City Rail Link Notices of Requirement – Contaminated Land Report

Auckland Transport

Prepared for Auckland Council

May 2013

This document has been prepared for the benefit of Auckland Council. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval to fulfil a legal requirement.

EXPERIENCE AND QUALIFICATIONS

I, Paul Frederick Heveldt, have prepared this report. I hold the degrees of Bachelor of Science (Hons) (1971) and a Ph D in Chemistry (1975) from the University of Canterbury. I have been a post-doctoral fellow in Chemistry (1976-1977) at Cambridge University (UK). I have 34 years experience in the fields of environmental science and the assessment of environmental effects, with an emphasis on air quality assessments, odour assessment and mitigation, contaminated land and general environmental management. I hold the position of National Hazardous Substances and Air Quality Specialist in the consultancy firm MWH NZ Ltd.

QUALITY STATEMENT

PROJECT MANAGER	PROJECT TECHNICAL LEAD
Annie Feng	Paula Hunter

PREPARED BY	…Paul Heveldt…….....	……/……/……
CHECKED BY	…….....	……/……/……
REVIEWED BY	…Garrett Hall…….....	……/……/……
APPROVED FOR ISSUE BY	…Paula Hunter…….....	……/……/……

AUCKLAND LEVEL 3
Level 3 Building C Millennium Centre, 600 Great South Road, Greenlane, Auckland 1051
PO Box 12-941, Penrose, Auckland 1642
TEL +64 9 580 4500, FAX +64 9 580 7600

REVISION SCHEDULE

Rev No	Date	Description	Signature or Typed Name (documentation on file).			
			Prepared by	Checked by	Reviewed by	Approved by
1	10/06/13	Final	Paul Heveldt		Garrett Hall	Paula Hunter

Auckland Council

City Rail Link Notices of Requirement – Contaminated Land Report

Auckland Transport

CONTENTS

1 Introduction

1.1 Purpose of report

The purpose of this report is to assess the effects of contaminated land on the City Rail Link Project, consider the issues raised by the submitters in respect of contaminated land and determine the adequacy of the measures proposed by Auckland Transport (AT) to avoid, remedy or mitigate these effects.

2 Documents considered

The following documents (and their appendices) have been considered in preparing this report.

- Environmental Management Framework, Auckland Transport, July 2012
- City Rail Link Notices of Requirement: Draft Notice of Requirement: Conditions, Auckland Transport, April 2013
- City Rail Link Notices of Requirement: Assessment of Effects on the Environment, Auckland Transport, August 2012
- City Rail Link Notice of Requirement; Assessment of Effects on the Environment, Appendix 6 Contaminated Land Assessment, Auckland Transport, July 2012
- City Rail Link Notices of Requirement: Draft Notice of Requirement Conditions, Auckland Transport, April 2013
- City Rail Link Adjacent Owners Briefing, Auckland Transport, September 2012

3 Overview of contaminated land matters

3.1 Key issues relating to contaminated land

There are several potential adverse effects associated with contaminated land that might be encountered during the construction phase of the CRL development. These include erosion, sediment run-off from stockpiled soil, odour emissions from uncovered contaminated material and, particularly, dust emissions. The latter issue is an important matter where air quality is concerned but if dust is discharged from contaminated soil the potential adverse effects are compounded.

Peripheral issues include the removal and safe (and environmentally compliant) disposal of contaminated material, the management of soil stockpiles while contamination evaluation and soil disposal fate are each awaiting decisions, and the procedures for dealing with unexpected contamination, such as uncovered drums.

3.2 Summary of key issues raised in submissions

A total of three of the 257 submissions received on the NoR for the CRL identify concerns with the disturbance of contaminated land.

In particular, two submissions note that adverse effects might arise from such disturbance, with odour release being specifically cited as one possible adverse effect. The area on the corner of Pitt Street and Vincent Street, which was at one time occupied by a service station, is identified in one submission as a possible location of concern with regard to historic hydrocarbon contamination.

Similarly the disturbance of “gas works waste” in the Nikau Street area adjacent to the proposed Newton Station location is considered to have the potential to “cause odour or hazardous discharges … adversely affecting human health”.

4 Assessments of effects of contaminated land

4.1 Construction effects

4.1.1 Description of contaminated land effects

If contaminated land is encountered during the construction phase of the CRL there will be potential adverse effects on construction workers' health and safety. These are not further considered in this review but it is noted that the proposed conditions both identify and provide for suitable health and safety planning and practices to minimise worker exposure to contaminated material.

Other issues of relevance include sediment run-off from stockpiled soil, odour emissions from uncovered contaminated material and dust emissions. Dust emanating from contaminated soil has the potential to give rise to significant adverse effects.

The disposal of contaminated material, the management of soil stockpiles and procedures for dealing with unexpected contamination are all issues that are likely to be relevant or to occur during CRL construction activities.

4.1.2 Auckland Transport assessment and proposed mitigation

The Contaminated Land Assessment (CLA) carried out by Auckland Transport begins with a generic summary of the CRL project and identifies matters of particular relevance to a contamination assessment. The existing environment is described and focusses on topics such as geology, hydrogeology, topography and drainage that have particular relevance to the contaminated land assessment.

The legislative framework is outlined, in particular the applicable standards and statutory requirements that apply to the assessment of contaminants in soil. The critical matters discussed are the National Environmental Standards for Contaminants in Soil (NES), the Auckland Regional Land, Air and Water Plan, and the Auckland District Plan. Each of these instruments has relevance to the contamination assessment undertaken.

The CLA correctly focuses on those areas of the proposed CRL route where disturbance of the ground will take place. This includes those parts where a cut and cover methodology is proposed and also the sites selected for the stations where a box-type top down construction method will be used. Those parts of the route that will be developed by tunnel boring machines (TBMs) are not considered, apart from the launch and retrieval shafts for the TBMs.

The geological and hydrogeological conditions expected along the route are described, although this can only realistically be a broad discussion (albeit one that is informed appropriately by data from previous site-specific studies, which are listed).

Topography and drainage issues are briefly noted; these have only limited relevance to the CLA exercise, although stormwater channels could be impacted by construction-sourced sediments.

The investigations of past and present land uses along the CRL route are briefly summarised and this sets the scene for a more specific and detailed discussion later in the CLA report where the results of site investigation sampling and analysis are compared to known and inferred land uses to establish the significance of contamination expected to be encountered during construction activities.

The limitations of the aerial photographs are quite correctly noted. They are an adjunct to data review and not an end in themselves; in fact they do not provide much value to this CLA, and this is acknowledged in the report.

The summary of findings in Table 5 of the CLA report presents the consolidated data from all of the sources that have been utilised and the assessment of environmental effects presented in Table 7 of section 7 of the CLA summarises the findings of the various investigations that have contributed to the CLA report. The inclusion of a column in the table which outlines the available options in each case for "avoiding, remedying or mitigating" environmental effects is useful and informs the resource consenting exercise and the development of consent conditions.

The conclusions of the CLA report are brief and to the point; the three critical potential adverse environmental effects identified are:

- Exposure of workers and members of the public to contamination due to dermal, ingestion and inhalation pathways;
- Mobilisation of contaminants through the creation of preferential pathways; and
- Contaminated sediment runoff into stormwater

These are the key matters that require close and detailed attention in conditions and during CRL construction to ensure that adverse environmental impacts are mitigated to the greatest practicable extent.

4.1.3 Submitter issues

As noted earlier, there are only three submissions which mention contaminated land. Matters raised include the possibility of odour releases from disturbed contaminated soil and possible health risks if heavily contaminated waste such as gasworks waste was to be uncovered during excavations associated with CRL construction.

4.1.4 Mitigation measures

The mitigation measures proposed by Auckland Transport and encapsulated within the draft proposed conditions are thorough and deal, inter alia, with the potential adverse environmental impacts identified in submissions (see section 5 below).

4.2 Operational effects

The effects associated with the operation of the City Rail Loop do not include significant impacts resulting from the possible contamination of land. Once commissioned the electric train system of the CRL will operate without any usage of hydrocarbon fuels (except for the very infrequent proposed use of diesel-powered vehicles associated with maintenance purposes).

Also, for the most part the CRL system will operate well below ground level and any minor discharges of oils and greases (for example) from the trains and carriage stock bearings will comprise minor drips onto the tracks at up to 15m below ground. There are no ecological or human health impacts associated with such discharges.

5 Conclusion and conditions

The Environmental Management Framework prepared by Auckland Transport to support and inform the CRL project includes, inter alia, an indicative Contamination Remediation Plan outline. This addresses all of the key parameters that will be needed in the management of contamination during CRL construction activities.

The draft conditions for the CRL NoRs that Auckland Transport has subsequently prepared give effect to the coverage of the outline Contamination Remediation Plan and provide a comprehensive raft of detailed conditions by which the adverse effects relating to contaminated land can be managed.

It is noteworthy that the draft conditions also include some consideration of the requirements of a post-construction validation report that will document the management of contaminated soil and provide evidence of appropriately managed disposal.

The draft conditions are endorsed as sufficient in coverage and appropriate in detail to ensure the effective management of contaminated soil during CRL construction activities such that adverse environmental effects will be satisfactorily mitigated.