IN THE MATTER	of a direct referral application under section 87G of the Resource Management Act 1991 for resource consents for the necessary infrastructure and related activities associated with holding the America's Cup in Auckland	
BETWEEN	**PANUKU DEVELOPMENT AUCKLAND** Applicant	
	ENV-AKL-2018-000078	
AND	**AUCKLAND COUNCIL** Regulatory Authority	

Date: **31 July 2018**

Venue: **4Sight Offices, 201 Victoria St West**

Facilitator: **N/A**

Area of expertise: **Coastal, Stormwater, Geotech and Engineering**

Experts in attendance:

Name	For
Sam Morgan	Auckland Council
Gemma Chuah	Auckland Council
Hillary Johnston	Auckland Council
Ahad Khan	Auckland Council
Ross Roberts	Auckland Council
Stephen Priestley	Applicant (Panuku)

JOINT WITNESS STATEMENT

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1. Introduction

1.1. The purpose of expert conferencing is for expert witnesses to identify and reach agreement with other expert witnesses within their field of expertise on the issues/matters on which the expert witnesses agree and the issues/matters on which they do not agree, including reasons for their disagreement.

1.2. In preparing this statement, the experts have read and understood the Code of Conduct for Expert Witnesses as included in the Environment Court Practice Note 2014.

2. Geotechnical

2.1. Matters of agreement

2.1.1. In general, there is agreement over the reports provided thus far.

2.2. Matters of disagreement

2.2.1. The requirement to address acid sulphate soils in the initial set of Conditions has previously been a matter of disagreement. This disagreement has now been resolved. SP provided an email from Stuart Cartwright describing the proposed management methodology. RR was satisfied with this response and agreed that 135B. i. could be deleted subject to the methodology contained within the email being adopted. This email is attached as Appendix A. The revised conditions are set out below:

135B. The following geotechnical requirements shall apply to the Project:

a. Project Geotechnical Design Report (PGDR) shall be prepared and submitted for approval to the Team Leader Compliance Monitoring - Central no later than 20 working days before the Commencement of Construction. The PGDR shall include analysis and design to address specific natural hazards likely to affect the development and shall include but not be limited to:

~~*i. Investigation and assessment of the risk and effects of liquefaction under design seismic conditions including assessment and design of appropriate detailed liquefaction mitigation measures.*~~

~~*i. Assessment of the potential for the presence of acid sulphate soils within the underlying strata disturbed by the proposed development. If acid sulphate soils are not present, the PGDR shall include a statement to that effect. Where acid sulphate soils are identified, the report shall include assessment of the potential environmental effects of acid sulphate soil disturbance including appropriate mitigation measures.*~~

i Detailed geotechnical assessment and design of structures and earthworks fill which demonstrates stability and appropriate performance in accordance with the ~~*current adopted design codes*~~ *Auckland Council Code of Practice For Land Development and Subdivision for the specific intended design life, considering the destabilising effects of natural hazards.*

2.3. Matters of disagreement

2.3.1. None

2.4. Comment

2.4.1. No further comment

3. Development Engineering

3.1. Matters of agreement

3.1.1. In general, there is agreement over the reports provided thus far.

3.1.2. SP and AK agree the following changes to the conditions:

Condition 135B(b) be amended to delete (i) and (iii). Condition 135B(b) will simply read:

> *"Any trenches, retaining walls and building foundations shall be supervised by a suitably qualified engineering professional. In supervising the works, the suitably qualified engineering professional shall ensure that trenches for the purpose of drainage (manholes and drains), fill and foundations (if any), have been provided with adequate support and protection so they will not lead to instability.*

Condition 135B(c) would remain as it is.

Condition 135C can be deleted in its entirety, however in its place:

3.1.3. Condition 40(c) should be amended to refer to representatives of Watercare Services Limited;

3.1.4. Condition 41 should be amended to refer, in the brackets, to "water and wastewater services" as a topic for discussion at the pre-start meeting;

3.1.5. The following general information shall be captured in an Advice Note somewhere in the conditions, in a suitable location (e.g. as a reminder of the Watercare review reference number):

*"**Advice Note**: All new and temporary public water and wastewater infrastructure including connection points to the existing systems will require an approval from Watercare Services and an Engineering Plan Approval from Auckland Council. All new and temporary private wastewater infrastructure will require a Building Consent from Auckland Council. The Consent Holder is reminded of the need to consult with Watercare Services (as per the Watercare review, Referenced 72816)."*

3.2. Matters of disagreement

3.2.1. None

3.3. Comment

3.3.1. No further comments.

4. Stormwater and ITA's

4.1. Matters of agreement

4.1.1. In general, there is agreement over the reports provided thus far.

4.2. Matters of disagreement

4.2.1. None

4.3. Comment

4.3.1. Discussion around the requirement to use detergents for wash down. SP to investigate the potential use of detergents and how they will be dealt with and incorporated into the EMP.

4.3.2. A CoC (say 151) could read "If the syndicate bases are to use detergents then the Applicant shall prepare and submit a Detergent Management Plan to the Team Leader Compliance Monitoring - Central for

certification in terms of the following matters: a) a description of the detergent, the quantity and frequency of use, and the combined amount of washwater. b) the procedure during application to contain the washwater so that it avoids entering the stormwater treatment device. c) acceptance by Watercare of any subsequent discharge to the public wastewater system.

4.3.3. .GC suggested that the change should be incorporated into CoC 141 as “The ITA HSEMPs shall include the following:
(d) If the syndicate bases are to use detergents the consent holder shall prepare and submit a Detergent Management Plan that includes but is not limited to:
(i) A description of the detergent, the quality and frequency of use, and the combined amount of wash water;
(ii) The procedure during application to contain the washwater so that it avoids entering the stormwater treatment device;
(iii) Acceptance by Watercare of any subsequent discharge to the public wastewater system.”

5. Coastal

5.1. Matters of agreement

5.1.1. In general, there is agreement over the reports provided thus far.

5.1.2. Agreement that monitoring of environmental conditions within the Wynyard Basin space can be limited to aesthetic issues such as litter and other such visual cues. This could be similar in nature to that suggested for the Inner Viaduct area.

5.1.3. Condition 53 c) suggested wording “Details of the physical characteristics of the dredged material, based on visual observation, to be provided to the Council throughout the physical works period.”

5.2. Matters of disagreement

5.2.1. None

5.3. Comment

5.3.1. SM sent SP Sail World New Zealand Ltd. submission and reference to breakwater adequacy on 12 July 2018. SP has been in touch with Richard Gladwell of Sail World. Richard has advised that he will not be giving evidence to the Court on the issue of the performance of the breakwaters.

Dated the 31st day of July 2018

Stephen Priestley

Gemma Chuah

Hillary Johnston

Ahad Khan

Ross Roberts

Sam Morgan

Appendix A – email from Beca confirming proposed methodology to manage potential acid sulphate soils

RE AC36
Conferencing- Coasta

Charlie

Attached below is our response to the acid sulphate soil issue. It was prepared by the Alliance's Geologist – Stuart Cartwright. It concludes that the Tauranga Group soils at our site should not be "potential acid sulphate soils" as testing has not identified any peat material within the Group. That is the material at our site is non-organic Tauranga Group soil. Use of any of the Group material as fill will require stabilisation for it to be effective which would neutralise any acidic potential.

I hope this allays your concerns.

Stephen Priestley
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A geological perspective on the likelihood of Tauranga Group soils at the AC36 site being potential acid sulphate soils….

Background

It is understood that Auckland Council have made the following comments in relation to acid sulphate soil potential of the site soils:

"*3.7 Disturbance of the Tauranga Group alluvial and estuarine sediments underlying the site has the potential to cause oxidation, leading to lowering of the soil pH and leaching and transport of acidity into groundwater and the marine environment. Disturbance of these soils is proposed, in the form of piling and deep ground improvement works. No detailed assessment of the acid sulphate potential of the soils and the subsequent effects on the environment has been received or proposed. The level of risk this may pose is unconfirmed.*
3.8 I recommend a specific consent condition is imposed requiring an assessment for acid sulphate soils and an assessment of the potential environmental effects and effects on proposed buried structures of acidity caused by disturbance of these soils. Mitigation measures should be included where acid sulphate soils are identified."

Potential acid sulphate soils (PASS) can occur in low-lying coastal land where estuaries and mangrove swamps have existed in the recent past. These coastal environments are naturally reducing environments that can result in the build-up of the mineral iron pyrite (FeS_2). When PASS soils are exposed to the air and oxidise they become known as Actual Acid Sulphate Soils (AASS). PASS soils have been identified in Northland by Dent (1980),

and most recently ASS soils have caused significant issues for the stormwater network constructed at the Marsden City development near Whangarei. In Auckland, testing of Puketoka Formation (a unit of the Tauranga Group) soils at Auckland Airport and in Pakuranga have identified PASS. The key aspect of PASS at these locations was the presence of relatively young peaty soils, which naturally contain sulphide minerals, and typically have a low pH.

Testing for water soluble sulphate was undertaken during the site investigations for the Waterview Tunnel Project to inform an assessment of the durability exposure of buried concrete structures. The testing identified that peat soils of the Tauranga Group had water soluble sulphate concentrations much greater than non-organic Tauranga Group soils. Organic Tauranga Group soils in general had a much lower pH than non-organic Tauranga Group soils. Test results confirmed that the water soluble sulphate in non-organic Tauranga Group geology was comparable to the East Coast Bays Formation geology, which are not considered to be PASS soils.

In Auckland it is the presence of peaty soils in significant concentrations, and the potential for these peaty soils to oxidise (e.g. by the lowering of groundwater) that should be considered when assessing the likelihood of PASS at a site.

Geological conditions at the AC36 site

A comprehensive geotechnical drilling campaign has recently been completed at the AC36 site. The boreholes did not encounter peat soils in the Tauranga Group soils. In addition, the Tauranga Group soils at the site are located below -5m CD, and will not be oxidised in situ (i.e. from groundwater lowering) as a result of the proposed works. The likelihood of PASS being present in the Tauranga Group soils is therefore considered to be very low.

In addition, due to the silty and sensitive nature of the Tauranga Group soils, the use of these soils as fill on land will likely require some cement stabilisation and/or sufficient mixing with Waitemata Group soils, so as to make suitable for the use as engineered fill. Cement stabilisation would likely counter any acid producing potential.

Regards,

Stuart Cartwright
Geotechnical Investigation Coordinator