Memorandum: Contamination Status of 80, 84, 92, 108, 148 Middle Road and 139 Te Aute Road

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1.0 Introduction

This report is submitted in support of CDL's Referral Application (**Application**) under the Fast-track Approvals Act 2024 (**FTAA**). The project is for the residential development of approximately 300 – 350 lots at 92, 108, 148 Middle Road and 139 Te Aute Road in Havelock North, and is referred to as the 'Middle Road' project.

The purpose of this report is to provide an overview of the contamination status of the property based on investigative work already completed, and in reference to the National Environmental Standard for Assessing Contaminants in Soil to Protect Human Health (**NES-CS**) Regulations (Ministry for the Environment, 2012). The assessment is based on an indicative concept plan, noting that detailed design will be undertaken as part of a future substantive application should the project be accepted for referral to the Fast-track process.

2.0 Description of Application Site

The application site is located at 92, 108, 148 Middle Road and 139 Te Aute Road in Havelock North (**site**). The site is held in five separate titles and consists of a combined area of approximately 30.6ha. The site is relatively flat and currently used for rural residential and grazing purposes with three existing dwellings. Figure 1 shows the site extent within the context of Havelock North.

Figure 1: Location and Extent of Site (Red Outline).

The site is on the southwest side of Havelock North, approximately 900m south of the town centre, which contains a range of retail and commercial uses. The wider land uses to the north, east and west of the site are predominantly suburban residential in character, with a retirement village to the northwest and larger rural landholdings to the southwest.

A separate 3.3ha rural residential landholding at 80 and 84 Middle Road, known as the McKenna Block, is located immediately to the east of the site adjacent to the Herehere Stream (Figure 1). This landholding is in separate ownership and does not form part of the application site at the time of lodgement. However, given the McKenna Block's proximity and relationship to the Middle Road site, the landholding has been considered at a high level within this assessment.

The Planning Overview Report and other technical assessments prepared to support the referral application under the FTAA provides a comprehensive description of the site and its context. With respect to matters relating to actual and potential contamination, the following comments are made about the site:

- The parcels of land are determined to be a 'piece of land' with respect to the NES-CS;
- Site assessments have been undertaken as part of CDL Land New Zealand's acquisition and development plans that identify the scope and scale of actual and potential contamination to appropriate detail to determine remediation is a practicable undertaking;
- The primary issues associated with the site relate to the historic uses of persistent pesticides and discharges from hazardous building materials;
- Arsenic & lead are the primary contaminants of concern. While other heavy metals are elevated, and traces of persistent pesticides have been identified, these are generally lower risk than the identified arsenic and lead impacts; and
- Remediation and management will be required as part of earthworks to ensure any risks to human health under the proposed residential landuse are addressed.

2.1 Description of Proposal

The Middle Road project will provide for the residential subdivision of the site to enable the development of approximately 300 – 350 lots. The intended subdivision layout will provide for a range of lot sizes to enable conventional residential development along with medium density development opportunities. An indicative concept plan has been prepared to inform the referral application and is provided as Figure 2. The development is supported by integrated three-waters and transport infrastructure, together with an interconnected open space network.

A full description of the Middle Road Project is provided in the Planning Overview Report submitted in support of the Referral Application. The proposal and the matters addressed in this report are based on an indicative concept design prepared for referral purposes. Detailed design and refinement of will be undertaken as part of the substantive application process should the project proceed. For assessment completeness, this report has also had regard to a potential extension of the Middle Road development across the adjoining McKenna Block (McKenna Block Extension at Figure 1).

Figure 2: Draft Concept Plan.

The planning report prepared to support the referral application under the FTAA provides a full description of the proposal. With respect to matters relating to actual and potential contamination:

- Residential redevelopment results in change of landuse, subdivision, and development which trigger the requirements of the NES CS;
- CDL Land New Zealand Ltd has undertaken previous investigations of the parcels of land, resulting in a good understanding of soil quality alongside remediation and management requirements;
- Identified impacts are typical of historical orchard, horticultural, and pastoral farming landuses;
- Risks identified within the previous investigation relate to potential risks to human health in isolated areas due to the change in landuse from production land to residential land and the associated exceedances of the Soil Contaminant Standard for Residential Landuse (10% homegrown produce); and
- Identified areas of contamination can be managed through standard practices coupled with appropriate controls, reporting, and testing to ensure that land is safe for its intended end landuses.

3.0 Previous Investigations

CDL Land New Zealand Ltd has previously commissioned five assessments of ground contamination risks across the site as part of previous development programmes and / or pre purchase due diligence. Each of these reports are summarised in Appendix A and full copies can be provided upon request. All investigations have been completed in accordance with the MfE CLMG No.1 & No.5 and the sum of the reports are considered to provide sufficient coverage of the site with respect to detailed site investigations.

With respect to this FTAA Application, AgFirst notes that while these assessments have identified the site meets the definition of *Land Covered* as defined by the NES-CS, identified contamination areas are consistent with typical historic orchard, horticultural, and farming use and can be readily remediated within a development programme. Previous assessments have identified the following primary contamination risks:

- Lead based paint degradation through time creating a curtilage of impacts around buildings constructed pre-1950's;
- Arsenic, cadmium and zinc impacted soil arising within a previous animal race area and long history of sheep farming operations; and
- Minor degradation of asbestos containing materials utilised within residential buildings across the site.

Risks are confined to discrete areas of the site and concentrated in the surficial soil layers of soil. Testing has identified four discrete areas of impact encompassing 12,556 m^2 (3.7%) of the development footprint with an estimated 5,865 m^3 of impacted soil that requires remediation and / or management.

4.0 Risk Assessment

Discrete areas of the site contain concentrations of heavy metals that exceed the NES CS Soil Contaminant Standard (SCS) for Residential Landuse (10% homegrown produce) and therefore in their current state represent a potential risk to human health and the environment. Remediation is required to facilitate the proposed change in landuse, subdivision, and development activity. Discrete areas also exceed the Commercial / Industrial Worker SCS and Recreational Landuse SCS and require additional controls during remediation to ensure that site workers have appropriate protection.

These identified risks can be appropriately managed through conventional remediation methods that ensure there is no 'source' of contamination that can impact future site users within the source – pathway – receptor relationship. This approach will include:

- Removal and offsite disposal of any materials that cannot be readily remediated;
- Excavation and encapsulation of soil from sensitive land use areas into non-sensitive landuse areas (e.g. arsenic concentrations between 20 mg /kg and 70 mg/kg can be incorporated and encapsulated into reserve areas); and
- In-situ mixing of impacted soils in accordance with HBRC *Guideline for Contaminated Land Remediation by Soil Mixing* (2015), Pattle Delamore Partners Ltd.

Similarly, appropriate controls can be implemented for those undertaking remediation to ensure any risks of potential exposure are mitigated to a sufficiently low level.

5.0 NES – CS Regulations

As the site meets the definition of Land Covered, and the Proposed Middle Road Project involves subdivision, soil disturbance, and a change in landuse (primary production to residential), the NES-CS regulations are applicable to the site.

Previous investigations have identified discrete areas of the site where soil contaminant concentrations exceed the Soil Contaminant Standards (SCS) for Residential Landuse (10% home-grown produce). Remediation is therefore required to enable the proposed residential development.

Based on the extent of identified contamination and proposed remediation methodologies (including excavation, soil mixing, and encapsulation), the works are unlikely to comply with Regulation 8(3) of the NES-CS as a permitted activity. Consistent with the conclusions reached in the site investigations referenced in this report, it is anticipated that a Restricted Discretionary Consent will be required under Regulation 10 of the NES-CS to authorise remediation, subdivision, and soil disturbance.

For the purpose of this referral application, the findings of this report demonstrate that the contamination effects are localised, well characterised and can be appropriately managed using conventional remediation techniques. Contamination does not preclude residential

development of the site and NES-CS consenting matters can be addressed at the substantive application stage.

6.0 Remediation & Reporting Requirements

As identified in Section 2 and Appendix A, an existing Remediation Action Plan (**RAP**) was prepared for development of 92 & 108 Middle Road, which also incorporates general earthworks practices for site development. While this plan is sufficiently detailed for 92 & 108 Middle Road, it will require revision to address the full extent of the Middle Road project, refine remediation options, and incorporate earthworks requirements for the development. This can readily be done at the detailed application stage.

As part of standard requirements for remediation and earthworks on *Land Covered*, reporting and record keeping controls are required. Reflecting the assessments already undertaken, and in recognition of the requirements of the NES CS, site validation reporting (**SVR**) must include:

- Volume and nature of any offsite disposal of soil, including a copy of disposal dockets / disposal manifests for all managed fill or landfill quality soil disposed offsite;
- Confirmation via Suitably Qualified and Experienced Person (**SQEP**) inspection that remediation has addressed the areas of contamination identified, and where required within the updated RAP, soil testing to confirm remediation has been successful;
- Details of any complaints received;
- Details of any accidental discoveries of previously unidentified contamination;
- Details of any incidences that occurred during earthworks pertaining to actual or potential contamination;
- Details of any material imported to site, including certification of imported soil should it be required for the development;
- Copies of laboratory transcripts for any verification soil testing undertaken;
- Written confirmation from the Primary Contractor that the controls set out in the RAP were in place and effective for the duration of soil disturbance activities; and
- Site photographs of excavation and remedial works.

7.0 Summary and Conclusions

CDL Land are proposing to develop 30.6 ha on the western edge of Havelock North into residential subdivision, enabling the development of approximately 300 - 350 residential lots. The intended subdivision layout will provide for a range of lot sizes to enable conventional residential development along with medium density development opportunities.

Previous ground contamination assessments have been undertaken across the parcels in association with former development plans and / or pre-purchase due diligence which have identified discrete areas of the site are adversely impacted from historic landuse activities.

These discrete areas of the site are limited and can be remediated and managed using conventional methods.

Due to the presence of these discrete areas of contamination, the site meets the definition of Land Covered under the NES-CS and remediation is required to enable the proposed change in landuse, subdivision and development. Based on the extent of identified contamination and anticipated remedial methods, consent as a Restricted Discretionary Activity under the NES-CS will be required.

Investigations completed to date demonstrate that the identified impacts can be appropriately remediated and managed using conventional and proven methods. Contamination does not present a constraint to residential development of the site.

Within the substantive application stage, the following matters will be addressed to satisfy the NES-CS and relating consenting requirements pertaining to actual and potential contamination:

- Preparation of an updated RAP covering the full extent of the Middle Road Project;
- Inclusion of appropriate site management and health and safety controls to be implemented during remediation and development earthworks, including accidental discovery protocols; and
- Application of an NES-CS Restricted Discretionary Activity consent, incorporating appropriate conditions to reflect the required remediation and validation pathways.

Following completion of remedial and development earthworks, an SVR is required to be prepared by a SQEP certifying that remediation has been completed in accordance with the RAP and NES-CS requirements and residual site areas are highly unlikely to present any risk to human health or the environment.

These matters are standard procedures for development activities on *Land Covered* by the NES-CS and can be readily addressed through the future substantive consenting process.

Prepared By
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s 9(2)(a)
02 April 2026

Qualifications and Experience

I am a Senior Environmental / Horticultural Consultant at AgFirst Consultants HB Ltd. AgFirst Consultants HB Ltd is a specialist multi-disciplinary consultancy supporting the primary sector with world class knowledge and experience across farmers, growers, and agribusiness enterprises. I have been employed at AgFirst Consultants HB Ltd since July 2023.

I hold the qualifications of Post Graduate Diploma in Environmental Management (Distinction)(2012) and a Bachelor of Science (Biology) (2008), both from the University of Auckland. I am also a member of the New Zealand Institute of Primary Industry Management. I have 17 years of professional experience in Environmental Management, including roles such as General Manager / Director of Geosciences Ltd and Environmental Consultant with Mitchell Partnerships Ltd. I meet the definition of a Suitable Qualified and Experienced Practitioner as defined within Section 2.1.1 the *Users' Guide National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (*MfE 2012).

My area of expertise is within Environmental Management and the application and interpretation of the Resource Management Act 1991 (RMA), national environmental standards (NES), national policy statements (NPS), district plans and regional plans to the extent that these relate to soil and water resources. Within my role for AgFirst Consultants HB Ltd I have:

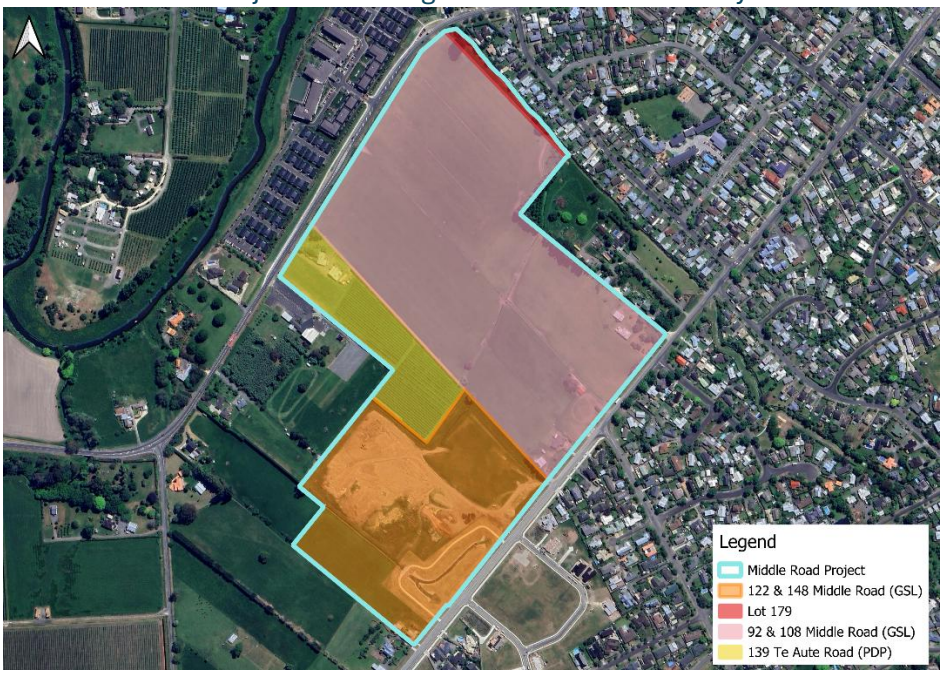
- Undertaken preliminary and detailed site investigations for a range of private developments throughout the region;
- Provided strategic advice on risk and management of tile drain discharges as part of the *What's Coming out of Tile Drains* SFFF Project;
- Undertaken Land Use Change Assessments for private sector clients regarding changing contamination risk levels associated with productive land, irrigation, and intensification;
- Provided strategic advice and risk assessment on water allocation, water requirements, consent renewals, and demand modelling for a range of public and private sector clients with respect to water availability and use across the region; and
- Assisted a range of parties with Cyclone Gabrielle recovery works including soil remediation, productive capacity, land use assessments, and strategic business advice.

I confirm that, in my capacity as Author of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

Appendix A: Summary of Completed Site Investigations

CDL Land New Zealand Ltd has commissioned a range of contamination investigations across the parcels of land comprising the FTAA Application area and adjacent sites as outlined in red below.

Figure A: Parcels of Land Subject to Investigations Commissioned by CDL Land New Zealand.



Investigations have been completed between 2020 and 2026 and provide sufficient characterisation of the site to enable residential development. A summary of each of the assessments is set out in turn below, while full copies of these reports can be provided upon request.

122 & 148 Middle Road

Geosciences Ltd (GSL) undertook a pre purchase due diligence assessment of the Iona Structure Plan area in October 2020, which included the properties at 122 & 148 Middle Road. Desktop assessment identified that the properties had been utilised for mixed cropping activities amongst a long history of pastoral farming. A series of sheds were constructed on 122 Middle Road in 1988 associated with the dwelling, while a shed and dwelling was constructed in 1969 at 148 Middle Road. No other evidence of potential contamination was recorded within the site history.

Two composite soil samples were collected from the productive areas of these sites to assess soil quality. Both Comp 1 from across 148 Middle Road and Comp 2 from across Middle returned concentrations of heavy metals below the expected naturally occurring background ranges, and concentrations of OCPs below the laboratory limit of reporting. AgFirst notes that there is an

error on Figure 3 of this report where the location of Comp-1 is recorded in the key to be above the expected naturally occurring background range.

92 & 108 Middle Road

The properties at 92 & 108 Middle Road have been subject to two distinct assessments, alongside the preparation of a draft remediation action plan.

November 2020

Initial assessment was undertaken in November 2020 as a pre-purchase due diligence which identified portions of the site have been utilised for horticultural & rural activities while buildings and structures present on site are of an age where lead-based paint and asbestos may be present. Stage 1 of intrusive investigation revealed:

- Trace detections of the Organochlorine Pesticide (OCP) DDT were detected in two of the four composite soil samples collected;
- 15 Discrete soil samples collected from within the house and woolshed areas revealed concentrations of lead, copper, cadmium, arsenic, and zinc at levels that present a risk to human health and / or the environment. Concentrations of lead ranged from below background to 2,580 mg/kg while arsenic ranged from below background to 44.5 mg/kg; and
- Traces of OCPs were recorded in three of the seven discrete soil samples assessed.

Subsequent to the above results being recorded and assessed, additional delineation soil sampling was completed and reported, focussed on delineation of lead impacts around the dwelling and lead and arsenic impacts around the woolshed and suspected spray race associated with that woolshed operation. A further five composite soil samples were collected while 37 additional discrete soil samples were collected comprising 30 additional unique locations and seven depth samples from the two worst results recorded. Analytical results revealed:

- Topsoil across the remainder of the horticultural areas is consistent with all five additional soil samples returning concentrations of heavy metals within the expected naturally occurring background ranges for the underlying geology alongside trace levels of DDT;
- Concentrations of arsenic and lead rapidly attenuate from surface with concentrations of arsenic attenuating to be within the expected naturally occurring background range within 750mm of surface and lead within 500mm of surface;
- Arsenic concentrations are concentrated within the race footprint and do not extend widely beyond; and
- Toxic characteristic leaching procedures (TCLP) undertaken on SS7 and SS14 revealed that TCLP results were within the Class A Landfill Acceptance thresholds and there did not require any pre-treatment should offsite disposal be required.

GSL identified that an estimated area of 2100 m^2 around the dwelling at 98 Middle Road was impacted by lead to approximately 300mm below ground level, comprising some 631 m^3 of impacted topsoil. Similarly, an estimated area of 441 m^2 around the woolshed and race at 108

Middle Road was impacted by heavy metals (primarily arsenic and lead) to a depth of 750 mm below ground level, comprising 331 m^3 of impacted soil.

Based on the findings of desktop and intrusive assessment, GSL recommended that the estimated 1072 m^3 of impacted soil be removed offsite and disposed of at Omarunui Landfill due to its concentrations and difficulty in mixing to an acceptable threshold. In addition, localised removal of effluent fields associated with residences would be necessary in conjunction with appropriately detailed hazardous building material surveys on all buildings and structures requiring demolition. While the regulations of the NES CS are applicable to the site, the exact activity status would depend on the staging of remedial works through time. A conservative determination of restricted discretionary status was made.

February 2022 – REP-H0181A/DSI/Feb22, GSL

A revised Detailed Site Investigation was prepared by GSL in February 2022 that built on the previous due diligence assessment completed, and included additional delineation samples collected in January 2022. A further 18 discrete sample locations were established in 2022 to assist in refining the extent of contaminated soil around the race and dwelling.

Concentrations of contaminants recorded within the additional delineation samples were consistent with those previously identified showing lead and arsenic above the NES CS Soil Contaminant standard for Residential Landuse (10% Produce) alongside discrete elevations of zinc, cadmium and copper.

Delineation soil sampling confirmed three discrete areas of the site required remediation as follows:

- 92 Middle Road Villa Curtilage: an impacted area of 2,460 m^2 is impacted by lead to a depth of 300mm and comprising an estimated volume of 738 m^3 of impacted soil;
- 108 Middle Road Woolshed Curtilage: an impacted area of 131 m^2 around the woolshed is impacted by lead to a depth of 300mm, comprising an estimated volume of 39.3 m^3 of impacted soil; and
- 108 Middle Road Spray Race: an impacted area of 425m^2 was identified around the race and holding pens, to a depth of 750mm below ground level and comprising some 318.75 m^3 of impacted soil.

GSL concluded that a restricted discretionary consent would be required to facilitate general earthworks under the NES CS. A remediation action plan is cross referenced to facilitate this which is assessed in turn below.

February 2022 Remediation Action Plan – REP-H0181A/RAP-SMP/Feb22, GSL

A combined Remediation Action Plan and Site Management Plan (RAP-SMP) was prepared for the properties at 92 and 108 Middle Road (18.0971 ha) based on the findings of the pre-purchase due diligence and detailed site investigations completed in 2020 and 2022 respectively. The purpose of the RAP-SMP was to detail remedial procedures for areas of the site that have been identified as containing contaminants above the applicable residential landuse threshold and to document controls to manage risks during site development activities (accidental discovery, soil handling,

non-clean fill soil tracking etc). GSL proposed a combination of remedial strategies for ht esite including:

- Excavation and in-situ mixing;
- Encapsulation and utilisation of soil that exceeds the residential landuse threshold, but not the commercial / industrial thresholds within non sensitive landuse areas (reserves, roadberms etc); and
- Utilisation of topsoil within offsite locations for rehabilitation of sports fields, reserves and other development areas that require topsoil and the assessed quality meets the applicable landuse threshold; and
- Offsite disposal to a licensed waste site as a last resort;

The RAP-SMP sets out appropriate health and safety controls including Personal Protective Equipement (PPE), soil handling, dust, erosion, and stormwater protection controls alongside contingency measures for any accidental discoveries that could occur.

Validation sampling and reporting controls are also included.

139 Te Aute Road

Pattle Delamore Partners Ltd (PDP) undertook a Ground Contamination Risk Assessment in August 2024 across 139 Te Aute Road (Ref *HB010870001L001_Final*). The assessment is in general accordance with CLMG No.1 and No.5 and included a desktop assessment, site walkover, and intrusive soil sampling.

Assessment identified that the site already had a residence established in 1950 with the remainder of the site under pasture cover from which it was developed into orchard between 1964 and 1980. At the time of their assessment, the site remainder under orchard cover.

As the bulk storage and use of persistent pesticides within orchards is included on the Mfe HAIL under item A.10, PDP collected 8 composite soil samples from within the orchard footprint and 9 discrete soil samples within the site. Analytical results identified:

- Three composite soil samples and four discrete soil samples returned concentrations of arsenic above the NES SCS for Residential Landuse (10% Produce);
- One soil sample returned a positive detection of asbestos debris; and
- All but two soil samples returned concentration of priority contaminants exceeding the expected naturally occurring background ranges for the underlying geology.

The primary contaminant of concern identified by PDP and requiring remediation is arsenic, with concentrations ranging from 27 to 50 mg/kg, exceeding the residential landuse threshold of 20 mg/kg. It is noted that no concentrations exceed the commercial / industrial or recreational landuse standards of 70 mg/kg and 80 mg/kg respectively. PDP estimated the impacted area to encompass 9,540 m^2 and represent between 3,816 and 4,770 m^3 of topsoil.

While asbestos was detected adjacent to the buildings, the ACM debris recorded was below the laboratory limit of reporting and was therefore assessed as compliant with the Asbestos in Soil Guidelines (ALGA 2017) for residential use.

Lot 179 Te Aute Road

AgFirst undertook a pre-purchase due diligence assessment of Lot 179 in January 2026 in general accordance with Mfe CLMG No.1 and No.5 to assess the site history and determine whether any actual or potential contamination risks exists within the piece of land. The report identified that the land has been vacant for its discernible history, with no distinct features, buildings or structures identifiable.

To verify soil quality, one composite and one discrete soil sample were collected, from which both soil samples returned concentrations of priority contaminants within the expected naturally occurring background range. As a result this parcel is not considered contaminated and the provisions of the NES CS are not applicable to this parcel.