IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a submission in respect of the **PROPOSED WAIKATO DISTRICT PLAN** by **AMBURY PROPERTIES LIMITED** pursuant to Clause 6 of Schedule 1 of the Act seeking the rezoning of land at Ohinewai

STATEMENT OF EVIDENCE OF CARL VERNON O'BRIEN

1. INTRODUCTION

1.1 My full name is Carl Vernon O'Brien. I am General Manager at Geosciences Ltd ("GSL"), a specialist contaminated land advisory consultancy.

Qualifications and experience

1.2 I hold a Post Graduate Diploma in Environmental Management (Distinction) (2013) and a Bachelor of Science (Biology) (2008) from Auckland University.

1.3 I have some 11 years' experience working in resource management consultancies. My specialist area of expertise is in environmental management; that is, understanding the effects of human activities on the environment and assessing risks to both human health and the natural environment.

1.4 My current role focuses on contaminated land management and includes undertaking preliminary and detailed site investigations, development of remediation and site management processes commensurate with the scale and degree of impacts identified.

1.5 My qualifications and experience meet the requirements of a 'Suitably Qualified and Experienced Practitioner' as detailed in the User's Guide*: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health* (MfE 2012). A selection of significant projects I have been involved with is attached in **Attachment A**.

Involvement in project

1.6 GSL was engaged by Ambury Properties Limited ("APL") in May 2019 to undertake a preliminary site investigation ("PSI") of the piece of land at 52-58 Lumsden Road, 88 Lumsden Road and 231 Tahuna Road, Ohinewai ("the Site") to inform APL's proposal to change the use of the land from primary production into a mixture of commercial / industrial, medium to high density residential and recreational / reserve land uses. The PSI was provided to the Waikato District Council ("WDC") on 6 December 2019 (attached as Appendix M to the Assessment of Environmental Effects and Section 32AA Evaluation dated December 2019).

1.7 Once completed, GSL was further instructed to undertake a detailed site investigation (DSI) of the Stage 1A Earthworks footprint for the purposes of seeking all requisite resource consents. The findings of the DSI were then utilised to compile a Remediation Action and Site Management Plan for the Stage 1A earthworks.

1.8 In my role as General Manager for GSL, I was the initial point of contact for this work and developed the framework for investigations. I have been responsible for developing the staged investigation approach, overseeing and certifying the PSI, developing the soil sampling methodology for the Stage 1A earthworks DSI and maintaining client liaison during the above engagements. I am familiar with the Site and am familiar with APL's proposal.

1.9 I am familiar with the Site having initially visited briefly in May 2019. I intend to undertake an additional visit in July 2020.

Purpose and scope of evidence

1.10 The purpose of this statement of evidence is to document the preliminary and detailed site investigations and my recommendations to ensure that the land can be made fit for purpose in light of the soil contaminant standards set out in the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations (NES-CS) (MfE, 2012).

1.11 Specifically, my evidence will:

(a) Provide a brief overview of the Site and the proposal (Section 3);

(b) Provide an overview of the relevant regulatory context (Section 4);

(c) Detail the methodology used to assess contamination risks encountered during the site investigation; (Section 5);

(d) Document the preliminary and detailed site investigations completed on the piece of land (Section 6);

(e) Discuss the Remediation Action and Site Management Plan prepared for Stage 1A Earthworks (Section 7);

(f) Set out the requirements for further investigations and requirements of APL's proposed development (Section 8);

(g) Comment on the appropriateness of the site for urban development from a site contamination perspective (Section 9);

(h) Address the interface between this statement of evidence and the evidence of Mr Nick Speight in relation to geotechnical matters (Section 10);

(i) Comment on the Council officer's report (Section 11); and

(j) Provide a brief conclusion (Section 12).

1.12 A summary of my evidence is contained in Section 2.

1.13 My evidence relies in part on the evidence of Nick Speight regarding geotechnical considerations for site development.

Expert Witness Code of Conduct

1.14 I have read the Code of Conduct for Expert Witnesses, contained in the Environment Court Consolidated Practice Note (2014) and I agree to comply with it. I can confirm that the issues addressed in this statement are within my area of expertise and that in preparing my evidence I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

2. SUMMARY OF EVIDENCE

2.1 As a result of APL's proposal to develop the Site for a mixture of commercial / industrial, medium to high density residential and recreational / reserve land uses, GSL undertook a preliminary site investigation across the proposed development footprint to identify any actual or potential contaminating activities. The PSI formed a Tier 1 risk assessment in

accordance with the Ministry for the Environment Contaminated Land Management Guidelines.

2.2 The PSI identified the following contamination consistent with farming activities and aging infrastructure and concluded that regulations of the NES-CS would be applicable to the piece:

(a) Bulk storage of fertiliser (HAIL Item A.6);

(b) Above ground bulk storage of petrochemicals (HAIL Item A.13);

(c) Asbestos products in deteriorated condition (HAIL Item E.1);

(d) Dairy effluent wastewater treatment (HAIL Item G.6);

(e) Burning and burying of refuse and waste materials (HAIL Item I);

(f) Potential release of lead to soil from lead-based paint (HAIL Item I); and

(g) Bulk application of phosphate fertilisers to pasture grass potentially resulting in elevated concentration of cadmium (HAIL Items A.1 and I).

2.3 As a result of the identification of potentially contaminating activities, the PSI recommended that detailed investigations be undertaken. To account for the proposed development approach, staged investigation was considered appropriate to coincide with each applicable stage.

2.4 A detailed site investigation of the Stage 1A earthworks footprint was then undertaken to assess whether any of the above potentially contaminating historical activities had actually adversely impacted the soil on the Site. The investigation involved the collection and analysis of 22 soil samples from within the Stage 1A earthworks area targeted at the potentially contaminated areas identified during the PSI.

2.5 The findings of the DSI were as follows:

(a) No soil sample returned any concentrations of the identified priority contaminants in excess of the NES-CS Soil Contaminant Standard for Commercial / industrial workers on an unpaved site (the applicable land use standard for the proposed development plan);

(b) All four composite soil samples from areas identified as subjected to bulk application of phosphate fertilisers returned elevated

concentrations of cadmium in soil above the expected naturally occurring background ranges for the underlying geology, but not to a degree considered to present any risk to human health or the environment; and

(c) All eight discrete soil samples collected from within the footprint of historic buildings returned concentrations above the expected naturally occurring background ranges for the underlying geology, with one sample returning a concentration elevated to be considered a potential environmental discharge risk, but not at a level considered to present a risk to human health.

2.6 Based on the findings of the DSI, it was concluded that one discrete area of the Stage 1A Earthworks Footprint presented a potential risk to ecological receptors and would require remediation. A remediation action plan was prepared that contemplates a remedial approach of vertical mixing followed by placement within the landscape planting bunds required.

2.7 The identification of HAIL ("MfE Hazardous Activities and Industries List or "HAIL") activities has resulted in recommendations for further detailed site investigation(s) to be undertaken to characterise the exact risk and inform the most appropriate management practices to ensure that the requirements of the NES are met. That is, where necessary, all soils will be remediated to a level that complies with the applicable soil contaminant standard for the specific urban development scenario identified (be it commercial/industrial, residential or reserve / recreational land).

2.8 While no risks to groundwater have currently been identified, should those recommended investigations identify a gross risk to groundwater or offsite discharge, the requirement to remediate would still exist and appropriately scaled investigations would be triggered.

2.9 In remediating the Site, it is expected that onsite management options will be given precedence where soils assessed as unsuitable for residential land use are excavated and incorporated into commercial / industrial or reserve footprints as permitted by the differential risk scenarios and permissible standards set under the NES. Where soil cannot be readily remediated or managed on site, offsite disposal to suitably licensed landfills proximate to the Site can be readily achieved.

2.10 While potentially contaminating activities have been identified, I do not consider any of these identified risks present an issue that cannot be readily managed using conventional contamination management practices. Any

further contamination identified during progressive site investigations will be appropriately remediated and managed

3. OVERVIEW OF THE PROPOSAL

3.1 APL proposes to develop the Site for a mixture of commercial / industrial, medium to high density residential and recreational / reserve land uses.

The Site

3.2 The Site is 178 hectares in area and currently used for primary production (dairy farming). It is predominantly flat pasture with low hills in the central region along the boundary between Lot 1 and 2 and a slope along the entire southern boundary.

3.3 In its use for primary production, the Site includes farm buildings at 52 Lumsden Road, 109 Tahuna Road, 151 Tahuna and 232 Tahuna Road while 82 Lumsden Road had been demolished sometime previously. An active milking shed is present on Lot 1 while Lot 2 and Allot 405 included historic, but now disused milking sheds. A historic slaughterhouse, now timber store shed, was present on Lot 3. Lot 405 contains a hay barn.

3.4 The Site contains a number of drainage channels that divert stormwater to Lake Rotokawau, which is approximately 220m north east of the site. The low-lying eastern part of the site is known to flood during high rainfall events.

Proposed Development

3.5 The Ohinewai Structure Plan anticipates industrial development in the western part of the site adjacent to State Highway 1, with a business/commercial area in the south-western part of the site. The central and eastern part of the site will be used for residential development, with the remainder of the eastern part of the site being occupied by wetland park, sports fields and a market garden.

4. REGULATORY FRAMEWORK

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health ("NES-CS")

4.1 The NES Soil came into effect on 1 January 2012. The NES Soil supersedes any corresponding plan rules that relate to contaminated land, in accordance with section 43B of the Resource Management Act 1991 ("RMA").

4.2 The objective of the NES Soil is to ensure that land affected by contaminants is identified and, where necessary, remediated or managed when being redeveloped, in order to protect human health.

4.3 Section 5 of the NES Soil provides that it only applies when the following activities are being undertaken on land where an activity or industry described in the HAIL is being, has been, or is more likely than not to have been, undertaken on the piece of land:

(a) Removing or replacing all, or part of, a fuel storage system;

(b) Sampling the soil;

(c) Disturbing the soil;

(d) Subdividing land; and

(e) Changing the land use.

4.4 Where those activities meet relevant criteria, they can be classified as permitted activities under section 8 of the NES Soil. If they do not, the NES-CS provides (in sections 9 to 11) that they will require resource consent as either controlled, restricted discretionary or discretionary activities.

4.5 The exception being Regulation 5(9) of the NES-CS which notes the regulations do not apply where a detailed site investigation has been completed that demonstrates that any contaminants in or on the piece of land are at or below background concentrations.

Waikato Regional Plan (WRP)

4.6 The contaminated land rules from Chapter 5.3 of the WRP are fully operative. Those provisions address the effects of the discharge of contaminants from contaminated land or land containing elevated levels of contaminants into air, or into water, or onto or into land pursuant to section 15 of the RMA. This is a separate issue to that addressed by the NES Soil as it addresses environmental receptors as opposed to human health, with the upshot that these provisions need to be considered alongside (and separate from) any consenting requirements under the NES-CS.

4.7 Objective 5.3.2 of the WRP is to manage discharges from land containing elevated levels of contaminants so that they:

(a) Do not present significant risk of chronic or acute toxic effects on human health, flora or fauna.

(b) Do not have adverse effects on water quality or aquatic ecosystems that are inconsistent with the water management objectives of the WRP.

(c) Do not result in adverse air quality effects that are inconstant with the air quality objectives of the WRP.

(d) Avoid significant adverse effects on the relationship that tangata whenua as Kaitiaki have with their identified taonga such as ancestral lands, water and waahi tapu.

(e) Remedy or mitigate cumulative adverse effects on the relationship that tangata whenua as Kaitiaki have with their identified taonga such as ancestral lands, water and waahi tapu.

4.8 The WRP provides for remediation of contaminated land as a permitted activity under Rule 5.3.4.6 subject to conditions regarding the potential discharge risks and subject to copies of the relevant investigation reports being provided to Waikato Regional Council. Where the permitted thresholds cannot be met, remediation of contaminated land is considered a controlled or discretionary activity under Rules 5.3.4.7 and 5.3.4.8 respectively.

5. CONTAMINATION ASSESSMENT METHODOLOGY

5.1 In accordance with the MfE Contaminated Land Management Guidelines ("CLMG") and industry best practice, GSL undertook a two-tiered investigation and risk assessment to determine the likelihood of actual or potential contamination existing on the Site, followed by quantification of soil quality in light of the potential for contamination to be present.

Tier 1 – Preliminary Site Investigation

5.2 Tier 1 of the risk assessment methodology involved the preparation and development of a preliminary site investigation ("PSI") to assess the potential for soil contamination to exist on the Site. The purpose of the investigation was to determine the applicability of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS) (Ministry for the Environment (MfE), 2012) by identifying the location and extent of any activities incorporated within the HAIL.

5.3 The PSI is a desktop review of all available historical information (Council files, aerial imagery, and certificates of titles) relating to uses of the site.

5.4 Where evidence was identified for activities included on the MfE HAIL to have been, currently be, or more likely than not to have been, undertaken within the piece of land, a potential risk was identified and flagged as requiring further investigation.

Tier 2 – Detailed Site Investigation

5.5 Tier 2 of the risk assessment GSL involves the preparation of a detailed site investigation ("DSI"). Given the nature, extent and scope of APL's proposal, a staged approach to the preparation of DSI's is being followed to facilitate development timings for subdivision, development and ultimately change in land use.

5.6 The first DSI has been undertaken to inform on the resource consent application necessary for earthworks required for Stage 1A of the development, being part of the Sleepyhead factory in the west of the Site.

5.7 The DSI involved collection of representative soil samples from those areas identified in the PSI as presenting a potential risk and their subsequent analysis at an accredited laboratory for contaminants of concern.

5.8 Based on the analytical results returned, assessment is then made against the applicable Soil Contaminant Standard directed under the NES-CS for the particular land use scenario, in this instance, the Commercial / Industrial Outdoor Worker Standard.

5.9 Further assessment of the analytical results was also undertaken to ensure that discharges from contaminated sites "*do not present a significant risk of chronic or acute toxic effects on human health, flora, or fauna due to the contamination of soil and ground or surface water*" as required under Section 5.3 *Contaminated Land* of the Waikato Regional Plan.

5.10 While the MfE CLMG's provide for combining stages of investigation, a two-tiered investigation and risk assessment methodology is considered best practice. This enables a conceptual site model of locations and the extent of potential contamination to be compiled based on a weight of evidence approach. Once the spatial extents and potential contaminants are clearly identified, intrusive assessment can then target those areas within a piece of land.

5.11 It should be noted that the presence of actual or potential contamination does not preclude a piece of land being 'fit for purpose'. Rather, the intent of the NES-CS regulation is to use subdivision, change in land use or

development activities as a trigger for investigation and identification of actually and potentially contaminated land. Without such a trigger in place, contamination is otherwise unlikely to be directly assessed. Where soil contamination is identified, this enables requirements to be imposed (through conditions) to ensure that any risks to human health and / or the environment are appropriately remediated, managed or contained.

5.12 Additional DSI's will be completed on the areas identified within the PSI as requiring investigation at the point in time when each of those relevant stages are progressed.

6. PRELIMINARY AND DETAILED SITE INVESTIGATIONS – RESULTS

Preliminary Site Investigation

6.1 The PSI was undertaken in June 2019. It identified discrete portions of the site that have potentially been subject to HAIL Items as follows:

(a) Bulk storage of fertiliser (HAIL Item A.6);

(b) Above-ground bulk storage of petrochemicals (HAIL Item A.13);

(c) Asbestos products in deteriorated condition (HAIL Item E.1);

(d) Dairy effluent wastewater treatment (HAIL Item G.6);

(e) Burning and burying of refuse and waste materials (HAIL Item I);

(f) Potential release of lead to soil from lead-based paint (HAIL Item I); and

(g) Bulk application of phosphate fertilisers to pasture grass potentially resulting in elevated concentration of cadmium (HAIL Items A.1 and I).

6.2 The location and estimated extent of the above HAIL items is shown on the figure attached as **Attachment B**.

6.3 The PSI concluded that, based on the weight of evidence, portions of the Site would be considered potentially impacted and subject to the requirements of the NES-CS.

6.4 Where HAIL items had been identified, appropriate intrusive investigation would be required to assess the risks against the applicable land use

standard set under the NES-CS and to determine whether any discharge risk exists in the context of the Waikato Regional Plan.

Detailed Site Investigation

6.5 A DSI of the Stage 1A Earthworks footprint, in the north-western corner of the Site was undertaken in August 2019.

6.6 The DSI involved the collection and analysis of 22 soil samples from within the Stage 1A earthworks area, targeting the areas identified within the PSI as potentially contaminated. These areas comprised:

(a) An area of suspected asbestos containing materials in broken or degraded condition (HAIL Item E.1) was assessed through the collection and analysis of a composite soil sample from the base of the building materials observed to be in degraded condition.

(b) Potential use of superphosphate or phosphate ammonium across pasture grasses potentially resulting in elevated concentrations of cadmium (HAIL Item A.1 and / or I) within surface soils. Four composite soil samples were collected across the four distinct paddocks within the Stage 1A footprint with each composite sample comprised of four sub- samples from the topsoil (0-150mm) horizon.

(c) Suspected buried refuse (HAIL Item I) was investigated through the advancement of 20 hand auger holes in the area suspected of containing buried refuse. While no refuse was encountered, three discrete surface (0-150mm) soil samples and two depth (500mm below relative ground level) were collected to determine if soil in this area had been adversely impacted by the suspected buried refuse.

(d) Potential release of lead to soil from lead-based paint on historic buildings (HAIL Item I) was investigated through the collection of eight discrete soil samples. Discrete soil sample locations were identified by geo-referencing the footprint of the historic buildings and targeting the 'halo' where discharges would most likely present a worst-case scenario in surface soil.

(e) Dairy effluent wastewater treatment ponds (HAIL Item G.5 / G.6) were investigated through the collection of four surface soil samples in the location of the former ponds alongside one soil sample from 500 mm below relative ground level.

6.7 The findings of the DSI are summarised below:

(a) No soil sample returned any concentrations of the identified priority contaminants in excess of the NES-CS Soil Contaminant Standard for commercial / industrial workers on an unpaved site (the applicable land use standard for the proposed development plan).

(b) All four composite soil samples from areas identified as subjected to bulk application of phosphate fertilisers returned elevated concentrations of cadmium in soil above the expected naturally occurring background ranges for the underlying geology, but not to a degree considered to present any risk to human health or the environment.

(c) All eight discrete soil samples collected from within the footprint of historic buildings returned concentrations above the expected naturally occurring background ranges for the underlying geology, with one sample returning a concentration elevated to be considered a potential environmental discharge risk, but not at a level considered to present a risk to human health.

6.8 Treated stock effluent has been applied to the site as fertiliser, with the result that, in accordance with accepted practice, the MfE (2003) *Guidelines for the Safe Application of Biosolids to Land in New Zealand* through Table 3-9 *Pathogen and Contaminant Levels* criteria were adopted as an indicator of potential risk to environmental health during disturbance of soil on site which may result in mobilisation of contaminants of concern in accordance with CLMG No. 2 *Hierarchy and Application in New Zealand of Environmental Guideline Values* (Revised 2011).

6.9 While the *Biosolids Guideline* is not an explicit risk based guideline, it is noted that the threshold of 300 mg/kg set therein accords well with other risk based thresholds such as the 250 mg/kg set under the Auckland Unitary Plan (Operative in Part) or the Soil Guideline Value for the protection of ecological receptors (*Users Guide: Background soil concentrations and soil guideline values for the protection of ecological receptors* (Eco-SGVs) – Consultation Draft, Cavanagh, J.E, 2016) value of 280 mg/kg set for non-food production land, both of which are readily accepted by territorial authorities.

6.10 Based on the findings of the DSI, it was concluded that one discrete area of the Stage 1A Earthworks footprint (shown in the plan attached as **Attachment C**) presents a potential risk to sensitive ecological receptors (soil microbes, invertebrate, plants, wildlife and stock) in soil and should be remediated.

6.11 Given the proposed earthworks, size of the Site, and concertation identified, GSL recommended that a soil mixing programme be used on this area with remediated soil emplaced within the landscape bunds for planting as appropriate.

7. PROPOSED REMEDIATION AND SITE MANAGEMENT PLAN

7.1 Based on the findings of the site investigations described above, GSL developed a Remediation Action and Site Management Plan ("RA-SMP") for the Stage 1A Development Area to meet the requirements of the NES-CS. The primary purpose of the RA-SMP is to provide appropriate controls to ensure that a conservative management approach is implemented during soil disturbance activities such that any risks of potential contaminant mobilisation or accidental discovery are managed to an acceptably low level.

7.2 The findings of the DSI confirmed that the primary controls for mitigating risks would be the use of appropriate erosion, sediment and dust generation controls in accordance with industry best practice. To supplement these controls, accidental discovery protocols were included should unexpected contamination be identified during earthworks.

7.3 To address the elevated concentration of lead in soil, it was recommended that soil from that area should be subject to vertical mixing in order to dilute concentrations, followed by its subsequent removal and emplacement within landscaped planting areas.

7.4 I consider the vertical mixing approach proposed to be an appropriate remedial mechanism given the isolated concentration of lead recorded. This approach is readily achievable given the scale of the piece of land comprising the Stage 1a development.

8. FURTHER INVESTIGATION AND REPORTING REQUIREMENTS

8.1 As set out in Section 5 above, further investigation and reporting will be required across the wider site areas as these are developed.

8.2 Each stage of investigation will be required to assess the residual soil quality in light of the findings of the PSI and undertake an appropriate risk assessment through comparison of the analytical results with the NES-CS Soil Contaminant Standard (whether that be residential, recreational, or commercial / industrial) for the intended end land use alongside environmental discharge risk thresholds.

8.3 Should further investigation identify concentrations of contaminants in excess of the applicable NES-CS Soil Contaminant Standards or Environmental Risk thresholds, remediation and / or management will be required.

8.4 I note that under the current regulatory framework, detailed investigation and / or Remediation Action Plans are required to be submitted to Waikato District Council and Waikato Regional Council for approval prior to any works being undertaken. Consequently, any remediation required can readily be conditioned within the necessary resource consents of any one stage.

8.5 Similarly, at the completion of each stage of development, where contaminated soil has been identified, a site validation report must be submitted to Waikato District and Waikato Regional Council's certifying that the controls of the RAP have been implemented and residual soil quality meets the applicable standards.

8.6 Therefore, upon completion of development works, all areas of impacted soil identified will have been subject to assessment, and where required, remediated or managed, rendering the land compliant with the applicable human health and environmental standards.

9. APPROPRIATENESS OF THE SITE FOR URBAN DEVELOPMENT

9.1 The results of my investigations have not identified any actual or potential contamination issues that raise fundamental concerns in respect of the proposed changes in land use or development.

9.2 To expand, the PSI has identified a number of HAIL activities on the Site that would be considered typical of farming and aged infrastructure. None of these activities pose a potential contamination risk that cannot be readily managed using conventional contamination management practices.

9.3 The identification of those HAIL activities has resulted in recommendations by professional consultants that further detailed site investigation(s) be undertaken to characterise that risk and inform on the most appropriate management practices.

9.4 A staged approach to investigation is considered appropriate given the large area covered by the proposed scheme plan and APL's desire for staged consenting and development.

9.5 These future investigations will determine the extent and nature of any actual contamination present on site. Where contamination is identified, and

in accordance with the requirements of the NES, all soils will be remediated to a level that satisfies the requirement of the applicable soil contaminant standard for the specific urban development scenario identified (be it commercial/industrial, residential or reserve / recreational land).

9.6 The scale of the Site and range of land uses proposed provide onsite management options for any impacted soils identified compared to the default offsite disposal option. Soils that are not suitable for residential land use can be moved within the Site and incorporated in commercial/industrial portions or reserve/recreational land on account of the different risk scenarios and permissible standards set under the NES.

9.7 In addition, I note the site is proximate to a Class A Licensed Landfill at Hampton Downs and other Managed Fill facilities located in South Auckland and North Waikato, providing a range of easily accessible options for offsite disposal of contaminated soil should it be required.

10. RELIANCE ON EXPERT EVIDENCE – GEOTECHNICAL

10.1 In preparing this statement of evidence, I have read and considered the content of the geotechnical evidence prepared by Mr Nick Speight regarding geotechnical considerations for site development.

10.2 Mr Speight identifies two development constraints that would overlap with site contamination constraints as follows:

(a) A requirement for importation of fill; and

(b) Dewatering requirements / groundwater management requirements.

10.3 Importation of fill is a common requirement in site development activities and Mr Speight has noted that quarry sourced materials will likely be used within the proposed development.[1] Where fill is being imported to site, it is required to be certified cleanfill to meet the requirements of the WRP earthworks provisions, from which quarry sourced materials would readily meet that definition. Including a condition to make that requirement explicit would provide appropriate controls should an alternative source of clay fill be required and ensure that it is appropriately tested prior to being imported into the development site.

10.4 Mr Speight has also noted that localised groundwater controls may be required in those areas of the site where the groundwater table is close to

1 Statement of Evidence of Nick Speight, paragraph 8.8.

the surface. Controls noted include sheet piling and dewatering as standard mitigation controls.[2] To date, no indications of contamination have been identified that would impact groundwater quality and require specific mitigation mechanisms when dewatering excavations.

10.5 Should contamination be identified on site that could result in groundwater impacts, a specific assessment would be required as to the extent of the impacts, the mobility of the priority contaminant and the associated risk.

10.6 The requirements discussed in Section 7 above to remediate contamination would still apply and specific considerations to dewatering requirements and associated treatment and / or management would require incorporation into the RAP. I consider that this is a standard process and can be addressed within the regulatory controls already discussed and therefore does not present a significant constraint to the proposed development.

11. S42A REPORT

11.1 I have reviewed the section 42A report and relevant expert peer reviews with respect to my area of expertise. I note that these do not raise any issues with respect to actual or potential contamination, noting in accordance with my evidence that there is no reason to believe the contamination cannot be adequately mitigated.

12. CONCLUSIONS

12.1 Investigations of the Site have not identified any significant contamination constraints that would impact on the proposed development. Rather, those actually and potentially contaminating activities identified are typical of farming activities and aged infrastructure.

12.2 I consider that any further contamination identified within areas of the Site that are yet to be subject to a DSI will be able to be appropriately remediated and managed in an economic manner through a combination of onsite utilisation within appropriate land use scenario footprints or offsite disposal if necessary.

Carl Vernon O'Brien
9 July 2020

2 Statement of evidence of Nick Speight, paragraph 9.5.

ATTACHMENT A

SUMMARY OF SIGNIFICANT PROJECTS

Millennium Group Ltd – Sandy Lane Residential Development: Contaminated Land Advisor for the implementation of a revised Remediation Action Plan to address former landfill activities. Works included on call services for environmental advice, accidental discovery of a significant volume of refuse during earthworks, liaison with WorkSafe NZ and Licensed Asbestos Removalists and undertaking a staged validation approach over the site to minimize disruptions during earthworks. Following completion of works, the project required production of expert evidence and technical witness caucusing for High Court claims of loss by the Client against the previous consultancies;

NZ Storage Holdings Ltd - Otahuhu Power Station Redevelopment (ongoing): Resource consent works to obtain relevant permissions for staged investigation and redevelopment of the former Otahuhu A and Otahuhu B power stations and associated infrastructure (switchyards, transformer bays, DG Stores etc). Detailed investigation of underlying soil quality across the parcel is ongoing.

ERGO Consulting Ltd – Vector Substation Upgrades (ongoing): Preliminary and detailed investigation of existing substations throughout Auckland and Northern Waikato for the purpose of undertaking upgrade works.

Southern Gateway Consortium Limited – Puhinui Road, Prices Road and State Highway 20 Master Plan (ongoing): Engaged by the consortium to undertake staged contamination investigations (PSI and DSI's) across an initial 27.6 ha footprint for the expansion of road network linkages and bridges with supplementary detailed investigation of green fields properties in Wiri. Future provision for assessment of the remaining ~150 ha of masterplan footprint was set out in the site management plan prepared.

The Mill Industrial Park Ltd – The Mill Industrial Park Subdivision and Development (ongoing): Initially commenced engagement to facilitate Environment Court mediation following Auckland Council abatement notices with respect to actual and potential contamination. Following mediation, contaminated land investigations commenced and works expanded into development of remedial action plans and site management plans for the containment of impacted soil within an engineered structure on site. Works also expanded to include detailed site investigation of areas of the Industrial Park to provide recommendations and controls for completing boundary adjustment subdivisions across the site alongside Contaminated Land Advisor role during earthworks;

Kāinga Ora Housing Corporation – Social Housing Stock Re-Development Programme: Preparation of PSI, DSI and feasibility assessments for the redevelopment or significant swathes of KOHC (formerly Housing New Zealand Corporation) properties in Whangarei, Auckland, Rotorua, Gisborne, Napier, Hastings and Taupo. Works have included site management plans and remediation strategies to address a range of HAIL activities encompassed within the KOHC stock as well as technical caucusing to develop an internal KOHC policy on site assessment.

Northland Waste Ltd – Transfer Station Redevelopment: Preliminary and detailed site investigations of current waste transfer stations for redevelopment including preparation of Environmental Management Plans, design of stormwater and trade waste discharge monitoring regimes.

Ridge Road Quarry Ltd – Managed Fill & Quarry Expansion: Preparation of an Assessment of Environmental Effects of Leachate Discharge from the application to expand the Ridge Road Quarry Managed Fill to encompass up to 10 million cubic metres of fill over a life of quarry application. The scope of works included provisions for monitoring discharges from

sediment retention ponds, management mechanisms for deposition of asbestos containing materials and generation of a site specific set of waste acceptance criteria.

Pro Floors Ltd – Clean & Managed Fill AEE's and CLA Advice: Preparation of assessments of environmental effects for numerous managed fill locations across the Auckland Region including site specific risk assessments and development of acceptance criteria. In addition, ongoing contaminated land advice has been provided for accidental discovery of contamination, compliance with resource consent conditions and preparation of site closure reports at completion of filling activities.

Dirtworks Ltd – Preparation of Managed Fill AEE's and CLA advice: Preparation of assessments of environmental (discharge) effects for numerous managed fill locations across the Auckland Region including site specific risk assessments and development of waste acceptance criteria. In addition, ongoing contaminated land advice has been provided for accidental discovery of contamination, compliance with resource consent conditions and preparation of site closure reports at completion of filling activities.

P & I Pascoe Ltd – Clean & Managed Fill AEE's and CLA Advice: Preparation of assessments of environmental effects for numerous managed fill locations across the Auckland Region including site specific risk assessments and development of waste acceptance criteria. In addition, ongoing contaminated land advice has been provided for accidental discovery of contamination, compliance with resource consent conditions and preparation of site closure reports at completion of filling activities.

Hauraki District Council – Contaminated Land Report Peer Review: Peer review of reports pertaining to investigation, remediation and management of contaminated sites within the Hauraki District with respect to the requirements of the *National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*.

ATTACHMENT B

LOCATION AND ESTIMATED EXTENT OF HAIL ITEMS ON THE SITE

ATTACHMENT C

IMPACTED AREA IN STAGE 1A EARTHWORKS FOOTPRINT