Northern Link

TECHNICAL REPORT NO. 3

CONTAMINATED LAND

■ May 2008

Contents

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Acronyms and Abbreviations

AMA	Area Management Advice
ANZECC	Australian and New Zealand Environment and Conservation Council
AST	Aboveground Storage Tanks
BCC	Brisbane City Council
CLR	Contaminated Land Register
CW	Connell Wagner
Defence	Department of Defence
DNRW	Department of Natural Resources and Water
DoE	Department of Environment
DSI	Detailed Site Investigation
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMR	Environmental Management Register
EMS	Environmental Management System
EPA	Environmental Protection Agency
EP Act	Environmental Protection Act 1994
F&C	Flammable and Combustible Liquids
ICB	Inner City Bypass
IMP	Incident Management Plan
JV	Joint Venture
km	kilometre
L	Litre
mbgs	metres below ground surface
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NHMRC	National Health and Medical Research Council
PSI	Preliminary Site Investigation
QR	Queensland Rail

RP	Remediation Plan
SI	Site Investigation
SKM	Sinclair Knight Merz
SMP	Site Management Plan
TBM	Tunnel Boring Machine
the Project	Northern Link Project
TOR	Terms of Reference
TPR	Third Party Reviewer
UXO	Unexploded Ordnance

1. Introduction

Northern Link ("the Project") is a significant element in an overall strategy to alleviate congestion on Brisbane's road network. The Project will link the Western Freeway at Toowong with the Inner City Bypass (ICB) at Kelvin Grove. Northern Link would be constructed mostly in parallel tunnels.

Following the declaration by the Coordinator-General that the Project is a "project of State significance for which and EIS is required", Brisbane City Council (BCC) has commissioned the Joint Venture (JV) between Sinclair Knight Merz (SKM) and Connell Wagner (CW) to prepare an Environmental Impact Statement (EIS) for the Project. Two components of the EIS are presented in this report, firstly, information from the SKMs (2008) contaminated land existing environment assessment and, secondly, the assessment of potential contaminated land Impacts and Mitigations Measures of the Project.

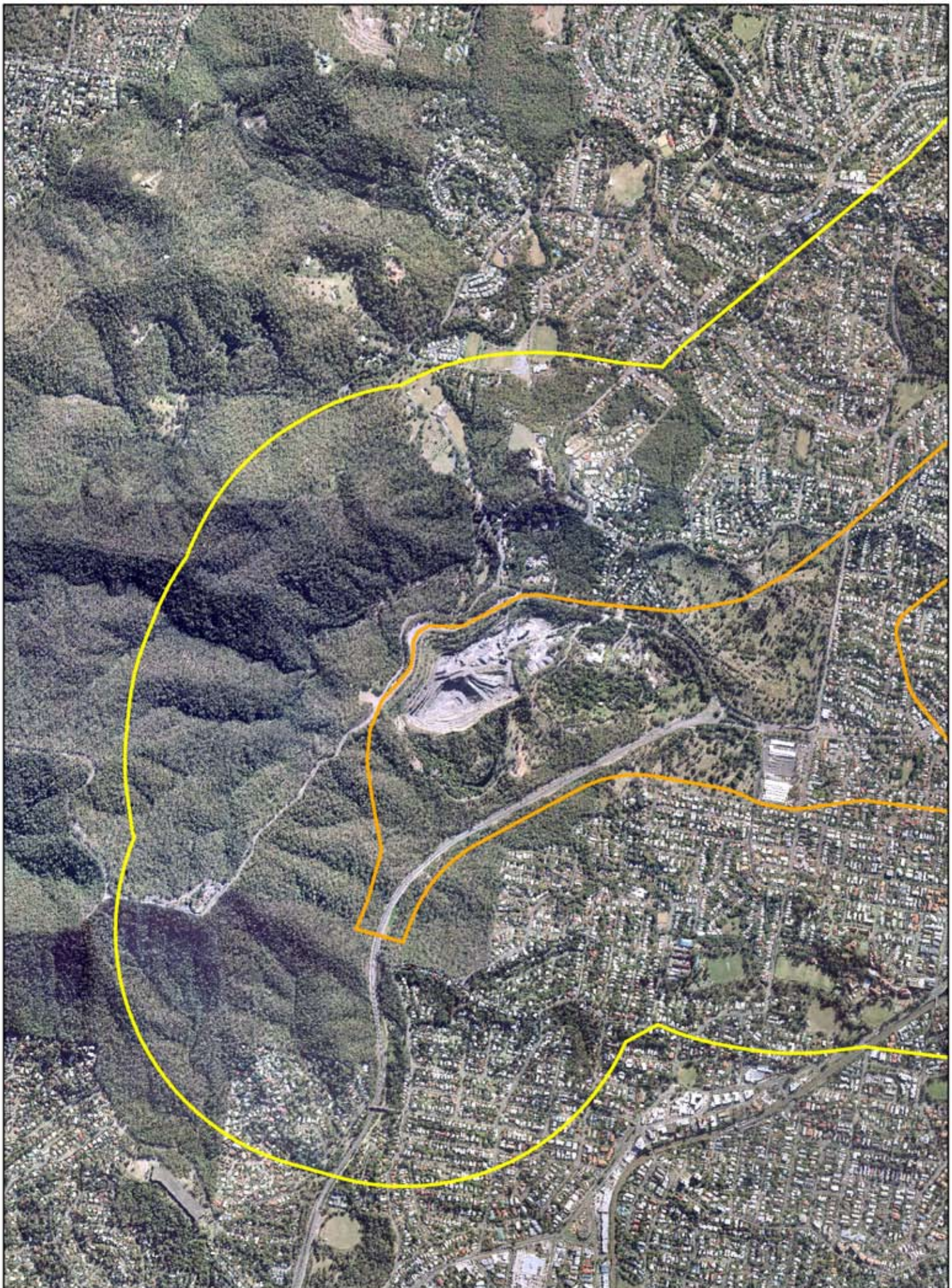
For the purpose of this assessment, the "Project Study Area" comprises the "Study Corridor Boundary[1]" and a surrounding 1km buffer to account for potential groundwater drawdown[2] ("the Drawdown Area"). The Study Corridor Boundary and the Drawdown Area are shown in **Figure 1-1A**, **Figure 1-1B** and **Figure 1-1C**.

Contaminated soil and/or groundwater can adversely affect human health and the environment. Because the Project crosses, or passes by, a range of land parcels which are or may have been contaminated by past or present land uses, this assessment aims to:

- provide a description of land parcels within the Project Study Area that are listed on the BCC Environmental Management Register (EMR) and/or the Contaminated Land Register (CLR);
- identify land parcels which are not included on the EMR/CLR which based on past or present land uses have had the potential to cause soil and/or groundwater contamination;
- Identify potential impacts that require management in the construction and operation stages of the Project;
- Where insufficient information is currently available, make recommendations for future investigations, where required; and
- Where potential impacts are identified, make recommendations to mitigate such impacts.

[1] as identified in the Northern Link Road Tunnel project, Terms of Reference for an Environmental Impact Statement. Under part 4 of the *Queensland State Development and Public Works Organisation Act 1971*. The Coordinator General, April 2008.

[2] Groundwater drawdown has the potential to mobilise contaminated groundwater from a site of origin to a neighbouring site(s).



LEGEND

- Study Area Corridor
- Groundwater Drawdown Area

0 400 800

metres

Scale 1:20,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 1 - 1A

Study Area

Northern Link

SKM Connell Wagner
JOINT VENTURE

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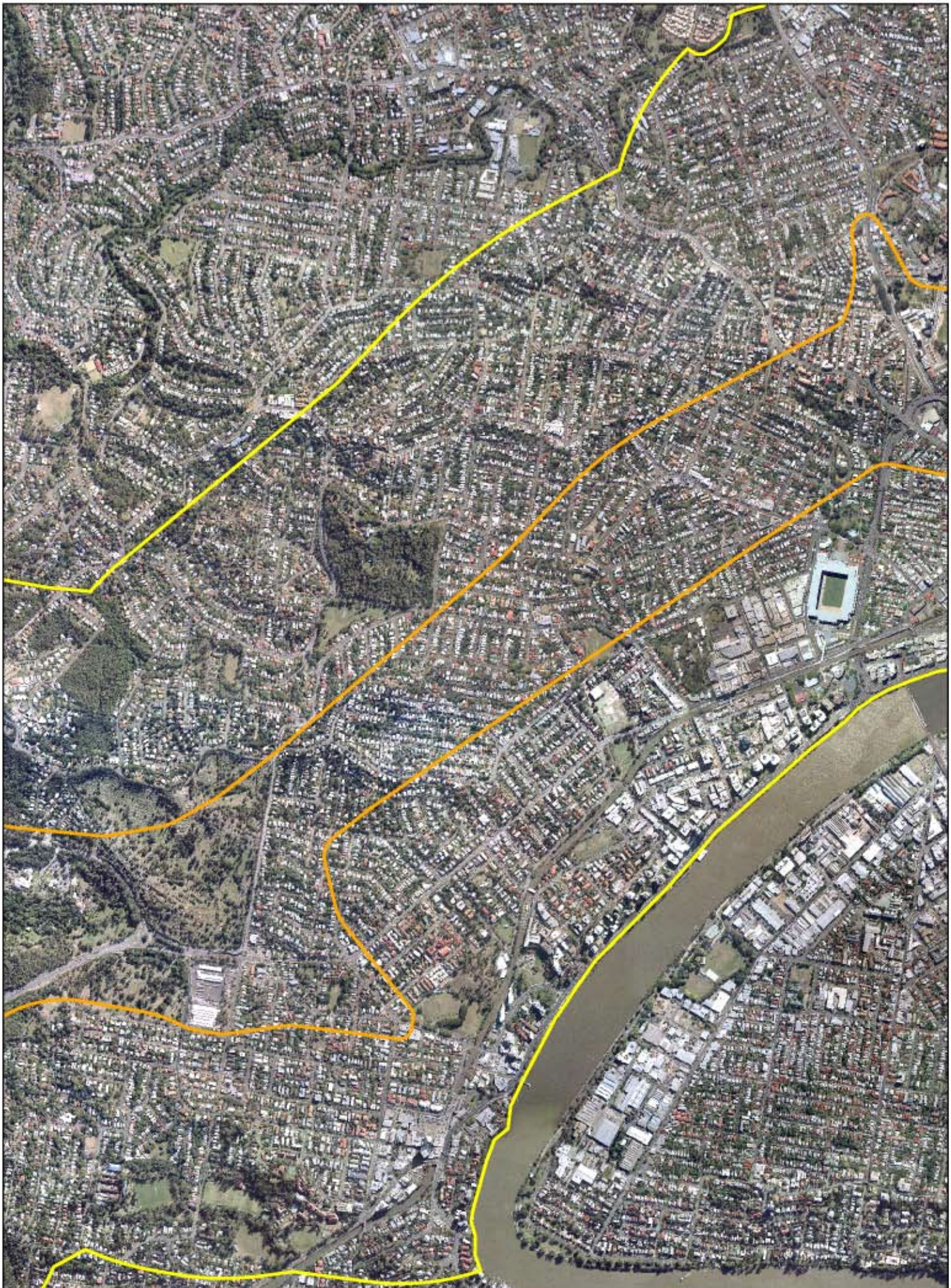

LEGEND

- Study Area Corridor
- Groundwater Drawdown Area

0 400 800

metres

Scale 1:20,000 (A4)

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NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 1 - 1B

Study Area

Northern Link

SKM Connell Wagner JOINT VENTURE

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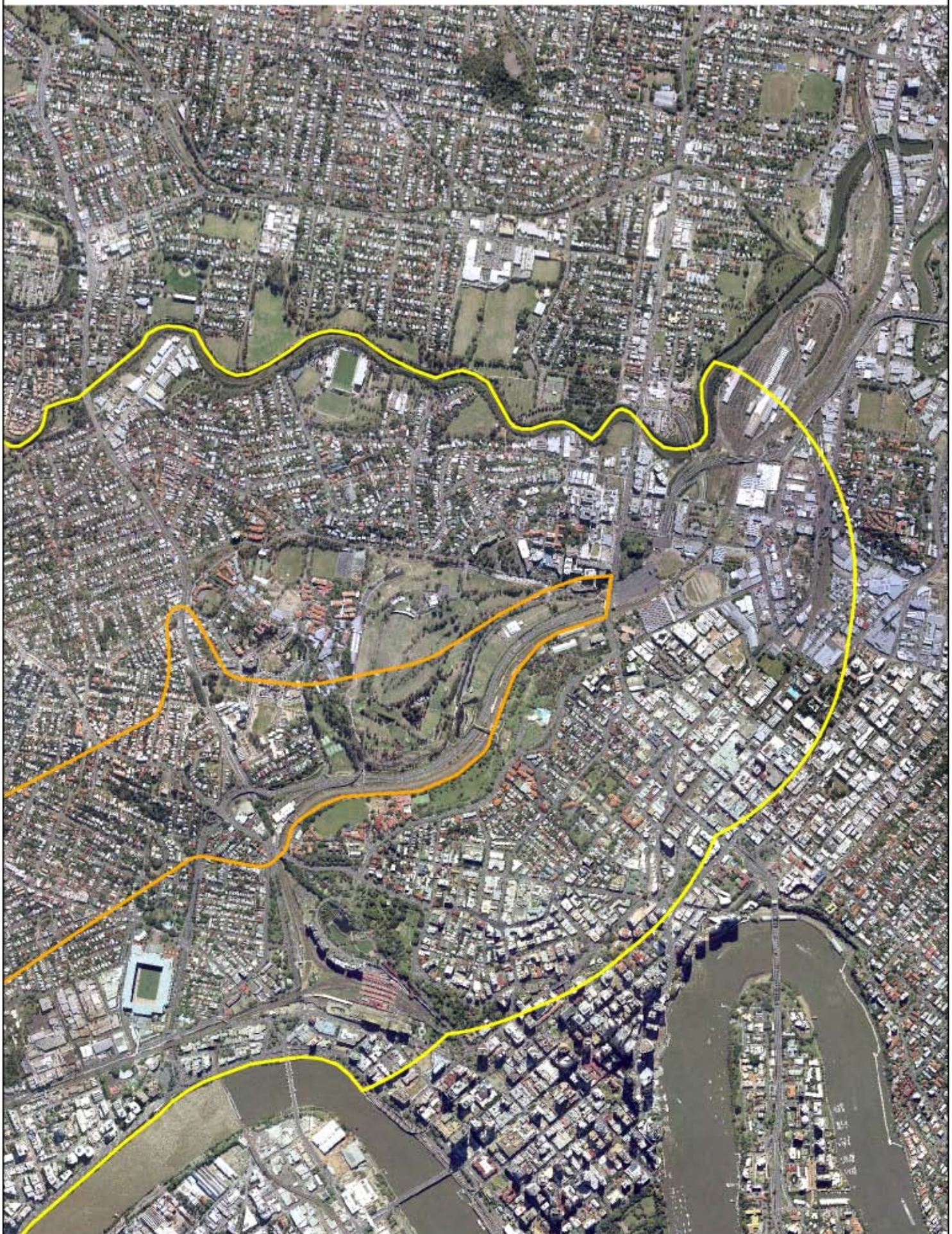

LEGEND

- Study Area Corridor
- Groundwater Drawdown Area

0 400 800

metres

Scale 1:20,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 1 - 1C

Study Area

Northern Link

SKM Connell Wagner
JOINT VENTURE

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2. Scope of Assessment

The assessment undertaken was based on the introductory steps of a preliminary site investigation (PSI), as per the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland* (Department of Environment (DoE), 1998). These steps are intended to broadly identify whether there is a potential risk of a historical or existing land use to have occurred with the potential to cause contamination.

The scope of this assessment included the following:

- Desk-top review comprising:
  - review of BCC EMR/CLR data;
  - review of historical aerial photographs;
  - review of the potential for Unexploded Ordnance (UXO);
  - review of contaminated land information obtained from Queensland Rail (QR);
  - review of BCC operated landfills;
  - review of the site investigation report provided by City Design (2002) on a fuel line leakage at the Toowong Bus Depot;
- drive-by survey within the Project Study Area; and
- provide an assessment of potential contaminated land impacts and mitigation measures.

While the scope of this assessment is considered appropriate for broadly identifying sites within the Project Study Area with the potential for contamination, there were a number of limitations to the assessment, which may have lead to potentially contaminated sites not having been identified, namely:

- the scope did not include all steps that would normally be undertaken as part of a site history review in a PSI, including historical title searches, interviews and site inspections. Where required, a site history review as part of a full PSI should be undertaken on identified land parcels prior to the commencement of construction activities, as required;
- there may be land parcels with either existing or historical uses which have the potential to cause contamination which are unknown or unobserved and consequently not identified;
- the assessment was limited in time to post 1946 historical aerial photography; and
- the assessment did not include sampling or intrusive investigation which would be required to confirm contamination in soil and/or groundwater.

This assessment focused on identifying potentially contaminated land parcels within the Project Study Area. It was not the intended purpose of this assessment to identify or evaluate the impacts of contaminated land parcels on human health or the wider environment. Such assessments are the responsibility of the land owner and/or the person(s) having caused the contamination and are outside the scope of this EIS. However, additional detailed assessments will be required on identified land parcel (**Section 4.3**) prior to the commencement of construction of the Project.

After identifying potentially contaminated land parcels within the Project Study Area, as part of the existing environment study, Project impacts and mitigation measures are presented and discussed in **Section 4.** For infrastructure projects where contaminated material is likely to remain onsite, the current practice to prevent contact with the general public and the environment is to provide adequate protection or contaminant capping (i.e. to remove the exposure pathway). Pavements, building foundations and garden areas typically achieve this objective.

3. Existing Environment

3.1 Regulatory Setting

Legislative requirements covering contaminated land in Queensland are primarily contained in the *Environmental Protection Act 1994* (EP Act) and subordinate policies and regulations. The methodology used in this assessment is based largely on the following Australian guideline publications:

- The National Environment Protection (Assessment of Site Contamination) Measure (NEPM) (National Environment Protection Council [NEPC], 1999) and;
- QLD Department of Environment and Heritage (now Environmental Protection Agency) *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland*, May 1998 (Department of Environment [DoE], 1998, referred to as "the Draft Guidelines").

These documents provide a framework for assessing and managing contaminated soil and/or groundwater based on an evaluation of three components in the risk chain, identified below. Each of these links must be present in the risk chain for a risk to exist:

a) *Contamination (source)*: Soil and/or groundwater contamination must be present. Contamination is the release of a hazardous contaminant into the environment that is likely to cause serious or material environmental harm because of its physical, chemical, infectious characteristics or concentration.

b) *Receptors*: Humans and/or a receiving environment must be present and be potentially impacted by the identified contaminants.

c) *Pathways*: The contamination must be able to contact receptors by means such as:
   - Humans – ingestion, skin contact, inhalation; and
   - Environment – seepage into waterways, wind-blown deposition on plants, root uptake, ingestion, skin contact and inhalation by various life forms.

Appendix 9 of the Draft Guidelines provides investigation thresholds for contaminated soils in Queensland. The threshold levels are based on the risk of human exposure to potential contaminants in soil in association with particular types of land use (e.g. residential, open space recreation and industrial). The threshold levels do not necessarily take into account environmental concerns such as the protection of a species or ecosystem.

3.1.1 The Assessment and Management of Contaminated Land

The QLD EPA *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland* provide information on how contaminated site investigations are to be progressively assessed and managed through a staged approach. These stages include:

- Stage 1 — Preliminary Site Investigation (PSI);
- Stage 2 — Detailed Site Investigation (DSI);

- Stage 3 — Health and environmental assessment and determination of remediation plan; and
- Stage 4 — Implementation of agreed remediation plan and validation sampling.

A brief summary of each stage is provided below:

Stage 1 - Preliminary Site Investigation

A PSI includes the following components:

- development of a site history;
- EPA register searches;
- an inspection of the site;
- a basic sampling program to determine if contamination is present; and
- report preparation.

The most important part of a PSI is the preparation of a comprehensive site specific history to identify all past and present potentially contaminating activities. Sometimes Stage 1 and 2 investigations are combined.

Stage 2 - Detailed Site Investigation

A DSI is required when the results of PSI indicate potential or actual contamination. The DSI should delineate the lateral and vertical extent of contamination, and provide information about:

- maximum and average concentrations of the various contaminants,
- volumes of soil requiring remediation,
- leachability and mobility of contaminants,
- potential for groundwater contamination, and
- possibility of off-site migration through soil, surface water or groundwater.

The decision on how to proceed in the second stage of investigation requires professional judgement of the site-specific issues and is dependent on the findings of the PSI.

Stage 3 - Health and Environmental Assessment and Determination of Remediation/Management Plan

The results obtained from the DSI are used to determine the potential human exposure and environmental impact of the contaminants on the current and proposed land uses.

When results of a contaminated site investigation indicate that remediation is required, a remediation plan is prepared. The draft remediation plan may include a request for a disposal permit in accordance with the requirements of the EP Act, if necessary, to remove contaminants from the site. Under Section 424 of the *EP Act* a person must not, without a disposal permit, remove and treat or dispose of contaminated soil from properties recorded in the EMR. Disposal permits identify the amount of soil to be removed, how it is to be transported and how it must be disposed of in a

licensed/approved disposal facility. Advice will need to be sought from the EPA regarding disposal permit requirements for;

- material excavated from land parcels listed on the EMR;
- land parcels containing unanticipated/unexpected contamination;
- land parcels inadvertently contaminated during construction activities; and
- whether disposal permits would be required for material excavated from all land parcels listed on the EMR (i.e. spoil from tunnelling) to confirm if;
  - the material being removed is weathered rock[3] or soil, it is likely that investigation will be required to determine if the material is contaminated. In the event it is, then a Section 424 Disposal Permit will be required to be obtained prior to the removal of the material;
  - the material being removed is bedrock[3] it is likely that no permit will be required from the EPA, regardless of the depth of the bedrock; and
  - a longitudinal section of the proposed tunnel alignment accompanied by a geology map of the tunnel route will be required to support any findings in this regard.

In some cases, contamination associated risks can be safely managed on-site. Specific procedures for this management would be detailed in a Site Management Plan (SMP), including construction, maintenance, and long term monitoring. Approval for an SMP must be sought through the EPA.

Investigation, assessment and management of contaminated sites may need to be undertaken in cooperation with the EPA Contaminated Land Unit. Investigations should be carried out by a suitably-qualified investigator in accordance with requirements of the EP Act (1994) and site investigation reports should be submitted with a statutory declaration by the investigator as required by the EPA, where a statutory decision to change the status of the site in relation to its listing on the EMR is required. Work may also be subject to review and approval by an EPA-approved Third Party Reviewer (TPR). Based on report findings and possible TPR advice, the EPA will determine whether the health and environmental risks associated with the EMR listed land parcel has been appropriately addressed and managed.

Required remediation and/or site management of each EMR listed land parcel will need to be completed and approved by the EPA prior to commencement of the new land use. Any required long-term monitoring will need to be provided for in Project operation plans.

3.2 EMR/CLR Register

BCC EMR/CLR data were reviewed as part of this assessment. The EPA administers contaminated land in QLD in part through its EMR/CLR databases. The BCC EMR/CLR database is a duplication of the EPA EMR/CLR data for the BCC area.

[3] The mantle of earth and rock, including *weathered rock* and sediment, altered or formed by land surface processes is referred to regolith. The underlying zone of rocks formed or altered by deep-seated crustal processes is referred to *bedrock*.

The EMR is a land-use planning and management register. Land that has been or is being used for a Notifiable Activity, and of which the EPA has been advised, is recorded on the EMR. The EMR provides information on past and present land uses, including whether the land has been or is being used for a Notifiable Activity, or has been contaminated by a hazardous contaminant. Notifiable Activities are those that cause or are likely to cause contamination. The following is a list of the thirty-eight (38) Notifiable Activities listed under Schedule 3 of the EP Act:

- Abrasive blasting
- Aerial spraying
- Asbestos manufacture or disposal
- Asphalt or bitumen manufacture
- Battery manufacture or recycling
- Chemical manufacture or formulation
- Chemical storage
- Coal fired power station
- Coal gas works
- Defence establishments or training areas
- Drum reconditioning or recycling
- Dry cleaning
- Electrical transformers
- Engine reconditioning works
- Explosives production or storage
- Fertiliser manufacture
- Foundry operations
- Gun, pistol or rifle range
- Herbicide or pesticide manufacture
- Landfill
- Lime burner
- Livestock dip or spray race operations
- Metal treatment or coating
- Mine wastes
- Mineral processing
- Paint manufacture or formulation
- Pest control
- Petroleum or petrochemical industries
- Petroleum product or oil storage
- Pharmaceutical manufacture
- Printing
- Railway yards
- Scrap yards
- Service stations
- Smelting or refining
- Tannery, fellmongery or hide curing
- Waste storage, treatment or disposal
- Wood treatment and preservation

A Notifiable Activity is an activity that can lead to or is likely to cause contamination. However, a land parcel identified with a Notifiable Activity does not necessarily indicate that the land parcel is or will be contaminated. If site specific procedures and practices are appropriately developed, correctly managed and implemented, the risks of a Notifiable Activity causing contamination can be considerably reduced. It is also important to understand that the Notifiable Activity is assigned to the entire land parcel, for example, the Notifiable Activity “chemical storage” may be assigned to a large land parcel however the actual storage location of the chemical may only occupy a small portion of the entire land parcel.

Certain Notifiable Activities present a greater risk of generating contaminants which are likely to be mobile in groundwater and susceptible to groundwater drawdown. **Table 3-1** lists fifteen (15) different Notifiable Activities which were identified within the Project Study Area. Each Notifiable

Activity has been classified as being potentially high or low risk based on the actual Notifiable Activity and the potential for contaminated groundwater drawdown becoming mobile due to groundwater drawdown from construction and operation of the Project. It is important to note that the actual risks associated with a land parcels Notifiable Activity will need to be examined further by undertaking site specific investigations prior to construction of the Project.

- **Table 3-1 Potential High and Low Risk Notifiable Activities within the Project Study Area with Respect to Groundwater Drawdown**

'High Risk' Notifiable Activities	'Low Risk' Notifiable Activities
Hazardous Contaminant	Chemical Storage
Landfill	Dry Cleaning
Petroleum Product or Oil Storage	Foundry Operations
Railway Yards	Mineral Processing
Service Station	Pest control
	Printing
	Scrap Yards
	Tannery, Fellmongery or Hide Curing
	Waste Storage, Treatment or Disposal
	Other (BCC Sites of Interest)

A managed property is a land parcel which is subject to a SMP approved by the EPA. The SMP is a public document attached to the EPA's EMR/CLR listing for that land parcel. The objective of a SMP is to manage the contamination on the land parcel in a manner which protects human health and the environment and ensures that the land parcel is suitable for the specified use.

The CLR is a register of land parcels which have been demonstrated (through investigation) to be contaminated land which is causing or may cause serious environmental harm[4]. Land is recorded on the CLR when investigation shows it is contaminated and action needs to be taken to remediate or manage the land.

The absence of a land parcel from the EMR/CLR does not necessarily mean that a land parcel has not been used for a Notifiable Activity or another activity, which may result in contamination. Conversely a land parcel listed on the EMR does not necessarily indicate that the land parcel is or will be contaminated.

The EMR/CLR does not provide a definitive list of contaminated or potentially contaminated land parcels. The EMR/CLR is a register of land parcels that are known to the EPA as being contaminated

[4] Environmental harm is defined in section 17 of the EP Act as environmental harm (other than environmental nuisance):

(a) that causes actual or potential harm to environmental values that is irreversible, of a high impact or widespread; or

(b) that causes actual or potential harm to environmental values of an area of high conservation value or special significance; or

(c) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the threshold amount; or

(d) that results in costs of more than the threshold amount being incurred in taking appropriate action to (i) prevent or minimise the harm; and (ii) rehabilitate or restore the environment to its condition before the harm.

or have the potential for contamination as the result of an existing or past Notifiable Activity being undertaken on the land parcel.

3.3 BCC EMR Results

BCC EMR data were reviewed to determine the number of land parcels identified as having a Notifiable Activity located within the Project Study Area.

A total of 378 land parcels listed on the EMR were identified within the Project Study Area, and of these:

- Twenty-eight (28) land parcels were identified within or on the boundary of the Study Corridor Boundary (**Table 3-2**), twenty-two (22) were identified as high risk and six (6) were identified as low risk; and
- Three hundred and fifty (350) land parcels were identified within or on the boundary of the Drawdown Area (**Table 3-3**), two hundred and ninety one (268) were identified as high risk and eighty-seven (82) were identified as low risk**.**

Land parcel description information including lot and plan number, street address, EMR status and Notifiable Activity for each of the 378 land parcels is presented in **Appendix A**.

Sixty-one (61) land parcels were listed on the EMR, subject to an SMP, and of these:

- No land parcels were located within or on the boundary of the Study Corridor Boundary (**Table 3-2**; and
- All 61 land parcels were located within or on the boundary of the Drawdown Area, outside the Study Corridor Boundary (**Table 3-3**).

- **Table 3-2 BCC EMR Listed Land Parcels within the Study Corridor Boundary.**

Notifiable Activity	BCC EMR Results		
	Listed	SMP Managed	Total
Dry Cleaning[2]	1	-	1
Hazardous Contaminant[1]	4	-	4
Landfill[1]	3	-	3
Mineral Processing[2]	1	-	1
Petroleum Product or Oil Storage[1]	3	-	3
Railway Yards[1]	4	-	4
Service Station[1]	8	-	8
Other (BBC Sites of Interest) [2]	4	-	4
Total			**28**

[1] High Risk
[2] Low Risk

- **Table 3-3 BCC EMR Listed Land Parcels within the Drawdown Area.**

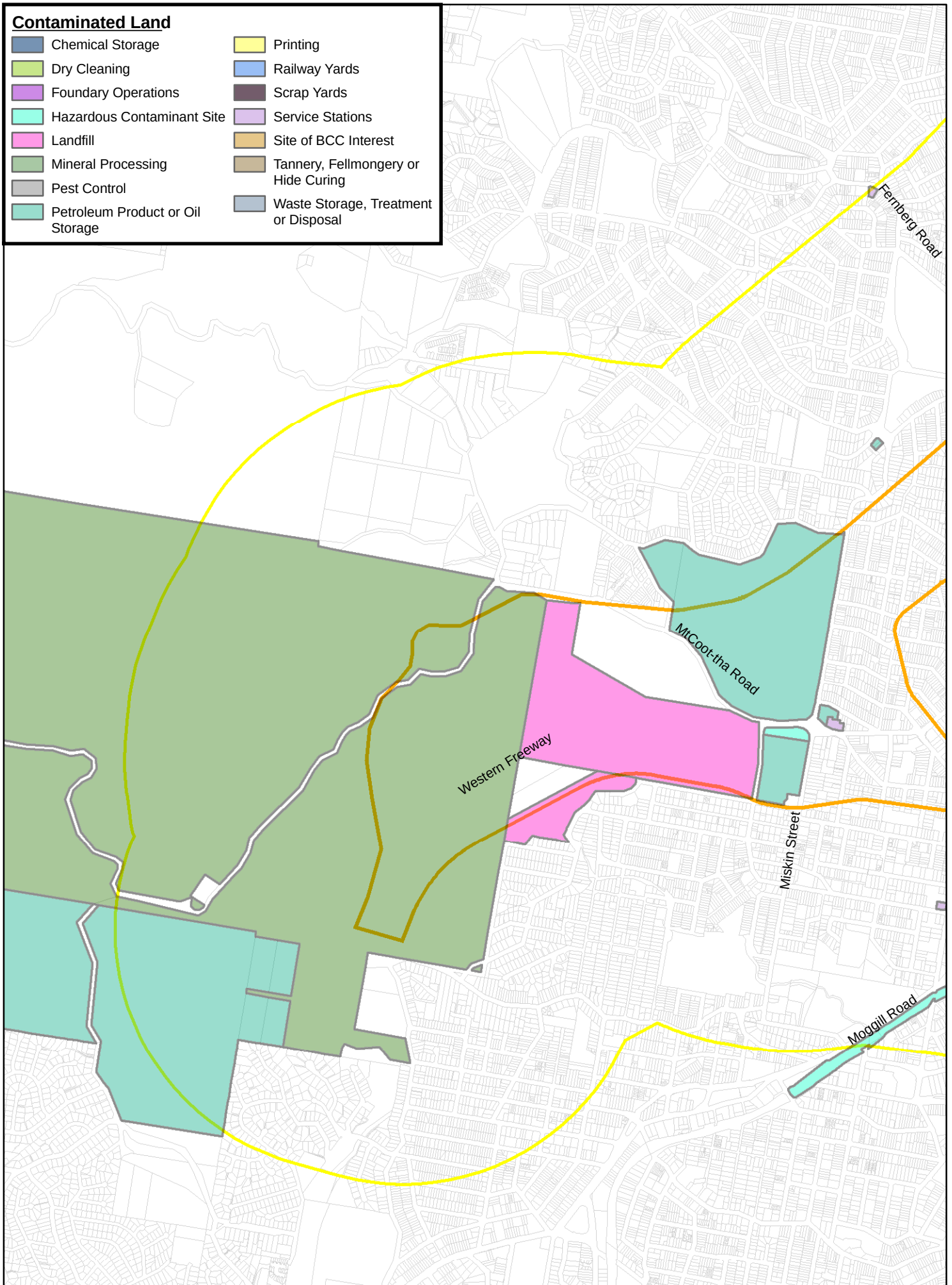
Notifiable Activity	BCC EMR Results		
	Listed	SMP Managed	Total
Chemical Storage[2]	10	-	10
Foundry Operations[2]	1	1	1
Hazardous Contaminant[1]	68	10	68
Landfill[1]	64	23	64
Mineral Processing[2]	4	-	4
Pest Control[2]	1	-	1
Petroleum Product or Oil Storage[1]	95	10	95
Printing[2]	33		33
Railway Yards[1]	8	-	8
Scrap Yards[2]	1	-	1
Service Stations[1]	33	4	33
Tannery, Fellmongery or Hide Curing[2]	14	10	14
Waste Storage, Treatment or Disposal[2]	2	2	2
Other (BBC Site of Interest) [2]	16	1	16
Total	**350**	**61**	**350**

[1] High Risk
[2] Low Risk

The locations of the 378 EMR listed land parcels, their Notifiable Activity and the land parcels high/low risk are presented in **Figure 3-1A**, **Figure 3-1B** and **Figure 3-1C**.

3.4 BCC CLR Results

No land parcels were listed on the CLR within the Project Study Area.



LEGEND

- Study Area Corridor
- Groundwater Drawdown Area

0 400 800

metres

Scale 1:20,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 3 - 1A

EMR Listed Land Parcels, Northern Link Study Area

Northern Link

SKM Connell Wagner JOINT VENTURE

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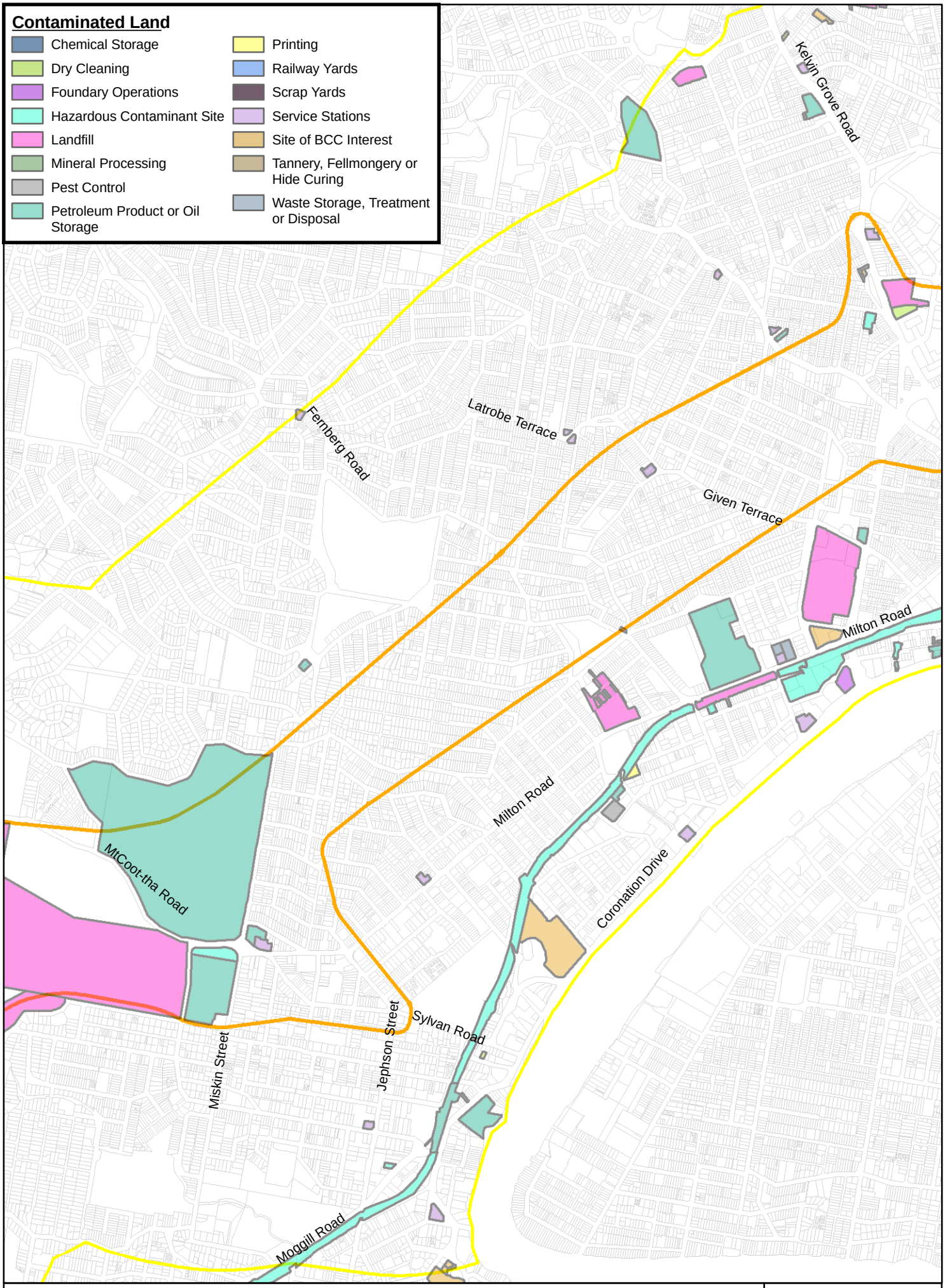

LEGEND

- Study Area Corridor
- Groundwater Drawdown Area

0 400 800

metres

Scale 1:20,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 3 - 1B

EMR Listed Land Parcels, Northern Link Study Area

Northern Link

SKM Connell Wagner JOINT VENTURE

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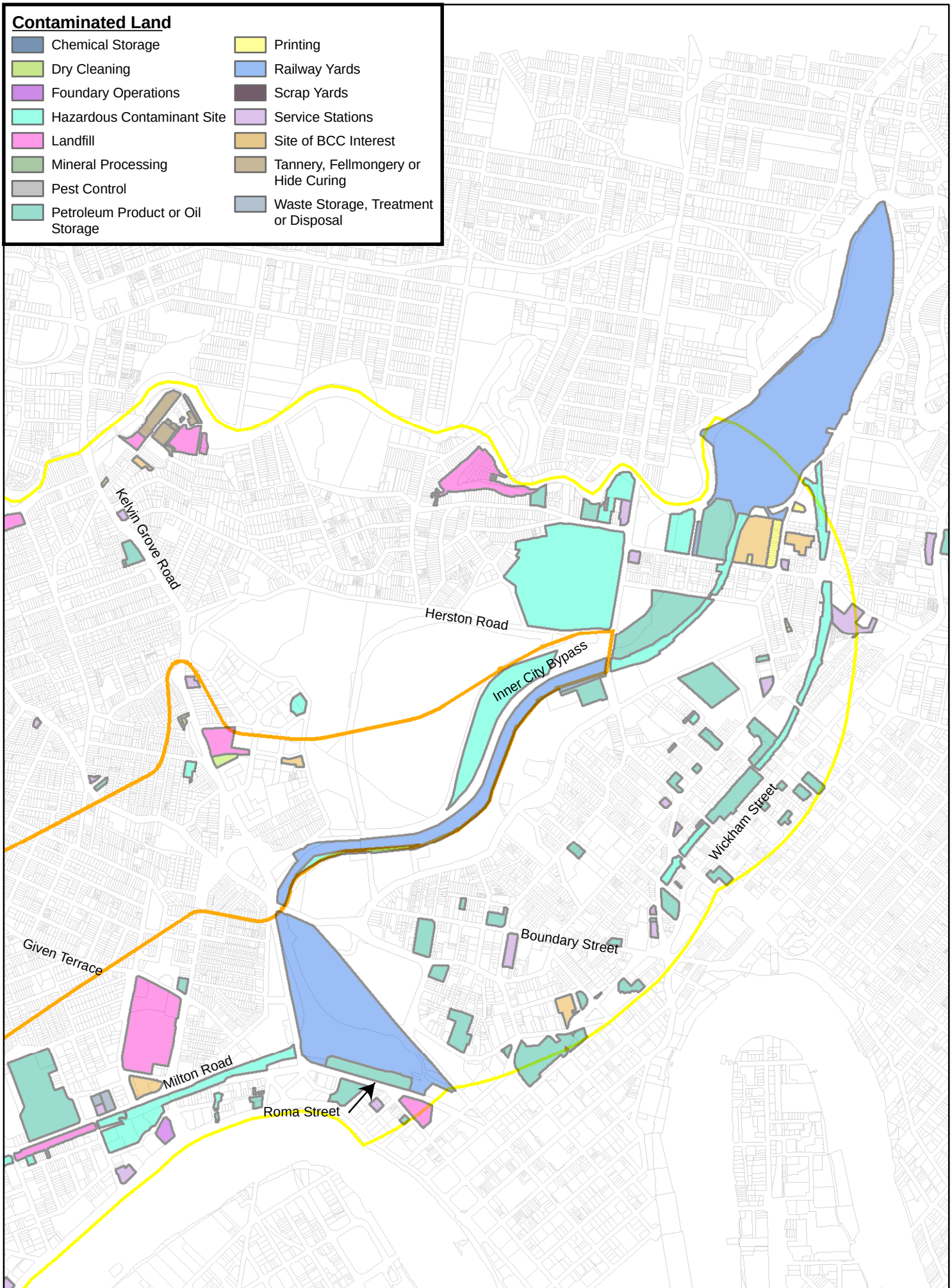

LEGEND

- Study Area Corridor
- Groundwater Drawdown Area

0 400 800

metres

Scale 1:20,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 3 - 1C

EMR Listed Land Parcels, Northern Link Study Area

Northern Link

SKM Connell Wagner JOINT VENTURE

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3.5 Historical Aerial Photograph Review

A historical aerial photograph review was undertaken to identify additional potentially contaminating land uses within the Project Study Area. The purpose of the historical review was to identify (where possible):

- land parcels which may have had a Notifiable Activity that were not identified in BCC EMR/CLR data; and
- areas likely to contain commercial/industrial activities or having had such an activity that could be considered as having a higher probability to have caused land contamination (as opposed to other activities such as residential use which would be considered as having a lower probability of causing land contamination).

Historical aerial photography reviews undertaken by SKM in previous EIS reports (SKM 2004 and SKM 2006) were re-examined to assist in identifying additional potentially contaminated land parcels within the Project Study Area.

Aerial photography appraised as part of this study were obtained from the Queensland Department of Natural Resources and Water (DNRW) and included:

- Tweed Heads-Urangan 2004 (1:12,000) QAP6078, Run 103 Frames 35 and 37;
- Brisbane 1994 (1:20,000) QPC5332 Run 8 Frame 168 and QPC5334 Run 9 Frame 23;
- Brisbane 1987 (1:25,000) QC4621, Run 13 Frame 53;
- Caboolture 1987 (1:25,000) QC4621, Run 14 Frame 24;
- Brisbane West 1980 (1:9,300) QP3775, Run 12 Frame 297;
- Brisbane East 1980 (1:9,300) Q3718, Run 14 Frame 2455 and 2461;
- Brisbane 1978 (1:25,000) Q3604, Run 13, Frame 3059;
- Brisbane East 1977 (1:9,400) Q3465, Run 1, Frame 162;
- Birkdale-Sandgate Road 1969 (1:11,900) Q1939, Run 8 Frame 73 and 74, and Q1938, Run 9 Frame 172 and 174;
- Greater Brisbane 1960 (1:15,900) Q1090, Run 9 Frame 78 and 80, and Run 10 Frame 98 and 99;
- Greater Brisbane 1951 (1:16,000) BCCO, Run 8 Frame 39332 and Run 9 Frame 39365 and 39366;
- Brisbane City Council Series 1946 (1:15,900) QAP0, Run 16 Frame 34731, Run 17 Frame 34630, and Run 20 Frame 34691; and

Potential exists for a Notifiable Activity not being identified or not being easily identifiable from viewing historical aerial photography. For example, there are many land parcels where buildings obscure the activity undertaken on a land parcel.

3.5.1 Additional Sites

Nine (9) additional sites were identified through the review of historical aerial photography as having been/being subject to a potential Notifiable Activity. The following potential Notifiable Activities were identified for the nine (9) sites:

- Landfill (Site 3);
- Petroleum Product or Oil Storage (Sites 7 and 9);
- Scrap Yard (Site 1);
- Service Station (Sites 4, 5 and 6);
- Unidentified Fill (Sites 2 and 8).

The location of the nine (9) sites (Sites 1 to 9) are presented in **Figure 3-2A**, **Figure 3-2B** and **Figure 3-2C** with land parcel description information and the sites potential Notifiable Activity detailed in **Appendix B**.

A further three (3) additional sites (Sites 10 to 12), also presented in **Appendix B,** were identified during the drive-by survey and are discussed in **Section 3.10**. A further six (6) sites (Sites 13 to 18 **Appendix B**), identified during the NSBT EIS (SKM 2004) historical aerial photo review, have also been included in this report.

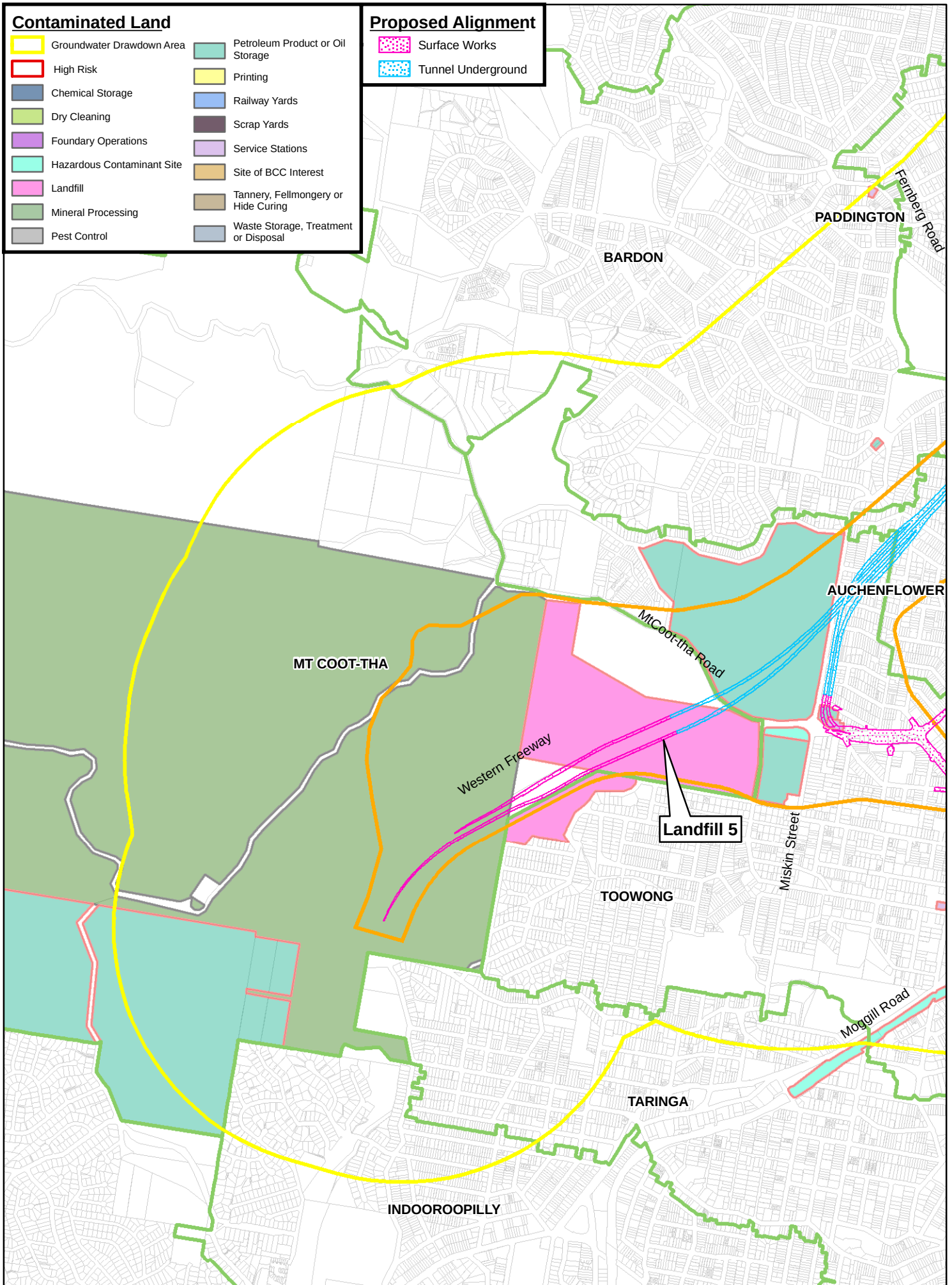
3.5.2 Additional Information Supplied by BCC

BCC was contacted to determine if any of the eighteen (18) additional sites (Sites 1 to 18) were historically listed on the EMR/CLR and have subsequently been removed. The following information supplied by BCC identified:

- Site 1 - (Lot 1 SP193899 - Scrap Yard). BCC records indicate that the site has not been listed on the EMR;
- Site 2 - (Unidentified Fill). BCC records indicate that the site has not been listed on the EMR;
- Site 3 - (Lot 13 SP186853 at 137 Kelvin Grove Rd., Kelvin Grove). This site was listed on the EMR as a "Landfill" in 1994. A SMP/Remediation Plan (RP) was approved for the site in March 2006 with the site remediated and removed from the EMR in August 2006;
- Site 4 - (Lot 232 RP882112 at 165 Baroona Rd., Paddington). A Flammable and Combustible Liquids Licence (F&C licence) was cancelled in 1994 and tanks were removed from the site at an unknown date. The site operated as a Service Station. However, the site was not identified as a Notifiable Activity. BCC confirmed with the EPA that the site was on the EMR but was removed in 2004;
- Site 5 - (Lot 2 RP104850 at 155 Baroona Rd., Paddington). The site operated as a Service Station. However, the site was not identified as a Notifiable Activity. BCC confirmed with the EPA that the site was on the EMR but was removed in 1999;
- Site 6 - (Service Station). BCC records indicate that the site has not been listed on the EMR;
- Site 7 - (Petroleum Product or Oil Storage). BCC records indicate that the site has not been listed on the EMR;

- Site 8 - (Unidentified Fill). BCC records indicate that the site has not been listed on the EMR;
- Site 9 - (Petroleum Product or Oil Storage). BCC records indicate that the site has not been listed on the EMR;
- Site 10 - (Printing). BCC records indicate that the site is used for "offset printing" which is not a Notifiable Activity;
- Site 11 - (Service Station). BCC records indicate that the site has not been listed on the EMR;
- Site 12 - (Service Station). BCC records indicate that the site has not been listed on the EMR;
- Site 13 - (Service Station). BCC records indicate that the site has not been listed on the EMR;
- Site 14 - (Service Station). BCC records indicate that the site has not been listed on the EMR;
- Site 15 - (Scrap Yard). BCC records indicate that the site has not been listed on the EMR;
- Site 16 - (Service Station). BCC records indicate that the site has not been listed on the EMR;
- Site 17 - (Service Station). BCC records indicate that the site has not been listed on the EMR; and
- Site 18 - (Service Station). BCC records indicate that the site has not been listed on the EMR.

A high or low risk (**Table 3.1**) was assigned to each site (**Appendix B**), ten (10) sites were assigned a high risk (sites 6, 7, 9, 11-14 and 16-18) and five (5) sites (sites 1, 2, 8, 10 and 15) were assigned a low risk. Four (4) sites (sites 3-5 and 10) were not assigned a risk as these sites had been removed from the EMR or were not identified as a Notifiable Activity (i.e. off-set printing). Unidentified fill, which is also not identified as a Notifiable Activity, was assigned a low risk (Sites 2 and 8). Only high risk sites 6 and 11 were located within the Study Corridor Boundary (sites 3-5 had been removed from the EMR), the remaining high risk sites were located outside the Study Corridor Boundary within or on the boundary of the Drawdown Area (**Figure 3-2A**, **Figure 3-2B** and **Figure 3-2C)**.



LEGEND

Study Area Corridor
Suburb Boundary

Identified Properties

No Risk
High Risk
Low Risk

0 400 800
metres

Scale 1:20,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 3 - 2A

Potentially Contaminated Sites

Northern Link

SKM Connell Wagner
JOINT VENTURE

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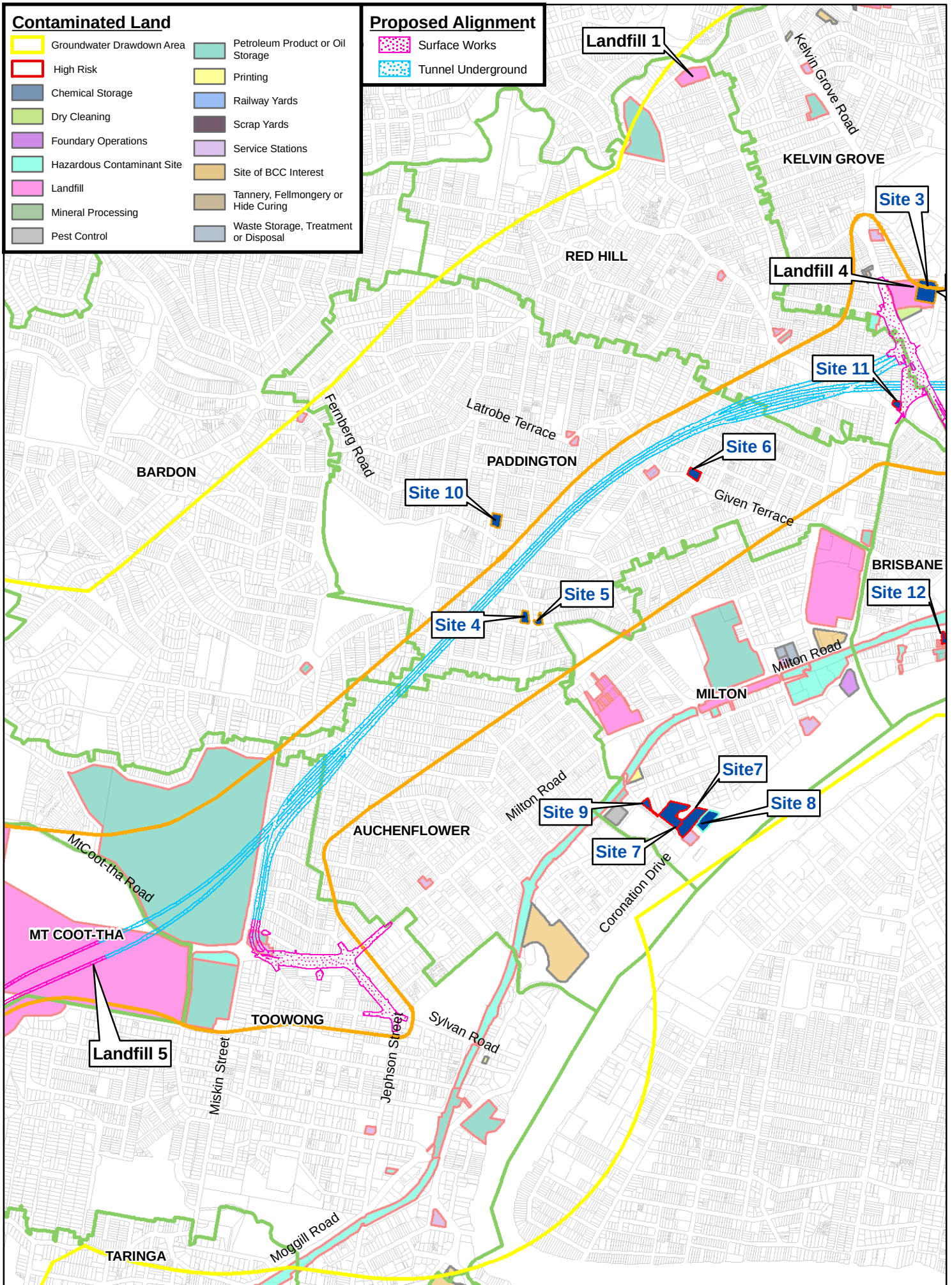

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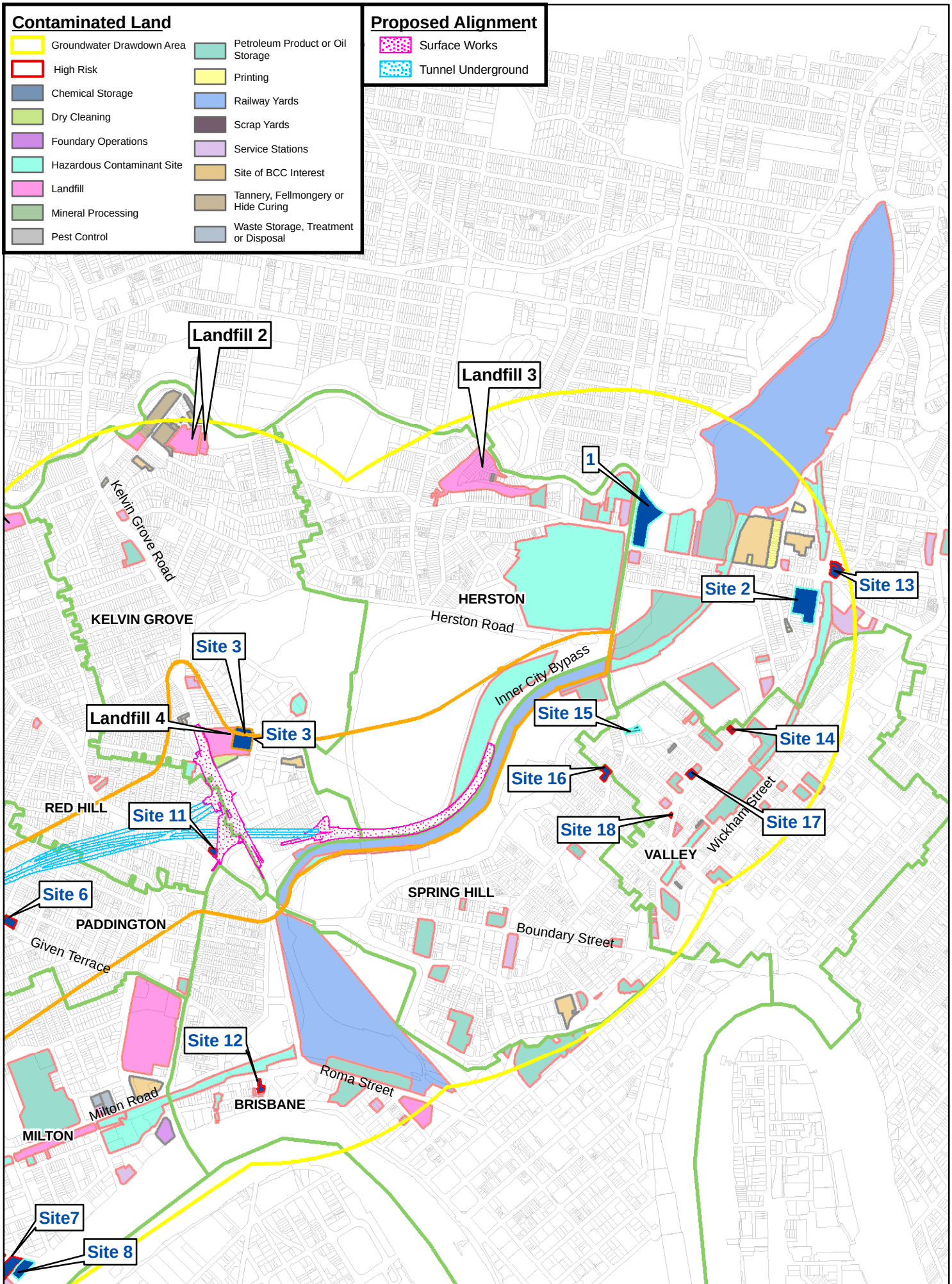

LEGEND

Study Area Corridor
Suburb Boundary

Identified Properties

No Risk
High Risk
Low Risk

0 400 800
metres

Scale 1:20,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 3 - 2C

Potentially Contaminated Sites

Northern Link

SKM Connell Wagner
JOINT VENTURE

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3.5.3 Historical Land Use Overview

As part of the historical aerial photography review an overview of each suburb was undertaken to identify the historical land use of that suburb. A brief summary of each suburb within the Project Study Area is provided in the following sections.

3.5.3.1 Indooroopilly

A small northern part of Indooroopilly falls within the Drawdown Area. This part of Indooroopilly is residential and no EMR land parcels were listed in this area.

3.5.3.2 Mount Coot-tha

The suburb of Mt Coot-tha occupies the south-western part of the Project Study Area. Mount Coot-tha Reserve, Mount Coot-tha Quarry and the Botanical Gardens are located on the northern side of the Drawdown Area, whilst the Western Freeway lies within the Study Corridor Boundary. Large tracts of the Reserve remain unchanged (other than with respect to the density of vegetation cover) since 1946. Quarrying activities commenced prior to 1946, with the current footprint (including the rehabilitated areas) established around 1969. The Botanical Gardens were established around 1978 and remain largely unchanged (except for vegetation cover).

3.5.3.3 Taringa

Approximately one third of Taringa occupies the south-eastern area of the Drawdown Area. Taringa has been a residential area since 1946 with a predominance of single dwellings. Land parcel size has gradually decreased and number of dwellings increased over time.

3.5.3.4 Toowong

The central part of Toowong is located within the Study Corridor Boundary. Sites of interest being the Toowong Cemetery and the BCC Bus Depot (both listed on the EMR for petroleum product storage). The part of Toowong located south of the Study Corridor Boundary and within the Drawdown Area has been predominantly residential since 1946 with a gradual increase in dwellings/decrease in land parcel size. The railway line (listed on the EMR for hazardous contaminants) proceeds along the eastern part of Toowong. By 1994, the river front area east of the railway line changed from its predominantly residential (single dwellings) nature to the mixed land use that it is today (multiple and single dwellings, commercial/light industrial developments).

3.5.3.5 Auchenflower

The north-western part of Auchenflower is located within the Study Corridor Boundary, whilst the bulk of the suburb is located within the Drawdown Area, extending eastwards to the Brisbane River. The majority of Auchenflower has retained its residential characteristics since 1946, with very few changes to the density and type of (single) dwellings. The most significant changes were experienced at the Wesley Hospital (a site of interest to BCC for its potential contamination associated with health care activities). Here, substantial expansion occurred between 1980 and 1994. Other substantial

changes are evident along Coronation Drive, where high rise residential and commercial (office) buildings were established post 1994.

3.5.3.6 Bardon

The south-eastern part of Bardon is located within the Drawdown Area. Bardon has been a residential suburb since 1946, with bursts of further residential development in 1969 and 1987.

3.5.3.7 Milton

This suburb is located within the Drawdown Area with its north-western boundary abutting the Project Study Area. Milton has undergone substantial land use changes. In 1946, Milton was predominantly residential (single dwellings). By 1969, a mixed land use emerged, particularly in the area south west of the (current) Suncorp Stadium where commercial/industrial buildings were established. The area along the riverfront experienced the most significant changes post 1994, with most of the residential premises being replaced by commercial buildings. Sites of (contaminated land) interest in Milton include the 'old' Milton Tennis Courts and Suncorp Stadium (landfills), the Brewery (petroleum product or oil storage) and the railway line (hazardous contaminants).

3.5.3.8 Paddington

The south-eastern part of Paddington is located within the Project Study Area. Paddington has been a residential suburb since 1946, with a predominance of single dwellings. Land parcel size has gradually decreased and number of dwellings increased over time.

3.5.3.9 Brisbane (City Centre)

Only the north-western part of Brisbane is located within the Project Study Area. The north western part of the suburb, north of Milton Road and west of Petrie Terrace, has been residential since 1946. The remainder of the suburb, within the Project Study Area, has been and remains commercial/industrial. Sites of (contaminated land) interest in Brisbane include the railway line along Milton Road (hazardous contaminants) and the Roma Street Railway Station and Parklands (railway yards).

3.5.3.10 Spring Hill

The majority of Spring Hill is located within the Drawdown Area. The northern boundary of Spring Hill is located within the Project Study Area. This area also occupies QR land (railway yards and hazardous contaminants). From 1946 to 1965 Spring Hill was primarily a mixed land use of residential and commercial with minor industrial. From 1978 to 2005, primarily residential land use was located in the northern half of the suburb with an increase of commercial to the south. This is evident by the number of EMR listed sites located in the southern half of the suburb.

3.5.3.11 Red Hill

The south-eastern part of Red Hill is located within the Project Study Area. Red Hill has been a residential suburb since 1946, with a predominance of single dwellings. Land parcel size has gradually decreased and number of dwellings increased over time.

3.5.3.12 Kelvin Grove

The southern part of Kelvin Grove is located within the Project Study Area. Kelvin Grove has primarily been a residential suburb since 1946, other than the Queensland University of Technology (Kelvin Grove Campus) located in the south east of the suburb. EMR listed sites are primarily located along Kelvin Grove Road and a concentration of sites located to the north of the suburb along Enoggera Creek.

3.5.3.13 Herston

The southern part of Herston is located within the Project Study Area. Herston has primarily been a residential suburb since 1946, other than the Victoria Park Golf Complex located in the southern part of the suburb and the Royal Brisbane Hospital (hazardous contaminants and petroleum product or oil storage) located to the east. EMR listed sites are primarily located at the north, north eastern part of the suburb other than a large parcel of land to the south paralleling the ICB which is listed for hazardous contaminants.

3.5.3.14 Bowen Hills

Bowen Hills is located within the Drawdown Area. From 1946 to 1965 the south-western and northern parts of the suburb were industrial. A central corridor running west to east between Campbell Street and O'Connell Terrace and east of Brooks, Hamilton and Abbotsford Roads was residential during 1946 to 1965. From 1978 to 2005 this residential corridor gradually changed to primarily a commercial/industrial land use. Large areas of EMR listed land parcels are identified in Bowen Hills primarily located within the industrial areas to the southwest and northern parts of the suburb.

3.5.3.15 Fortitude Valley

Fortitude Valley is located within the Drawdown Area. From 1946 to 1960 the suburb was primarily industrial/commercial with minor areas of residential. From 1978 to 2005 the minor residential areas were less evident with a commercial/industrial land use dominant in the suburb. Numerous areas of EMR listed land parcels, primarily petroleum product or oil storage, are located throughout Fortitude Valley confirming the commercial/industrial land use of the suburb.

3.6 Potential for Unexploded Ordnance

A site which are known or suspected of having been used for military activity are categorised according to the assessed potential for UXO on that site. Defence maintain a webpage[5] that provides information on sites with the potential for UXO. These are usually associated with a military activity which has occurred on the site. No potential for UXO was identified, from the Defence web page, within the Project Study Area.

[5] http://www.defence.gov.au/uxo/UXO_Website/index.htm

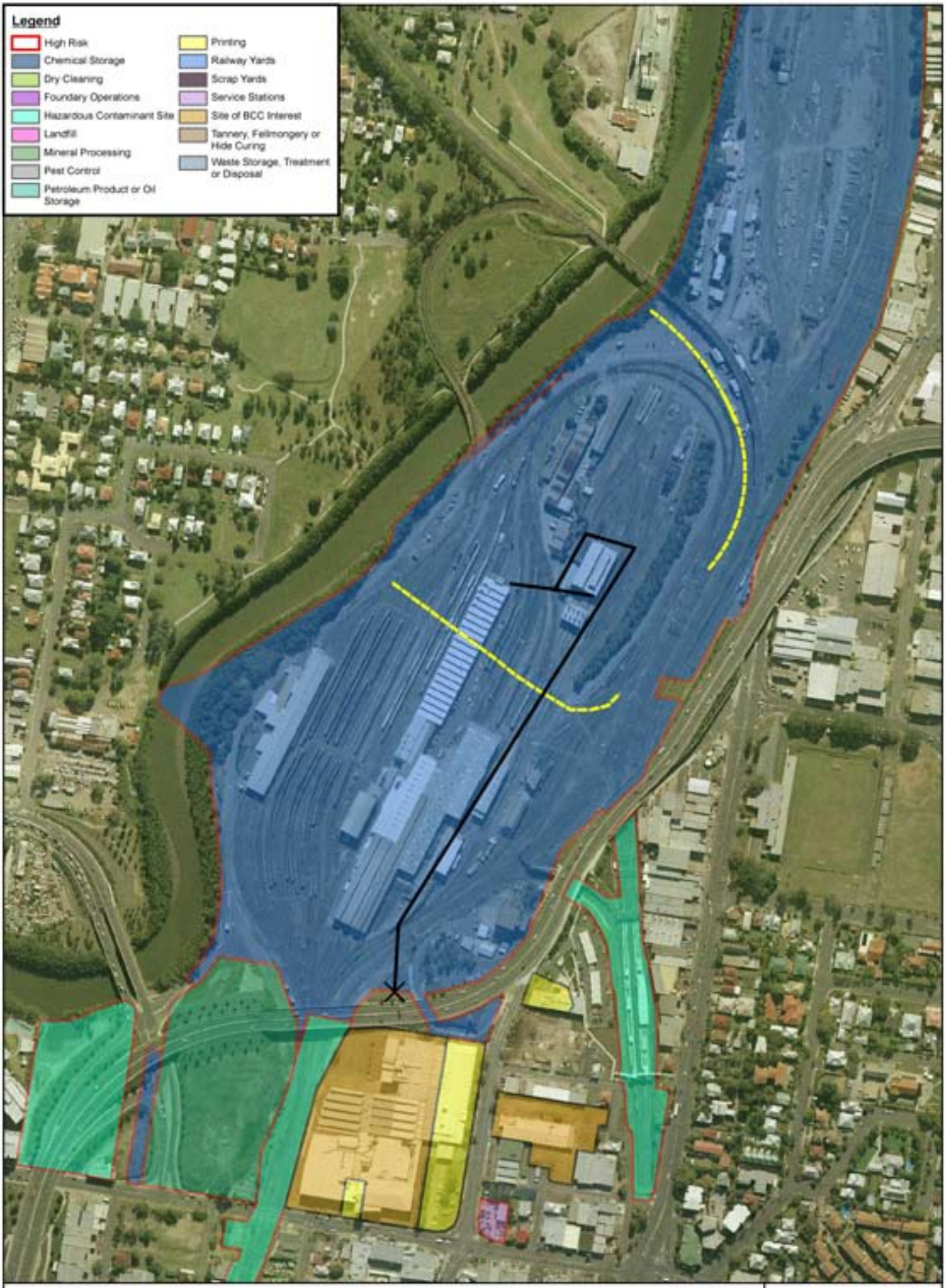
3.7 Queensland Rail Contaminated Land Review

As shown on Figure 3-1A, Figure 3-1B and Figure 3-1C the Project Study Area crosses land managed by QR. Not all QR land is listed on the EPA EMR/CLR. However, QR and the QLD EPA acknowledge that past practices may have resulted in soil and/or groundwater contamination within any railway land in QLD. Potential contaminating activities that may be associated with railway land typically include:

- the disposal of ash material;
- the stockpiling of fill and ballast;
- the use of herbicides/pesticides; and
- petroleum product and oil storage.

Regarding QR managed land within the Project Study Area, the following anecdotal information was provided by QR:

- Typically, QR corridor land is listed on the EMR for hazardous contaminant for arsenic residue from herbicide/pesticide spraying during the 1940s and 50s. Limited soil sampling and testing has been conducted within metropolitan corridors. However, it is expected that levels of arsenic are low as procedures were in place to prevent or limit the herbicide treatment in sensitive areas near residential buildings, creeks, etc. The application of herbicide was limited by equipment, only a thin strip spray was directed on the track. Residues of arsenic still exist in track formation soils as arsenates bind well to soil particles. There has been no indication of arsenic contamination effects on groundwater in any QR land;
- Railway stations within the Project Study Area service the passenger network and typically do not have contamination issues other than minor arsenic contamination in soil along railway tracks as mentioned above;
- Lot 2 on SP116599 Mayne Railway Yards. The Mayne Railway Yards have been used by QR for over 100 years. Hydrocarbon contamination exists on site. Free product was identified in the late 1990s early 2000s during site excavation activities (**Figure 3-3**). The source of contamination was a leaking diesel reticulation line associated with two old 60,000 Litre (L) aboveground storage tanks (ASTs) and related above ground handling. The ASTs were removed during construction of the ICB and replaced with a 30,000 L AST located toward the centre of the southern yard. Inferred groundwater flow direction is to the northwest towards Enoggera Creek. A contamination risk assessment was conducted in the mid 1990s and QR advised that residual contamination was being managed at the site.
- Lot 14 on SP158920 (located south of the Mayne Railway Yards). QR advised that this lot, due to proximity to the Mayne Railway Yards, has the potential for diesel fuel contamination in groundwater. This is associated with the leaking diesel reticulation line, mentioned above, on Lot 2 on SP116599.



LEGEND

Observed Hydrogen Plume

Diesel Reticulation Line

Previous Location of USTs

0 100 200

metres

Scale 1:5,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 3 - 3

Mayne Railway Yard
(Lot 2 on SP116599)

Northern Link

SKM Connell Wagner
JOINT VENTURE

I:\QENV\Projects\QE07311\Spatial\Arc_MXD\Contaminated_Lands\080617_Figure_3-3_Mayne_Railway_Yards.mxd

3.8 Flammable and Combustible Liquids

BCC maintains a register of Flammable and Combustible Liquids[6] (F&C) stored on land parcels having current and/or cancelled licenses under the *Dangerous Goods Safety Management Regulation 2001*. The EPA makes use of this register to identify any F&C licences that exceed threshold limits set by the EPA that require listing on the EMR as a Notifiable Activity. Examples of Notifiable Activities that would require an F&C licence include, but are not limited to, chemical storage, petroleum product or oil storage and service stations. If a land parcel with an F&C licence does not meet or exceed the threshold limits set by the EPA (for Notifiable Activities), it is not required to be listed on the EMR. F&C licence information should be obtained from BCC for land parcels where construction activities are proposed. This information can be used to determine if potential contamination is/has been associated with the storage of F&C liquids that do not meet QLD EPA threshold limits.

3.9 Brisbane City Council Landfills

To meet its reporting obligations under the EP Act, BCC maintains records of all known BCC landfill sites and a précis of their operational history. Thirty-four (34) of the sixty-seven (67) land parcels listed as "Landfill" in **Table 3-2** and **Table 3-3** fall into the footprint of five (5) landfill properties which are maintained by BCC (**Figure 3-2A**, **Figure 3-2B** and **Figure 3-2C)**. BCC information regarding these five (5) landfill properties is provided in **Appendix C** and is summarised below:

- Landfill 1: - Lot 1 on RP90610 (38 Murray St., Kelvin Grove) listed on EMR in 1994. No details about the type of fill or duration of filling available;
- Landfill 2: - Lot 2 on RP69590 (59 Picot St., Kelvin Grove) listed on EMR in 1999. Site supposedly used to bury asbestos material and Lot 34 on RP17303 (72 Picot St., Kelvin Grove) listed on EMR in 1993. Five metres of fill (primarily soils and organic matter) on site. Fibro sheeting was historically dumped at the landfill. Site partially remediated with only the batters capped with 0.5 metres of capping material;
- Landfill 3: - 28 individual land parcels (Butterfield St., Ramsey Park, Herston). Listed on EMR in 2006. Operated as a landfill between the 1930's and 1940's. Waste predominately domestic refuse and ash approximately 2.5 metres in depth;
- Landfill 4: - Lot 556 on SP133445 (137 Kelvin Grove Rd., Kelvin Grove) listed on EMR in 1994. No details about the type of fill or duration of filling available; and
- Landfill 5: - Lot 1 on RP18899 (170 Mt Coot-tha Rd., Mt Coot-tha). The following information related to Anzac Park which is within the south eastern section of the lot. Area gazetted as part of the Toowong General Cemetery in 1861. By 1877 no internments had taken place and the site was gazetted as a rifle range (QLD Rifle Association). By 1918 the rifle range had been decommissioned and the area became a memorial park. Lot 3 on SP159806 (200 Broseley Rd., Toowong) listed on EMR in 1994. BCC provided no further information for this site.

[6] Flammable and combustible liquids has the meaning provided by Schedule 2 of the *Dangerous Goods Safety Management Regulation 2001*

3.10 City Design Report

City Design provided the following report:

- Contaminated Land and Groundwater Assessment, Fuel Line Leakage, Toowong Bus Depot, Miskin Street, Toowong. Geotechnical and Environmental Engineering, City Design, February 2002.

Inspection of a storm water pipeline in June 2000 identified diesel fuel entering the drainage system below the Toowong Bus Depot. The diesel leakage had resulted in significant soil and groundwater contamination within fill material along the northern boundary of the bus depot underlying the bus maintenance building and the main entrance. Hydrocarbon contamination was present in fill material at a depth greater than 2 metres below ground surface (mbgs). Free-phase hydrocarbon product was detected at the base of fill material that appeared to form a "channel" crossing the bus depot from west to east and into the park-n-ride property north of the site. City Design (2002) was unable to determine whether the "channel" of fill material extended beyond the park-n-ride boundary or along Miskin Street to the east. City Design (2002) delineated the lateral extent of a west to east linear zone of hydrocarbon impacted soil and groundwater up to 30 m wide adjacent to the northern boundary of the Bus Depot. City Design (2002) determined that the contamination had not impacted, to any significant degree, the underlying natural soil or rock and associated aquifer system.

However, City Design (2002) recommended that hydrocarbon contamination may be present adjacent to the bus depot area and disturbance of surrounding soils by any excavation works in the future may expose construction workers, and others to the contaminants of concern. City Design (2002) also recommended that adequate management plans must be prepared and implemented prior to the commencement of any underground works within and surrounding the Toowong Bus Depot.

3.11 Potential for Contaminated Material Being Disturbed

The potential for contaminated soil being disturbed during construction of the Project will occur at the Toowong Connection and is also likely to occur at the Kelvin Grove Connection. Notifiable Activities (mineral processing, landfills, petroleum product or oil storage and hazardous contaminated sites) and identified hydrocarbon contamination associated with the Toowong Bus Depot are concentrated within and around the Study Corridor Boundary at the Toowong Connection, and Notifiable Activities (hazardous contaminated sites and railway yards) are located within the Study Corridor Boundary at the Kelvin Grove Connection (**Figure 1-1A**, **Figure 1-1B** and **Figure 1-1C**). Potential impacts from the identified Notifiable Activities are discussed in **Section 4**.

3.12 Drive-By Survey

A targeted drive-by survey was undertaken of commercial and industrial areas within the Project Study Area. The purpose of the drive-by survey was to identify sites that are not listed on the EMR/CLR and based on existing land use, interpreted from aerial photography, may have the potential to cause land contamination. The drive-by survey was conducted on November 29th and 30th, 2007 and December 2nd, 2007. A total of three (3) additional land parcels were identified from the drive-by survey.

These land parcels include:

- Printing (Site 10);
- Service Station (Sites 11 and 12).

A high or low risk (**Table 3-1)** was assigned to each site (as identified in **Section 3.5**). Land parcel description information is provided in **Appendix B**. Photographs of each site are presented in **Appendix D** and the location of the identified sites is provided in **Figure 3-2A**, **Figure 3-2B** and **Figure 3-2C**.

4. Impact Assessment and Mitigation Measures

4.1 Background

The level of impact that a potentially contaminated land parcel may have on the Project due to the disturbance of contaminated soil and/or groundwater from construction activities is currently unknown. Information outlined in this report has identified land parcels that are listed on the EMR as having a Notifiable Activity (Notifiable Activities are those that cause or are likely to cause contamination). Therefore land parcels located within the Project Study Area that are listed on the EMR, depending on the Notifiable Activity, have a greater potential to impact the Project than land parcels that are not listed on the EMR. To accurately evaluate the impacts of each EMR listed land parcel, additional information will be required from either the land owner, BCC and/or the QLD EPA. It is most likely that the land parcel will require further investigation, in accordance with State and/or National guidelines (**Section 3.1**).

4.2 Project Impacts

No cumulative impacts relating to contaminated land values have been identified in conjunction with other major projects, approved and known to be proceeding at the time of commencement of operations of the Project.

The disturbance of potential soil and/or groundwater contamination on EMR listed land parcels and additional identified land parcels within the Project Study Area during construction and operation of the Project are described below.

4.2.1 Disturbance of Potentially Contaminated Soil

Potential for disturbance of contaminated soil has been assessed based on the following:

- The interception of EMR listed land parcels and additional identified land parcels during Project construction, based on alignment and associated type of construction activities; and
- The location of EMR listed land parcels and additional identified land parcels bordering or located next to Project construction activities.

Identified EMR listed and additional identified land parcel were compared to property land acquisition information detailed in the *Northern Link Project Definition Report* (SKM-CW Joint Venture 2008). The disturbance of potentially contaminated soil is likely to occur at seventeen (17) EMR listed and additional identified land parcels. **Table 4-1** provides a summary of the seventeen (17) identified land parcels. Mitigation measures for the above identified land parcels are detailed in **Section 4.3**.

Table 4-1. Land Parcels for Consideration During Construction.

Northern Link Corridor Section	Land Parcels for Consideration During Construction	EMR (Notifiable Activity)	Construction Activities	Additional Investigations Required
EMR Listed Land Parcels				
Toowong Connection	Lot 1 on Plan RP868488 - MT COOTHA RESERVE (200 MT COOTHA RD TOOWONG)	Mineral Processing	Surface Works & Interface Earthworks	refer to Section 4.3.1
	Lot 3 SP159806 (216 BROSLEY RD TOOWONG)	Landfill	Interface Earthworks	refer to Section 4.3.1
	Lot 1 RP18899 - MT COOTHA RESERVE & ANZAC PARK (108 DEAN ST TOOWONG)	Landfill	Surface Works, Transition Structure, Interface Earthworks, Cut and Cover Tunnel, & Cross Passages	refer to Section 4.3.1
	Lot 5 SL12786 - TOOWONG CEMETERY (124 BIRDWOOD TCE TOOWONG)	Petroleum Product or Oil Storage	TBM Excavated Driven Tunnel & Cross Passages	refer to Section 4.3.1
	Lot 3 RP886311 (601 MILTON RD TOOWONG)	Petroleum Product or Oil Storage	Elevated Structure & Surface Works	refer to Section 4.3.1
	Lot 5 RP127711 (581 MILTON RD TOOWONG)	Service Station	Elevated Structure & Surface Works	refer to Section 4.3.1
	Lot 1043 SL7078 - TOOWONG BUS DEPOT (29 MISKIN ST TOOWONG)	Petroleum Product or Oil Storage	Nil	refer to Section 4.3.1

Northern Link Corridor Section	Land Parcels for Consideration During Construction	EMR (Notifiable Activity)	Construction Activities	Additional Investigations Required
	Lot 1042 SL9242 PARK-N-RIDE (27 MISKIN ST TOOWONG)	Hazardous Contaminant Site	Nil	refer to Section 4.3.1
Kelvin Grove Connection	Lot 1 RP181929 (43 MUSGRAVE RD RED HILL)*	Service Station	Surface Works	refer to Section 4.3.2
	Lot 1 RP142701 (6 VICTORIA ST KELVIN GROVE)	Hazardous Contaminant Site	Nil	refer to Section 4.3.2
	Lot 1 RP891412 (113 KELVIN GROVE RD KELVIN GROVE)	Dry Cleaning	Nil	refer to Section 4.3.2
	Lot 556 SP133445 (137 KELVIN GROVE RD KELVIN GROVE)	Landfill	Nil	refer to Section 4.3.2
	Lots 1,2 & 3 SP179651 (150 KELVIN GROVE RD KELVIN GROVE)	Site of BCC Interest	Nil	refer to Section 4.3.2
	Lot 2 SP113018 (39 KELVIN GROVE RD KELVIN GROVE)	Railway Yards	Nil	refer to Section 4.3.2
	Lot 4 SP113018 (29 GILCHRIST AVE HERSTON)	Railway Yards	Nil	refer to Section 4.3.2
	Lot 32 SP122215 (GILCHRIST AVE HERSTON)	Railway Yards	Surface Works	refer to Section 4.3.2
	Lot 5 SP123915 (18 BOWEN BRIDGE RD HERSTON)	Hazardous Contaminant Site	Surface Works & Interface Earthworks	refer to Section 4.3.2

* Site identified as a service station through historical aerial photography. BCC records indicate that the site has not been listed on the EMR.

Disturbance of potentially contaminated soil during operational stages of the Project are considered low or not applicable. It is not anticipated that the operational stage of the Project will require substantial disturbance of potentially contaminated soil. If an operational or maintenance issue involves potentially contaminated soil being disturbed, then appropriate regulations and management plans should be followed and implemented as per **Section 3.1** and **Section 4.1**, respectively.

4.2.2 Disturbance/Migration of Potentially Contaminated Groundwater

Potential for disturbance of contaminated groundwater has been assessed based on the following:

- The interception of EMR listed land parcels and additional identified land parcels during Project construction, based on alignment and associated type of construction activities; and
- The potential influence of all EMR listed land parcels, and additional identified land parcels, located within the Project Study Area during construction and operation of the Project.

Depending on the nature and extent of potentially contaminated groundwater at a site, potential disturbance and/or migration of potentially contaminated groundwater is likely to occur at the seventeen (17) land parcels identified in **Table 4.1**, during construction activities. Mitigation measures for the seventeen (17) land parcels are presented below in **Section 4.3**.

Groundwater flow modelling (see Hydrogeology Section of this EIS) has been undertaken to assess the potential drawdown of groundwater in the vicinity of the Project. Contaminants in groundwater, if present on EMR listed land parcels, and additional identified land parcels, located within the drawdown area have the potential to become mobile. As identified in **Section 3.2**, **Table 3.1** has assigned a potential high or low risk to fifteen (15) different Notifiable Activities identified in the Project Study Area. High risk Notifiable Activity listed land parcels have the potential of generating contaminants likely to be more susceptible to groundwater drawdown than low risk land parcels.

A total of 378 land parcels listed on the EMR were identified within the Project Study Area. Twenty-eight (28) land parcels were identified within or on the boundary of the Study Corridor Boundary (**Table 3-2**), of theses, twenty-two (22) were identified as high risk and six (6) were identified as low risk. Three hundred and fifty (350) land parcels were identified within or on the boundary of the Drawdown Area (**Table 3-3**), of these, two hundred and ninety one (268) were identified as high risk and eighty-seven (82) were identified as low risk**.**

Eighteen (18) additional sites were identified within the Project Study Area (**Section 3.5.2**). Five (5) were identified within or on the boundary of the Study Corridor Boundary of theses, two (2) were identified as high risk and three (3) had no associated risk as the sites have been remediated and removed from the EMR. Thirteen (13) land parcels were identified within or on the boundary of the Drawdown Area, of these, eight (8) were identified as high risk, four (4) were identified as low risk and one (1) had no associated risk as the sites have been remediated and removed from the EMR **(Figure 3-2A**, **Figure 3-2B** and **Figure 3-2C)**.

The twenty-two (22) high risk EMR listed land parcels and two (2) additional high risk sites were identified within or on the boundary of the Study Corridor Boundary. Contaminants, if present, from these land parcels have the highest potential to become mobilised due to construction/operation of the Project. **(Figure 3-2A**, **Figure 3-2B** and **Figure 3-2C).** Contaminants in groundwater, if present on the remaining EMR listed land parcels, and additional identified land parcels, located within the Project Study Area also have the potential to become mobilised due to construction/operation of the Project.

4.3 Mitigation Measures – Disturbed Land Parcels

The following mitigation measures have been proposed for the seventeen (17) EMR listed and other identified land parcels being disturbed during construction activities.

4.3.1 Toowong Connection

The following land parcels were identified at the Toowong Connection.

4.3.1.1 Lot 1 on Plan RP868488 (Mt Coo-tha Reserve), Mineral Processing

Partial purchase land acquisition is proposed for this land parcel up to approximately 50 metres either side of the Western Freeway. Surface works and interface earthworks are proposed in this area to a depth of approximately 6 mbgs (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the type and location of the "Mineral Processing" Notifiable Activity which may have occurred, or is occurring on this land parcel. The EMR Notifiable Activity listing for this land parcel describes "Mineral Processing" as chemically or physically extracting or processing metalliferous ores. The location of the "Mineral Processing" Notifiable Activity within this land parcel is currently unknown. Further information, from the EPA, BCC and/or the land owner, regarding the "Mineral Processing" Notifiable Activity on this land parcel is required. A PSI, as identified in **Section 4.1**, will be required to establish the site history of this land parcel in relation to the location of the "Mineral Processing" Notifiable Activity. The primary objectives of the PSI will be to determine if the Notifiable Activity has occurred or is occurring in the proposed partial purchase land acquisition area and consequently, whether the Notifiable Activity has the potential to impact on the proposed construction activities for the Project. Based on the findings of the PSI, the PSI will recommend any additional investigations that may be required and/or any remediation options that may be needed for the identified partial purchase land acquisition area.

4.3.1.2 Lot 3 SP159806, Landfill

Lot 3 SP159806, Landfill (216 BROSLEY RD. TOOWONG) - Partial purchase land acquisition is proposed to an extent of approximately 20 metres from the land parcels northern boundary. Interface earthworks are proposed in the north western corner of the land parcel down to approximately 15 mbgs (SKM-CW Joint Venture 2008). BCC identified this land parcel was listed on EMR in 1994 for the Notifiable Activity "Landfill" but have at this time provided no further information regarding landfill activities on this land parcel. The EMR Notifiable Activity listing for this land parcel describes "Landfill" as disposing of waste (excluding inert construction and demolition waste). The location of the "Landfill" Notifiable Activity within this large land parcel is currently unknown. Further information, from the EPA, BCC and/or the land owner, regarding the "Landfill" Notifiable

Activity on this land parcel is required. A PSI, as identified in **Section 4.1**, will be required to establish the site history of this land parcel in relation to the "Landfill" Notifiable Activity. The primary objective of the PSI will be to determine if the "Landfill" Notifiable Activity has occurred or is occurring in the proposed partial purchase land acquisition area. Based on the findings of the PSI, the PSI will recommend any additional investigations that may be required and/or any remediation options that may be needed for the identified partial purchase land acquisition area.

4.3.1.3 Lot 1 RP18899 (Mt Coo-tha Reserve & Anzac Park), Landfill

Lot 1 RP18899 (MT COOTHA RESERVE & ANZAC PARK), Landfill (108 DEAN ST. TOOWONG) - Partial purchase land acquisition is proposed of this land parcel up to approximately 60 metres, extending either side of the Western Freeway. Surface works, transition structures, interface earthworks, cut and cover tunnel and cross passages are proposed through the centre of this land parcel to a depth of approximately 15 mbgs (SKM-CW Joint Venture 2008). BCC provided the following information relating to this land parcel (Anzac Park) relating to the south eastern section of the land parcel. The area was gazetted as part of the Toowong General Cemetery in 1861. By 1877 no internments had taken place and the site was gazetted as a rifle range (QLD Rifle Association). By 1918 the rifle range had been decommissioned and the area became a memorial park. The EMR Notifiable Activity listing for this land parcel describes "Landfill" as disposing of waste (excluding inert construction and demolition waste). The location of the "Landfill" Notifiable Activity on this sizeable land parcel is currently unknown and the information supplied by BCC does not mention historical landfill activities. A PSI, as identified in **Section 4.1**, will be required to establish the detailed site history of this land parcel in relation to the "Landfill" Notifiable Activity. Potential contamination from the Toowong Bus Depot site should also be considered during the PSI for this land parcel. However, it is unlikely that hydrocarbon contamination from the Toowong Bus Depot has impacted this land parcel as the Toowong Bus Depot is located topographically and hydrogeologically down-gradient of this land parcel and the risk of migration of contaminants is considered low (City Design 2002). The primary objectives of the PSI will be to determine, whether the "Landfill" Notifiable Activity has occurred or is occurring in the proposed partial purchase land acquisition area. The PSI should also determine whether there are any potential impacts from contamination migration into Anzac Park from the Toowong Bus Depot and whether this migration is likely to pose a risk on the proposed construction activities of the Project. Based on the findings of the PSI, the PSI will recommend any additional investigations that may be required and/or any remediation options that may be needed for the identified partial purchase land acquisition area.

4.3.1.4 Lot 5 SL12786 (Toowong Cemetery), Petroleum Product or Oil Storage

Lot 5 SL12786 (TOOWONG CEMETERY), Petroleum Product or Oil Storage (124 BIRDWOOD TCE. TOOWONG) – Volumetric purchase land acquisition is proposed of this land parcel. Tunnel boring machine (TBM) excavated driven tunnels and cross passages, to a depth of approximately 20 to 45 mbgs, are proposed beneath the southern half of this land parcel (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the type and location of the "Petroleum Product or Oil Storage" Notifiable Activity on this land parcel. The EMR Notifiable Activity listing for this land parcel describes "Petroleum Product or Oil Storage" as storing petroleum products or oil in underground tanks with more than 200 L capacity or in above ground tanks with;

- for petroleum products or oil in class 3 in packaging groups 1 and 2 of the dangerous goods code – more than two 500 L capacity;
- for petroleum products or oil in class 3 in packaging group 3 of the dangerous goods code – more than two 5,000 L capacity; or
- for petroleum products that are combustible liquids in class C1 or C2 in Australian Standard AS 1940, 'The storage and handling of flammable and combustible liquids' published by Standards Australia – more than 25,000L capacity.

The location of the "Petroleum Product or Oil Storage" Notifiable Activity on the land parcel is currently unknown. However it is likely that the "Petroleum Product or Oil Storage" Notifiable Activity is associated with infrastructure located in the south east corner of the land parcel. Additional information from the EPA, BCC or the land owner should be obtained to determine the exact location of the "Petroleum Product or Oil Storage" Notifiable Activity. Ground truthing should be undertaken to confirm the location of the "Petroleum Product or Oil Storage" Notifiable Activity and to identify with the property owner whether any spills have historically occurred on-site. The outcomes of the ground truthing exercise will determine whether any potential risks from the "Petroleum Product or Oil Storage" Notifiable Activity may exist, what potential impacts the "Petroleum Product or Oil Storage" Notifiable Activity may pose for the Project and whether any additional investigations are required, as per **Section 4.1**. Although the cemetery itself is not a Notifiable Activity, minor soil contamination may be present in surface and sub-surface soil from lead lined coffins, and arsenic and formaldehyde from embalming solutions. If present, this contamination is unlikely to pose a risk to the Project as the potential contamination is unlikely to be concentrated at levels that pose a risk to human health and the environment.

4.3.1.5 Lot 3 RP886311, Petroleum Product or Oil Storage

Lot 3 RP886311, Petroleum Product or Oil Storage (601 MILTON RD. TOOWONG) - Full purchase land acquisition is proposed for this land parcel. Elevated structures are proposed over the land parcel and surface works are proposed on the southern end and northern boundaries (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the type and location of the "Petroleum Product or Oil Storage" Notifiable Activity on this land parcel. The EMR Notifiable Activity listing for this land parcel is described above. The location of this "Petroleum Product or Oil Storage" Notifiable Activity on the land parcel is currently unknown. A PSI, as identified in **Section 4.1**, will be required to establish the detailed site history of this land parcel, in relation to the "Petroleum Product or Oil Storage" Notifiable Activity, to identify the exact location of the "Petroleum Product or Oil Storage" Notifiable Activity and whether any spills have historically occurred on-site. Based on the findings of the PSI, the PSI will recommend any additional investigations that may be required and/or any remediation options that may be needed for this land parcel.

4.3.1.6 Lot 5 RP12771, Service Station

Lot 5 RP12771, Service Station (581 MILTON RD. TOOWONG) - Full purchase land acquisition is proposed for this land parcel. Elevated structures and surface works are proposed on the southern half of the land parcel (SKM-CW Joint Venture 2008). No additional information was supplied by BCC

regarding this "Service Station" Notifiable Activity on this land parcel. The EMR Notifiable Activity listing for this land parcel describes "Service Station" as, operating a commercial service station. A PSI, as identified in **Section 4.1**, will be required to establish the detailed site history of this land parcel, in relation to the "Service Station" Notifiable Activity, and to determine if any spills have historically occurred on-site. Based on the findings of the PSI, the PSI will recommend any additional investigations that may be required and/or any remediation options that may be needed for this land parcel.

4.3.1.7 Lot 1043 SL7078 (Toowong Bus Depot), Petroleum Product or Oil Storage and Lot 1042 SL9242 (Park-n-Ride), Hazardous Contaminants Site

Lot 1043 SL7078 (TOOWONG BUS DEPOT), Petroleum Product or Oil Storage (29 MISKIN ST. TOOWONG) and Lot 1042 SL9242 (Park-n-Ride), Hazardous Contaminants Site (27 MISKIN ST. TOOWONG) - No land acquisition is proposed of this land parcel. Further information relating to contamination issues on these sites is provided in **Section 3.10**. City Design (2002) recognised that there are a number of uncertainties that have not been fully addressed from their investigation. These include:

- the down-gradient extent of hydrocarbon impacts to soil and groundwater adjacent to the park-n-ride boundary at Miskin Street;
- the source and extent of hydrocarbon contamination underlying the fuel tank area; and
- volume and extent of free-phase hydrocarbon contamination remaining within the fill material underlying the Toowong Bus Depot property.

City Design (2002) concluded that any subsurface construction work within the Bus Depot, park-n-ride area and adjacent roads would require the preparation and implementation of appropriate management plans to identify and handle contaminated material. City Design (2002) also concluded that "the associated costs and disruptions to activities limit potential remediation options for the bus depot whilst it remains in operation. It is the conclusion of City Design that it would be acceptable to undertake no further investigations or remediation works on the basis that the following recommendations were adopted and carried out:

- six monthly sampling of the existing monitoring well network was carried out for at least the next two years;
- preparation of monitoring reports that discuss the results obtained and provide recommendations to modify or extend the monitoring program as required; and
- informing of relevant sections of BCC and other underground service providers that hydrocarbon contamination may be present adjacent to the bus depot and park-n-ride areas and that adequate management plans must be prepared and implemented prior to the commencement of any underground works."

Additional information from City Design will be required to determine whether the above recommendations were adopted, what additional investigations were undertaken and remediation activities have occurred at the Toowong Bus Depot. This information will determine what impacts

the hydrocarbon contamination has had on the surrounding road reserves and land parcels to determine if these impacts pose a risk to the proposed Project construction activities in the area.

4.3.2 Kelvin Grove Connection

The following land parcels were identified at the Kelvin Grove Connection.

4.3.2.1 Lot 1 RP181929, Service Station

Lot 1 RP181929, Service Station (43 MUSGRAVE RD. RED HILL) - Land acquisition has not been identified for this land parcel. However, surface works are proposed adjacent to the eastern boundary of the land parcel to a depth of approximately 0.7 mbgs along Lower Clifton Terrace (SKM-CW Joint Venture 2008). This land parcel was identified during the drive-by survey (**Appendix B**). Historical aerial photography identified the land parcel was residential in 1946 and an industrial land use (service station) was evident in 1960 to 1980. BCC records indicate that the site has not been listed on the EMR and no additional information was supplied by BCC regarding the possible "Service Station" Notifiable Activity on this land parcel. Due to the unknown nature of this land parcel, a PSI, as identified in **Section 4.1**, will be required to establish the detailed site history of this land parcel in relation to the "Service Station" Notifiable Activity. The primary objectives of the PSI will be to determine whether the "Service Station" Notifiable Activity did occur on this land parcel. Based on the findings of the PSI, the PSI will recommend any additional investigations that may be required and/or any remediation options that may be needed for this land parcel.

4.3.2.2 Lot 2 SP113018 and Lot 4 SP113018, Railway Yards

Lot 2 SP113018, Railway Yards (39 KELVIN GROVE RD. KELVIN GROVE) and Lot 4 SP113018, (29 GILCHRIST AVE HERSTON) Railway Yards - Land acquisition has not been identified for these land parcels. Surface works are proposed along the northern boundary of these land parcels to a depth of approximately 0.2 mbgs (SKM-CW Joint Venture 2008). No additional information was supplied by BCC or QR regarding the "Railway Yards" Notifiable Activity for these land parcels. However anecdotal information supplied by QR identified the following potential contaminating activities associated with railway land in QLD (**Section 3.7**):

The EMR Notifiable Activity listing for this land parcel describes "Railway Yards" as operating a railway yard including goods-handling yards, workshops and maintenance areas. As construction activities are not proposed for these land parcels and based on the shallow depth of surface work, a PSI, as identified in **Section 4.1**, would not be required for these land parcels. However, the potential for the disturbance of unanticipated/unexpected contamination bordering these land parcels is high and should be considered during the proposed surface works along the northern boundary of the land parcels. The requirements of the environmental management plan (EMP) (**Section 5)** should be followed in the event that unanticipated/unexpected contamination is encountered and/or disturbed during any construction activities adjacent to these land parcels.

4.3.2.3 Lot 32 SP122215, Railway Yards

Lot 32 SP122215, Railway Yards (GILCHRIST AVE HERSTON) - Land acquisition has not been identified for this land parcel. Surface works are proposed along the northern boundary of the land

parcel. The information identified above for Lot 2 and 4 SP113018 should also be considered for this land parcel.

4.3.2.4 Lot 5 SP123915, Hazardous Contaminant Site

Lot 5 SP123915, Hazardous Contaminant Site (18 BOWEN BRIDGE RD HERSTON) - Land acquisition has not been identified for this land parcel. Surface works and interface earthworks are proposed along the southern boundary of the land parcel to a depth of approximately 0.3 mbgs (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the "Hazardous Contaminant Site" Notifiable Activity on this land parcel. The location of the "Hazardous Contaminant Site" Notifiable Activity within this land parcel is currently unknown. Further information, from the EPA, BCC and/or the land owner, regarding the "Hazardous Contaminant Site" Notifiable Activity on this land parcel is required. A PSI, as identified in **Section 4.1**, will be required to establish the detailed site history of this land parcel in relation to the location of the "Hazardous Contaminant Site" Notifiable Activity. The primary objectives of the PSI will be to determine whether the Notifiable Activity has occurred or is occurring in the proposed surface works and interface earthworks area. Based on the findings of the PSI, the PSI will recommend any additional investigations that may be required and/or any remediation options that may be needed for the identified surface works and interface earthworks area.

4.3.2.5 Lot 1 RP142701, Hazardous Contaminant Site

Lot 1 RP142701, Hazardous Contaminant Site (6 VICTORIA ST KELVIN GROVE) - Land acquisition has not been identified for this land parcel. Surface works are proposed along the northern boundary of the land parcel to a depth of approximately 0.1 mbgs (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the "Hazardous Contaminant Site" Notifiable Activity on this land parcel. As construction activities are not proposed for this land parcel and based on the shallow depth of surface work, a PSI, as identified in **Section 4.1**, would not be required for this land parcel. However, disturbance of unanticipated/unexpected contamination may be encountered and should be considered during the proposed surface works adjacent to the northern boundary of the land parcel. The requirements of the EMP (**Section 5)** should be followed in the event that unanticipated/unexpected contamination is encountered and/or disturbed during any construction activities adjacent to this land parcel.

4.3.2.6 Lot 1 RP891412, Dry Cleaning

Lot 1 RP891412, Dry Cleaning (113 KELVIN GROVE RD. KELVIN GROVE) - Land acquisition has not been identified for this land parcel. Surface works are proposed along the western boundary of the land parcel to a depth of approximately 0.1 mbgs (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the "Dry Cleaning" Notifiable Activity on this land parcel. As construction activities are not proposed for this land parcel and based on the shallow depth of surface work, a PSI, as identified in **Section 4.1**, would not be required for this land parcel. However, disturbance of unanticipated/unexpected contamination may be encountered and should be considered during the proposed surface works adjacent to the western boundary of the land parcel. The requirements of the EMP (**Section 5)** should be followed in the event that

unanticipated/unexpected contamination is encountered and/or disturbed during any construction activities adjacent to this land parcel.

4.3.2.7 Lot 556 SP133445, Landfill

Lot 556 SP133445, Landfill (137 KELVIN GROVE RD. KELVIN GROVE) - Land acquisition has not been identified for this land parcel. Surface works are proposed along the western boundary of the land parcel to a depth of approximately 0.1 mbgs (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the "Landfill" Notifiable Activity on this land parcel. As construction activities are not proposed for this land parcel and based on the shallow depth of surface work, a PSI, as identified in **Section 4.1**, would not be required for this land parcel. However, disturbance of unanticipated/unexpected contamination may be encountered and should be considered during the proposed surface works adjacent to the western boundary of the land parcel. The requirements of the EMP (**Section 5)** should be followed in the event that unanticipated/unexpected contamination is encountered and/or disturbed during any construction activities adjacent to this land parcel.

4.3.2.8 Lots 1, 2 and 3 SP179651, Site of BBC Interest (Service Station)

Lots 1, 2 and 3 SP179651, Site of BBC Interest (150 KELVIN GROVE RD. KELVIN GROVE) - Land acquisition has not been identified for this land parcel. Surface works are proposed approximately 30 m from the south eastern boundary of these land parcels to a depth of approximately 0.1 mbgs (SKM-CW Joint Venture 2008). No additional information was supplied by BCC regarding the "Site of BBC Interest" on this land parcel. During the drive-by survey of these land parcels, the site was operating as a service station and car repair workshop. As construction activities are not proposed for these land parcels and based on the shallow depth of surface work a PSI, as identified in **Section 4.1**, would not be required for these land parcels. However, disturbance of unanticipated/unexpected contamination may be encountered and should be considered during the proposed surface works adjacent to the western boundary of these land parcels. The requirements of the EMP (**Section 5)** should be followed in the event that unanticipated/unexpected contamination is encountered and/or disturbed during any construction activities adjacent to these land parcels.

4.4 Mitigation Measures - Migration of Potential Groundwater Contamination

As identified in **Section 4.2.2**, groundwater flow modelling has been undertaken to assess the potential drawdown of groundwater in the vicinity of the Northern Link Tunnel. Contaminants in groundwater, if present on EMR listed land parcels, and additional identified land parcels, located within the drawdown area have the potential to become mobile.

The twenty-two (22) high risk EMR listed land parcels and two (2) additional high risk sites were identified within or on the boundary of the Study Corridor Boundary. Contaminants, if present, from these land parcels have the highest potential to become mobilised due to construction/operation of the Project **(Figure 3-2A**, **Figure 3-2B** and **Figure 3-2C).** It is important to note that the actual risks associated with a land parcel's Notifiable Activity will need to be examined further by undertaking additional groundwater flow modelling and through site specific contaminated land investigations, as outlined in **Section 3.1.1**, prior to construction of the Project. Contaminants in groundwater, if

present on the remaining EMR listed land parcels, and additional identified land parcels, located within the Project Study Area also have the potential to become mobilised due to construction/operation of the Project.

4.5 Mitigation Measures - General

As discussed in **Section 3.1.1**, the QLD EPA *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland* provide information on how contaminated site investigations are to be progressively assessed and managed through a staged approach.

During this staged approach, site activities relating to the disturbance, excavation, removal and/or disposal of contaminated soil and/or groundwater must ensure that environmental harm is prevented. To achieve this outcome, specific procedures must be developed and implemented. These procedures should be developed by a person whose qualifications and experience complies with the requirements of section 381 of the EP Act. A suitably qualified individual must also supervise the activities. Procedures must be developed prior to commencement of site activities and must consider as a minimum:

- The staging of site activities to minimise the extent of disturbed areas and to reduce the potential for contaminated run-off;
- Any odour emissions which occur during or as a result of excavation activities must be immediately mitigated by use of water sprays, odour suppressants and/or the odour-causing material covered by plastic or mulch;
- Dust emissions and their management;
- Stormwater controls around stockpiles and/or excavations to minimise the potential for the off-site migration of contaminants;
- Minimising the exposure of humans and the environment from potentially contaminated material during excavation activities;
- Controls for material haulage (e.g. covering loads, wetting material to reduce airborne dust emissions);
- Documentation of all contaminated material transport operations (including the descriptions of processes, personnel and organisations involved in the removal, transportation and receival of contaminated material); and
- Throughout construction and development phases, details of inspections, the monitoring of contaminated material movement and disposal, and Workplace Health & Safety compliance needs to be documented.

For infrastructure projects where contaminated material is likely to remain onsite, current practices to prevent contact with the general public and the environment is to provide adequate protection or contaminant capping (i.e. to remove the exposure pathway). Pavements, building foundations and garden areas typically achieve this objective.

5. Environmental Management Plan

5.1 EMP Objectives

An EMP will be required to ensure that identified environmental impacts relating to Project construction and operation are avoided or minimised. The procedures and objectives of the EMP should include, but are not limited to:

- the guidance on environmental, health and safety aspects associated with construction and operation of the Project;
- the management of health and environmental risks from contaminated land;
- managing the way contaminated spoil is removed and disposed to ensure the risk is not relocated to another site; and
- minimising the potential and risk for hazardous events.

5.2 Environmental Responsibilities

There are a number of contaminated land project responsibilities involved in the Project, with respect to the *EP Act*. All project staff have a general environmental duty under Section 319 of the Act, and must not carry out any activities that cause, or are likely to cause, environmental harm, unless all reasonable and practical measures are taken to prevent or minimise harm. If project staff, while performing their work, notices that serious or material environmental harm is being caused or threatened by their actions or the actions of someone else, they should then report the matter, under section 320 of the Act. Additionally, project staff are required to comply with the following items at all times:

- Contractor's environmental policy and Environmental Management System (EMS);
- Relevant legislation, with particular attention to environmental legislation under this EMP;
- EMP requirements including relevant criteria for construction and operation; and
- Training requirements.

Project staff responsible for any baseline, construction or operational stage monitoring should ensure that all monitoring equipment used is regularly calibrated and the results recorded. All monitoring and sampling undertaken should be in accordance with the relevant agency guidelines or Australian Standards. All analytical testing performed should use National Association of Testing Authorities (NATA) approved procedures or if this is unavailable, be performed to the best relevant standard.

5.3 Guidelines

The methodology used in this EMP is based largely on the following Australian guideline publications:

- *Environmental Protection Act 1994*;
- National Environment Protection Council [NEPC], 1999;The *National Environment Protection (Assessment of Site Contamination) Measure* (NEPM); Australian and New Zealand Environment

and Conservation Council (ANZECC)/National Health and Medical Research Council (NHMRC). *Guidelines for the Assessment and Management of Contaminated Sites;*

- Standards Australia, 1997; Australian Standard AS4482.1-1997: *Guide to the sampling and investigation of potentially contaminated soil Part 1:Non-volatile and semi-volatile compounds* (Standards Australia, 1997); and
- DEH, 1998 *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland*.

5.4 EMP

The following identifies mitigation measures should be implemented to avoided or minimised environmental impacts for the Project. The following procedures and objectives would include, but are not limited to:

- Manage the health and environmental risks from contaminated land;
- Manage the way contaminated spoil is removed and disposed to ensure the risk is not relocated to another site;
- Undertake detailed site history investigations of identified EMR listed and additionally identified land parcels within the Project Study Area to identify actual soil/groundwater contamination;
- Prepare and implement a Remediation Plan for removal, transport and remediation of contaminated soil, in accordance with:
  - ANZECC/NHMRC - Guidelines for Assessment and Management of Contaminated Sites; and
  - the EP Act as amended and other related Acts, Policies and Statutory Regulations of Federal, State and Local Government.
- Develop a Hazardous Materials Register, to include details on:
  - storage location;
  - storage requirements;
  - proper usage;
  - handling information; and
  - disposal procedures.
- Design chemical and fuel storage areas to comply with Australian Standards such as AS1940: Storage and Handling of Flammable and Combustible Liquids, and AS3780: The Storage and Handling of Corrosive Substances;
- Develop emergency response procedures, including Incident Management Plans (IMPs), to incorporate spill response procedures;
- Undertake induction and training regarding contaminated land issues for construction staff;
- Ensure the applicable guidelines are adopted for storage requirements including the adequacy and need for bunding around stores;
- Ensure spills and leaks are cleaned up and remediated as specified in IMPs;

- Ensure spill response and containment equipment is kept on the worksite in close proximity to storage and handling areas;
- Conduct validation sampling following remediation or covering of contaminated soil, and achieve sign-off by the EPA or by a Third Party Reviewer;
- Prepare and implement a Dust and Odour Management System for the duration of the construction activities, which includes:
  - Effective management of dust and odour generation;
  - Effective monitoring of impacts;
  - Effective communications with the local community on issues associated with the construction activities;
  - A clearly identified point of contact should the community have comments or complaints;
  - A well defined process to ensure that any issues are dealt with promptly and to a satisfactory level; and
  - A well defined system of recording any incidents or complaints.
- Utilise appropriate dust control measures while undertaking demolition activities;
- Install and maintain a truck wheel wash station at the worksites and construction zones, at locations where trucks will be moving from unsealed areas of pavement to sealed roads and mechanisms for cleaning out truck wash/dealing with sediment created – any potentially contaminated sediments collected in the truck wheel wash must be managed in accordance with this EMP, any applicable legislation and/or advice sought from and provided by a suitably experienced contaminated land practitioner;
- Keep the sealed access roads to the worksite sheds relatively dust free by regular sweeping and washing as needed;
- Cover trucks transporting excavated material to prevent windblown dust during transport. Should train transport be utilised, controls on windblown dust from spoil containers will be required;
- During the first disturbances of potentially odorous soil activities, implement appropriate management measures such as:
  - proceeding slowly during excavation of potentially odorous sites in order to determine whether odour impacts at off-site sensitive receivers will be likely;
  - in the event that it seems odour impacts will be likely, disturbances would only take place if the wind direction is not incident on sensitive receptors; and
  - if excavated soil is stockpiled on-site, it shall be covered with a tarpaulin or mulch to prevent odour release.
- Daily inspection of stockpiles, work areas and work practices to ensure Dust and Odour Management System is being implemented;
- Carry out dust monitoring at approved monitoring locations to assess the levels of dust generation affecting nearby sensitive receptors including increasing frequency if dust complaints occur;

- Formal inspections/audits of stockpiles, work areas and work practices to ensure Dust and Odour Management System is being followed;
- Develop and implement IMPs for the containment and clean up procedures for spillage of fuels and other dangerous goods, including the provision of access and egress of emergency vehicles;
- Develop and implement containment and clean up procedures dealing with the prevention and management of spillage of spoil during transport to spoil placement sites as part of a Sediment and Erosion Control Plan;
- Ensure the transport of regulated wastes and contaminated soils or other materials is conducted by licensed contractors for disposal at licensed facilities, in accordance with legislative requirements;
- Undertake refuelling and maintenance activities in designated bunded areas to minimise the potential for soil and water contamination to result from these activities. Appropriate spill response plans should also be prepared;
- If land is found effected by contamination, a SMP will need to be implemented;
- If spills occur during the transport of contaminated material, the area affected will require remediation.

5.5 Unanticipated/Unexpected Contamination

The following should be undertaken in the event unanticipated or unexpected contamination is encountered during construction activities:

- Stop work and assess the situation. Isolate the area and ensure the health and safety of yourself, others, and the environment;
- Get advice from the EPA and/or a contaminated land practitioner. Depending on the severity of the situation a contaminated land practitioner may need to assess the site before work can continue; and
- Once potential contamination has been identified the site should be managed in accordance to State and Federal Guidelines (**Section 3.1.1).**

6. Conclusions

The purpose of this report was to conduct a broad desk-top review of potentially contaminated land parcels on the EMR within the Project Study Area and identify the potential impacts and mitigation measures associated with the Project. The assessment undertaken was based on introductory steps for a preliminary site investigation. These steps are intended to broadly identify whether there is a potential risk of a historical or existing land use to have occurred with the potential to cause contamination.

The scope of this assessment included the following:

- Desk-top review comprising:
  - review of BCC EMR/CLR data;
  - review of historical aerial photographs;
  - review of the potential for Unexploded Ordnance (UXO);
  - review of contaminated land information obtained from Queensland Rail (QR);
  - review of BCC operated landfills;
  - review of the site investigation report provided by City Design (2002) on a fuel line leakage at the Toowong Bus Depot;
- drive-by survey within the Project Study Area; and
- provide an assessment of potential contaminated land impacts and mitigation measures.

BCC EMR/CLR data were reviewed as part of this assessment. The BCC EMR/CLR database is a duplication of the EPA EMR/CLR data for the BCC area. The EMR/CLR provides information on past and present land uses, including whether the land has been or is being used for a Notifiable Activity, or has been contaminated by a hazardous contaminant. Notifiable Activities are those that cause or are likely to cause contamination. However, a land parcel identified with a Notifiable Activity does not necessarily indicate that the land parcel is or will be contaminated.

Certain Notifiable Activities present a greater risk of generating contaminants which are likely to be mobile in groundwater and susceptible to groundwater drawdown. Fifteen different Notifiable Activities were identified within the Project Study Area. Each Notifiable Activity was assigned a high or low risk, based on the actual Notifiable Activity and the potential for contaminated groundwater becoming mobile due to groundwater drawdown from construction and operation activities of the Project.

The absence of a land parcel from the EMR/CLR does not necessarily mean that a land parcel has not been used for a Notifiable Activity or another activity, which may result in contamination. Conversely a land parcel listed on the EMR does not necessarily indicate that the land parcel is or will be contaminated.

A total of 378 land parcels listed on the EMR were identified within the Project Study Area, of these:

- twenty-eight land parcels were identified within or on the boundary of the Study Corridor Boundary; and
- three hundred and fifty land parcels were identified within or on the boundary of the Drawdown Area**.**

The level of impact that a potentially contaminated land parcel may have on the Project due to the disturbance of contaminated soil and/or groundwater from construction activities is currently unknown.

To accurately evaluate the impacts of each EMR listed land parcel, additional information will be required from either the land owner, BCC and/or the QLD EPA. It is most likely that the land parcel will require further investigation, in accordance with State and/or National guidelines.

The disturbance of potentially contaminated soil and groundwater is likely to occur at seventeen (17) EMR listed and additional identified land parcels during construction activities. Mitigation measures have been proposed for the seventeen (17) EMR listed and other identified land parcels being disturbed during construction activities due to potential soil and/or groundwater contamination. The disturbance of potentially contaminated soil during operational stages of the Project is considered low or not applicable.

Groundwater flow modelling (see Hydrogeology Section of this EIS) has been undertaken to assess the potential drawdown of groundwater in the vicinity of the Project. Contaminants in groundwater, if present on EMR listed land parcels, and additional identified land parcels, located within the drawdown area have the potential to become mobile. High risk Notifiable Activity listed land parcels have the potential of generating contaminants likely to be more susceptible to groundwater drawdown than low risk land parcels.

The twenty-two (22) high risk EMR listed land parcels and two (2) additional high risk sites were identified within or on the boundary of the Study Corridor Boundary. Contaminants, if present, from these land parcels have the highest potential to become mobilised due to construction/operation of the Project**.** It is important to note that the actual risks associated with a land parcels Notifiable Activity will need to be examined further by undertaking additional groundwater flow modelling and through site specific contaminated land investigations, as outlined in **Section 3.1.1**. Contaminants in groundwater, if present on the remaining EMR listed land parcels, and additional identified land parcels, located within the Project Study Area also have the potential to become mobilised due to construction/operation of the Project.

The QLD EPA *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland* provide information on how contaminated site investigations are to be progressively assessed and managed through a staged approach. During this staged approach, site activities relating to the disturbance, excavation, removal and/or disposal of contaminated soil and/or groundwater must ensure that environmental harm is prevented. An EMP will be required to ensure that identified environmental impacts relating to Project construction and operation activities are avoided or minimised. Procedures and objectives of the EMP are outlined in **Section 5.**

Information on the nature and extent of possible contamination along the Project Study Area is extremely limited. As additional information is obtained through further investigation, the recommendations made in this assessment should be refined to manage actual rather than potential impacts.

7. Limitations

The purpose of this report was to conduct a broad desk-top review of potentially contaminated land parcels on the EMR within the Project Study Area. Information in this report was primarily obtained from data provided by BCC and other publicly available information sources.

This investigation covered many land parcels, hence limits were imposed on the amount of information collected and assessed. There may be land parcels with either existing or historical uses which have the potential to cause contamination which are unknown or were unobserved and consequently not identified. This investigation was limited in time to post 1946 due to the lack of detailed historical information prior to this date.

In preparing this report, SKM has relied upon and presumed accurate certain information (or absence thereof) relative to the information provided by BCC and the various literature sources. Except as otherwise stated in the report, SKM has not attempted to verify the accuracy or completeness of any such information.

No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings, observations and conclusions are based solely upon information and drawings supplied by the Client, and information available in the public domain in existence at the time of the investigation.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between SKM, the JV and the Client. SKM accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

As per the Draft Guidelines, PSI will need to be undertaken on land parcels listed on the EMR which are being disturbed, prior to the commencement of the proposed Project construction activities. These investigations are beyond the requirements of an existing environment, and impact assessment and mitigation study as part of an EIS.

Information on the nature and extent of possible contamination along the Project Study Area is extremely limited. As additional information is obtained through further investigation, the recommendations made in this assessment should be refined to manage actual rather than potential impacts.

8. References

City Design (2002). Contaminated Land and Groundwater Assessment, Fuel Line Leakage, Toowong Bus Depot, Miskin Street, Toowong. Geotechnical and Environmental Engineering, City Design, February.

Department of Environment, (1998). Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland, May.

National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure.

Sinclair Knight Merz (2004). Final, Brisbane North South Bypass Tunnel – Report on Existing Environment Land Contamination, 19 November.

Sinclair Knight Merz (2006). Final, Airport Link Phase 2 – Detailed Feasibility Study, Contaminated Land, July.

Sinclair Knight Merz (2008). Revised Draft, Northern Link – Contaminated Land – Existing Environment, February.

Sinclair Knight Merz – Connell Wagner (2008). *Northern Link Project Definition Report* Volume 1 & 2, March.

Appendix A

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
1	RP128787	117 VICTORIA ST WEST END	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
14	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
15	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
16	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
17	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
18	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
19	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
20	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
21	GTP100234	22 THURLOW ST NEWMARKET	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE
2	RP137861	439 MONTAGUE RD WEST END	EMR-NOTIFIABLE ACTIVITIES	CHEMICAL STORAGE, TANNERY, FELLMONGERY OR HIDE CURING
1	RP891412	113 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	DRY CLEANING
4	SP113412	31 LITTLE CRIBB ST MILTON QLD 4064	EMR-SITE MANAGEMENT PLAN	FOUNDRY OPERATIONS
1	RP92589	121 CAMPBELL ST BOWEN HILLS QLD 4006	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
1	SP163311	RAILWAY CORRIDOR VARIOUS LOTS	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
1	RP142701	6 VICTORIA ST KELVIN GROVE QLD 4059	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
1	RP57249	10 COSTIN ST VALLEY QLD 4006	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
1	RP124155	40A WICKHAM TCE SPRING HILL QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
1	RP59251	503A ST PAULS TCE VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
1	RP175247	74 QUAY ST BRISBANE QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
2	RP92589	117 CAMPBELL ST BOWEN HILLS QLD 4006	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
2	RP158827	64 BOWEN BRIDGE RD HERSTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
2	RP113229	45B CAMPBELL ST BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
2	RP9882	101A MAYNE RD BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
2	RP9711	503E ST PAULS TCE VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
2	RP219864	63C CORONATION DR BRISBANE QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
3	RP113229	47 CAMPBELL ST BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
3	RP109984	24B GREGORY TCE SPRING HILL QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
4	RP109984	24C GREGORY TCE SPRING HILL QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
5	SP123915	18 BOWEN BRIDGE RD HERSTON QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
5	SP113413	30 LITTLE CRIBB ST MILTON	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
6	SP113413	30 LITTLE CRIBB ST MILTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
7	SP113413	30 LITTLE CRIBB ST MILTON	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
8	SP113413	30 LITTLE CRIBB ST MILTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
9	SP113413	30 LITTLE CRIBB ST MILTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
9	RP89138	36 DUNCAN ST WEST END QLD 4101	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
10	SP135195	315 UPR ROMA ST BRISBANE QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
11	SP125076	93A LUTWYCHE RD WINDSOR QLD 4030	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
11	SP128519	RAILWAY LAND - 25B ROSETTA ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
11	SP129983	5A RAILWAY TCE MILTON QLD 4064	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
11	RP9717	121 CONSTANCE ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
11	SP129983	5A RAILWAY TCE MILTON QLD 4064	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
12	RP9717	119 CONSTANCE ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
12	SP135186	55 CRIBB ST MILTON QLD 4064	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
15	RP94274	43B CAMPBELL ST BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
15	RP218570	42 FERRY ROAD WEST END QLD 4101	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
18	RP9934	1 BUTTERFIELD STREET HERSTON QLD 4006	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
18	RP197695	42 FERRY ROAD WEST END QLD 4101	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
19	RP197695	42 FERRY ROAD WEST END QLD 4101	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
21	RP885003	97 MAYNE RD BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
21	SP122213	RAILWAY LAND - 80 BROOKES ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
21	RP79609	51 RAILWAY TCE, MILTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
22	SP157087	96 VICTORIA PARK ROAD, KELVIN GROVE 4059	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
22	RP183632	338A TURBOT ST SPRING HILL QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
23	SP157087	68 BLAMEY ST KELVIN GROVE	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
23	SP122212	RAILWAY LAND - 83 BROOKES ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
23	RP79609	53 RAILWAY TCE, MILTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
25	SP129985	RAILWAY LAND - 274A MILTON RD MILTON QLD 4064	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
26	SP129987	RAILWAY LAND - 27 SYLVAN RD TOOWONG QLD 4066	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
27	SP129988	RAILWAY LAND - 28A SYLVAN RD TOOWONG QLD 4066	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
29	RP18712	51 HIGH STREET, TOOWONG	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
31	SP122214	RAILWAY LAND - 24 ABBOTSFORD RD BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
31	SP117120	81 QUAY ST BRISBANE QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
32	SP129990	RAILWAY LAND - 90A MOGGILL RD TARINGA QLD 4068	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
32	SP129990	RAILWAY LAND - 90A MOGGILL RD TARINGA QLD 4068	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
33	RP9712	503F ST PAULS TCE VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
34	RP18497	2 EARLE ST WINDSOR QLD 4030	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
34	RP9694	503C ST PAULS TCE VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
39	SP129989	RAILWAY LAND - 5 BENSON ST TOOWONG QLD 4066	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
41	SP117121	15 EXFORD ST BRISBANE QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
51	SL801574	15 BUTTERFIELD ST HERSTON QLD 4006	EMR-SITE MANAGEMENT PLAN	HAZARDOUS CONTAMINANT SITE
66	RP9348	15 MAUD ST NEWSTEAD QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
100	RP213606	237 BRUNSWICK ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
101	RP810101	112 GIPPS ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
101	SP129986	RAILWAY LAND - 120A EAGLE TCE AUCHENFLOWER QLD 4066	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
215	RP18374	55 RAILWAY TCE, MILTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
411	RP890875	51A COLLEGE RD SPRING HILL QLD 4000	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
431	SL2529	64 BOWEN BRIDGE RD HERSTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
452	SL3473	25A OCONNELL TCE BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
454	SP122217	RAILWAY LAND- -58 CAMPBELL ST BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
455	SL3473	52B OCONNELL TCE BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
456	SL3473	52A OCONNELL TCE BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
474	SL12086	574A GREGORY TCE BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	HAZARDOUS CONTAMINANT SITE
1042	SL9242	27 MISKIN ST TOOWONG QLD 4066	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE
544	SP119375	30 BOWEN BRIDGE RD HERSTON	EMR-HAZARDOUS CONTAMINANTS	HAZARDOUS CONTAMINANT SITE, PETROLEUM PRODUCT OR OIL STORAGE
1	RP90610	38 MURRAY ST RED HILL	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
1	RP69590	47 PICOT ST KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
1	SP184982	52 BISHOP ST KELVIN GROVE QLD 4059	EMR-SITE MANAGEMENT PLAN	LANDFILL
1	RP18899	108 DEAN ST TOOWONG	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
2	RP69590	59 PICOT ST KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
2	RP66835	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
2	RP114804	18 COSTIN ST VALLEY QLD 4006	EMR-SITE MANAGEMENT PLAN	LANDFILL
2	RP89283	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
3	SP159806	216 BROSLEY RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
12	SP147396	419 GEORGE ST BRISBANE QLD 4000	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
21	RP100093	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
22	SP129984	5A RAILWAY TCE MILTON QLD 4064	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
34	RP17303	72 PICOT ST KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
59	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
63	RP18863	316 MILTON ROAD, MILTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
65	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
66	RP18863	316 MILTON ROAD, MILTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
68	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
354	RP898660	150 CAXTON ST PADDINGTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
356	SP161706	150 CAXTON ST PADDINGTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
357	SP161706	150 CAXTON ST PADDINGTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
434	SL2989	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
434	SL2989	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
436	SP135355	147 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
437	SP135374	147 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
532	RP18524	95 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
534	RP18524	95 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
535	RP18524	95 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
536	RP18524	95 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
537	RP18524	95 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
538	RP18524	95 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
539	RP18524	95 BUTTERFIELD STREET, HERSTON	NOTIFIED TO EPA	LANDFILL
540	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
541	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
542	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
543	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
544	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
545	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
546	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
547	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
548	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
549	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
550	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
551	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	NOTIFIED TO EPA	LANDFILL
552	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	NOTIFIED TO EPA	LANDFILL
553	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
554	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
555	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
556	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
556	SP133445	137 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
557	RP18524	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
581	RP227070	124 CAXTON ST PADDINGTON	EMR-SITE MANAGEMENT PLAN	LANDFILL
989	SL3468	97 BUTTERFIELD STREET, HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	LANDFILL
1	RP91834	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
2	RP58871	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
3	RP100093	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
15	RP10971	41 FERRY RD WEST END QLD 4101	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
21	SP129984	5A RAILWAY TCE MILTON QLD 4064	EMR-NOTIFIABLE ACTIVITIES	LANDFILL, HAZARDOUS CONTAMINANT SITE
22	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
23	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
24	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
25	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
60	RP18863	316 MILTON ROAD, MILTON	EMR-HAZARDOUS CONTAMINANTS	LANDFILL, HAZARDOUS CONTAMINANT SITE
61	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
62	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
64	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
67	RP18863	316 MILTON ROAD, MILTON	EMR-SITE MANAGEMENT PLAN	LANDFILL, HAZARDOUS CONTAMINANT SITE
1	RP868488	200 MT COOTHA RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	MINERAL PROCESSING

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
1	RP868488	200 MT COOTHA RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	MINERAL PROCESSING
1	RP868488	200 MT COOTHA RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	MINERAL PROCESSING
1	RP868488	200 MT COOTHA RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	MINERAL PROCESSING
1	RP868488	200 MT COOTHA RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	MINERAL PROCESSING
1	RP107107	15 ROY ST AUCHENFLOWER	EMR-NOTIFIABLE ACTIVITIES	PEST CONTROL
1	RP20344	270 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP152626	71 BUTTERFIELD ST HERSTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	SP125074	87 LUTWYCHE RD WINDSOR QLD 4030	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP167860	47 BROOKES ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP154835	113 CAXTON ST PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP126496	108 WICKHAM ST VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP41005	40 QUARRY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP140930	398 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP203299	148 BRUNSWICK ST VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	SP100562	BRISBANE TRANSIT CENTRE AND TRAVELLODGE HOTEL 159 ROMA ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP157793	325 WICKHAM ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP138453	31 DUNCAN ST FORTITUDEVALLEY (31 DUNCAN ST FORTITUDE VALLEY)	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP86690	10 QUAY STREET (10 QUAY STREET BRISBANE)	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1	RP46495	31 CORONATION DRIVE (31 CORONATION DRIVE BRISBANE)	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	SP144596	574 GREGORY TCE BOWEN HILLS	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
2	SP193904	1 HORACE ST WINDSOR	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	SP117789	91 BREAKFAST CREEK RD NEWSTEAD	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP152576	152 WHARF ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP41005	40 QUARRY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP124155	310 ANN ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP43451	166 WICKHAM TCE BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP231259	433 BOUNDARY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP221700	824 ANN ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	SP195250	503 ST PAULS TCE FORTITUDE VALLEY	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
2	RP23621	407 CHAPEL HILL RD, MT COOT-THA	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP23621	407 CHAPEL HILL RD, MT COOT-THA	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
2	RP118610	36 DUNCAN ST WEST END	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
2	RP212214	24 DUNCAN ST WEST END	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
3	SP190738	574 GREGORY TCE BOWEN HILLS	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
3	RP8693	11 EAGLE TCE BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
3	RP211213	300 ANN ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
3	RP41005	40 QUARRY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
3	SP140773	298 ANN ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
3	SP195250	503 ST PAULS TCE FORTITUDE VALLEY	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
3	RP886311	601 MILTON RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
3	RP46495	19 EAGLE TCE BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
4	SP163909	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
4	RP41005	40 QUARRY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
4	RP9713	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
4	RP45691	275 WICKHAM ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
4	SP195250	503 ST PAULS TCE FORTITUDE VALLEY	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
5	RP152604	5A HORACE ST WINDSOR	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
5	SP163909	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
5	RP9713	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
5	RP127273	211 BOUNDARY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
5	SP195250	503 ST PAULS TCE FORTITUDE VALLEY	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
5	SL12786	124 BIRDWOOD TCE TOOWONG	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
6	SP163909	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
6	RP221165	426 ANN ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
6	RP41005	40 QUARRY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
6	RP9713	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
7	SP163909	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
7	RP8693	11 EAGLE TCE BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
7	RP804537	15 LEICHHARDT ST SPRING HILL (23 LEICHHARDT ST SPRING HILL)	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
7	RP41005	40 QUARRY ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
7	RP9713	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
8	SP163909	50 NOBLE ST WILSTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
10	RP209688	603 CORONATION DVE TOOWONG	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
11	SP125074	87 LUTWYCHE RD WINDSOR QLD 4030	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
11	RP63738	8 RUNIC ST BARDON	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
12	SP193904	1 HORACE ST WINDSOR	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
12	RP63738	8 RUNIC ST BARDON	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
13	SP158918	49 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
13	RP10457	477 BOUNDARY ST SPRING HILL QLD 4000	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
13	RP104400	600 CORONATION DRIVE TOOWONG 4066 (600 CORONATION DRIVE TOOWONG)	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
14	SP158920	49 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
15	RP170268	465 WICKHAM TCE SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
15	RP137816	420 GEORGE ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
17	RP100716	147 MUSGRAVE RD RED HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
17	RP9713	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
18	RP9713	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
19	RP9713	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
20	RP909220	21 BALLOW ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
20	SP198740	42 BRIDGE ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
23	RP146760	454 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
23	SL12397	271 NORTH QUAY BRISBANE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
25	RP101422	48 MONTPELIER RD BOWEN HILLS	EMR-SITE MANAGEMENT PLAN	PETROLEUM PRODUCT OR OIL STORAGE
35	RP191045	34 HEUSSLER TCE MILTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
35	SL805565	185 MILTON RD MILTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
40	RP134580	240 BRUNSWICK ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
49	RP231249	255 WICKHAM TCE SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
60	RP20344	270 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
67	RP80003	108 LUTWYCHE RD WINDSOR	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
68	RP18524	108 LUTWYCHE RD WINDSOR	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
73	RP46061	60 BARRY PDE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
74	RP46061	60 BARRY PDE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
101	RP908959	18 KILROE ST MILTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
202	M332201	188 TARINGA PDE INDOOROOPILLY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
203	M332201	188 TARINGA PDE INDOOROOPILLY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
303	M332201	188 TARINGA PDE INDOOROOPILLY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
304	M332201	188 TARINGA PDE INDOOROOPILLY	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
449	SL4242	35 BUTTERFIELD ST HERSTON 4006	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
487	SP196776	574 GREGORY TCE BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
496	SL12309	10 BOWEN BRIDGE RD HERSTON	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
660	RP892974	58 GLENROSA RD RED HILL	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
872	S311352	124 BIRDWOOD TCE TOOWONG	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
1043	SL7078	29 MISKIN ST TOOWONG	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE
9	RP10558	10 COSTIN ST VALLEY QLD 4006	EMR-NOTIFIABLE ACTIVITIES	PETROLEUM PRODUCT OR OIL STORAGE, PRINTING
1	RP9892	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
1	RP116564	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
1	RP98241	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
1	RP47587	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
1	RP41931	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
2	RP52004	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
2	RP9893	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
2	RP47587	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
2	RP41931	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
2	RP9773	229 BRUNSWICK ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PRINTING
3	RP98241	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
3	RP9893	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
3	RP9891	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
3	RP41931	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING

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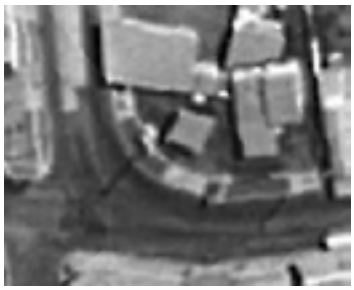
3	RP9469	130 WICKHAM ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PRINTING
3	RP9773	229 BRUNSWICK ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PRINTING
3	RP897163	4 DORSEY ST MILTON	EMR-NOTIFIABLE ACTIVITIES	PRINTING
3	RP18645	6 LANDSBOROUGH TCE TOOWONG	EMR-NOTIFIABLE ACTIVITIES	PRINTING
4	RP9891	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
4	RP9893	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
4	RP41931	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
5	RP9891	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
6	RP10639	333 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	PRINTING
6	RP9891	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
6	RP9893	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
7	RP9893	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
7	RP9891	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
8	RP9893	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
8	RP9891	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
19	RP9723	60 BAXTER ST FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	PRINTING
44	RP9986	26 JEAYS ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
45	RP9986	26 JEAYS ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
101	RP146694	69 MAYNE RD BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	PRINTING
1	RP892797	118-A ABBOTSFORD RD BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
1	RP88204	63 CAMPBELL ST BOWEN HILLS QLD 4006	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
2	SP158926	MAYNE RAILWAY YARDS 118 ABBOTSFORD RD BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
2	SP113018	39 KELVIN GROVE RD KELVIN GROVE QLD 4059	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
4	SP113018	29 GILCHRIST AVE HERSTON QLD 4006	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
16	RP903097	271 ROMA ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
17	RP903101	271 ROMA ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
18	RP903101	271 ROMA ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
32	SP122215	GILCHRIST AVE HERSTON (RAILWAY YARD)	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
35	SP169851	271 ROMA ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
39	SP169853	271 ROMA ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
60	SP152865	271 ROMA ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	RAILWAY YARDS
1	RP55684	15 EARLE ST WINDSOR	EMR-NOTIFIABLE ACTIVITIES	SCRAP YARDS
1	RP97627	305 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	RP89174	35 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	RP100688	78 LATROBE TCE PADDINGTON	EMR-SITE MANAGEMENT PLAN	SERVICE STATIONS
1	RP87496	93 LATROBE TCE PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	RP92573	2 LATROBE TCE PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	RP55287	2 LATROBE TCE PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	RP99090	171 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	SP129268	216 MUSGRAVE RD RED HILL	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
1	RP170643	316 ST PAULS TCE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	RP907285	467 MILTON RD AUCHENFLOWER	EMR-SITE MANAGEMENT PLAN	SERVICE STATIONS
1	RP910688	510 ST PAULS TCE FORTITUDE VALLEY (69 BROOKES ST FORTITUDE VALLEY)	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
2	SP129268	216 MUSGRAVE RD RED HILL	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
2	RP211151	55 LITTLE EDWARD ST SPRING HILL	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
2	RP910688	510 ST PAULS TCE FORTITUDE VALLEY	EMR-SITE MANAGEMENT PLAN	SERVICE STATIONS
2	RP106099	68 BENSON ST TOOWONG	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
3	RP101656	153 MUSGRAVE RD RED HILL	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
4	RP209568	98 MONTPELIER RD BOWEN HILLS QLD 4006	EMR-SITE MANAGEMENT PLAN	SERVICE STATIONS
4	RP52501	153 MUSGRAVE ROAD RED HILL (153 MUSGRAVE RD RED HILL)	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
4	SP137684	119 MILTON RD MILTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
5	RP127711	581 MILTON RD TOOWONG	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
5	B361	44 HERSCHEL ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
6	SP135240	319 CORONATION DVE MILTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
6	B361	44 HERSCHEL ST BRISBANE	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
8	RP97765	63 JEPHSON ST TOOWONG	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
15	RP205843	17 BOWEN BRIDGE RD HERSTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
17	SP135243	159 CORONATION DVE MILTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
25	RP19619	2 LATROBE TCE PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
26	RP19619	2 LATROBE TCE PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
26	RP44192	223 BARRY PDE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
27	RP44192	223 BARRY PDE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
28	RP19619	2 LATROBE TCE PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
28	RP44192	223 BARRY PDE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
29	RP44192	223 BARRY PDE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
38	RP102728	50 MACGREGOR TCE BARDON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
67	RP46061	100 BARRY PDE FORTITUDE VALLEY (100 BARRY PDE FORTITUDEVALLEY)	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
68	RP46061	100 BARRY PDE FORTITUDE VALLEY (100 BARRY PDE FORTITUDEVALLEY)	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
69	RP46061	100 BARRY PDE FORTITUDE VALLEY (100 BARRY PDE FORTITUDEVALLEY)	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
70	RP46061	100 BARRY PDE FORTITUDE VALLEY (100 BARRY PDE FORTITUDEVALLEY)	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
100	SP134740	44 BOWEN BRIDGE RD HERSTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
106	RP846555	44 BARRY PDE FORTITUDE VALLEY	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
116	RP19643	2 FERNBERG RD PADDINGTON	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
600	RP864272	94 BREAKFAST CK RD NEWSTEAD QLD 4006	EMR-NOTIFIABLE ACTIVITIES	SERVICE STATIONS
1	SP179651	150 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST

Lot	Plan	Street Address	EMR STATUS	Notifiable Activity
1	RP85366	99 GAILEY RD TARINGA	COUNCIL PURPOSES	SITE OF BCC INTEREST
2	SP147208	41 CAMPBELL ST BOWEN HILLS	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST
2	SP179651	150 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST
2	RP85366	99 GAILEY RD TARINGA	COUNCIL PURPOSES	SITE OF BCC INTEREST
2	RP116686	99 GAILEY RD TARINGA	COUNCIL PURPOSES	SITE OF BCC INTEREST
3	SP179651	150 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST
3	RP43451	166 WICKHAM TCE SPRING HILL	NOTIFIED TO EPA	SITE OF BCC INTEREST
6	RP166426	37 BISHOP ST KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST
6	SL12311	43 MAYNE RD BOWEN HILLS	NOTIFIED TO EPA	SITE OF BCC INTEREST
10	RP887414	97 ASTOR TCE SPRING HILL	NOTIFIED TO EPA	SITE OF BCC INTEREST
15	SP115647	451 CORONATION DVE AUCHENFLOWER	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST
16	RP10971	41 FERRY RD WEST END QLD 4101	EMR-SITE MANAGEMENT PLAN	SITE OF BCC INTEREST
41	RP904552	6 CHIPPENDALL ST MILTON	EMR-HAZARDOUS CONTAMINANTS	SITE OF BCC INTEREST
42	SP161089	14 CHIPPENDALL ST MILTON	EMR-HAZARDOUS CONTAMINANTS	SITE OF BCC INTEREST
43	SP161089	14 CHIPPENDALL ST MILTON	EMR-HAZARDOUS CONTAMINANTS	SITE OF BCC INTEREST
121	SP182768	150 KELVIN GROVE RD KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST
533	RP18524	95 BUTTERFIELD STREET, HERSTON	EMR-NOTIFIABLE ACTIVITIES	SITE OF BCC INTEREST
902	SP151277	9 MAIDSTONE ST KELVIN GROVE QLD 4059	NOTIFIED TO EPA	SITE OF BCC INTEREST
1	SP142032	KELVIN GROVE 52 BISHOP ST PART 1	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
2	RP219785	43 FORBES ST WEST END QLD 4101	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
3	RP69587	KELVIN GROVE 52 BISHOP ST PART 2	EMR-NOTIFIABLE ACTIVITIES	TANNERY, FELLMONGERY OR HIDE CURING
4	SP106163	PROVINCIAL SECURITIES PTY LTD\ (81 BISHOP ST KEVIN GROVE)	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
7	RP869214	54-A BISHOP ST PART 2 KELVIN GROVE	EMR-NOTIFIABLE ACTIVITIES	TANNERY, FELLMONGERY OR HIDE CURING
9	RP10605	KELVIN GROVE 52 BISHOP ST PART 1	EMR-NOTIFIABLE ACTIVITIES	TANNERY, FELLMONGERY OR HIDE CURING
9	SP115906	81 BISHOP ST KELVIN GROVE	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
10	RP10605	KELVIN GROVE 52 BISHOP ST PART 2	EMR-NOTIFIABLE ACTIVITIES	TANNERY, FELLMONGERY OR HIDE CURING
10	SP115906	81 BISHOP ST KELVIN GROVE	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
11	SP115906	81 BISHOP ST KELVIN GROVE	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
12	SP115906	81 BISHOP ST KELVIN GROVE	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
13	SP115906	81 BISHOP ST KELVIN GROVE	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
14	SP115906	81 BISHOP ST KELVIN GROVE	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
20	RP883269	55 BISHOP ST KELVIN GROVE	EMR-SITE MANAGEMENT PLAN	TANNERY, FELLMONGERY OR HIDE CURING
1	SP135464	20 BLACK ST MILTON	EMR-SITE MANAGEMENT PLAN	WASTE STORAGE, TREATMENT OR DISPOSAL
2	SP135464	20 BLACK ST MILTON	EMR-SITE MANAGEMENT PLAN	WASTE STORAGE, TREATMENT OR DISPOSAL

Appendix B

Site #	Lot and Plan	Potential Contaminating Activitiy	Description	
1	Lot 1 RP152622, Lot 11 SP193900, Lot 2 SP193900, Lot 1 SP193899	Scrap Yard	This site is located in Bowen Hills within the 1km groundwater buffer zone. In 1940 a rectangular shaped building runs along the entire eastern boundary. The remainder of the central and southern portions of the site consists of two rows of scrap metal or tyres running north/south along the site. There are a series of smaller square and rectangular shaped buildings on the northern portion of the site. In 1955 the central and southern portions of the site was cleared of the two rows of scrap metal or tyres and the area is segregated via a fence on the southern side. There is no evidence of materials being stockpiled on the site. In 1978 an expansion of commercial/industrial landuse has occured across the site which is evident through to 2007.	 1940
2	Lots 10-29 RP10074, Lot 51 RP855576, Lots 3-4 RP55213	Unidentified Fill	This site is located in Bowen Hills within the 1km groundwater buffer zone. In 1940, 1955, 1960 and 1965 the site was residential. In 1978 and 1987 the site was cleard. In 1994 and 2005 Unidentified stockpiled fill material was observed on the site.	 2005
3	Lot 13 SP186853	Landfill	This site is located in Kelvin Grove straddling the Northern Link study corridor and the 1km groundwater buffer zone area. This site abuts Lot 556 SP133445 to the west which is listed on the EMR as a landfill. In 2005 the site is cleaed and is being used as a construction lay down/car park area. In 1994 and 1987 the site and Lot 556 is an open parkland area. In 1980, 1977 and 1969 the site is still cleared as parkland together with Lot 556, however in 1969 the easten side of the site is being used as a carpark. In 1960 and 1940 the site together with Lot 556 is still one large site that has disturbed areas throughout indicating that the site and Lot 556 is operating as a landfill.	 1960

4	Lot 232 RP882112	Service Station	This site is located in Paddington within the Northern Link study corridor. In 2005 and 2004 the site appears to be a small group of shops with associated parking however the site is located on a corner and the roof structure seems to overhang the parking area slightly to indicate the site may have been a service station. In 1994 the site was cleared. In 1978 and 1969 the structures on site look to resemble a service station.	 1969
5	Lot 2 RP104850	Service Station	This site is located in Paddington within the Northern Link study corridor. In 1978 and 1969 two overhang structures located on the easten and western sides of the site look to resemble service stations.	 1969
6	Lot 21 RP202680	Service Station	This site is located in Paddington within the Northern Link study corridor. In 1980 the site look to resemble a service station and in 1978, 1977, 1969 and 1960 the site had a commercial/industrial land use.	 1969
7	Lots 1 to 5 RP883055	Petroleum Product Storage	This site is located in Milton within the 1 km groundwater drawdown area. This site abutts Lot 6 on SP135242 that is listed on the EMR as a service station. The south west boundary also abutts a substantial stormwater drain that has been in existence since the early 1960's. The land was vacant in 1951 but has been increasingly developed in occupancy of what appears to be commercial/light industrial use. Few changes in configuration have been made since 1969.	 1969

8	Lot 1 RP211215 Lot 1 RP139280	Unidentified Fill	This site is located in Milton within the 1 km groundwater drawdown area. The site appears to have been used for commerical/light industrial activities (a series of regular rectangular shapes covered the site in 1951 and 1960, indicating workshops or storage facilties). The site was vacant in 1969 with no vegetation and very apparent soil/dirt movement. From 1978, the site has been developed with large complex building covering almost the entire site.	 1951
9	Lot 1 RP125226	Petroleum Product Storage	This site is located in Milton within the 1 km groundwater drawdown area. The south west boundary also abutts a substantial stormwater drain that has been in existence since the early '60s. Aerial photography indicates that site has been used predominantly for industrial/commercial activities. However, in 1969 the site appears to exhibit drive - way accessibility from two sides and characterstics commonly assoicated with a depot of sorts (driveway access, trucks, small building).	 1969
10	Lot 4 RP104194	Printing	This site is located in Paddington within the 1 km groundwater drawdown area. The site was identified during the drive-by survey. The site was residential in 1946 and an industrial land usewas identified in 1960 to 2005.	see photograph in **Appendix D**
11	Lot 1 RP181929	Service Station	This site is located in Red Hill within the Northern link study area. The site was identified during the drive-by survey. The site was residential in 1946 and an industrial land (service station) use was identified in 1960 to 1980.	see photograph in **Appendix D**

12	Lot 2 RP74778, and Lot 5 and 6 RP8693	Service Station	This site is located in Brisbane within the 1 km groundwater drawdown area. The site was identified during the drive-by survey. The sites potential Notifiable Activity could not be identified from historical aerial photo interpretation.	see photograph in **Appendix D**
13	Lot 1 RP172803, and Lot 1 and 6 RP116943	Service Station	Site identified during historical aerial photo review conducted during NSBT EIS (SKM 2004).	 1974
14	Lot 36 and 37 SP196756	Service Station	Site identified during historical aerial photo review conducted during NSBT EIS (SKM 2004).	 1974
15	Lot 1 and 5 RP81335	Scrap Yard	Site identified during historical aerial photo review conducted during NSBT EIS (SKM 2004).	 1961

16	Lot 4 RP206795	Service Station	Site identified during historical aerial photo review conducted during NSBT EIS (SKM 2004).	 1961
17	Lot 1 RP231109	Service Station	Site identified during historical aerial photo review conducted during NSBT EIS (SKM 2004).	 1961
18	Lot 1 RP44192	Service Station	Site identified during historical aerial photo review conducted during NSBT EIS (SKM 2004).	 1961

Appendix C BCC Landfill Information

MEMORANDUM

Brisbane City Council

To: **Sinclair Knight Mertz** Date: **7/02/2008**

Attn: **Rowan Turner**

cc:

From: **Kate Atkins**

Re: **BCC Landfill Information Request**

City Design

Water and Environment

Green Square South Tower
505 St Pauls Terrace
Fortitude Valley Qld 4006
GPO Box 1434
Brisbane Qld 4001

Phone: 07 3027 4727
Facsimile: 07 3333 4007
Email: kate.atkins@brisbane.qld.gov.au
Internet: www.brisbane.qld.gov.au

Rowan,

Please find below the information requested. I have gone through the files that I could find relating to the sites listed below and have not been able to find a great deal of information. I have detailed what I thought was relevant to the contamination status of each site.

SITE 1:

Lot 1 on RP90610 (38 Murray St, Kelvin Grove)

- Listed on EMR as Landfill 7 October 1994. No details about type of fill or duration of filling.

Information source:

Brisbane City Council, *Overland Database* (information received from the EPA regarding sites on the EMR) January 2008.

- No further information found for this site.

SITE 2:

Lot 2 on RP69590 (59 Picot St, Kelvin Grove)

- Listed on EMR as Landfill 18/12/1999.
- Site supposedly used to bury asbestos material

Information source:

Brisbane City Council, *Overland Database* (information received from the EPA regarding sites on the EMR) January 2008.

- No further information found for this site. Likely to be the same as 72 Picot Street as lots adjacent.

Lot 34 on RP.17303 (72 Picot St, Kelvin Grove)

- Listed on EMR as Landfill 10 December 1993.

Information source:

Brisbane City Council Coreland Database (information received from the EPA regarding sites on the EMR) January 2008

- Originally used as a Council landfill – material placed on site was primarily soils and organic matter collected by Council while cleaning gully traps. There is over 5m of fill on site.
- Local residents advised that a nearby industrial site dropped fibro sheeting at the landfill many years ago.
- Site partially remediated – exposed material (namely fibro sheeting) is removed and buried (unclear where). Over 1 metre of clean imported fill is used to cap.

Information source:

Brisbane City Council, memorandum to Cr. David Hinchliffe from P. Boevink, Contaminated Land Unit (dated 28/08/1998)

- A later memo notes that only the batters were capped with 0.5 metres and not 1 metre as reported.

Information source:

Brisbane City Council, memorandum to file from S. Wharton, BCC (dated 1/06/1999)

SITE 3:

Butterfield Street – Rocky Park

Lot 540 on RP.18524 (97A Butterfield St, Herston)

Lot 539 on RP.18524 (95Q Butterfield St, Herston)

Lot 538 on RP.18524 (95P Butterfield St, Herston)

Lot 537 on RP.18524 (95O Butterfield St, Herston)

Lot 536 on RP.18524 (95N Butterfield St, Herston)

Lot 535 on RP.18524 (95M Butterfield St, Herston)

Lot 534 on RP.18524 (95L Butterfield St, Herston)

Lot 532 on RP.18524 (95 Butterfield St, Herston)

Lot 541 on RP.18524 (97B Butterfield St, Herston)

Lot 542 on RP.18524 (97C Butterfield St, Herston)

Lot 543 on RP.18524 (97D Butterfield St, Herston)

Lot 544 on RP.18524 (97E Butterfield St, Herston)

Lot 545 on RP.18524 (97F Butterfield St, Herston)

Lot 546 on RP.18524 (97G Butterfield St, Herston)

Lot 547 on RP.18524 (97H Butterfield St, Herston)

Lot 548 on RP.18524 (97I Butterfield St, Herston)

Lot 549 on RP.18524 (97J Butterfield St. Herston)

Lot 550 on RP.18524 (97K Butterfield St, Herston)

Lot 551 on RP.18524 (97L Butterfield St, Herston)

Lot 552 on RP.18524 (97M Butterfield St, Herston)

Lot 553 on RP.18524 (97N Butterfield St, Herston)

Lot 554 on RP.18524 (97O Butterfield St, Herston)

Lot 555 on RP.18524 (97P Butterfield St, Herston)

Lot 556 on RP.18524 (97Q Butterfield St, Herston)

Lot 557 on RP.18524 (97R Butterfield St, Herston)

Lot 989 on SL.3468 (97S Butterfield St, Herston)

Lot 436 on SP.135355 (147A Butterfield St, Herston)

Lot 437 on SP.135374(6 Bird St, Herston)

- Listed on EMR as Landfill 22 April 2006.

Information source.

Brisbane City Council, *Greyhind Database* (information received from the EPA regarding sites on the EMR) January 2008.

- The site is currently leased to Old Women's Hockey Association.
- Western field upgraded with topsoil and turf in 2005.
- Eastern field is currently undergoing capping works (excavation and recompaction of fill, placement of 300mm compacted clay material, 150mm of topsoil and turf.
- The site was operated as a landfill between the 1930's and 1940's. The waste was uncompacted and it is likely that due to the age and location of the landfill, the waste was predominantly domestic refuse and ash (approximately 2.5m in depth). This information has been acquired through observation of site topography and features (including subsidence and the formation of voids), aerial photographic interpretation and of limited test pitting at the site. From the type of materials (debris of bottles) excavated it is likely that filling activities occurred sometime prior to, during or sometime shortly after World War 2
- It is also possible that the filling operations extended further to the east of the site but given the limited information available, these sites have not been listed on the EMR.

Information sources:

Brisbane City Council, *Raxey Park Site Investigation Report* (dated 2/03/2006)

Brisbane City Council, *Annual Landfill Audit – Butterfield Street, Herston* (dated 27/11/2006)

Brisbane City Council, Capping Works Auditing (undertaken by Kate Atkins December 2007 – works still under way)

SITE 4:

Lot 556 on SP.133445 (137 Kelvin Grove Rd, Kelvin Grove)

- Listed on EMR as Landfill 13/09/1994. No details about type of fill or duration of filling.

Information sources:

Brisbane City Council, *Overland Database* (information received from the EPA regarding sites on the EMR) January 2008

- No further information found for this site.

SITE 5:

Lot 1 on RP.18899 (170 Mt Coot-tha Rd, Mt Coot-tha)

The following information relates to Anzac Park which is within the south eastern section of this lot.

- The land on which Anzac Park now stands was gazetted as part of Toowong General Cemetery in 1861. By 1887 no interments had taken place in this portion and the 133 acre site was gazetted as a rifle range.
- 1877 - Qld Rifle Association rifle range. By 1918 the rifle range has been decommissioned and the area became a memorial park to commemorate local men who had served in the Great War ornamental trees planted in their honour.

Information sources:

Brisbane City Council, *Anzac Park Toowong. Conservation Management Strategy* (dated September 2002)

- No further information found for this site.

Lot 3 on SP.159806 (200 Broseley Rd, Toowong)

- Listed on EMR as Landfill 13 September 1994. Listed as 216 Broseley Rd, Toowong.

Information source:

Brisbane City Council, *Overland Database* (information received from the EPA regarding sites on the EMR) January 2008.

- No further information found for this site.

I trust this information meets with your requirements. However, should you have any further questions regarding this information, please do not hesitate contacting me on 3027 4727.

Yours sincerely

Kate Atkins
Environmental Scientist
Environmental Management
City Design

Appendix D Drive-By Survey Photographs

Photograph 1. Westminster printing (Site 10) on Stevenson Street, Paddington. Looking north east.

Photograph 2. A possible historical service station (Site 11), now Hang Ups Gallery on Musgrave Road, Red Hill. Looking south east.

Photograph 3. A Shell service station (Site 12) on Eagle Terrace, Brisbane (City Centre). Looking west.