mg/L	T	0.0021		
SW7	SW3	3/08/2021	21-34657-3	Bicarbonate	g CaCO3/m3	F	8.6		
SW7	SW3	26/10/2021	21-44984-3	Bicarbonate	g CaCO3/m3	F	38		
SW7	SW3	3/12/2021	21-50599-6	Bicarbonate	g CaCO3/m3	F	54		
SW7	SW3	21/01/2022	2835216_4	Bicarbonate	g CaCO3/m3	T	111		
SW7	SW3	6/07/2020	20-24885-3	Cadmium	mg/L	F	< 0.00002		
SW7	SW3	3/08/2021	21-34657-3	Cadmium	mg/L	F	0.000096		
SW7	SW3	3/08/2021	21-34657-3	Cadmium	mg/L	T	< 0.00002		
SW7	SW3	3/08/2021	21-34657-4	Cadmium	mg/L	F	< 0.00002		
SW7	SW3	3/08/2021	21-34657-4	Cadmium	mg/L	T	< 0.00002		
SW7	SW3	26/10/2021	21-44984-3	Cadmium	mg/L	F	< 0.00002		
SW7	SW3	26/10/2021	21-44984-3	Cadmium	mg/L	T	< 0.00002		
SW7	SW3	3/12/2021	21-50599-6	Cadmium	mg/L	F	< 0.00002		
SW7	SW3	3/12/2021	21-50599-6	Cadmium	mg/L	T	< 0.00002		
SW7	SW3	21/01/2022	2835216_4	Cadmium	mg/L	F	< 0.00005		
SW7	SW3	21/01/2022	2835216_4	Cadmium	mg/L	T	< 0.000053		
SW7	SW3	6/07/2020	20-24885-3	Calcium	mg/L	T	16.1		
SW7	SW3	3/08/2021	21-34657-3	Calcium	mg/L	F	24.3		
SW7	SW3	3/08/2021	21-34657-3	Calcium	mg/L	T	12.5		
SW7	SW3	3/08/2021	21-34657-4	Calcium	mg/L	F	12		
SW7	SW3	3/08/2021	21-34657-4	Calcium	mg/L	T	12.4		
SW7	SW3	26/10/2021	21-44984-3	Calcium	mg/L	F	15.3		
SW7	SW3	26/10/2021	21-44984-3	Calcium	mg/L	T	14.4		
SW7	SW3	3/12/2021	21-50599-6	Calcium	mg/L	F	15		
SW7	SW3	3/12/2021	21-50599-6	Calcium	mg/L	T	14.6		
SW7	SW3	21/01/2022	2835216_4	Calcium	mg/L	F	15.1		
SW7	SW3	21/01/2022	2835216_4	Calcium	mg/L	T	14.9		
SW7	SW3	3/08/2021	21-34657-3	Carbonate	g CaCO3/m3	F	< 1		
SW7	SW3	26/10/2021	21-44984-3	Carbonate	g CaCO3/m3	F	< 1		
SW7	SW3	3/12/2021	21-50599-6	Carbonate	g CaCO3/m3	F	< 1		
SW7	SW3	21/01/2022	2835216_4	Carbonate	g CaCO3/m3	T	< 1		
SW7	SW3	21/01/2022	2835216_4	Cations Total	meq/L	F	2.3		
SW7	SW3	3/08/2021	21-34657-3	Chloride	mg/L	F	46.1		
SW7	SW3	26/10/2021	21-44984-3	Chloride	mg/L	F	43.9		
SW7	SW3	3/12/2021	21-50599-6	Chloride	mg/L	F	43.7		
SW7	SW3	21/01/2022	2835216_4	Chloride	mg/L	F	26		
SW7	SW3	6/07/2020	20-24885-3	Chromium (III+VI)	mg/L	F	< 0.0002		
SW7	SW3	3/08/2021	21-34657-3	Chromium (III+VI)	mg/L	F	< 0.0002		
SW7	SW3	3/08/2021	21-34657-3	Chromium (III+VI)	mg/L	T	< 0.0002		
SW7	SW3	3/08/2021	21-34657-4	Chromium (III+VI)	mg/L	F	< 0.0002		
SW7	SW3	3/08/2021	21-34657-4	Chromium (III+VI)	mg/L	T	< 0.0002		
SW7	SW3	26/10/2021	21-44984-3	Chromium (III+VI)	mg/L	F	< 0.0002		
SW7	SW3	26/10/2021	21-44984-3	Chromium (III+VI)	mg/L	T	< 0.0002		
SW7	SW3	3/12/2021	21-50599-6	Chromium (III+VI)	mg/L	F	< 0.0002		
SW7	SW3	3/12/2021	21-50599-6	Chromium (III+VI)	mg/L	T	0.00023		

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW7	SW3	21/01/2022	2835216_4	Chromium (III+VI)	mg/L	F	< 0.0005		
SW7	SW3	21/01/2022	2835216_4	Chromium (III+VI)	mg/L	T	0.00187		yes
SW7	SW3	3/08/2021	21-34657-3	CO2 (Free)	g/m3	T	10.9		
SW7	SW3	26/10/2021	21-44984-3	CO2 (Free)	g/m3	T	17.2		
SW7	SW3	3/12/2021	21-50599-6	CO2 (Free)	g/m3	T	14.9		
SW7	SW3	21/01/2022	2835216_4	CO2 (Free)	g/m3	T	4.9		
SW7	SW3	6/07/2020	20-24885-3	Copper	mg/L	F	0.012		yes
SW7	SW3	3/08/2021	21-34657-3	Copper	mg/L	F	0.0068		yes
SW7	SW3	3/08/2021	21-34657-3	Copper	mg/L	T	0.002		yes
SW7	SW3	3/08/2021	21-34657-4	Copper	mg/L	F	0.0016		yes
SW7	SW3	3/08/2021	21-34657-4	Copper	mg/L	T	0.0017		yes
SW7	SW3	26/10/2021	21-44984-3	Copper	mg/L	F	0.0021		yes
SW7	SW3	26/10/2021	21-44984-3	Copper	mg/L	T	0.0023		yes
SW7	SW3	3/12/2021	21-50599-6	Copper	mg/L	F	0.0018		yes
SW7	SW3	3/12/2021	21-50599-6	Copper	mg/L	T	0.0018		yes
SW7	SW3	21/01/2022	2835216_4	Copper	mg/L	F	0.0034		yes
SW7	SW3	21/01/2022	2835216_4	Copper	mg/L	T	0.0094		yes
SW7	SW3	3/08/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	67.3		
SW7	SW3	26/10/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	13.9		
SW7	SW3	3/12/2021		Dissolved Oxygen (% saturated) (Field)	%S	F	34		
SW7	SW3	3/08/2021	21-34657-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW7	SW3	26/10/2021	21-44984-3	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW7	SW3	3/12/2021	21-50599-6	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.002		
SW7	SW3	21/01/2022	2835216_4	Dissolved Reactive Phosphorus (FIA) (DRP)	g/m3	F	< 0.004		
SW7	SW3	3/08/2021		Electrical Conductivity (Field)	µS/cm	T	167.5		
SW7	SW3	26/10/2021		Electrical Conductivity (Field)	µS/cm	T	335		
SW7	SW3	3/12/2021		Electrical Conductivity (Field)	µS/cm	T	371.9		
SW7	SW3	6/07/2020	20-24885-3	Electrical conductivity *(lab)	µS/cm	T	331		
SW7	SW3	21/01/2022	2835216_4	Electrical conductivity *(lab)	µS/cm	T	28600		
SW7	SW3	3/08/2021	21-34657-3	Hardness as CaCO3	g CaCO3/m3	F	83		
SW7	SW3	26/10/2021	21-44984-3	Hardness as CaCO3	g CaCO3/m3	F	68		
SW7	SW3	3/12/2021	21-50599-6	Hardness as CaCO3	g CaCO3/m3	F	67		
SW7	SW3	3/08/2021	21-34657-3	Hydroxide	g CaCO3/m3	F	< 1		
SW7	SW3	26/10/2021	21-44984-3	Hydroxide	g CaCO3/m3	F	< 1		
SW7	SW3	3/12/2021	21-50599-6	Hydroxide	g CaCO3/m3	F	< 1		
SW7	SW3	6/07/2020	20-24885-3	Iron	mg/L	T	7.45		
SW7	SW3	3/08/2021	21-34657-3	Iron	mg/L	F	0.17		
SW7	SW3	3/08/2021	21-34657-3	Iron	mg/L	T	0.3		
SW7	SW3	3/08/2021	21-34657-4	Iron	mg/L	F	0.16		
SW7	SW3	3/08/2021	21-34657-4	Iron	mg/L	T	0.18		
SW7	SW3	26/10/2021	21-44984-3	Iron	mg/L	F	0.24		
SW7	SW3	26/10/2021	21-44984-3	Iron	mg/L	T	0.5		
SW7	SW3	3/12/2021	21-50599-6	Iron	mg/L	F	0.549		
SW7	SW3	3/12/2021	21-50599-6	Iron	mg/L	T	0.919		
SW7	SW3	21/01/2022	2835216_4	Iron	mg/L	T	7.8		
SW7	SW3	6/07/2020	20-24885-3	Kjeldahl Nitrogen Total	mg/L	T	1.03		
SW7	SW3	3/08/2021	21-34657-3	Kjeldahl Nitrogen Total	mg/L	T	0.41		
SW7	SW3	26/10/2021	21-44984-3	Kjeldahl Nitrogen Total	mg/L	T	0.76		
SW7	SW3	3/12/2021	21-50599-6	Kjeldahl Nitrogen Total	mg/L	T	1.05		
SW7	SW3	21/01/2022	2835216_4	Kjeldahl Nitrogen Total	mg/L	T	1.28		
SW7	SW3	6/07/2020	20-24885-3	Lead	mg/L	F	0.00057		
SW7	SW3	3/08/2021	21-34657-3	Lead	mg/L	F	0.00038		
SW7	SW3	3/08/2021	21-34657-3	Lead	mg/L	T	0.00042		
SW7	SW3	3/08/2021	21-34657-4	Lead	mg/L	F	0.00012		
SW7	SW3	3/08/2021	21-34657-4	Lead	mg/L	T	0.00014		
SW7	SW3	26/10/2021	21-44984-3	Lead	mg/L	F	0.0002		
SW7	SW3	26/10/2021	21-44984-3	Lead	mg/L	T	0.00012		
SW7	SW3	3/12/2021	21-50599-6	Lead	mg/L	F	0.00014		
SW7	SW3	3/12/2021	21-50599-6	Lead	mg/L	T	0.00021		
SW7	SW3	21/01/2022	2835216_4	Lead	mg/L	F	< 0.0001		
SW7	SW3	21/01/2022	2835216_4	Lead	mg/L	T	0.008		yes
SW7	SW3	6/07/2020	20-24885-3	Magnesium	mg/L	T	9.04		
SW7	SW3	3/08/2021	21-34657-3	Magnesium	mg/L	F	5.48		
SW7	SW3	3/08/2021	21-34657-3	Magnesium	mg/L	T	5.8		
SW7	SW3	3/08/2021	21-34657-4	Magnesium	mg/L	F	5.53		
SW7	SW3	3/08/2021	21-34657-4	Magnesium	mg/L	T	5.77		
SW7	SW3	26/10/2021	21-44984-3	Magnesium	mg/L	F	7.27		
SW7	SW3	26/10/2021	21-44984-3	Magnesium	mg/L	T	7.27		
SW7	SW3	3/12/2021	21-50599-6	Magnesium	mg/L	F	7.26		
SW7	SW3	3/12/2021	21-50599-6	Magnesium	mg/L	T	7.38		
SW7	SW3	21/01/2022	2835216_4	Magnesium	mg/L	F	6.6		
SW7	SW3	21/01/2022	2835216_4	Magnesium	mg/L	T	7		
SW7	SW3	6/07/2020	20-24885-3	Manganese	mg/L	T	0.812		
SW7	SW3	3/08/2021	21-34657-3	Manganese	mg/L	F	0.506		
SW7	SW3	3/08/2021	21-34657-3	Manganese	mg/L	T	0.048		
SW7	SW3	3/08/2021	21-34657-4	Manganese	mg/L	F	0.048		
SW7	SW3	3/08/2021	21-34657-4	Manganese	mg/L	T	0.05		
SW7	SW3	26/10/2021	21-44984-3	Manganese	mg/L	F	1.28		
SW7	SW3	26/10/2021	21-44984-3	Manganese	mg/L	T	0.624		
SW7	SW3	3/12/2021	21-50599-6	Manganese	mg/L	F	1.16		
SW7	SW3	3/12/2021	21-50599-6	Manganese	mg/L	T	1.07		
SW7	SW3	21/01/2022	2835216_4	Manganese	mg/L	T	16.8		yes
SW7	SW3	6/07/2020	20-24885-3	Nickel	mg/L	F	0.00083		
SW7	SW3	3/08/2021	21-34657-3	Nickel	mg/L	F	0.0012		
SW7	SW3	3/08/2021	21-34657-3	Nickel	mg/L	T	0.0013		
SW7	SW3	3/08/2021	21-34657-4	Nickel	mg/L	F	0.001		
SW7	SW3	3/08/2021	21-34657-4	Nickel	mg/L	T	0.0011		
SW7	SW3	26/10/2021	21-44984-3	Nickel	mg/L	F	0.0025		
SW7	SW3	26/10/2021	21-44984-3	Nickel	mg/L	T	0.0024		
SW7	SW3	3/12/2021	21-50599-6	Nickel	mg/L	F	0.0028		
SW7	SW3	3/12/2021	21-50599-6	Nickel	mg/L	T	0.0028		
SW7	SW3	21/01/2022	2835216_4	Nickel	mg/L	F	0.0024		

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW7	SW3	21/01/2022	2835216_4	Nickel	mg/L	T	0.0072		
SW7	SW3	6/07/2020	20-24885-3	Nitrate (as N)	mg/L	F	0.0506		
SW7	SW3	3/08/2021	21-34657-3	Nitrate (as N)	mg/L	F	0.318	yes	
SW7	SW3	26/10/2021	21-44984-3	Nitrate (as N)	mg/L	F	0.08	yes	
SW7	SW3	3/12/2021	21-50599-6	Nitrate (as N)	mg/L	F	0.0302		
SW7	SW3	21/01/2022	2835216_4	Nitrate (as N)	mg/L	T	0.46	yes	
SW7	SW3	6/07/2020	20-24885-3	Nitrite (as N)	mg/L	F	0.0014		
SW7	SW3	3/08/2021	21-34657-3	Nitrite (as N)	mg/L	F	0.0011		
SW7	SW3	26/10/2021	21-44984-3	Nitrite (as N)	mg/L	F	0.0021		
SW7	SW3	3/12/2021	21-50599-6	Nitrite (as N)	mg/L	F	0.002		
SW7	SW3	21/01/2022	2835216_4	Nitrite (as N)	mg/L	F	0.01		
SW7	SW3	6/07/2020	20-24885-3	Nitrogen (Total)	mg/L	T	1.1		
SW7	SW3	3/08/2021	21-34657-3	Nitrogen (Total)	mg/L	T	0.73		
SW7	SW3	26/10/2021	21-44984-3	Nitrogen (Total)	mg/L	T	0.84		
SW7	SW3	3/12/2021	21-50599-6	Nitrogen (Total)	mg/L	T	1.1		
SW7	SW3	21/01/2022	2835216_4	Nitrogen (Total)	mg/L	T	1.75		
SW7	SW3	3/08/2021		pH (Field)	pH_Units	T	6.14		
SW7	SW3	26/10/2021		pH (Field)	pH_Units	T	6.53		
SW7	SW3	3/12/2021		pH (Field)	pH_Units	T	6.24		
SW7	SW3	6/07/2020	20-24885-3	pH (Lab)	pH_Units	T	6.7		
SW7	SW3	21/01/2022	2835216_4	pH (Lab)	pH_Units	T	7.6		
SW7	SW3	3/08/2021	21-34657-3	Phosphorus	mg/L	T	0.015		
SW7	SW3	26/10/2021	21-44984-3	Phosphorus	mg/L	T	0.013		
SW7	SW3	3/12/2021	21-50599-6	Phosphorus	mg/L	T	0.015		
SW7	SW3	21/01/2022	2835216_4	Phosphorus	mg/L	T	0.192		
SW7	SW3	3/08/2021	21-34657-3	Potassium	mg/L	F	2.3		
SW7	SW3	3/08/2021	21-34657-3	Potassium	mg/L	T	2.4		
SW7	SW3	3/08/2021	21-34657-4	Potassium	mg/L	F	2.1		
SW7	SW3	3/08/2021	21-34657-4	Potassium	mg/L	T	2.3		
SW7	SW3	26/10/2021	21-44984-3	Potassium	mg/L	F	0.23		
SW7	SW3	26/10/2021	21-44984-3	Potassium	mg/L	T	0.21		
SW7	SW3	3/12/2021	21-50599-6	Potassium	mg/L	F	0.31		
SW7	SW3	3/12/2021	21-50599-6	Potassium	mg/L	T	0.26		
SW7	SW3	21/01/2022	2835216_4	Potassium	mg/L	F	2.6		
SW7	SW3	21/01/2022	2835216_4	Potassium	mg/L	T	3.2		
SW7	SW3	3/08/2021		Redox	mV	T	123.7		
SW7	SW3	26/10/2021		Redox	mV	T	57.5		
SW7	SW3	3/12/2021		Redox	mV	T	54.9		
SW7	SW3	3/08/2021	21-34657-3	Sodium	mg/L	F	26.6		
SW7	SW3	3/08/2021	21-34657-3	Sodium	mg/L	T	28.6		
SW7	SW3	3/08/2021	21-34657-4	Sodium	mg/L	F	27.1		
SW7	SW3	3/08/2021	21-34657-4	Sodium	mg/L	T	28.2		
SW7	SW3	26/10/2021	21-44984-3	Sodium	mg/L	F	28.7		
SW7	SW3	26/10/2021	21-44984-3	Sodium	mg/L	T	28.7		
SW7	SW3	3/12/2021	21-50599-6	Sodium	mg/L	F	27.2		
SW7	SW3	3/12/2021	21-50599-6	Sodium	mg/L	T	27.6		
SW7	SW3	21/01/2022	2835216_4	Sodium	mg/L	F	23		
SW7	SW3	21/01/2022	2835216_4	Sodium	mg/L	T	22		
SW7	SW3	6/07/2020	20-24885-3	Sulphate	mg/L	F	29.7		
SW7	SW3	3/08/2021	21-34657-3	Sulphate	mg/L	F	29.4		
SW7	SW3	26/10/2021	21-44984-3	Sulphate	mg/L	F	17		
SW7	SW3	3/12/2021	21-50599-6	Sulphate	mg/L	F	3.23		
SW7	SW3	21/01/2022	2835216_4	Sulphate	mg/L	F	5.7		
SW7	SW3	3/08/2021		Temperature (Field)	oC	T	6.5		
SW7	SW3	26/10/2021		Temperature (Field)	oC	T	10.8		
SW7	SW3	3/12/2021		Temperature (Field)	oC	T	12.1		
SW7	SW3	3/08/2021	21-34657-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.319		
SW7	SW3	26/10/2021	21-44984-3	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.0821		
SW7	SW3	3/12/2021	21-50599-6	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.0322		
SW7	SW3	21/01/2022	2835216_4	Total Oxidised Nitrogen (NO2N + NO3N)* NOx	g/m3	F	0.47		
SW7	SW3	3/08/2021	21-34657-3	Total Suspended Solids	mg/L	T	< 3		
SW7	SW3	26/10/2021	21-44984-3	Total Suspended Solids	mg/L	T	< 3		
SW7	SW3	3/12/2021	21-50599-6	Total Suspended Solids	mg/L	T	18		
SW7	SW3	21/01/2022	2835216_4	Total Suspended Solids	mg/L	T	110		
SW7	SW3	3/08/2021	21-34657-3	Turbidity	NTU	T	5.42	yes	
SW7	SW3	26/10/2021	21-44984-3	Turbidity	NTU	T	2.82		
SW7	SW3	3/12/2021	21-50599-6	Turbidity	NTU	T	4.09		
SW7	SW3	21/01/2022	2835216_4	Turbidity	NTU	T	188	yes	
SW7	SW3	6/07/2020	20-24885-3	Zinc	mg/L	F	0.0028		
SW7	SW3	3/08/2021	21-34657-3	Zinc	mg/L	F	0.03		yes
SW7	SW3	3/08/2021	21-34657-3	Zinc	mg/L	T	0.0098		yes
SW7	SW3	3/08/2021	21-34657-4	Zinc	mg/L	F	0.011		yes
SW7	SW3	3/08/2021	21-34657-4	Zinc	mg/L	T	0.0088		yes
SW7	SW3	26/10/2021	21-44984-3	Zinc	mg/L	F	0.013		yes
SW7	SW3	26/10/2021	21-44984-3	Zinc	mg/L	T	0.0057		
SW7	SW3	3/12/2021	21-50599-6	Zinc	mg/L	F	0.0057		
SW7	SW3	3/12/2021	21-50599-6	Zinc	mg/L	T	0.0046		
SW7	SW3	21/01/2022	2835216_4	Zinc	mg/L	F	< 0.001		
SW7	SW3	21/01/2022	2835216_4	Zinc	mg/L	T	0.024		yes
SW8	SW2	6/07/2020	20-24885-2	Ammonia as N	mg/L	F	0.03		
SW8	SW2	6/07/2020	20-24885-2	Arsenic	mg/L	F	< 0.0005		
SW8	SW2	6/07/2020	20-24885-2	Cadmium	mg/L	F	< 0.00002		
SW8	SW2	6/07/2020	20-24885-2	Calcium	mg/L	T	16.3		
SW8	SW2	6/07/2020	20-24885-2	Chromium (III+VI)	mg/L	F	< 0.0002		
SW8	SW2	6/07/2020	20-24885-2	Copper	mg/L	F	0.00028		
SW8	SW2	6/07/2020	20-24885-2	Electrical conductivity *(lab)	µS/cm	T	340		
SW8	SW2	6/07/2020	20-24885-2	Iron	mg/L	T	9.07		
SW8	SW2	6/07/2020	20-24885-2	Kjeldahl Nitrogen Total	mg/L	T	1.45		
SW8	SW2	6/07/2020	20-24885-2	Lead	mg/L	F	< 0.00005		
SW8	SW2	6/07/2020	20-24885-2	Magnesium	mg/L	T	9.02		
SW8	SW2	6/07/2020	20-24885-2	Manganese	mg/L	T	0.651		
SW8	SW2	6/07/2020	20-24885-2	Nickel	mg/L	F	0.0007		

Consent condition monitoring ID	Initial investigation ID	Sample Date	Laboratory sample code	Parameter	Unit	Total or Filtered	Concentration	Schedule 15 exceedance?	ANZG (2018) exceedance?
SW8	SW2	6/07/2020	20-24885-2	Nitrate (as N)	mg/L	F	0.0245		
SW8	SW2	6/07/2020	20-24885-2	Nitrite (as N)	mg/L	F	0.003		
SW8	SW2	6/07/2020	20-24885-2	Nitrogen (Total)	mg/L	T	1.5		
SW8	SW2	6/07/2020	20-24885-2	pH (Lab)	pH_Units	T	6.7		
SW8	SW2	6/07/2020	20-24885-2	Sulphate	mg/L	F	32.3		
SW8	SW2	6/07/2020	20-24885-2	Zinc	mg/L	F	0.0024		
SW9	SW1	6/07/2020	20-24885-1	Ammonia as N	mg/L	F	0.05		
SW9	SW1	6/07/2020	20-24885-1	Arsenic	mg/L	F	< 0.0005		
SW9	SW1	6/07/2020	20-24885-1	Cadmium	mg/L	F	< 0.00002		
SW9	SW1	6/07/2020	20-24885-1	Calcium	mg/L	T	15.6		
SW9	SW1	6/07/2020	20-24885-1	Chromium (III+VI)	mg/L	F	< 0.0002		
SW9	SW1	6/07/2020	20-24885-1	Copper	mg/L	F	0.00072		
SW9	SW1	6/07/2020	20-24885-1	Electrical conductivity *(lab)	µS/cm	T	325		
SW9	SW1	6/07/2020	20-24885-1	Iron	mg/L	T	4.48		
SW9	SW1	6/07/2020	20-24885-1	Kjeldahl Nitrogen Total	mg/L	T	1.49		
SW9	SW1	6/07/2020	20-24885-1	Lead	mg/L	F	< 0.00005		
SW9	SW1	6/07/2020	20-24885-1	Magnesium	mg/L	T	8.77		
SW9	SW1	6/07/2020	20-24885-1	Manganese	mg/L	T	0.957		
SW9	SW1	6/07/2020	20-24885-1	Nickel	mg/L	F	0.0013		
SW9	SW1	6/07/2020	20-24885-1	Nitrate (as N)	mg/L	F	0.322	yes	
SW9	SW1	6/07/2020	20-24885-1	Nitrite (as N)	mg/L	F	0.0045		
SW9	SW1	6/07/2020	20-24885-1	Nitrogen (Total)	mg/L	T	1.8		
SW9	SW1	6/07/2020	20-24885-1	pH (Lab)	pH_Units	T	6.7		
SW9	SW1	6/07/2020	20-24885-1	Sulphate	mg/L	F	33.2		
SW9	SW1	6/07/2020	20-24885-1	Zinc	mg/L	F	0.0048		

FOR CONSENT
NOT FOR CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
3	FOR CONSENT - UPDATED WATER MONITORING LOCATIONS	JF	NE*	SD*	28.04.22
2	RE-ISSUE FOR CONSENT	JF	NE*	SD*	21.05.21
1	FOR CONSENT	SLP	NE*	SD*	14.08.20

Note: * indicates signatures on original issue of drawing or last revision of drawing

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DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

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Drafting Check: G.DOUGHERTY* | Design Check: N. ELDRED*
Approved (Project Director): S. DOUGLASS*
Date: 14.08.20
Scale: 1:2500
This Drawing must not be used for Construction unless signed as Approved

Client: DUNEDIN CITY COUNCIL
Project: SMOOTH HILL LANDFILL
Title: WATER MONITORING LOCATIONS

Original Size: A1 | Drawing No: 12506381-01-C309 | Rev: 3

Plot Date: 28 April 2022 - 11:57 AM Plotted by: Brian Raj Cad File No: C:\12d\SW\data\P-00-12D-001\51-12506381 - Smooth Hill Landfill_293\CADD\Drawings\51-12506381-01-C309.dwg