18 May 2021

Watercare Services Limited
Attn: Paul Jones
Private Bay 92521
Victoria Street West
Auckland 1142

Dear Paul

Resource consent application – s92 request and s37 timeframe extension

Application number:	BUN60376317
Applicant:	Watercare Services Limited
Proposed activity:	731 Great North Road, Grey Lynn
Site address:	The construction of a new accessway within the outer playing field of the Western Springs Recreation Facility to support construction of the Central Interceptor Project

Thank you for submitting the above resource consent application.

Following consultation with the respective Council specialists, I am writing to advise you that the following further information and clarification is required under Section 92(1) of the Resource Management Act 1991 ("the Act") to allow for a full and accurate assessment of your application to be undertaken:

<u>Stormwater</u>

1. The submitted application states that *'runoff from the new accessway into the existing public piped infrastructure is to be via the proposed half dish channel and raingarden. The rain garden will provide retention, detention and water quality treatment of road runoff via the raingarden, designed to Auckland Council GD01 standard*. *Overflow from the raingarden will discharge to the existing public stormwater pipe*.' Under the Auckland Unitary Plan (Operative in Part), if the

discharge is into a public system, it is a Permitted Activity under Rule E8.4.1(A1). Accordingly, if the stormwater discharge is to the public network, please confirm why a controlled activity stormwater diversion and discharge consent has been applied for.

2. Please confirm if the proposed stormwater management measures have been reviewed by the Council's Healthy Waters department to confirm if they comply with the relevant sub-precinct and catchment management plans requirements.

3. Please clearly identify and confirm where the stormwater runoff from the proposed impervious area will discharge.

4. Please provide a copy of the stormwater management plan approved as part of the Central Interceptor Project consent application. This is required to understand the overall stormwater discharge effects, as the submitted stormwater memorandum (Appendix D) only assesses effects associated with the additional 1,500m^2 of impervious surfacing required to form the accessway.

Contamination

5. Please provide a site management plan to address adverse effects associated with the disturbance and discharge of contaminants. It is understood that a site management plan was prepared for the consented Central Interceptor Project development. This document could be adapted as necessary to address this query.

Planning

6. In section 4.2 of the submitted assessment of environmental effects (**AEE**), it is stated that written consent will be obtained from Auckland Council in terms of Section 177(1)(a) requirements with respect to Designation 518. Please confirm is this consent has been obtained. If so, please provide a copy.

7. In section 6.1 of the submitted AEE, it is stated that the application has been provided to iwi entities that have expressed interest in the project and feedback will be provided to Council directly. I have been provided a copy of an email from Tama TeRangi dated 23 April 2021 that supports the proposed development. Please confirm if any other feedback has been received from iwi groups. If so, please provide copies of this correspondence.

It is requested that you either provide this information, in writing, within 15 working days, or contact me to arrange an alternative timeframe.

Please note that pursuant to Section 95C of the Act, if the information is not or will not be submitted within the 15-day timeframe and an alternative timeframe has not been agreed, the application must be publicly notified. Please contact me as soon as possible to confirm that the information will be provided either within the 15 working days of the request or to agree alternative timeframes for the provision of the information requested.

If you do not reply in writing within 15 working days, or refuse to provide the information, the Council reserves the right to decline your application under Section 92A(3) of the Act should it consider that it has insufficient information to enable it to determine the application.

Your attention is also drawn to the provisions of Sections 357A(1) and 357C of the Act which set out the rights of objection against this request for information.

Please also note that pursuant to S37 & S37A(3)(4) of the Resource Management Act 1991, the Council has determined that it is appropriate to double the timeframe available to process this resource consent application given the special circumstances associated with it. These special circumstances are the complexity of the application, being a combined land use and discharge application, and the level of assessment required to fully assess and evaluate the merits of the proposed development.

In extending this time frame, the following matters have been considered:

- The interests of any person who may be affected by the extension.
- The interests of the community in achieving an adequate assessment of the proposal.
- Council's duty to avoid unreasonable delay.

The new timeframe within which the Council has to process the application is 40 working days.

Pursuant to Sections 88B and 88C of the Act, the application is "on hold" until all matters have been addressed.

If you wish to discuss the matters, please do not hesitate to contact me.

Yours sincerely

Mark Ross

Consultant Planner, Auckland Council

Central Interceptor | Watercare
An Auckland Council Organisation

Watercare Services Limited
Private Bag 94010
Auckland 2241

www.watercare.co.nz
ciproject@water.co.nz
www.centralinterceptor.co.nz

Customer service line
Mon to Fri 7.30am to 6pm
09 442 2222

8th June, 2021

Attn: Mark Ross
Auckland Council
Private Bag 92300
Auckland 1142

Dear Mark,

Western Spring Accessway: Response to s92 Request for Further Information in relation to Watercare's Resource Consent Application BUN60376317

Further to your letter dated 18 May 2021 requesting further information with respect to application BUN60376317, we provide the following response:

Stormwater

1. *The submitted application states that 'runoff from the new accessway into the existing public piped infrastructure is to be via the proposed half dish channel and raingarden. The rain garden will provide retention, detention and water quality treatment of road runoff via the raingarden, design to Auckland Council GD01 standard. Overflow from the raingarden will discharge to the existing public stormwater discharge pipe'. Under the Auckland Unitary Plan (Operative in Part), if the discharge is into the public system, it is a Permitted Activity under Rule E8.4.1(A1). Accordingly, if the stormwater discharge is to the public network, please confirm why a controlled activity stormwater diversion and discharge consent has been applied for*.

   A controlled activity stormwater diversion and discharge consent has been applied for because, in our view, E8.4.1(A1) [Stormwater runoff from lawfully established impervious areas directed into an authorised stormwater network] does not apply to impervious surfaces that were not in place when the rule became operative. Therefore, the proposal does not comply with E8.6.2.1(1) of the Auckland Unitary Plan (Operative in Part) and consent is sought in accordance with E8.4.1(A9).

   However, if we have misinterpreted this Chapter of the Plan, please advise and we will withdraw this application.

2. *Please confirm if the proposed stormwater management measures have been reviewed by the Council's Healthy Waters department to confirm if they comply with the relevant sub-precinct and catchment management plans requirements*.

   Watercare met with Richard Smedley of Healthy Waters on 31 May 2021. The stormwater management option was reviewed and approved with minutes circulated. A copy of the minutes is provided in **Attachment 1**.

3. *Please clearly identify and confirm where the stormwater runoff from the proposed impervious area will discharge*.

   Refer to drawings 2011811.043 and 2011811.044 which clearly identify the location of the stormwater discharge point (**Attachments 2 and 3**).

4. *Please provide a copy of the stormwater management plan approved as part of the Central Interceptor Project consent application. This is required to understand the overall stormwater discharge effects, as the submitted stormwater memorandum (Appendix D) only assesses effects associated with the additional 1,500m^2 of impervious surfacing required to form the accessway*.

   In accordance with consent 40837, condition 6.2, stormwater management plans are not required if the final design of the works demonstrates that the impervious surfaces will be less than 1,000m^2. For the Western Springs shaft site, the final impervious area is ~400m^2. Therefore, a SWMP is not required and has not been prepared.

   However, for the proposed accessway, Watercare has chosen to align its approach with consent 40837, condition 6.3(d) and implement a low impact design solution. As the proposed accessway is located in close proximity of Motions Creek, a raingarden has been proposed. The raingarden will provide water quality treatment, retention and detention so that there is no overall stormwater discharge effect from the proposal post-development.

Contamination

5. *Please provide a site management plan to address adverse effects associated with the disturbance and discharge of contaminants. It is understood that a site management plan was prepared for the consented Central Interceptor Project development. This document could be adapted as necessary to address this query*.

   In accordance with consent 40843, condition 8.3, a Site Management Plan to address the adverse effects of land disturbance and discharge of contaminants has been prepared for the wider Western Springs site. The most recent version of the project's SMP, approved by Auckland Council in April 2021, is included as **Attachment 4**. This document, as written, is sufficiently comprehensive to address the construction of the accessway as well.

Planning

6. *In section 4.2 of the submitted assessment of environmental effects (AEE), it is stated that written consent will be obtained from Auckland Council in terms of Section 177(1)(a) requirements with respect to Designation 518. Please confirm this consent has been obtained. If so, please provide a copy*.

   Watercare has approached Auckland Council for both section 176 and 177 approval; however, this has yet to be granted. As works can not proceed until this approval has been obtained, it is not considered a matter relevant to this consent application. However, a copy will be provided to Council (Regulatory) for their records, once received.

7. *In section 6.1 of the submitted AEE, it is stated that the application has been provided to iwi entities that have expressed interest in the project and feedback will be provided to Council directly. I have been provided a copy of an email from Tame*

Te Rangi dated 23 April 2021 that supports the proposed development. Please confirm if any other feedback has been received from iwi groups. If so, please provide copies of this correspondence.

Copies of all other correspondence is included as **Attachment 5**.

We trust the above provides sufficient information in response to the s92 queries and processing application BUN60376317 can recommence.

Yours faithfully,
Paul Jones
Principal Resource Consent Planner
Watercare Services Limited

Attachments
Attachment 1: Meeting minutes with Healthy Waters
Attachment 2: Drawing 2011811.043
Attachment 3: Drawing 2011811.044
Attachment 4: Approved Central Interceptor Contaminated Land Site Management Plan
Attachment 5: Correspondence from Iwi groups

Attachment 1: Meeting minutes with Healthy Waters

From: Gillham, Tess
To: Richard Smedley; SSanjeshni (Shalini); XMeier (Xenia); PJones
(Paul) **Subject:** Central Interceptor Western Springs Accessway Section 92 meeting
notes **Date:** Wednesday, 2 June 2021 5:24:51 pm
Attachments: image001.png

CAUTION:External Email!

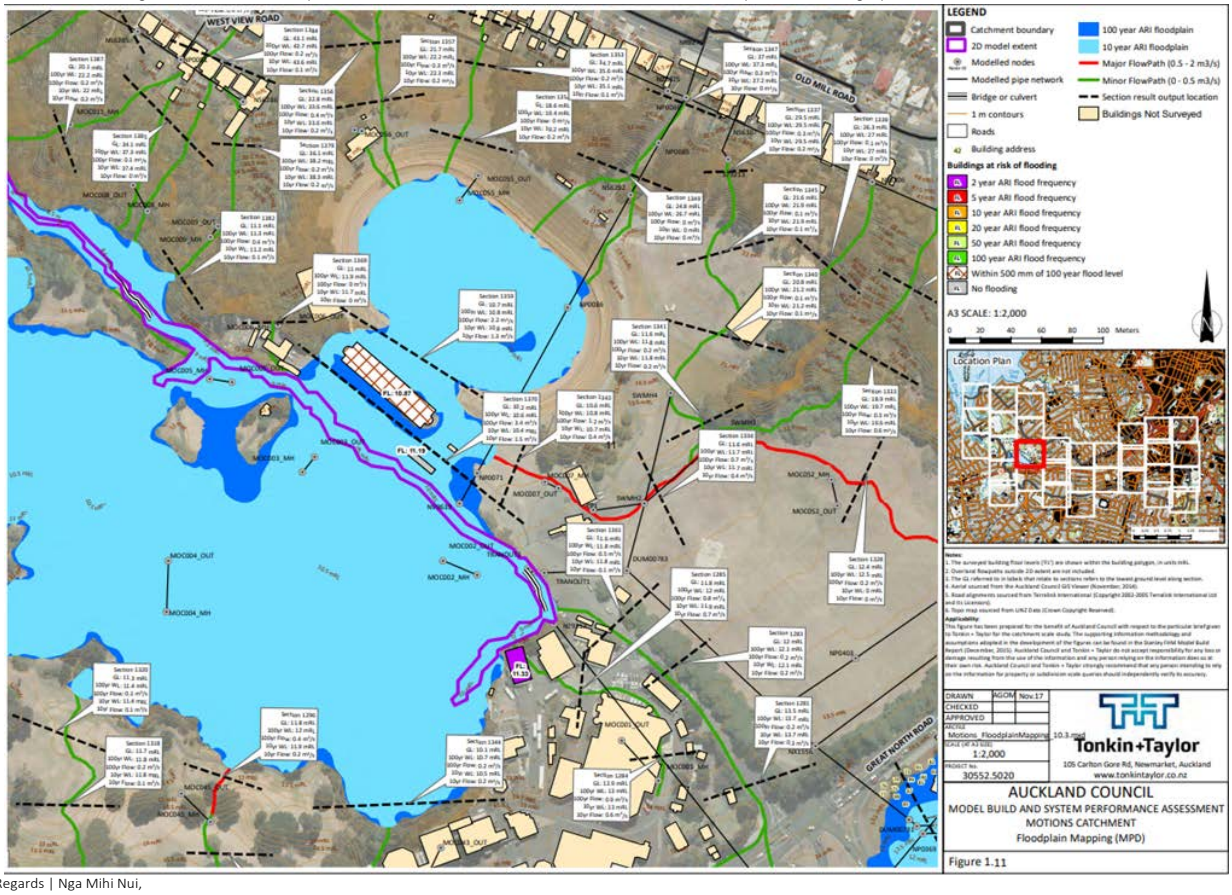
Hi Richard & co,

Thanks for your time on Monday to meet to discuss the Western Springs Accessway Proposal. Below are my notes from our meeting,

- Watercare have recently submitted a resource consent for the Western Springs accessway and have received a section 92 question from Council asking if consultation had occurred with Healthy Waters.
- The purpose of the accessway is to use as a haul road during the construction of CI. The haul road will allow one way truck movements from the Bullock track, through the CI site to exit at Great North Road.
- Auckland Unlimited own and operate both the Western Springs Stadium and the Western Springs
- Fields. Watercare have consulted with Auckland Unlimited regarding the haul road and proposed rain garden.
- Auckland Unlimited have future redevelopment plans for Western Springs Stadium, hence have requested that the haul road become a permanent accessway into the stadium.
- The accessway impervious area is approximately 1500m^2. I have been told that it is a controlled activity under E8.4.1 (A9) and has to comply with E8.6.3.1. As the accessway will discharge to a stream environment (the nearby Motions Creek) hydrology mitigation must be provided (retention and detention).
- We have proposed a raingarden which provides water quality treatment, retention and detention. The proposed raingarden also falls into alignment with the existing CI consent, which requires low impact design.
- We have consulted with Auckland Unlimited about the raingarden proposal. It was Auckland Unlimited who requested that the raingarden be located on the northern side of the accessway to suit their future stadium redevelopment plans.
- The raingarden will discharge into the existing 900mm diameter stormwater system via a new saddle
- connection. No attenuation is proposed as Western Springs is located near the bottom of the catchment.

Actions from the meeting are,

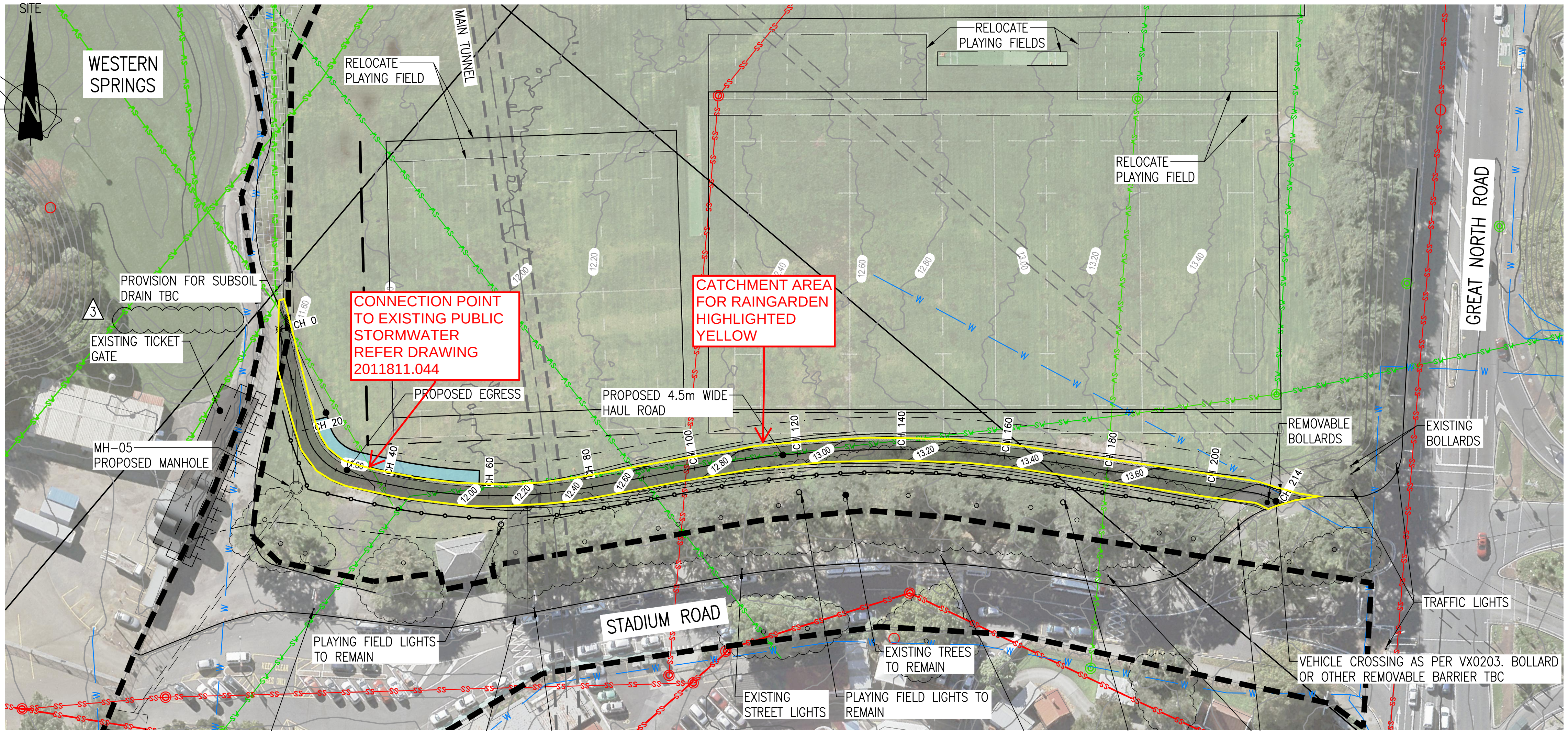
- Richard to send through the latest overland flow paths based on the new LiDAR. Below is from Auckland Council Geomaps linked modelling report which our assessment is based on.



Kind Regards | Nga Mihi Nui,

Tess Gillham, BE(Hons) | Jacobs | +64 20 480 4795| Tess.Gillham@jacobs.com | www.jacobs.com | www.linkedin.com/in/tess-gillham
For more information on Jacobs complete water management solutions click here

Attachment 2: Drawing 2011811.043



STORMWATER MANAGEMENT CONCEPT DESIGN

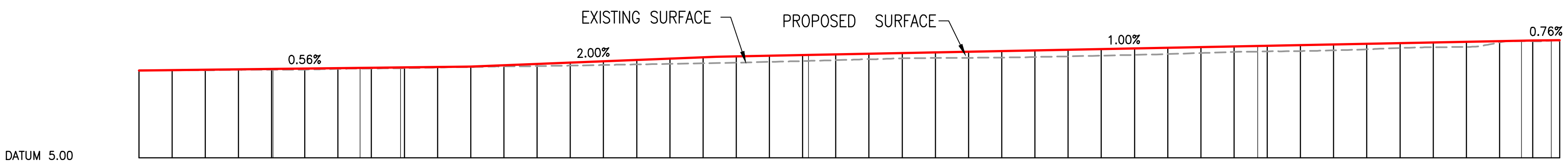
SCALE. 1:500

NOTES:

1. CO-ORDINATES ARE IN NZTM AND LEVELS ARE TO AUCKLAND L&S 1946 DATUM.
2. LOCATION OF EXISTING SERVICES HAVE BEEN EXTRACTED FROM AUCKLAND COUNCIL GIS AND UTILITIES PLANS AND ARE INDICATIVE. PHYSICAL LOCATION OF AFFECTED SERVICES WILL BE REQUIRED PRIOR TO CONSTRUCTION.
3. PLAYING FIELD LIGHTS AND EXISTING TREE DRIP LINE LOCATIONS ARE APPROXIMATE. LOCATIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

LEGEND

- PROPOSED MAIN TUNNEL
- PROPOSED LINK SEWER
- PROPOSED SEWERAGE
- DESIGNATION BOUNDARY
- ALL WEATHER TRAFFICABLE ACCESS (SEPARATE CONTRACT)
- PROPOSED ALL WEATHER TRAFFICABLE SURFACE (3)
- PROPOSED KERB: ATCOP TYP13 FLAT EDGE BEAM
- PROPOSED KERB: ATCOP STANDARD CONCRETE ROUND DISH CHANNEL
- PROPOSED FENCE FOR CONSTRUCTION ONLY (CONTRACTOR TO CONFIRM)
- 5m PLAYING FIELD OFFSET
- 17m OFFSET FROM STADIUM ROAD KERB
- 4m PEDESTRIAN PATH
- EXISTING PLAYING FIELD TO BE RELOCATED
- APPROXIMATE TREE DRIP LINE
- 13.60 PROPOSED CONTOURS (MAJOR)
- 13.40 PROPOSED CONTOURS (MINOR)
- 12.00 EXISTING CONTOURS (MAJOR)
- EXISTING CONTOURS (MINOR)
- PROPOSED STORMWATER
- SW EXISTING STORMWATER
- EXISTING STORMWATER STREAM
- SS EXISTING NETWORK WASTEWATER
- SS SS SS EXISTING TRANSMISSION WASTEWATER
- W EXISTING WATERMAIN
- REMOVABLE BOLLARDS
- RAINGARDEN LOCATION



CUT/FILL	0.00	-0.01	-0.05	-0.04	-0.05	-0.08	-0.05	-0.06	-0.05	-0.03	-0.03	-0.08	-0.16	-0.22	-0.27	-0.33	-0.38	-0.44	-0.46	-0.46	-0.44	-0.43
PROPOSED LEVEL	11.60	11.62	11.65	11.68	11.71	11.74	11.76	11.79	11.82	11.85	11.88	11.98	12.08	12.18	12.28	12.38	12.48	12.58	12.65	12.70	12.75	12.80
EXISTING LEVEL	11.60	11.61	11.60	11.64	11.65	11.66	11.71	11.74	11.77	11.81	11.85	11.90	11.92	11.96	12.01	12.05	12.09	12.14	12.18	12.24	12.30	12.37
CHAINAGE	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00	100.00	105.00

CUT/FILL	-0.40	-0.39	-0.41	-0.45	-0.48	-0.49	-0.49	-0.49	-0.48	-0.47	-0.44	-0.41	-0.41	-0.44	-0.44	-0.41	-0.36	-0.36	-0.38	-0.09	-0.05	-0.05
PROPOSED LEVEL	12.85	12.90	12.95	13.00	13.05	13.10	13.15	13.20	13.25	13.30	13.35	13.40	13.45	13.50	13.55	13.60	13.65	13.70	13.75	13.80	13.85	13.88
EXISTING LEVEL	12.45	12.51	12.54	12.55	12.57	12.61	12.66	12.71	12.76	12.83	12.91	12.99	13.03	13.05	13.11	13.19	13.29	13.34	13.37	13.71	13.80	13.83
CHAINAGE	110.00	115.00	120.00	125.00	130.00	135.00	140.00	145.00	150.00	155.00	160.00	165.00	170.00	175.00	180.00	185.00	190.00	195.00	200.00	205.00	210.00	214.04

VERTICAL GEOMETRY: 0.6% (1:178.6) | 2.0% (1:50.0) | 1.0% (1:100.0) | 0.8% (1:131.5)

HORIZONTAL GEOMETRY: L 20.21, B 215° 08' 05" | 20.21 | L 13.1, R 12.00 | 33.34 | B 152° 24' 53", L 6.08 | 39.42 | L 40.6, R 100.00 | 79.99 | L 20.89, B 129° 10' 12" | 100.88 | L 67.7, R 202.00 | 168.57 | L 39.74, B 148° 22' 11" | L 4.5, R 12.00, 208.31, 212.77 | L 1.27, B 169° 41' 52"

LONGITUDINAL SECTION

SCALE. 1:500

SCALE 1:500 (A1) 10 8 6 4 2 0 10 20 30 40 50m 50.00 m

CONSENT ISSUE

JACOBS AECOM McMILLEN JACOBS ASSOCIATES

ISSUE	DATE	AMENDMENT	BY	APPD.
3	25.03.21	CONSENT ISSUE – FENCING REVISED AND REVISED AS INDICATED	PMF	DJK
2	08.03.21	CONSENT ISSUE	SS	DJK
1	22.01.21	CLIENT REVIEW ISSUE	SS	DJK

	BY	DATE
DESIGNED	BH	06.20
DES. CHECKED	CW	01.21
DRAWN	AT	07.20
DWG. CHECKED	PMF	01.21
PROJECT LEADER		
INFRAST'R APP'D		

OPERATIONS

INFRASTRUCTURE

Watercare

WESTERN SPRINGS – CENTRAL INTERCEPTOR (DSCIN)

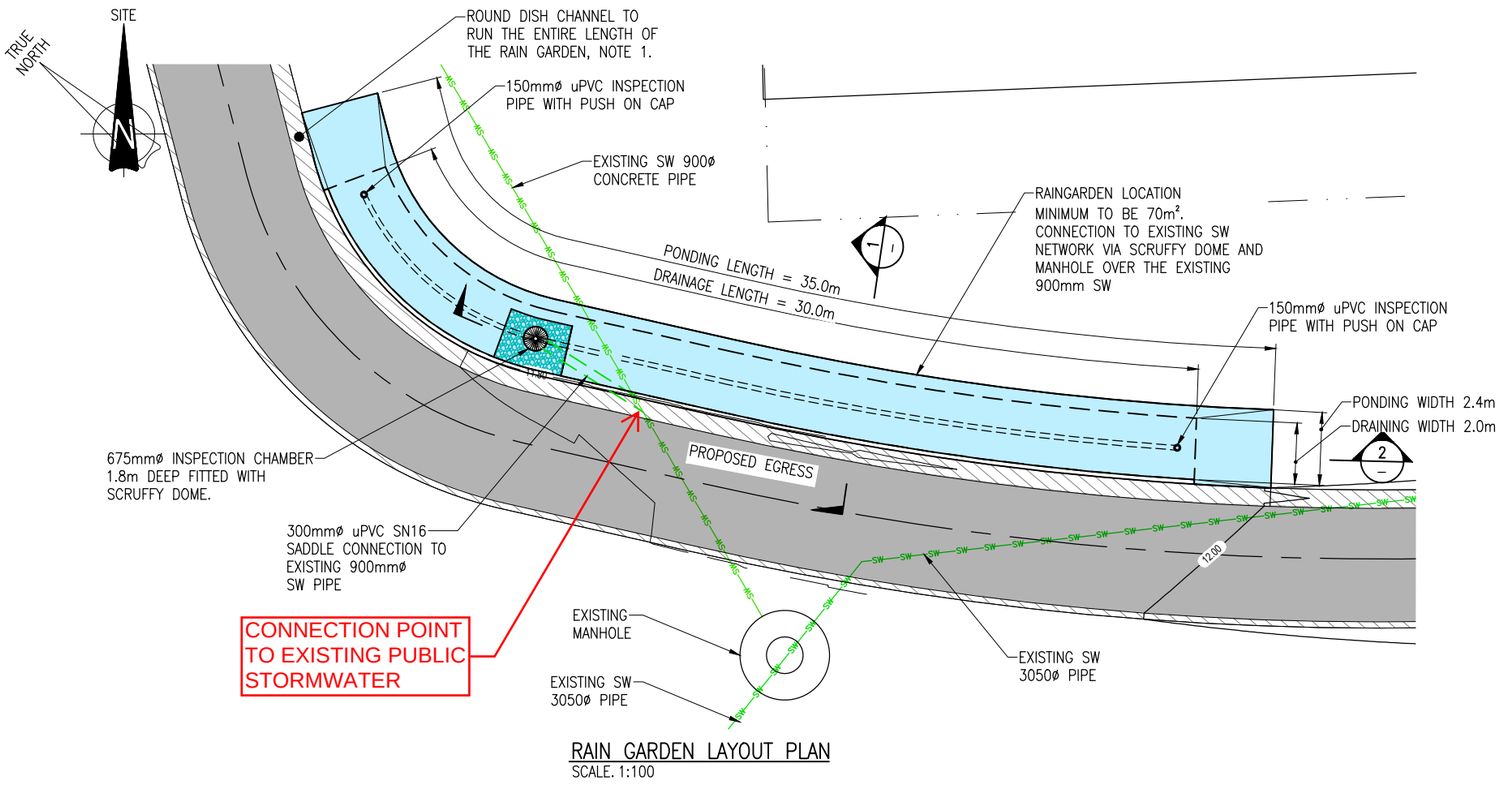
11 STORMWATER

STORMWATER MANAGEMENT CONCEPT

CAD FILE 2011811.043 DATE 25.03.21
ORIGINAL SCALE A1 1:500
CONTRACT No. 6661
REF. No. CI–CIVIL
ISSUE 3
DWG. No. 2011811.043

Plot Date: Mar 25, 2021 - 8:59am C:\users\pfar\appdata\local\projectwise\watercare_ltd_projects\dms52245\ 2011811.043.dwg

Attachment 3: Drawing 2011811.044



RAIN GARDEN LAYOUT PLAN
SCALE. 1:100

SPECIFIC REQUIREMENTS:

1. PIPELINES ARE TO BE BEDDED, SURROUNDED, AND BACKFILLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS EXCEPT WHERE OTHERWISE SPECIFICALLY SHOWN ON THE DRAWINGS.
2. SURFACE REINSTATEMENT OF EXCAVATIONS FOR PIPELINES AND ASSOCIATED STRUCTURES SHALL MATCH THE EXISTING ADJACENT SURFACE(S).
3. PRIOR TO UNDERTAKING THE WORKS, THE CONTRACTOR IS REQUIRED TO PROVIDE TO THE ENGINEER A CONSTRUCTION PROGRAM THAT IDENTIFIES ALL THE KEY ACTIVITIES AND THE PLANNED TIMING OF THOSE ACTIVITIES.
4. SADDLE CONNECTION TO BE COMPLETED AS PER AUCKLAND COUNCIL SW COP DRAWING SW04.

LEGEND:

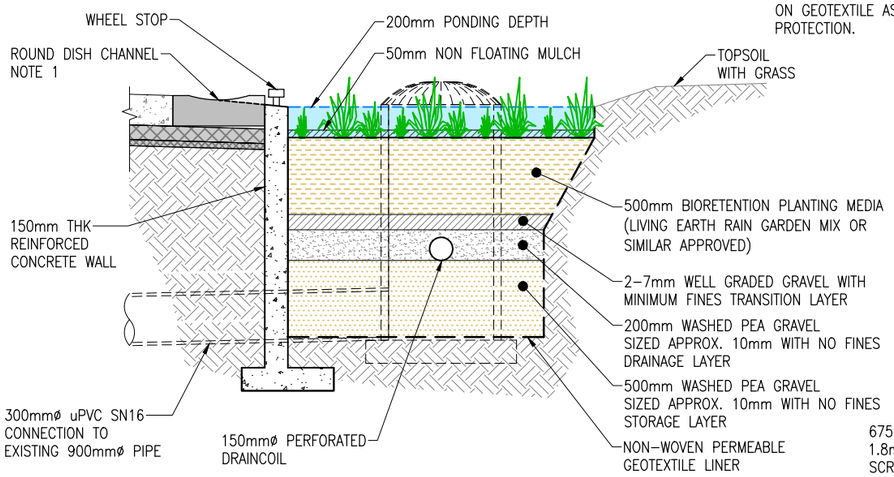
- RAINGARDEN LOCATION
- PROPOSED PERMANENT CONCRETE ROAD
- PROPOSED KERB: ROUND DISH CHANNEL
- EXISTING PLAYING FIELD TO BE RELOCATED
- 13.60 — PROPOSED CONTOURS (MAJOR)
- 13.40 — PROPOSED CONTOURS (MINOR)
- EXISTING CONTOURS
- PROPOSED STORMWATER
- SW — EXISTING STORMWATER

NOTES:

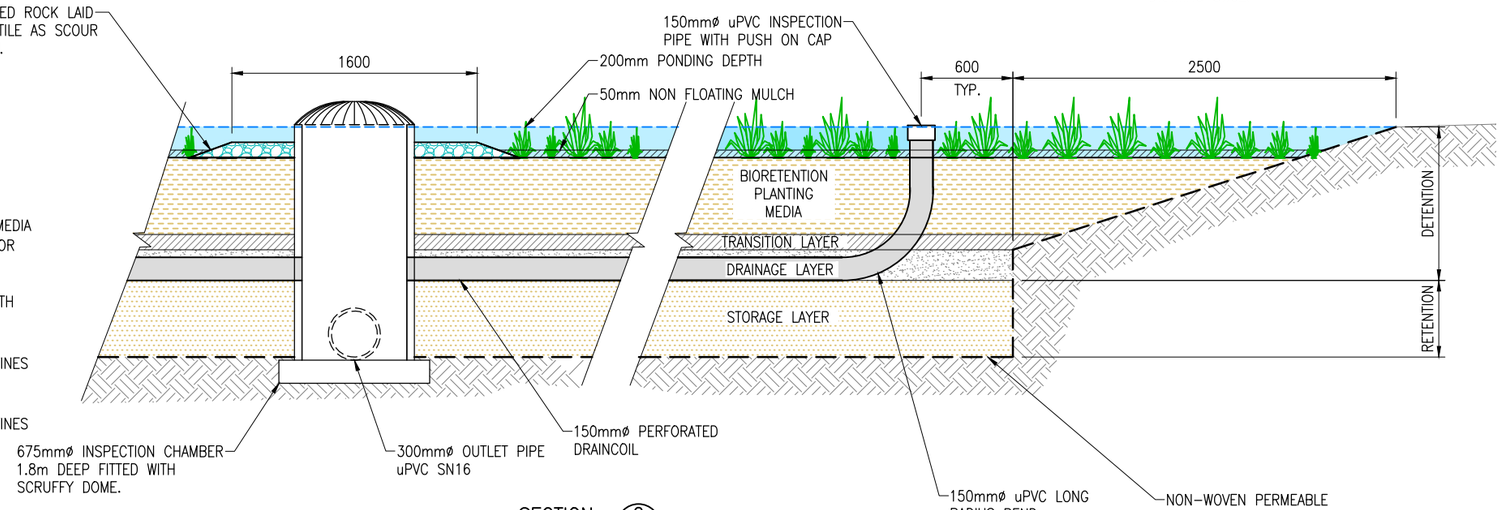
1. ROUND DISH CHANNEL TO BE CUT 1m LONG AT EVERY 2m SPACINGS TO ALLOW FLOW TO ENTER INTO THE RAIN GARDEN.

GENERAL REQUIREMENTS:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT SPECIFICATION.
2. UNLESS SPECIFIED OTHERWISE ALL PIPES SHALL BE INSTALLED UNDERGROUND. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING THE MOST APPROPRIATE CONSTRUCTION METHODOLOGY/TECHNIQUE CONSISTENT WITH MINIMISING DISRUPTION TO OTHER PARTIES.
3. EXISTING UNDERGROUND SERVICE INFORMATION SHOWN ON THE DRAWINGS IS PROVIDED IN GOOD FAITH BUT MAY BE INACCURATE, INCORRECT, OR FAIL TO SHOW EXISTING SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND LOCATING UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING EXCAVATIONS INCLUDING POTHOLING WHERE APPROPRIATE.
4. THE CONTRACTOR IS REQUIRED TO CONSULT WITH THE AUTHORISED REPRESENTATIVE(S) OF THE LAND ON WHICH THE WORKS ARE TO BE UNDERTAKEN AND TO ENTER INTO AN AGREEMENT COVERING ACCESS TO THE LAND, MAINTENANCE OF ACCESS TO THE LAND, ANY EARTHWORKS AND ANY REINSTATEMENT WORKS, AND TIMING OF THESE WORKS.
5. THE CONTRACTOR IS RESPONSIBLE FOR RECORDING BEFORE AND AFTER VISUAL RECORDS OF THE SITE TO FACILITATE COMPARISONS IN THE EVENT THAT CLAIMS OF BREACHES OF AGREEMENT ARE SUBMITTED.
6. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE CONDITIONS OF THE BUILDING CONSENT, RESOURCE CONSENTS, LAND OWNER AGREEMENTS, SERVICE PROVIDER AGREEMENTS/CONSENTS, AND THE REQUIREMENTS OF THE CONTRACT SPECIFICATION.
7. WHERE INFORMATION RELATING TO EXISTING OR PROPOSED ASSET POSITION DATA MAY BE DIFFER FROM THOSE SHOWN ON THE DRAWINGS THE CONTRACTOR IS REQUIRED TO NOTIFY THE ENGINEER AND REQUEST UPDATED CONSTRUCTION DETAILS.
8. WHERE PIPELINE GRADIENTS ARE STEEPER THAN 1:5 ANCHOR BLOCKS ARE TO BE PROVIDED AS DESCRIBED IN AUCKLAND COUNCIL STORMWATER DRAWING ACSD SW23
9. THE STANDARD EMBEDMENT FOR FLEXIBLE PIPES SHALL BE AS DESCRIBED IN AUCKLAND COUNCIL STORMWATER COP DRAWING SW02.



SECTION 1
SCALE.1:20



SECTION 2
SCALE.1:20

SECTION IS THE SAME AT BOTH ENDS

SCALE 1:20 (A1) 0 0.4 0.8 1.2 1.6 2.0m (0.4)

SCALE 1:100 (A1) 0 2 4 6 8 10m (2 1)

CONSENT ISSUE

JACOBS AECOM McMILLEN JACOBS ASSOCIATES

ISSUE	DATE	AMENDMENT	BY	APPD.
1	23.02.21	CONSENT ISSUE	PMF	DJK

DESIGNED	ES	02.21
DES. CHECKED	TG	02.21
DRAWN	CRS	02.21
DWG. CHECKED	PMF	02.21
PROJECT LEADER		
INFRAST'R APP'D		
	BY	DATE

OPERATIONS

INFRASTRUCTURE

Watercare

WESTERN SPRINGS – CENTRAL INTERCEPTOR (DSCIN)
00 SITE GENERAL
HAUL ROAD – RAINGARDEN GENERAL ARRANGEMENT

CAD FILE 2011811.044	DATE 23.02.21
ORIGINAL SCALE A1 AS SHOWN	CONTRACT No. 6661
REF. No. CI–CIVIL	ISSUE
DWG. No. 2011811.044	1

Plot Date: Feb 23, 2021 - 4:13pm
C:\Users\pfan\AppData\Local\projectwise\watercare_1\d_projects\dms52245\2011811044.dwg

Attachment 4: Approved Central Interceptor Contaminated Land Site Management Plan

This document is an exact copy of the Council approved plan (with approval documentation inserted) and has been issued For Information only.

Drawings embedded in this document are from the tender package and are not to be used for construction.

Contaminated Land Site Management Plan

Central Interceptor Project – Main Project Works

Central Interceptor

Doc No: GAJV-PLN-00026 (previously CI-EN-2004)

Revision: [2.0 Final]

Watercare
An Auckland Council Organisation

Ghella 5 Generations of Tunnelers
ABERGELDIE COMPLEX INFRASTRUCTURE

Caitlin Perkins

From: Randy Leung <Randy.Leung@aucklandcouncil.govt.nz>
Sent: Friday, 30 April 2021 2:23 pm
To: Caitlin Perkins
Cc: Sandra Edwards; XMeier (Xenia); Ryan Adam; Hannah Jozaei
Subject: RE: CONTAMINATED LAND SITE MANAGEMENT PLAN

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Caitlin,

I can confirm the provided Contaminated Land Site Management Plan (CLSMP) and associated appendices has been adequately amended to reflect the recent recommendations regarding available options for the discharge of groundwater during the dewatering process, and disposal of soil from the designated shaft locations. The amendments have affected Sections 2.1, 5.3.4, 5.3.6, 7.7, and 9.1.1 of the CLSMP.

Many thanks.

Kia kaha, stay strong.

Ngā mihi | Kind Regards

Randy Leung | Senior Compliance Monitoring Officer | Licensing & Regulatory Compliance
Auckland Council | T: +64 (09) 353 9101 | M: 027 272 0302
Location: Level 1 | 35 Graham Street | CBD Auckland
Postal: Private Bag 92300 | Wellesley Street | Auckland | 1036
mailto: randy.leung@aucklandcouncil.govt.nz |

From: Caitlin Perkins <cperkins@ga-jv.com>
Sent: Tuesday, 20 April 2021 3:42 PM
To: Randy Leung <Randy.Leung@aucklandcouncil.govt.nz>
Cc: Sandra Edwards <sedwards@ga-jv.com>; XMeier (Xenia) <xenia.meier@water.co.nz>; Ryan Adam <radam@ga-jv.com>; Hannah Jozaei <hjozaei@ga-jv.com>
Subject: CONTAMINATED LAND SITE MANAGEMENT PLAN

Good Morning Randy,

Please find attached the updated Contaminated Land Site Management Plan (CLSMP) and associated appendices.

Following the heavy metals found in the groundwater at the Dundale shaft site and subsequent investigation, section 7.7 (Dewatering) in reference to RC8.17 has been updated to reflect the changes accepted by Council. The updates focuses the justification for discharging groundwater containing dissolved heavy metals above ANZECC 80% freshwater guidelines. The technical memo from Tonkin and Taylor to Council and supporting communications with WSL and the GAJV are included in Appendices F and G respectively. Additionally, the Dundale and Miranda site-specific information has been updated following the unexpected contamination discoveries at said sites.

Any other questions please let me know.

Nga Mihi | Kind Regards,

Caitlin

Caitlin Perkins

Senior Consents Advisor – Central Interceptor

M +6421 630 942

Ghella Abergeldie JV

90 Prospect Terrace, Mt Eden, Auckland

Table of Contents

Appendices

APPENDIX A - Sustainability Aspects

Revision History

Review and Approval – Beca

FUNCTION	POSITION	NAME	SIGNATURE	DATE
Prepared by	Contaminated Land Specialists, Beca Limited	Phillip Ware & Curtis Blyth (Beca Limited)		23/07/2019
Reviewed By	Contaminated Land Specialist, Beca Limited	Phillip Ware (Beca Limited)		24/07/2019
Approved by	Job Director, Beca Limited	Quintin Blackburn		24/07/2019

Review and Approval – Ghella Abergeldie JV

FUNCTION	POSITION	NAME	SIGNATURE	DATE
Coordinated by	Compliance Advisor, Ghella Abergeldie JV	Sarah Blair		24/07/2019
Reviewed by	Environmental Manager, Ghella Abergeldie JV	Sandra Edwards		24/07/2019
Approved by	Project Director, Ghella Abergeldie JV	Alfonso Pupi		24/07/2019
Second Revision drafted by	Environmental Graduate, Ghella Abergeldie JV	Ryan Adam		23/03/2021
Second Revision reviewed by	Environmental Manager, Ghella Abergeldie JV	Sandra Edwards		23/03/2021
Second Revision approved by	Project Director, Ghella Abergeldie JV	Francesco Saibene		

Each page of this document bears a document number and revision date. When revisions to the document are issued, the following table will be updated to show the most recent revision level. The revised document will be forwarded to the holders of controlled copies. Recipients are responsible for destroying or marking "superseded" on the previous revision.

Revision Status

REVISION	DATE	STATUS	AMENDMENT DESCRIPTION
0.1	20/05/2019	Draft	Draft for internal review

0.2	5/06/2019	Final Draft	For Watercare review
0.3	1/07/2019	Final	For submission to Auckland Council
0.4	24/07/2019	Final	Amended following Auckland Council comments
1.1	27/03/2020	Final	Include new contamination investigation results and spoil management decision making process
2.0	23/03/2021	Final	Inclusion of updated groundwater discharge approvals from Auckland Council (Section 7.7). Update to Dundale Ave and Miranda Reserve Site Specific Contamination and associate soil disposal options (Section 5.3.4, 5.3.6 and 9.1.1). Update to Project background (Section 2.1).

Where review and revision is deemed warranted, i.e. such as comments received from the Client, or where necessary to reflect changes in contractual or Project requirements, or as a result of an incident then these revisions shall be reviewed by the respective Project Manager and approved by the Construction Manager.

Distribution (Controlled Copies)

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1	Project File	Ghella Abergeldie Joint Venture	Select Date
2	Client Rep	Engineer to Contract	Select Date

1. Information

1.1 Definitions and abbreviations

Abbreviation	Detail
ACM	Asbestos Containing Material
AMP	Asbestos Management Plan
Babingtons	Babingtons – Civil and Environmental Consultants
BRANZ	Building Research Association of New Zealand - reference to the New Zealand Guidelines for Assessing and Managing Asbestos in Soil
CLSMP	Contaminated Land Site Management Plan
CMP	Construction Management Plan
CSO	Combined Sewer Overflows
DSI	Detailed Site Investigation
ESC	Erosion and Sediment Control
ESR	Excavation Summary Report
(FA/AF)	Fibrous asbestos/asbestos fines
HAIL	Hazardous Activities and Industries List
HSM	Health and Safety Manager
ISCA	Infrastructure Sustainability Council of Australia
MfE	Ministry for the Environment
NESCS	National Environmental Standard for Assessing and Managing Contaminants in soil to Protect Human Health
OCP	Organochlorine pesticides
PAH	Polyaromatic hydrocarbons
PPE	Personal Protective Equipment
PSI	Preliminary Site Investigation
SQEP	Suitably Qualified and Experienced Practitioner
SVOC	Semivolatile organic compounds
TPH	Total Petroleum hydrocarbons
T&T	Tonkin and Taylor Limited
VOC	Volatile organic compounds

2. Introduction

2.1 Project background

The Central Interceptor is a wastewater tunnel that will run between the Mangere Wastewater Treatment Plant and Grey Lynn. The 14.7-kilometre-long tunnel will run between 15 and 110 metres below ground. It will cross the Manukau Harbour at about 15 metres under the seabed. Along the route it will connect to the existing wastewater network, which will divert flows and overflows into the tunnel.

In the older parts of central Auckland, wastewater and stormwater flow into a combined network of pipes which were designed to direct overflows into nearby creeks and streams. The Central Interceptor is a giant wastewater tunnel project that will reduce overflows of wastewater from central Auckland into the city's waterways, helping to make them cleaner. The Central Interceptor will store and convey wastewater to the Māngere Wastewater Treatment Plant to be processed. The extent of the Central Interceptor project is shown in Figure 2.

This Contaminated Land Site Management Plan ('**CLSMP**') has been prepared by Beca Limited for the Ghella Abergeldie Joint Venture ('**Ghella Abergeldie JV**' or '**the Contractor**'), the construction contractor for the Project. The CLSMP is a requirement of resource consents R/LUC/2012/2846/1, PRC40963, and 40843. The specific conditions are set out in Table 1 of this plan.

2.2 Purpose and objectives of this CLSMP

This Contaminated Land Site Management Plan ('**CLSMP**') is based on the initial Site Management Plan[1] prepared by Tonkin and Taylor ('**T&T**') during the consenting phase of the Project in 2012.

This CLSMP will assist in managing the excavation, handling and disposal of any contaminated material encountered as part of the Central Interceptor Project and is required to satisfy resource consent conditions of consents R/LUC/2012/2846/1, PRC40963, and 40843.

The T&T Site Management Plan was provided to support the statutory approvals process undertaken for the Project in 2012. This Plan has been adapted to include the results and assessment of the investigations that have occurred since then.

The assessments undertaken for the Project as identified above, indicated that contaminated soils are unlikely to pose a human health risk to workers undertaking the works or to the general public. Additional focus across the industry and from regulators has been placed on the potential risks from inground asbestos since 2012 when the main identification of contaminated site risks was identified by T&T. As well as this additional focus, new regulations[2] have been implemented. These asbestos regulations and how they influence each site are further discussed in Section 5.

The objective of this CLSMP is to provide procedures for the excavation, handling and disposal of any contaminated or potentially contaminated soil that may be encountered during the construction of the Central Interceptor on a site-by-site basis.

[1] Central Interceptor Site Management Plan, Tonkin & Taylor, December 2012
[2] New Zealand Guidelines for Assessing and Managing Asbestos in Soil, BRANZ, November 2017

The scope of this report is to provide procedures for:

- Identifying the presence of contaminants and sites of potential concern;
- Undertaking excavations in areas potentially containing contaminated soils;
- Managing and containing contaminated soils encountered during the development of the site;
- Controlling potential effects during the works such as odour, dust and tracked soil;
- Managing health and safety during the works; and
- Validating/monitoring the works, as necessary, to ensure appropriate disposal of surplus soil.

2.3 Consent requirements

Table 1 identifies the conditions that specify what is to be included in the CLSMP and which sections of the CLSMP address these conditions.

Table 1: Resource consent conditions relevant to the CLSMP

Resource consent condition	Condition Text	Relevant CLSMP section
8.1	This consent shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.	-
8.2	Any amendments to the documents listed in General Condition 1.1 shall be submitted to the Manager prior to implementation, for approval that it complies with the Ministry for the Environment Contaminated Land Management Guideline No. 1 and the conditions of this consent: a) changes to the documents shall not be implemented until confirmation has been received; b) notwithstanding (a), changes may be implemented if 10 working days have passed since the documents were submitted and no correspondence has been received from the Council regarding the changes or immediately in the case of an emergency; and c) all confirmed changes shall be incorporated into respective replacement documents.	Section 4.2
8.3	The Consent Holder shall review The Central Interceptor Project Contaminated Land Site Management Plan (Rev 1) dated December 2012 ("the CLSMP"), prepared by Tonkin & Taylor, and submit a revised or final CLSMP prior to commencement of any Project stage. The CLSMP shall include mitigation measures to ensure that discharges from the sites to land or water are minimised, and to ensure that the risks to the health of workers on the site and nearby sites is less than minor. Where minor enabling works or isolated works are to be undertaken prior to commencement of the main works, a site specific CLSMP may be prepared, commensurate with the scale and effects of the proposed works. The CLSMP or plans shall be submitted to the Manager for approval. The CLSMP shall include, but not be limited to:	This plan
8.3 (a)	measures to be undertaken in the handling, storage and disposal of contaminated surficial soils excavated during the construction works;	Sections 5, 6, 7
8.3 (b)	soil validation testing and groundwater testing;	Sections 5.4 and below8.3

Resource consent condition	Condition Text	Relevant CLSMP section
8.3 (c)	a process for confirming potential for contamination and soil testing at the identified potentially contaminated sites to determine the nature of the excavated soil and potential reuse or disposal options;	Sections 5.2 and 5.4
8.3 (d)	measures to be undertaken in the event of unexpected contamination being identified during construction activities; and	Sections 5.4 and 7.4
8.3 (e)	measures to be undertaken for the handling of asbestos containing material.	Sections 7.10 and 8.2
8.4	The Consent Holder shall engage a suitably qualified and experienced practitioner (SQEP) as defined in the User's Guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (April, 2012). In accordance with the User's Guide, the SQEP shall be a person with a tertiary degree in environmental science or engineering or a related field and at least five years' experience in environmental investigations. The SQEP shall carry out any soil and groundwater sampling work and observe construction site earthworks in areas identified in the CLSMP, including the excavation and removal of contaminated surficial soils from the site. The SQEP shall be available during the excavation works and be in regular contact with the Watercare Project Manager and/or contractor over the course of the project to ensure that the procedures set out in the CLSMP are being followed.	Section 4.1
8.5	Confirmatory soil sampling and testing shall be undertaken at the following construction sites prior to works commencing at these sites, or as described in the CLSMP: • Rawalpindi Reserve; • Mt Albert War Memorial Reserve; • Lyon Avenue; • Haverstock Road; • Walmsley Park; • PS25 (Miranda Reserve); • Keith Hay Park; • PS23 (Frederick Street); • ~~Western Springs Depot~~; and • Miranda Reserve. The sites at Mt Albert War Memorial Reserve, Lyon Avenue and Haverstock Road, shall be investigated prior to any construction activities, rather than during construction. Where sampling is undertaken during construction, the excavated soil shall be treated as potentially contaminated while awaiting laboratory results and relevant procedures set out in the CLSMP shall be followed. Sampling and testing shall be undertaken as outlined in the CLSMP. The results of these investigations shall determine appropriate handling and surplus soil disposal locations as well as appropriate health and safety requirements at these sites. For the sites at Mt Albert War Memorial Reserve, Lyon Avenue and Haverstock Road the findings of the investigations and any site-specific requirements shall be provided to the Construction Manager prior to the commencement of excavation works.	Section 5 Note: The Western Springs Depot site is no longer applicable to this project

Resource consent condition	Condition Text	Relevant CLSMP section
8.6	The Consent Holder shall ensure that excavation workers (which excludes workers associated with excavations in natural uncontaminated ground for underground tunnelling or shaft construction works) are appropriately informed and trained regarding potential health and safety risks and corresponding mitigation measures associated with contamination, in accordance with the CLSMP.	Section 6
8.7	The Consent Holder shall ensure that the public is excluded from the work area.	Refer to the CMP
8.8	When excavating actual or potentially contaminated soil (which excludes excavations in natural uncontaminated ground for underground tunnelling or shaft construction works), the contractor shall maintain weekly records of the excavation areas, the type and volume of soil removed to landfill, and the location of the landfill. The records shall be retained and provided to the Auckland Council on request.	Section 0
8.9	During the works, regular inspections of the excavation of actual or potentially contaminated areas (which excludes excavations in natural uncontaminated ground for underground tunnelling or shaft construction works) shall be carried out to ensure that the site management procedures are implemented in accordance with the CLSMP.	Section 7.9
8.10	For sites where asbestos has previously been identified, or could potentially be present, or is discovered during the works, all excavation work shall be observed by a person certified under the Asbestos Regulations (Health and Safety in Employment Act (Asbestos) Regulations 1998, and Department of Labour Guidelines for the Management and Removal of Asbestos 1999).	Sections 7.4 and 7.10
8.11	All excavation works shall be carried out in a manner that will minimise the potential for mixing contaminated soils with uncontaminated soils.	Section 7.1
8.12	Where possible, contaminated soils identified for off-site disposal shall be loaded directly onto trucks. Any contaminated soil removed from the site shall be covered during transportation.	Section 7.1
8.13	Stockpiling of contaminated soil shall be avoided so far as practicable. If required, the stockpiles shall follow the procedures set out in the CLSMP.	Section 7.2
8.14	Any contaminated material removed from the site shall be disposed of in accordance with the CLSMP, at a facility which holds a consent to accept the relevant level of contamination, unless it has been appropriately demonstrated that the materials removed from the site meet the definition of 'clean fill', as described in 'A Guide to the Management of Clean fills', Ministry for the Environment (2002).	Section 0
8.15	Any excavated material re-used on site shall have soil concentrations that are the lower of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health for the site final land use or the Auckland Council Regional Plan: Air, Land and Water Schedule 10 permitted activity criteria.	Section 7.1
8.16	All imported fill shall:	Section 7.3

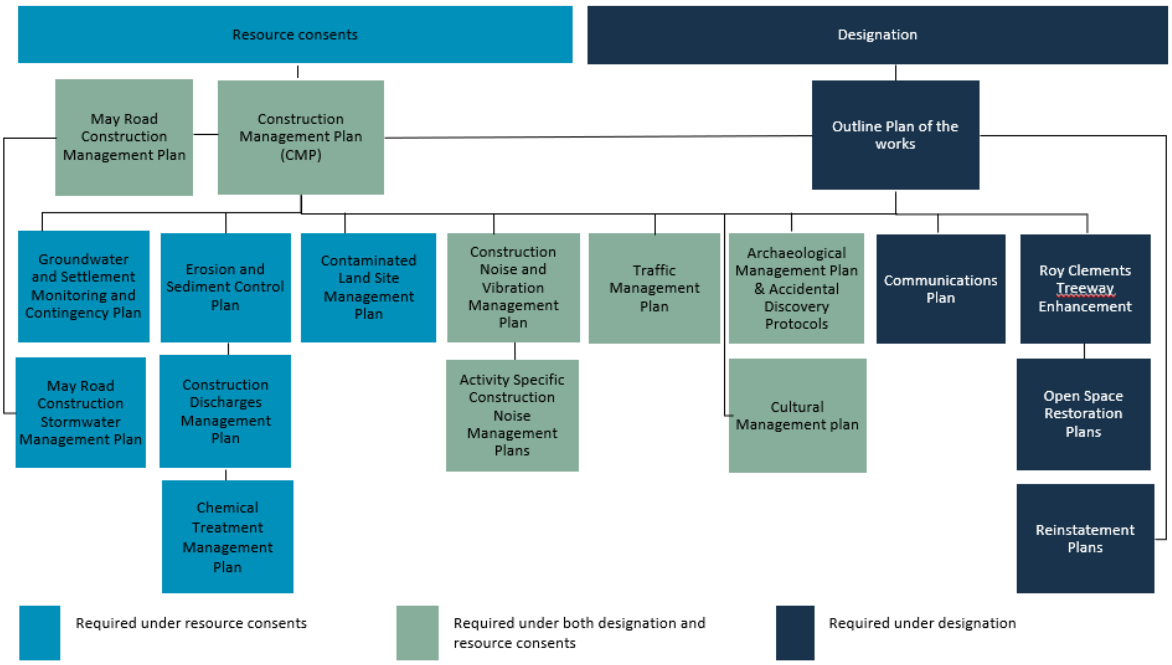
Resource consent condition	Condition Text	Relevant CLSMP section
	a) comply with the definition of 'clean fill' as per 'A Guide to the Management of Clean fills', Ministry for the Environment (2002); b) be solid material of an inert nature; and c) not contain hazardous substances or contaminants above natural background levels of the receiving site.	
8.17	The Consent Holder shall ensure that any groundwater, perched groundwater or stormwater which may become contaminated through contact with contaminated soil or some other means shall be isolated while work is in progress. The water shall be tested prior to discharge to the stormwater system. In accordance with the CLSMP, if contaminant concentrations meet the 80% trigger level for protection of freshwater species in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality ("ANZECC") (2000), the water shall be allowed to be discharged to the stormwater system. In the absence of confirmatory testing, or if levels exceed the ANZECC criteria, the water shall be disposed to trade waste/sewer.	Section 7.7
8.18	Should any unexpected contamination be found during the works, the appointed SQEP is to be consulted and is to advise on the best option for managing the affected material (including sampling and testing, if required), in accordance with the CLSMP.	Sections 5.4 and 7.4
8.19	All sampling, testing and analysis carried out in accordance with this consent shall be: a) undertaken or supervised by the SQEP; and b) in accordance with Contaminated Land Management Guidelines No.5, Ministry for the Environment, revised 2011.	Section 5.4
8.20	The Consent Holder shall notify the Manager within 10 working days of identification of any contamination which was not identified in the reports submitted with the application, or subsequent investigations, including contaminated soil, surface water or groundwater. If the contamination is considered by the SQEP to pose significant environmental and/or health and safety issues, the Manager shall be notified immediately.	Sections 5.4 and 7.4
8.21	In the event that unexpected contaminated material is encountered, a further review of site procedures is to take place to ascertain if additional measures are required, and the SMP updated accordingly.	Sections 4.2 and 5.4
8.22	With the exception of soils excavated as part of the underground tunnelling works, the Consent Holder shall submit to the Manager separate Excavation Summary Reports for each construction site identified as contaminated no later than three months after the completion of the earthworks at each site. The Reports shall be prepared in accordance with the Ministry for the Environment Guidelines for Reporting on Contaminated Sites in New Zealand (Revised 2011) and include: a) results of any soil and groundwater testing and imported material testing carried out to ensure compliance with the CLSMP; b) volumes of soil removed from the site and confirmed disposal location as well as disposal receipts; and	Section 10

Resource consent condition	Condition Text	Relevant CLSMP section
	c) reports of any non-compliance with the CLSMP procedures or complaints received while undertaking the works.	
8.23	On completion of the excavation works in sites of identified contamination, the Consent Holder shall ensure that plant and equipment is cleaned and decontaminated in a controlled area of the site and that any residues are collected and properly disposed of.	Section 7.1

2.4 Relationship to other management plans

Figure 1 shows how this plan fits under the broader construction management plan structure provided by the designation and resource consents for the Project.

Figure 1: Construction management plan framework



2.5 Sustainability

Watercare are seeking an Infrastructure Sustainability Council of Australia ('**ISCA**') Infrastructure Sustainability rating for the Project. Full details about the rating scheme and methods to achieve the accreditation are included in the Project's Sustainability Management Plan. The Sustainability Management Plan is not a designation/resource consent compliance requirement, however, this CLSMP does include Project sustainability aspects, and they are outlined in **Appendix A**.

3. Project Description

3.1 Overview

The Central Interceptor main project works involve the construction and commissioning of a bulk wastewater interceptor and associated activities. In summary, the Project involves constructing a 14.7 km gravity sewer tunnel with two link sewer tunnels extending from the main tunnel westward, a series of connections to the existing trunk sewer network to pick up wastewater flow, and a new pump station at the Māngere WWTP. Figure 2 provides a general location plan.

A full description of construction activities and methodologies for each of the 16 shaft sites is detailed in the Construction Management Plan ('**CMP**').

Figure 2: Central Interceptor project alignment and shaft sites

3.2 Contamination investigation background

Ground contamination assessments have been completed for the Project and are documented in the following reports:

- Hereby referred to as the T&T assessment (**Appendix C**):
  - Tonkin and Taylor Ltd, July 2012, Desk study and ground contamination assessment – Main works Central Interceptor Project; and
  - Tonkin and Taylor Ltd, July 2012, Desk study and ground contamination assessment – Combined sewer overflows ('**CSO**') points Central Interceptor Project.
- Hereby referred to as the Jacobs assessment (**Appendix D**):
  - Jacobs NZ Ltd, Aecom NZ Ltd and McMillen Jacobs Ltd, February 2017, Central Interceptor: Main Project Work Detailed Design – Geotechnical Factual Report; and,
  - Jacobs NZ Ltd, Aecom NZ Ltd and McMillen Jacobs Ltd, February 2017, Central Interceptor: Main Project Work Detailed Design – Geotechnical Interpretive Report.

The initial T&T contamination assessments were targeted to the sites being designated by Watercare for construction. At the time it was known that construction activities would disturb near-surface soils which could have been contaminated by current and/or historic activities listed on the Ministry for the Environment's ('**MfE**') Hazardous Activities and Industry List ('**HAIL**'). T&T's assessment was predominantly desk based and involved the review of available information on record for all Central Interceptor sites. T&T included further intrusive investigation of four of these sites as they were raised as a priority at the time.

Following T&T's assessment and the consenting of the project in 2012, Jacobs were commissioned in 2015 to undertake sampling of all sites as required by consent conditions. This assessment assessed the potential risk of contaminated soils to human health and environmental receptors and provided disposal option recommendations.

4. Plan and Management Control

4.1 Roles and responsibilities (RC8.4)

Implementation of this CLSMP shall be the responsibility of the Ghella Abergeldie JV.

Ghella Abergeldie JV has appointed a suitably qualified and experienced practitioner (**SQEP**) in the contaminated land field as defined in the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 to address specific contamination issues outlined in this report and in accordance with Condition 8.4 of the consent. The SQEP shall be in regular contact with the Environmental Manager over the course of the project to ensure that the procedures set out in this CLSMP are being followed.

In particular, the SQEP shall carry out the following work required by the CLSMP:

- identifying potential contaminated land once the micro-tunnelling and trenching work route for the main is confirmed;
- carry out confirmatory sampling and testing for the identified potentially contaminated land where required;
- inspecting the earthworks on an as-required basis, dependent on the level of contamination expected or identified in the area of works;
- working with the project team to assist in defining suitable options for landfill locations to dispose of the contaminated soils from the project; and
- preparing any necessary site validation reports (or 'Earthworks Closure Reports').

Ghella Abergeldie JV, in consultation with the SQEP, shall train all staff involved with earthworks to ensure they are aware of and understand ways in which contamination can be identified on site (refer Section 6).

The Ghella Abergeldie JV have produced a Health and Safety Plan which addresses contamination issues outlined in this plan.

The table below sets out the specific responsibilities under this CLSMP.

Table 2: Responsibility matrix

Responsibility	Position	Name
Final approval of this CLSMP	Project Director	Francesco Saibene
Nominated as responsible for managing the construction works associated with this CLSMP	Construction Manager	Stefano Vittor
Nominated responsible "Owner" of this CLSMP **(required to ensure regular review of this document when aspects of the document need amending)**	Environmental Manager	Sandra Edwards
Nominated as responsible for the development and communication of emergency procedures to all personnel involved on site and the provision of personal protective equipment	Health and Safety Manager	Duane Rogers
Appointed Contaminated Land SQEP	Senior Environmental Consultant, Babingtons – Civil and Environmental Consultants	Sean Toland

4.2 Review and update (RC8.2, RC8.21)

This CLSMP shall be considered a live document and shall be reviewed prior to work commencing on each site and as necessary to cater for changes in ground conditions and operation procedures.

Commitment and continuous improvement to the environmental culture by management is critical to its success and continuation. As part of continuous improvement changes to the CLSMP may be appropriate during the project.

These changes may be a result of:

- Any significant changes to construction activities or methods;
- Key changes to roles and responsibilities within the Project;
- Changes in industry practise standards;
- Changes in legal or other requirements (social and environmental legal requirements, consent conditions, and relevant policies, plans, standards, specifications and guidelines);
- Results of inspection and maintenance programmes, logs of incidents, corrective actions, internal or external assessments; and
- The outcome of investigations relating to contaminated land management.

Reasons for making changes to the CLSMP will be documented. A copy of the original CLSMP document and subsequent versions will be kept for the Project records and marked as obsolete. Each new/updated version of the CLSMP documentation will be issued with a version number and date to eliminate obsolete CLSMP documentation being used.

Any substantial amendments to the CLSMP shall be approved by the Manager in writing, at least 10 working days prior to implementation.

4.3 Distribution

At least one (master) copy of the CLSMP shall be held by the Ghella Abergeldie JV.

A copy of the CLSMP shall always be kept onsite by the Ghella Abergeldie JV Site Managers.

It is the responsibility of Ghella Abergeldie JV to distribute the CLSMP to site workers or subcontractors carrying out the construction works and to ensure everyone on site is made aware of the requirements of this plan through regular site training (Section 6).

5. Ground Contamination (RC8.5)

5.1 Further desktop assessment

Through reviewing the previous assessments undertaken for the Project, it is acknowledged that potential contaminating activities may have been undertaken on any of the sites after the assessment dates, in particular, after Jacobs soil sampling assessment in 2015.

In order to assess the potential for contamination having occurred on site after these assessments took place a review of historical aerials and a statement from Watercare, as landowners, has been provided in **Appendix B**. Watercare have confirmed that no activities have changed on the below sites that is of relevance to the validity of the previous assessments: 10 Camden Road; 54 Roma Road; 22 Gregory Place; 39 Frederick Street; 2 and 4 Haycock Avenue; and, 500 Island Road. The sites not controlled by Watercare are either Auckland Council Parks or in the road reserve and therefore have a very low likelihood of land use changes during this period. A review of historical aerials from between 2012 – 2019 also found that it is unlikely that activities have occurred at any of the subject sites over this time that could have contaminated soils more than what has been identified in the existing assessments.

It is therefore concluded that the results provided in the historical investigations are appropriate to be used for the development of this CLSMP. It should also be taken into consideration that several sites will have additional sampling conducted as detailed in this report.

5.2 Actual and potential ground contamination

The investigations undertaken by T&T, Jacobs and Babingtons have been reviewed and summarised on a site by site basis in Section 5.3. In undertaking this review, each site has been assessed to enable the necessary management controls outlined in this plan to be identified. Table 3 identifies which sites are considered to pose a potential risk, or in contrast, which sites do not have sufficient indication of contamination presence to require the implementation of this plan.

The assessment undertaken by Jacobs satisfies the condition of consent to undertake additional sampling of certain sites. It is considered however, given the regulation changes in the risk assessment and management of asbestos, that several of the sites require additional asbestos sampling to further inform potential risk and management protocols. These sites are identified in Table 3 below as amber or red classification. It is considered appropriate for these additional sampling works to be undertaken prior to site establishment in those areas.

The potential for contamination in the deep tunnelling works has been considered low because soils (or rock) at the proposed tunnelling depths are highly unlikely to be influenced by any surface activities. There is a low potential for auxiliary works within the road corridors (such as during micro-tunnelling and/or trenching) to encounter contaminated ground and/or groundwater (e.g. migration from neighbouring industrial or service station sites). These auxiliary works can be managed as they arise or through accidental discovery protocol outlined in Section 7.4.

Table 3: Contaminated Land Management Plan applicability and sampling recommendations

Trench	Site ID	Site Name	Whats HAILs have been identified?	Has there been a sufficient assessment?	Sampling recommendation	CLSMP Status
Link Sewer 1	~~L1S1~~	Removed from Project				
	~~L1S2~~	Removed from Project				
Link Sewer 2	L2S1	Rawalpindi Reserve	Wastewater overflows	Yes	Optional sampling for disposal savings	The procedures set out in this CLSMP are required to mitigate and manage potential effects
	L2S2	Norgrove Avenue	Wastewater overflows	Yes	Optional sampling for disposal savings	
Link Sewer 3	L3S1	Pump station 25	Wastewater overflows	Yes	Optional sampling for disposal savings	
	L3S2	Miranda Reserve	HAIL E1, I, asbestos	Yes	Sampling completed – Refer to section 5.3, and Babingtons investigation report (GAJV-RPT-00202) and validation report (GAJV-RPT-00194).	The procedures set out in this CLSMP are required to mitigate and manage potential effects
	L3S3	Whitney Street	No	Yes	Optional sampling for disposal savings	CLSMP not required – Accidental Discovery protocol to be in place within overarching Construction Management Plan
	L3S4	Dundale Avenue	HAIL E1, I, asbestos	Yes	Sampling completed – Refer to section 5.3.	The procedures set out in this CLSMP are required to mitigate and manage potential effects
	L3S5	Haycock Avenue	HAIL E1, I, asbestos, lead paint in building materials, filling	Yes	Sampling completed – Refer to Section 5.3, detailed site Investigation report for 2 – 4 Haycock Ave completed by Babingtons (GAJV-RPT-00081) and Asbestos demolition reports for both 2 and 4 Haycock (GAJV-RPT-00079 and GAJV-RPT-00080)	The procedures set out in this CLSMP are required to mitigate and manage potential effects - jexuta28
Main Tunnel	WS1	Western Springs Playing Field	Unknown Fill	Not for asbestos	2x Asbestos samples tested - 1 positive. ACM not observed. Requires more shallow asbestos sampling for risk and disposal assessment – SQEP to be consulted	Sampling suggested prior to mobilising to site. Could mobilise onsite with conservative measures outlined in section 7.10 of this CLSMP. Class B Asbestos protocol required. Sampling may reduce costs of disposal and determine H&S and management requirements
	WS2	May Road Stage 1	HAIL I – related to uncontrolled historical filling, nearby pollution incidents	Yes	Sampling completed – Refer to section 5.3 and contamination reports – Jacobs (Appendix D), Soil & Rock (GAJV-RPT-00084) and Babingtons memorandum (GAJV-RPT-00085)	The procedures set out in this CLSMP are required to mitigate and manage potential effects
		May Road Stage 2 (105 May Road)	HAIL I – related to uncontrolled historical filling, nearby pollution incidents	Yes	Sampling completed - Refer to Section 5.3 and detailed site Investigation report for May road completed by Babingtons (GAJV-RPT-00122)	The procedures set out in this CLSMP are required to mitigate and manage potential effects

	WS3	Māngere Pump Station	HAIL A17, G6 and I, unknown fill, Sludge dewatering and reclamation 1950's	Yes	Sampling conducted - Refer to Section 5.3 and Supplementary site investigation conducted for Māngere completed by Babingtons (GAJV-RPT-00082)	The procedures set out in this CLSMP are required to mitigate and manage potential effects
		Twin Rising main	HAIL G6 and I, wastewater activities, filling activities	Yes	Sampling conducted - Refer to Section 5.3 and Environmental site investigation conducted for Twin rising main completed by Babingtons (GAJV-RPT-00083)	The procedures set out in this CLSMP are required to mitigate and manage potential effects
	AS1	Mt Albert War Memorial/Centre	Unknown fill, Nearby UST	Yes	4x Asbestos tested – all negative. Shallow basalt and hardfill detected under existing pavement. Optional sampling for disposal savings	The procedures set out in this CLSMP are required to mitigate and manage potential effects
	AS2	Lyon Ave	Unknown fill, electroplating manufacturing, nearby UST	Not for asbestos	3x samples tested – 2 positive. ACM observed in soil. Requires more shallow asbestos sampling for risk and disposal assessment – SQEP to be consulted	Requires asbestos sampling prior to mobilising to site. Sampling for confirmation risk and disposal assessment will inform requirements within this CLSMP
	AS3	Haverstock Road	Pesticides and radioactive material associated with horticultural research	Yes	ACM not tested, not observed, not anticipated. Optional sampling for disposal savings	The procedures set out in this CLSMP are required to mitigate and manage potential effects
	AS4	Walmsley Park	HAIL activity I, filling	Yes	Sampling conducted - Refer to Section 5.3 and Environmental site investigation conducted for Walmsley completed by Babingtons (GAJV-RPT-00086)	CLSMP not required – Accidental Discovery protocol to be in place within overarching Construction Management Plan
	AS5	Keith Hay Park	HAIL E1 & I Unknown Fill, wastewater overflows	Yes	Sampling conducted - Refer to Section 5.3 and Environmental site investigation conducted for Keith Hay Park completed by Babingtons (GAJV-RPT-00078)	The procedures set out in this CLSMP are required to mitigate and manage potential effects
	AS6	Pump Station 23	Reclamation and wastewater overflows	Not for asbestos	ACM not observed. Not tested. Requires more shallow asbestos sampling for risk and disposal assessment – SQEP to be consulted	Sampling suggested prior to mobilising to site. Could mobilise onsite with conservative measures outlined in section 7.10 of this CLSMP. Class B Asbestos protocol required. Sampling may reduce costs of disposal and determine H&S and management requirements
	~~AS7~~	~~Kiwi Esplande + Ambury Regional Park~~	Removed from Project			

5.3 Site specific reviews

5.3.1 Rawalpindi Reserve

Rawalpindi Reserve was included in the T&T Assessment in 2012. This site was identified as having potential wastewater overflows and no other potentially contaminating activities. The Jacobs assessment involved the collection of samples throughout the extent of the proposed works area in Rawalpindi Reserve. No indications of contamination were identified during the investigation. Results indicate a low human health risk and environmental discharge risk.

Results indicate surface overburden spoil is appropriate for disposal to clean fill or managed fill pending acceptance from the landfill operator.

Standard management procedures outlined in Section 7 and health and safety protocol outlined in Section 8.1 are required.

Rawalpindi Reserve			
Fill Classification	Clean fill or Managed fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedance of nickel above Auckland non-volcanic but within volcanic criteria.		
Previous Assessments	Sufficient assessment completed - optional sampling for disposal savings.		

5.3.2 Norgrove Avenue

Norgrove Avenue was included in the T&T Assessment in 2012. This site was identified as having potential wastewater overflows and no other potentially contaminating activity. The Jacobs assessment involved the collection of one sample within the extent of the proposed works area at Norgrove Avenue. The samples were analysed for heavy metals and Organochlorine pesticides (OCP) compounds. Exceedance of lead above Auckland non-volcanic and volcanic criteria was identified during the investigations. Results indicate a low human health risk and environmental discharge risk.

Results indicate surface overburden spoil is appropriate for disposal to clean fill or managed fill pending acceptance from the landfill operator.

Standard management procedures outlined in Section 7 and health and safety protocol outlined in Section 8.1 are required.

Norgrove Ave			
Fill Classification	Clean fill or Managed fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedance of lead above non-volcanic and volcanic criteria.		
Previous Assessments	Sufficient assessment completed - optional sampling for disposal savings.		

5.3.3 Pump Station 25

Pump Station 25 was included in the T&T Assessment in 2012. This site was identified as having potential wastewater overflows and no other potentially contaminating activity. The Jacobs assessment involved the collection of samples throughout the extent of the proposed works area at the Pump Station 25 site. The samples were analysed for heavy metals, nitrogen compounds, polyaromatic hydrocarbons (PAH) compounds, semi-volatile organic compounds (SVOC), and volatile organic compounds (VOC). Exceedance of nickel above Auckland non-volcanic criteria, but within volcanic criteria was identified during the investigations. Results indicate a low human health risk and environmental discharge risk.

Results indicate surface overburden spoil is appropriate for disposal to clean fill or managed fill pending acceptance from the landfill operator.

Standard management procedures outlined in Section 7 and health and safety protocol outlined in Section 8.1 are required.

Pump Station 25			
Fill Classification	Clean fill or Managed fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedance of nickel above Auckland non-volcanic criteria, but within volcanic criteria.		
Previous Assessments	Sufficient assessment completed - optional sampling for disposal savings.		

5.3.4 Miranda Reserve

Miranda Reserve was included in the T&T Assessment in 2012. The site was assessed to have no potentially contaminating activity having occurred and the site was not tested. The Jacobs assessment involved the collection of samples through the extent of works. The samples were analysed for heavy metals, and OCP compounds. No indications of contamination were identified during the investigations. Results indicate a low human health risk and environmental discharge risk.

Initial results indicated surface overburden spoil from the site was appropriate for disposal to clean fill pending acceptance from the landfill operator. However once topsoil stripping began, class B asbestos was uncovered in several locations across the site. Several fragmented asbestos pieces were discovered. Babingtons tested 9 soil samples across the site, 4 of which were above the BRANZ human health criteria. The site was validated in November 2020 by Babingtons. A small area in the North Western corner of site has not been stripped, but will be stripped as part of site reinstatement.

Standard management procedures outlined in Section 7 and health and safety protocol outlined in Section 8.1 are required.

Miranda Reserve			
Fill Classification	Contaminated fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedance of ACM		
Previous Assessments	Sufficient assessment completed		

5.3.5 Whitney Street

Whitney Street was included in the T&T Assessment in 2012. The site was assessed to have no potentially contaminating activity having occurred and the site was not tested. Jacobs Assessment (2017) involved the collection of samples from one borehole. The samples were analysed for heavy metals, PAH compounds, OCP compounds, SVOC, and VOC. Exceedance of lead above Auckland non-volcanic and volcanic criteria was identified during the investigations. Results indicate a low human health risk and environmental discharge risk.

Results indicate surface overburden spoil is appropriate for disposal to clean fill or managed fill pending acceptance from the landfill operator.

The CLSMP is not required to be followed in full for this site as no potentially contaminating activities were identified and follow up sampling concluded a low risk. Unexpected discovery protocols should however be in place should an area of potential contamination be discovered during works.

Whitney Street			
Fill Classification	Clean fill or Managed fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedance of Lead above Auckland non-volcanic and volcanic criteria.		
Previous Assessments	Sufficient assessment completed - optional sampling for disposal savings.		

5.3.6 Dundale Avenue

Dundale Avenue was included in the T&T Assessment in 2012. The site was assessed to have no potentially contaminating activity having occurred and the site was not tested. Jacobs Assessment (2017) involved the collection of samples from one borehole. The samples were analysed for heavy metals and OCP compounds. Exceedance of arsenic above Auckland non-volcanic and volcanic criteria and nickel above Auckland non-volcanic criteria, but within volcanic criteria were identified during the investigations. Once topsoil stripping was undertaken on site, several ACM discoveries were made. Asbestos was detected in three of the nine soil samples and the pipe uncovered was also ACM.

Results indicate surface overburden spoil and sub surface find are appropriate for disposal at Ridge Road quarry or Hampton Downs as asbestos contaminated fill pending acceptance from the landfill operator.

The ACM levels were less than 0.001%, below the BRANZ human health criteria. Nevertheless, standard management procedures outlined in Section 7 and health and safety protocol outlined in Section 8.1 are required.

Dundale Ave			
Fill Classification	Contaminated fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedance of arsenic above Auckland non-volcanic and volcanic criteria and nickel above Auckland non-volcanic criteria, but within volcanic criteria. ACM exceedance.		
Previous Assessments	Sufficient assessment completed.		

5.3.7 Haycock Avenue

Haycock Avenue was included in the T&T Assessment in 2012 and Jacobs Assessment in 2017. The samples were analysed for heavy metals, OCP compounds and Asbestos Containing Materials (ACM). No indications of contamination were identified during the investigations. The site was then included in a detailed site investigation conducted by Babingtons – Civil and Environmental Consultants ('Babingtons') in February 2020 (Appendix E). The investigation found most of the onsite material will likely be accepted as managed fill, if not reused onsite. Any soil disposal will require confirmation of suitability for disposal by the chosen waste disposal facility operator.

- It is considered 'more likely than not' that the site is a HAIL site due to past and current site activities (HAIL E1, I, asbestos, lead paint in building materials, filling) on the 'piece of land' at the site.
- Heavy metal concentrations exceeded the natural background concentrations at two sampling locations
- Lead concentrations exceeded the AUP PAC at one location, indicating a risk to environmental receptors
- At five sampling locations, the soil concentrations of PAH analytes were found to be above the laboratory detection limits, but below the relevant risk acceptance criteria;
- At one sampling location, the soil concentrations of Total Petroleum Hydrocarbons (TPH) analytes were found to be above the laboratory detection limits, but below the relevant risk acceptance criteria;
- A limited investigation in 2015 did not detect soil contamination of note at the site for ACM, heavy metals or OCPs;

Due to the presence of two buildings containing asbestos materials there is potential for ACM to be present in the footprint of the demolished buildings onsite, including the garden shed at 4 Haycock Avenue. It is acceptable to scrape the extent of the building footprints by 150 mm and dispose of this presumed ACM contaminated soil separately.

The project CLSMP will assist the management of contamination risks for the site works. This CLSMP will also assist in the event of any accidental contamination discovery during site excavation works due to previous HAIL activities at the site.

Haycock Ave			
Fill Classification	Managed fill/Contaminated fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Contaminants above the natural background concentrations for heavy metals and TPH/PAH, and is presumed to contain ACM.		
Previous Assessments	Sufficient assessment completed.		

5.3.8 Western Springs Playing Field

The Western Springs Playing Field site was included in the T&T Assessment in 2012. This site was identified as containing unknown fill. T&T undertook an investigation throughout the extent of works in this site in 2011 which was subsequently assessed again by Jacobs in 2015. Soil samples were collected across the extent of the works on 2 occasions. The samples were analysed for heavy metals, PAH compounds, SVOC, and VOC. Exceedance of chromium, copper, lead, and nickel above Auckland non-volcanic criteria were observed. Other than asbestos, soil analysis results indicate a low human health risk and environmental discharge risk.

Both investigations assessed only 2 samples for asbestos risk, one of which returned a positive asbestos result, albeit at a low concentration. Further sampling for asbestos contamination in soil is recommended throughout the extent of work in order to properly assess asbestos risk and assist in soil disposal options.

Results indicate surface overburden spoil is appropriate for disposal as managed fill or contaminated fill, pending further asbestos assessment.

Management procedures outlined in Section 7, with particular reference to Section 7.10, and health and safety protocol outlined in Section 8.2 are required should work occur on this site prior to additional sampling taking place. Any sampling conducted prior to mobilisation will help inform or refine these procedures in future revisions of this plan.

Western Springs			
Fill Classification	Managed fill or Contaminated fill	**Management procedures**	Management procedures in Sections 7 (with particular reference to 7.10) and 8.2 of the CLSMP are required should work occur prior to additional sampling.
Justification	Exceedance of chromium, copper, lead, and nickel above Auckland non-volcanic criteria. Detection of asbestos.		
Previous Assessments	Insufficient assessment. Requires shallow asbestos sampling for risk and disposal assessment – SQEP to be consulted.		

5.3.9 May Road

The May Road Construction Site covers two sites; 54 Roma Road (owned by Watercare) and 105 May Road (leased land). It will be utilised as one of the main tunnel boring locations and associated removal of spoil generated throughout the operation. The work is split into two stages, the Stage 1 temporary platform is located fully within 54 Roma Road, it has been consented based on the previous assessments and is included in this CLSMP. The leased land at 105 May Road is only available for activities which comply with the permitted activity standards, for example, additional laydown area and egress from the site. No consents have been obtained for the Stage 2 portion of the site.

The May Road Stage 1 Site was included in the T&T Assessment in 2012. This site was identified as containing unknown fill and a nearby pollution incident. T&T undertook an investigation throughout the extent of proposed works area for this site in 2012 which was subsequently assessed again by Jacobs in 2015. Both investigations assessed only 4 samples for asbestos risk, two of which returned positive asbestos result.

Soil & Rock conducted a further supplementary site investigation to characterise the asbestos risk in 2019. This investigation found 20 positive results above the natural background concentrations for asbestos in soil out of the 66 samples analysed for ACM. Of those 20 positive results, 11 exceeded the BRANZ human health guidelines for fibrous asbestos/asbestos fines (FA/AF). Heavy metal analytes were generally detected above the laboratory detection limits at all sampling locations and exceeded the natural background concentrations at 7 locations. TPH/PAH analytes did not exceed the guideline criteria at any sampling location, however, the laboratory detection limits for these analytes were exceeded. The class B asbestos contamination area was removed by Ward Demolition and the relevant portion of the site validated by Babingtons in 2019.

All of the soil material assessed during this investigation contained contamination above the natural background concentrations for heavy metals and hydrocarbons. The material where ACM has been identified will not be accepted as managed fill, and landfill disposal will be required in Redvale or Hampton Downs.

Stage 2 works was initially investigated by T&T in 2012 and 2014 (Appendix C) which found ACM on site, Heavy metals and hydrocarbons above background concentrations and recommended further testing of surface soils for asbestos.

A further detailed site investigation followed in March 2020 (Appendix E) to assess the potential for soil contamination risk at 105 May Road. Based on the findings of this investigation, the following conclusions can be drawn:

- ACM was detected in two soil samples that were analysed, one of which exceeded the human health guidelines
- Lead and zinc concentrations exceeded the AUP PAC at one location, indicating a risk to environmental receptors
- At thirteen sampling locations, the soil concentrations of PAH analytes were found to be above the laboratory detection limits, but below the relevant risk acceptance criteria;
- At nine sampling location, the soil concentrations of TPH analytes were found to be above the laboratory detection limits, but below the relevant risk acceptance criteria

In relation to the risk of asbestos in soil in the hotspot area recorded above the human health guidelines, it is recommended that the soil surface should be scraped by 300 mm, and the asbestos contaminated soil be disposed at Redvale Landfill under Class B asbestos removalist supervision in accordance with the asbestos regulations.

The project CLSMP will assist the management of contamination risks for the site works. This CLSMP will also assist in the event of any accidental contamination discovery during site excavation works due to previous HAIL activities at the site.

May Road			
Fill Classification	Managed fill or Contaminated fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedances of Heavy Metals, ACM, PAH and TPH.		
Previous Assessments	Sufficient assessment.		

5.3.10 Māngere Pump Station

The Māngere Pump Station site was included in the T&T Assessment in 2012. This site was identified as being reclaimed from the Manukau Harbour in the 1950s and has also been used historically for sludge dewatering from the nearby wastewater operations. T&T undertook an investigation throughout the extent of works in this site in 2012 which was subsequently assessed again by Jacobs in 2015 however, neither investigation included the potential assessment of asbestos in reclamation fill.

A separate supplementary site investigation was conducted by Babingtons in October 2019 (Appendix E) in order to properly assess asbestos risk and assist in soil disposal options for this site. Based on the findings of this investigation, the following conclusions can be drawn:

- It is considered 'more likely than not' that the site is a HAIL site due to past and current site activities (HAIL A17, G6 and I) on the 'piece of land' at the site;
- At ten sampling locations, heavy metal concentrations exceeded what is considered to be typical natural background concentrations for the Auckland region;
- At thirteen sampling locations, heavy metal concentrations exceeded the AUP permitted activity criteria;

- At nine sampling locations, AF fibres were detected in low concentrations below the human health criteria; and
- The soil contaminant concentrations for PAH and SVOC were found above the laboratory detection limits but below the risk acceptance criteria.

The project CLSMP will assist with the management of contamination risks for the site works. It will also assist in the event of any accidental contamination discovery during the site excavation works due to previous HAIL activities at the site.

Māngere Pump Station			
Fill Classification	Managed fill or Contaminated fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	Exceedances of Heavy Metals, ACM, PAH and TPH.		
Previous Assessments	Sufficient assessment.		

5.3.11 Māngere Twin Rising Main

The Māngere Twin Rising Main is an extension of pipe from the new Pump Station into the existing Māngere WWTP. The work to lay the rising main pipe involves excavating a trench along the coastal marine area which then connects to the current WWTP.

The Twin Rising Main trench was included in the T&T Assessment in 2012. This site was identified as containing unknown fill and a portion of its length passes through the operational area of the current WWTP to the confluence chamber. Jacobs assessment involved the collection of four samples along the extent of works for the Twin Rising Main. The previous investigation reports for the site by Tonkin + Taylor and Jacobs show concentrations of contaminants in soil at the site above the natural background concentrations and AUP PAC, similar to what was observed in the current investigation discussed below.

It was identified in the T&T assessment that the site has potential construction fill, however no sampling for asbestos was conducted. In March 2020 Babingtons conducted an Environmental Site Investigation (Appendix E) to characterise the asbestos risk in 2020. This investigation confirmed the site is a HAIL site on reclaimed land, with uncontrolled fill and residual wastewater sludge, present at the site. The concentrations of heavy metal contamination recorded at the site were generally above the soil background concentrations and permitted activity criteria. TPH, PAH, SVOC and AF were measured in the soil in low concentrations above the natural background concentrations.

This material will not be accepted as managed fill due to the presence of ACM in the soil, and landfill disposal will be required in disposal facilities such as Redvale or Hampton Downs, if soil not safely reused onsite. Any soil disposal will require confirmation of suitability for disposal by the chosen waste disposal facility operator.

The project CLSMP will assist the management of contamination risks for the site works. This CLSMP will also assist in the event of any accidental contamination discovery during site excavation works due to previous HAIL activities at the site.

Māngere Rising Main			
Fill Classification	Contaminated fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP

Justification	Exceedances of Heavy Metals, ACM, PAH and TPH.
Previous Assessments	Sufficient assessment.

5.3.12 Mt Albert War Memorial / Centre

Mt Albert Reserve was included in the T&T Assessment in 2012. This site was identified as containing potential unknown fill and also has a nearby underground storage tank (outside of the works area). The Jacobs assessment involved the collection of samples throughout the extent of works. The samples were analysed for heavy metals, PAH compounds, SVOC, VOC, and ACM. No indications of contamination were identified during the investigation. Review of geotechnical logs from the Jacobs assessment found predominantly hardfill placed directly on an impenetrable layer of basalt from as shallow as 0.1 – 1m below ground level. Four samples were tested for asbestos in this site, all of which showed no presence of asbestos in soil. Results indicate a low human health risk and environmental discharge risk.

Given the identification of hardfill beneath the current road surface and shallow basalt at this site, it is considered any potential risk of encountering contaminants in the hardfill is low and further sampling for asbestos contamination in soil is therefore not required.

Results indicate surface overburden spoil is appropriate for disposal to clean fill or managed fill pending acceptance from the landfill operator.

Standard management procedures outlined in Section 7 and health and safety protocol outlined in Section 8.1 are required.

Mt Albert War Memorial/Centre			
Fill Classification	Clean fill or Managed fill	**Management procedures**	Standard management procedures in Section 7 and 8.1 of the CLSMP
Justification	No exceedances.		
Previous Assessments	Sufficient assessment – Optional sampling for disposal savings.		

5.3.13 Lyon Ave

Lyon Avenue was included in the T&T Assessment in 2012. This site was identified as containing potential unknown fill, has a portion of its boundary within the neighbouring site which has been used previously for electroplating manufacturing and also has a records of a now-removed underground storage tank. The Jacobs assessment involved the collection of samples from two hand auger locations within the extent of works. Demolition material and potential asbestos containing fibre board was observed in the Jacobs investigation. The samples were analysed for heavy metals, PAH compounds, SVOC, VOC, nitrogen compounds, and ACM. Asbestos (chrysotile) was detected and will need to be sampled and reassessed. Other than asbestos risk, results indicate a low human health risk and environmental discharge risk.

Three samples were tested for asbestos in this site, two of which showed the presence of asbestos in soil. The assessments conducted to date are insufficient and this site will require further analysis of contaminants, including asbestos. This sampling will assess contaminant risk and assist in soil disposal options for this site.

Based on current results, excavated surface overburden spoil is appropriate for disposal as contaminated fill, pending further asbestos assessment.

Management procedures outlined in Section 7, with particular reference to Section 7.10, and health and safety protocol outlined in Section 8.2 are required should work occur on this site prior to additional sampling taking place. Any sampling conducted prior to mobilisation will help inform or refine these procedures in future revisions of this plan.

Lyon Ave			
Fill Classification	Contaminated fill	**Management procedures**	Management procedures in Sections 7 (with particular reference to 7.10) and 8.2 of the CLSMP are required should work occur prior to additional sampling.
Justification	Asbestos detection, to be sampled and reassessed. Some organics would register as managed fill.		
Previous Assessments	Insufficient assessment – Requires shallow asbestos sampling for risk and disposal assessment – SQEP to be consulted.		

5.3.14 Haverstock Road

Haverstock Road site was included in the T&T Assessment in 2012. This site was identified as being a portion of the Horticulture and Food Research Institute of New Zealand site with potential pesticide use for various horticultural studies. Jacobs assessment involved the collection of samples throughout the extent of works. The samples were analysed for heavy metals, and OCP compounds. Exceedance of mercury above Auckland volcanic criteria was identified during the investigations. Results indicate a low human health risk and environmental discharge risk.

Results indicate surface overburden spoil is appropriate for disposal to clean fill or managed fill pending acceptance from the landfill operator.

Standard management procedures outlined in Section 7 and health and safety protocol outlined in Section 8.1 are required.

Haverstock Road			
Fill Classification	Clean fill or Managed fill	**Management procedures**	Standard management procedure in Sections 7 and 8.1 of the CLSMP
Justification	Exceedance of mercury above Auckland volcanic criteria.		
Previous Assessments	Sufficient assessment – ACM not observed, not tested, not anticipated. Optional sampling for disposal savings.		

5.3.15 Walmsley Park

Walmsley Park site was included in the T&T Assessment in 2012. This site was identified as containing unknown fill. Jacobs assessment involved the collection of samples throughout the extent of works. The samples were analysed for heavy metals, PAH compounds, SVOC, VOC, and ACM. Exceedance of arsenic, copper, and lead above Auckland volcanic criteria was identified during the investigations. Results indicate a low human health risk and

environmental discharge risk. Seven samples were tested for asbestos in this site, all of which showed no presence of asbestos in soil. No evidence of construction rubble was identified in all investigation locations.

In December 2019 Babingtons conducted an Environmental Site Investigation (Appendix E) to assess asbestos risk and assist in soil disposal options for this site. This investigation confirmed the site is considered 'more likely than not' that the site is a HAIL site due to past and current site activities (HAIL activity I, filling) on the 'piece of land' at the site. The soil contaminant concentrations for ACM were below the laboratory detection limits for the eight samples that were analysed which aligns with previous studies.

This material will likely be accepted as managed fill, if not reused onsite. Any soil disposal will require confirmation of suitability for disposal by the chosen waste disposal facility operator.

The project CLSMP will assist the management of contamination risks for the site works. This CLSMP will also assist in the event of any accidental contamination discovery during site excavation works due to previous HAIL activities at the site.

Walmsley Park			
Fill Classification	Managed fill	**Management procedures**	CLSMP not required. Accidental Discovery protocol to be in place within Construction Management Plan
Justification	Contaminants above the natural background concentrations for heavy metals and PAH, it will not be suitable for disposal at a clean fill facility.		
Previous Assessments	Sufficient assessment.		

5.3.16 Keith Hay Park

Keith Hay Park was included in the T&T Assessment in 2012. This site was identified as containing unknown fill and also subject to wastewater overflows. Jacobs assessment involved the collection of samples throughout the extent of works. The samples were analysed for heavy metals, nitrogen compounds, OCP compounds, SVOC, and VOC. Exceedance of arsenic and nickel above Auckland non-volcanic criteria was identified during the investigations. Other than asbestos, soil analysis results indicate a low human health risk and environmental discharge risk.

Because the site has potential construction fill from the demolition of 5 houses in 2012, and no sampling for asbestos had been conducted, Babingtons were engaged in 2020 (Appendix E) to conduct further sampling for asbestos contamination. Based off this Environmental site investigation the following conclusions can be drawn:

- It is considered 'more likely than not' that the site is a HAIL site due to past and current site activities (HAIL E1, I) on the 'piece of land' at the site;
- Non-friable ACM cement fragments were observed in soil during the initial site development works;
- At seven sampling locations on the site surface, AF fibres were detected in low concentrations below the human health criteria;
- At one sampling location on the site surface, AF was detected in soil in concentrations above the human health criteria requiring class B removal contractor for that area; and
- At one sampling location, heavy metal concentrations marginally exceed what is considered to be typical natural background concentrations for the Auckland region.

This material will not be accepted as managed fill without further delineation of ACM due to the presence of ACM / AF in the soil, and landfill disposal will be required at disposal facilities such as Redvale or Hampton Downs. Any soil disposal will require confirmation of suitability for disposal by the chosen waste disposal facility operator.

The project CLSMP will assist the management of contamination risks for the site works. This CLSMP will also assist in the event of any accidental contamination discovery during site excavation works due to previous HAIL activities at the site.

Keith Hay Park			
Fill Classification	Managed fill or Contaminated fill	**Management procedures**	Standard management procedure in Sections 7 and 8.1 of the CLSMP
Justification	Contaminants above the natural background concentrations for heavy metals, PAH and AF. Will not be accepted as managed fill without further delineation of ACM.		
Previous Assessments	Sufficient assessment.		

5.3.17 Pump Station 23

Pump Station 23 was included in the T&T Assessment in 2012. PS23 was identified as being reclaimed land and is subject to wastewater overflows. Jacobs assessment involved the collection of two samples from one location within the site. The samples were analysed for heavy metals, nitrogen compounds, TPH, SVOC, and VOC. Exceedance of arsenic and lead above Auckland non-volcanic criteria was identified during the investigations. Other than asbestos, soil analysis results indicate a low human health risk and environmental discharge risk.

As it has been identified that the site has unknown fill from the reclamation of this area from an unknown source, and no sampling for asbestos has been conducted, further sampling for asbestos contamination in soil is recommended throughout the extent of works. This sampling will assess asbestos risk and assist in soil disposal options for this site.

Results indicate surface overburden spoil is appropriate for disposal as managed fill or contaminated fill, pending further asbestos assessment.

Management procedures outlined in Section 7, with reference to Section 7.10, and health and safety protocol outlined in Section 8.2 are required should work occur on this site prior to additional sampling taking place. Any sampling conducted prior to mobilisation will help inform or refine these procedures in future revisions of this plan.

Pump Station 23			
Fill Classification	Managed fill or Contaminated fill	**Management procedures**	Management procedures in Sections 7 (with particular reference to 7.10) and 8.2 of the CLSMP are required should work occur prior to additional sampling.
Justification	Exceedance of arsenic and lead above Auckland non-volcanic criteria. ACM not tested.		
Previous Assessments	Insufficient assessment, requires asbestos sampling for risk and disposal assessment – SQEP to be consulted.		

5.4 Confirmation of ground contamination (RC8.3c, RC8.19)

5.4.1 Sites not previously assessed (RC8.18 and RC8.21)

Additional work to check the potential for contamination may be necessary for works relating to any micro-tunnelling and/or trenching activity of new (or adjacent) sites not included in the existing assessments. Work

on any auxiliary or new sites not covered by the original consent or historical assessments are outside the scope of this CLSMP and will require additional work.

A Preliminary Site Investigation ('**PSI**') may be required if additional construction sites are required or changes in the construction sites occur. A brief assessment shall be undertaken by a SQEP to determine whether a PSI is required. If required, a PSI shall be undertaken by the SQEP and shall comprise:

- a site walkover; and
- review of readily available published information including Auckland Council hazard maps, geological information and historical aerial photographs.

If the PSI identifies that an activity defined in the Ministry for the Environment's HAIL is more likely than not to have occurred on the land subject to soil disturbance, then confirmatory soil sampling works or a Detailed Site Investigation ('**DSI**') shall be undertaken. Any new sites will be discussed with the SQEP and Resource Consent Planner early to avoid project delays.

5.4.2 Confirmatory soil sampling (RC8.3c)

Further sampling is recommended for the sites identified as having potential asbestos contamination in Table 3 (amber or red highlighted). Alternatively, should urgent works be required on a case by case basis they could be undertaken on these sites but would require Class B Licenced Asbestos work controls which mandates the use of a licenced asbestos contractor, and more stringent controls than what may be necessary (as outlined in Section 7.10). This level of control cannot be determined based on the limited sampling and assessment undertaken in the previous investigations.

Any additional sampling conducted must be undertaken in accordance with MfE's Contaminated Land Management Guidelines and BRANZ Asbestos Management Guidelines including appropriate sampling density. The Project's SQEP shall be consulted to ensure the sampling methodology is appropriate.

When confirmatory soil sampling is undertaken prior to mobilisation onsite, the results of any soil testing, including asbestos in soil, will not be available for at least five working days. If soil testing is undertaken during the construction process, the excavated soil shall be treated as potentially contaminated while awaiting laboratory confirmatory results and relevant procedures set out in Section 7.2 for the containment and isolation of soil should be followed. Any licenced Disposal Facility Operator will require the results of spoil to be disposed prior to it being taken to their site. Further leachability testing may also be required if soil contaminant levels exceed their screening criteria. The number of soil samples needed for each site to satisfy the Disposal Facilities will be agreed with the Disposal Facilities prior to excavation.

Any confirmatory sampling conducted will be reported as outlined in Section 5.4.5 and allow for an update of this CLSMP.

5.4.3 Sampling procedure (RC8.19a, RC8.19b)

All sampling works to confirm if contamination is present shall be directed and undertaken by the SQEP in accordance with the MfE Contaminated Land Guidelines. The soil sampling strategy (including depth, sampling method and analytes) for the areas of excavation shall be based on the findings of the previous assessments and the extent of works within that specific site.

5.4.4 Classification of soils

Laboratory results should be assessed against the following:

- The National Environmental Standard for Assessing and Managing Contaminants to Protect Human Health ('**NESCS**') Soil Contaminant Criteria for commercial/industrial outdoor workers to conservatively establish if soils would pose a health risk to site workers;
- The NESCS Soil Contaminant Criteria for recreational or commercial/industrial land use to determine if soils can be re-used on site; and
- Auckland Background Concentrations (for the assessment of clean fill acceptance) and specific landfill criteria (managed fill and hazardous waste criteria) should soils be removed from site.

5.4.5 Reporting (RC8.20)

Auckland Council will be notified of any unexpected contamination (including contaminated soil, surface water or ground water) within 10 days of the contamination being identified or immediately if the contamination is considered by the SQEP to pose a significant environmental and/or health and safety issue.

Results of any ground contamination confirmatory testing will be made available on request. If the testing shows that additional measures need to be implemented, the CLSMP shall be revised according. The SQEP and Environmental Manager will communicate results and implications of results as they arise.

6. Staff Training (RC8.6)

Environmental training for all staff working on the project shall be undertaken as part of the site induction programme. All workers shall be made aware of the potential for contamination and understand ways in which contamination can be identified on site. This training is particularly important if sampling and testing of the material cannot be undertaken prior to excavations on the potentially contaminated sites or if contamination is encountered during the course of works on sites where potentially contaminating activities have not been identified, including any works within the road corridor.

Toolbox meetings will be held regularly and attended by all Project staff and subcontractors. Regular reminders on identification of contamination and procedures in this CLSMP shall also be included during these meetings.

6.1 Contamination indicators

If any of the following are noted in the excavation, or the excavated soils, it is an indication that contamination may be present:

- A solvent or hydrocarbon odour (petrol, diesel, kerosene type odour, etc);
- Other abnormal odours not normally associated with soil (e.g. putrescible or sewerage);
- Abnormal or unnatural coloured soil;
- Soil with waste material or building debris (i.e. plastics, metal, bricks, timber etc) indicating the ground has been filled;
- An oily substance or sheen on the surface of soil, or on the surface of water in the excavation;
- Intact or broken drums and containers; and
- Fibrous material (Asbestos Containing Materials ('ACM') as fragments or free fibre).

See Figure 3 below for examples of obvious contaminated land discovery.

If any of the above indications of contamination are identified when not anticipated, actions outlined in Section 7.4, Accidental Discovery Protocol, shall be followed.

Figure 3: Contamination photos, clockwise from top left: excavated construction rubble; excavated potential ACM; 'blue billy' cyanide staining beneath concrete; green stained groundwater; white stained groundwater; municipal waste filling.

7. Site Management Procedures

Site management procedures are outlined to ensure proper handling of contaminated materials and potentially contaminated materials throughout the Project works area.

7.1 Earthwork procedures (RC8.11, RC8.12, RC8.15, RC8.23)

The following general handling procedures should be followed where contamination is identified, is suspected, or has not been able to be confirmed:

- Soil concentrations are required to be below the lower of the NESCS soil contamination standards for the site final land use and the AUP Permitted Activity Criteria to be reused onsite. If the soil is not able to be reused on the site, it shall be loaded directly onto trucks for offsite disposal (Section 0), or temporarily stockpiled (Section 7.2). The SQEP shall be consulted where soil can be reused onsite to inform validation (Section 10).
- Trucks shall be loaded within the site where runoff and possible spills during loading can be controlled and contained.
- Trucks wheels shall be free of mud and debris prior to leaving the site.
- Each truck will have a tracking document signed onsite and collected at the receiving facility to track each load of material.
- Trucks shall have their loads covered by tarpaulins during transport of material to licensed landfill. These shall be affixed before leaving site.
- Approval shall be obtained by the contractor from the landfill destination prior to transportation. The contractor is responsible for obtaining this approval and recording disposal docket quantities.
- On completion of excavation works in sites of identified contamination, plant and equipment will be cleaned and decontaminated in a controlled area of the site. Any residues will be collected and disposed of in accordance with Section 0.

7.2 Stockpiling of contaminated or potentially contaminated soil (RC8.13)

Stockpiling of contaminated soil will be avoided as far as practicable. If stockpiling of contaminated soil on site is required, it shall be managed by the contractor as follows:

- Sediment control measures shall encircle the stockpile, this may include:
  - earth bunds with a minimum height of 0.3m;
  - silt fences; and/or
  - proprietary products such as filter socks etc;
- If the stockpile is to remain for more than 1-2 days, the stockpile will be covered with clean soil, geotextile or a polythene cover to prevent rainfall induced erosion and dust;
- If the stockpile is to remain for more than 1-2 days, the stockpile will be clearly labelled or signposted;
- The stockpile will be fenced or otherwise secured so that the general public cannot access the stockpile;
- The stockpile material shall be placed on sheeting or sacrificial geotextile to prevent contamination of underlying clean material; and
- Muck bays can be used to contain contaminated soil onsite prior to removal. These muck bays will be managed in the same manner as stockpiles and will require a permanent means to cover the muck bay during rain and the ability to retain any sediment runoff. These muck bays will be located as close to the primary excavation point as possible and will be in restricted entry areas.

7.3 Imported material procedure (RC8.16)

Material imported to the site for the purposes of filling and landscaping shall be certified clean fill. Records must be provided by the Contractor to demonstrate that any imported material is obtained from a quarry or other certified source. Material shall not be imported from any site that is, or would be considered, a HAIL site, unless sampled by a SQEP to show that it is suitable for the intended land use.

Basecourse/hardfill does not require testing, provided it is sourced directly from a quarry.

7.4 Accidental discovery protocol (RC8.3d, RC8.10, RC8.18)

The procedures outlined below provide the Contractor with protocols to identify potential contamination if suspected contaminated soils or hazardous materials are discovered during the excavation works other than contaminated soils already identified in the previous assessments as outlined in this CLSMP. These protocols will enable the appropriate action to avoid exposure of contaminants to site workers or the dispersion of contaminants into the surrounding environment.

Contamination indicators or hazardous materials may include but are not limited to the following:

- Unusual odours;
- Discoloured or stained water seeps and soils;
- Petroleum hydrocarbon contaminated soil and/or free product;
- Liquid waste, putrescible waste, household refuse and any material that normally would be sent to a licensed landfill;
- Suspected ACM not previously recorded; or
- Intact or broken drums, containers or structures.

During the earthworks on site, the Contractor shall actively monitor for the conditions/materials specified above. In the event that one of these is identified, the Contractor should take the following actions:

- Stop all earthworks within a 5m radius of the area where the suspected material/emission/discharge has been recorded.
- Immediately notify the Site Supervisor.
- Cordon off the area as practicable with a suitable barrier.
- Work shall not resume or commence within a 5m radius of the area unless authorised by the Ghella Abergeldie JV Construction Manager.

The Site Supervisor and Environmental Manager will consult with SQEP and advise on the appropriate course of action. The SQEP shall:

- Notify the regulatory authorities (Auckland Council's Compliance Team) in consultation with the Ghella Abergeldie JV and Watercare within 2 working days, that confirmed contamination has been discovered and contingency action is being implemented in accordance with resource consent condition 8.20.
- Characterise the contamination by collecting samples for chemical laboratory analysis.
- If appropriate, advise the Contractor to excavate the suspected contaminated material and stockpile (as detailed in Section 7.2) or place in a covered container to allow works to continue with minimum delay.
- If stockpiling/containerising is inappropriate, advice construction work to proceed to an area clear of contamination indicators until material testing, as necessary, defines the material characteristics.
- When the material characteristics have been established, advise the Site Supervisor as to whether the materials may remain on site or what remedial measures are required to manage this material onsite, or the options available to dispose of this material offsite (as per Section 0).

- Instruct relevant staff so that all appropriate information such as location and quantity of material and offsite weighbridge dockets are recorded.

Should asbestos be observed or suspected during the earthworks, all work shall cease and Health & Safety at Work (Asbestos) Regulations (2016) will be followed. Works can recommence once all asbestos has been removed safely. Any asbestos works (assessment, delineation, removal and verification) shall be undertaken by a specialist asbestos contractor under the supervision of a person certified under the Health & Safety at Work (Asbestos) Regulations (2016).

7.5 Dust control

From an environmental and human health perspective, dust generated during earthworks on a contaminated site has the potential to contain contaminants and, during windy conditions, may discharge offsite.

In order to control the generation of contaminated dust, the contractor shall:

- Limit the amount of contaminated soil to be excavated as much as practicable;
- Limit vehicle access onto contaminated areas;
- Utilise a water truck or portable water sprays in trafficked areas to dampen dust during dry and windy conditions;
- Cover stockpiled material awaiting laboratory testing and removal as outlined in Section 7.2 to prevent dust generation;
- Visually monitor dust emissions in the vicinity of the excavation until exposed contaminated material has been removed or covered by clean material; and
- Avoid work during windy conditions.

When utilising water to control dust, the contractor shall ensure that:

- The application does not cause surface runoff that would discharge into natural water bodies; and
- The application of water does not induce soil erosion or pugging.

7.6 Stormwater and sediment control measures

During earthworks on contaminated sites, rainwater has the potential to encounter contaminated material and become contaminated itself. Contaminated sediment may also become entrained in the stormwater.

The contractor shall liaise with the SQEP and ensure that the stormwater and sediment control procedures specific to and appropriate for the potential contaminants in each area, are put in place prior to any ground breaking works commencing. The procedures shall include as a minimum:

- Limiting the duration of exposure of contaminated ground as much as possible;
- Containment of any runoff during rainfall events within the excavation;
- Bunded stockpiles as set out in Section 7.2;
- Implement sediment and erosion control measures as set out in the Erosion and Sediment Control Plan, and;
- Controlled site exit points and wheel washing equipment shall be put in place to prevent contaminated soils being tracking offsite by vehicles.

7.7 Dewatering (RC8.17)

The quality of any dewatering discharges on confirmed contaminated sites (Table 3) shall be assessed as to the likelihood of the water becoming contaminated due to contact with contaminated soils. In line with consent

conditions, where it is considered that the dewatering water may have become contaminated it will be tested prior to the disposal of the water to stormwater. Considerations that will be included in this assessment will be if the area of dewatering is in direct contact with a potential area of contamination, if the adjacent contamination is a leaching risk i.e. not asbestos. Where deep dewatering is occurring, and the shallow groundwater and shallow soils are isolated from the excavation, those areas will not be considered a risk and no testing for compliance with the ANZECC guidelines will be required.

Water will be discharged to stormwater or a watercourse provided the contaminant concentrations criteria is met (Table 4).

Table 4: Stormwater disposal trigger levels

Parameter	Water concentration[1] (mg/L)
Arsenic	0.14
Cadmium	0.0008
Chromium	0.04
Copper	0.0025
Nickel	0.017
Lead	0.0094
Zinc	0.031
Hydrocarbons	Not to contain separate phase liquid contaminants, including separate phase hydrocarbons or hydrocarbon sheen. If hydrocarbons are likely to be present, benzene and xylene levels to be confirmed being below 2 mg/L and 1mg/L, respectively.

Notes: All values refer to soluble or dissolved concentrations

[1] Guideline for the protection of freshwater species, 80% trigger level from Australian and New Zealand Guidelines for Fresh and Marine Water Quality, ANZECC, 2000

Consultation with a SQEP may be required to inform management if samples do not meet criteria outlined in Table 4 above. In the absence of confirmatory testing, any dewatering at known contaminated sites, shall be disposed of to tradewaste with prior approval from Watercare. Additionally, the SQEP shall be notified if any unusual/unexpected ground and groundwater conditions are encountered during the project works. The SQEP shall assess the need to test or treat the water and advise on appropriate disposal methods.

During secant piling at Dundale Ave site, samples of groundwater removed from within the piles were taken for comparison to ANZECC 80% freshwater guidelines. Although the site was not considered to be contaminated in line with Chapter E30, heavy metal concentrations were present on site, therefore samples were taken as a precautionary approach. The results of these samples indicated that zinc and copper concentrations were slightly above ANZECC guidelines but well within acceptable discharge limits generally included in consent conditions (5 – 10x ANZECC 80% guidelines).

Following advice from Lean Phuah, Discipline Director – Science and Principal Environmental Engineer at Tonkin and Taylor and discussions with Auckland Council, the following was confirmed:

- The site is no longer considered contaminated as asbestos had been removed during site establishment and metals concentrations were at or below the anticipated background concentrations as published by Auckland Council for Auckland soils and are not contaminated. Condition 8.17 does therefore not apply.
- Discharge into the adjacent Whau Creek would be acceptable from an effects perspective.

Auckland Council confirmed that for dewatering during shaft construction, if the criteria for dissolved heavy metal contaminants (Table 4) cannot be met for dewatering during shaft construction, discharge is permitted provided the following criteria is met:

- no soil contamination above the Auckland Unitary Plan permitted activity soil acceptance criteria (Table 5) is present or dewatering occurs at depth and the dewatering zone is isolated from the shallow potentially contaminated soils;
- the construction methodology is similar to that at the Dundale Ave Site; and
- pH and clarity requirements (pH between 5.5 – 8.5, 100 mm of clarity).

Council approval extends to construction sites also within the Whau catchment in addition to the Dundale Ave site:

- Haycock Ave;
- Whitney Street;
- Miranda Reserve; and
- Pump Station 25.

See Appendix F and G for the Council reviewed Tonkin and Taylor letter and associated Council correspondence.

Table 5: Auckland Unitary Plan Permitted activity soil acceptance criteria (mg/kg).

Contaminant	Permitted activity criteria (mg/kg)
Arsenic	100
Benzo (a) pyrene (equivalent)	20
Cadmium	7.5
Copper (total)	400
Copper	325
Total DDT	12
Lead	250
Mercury	0.75
Nickel	105
Zinc	400

7.8 Odour control

If odorous material is uncovered during excavation works, the following odour control measures shall be implemented to prevent a nuisance to neighbouring houses and to ensure the health of workers:

- All work in the immediate vicinity of odorous material shall cease and the exposed material shall be covered, for example with tarpaulin, polyethylene sheeting or a layer of clean soil to prevent further discharge of odour. The contractor shall then seek advice from the SQEP. The SQEP shall assess the potential for volatile compounds and advise on health and safety requirements. Assessment of volatility may include use of a Photoionisation Detector and soil sampling and testing;
- Wind conditions shall be assessed and if necessary, work shall cease until conditions are more favourable for minimising discharge of odour; and

- A ventilation or other mitigation system, for example odour suppression sprays, shall be established if natural dispersion is not adequate.

7.9 Monitoring programme (RC8.9)

Daily monitoring shall be undertaken by the Ghella Abergeldie JV and shall involve inspection of earthworks areas for:

- Sediment control and compliance with specific ESCP;
- Water accumulation and/or any dewatering requirements; and
- Dust generation.

The Ghella Abergeldie JV shall also notify the SQEP if any visual inspections of excavations identify significant odours, discoloration or ACM.

7.10 Potential asbestos contaminated sites (RC8.3e, RC8.10)

Several sites have been identified as having the potential for asbestos contamination or limited sampling has identified asbestos presence. Table 3 identifies these sites as an amber or red classification.

As outlined in Table 3, several sites may require further testing. These sites will be managed as if they were Class B Licenced Asbestos Work without any delineation or further sampling being conducted. An Asbestos Management Plan has been developed to outline specific health and safety procedures associated with working on these sites.

Disposal options will also be limited to landfill for those sites with asbestos detections without any delineation or further sampling being conducted. It is therefore recommended that asbestos sampling be undertaken at these sites in advance of site mobilisation. Pre-emptive sampling will advise appropriate health and safety protocols and allow for the delineation of areas of asbestos onsite to reduce disposal costs.

Should additional asbestos sampling be undertaken, and it is shown that asbestos is present but at a level which requires BRANZ 'Asbestos related work' procedures as opposed to Class B Licenced Asbestos Work then site-specific procedures will be developed in conjunction with the Contractor and the SQEP.

In the case of changing the 'CLSMP Status' classification (as set out in Table 3) and the relevant type of asbestos works from 'Class B Licensed Asbestos Work' into 'Asbestos Related Work', Auckland Council's Compliance Team will be notified prior to the commencement of the land-disturbance works.

8. Health and Safety Procedures

Ghella Abergeldie JV have and are implementing a Health and Safety Plan in compliance with the Health and Safety at Work Act, 2015, its amendments, and associated regulations, and other applicable legislation, regulations, codes and guidelines. The HSP shall address all potential hazards associated with the proposed works. General protocols related to the presence of potentially contaminated material are described in this section and shall be included in the HSP.

8.1 General safety requirements

Ghella Abergeldie JV shall, as a minimum, implement the following measures for all sites highlighted in Table 3 as yellow, amber or red:

- Entry to the site shall be restricted to authorised workers only;
- A Health and Safety Manager ('HSM') shall be appointed for the works. The role of the HSM shall be to ensure workers are wearing the correct protective equipment and respond to new hazards as they arise;
- All workers shall be inducted prior to carrying out works at the sites. The inductions shall describe the Personal Protective Equipment ('PPE') requirements and outline the potential hazards of the contamination that is likely to be encountered at that specific construction site;
- Contact with contaminated soil by workers is expected to be minimal because the potential for contamination has been identified as low in most of the sites and earthworks are proposed to be undertaken by mechanical methods. However, as a precautionary measure, any worker that is required to manually handle contaminated or potentially contaminated soil shall be required to wear disposable gloves. The resistance of the gloves to the contaminants encountered on site shall be confirmed prior to use;
- Workers shall be made aware of fibrous asbestos risk in amber and red alert sites, and appropriate dust management and H&S protocol to mitigate asbestos risk will be in place. P2 dust masks shall be made available at all other sites within the Project area at all times and shall be used by workers if visible dust clouds are present within the Project area. The use of masks does not remove the need to carry out initial dust mitigation (e.g. dampening).
- Additional requirements such as safety glasses, disposable or splash/water proof overalls, and/or half mask respirators with organic filters may be required depending on the nature of the contamination present on site and the scale and location of the works. The conditions under which the need for additional requirements will be on a site-by-site basis and determined by the SQEP, HSM and Construction Manager prior to works commencing; and
- Hand to mouth contact (including eating, drinking and smoking) within the Project area shall not be permitted except within a designated support zone(s).

8.2 Asbestos contaminated sites requirements (RC8.3e)

Sites with an identified or potential asbestos risk are highlighted amber or red in Table 3. These sites will require additional PPE above that listed in Section 8.1 should they be intended to be worked prior to any further sampling being undertaken. These requirements are based on the lack of risk assessment currently known for some sites.

Work on these sites will be required to be classified as Class B Licenced Asbestos work and will require a specific Asbestos Management Plan to be developed by an independent contractor as detailed in Section 7.10.

Additional PPE, monitoring and isolation zone requirements are detailed the Project Asbestos Management Plan (*GAJV-PLN-00195*).

8.3 Emergency procedures

It is the responsibility of the HSM to ascertain the availability of appropriate emergency services and equipment prior to the start of works. These will include:

- The location of the nearest telephone;
- Location of the nearest first aid kit; and
- Appropriate local medical emergency numbers.

The HSM shall be immediately notified of any injury or accident occurring at the site. If serious harm occurs, Worksafe NZ must be notified immediately. Table 6 provides a list of emergency numbers.

Please refer to the Project's Emergency Management Plan in the first instance for any construction emergency item not relating to contaminated land. Spill response is also covered in the Projects Construction Management Plan.

Table 6. Contamination emergency contacts

Contact	Phone Number
Emergency	111
Auckland Hospital	09 367 0000
Project HSM (Duane Rogers)	+64 21 626 312
Construction Manager (Stefano Vittor)	+64 21 633 030
Contaminated Land SQEP (Sean Toland)	+64 27 403 1059

9. Soil Management (RC8.14)

9.1 Sustainability Hierarchy

The sustainability hierarchy outlined in Table 7 will be used to identify remediation options. The options will be developed with consideration to the site soil classification, the type and location of construction activities to be undertaken on the site, the final site design and advice from the SQEP.

These options will then be assessed using the option evaluation scorecard. The option evaluation score card is a decision-making tool that includes environmental, social and economic indicators to provide a ranking of options. Where applicable, consideration of the effectiveness and durability of the chosen remedial option shall be considered along with any associated maintenance and/or monitoring. The sustainability hierarchy will also be discussed in the excavation summary reports for individual sites, drawing on the information in the options evaluation scorecard, and what occurred on site.

Table 7: Sustainability Hierarchy

Remediation Options	Definition
1. On-site treatment (favourable)	Soil is treated* at site under assessment, so the contaminant is destroyed, or the associated risk is reduced to an acceptable level. This includes not touching parts of site that may contain contaminants if at all possible with regard to construction methodology (may only be possible for some contaminants).
2. Off-site treatment before return to site	Soil is taken off site under assessment** and treated* so the contaminant is destroyed, or the associated risk is reduced to an acceptable level. The soil is then returned to the site from which it came.
3. Consolidation and isolation	Soil is isolated on-site from humans and damage to the environment. Soil with mobile contamination (e.g. oils, hydrocarbons, and other leaching contaminants) is moved and isolated using a properly designed barrier (e.g. concrete cell or installation of impermeable barrier). Some forms of contaminated soil (e.g. asbestos) could be reused on site and covered/identified (e.g. geotextile layer) then landscaped and planted.
4. Removal and replacement	Soil is removed from site and disposed of at an approved site or facility, before being replaced with clean material if necessary.
5. Management strategy (unfavourable)	Where assessment indicates remediation would have no net environmental benefit, or would have a net adverse environmental effect - soil remains on-site and a management plan is developed in order to manage material long-term so that environmental and human health risks are minimised.

* Treatment options must be overseen by a SQEP and could include, but are not limited to:

- Biodegradation to reduce hydrocarbons
- Changing the pH level (e.g. adding lime)
- Mixing soil with other materials
- Stabilising soil (e.g. mixing with concrete/cement/other binding material)

** Includes moving soil to another area of project (e.g. from May Road to Māngere Pump Station) or to a third-party site.

9.1.1 Soil Disposal

The preliminary classifications of material for each site is identified in Table 8. These classifications will inform the site remediation options.

The confirmation sampling of asbestos concentrations present in the soil, as outlined in Section 5, shall determine the suitable disposal location for sites that may still present an asbestos risk.

Acceptance of spoil must be confirmed by the Disposal Facility prior to disposal.

Disposal locations have specific acceptance criteria for soil chemical parameters (test results) and physical parameters (moisture, refuse, organics, etc). Material that does not meet the acceptance criteria of a particular fill site may be required to be disposed of at a licensed landfill. This criterion should be discussed with the Disposal Facilities Manager prior to transporting.

Record of the material disposed (weighbridge dockets, etc) will be kept and this information shall be provided to the SQEP on request. Note that this information will be required for site validation as outlined in Section 10.

Table 8: Site fill classification

Tranch	Site Name	Justification:	Fill Classification:	Potential Fill Classification
Link Sewer 1	~~Motions Road~~	Not required anymore		
	~~Western Springs Depot~~	Not required anymore		
Link Sewer 2	Rawalpindi Reserve	Exceedance of nickel above Auckland non-volcanic but within volcanic criteria.	Managed fill	Potential Clean fill pending acceptance from disposal facility.
	Norgrove Avenue	Exceedance of lead above non-volcanic and volcanic criteria.	Managed fill	Potential Clean fill pending acceptance from disposal facility.
Link Sewer 3	Pump Station 25	Exceedance of nickel above Auckland non-volcanic criteria, but within volcanic criteria.	Managed fill	Potential Clean fill pending acceptance from disposal facility.
	Miranda Reserve	ACM exceedances.	Contaminated fill	Contaminated fill pending acceptance from disposal facility.
	Whitney Street	Exceedance of lead above Auckland non-volcanic and volcanic criteria.	Managed fill	Clean fill pending acceptance from disposal facility.
	Dundale Avenue	Exceedance of arsenic above Auckland non-volcanic and volcanic criteria and nickel above Auckland non-volcanic criteria, but within volcanic criteria. ACM exceedances	Contaminated fill	Contaminated fill pending acceptance from disposal facility.
	Haycock Avenue	Contaminants above the natural background concentrations for heavy metals and TPH/PAH, and is presumed to contain ACM.	Managed fill/Contaminated fill	Most of the onsite material will likely be accepted as Managed fill after the building footprints have been disposed of separately.
Main Tunnel	Western Springs Playing Field	Exceedance of chromium, copper, lead, and nickel above Auckland non-volcanic criteria. Detection of asbestos.	Managed fill/Contaminated fill	Requires further asbestos sampling to inform potential fill classification.
	May Road	Exceedances of Heavy Metals, ACM, PAH and TPH.	Managed fill/Contaminated fill	-
	Māngere Pump Station	Exceedances of Heavy Metals, ACM, PAH and TPH.	Managed fill/Contaminated fill	-
	Twin Rising Main	Exceedances of Heavy Metals, ACM, PAH and TPH.	Contaminated fill	-
	Mt Albert War Memorial/Centre	No exceedances.	Managed fill	Clean fill pending acceptance from disposal facility.
	Lyon Ave	Asbestos detection, to be sampled and reassessed. Some organics would register as managed fill.	Contaminated fill	
	Haverstock Road	Exceedance of mercury above Auckland volcanic criteria.	Managed fill	Clean fill pending acceptance from disposal facility.
	Walmsley Park	Contaminants above the natural background concentrations for heavy metals and PAH, it will not be suitable for disposal at a clean fill facility.	Managed fill	-
	Keith Hay Park	Contaminants above the natural background concentrations for heavy metals, PAH and AF.	Managed fill/Contaminated fill	Managed fill pending additional sampling to ensure no ACM in spoil.
	Pump Station 23	Exceedance of arsenic and lead above Auckland non-volcanic criteria. ACM not tested.	Managed fill/Contaminated fill	Requires further asbestos sampling to inform potential fill classification.

10. Site Validation

10.1 Validation testing (RC8.3b, RC8.22)

Validation sampling and reporting to Auckland Council is required as per resource consent condition 8.22.

As discussed in Section 7.3, validation testing of imported clean fill shall be undertaken.

In addition, should unexpected contamination conditions be encountered, the appointed SQEP shall inspect the material and provide additional advice regarding its safe handling, disposal and the requirement for any validation sampling to occur.

Validation sampling shall be undertaken by the SQEP and collected according to the Ministry for the Environment Contaminated Land Management Guidelines No.5: Site Investigation and Analysis of Soils.

10.2 Validation reporting (RC8.8, RC8.22)

Validation is the process of confirming that the objectives and goals of this CLSMP have been achieved. Excavation Summary Reports ('**ESR**s') shall be prepared by the SQEP on completion of the earthworks and upon receipt of all necessary documentation. The reports shall document:

- Variations from the strategies outlined in this plan and the reasons why variations were necessary;
- Provision of results of any testing of imported soils;
- Confirm the excavation soil disposal volume and destination;
- Results of soil validation samples (if any);
- Evidence that groundwater and surface water was disposed in an appropriate manner; and
- Requirements for further work, if any.

Any validation report prepared shall comply with the Ministry for the Environment *Guidelines for Reporting on Contaminated Sites in New Zealand* (Revised 2011).

Information required from the Contractor for inclusion in each site's ESR includes:

- Copies of disposal location weigh bridge summaries from any contaminated soil disposal;
- Documentation (e.g. weigh bridge summaries or invoices) confirming the source of any clean material imported to the site and the location of its placement;
- Records of visits by Council representatives;
- Details of any complaints related to contamination and how they were resolved; and
- Details of any health and safety incidents related to contamination and how they were resolved.

APPENDIX A - SUSTAINABILITY ASPECTS

Table A identifies the ISCA Credit Requirements relevant to this CLSMP and where they are address in the document.

Table A: ISCA Requirements

ISCA Credit	ISCA Requirement*	Relevant Sections	Other Relevant Information
Contamination and Remediation			
LAN-3 Level 1	LAN3.1.1 Site assessment follows the recommended approach	Section 3.2, 5.1, 5.2, 5.3, 5.4, 7.9	A site investigation has been completed for the Project and the following reports: - Desk study and ground contamination assessment – Main works Central Interceptor Project dated July 2012, prepared by Tonkin and Taylor Ltd; - Desk study and ground contamination assessment - Combined sewer overflows (CSO) points Central Interceptor Project dated July 2012, prepared by Tonkin and Taylor Ltd; - Central Interceptor: Main Project Work Detailed Design – Geotechnical Factual Report dated February 2017, prepared by Jacobs NZ Ltd, Aecom NZ Ltd and McMillen Jacobs Ltd; - Central Interceptor: Main Project Work Detailed Design – Geotechnical Interpretive Report dated February 2017, prepared by Jacobs NZ Ltd, Aecom NZ Ltd and McMillen Jacobs Ltd. The investigations undertaken by both Tonkin and Taylor Ltd and Jacobs have been reviewed and summarised on a site by site basis in Section 5.3. Table 3 identifies the degree of potential risk in each site. - Some of the sites will have additional sampling conducted as detailed in Section 5.4.2 and in Table 3 prior to mobilising on site. - Ongoing monitoring will continue during excavation as outlined in Sections 7.9. - Supervision by a Contaminated Land Professional will occur where required (refer to Section 7.4 and 7.7).
LAN-3 Level 1	LAN3.1.2 Remediation options are identified and selected using a	Section 9.1	5-step hierarchy of control used to identify and select remediation options.

	sustainability hierarchy

* Refer to ISCA Rating Tool for full details of the requirement

APPENDIX B - WATERCARE LETTER OF CONFIRMATION OF NO HAIL ACTIVITIES

APPENDIX C - TONKIN & TAYLOR CONTAMINATION ASSESSMENTS

The initial T&T contamination assessments were undertaken in 2012 during the consenting phase of the Central Interceptor project and targeted the sites being designated by Watercare for construction. A draft site management plan was also prepared in the S92 response by T&T. The T&T reports referred to in this CLSMP are:

- Tonkin and Taylor Ltd, July 2012, Desk study and ground contamination assessment – Main works Central Interceptor Project; and
- Tonkin and Taylor Ltd, December 2012, Central Interceptor Project Site Management Plan.
- Tonkin and Taylor Ltd, January 2014, Ground Contamination Investigation, 105 May Rd, Mt Roskill These reports are located on Watercare's website at:

https://www.watercare.co.nz/About-us/Central-interceptor/Central-Interceptor-consent-documents

APPENDIX D - JACOBS CONTAMINATION TEST

Following T&T's assessment and the consenting of the project in 2012, Jacobs were commissioned in 2015 to undertake sampling of all sites as required by consent conditions. Contamination testing was undertaken as part of a wider geotechnical investigation, and included in the following reports:

- Jacobs NZ Ltd, Aecom NZ Ltd and McMillen Jacobs Ltd, February 2017, Central Interceptor: Main Project Work Detailed Design – Geotechnical Factual Report; and,
- Jacobs NZ Ltd, Aecom NZ Ltd and McMillen Jacobs Ltd, February 2017, Central Interceptor: Main Project Work Detailed Design – Geotechnical Interpretive Report.

Extracts relevant to the contamination testing aspects in the reports above are included below and include:

- Contamination assessment summaries (from the Geotechnical Factual Report);
- Contamination assessment results (from the Geotechnical Factual Report); and
- Shaft site plans.

Note that the following sites are no longer applicable to this project: Motions Road, Western Springs Park Depot, Kiwi Esplanade, and Ambury Regional Park.

Full versions of these reports are available upon request.

APPENDIX E - ADDITIONAL SITE INVESTIGATIONS

Following previous investigations by T&T (2012) and Jacobs (2017), Babingtons and Soil & Rock have been involved on the Project to conduct additional detailed site investigations. The detailed investigations prior to site establishment at various sites help to inform what Health and Safety controls are required, assist with soil management considerations and help the GA-JV meet consent requirements.

- Babingtons Civil and Environmental Consultants Ltd, February 2020, Detailed Site Investigation: Shaft 5 Site 2 - 4 Haycock Avenue, Mt Roskill Central Interceptor Project February 2020 (GAJV-RPT-00081)
- Babingtons Civil and Environmental Consultants Ltd, December 2019, Environmental Site Investigation: Access Shaft 4, Walmsley Park Central Interceptor Project December 2019 (GAJV-RPT-00086)
- Babingtons Civil and Environmental Consultants Ltd, March 2020, Environmental Site Investigation: Access Shaft 5, Keith Hay Park Central Interceptor Project March 2020 (GAJV-RPT-00078)
- Babingtons Civil and Environmental Consultants Ltd, March 2020, Environmental Site Investigation: MPS - Twin Rising Main Central Interceptor Project March 2020 (GAJV-RPT-00083)
- Babingtons Civil and Environmental Consultants Ltd, February 2020, Supplementary Site Investigation: Māngere Pump Station Central Interceptor Project October 2019 (GAJV-RPT-00082)
- Soil & Rock Consultants Ltd, September 2019, Supplementary Site Investigation: May Road, Mount Roskill Environmental Site Assessment (GAJV-RPT-00084)
- Babingtons Civil and Environmental Consultants Ltd, October 2019, Memorandum: Soil and Rock Consultants Supplementary Site Investigation at May Road – Summary (GAJV-RPT-00085)
- Babingtons Civil and Environmental Consultants Ltd, February 2020, Detailed Site Investigation: 105 May Road, Mt Roskill Central Interceptor Project March 2020 (GAJV-RPT-00122)
- Babingtons Civil and Environmental Consultants Ltd, February 2020, Asbestos Demolition Survey – 2 Haycock Avenue, Mt Roskill, February 2020 (GAJV-RPT-00079)
- Babingtons Civil and Environmental Consultants Ltd, February 2020, Asbestos Demolition Survey – 4 Haycock Avenue, Mt Roskill, February 2020 (GAJV-RPT-00080)

APPENDIX F - TONKIN AND TAYLOR LETTER

Titled: Central Interceptor Project: Ground contamination and dewatering work at Dundale Avenue shaft site, dated 19 February 2021.

Tonkin+Taylor

Job No: 1011009.1000
19 February 2021

Watercare Services Limited
Private Bag 92 521,
Wellesley Street,
Auckland 1141, New Zealand

Attention: Xenia Meyer

Dear Xenia

Central Interceptor Project: Ground contamination and dewatering work at Dundale Avenue shaft site

As requested, Tonkin & Taylor Ltd (T+T) has undertaken a review of the ground contamination and dewatering related work undertaken by Ghella Abergeldie JV (GAJV) at the Central Interceptor Project Dundale Avenue shaft site (the site). This letter has been prepared to document the learnings from the work undertaken and proposed protocols to be adopted for dewatering work on future shaft sites within the Whau Tributary.

The work was undertaken in accordance with our engagement with Watercare Services Limited (Watercare) dated 28 July 2020.

1 Overview summary and recommendations

In summary, historical review has not identified any HAIL activities and confirmatory soil sampling has shown that, while fill on the site contains asbestos, chemical concentrations in shallow soils are generally within the anticipated background concentrations for Auckland soils. On that basis, the site is uncontaminated in accordance with Chapter E30 of the Auckland Unitary Plan (AUP).

Precautionary testing for metals concentrations in the dewatering water has been undertaken by the GAJV. The testing indicates that most metals are below or close to the ANZECC 80% level of protection. While the metals concentrations were up to about 3 times the relevant ANZECC 80% level of protection, the potential for significant adverse effects if the dewatering water was discharged into the adjacent Whau tributary is low. This is because the flow in the Whau tributary is at least 30 times more than the proposed discharge volume.

Based on the work undertaken to date, dewatering water on the other shaft sites within the same catchment as Dundale Avenue (Whitney Street, Miranda Reserve and PS25) should also be able to be discharged into the Whau Tributary if the following conditions are present at those sites:

- no soil contamination above the Auckland Unitary Plan permitted activity discharge concentrations is present or dewatering occurs at depth and the dewatering zone is isolated from the shallow potentially contaminated soils;
- the construction methodology is similar to Dundale.

It is recommended that the project either provide an addendum to or update Section 7.7 of the CLSMP to set out the changes to dewatering requirements based on the findings of these investigations.

Tonkin & Taylor Ltd | 105 Carlton Gore Rd, Newmarket, Auckland 1023, New Zealand
PO Box 5271, Victoria Street West, Auckland 1142 P +64-9-355 6000 F +64-9-307 0265 E akl@tonkintaylor.co.nz

Details of the investigation work at the Dundale Avenue shaft site and assessment are provided in the following sections.

2 Dundale Avenue shaft site

2.1 Construction works

The Dundale Avenue shaft site is located at 68 Dundale Avenue in Blockhouse Bay. A 23.5 m deep shaft is to be constructed at the site for the Link Sewer C section of the Central Interceptor Project (refer Figure 1). The shaft is to be used for access in the long term operational phase and will be used to launch the micro tunnel boring machine for the Link Sewer C.

Figure 1: Project Location Overview

Construction of the shaft will require piling, dewatering and excavation. Secant bored piles have been installed to the top of the East Coast Bays Rock, estimated to be about 18 m depth or at approximately 2.2. mRL at the site[1]. Each pile is machine augered and then filled with concrete using a tremie pipe[2]. As the pile fills up with concrete, groundwater that rises up is pumped out into a 10,000L tank. To remove suspended solids and manage the pH of the pumped water, the water is

[1] GAJV, August 2020, Groundwater settlement monitoring and contingency plan, version 2.
[2] GAJV, December 2020, Dundale Ave Groundwater investigation, version 1

treated with flocculant in a baffle tank and then with citric acid and polyaluminum chloride (PAC) in a condor tank prior to discharge (refer Figure 3).

The volume of discharge is dependent on geology. In December 2020, GAJV staff reported that about 220m^3 would need to be discharged for between 6 and 8 weeks during construction (or up to 7.3 m^3 per day, assuming 5 day discharge).

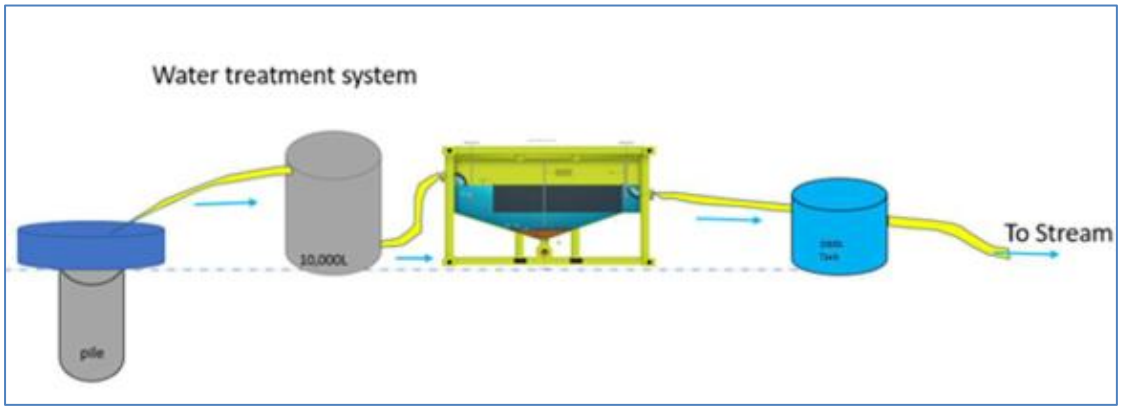


Figure 2: Schematic of water treatment system[2]

2.2 Site conditions

2.2.1 General description

The site sits on land that is currently used as a small reserve/greenspace, surrounded by residential properties.

It is located adjacent to a tributary of the Whau River (refer Appendix A). The section of the Whau River next to the site is concrete lined and has a catchment area of about 3.1km^2.

In December 2020[2], GAJV estimated the flow in the Whau tributary to be about 0.018 m^3/s or a specific discharge of 5.8 L/s/km^2. Auckland Council flow monitoring[3] indicates that specific five year low flow (Q_5) discharge for other similar urban catchments is about 1 L/s/km^2. The estimated December flow in the Whau tributary and the equivalent Auckland Council Q_5 flow are about 210 times and 36 times of the estimated volume of dewatering water, respectively.

2.2.2 Geology

Geotechnical logs at the site indicate there is about 1 m of fill comprising silt/clay mixed with basalt and scoria gravel overlying alluvial silts, clays and sands[4]. The alluvial silts/clays/sands are underlain by weathered East Coast Bays Formation (ECBF) mudstone and sandstone at approximately 5 m below ground surface.

GAJV reported that the groundwater in the ECBF is artesian with a potentiometric surface about 1 m above the site ground surface[2].

[3] Auckland Council, 2002, Auckland Water Quantity Statement, Technical Publication TP171. Table 10.1. The Pakuranga and Puhinui catchments are most similar to the site as they are both in the Waitemata/ECBF geology, urbanised and is in the upper catchment.

[4] Jacobs et al, 2017, Central Interceptor Geotechnical Interpretative Report

2.2.3 Ground contamination

Ground contamination investigations and assessments were undertaken at the site in 2012, 2017 and 2020[5]. While asbestos has been found in surface fill, testing of surface fill and deeper natural soil samples show metals at or below the anticipated background concentrations as published by Auckland Council for Auckland soils and are not contaminated. The findings are summarised in Table 1. No groundwater quality information was collected for the site.

Table 1: Summary of ground contamination investigation findings at Dundale

Report reference	Investigation scope	Findings
T+T, July 2012, Desk study and ground contamination assessment – Main works Central Interceptor Project	Preliminary Site Investigation (Desktop assessment)	No HAIL activities were identified.
Jacobs et al, 2017, Central Interceptor: Main Project Work Detailed Design – Geotechnical Factual and Interpretive Reports.	Two samples were collected from TP1 from 0.2 and 0.5 m depth and analysed for metals and organochlorine pesticides (OCP).	Metals were all either below or at the background concentration published by Auckland Council for volcanic soils, appropriate for the samples given that basalt gravels and scoria were reported within the shallow fill material on site. Note: one sample contained arsenic at 14 mg/kg which is within analytical uncertainty of the published background concentration.
GAJV/Babingtons, Jan 2020. Soil tables	Seven samples from BH1009 between depths 2.45 m and 21 m below ground surface were analysed for metals. The 2.45 m depth sample was analysed for total petroleum hydrocarbons.	Metals in all 7 soil samples and TPH were all either below the laboratory reporting limit or below the background concentrations published by Auckland Council for non volcanic soils.
GAJV/Babingtons, July 2020. Soil tables	Five near surface (less than 0.3 m depth) samples and five samples from stockpiles were taken for metal analysis.	All samples contained metals below or at the background concentrations published by Auckland Council for volcanic soils (appropriate for the samples given that basalt gravels and scoria were reported within the shallow fill material on site). Note: two samples contained arsenic and lead respectively slightly above the Auckland Council published concentration (arsenic – 18 mg/kg and lead - 68 mg/kg). The arsenic and lead concentrations are within analytical uncertainty of the published background concentration.

3 Consenting requirements

The Central Interceptor Project works are subject to a range of resource consent conditions related to contaminated land, earthworks, dewatering, discharge to air, discharge to stormwater from construction and permanent works (refer Appendix B). In addition, a suite of management plans has been prepared to assist with compliance of the resource consent conditions.

[5] GAJV, June 2020, Contaminated Land Site Management Plan Central Interceptor Project – Main Project Works

Documents relevant for this assessment (ground contamination and dewatering) are outlined in Table 2 below.

Table 2: Summary of relevant consent requirements

Document	Relevance
Consent condition 3.1-3.17	Earthworks and construction site related activities eg tunnel dewatering, wheel wash, application of grout and concrete to land etc. • Condition 3.2: All discharges from tunnel dewatering activities etc **are to be treated to an appropriate standard prior to discharge** to either land or stormwater drainage systems, watercourses or other receiving waters. • Condition 3.2: A Construction Discharges Management Plan (CDMP) shall be prepared to manage potential adverse effects to the environments. • Condition 3.3 and the CDMP indicates that the standards for construction discharges to receiving environments for shaft excavation shall be no less than 100 mm clarity and between 5.5 and 8.5 for pH.
Consent condition 8.1 – 8.23	Contaminated land conditions. • These conditions apply to **all** construction sites **unless confirmatory soil testing shows the site is not contaminated** (refer Table 3 in Contaminated Land Site Management Plan (CLSMP)[5]). • With respect to dewatering, Section 7.7 of the CLSMP or condition 8.17 **applies to confirmed contaminated sites and/or water that has the potential to come into contact with contaminated soil or some other means**. The CLSMP indicates that testing to show compliance with the stormwater disposal trigger levels (based on ANZECC 80% level of protection) is not required where deep dewatering occurs, and the shallow soils and groundwater are both isolated from the dewatering zone.

Based on the consenting documents and site information above (groundwater is artesian and the dewatering zone is isolated from potentially contaminated shallow soils), no testing of the groundwater is necessary at the Dundale Avenue shaft site and the earthworks and construction site related discharge conditions (3.1 – 3.17) are relevant for the discharge of dewatering water.

4 Dundale Ave dewatering water

4.1 Monitoring information[2]

As a precautionary measure, the GAJV carried out some testing of the dewatering water for dissolved metals at the site between 17 November 2020 and 4 February 2021. Testing of the natural groundwater and dewatering water were taken as follows:

- a borehole (BH241) located upgradient of the shaft;
- from the shaft to represent groundwater prior to concreting works;
- from the shaft to represent water impacted by concrete works collected from the shaft excavation and post flocculation and pH treatment; and
- potential receiving environment, i.e. adjacent Whau tributary, upgradient of the site.

All dewatering water was pumped and removed from site and disposed of by a waste disposal contractor during the proof of performance period.

The analytical results of the testing are summarised in Table 3, including the average groundwater and dewatering water concentrations for the monitoring period. The results were assessed against the following:

- maximum range concentration for the Auckland Waitemata Group aquifer published baseline;
- Whau Tributary sample results; and
- the relevant ANZECC 80% protection level guideline value. Toxicity of some metals (eg. lead, chromium, zinc) is dependent on the hardness of the water. Hence, hardness modified ANZECC guideline values for zinc were derived to assess analytical results.

Key findings are discussed below.

Groundwater

- Metal concentrations in groundwater at the site are all below either the greater of the ANZECC 80% protection level or maximum range concentration for the Auckland Waitemata Group aquifer published baseline, except occasionally copper. Copper concentrations vary from less than the laboratory limit of reporting (0.0005 mg/L) to up to 4 times (or on average 2.5 times) the ANZECC 80% level of protection guideline value of 0.0025 mg/L.

Receiving environment

- Limited sampling of the receiving environment indicates that metal concentrations are generally consistent with on-site groundwater concentrations, and only copper exceeds the ANZECC 80% level of protection guideline value. The copper concentration in the sample collected from upgradient of the site is in the range of concentrations reported in streams adjacent to the Whau catchment as reported by Auckland Council (refer Appendix A).

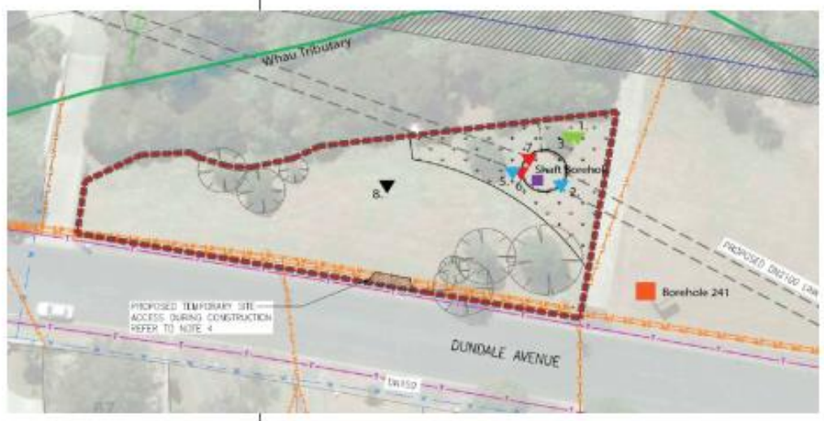
Concrete impacted water from shaft excavation and post floc and pH treatment

- As expected, the testing indicates that the piling and concreting works has impacted the pH of the water pumped from the piles.
- The metals testing undertaken indicates that dewatering water samples generally contain either similar or slightly higher (mostly within the same order of magnitude) metals concentrations compared to the samples collected to be representative of on-site groundwater. Metals concentrations meet the respective ANZECC 80% level of protection, with the exception of copper and zinc.
  - Copper concentrations in the dewatering water samples vary from below laboratory limit of reporting to about 3 times the ANZECC 80% protection level or on average about 2 times the ANZECC 80% protection level. The copper concentrations in the dewatering water samples are similar in range to concentrations in on-site groundwater samples, the adjacent Whau Creek and adjacent stream catchments.
  - Zinc concentrations in dewatering water samples were up to about 2 orders of magnitude higher than natural groundwater. The upper range dissolved zinc concentrations found in the post treatment water samples appear to be a construction related activity. The zinc concentrations in these samples are at the same order of magnitude as and marginally exceed the hardness modified ANZECC 80% level of protection guideline value.

Table 3: Dundale dewatering water analytical results

				Sample description/location (refer Figure) and date											
				Groundwater			Concrete laden dewatering water from shaft excavation and post treatment								Whau Creek
Analyte	Stormwater discharge standard	ANZECC 80% protection level	Maximum Range for Auckland Published Baseline [1]	BH241	Sample 2	Average	Sample 5	Sample 6	Sample 7	Shaft Borehole	Shaft Borehole	Shaft Borehole	Sample 1	Sample 3	Average	Sample 4
				5-Feb-21	25-Nov-20	25 Nov 2020 - 5 Feb 2021	3-Dec-20	3-Dec-20	3-Dec-20	6-Jan-20	18-Jan-21	4-Feb-21	17-Nov-20	25-Nov-20	17 Nov 2020 - 4 Feb 2021	25-Nov-20
pH	5.5 - 8			7.3	-	7.3	11.8	12.4	12.3	-	9.7	9.5	6	8	NA	-
Clarity	50 NTU (100mm during shaft excavation)	-	-	-	-	-	-	-	-	-		-	150 mm	>500 mm	-	-
Total Hardness	-	-	-	178	62	120	190	1100	630	240	18.8	20	NA	660	445	41
Dissolved Arsenic	-	0.14	0.01	<0.001	0.0011	0.001	0.0024	<0.02	<0.01	0.0069	0.0031	0.0033	0.0069	0.0032	0.008	0.0013
Dissolved Cadmium	-	0.0008	-	0.00016	<0.00005	0.00016	<0.00005	<0.0010	<0.0005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0002	<0.00005
Dissolved Chromium	-	0.04	0.01	<0.0005	0.017	0.009	0.0051	<0.010	0.021	<0.0005	<0.0005	<0.0005	0.009	0.074	0.016	0.0009
Dissolved Copper	-	0.0025	0.001	<0.0005	0.0107	0.0056	0.0019	<0.010	<0.005	0.0032	0.0055	<0.0005	0.0036	0.0078	0.005	0.0033
Dissolved Lead	-	0.017	0.0008	<0.00010	<0.00010	<0.00010	<0.00010	<0.002	<0.0010	<0.00010	0.00017	<0.00010	0.0004	0.0092	0.002	0.00035
Dissoled Nickel	-	0.0094	0.03	<0.0005	0.0011	0.0008	<0.0005	<0.010	<0.005	0.0028	0.0014	0.0006	0.0031	0.0039	0.004	0.0008
Dissolved Zinc	-	0.022 (for 20 mg/L hardness) 0.031 (for 30 mg/L hardness) 0.086 (for 100 mg/L hardness) 0.181 (for 240 mg/L hardness) 0.28 (for 400 mg/L hardness) 0.429 (for 660 mg/L hardness)	0.055	0.0098	<0.001	0.005	<0.001	<0.02	<0.010	0.0045	0.0041	<0.001	0.31	0.51	0.12	0.036
Total Zinc	-	-	-	0.0118	<0.011	0.011	-	-	-	-	0.011	<0.011	0.33	0.58	0.23	0.044
Comments :				Natural groundwater 6 m upgradient of shaft location	Groundwater taken from bottom of pile during shaft excavation prior to pouring concrete	-	Groundwater from hard pile construction after being freshly drilled. However, it is also possible that it is impacted by concreting works from surrounding piles.	From hard pile as the pile is being poured	From soft pile as pile is being poured	From shaft	Same location as 6 Jan 2020 sample	Same location as 6 Jan 2020 sample	Taken from the end of the on site water treatment facility		-	Upstream from site

Notes:
Hard Pile - pile that contains a reinforcing steel. Soft Pile - no reinforcing steel.
NA Not analysed
All units in mg/L unless noted
1. Auckland Regional Council (2007). State of the environment Monitoring: Groundwater Quality Data Report 1998 - 2005. ARC Technical publication 352. Waitemata Geology
Red values exceed either the greater of the ANZECC 80% protection level or maximum range for Auckland published baseline



4.2 Assessment of effects

In summary, additional monitoring undertaken by the GAJV indicates that concentrations of metals in the dewatering water at the site are similar to groundwater in other Waitemata aquifers in Auckland and the water in the adjacent Whau tributary. These findings confirm the site is not a contaminated site in accordance with Chapter E30 of the Auckland Unitary Plan (AUP).

Testing indicates that some metal concentrations in the dewatering water that may need to be discharged from the site can exceed the relevant ANZECC 80% level of protection by up to about 3 times (For zinc, the hardness modified guideline value is relevant).

If the dewatering water was discharged into the adjacent Whau tributary, the potential for significant adverse effects is low, given the December and published Q_5 flow in the Whau tributary is at least 30 times more than the proposed discharge volume (refer Section 2.1).

5 Applicability

This report has been prepared for Watercare Services Limited for the purposes of the Central Interceptor Project, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that this report will be used by Auckland Council in undertaking its regulatory functions in connection with the Central Interceptor Project.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared and authorised for Tonkin & Taylor Ltd by:

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Lean Phuah
Project Director

Technical review by: Sarah Schiess

PLP
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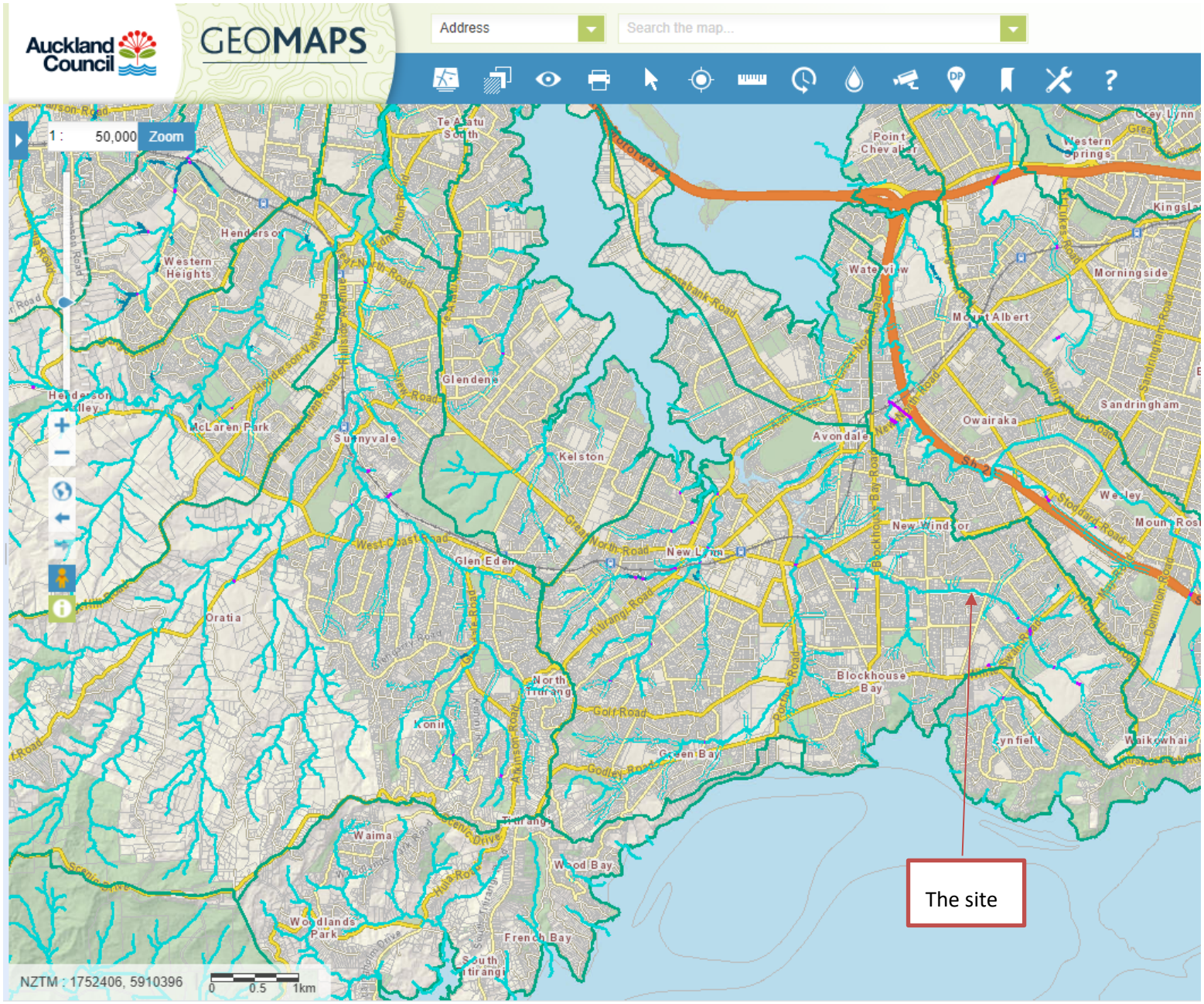
Appendix A:

- **Whau Stormwater Catchment Map**
- **Photo of Whau tributary adjacent to the site**
- **Copper and zinc concentrations in Auckland streams**


Auckland Council
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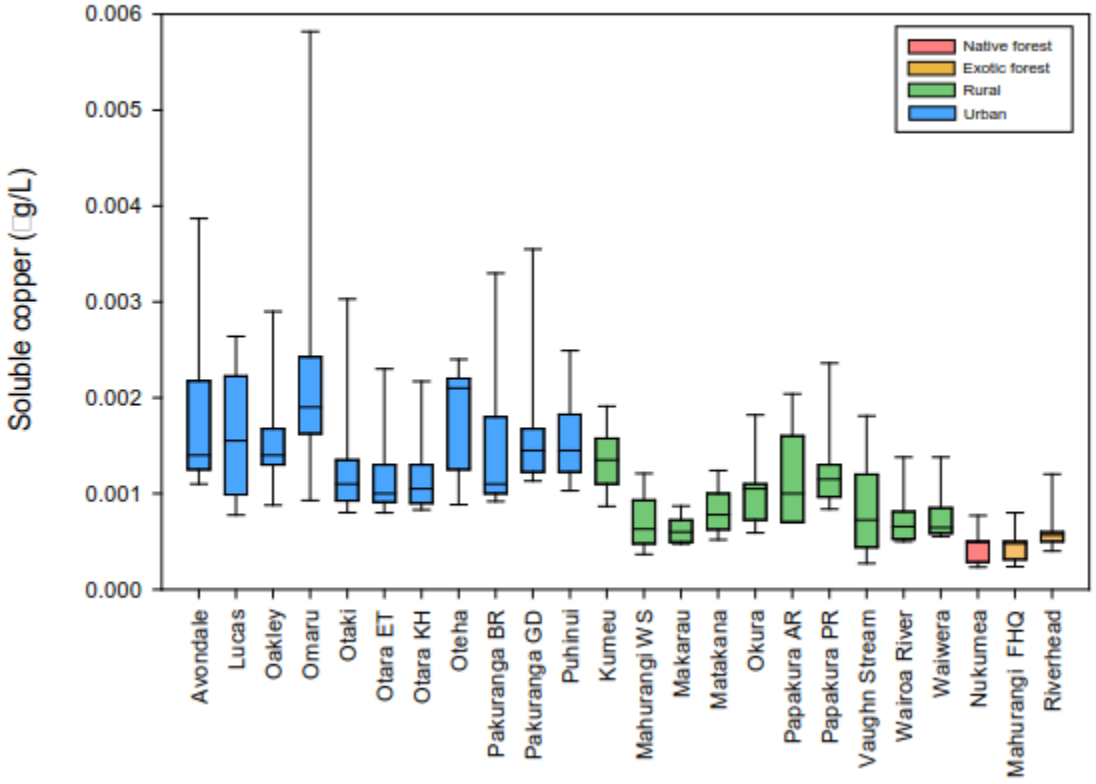
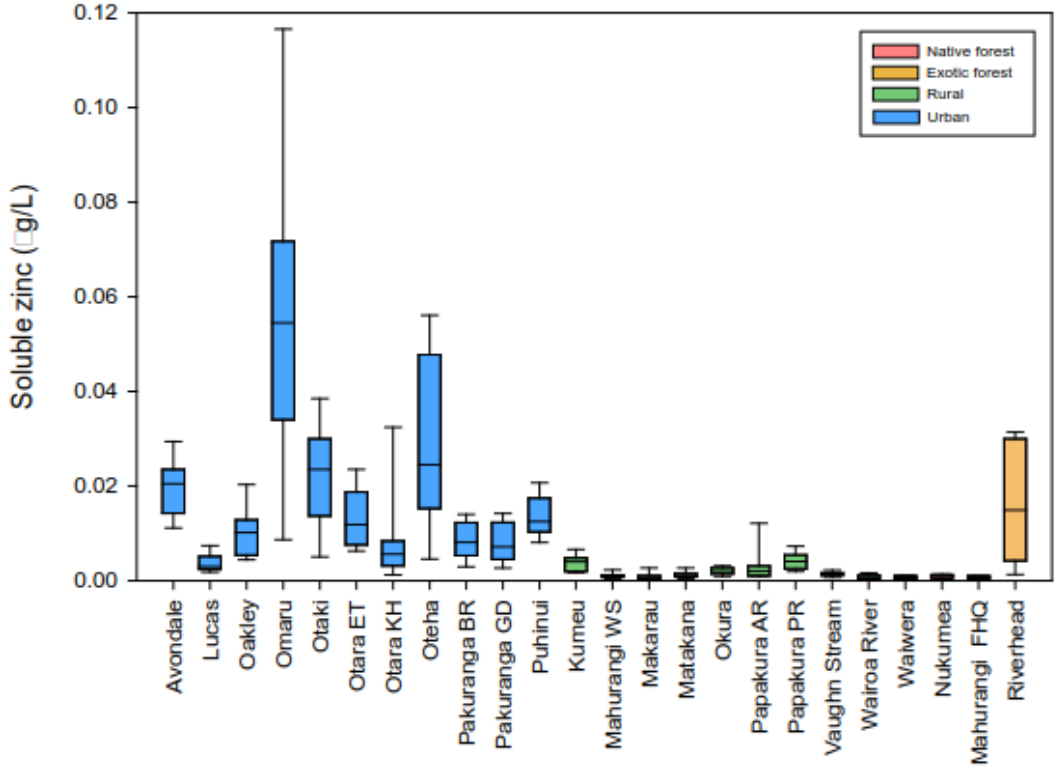
Section of the Whau tributary where the flow calculation was undertaken

Graphs below obtained from Auckland Council (July 2019) State of the Environment Monitoring: River Water Quality Annual Report 2017. Technical report 2019/010





Appendix B: Copy of consent conditions

WATERCARE SERVICES LIMITED – CENTRAL INTERCEPTOR MAIN WORKS

RESOURCE CONSENT CONDITIONS

Decision Version Reissued with s133A letter dated 19 December 2013

Final Version

The following conditions are related to their relevant consent reference as follows:

Consent Ref	Consent/Permit	Relevant Conditions
Auckland Council District Plan (Auckland City Isthmus Section)		
R/LUC/2012/2846	Construction of tunnel (earthworks and construction beneath land noted as being unstable)	1.1 – 1.34
Auckland Council District Plan (Manukau Section)		
PRC40962	Construction of tunnel and Link Sewer 4 (by network utility service, beneath road and earthworks beyond permitted levels); removal of existing pump station structure at Kiwi Esplanade Reserve. Tree removal / works in dripline / rootzone of trees associated with removal of existing pump station structure and construction of Link Sewer 4.	1.1- 1.34, 2.1 - 2.2
NES for Assessing and Managing Contaminants in Soil to Protect Human Health		
R/LUC/2012/2846/1 and PRC40963	Disturbance of contaminated sites (all surface construction sites)	1.1- 1.34, 8.1 – 8.23
Auckland Council Regional Plan (Sediment Control)		
40834	Earthworks above permitted levels (all surface construction sites)	1.1- 1.34, 3.1 – 3.17
Auckland Council Regional Plan (Air Land & Water)		
40836	Taking / diverting groundwater due to construction and dewatering of tunnels and shafts (Project-wide)	1.1 – 1.34, 4.1 – 4.34
40837	Discharge of stormwater from permanent works with impervious surfaces over 1,000m² (Western Springs)	1.1 and 1.5, 6.1 – 6.15

40838	Discharge of stormwater from permanent works with impervious surfaces over 1,000m² (Haverstock Road)	1.1 and 1.5, 6.1 – 6.15
40839	Discharge of stormwater from permanent works with impervious surfaces over 1000m² (PS25 Miranda)	1.1 and 1.5, 6.1 – 6.16
40840	Discharge of stormwater from permanent works with impervious surfaces over 5,000m² (May Road)	1.1 and 1.5, 6.1 – 6.15
40841	Discharge of stormwater during construction works (Project-wide)	1.1 – 1.34, 5.1 – 5.3
40835	Construction site related activities, e.g. tunnel dewatering, wheel wash, application of grout and concrete to land etc (Project-wide)	1.1 – 1.34, 3.1 – 3.17
40842	Discharges to air from tunnels and pump station at drop shafts and odour treatment facilities (Project-wide)	1.1 and 1.5, 7.1 – 7.11
40843	Disturbance of contaminated sites (Project-wide)	1.1 – 1.34, 8.1 – 8.23
Auckland Council Regional Plan (Coastal)		
40844	Works in the CMA – including all construction activities, occupation and use of tunnel; temporary construction platform and permanent sea wall structure at PS 23; and EPR structure adjacent to Mangere Pump Station (PS23, Kiwi Esplanade, Mangere Pump Station).	1.1 – 1.34, 9.1 – 9.18
40845		
40846		
40848	Discharges to CMA – stormwater discharges from construction works at PS23, Kiwi Esplanade and	1.1 – 1.34, 5.1 – 5.3

	Mangere Pump Station.	
40849	Discharges to CMA – stormwater discharges from construction and permanent works at PS23 and Mangere Pump Station.	1.1 and 1.5, 6.1 – 6.15
40850	Discharges to CMA – overflow discharge from EPR structure at Mangere Pump Station.	1.1 and 1.5, 10.1 – 10.10

Pursuant to Section 108 of the RMA, the consents and permits described above shall, except as specified, be subject to the following conditions:

1. General Conditions

Plans and Information

1.1 Except as modified by the conditions below and subject to final design, the project shall be undertaken in general accordance with the evidence provided at the hearing and the plans and information submitted with the application and documented as consent numbers R/LUC/2012/2846, R/LUC/2012/2846/1, PRC40962, PRC40963, 40834, 40835, 40836, 40837, 40838, 40839, 40840, 40841, 40842, 40843, 40844, 40845, 40846, 40848, 40849 and 40850 by the Council. The plans and information include:

(a) Part A: Assessment of Environmental Effects, titled "*Central Interceptor Main Project Works – Resource Consent Applications and Assessment of Effects on the Environment*" prepared by Watercare/Central Interceptor Team, dated 10 August 2012, reference 60102004.

(b) Part B: Site Specific Assessments, titled "*Central Interceptor Main Project Works – Assessment of Effects on the Environment*", prepared by Watercare/Central Interceptor Team and dated August 2012.

(c) Part C – Drawing Set, prepared by Watercare/Central Interceptor Team dated August 2012 (all drawings dated 26 July 2012), except as amended by the plans provided in the Hearing Drawing Set (provided on 12 July 2013) and the further plan SK 1500 Rev B provided to the Council on 23 July 2013 regarding the proposed access to the May Road site but excluding:

- Mt Albert War Memorial Reserve (AS1) - Permanent Works Plan AEEMAIN-2.1 Rev C; and
- Mt Albert War Memorial Reserve (AS1) - Construction Works Plan AEEMAIN-2.2 Rev C.

(d) Part D: Technical Reports (TR) as detailed below, and additional information:

- TR E: Traffic Impact Assessment, prepared by Traffic Design Group, dated 24 July 2012;
- TR F: Noise Impact Assessment, prepared by Marshall Day Acoustics, dated 23 July 2012;

- TR G: Vibration Assessment, prepared by Tonkin & Taylor Limited, dated July 2012, reference 27993;
- TR I: Ground Contamination Assessment, prepared by Tonkin & Taylor Limited, dated July 2012, reference 26145.401;
- TR J: Groundwater and Surface Settlement Assessment, prepared by Tonkin & Taylor Limited, dated July 2012, reference 21645.32;
- TR D: Archaeological Assessment, prepared by Clough & Associates Ltd, dated July 2012;
- TR K: Erosion and Sediment Control Plans, prepared by Watercare Services Limited, dated 8 August 2012, and including plans CSOESCP-004-009;
- TR B: Arboricultural Assessment, prepared by Arborlab Consultancy Services Limited, dated 30 July 2012, reference 17967;
- TR A: Landscape and Visual Assessment, prepared by Boffa Miskell Limited, dated 26 July 2012;
- TR C: Assessment of Ecological Effects, prepared by Boffa Miskell Limited, dated 24 July 2012;
- TR H: Odour Assessment, prepared by Beca Infrastructure Ltd, dated 30 July 2012.

(e) The Section 92 Response Report to Auckland Council, dated December 2012, and March 2013 including the following:

- Part A: Introduction and Background
- Part B: AEE Report Questions Response, and Specialist Reports and information as follows:
  - Property Instruments;
  - Draft Construction Discharge Management Plan;
  - Archaeological response (Clough & Associates), dated 26 November 2012;
  - Contamination response (Tonkin & Taylor), dated 12 December 2012;
  - Transportation response (Traffic Design Group), dated 12 December 2012;
  - Acoustic response (Marshall Day Acoustics), dated 29 November 2012;
  - Vibration response (Tonkin & Taylor), dated 12 December 2012; and
  - Trenching Drawings.
- Groundwater and Surface Settlement Effects (Tonkin & Taylor), dated 1 March 2013.

(f) Part 1 of the second Section 92 Response Report to Auckland Council dated May 2013, including the following:

- Watercare response report (Parts A and B) dated 13 May 2013;
- Mt Albert War Memorial Reserve Updated Drawings (AEE-MAIN-2.1A/2.2A, Issue D, dated 14 May 2013);

- Traffic response (Traffic Design Group), dated 6 May 2013;
- Vibration response (Tonkin & Taylor), dated 10 May 2013;
- Noise response (Marshall Day), dated 13 May 2013;
- Soil Conditioner Data Sheets;
- Mt Albert War Memorial Reserve Car Park – Erosion and Sediment
- Control Plan, dated 23 April 2013, Revision A; and
- Mt Albert War Memorial Reserve Car Park – Contamination response
- (Tonkin & Taylor), dated 2 May 2013; and
- Mt Albert War Memorial Reserve Car Park - Groundwater and Settlement response (Tonkin & Taylor), dated 3 May 2013.

(g) Part 2 of the second Section 92 Response Report to Auckland Council, being a letter from Watercare dated 27 May 2013 and including the following attachments:

- Attachment 1 – Amended Construction Discharges Condition;
- Attachment 2 – Updated Chemical Treatment Management Plan and Construction Discharges Management Plan;
- Attachment 3 – Watercare Incident Response Procedures;
- Attachment 4 – Roma Road Access Drawing;
- Attachment 5 – Alternative Sites Comparisons;
- Attachment 6 – Consultation Update;
- Attachment 7 – Lyon Avenue Updated Drawings;
- Attachment 8 – Mt Albert War Memorial Reserve Updated Drawing;
- Attachment 9 – Haverstock Road Updated Drawings;
- Attachment 10 – Updated Drawing Index; and
- Attachment 11 – Information on Mangere WWTP and the Manukau Harbour.

(ga) In relation to the *Mt Albert War Memorial Reserve – Car Park Site*, the supporting documents set out below, and as amended by Section 92 responses set out at condition (f) above:

- Part A: Assessment of Environmental Effects, titled "*Central Interceptor Main Project Works – Assessment of Effects on the Environment - Mt Albert War Memorial Reserve – Car Park Site*" prepared by Watercare/Central Interceptor Team, dated 8 March 2013, reference 60102004;
- Appendix A: Drawings:
- Mt Albert War Memorial Reserve Car Park (AS1) - Permanent Works Plan AEE-MAIN-2.1A Rev D
- Mt Albert War Memorial Reserve Car Park (AS1) - Construction Works Plan AEE-MAIN-2.2A Rev E

- Appendix D: Noise Impact Assessment prepared by Marshall Day Acoustics, dated 6 March 2013;
- Appendix E: Traffic Impact Assessment prepared by Traffic Design Group, dated 8 March 2013; and
- Appendix F: Vibration Assessment prepared by Tonkin & Taylor, dated 8 March 2013.

(i) The further section 41C information requested and dated 20 September 2013, including:

- Supporting Information A – Drawings of proposed Lyon Avenue site and Mount Albert Grammar School Alternatives;
- Supporting Information B – Memorandum from AECOM New Zealand Limited titled "CI – S41C Response – Technical Considerations Lyon Ave MAGS Alternative";
- Supporting Information C – Memorandum from Arbolab Consultancy Services Limited titled "Arboricultural Memorandum – St Lukes";
- Supporting Information D – Letter from Traffic Design Group Limited titled "Central Interceptor Project – Lyon Avenue Site (AS2): Access Options";
- Supporting Information E – Correspondence from Ministry of Education;
- Supporting Information F – Memorandum from Marshall Day Acoustics Limited titled "Lyon Avenue site options assessment";
- Supporting Information G – Memorandum from Tonkin and Taylor Limited titled "Central Interceptor Project – Technical report on settlement for site AS2 – S41C Direction";
- Supporting Information H – "Central Interceptor Main Project Works – Comparative assessment of proposed Lyon Avenue site and MAGS Alternative Sites"; and
- Supporting Information I – Amended Drawing of Proposed Keith Hay Park Site.

(j) The diagram titled "Foodstuffs Pre-Condition Survey Recommendation" dated 11 August 2014 and submitted to the Environment Court on 22 September 2014.

Fees and Charges

1.2 This consent (or any part thereof) shall not commence until such time as the following charges, which are owing at the time the council's decision is notified, have been paid in full:

(a) All fixed charges relating to the receiving, processing and granting of this resource consent under section 36(1) of the Act; and

(b) All additional charges imposed under section 36(3) of the Act to enable the council to recover its actual and reasonable costs in respect of this application, which are beyond challenge.

1.3 The consent holder shall pay any additional charges imposed under condition 2(b) above, relating to the receiving, processing and granting of this resource consent within 20 days of receipt of notification of a requirement to pay the same. That is

provided that, in the case of any additional charges that are subject to challenge, the consent holder shall pay such amount as is determined by that process to be due and owing, within 20 days of receipt of the relevant decision.

Monitoring Fees

1.4 The Consent Holder shall pay the Council a consent compliance monitoring charge or charges to recover the actual and reasonable costs that have been incurred to ensure compliance with the conditions attached to this consent. (Such charges are to cover the cost of inspecting the site, carrying out tests, reviewing conditions, updating files, etc, all being work to ensure compliance with the resource consent and are to be paid within one month of the date of invoice.)

Site Access

1.5 Subject to compliance with the Consent Holder's health and safety requirements and provision of reasonable notice, the servants or agents of the Council shall be permitted to have access to relevant parts of the surface construction sites controlled by the Consent Holder at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements and/or to take samples.

1.6 The Manager shall be informed in writing at least 20 working days prior to the commencement of the works authorised by these consents.

1.7 For the purposes identified in Condition 3.11, the Consent Holder shall hold a preconstruction site meeting at each construction site between representatives of the Council and all relevant parties, including the primary contractor, at least 10 working days prior to commencement of works authorised by these consents.

Construction Management

Note: "*Project stage*" means a separable part of the Project, e.g. by Contract area or by geographical extent and may include one or more designated sites enabling the preparation of site-specific plans for each of the surface construction sites.

1.8 Prior to the commencement of works authorised by these consents, the Consent Holder shall submit a Construction Management Plan ("CMP") for each of the relevant Project stages to the Manager for approval.

The purpose of the CMP is to confirm final project details and staging of works to illustrate that the works remain within the limits and standards imposed by the conditions of the consents and that the construction and operation activities avoid, remedy or mitigate adverse effects on the environment.

Where minor enabling works or isolated works are to be undertaken prior to commencement of the main works, a site specific CMP may be prepared commensurate with the scale and effects of the proposed works, for the prior approval of the Manager. In some cases, with the prior approval of the Manager, a CMP may not be required.

The CMP(s) required by this condition shall include specific details relating to the management of all construction activities associated with the relevant Project stage to which they relate, including:

(a) Details of the site or project manager and the construction liaison person, including their contact details (phone, postal address, email address);

(b) An outline construction programme;

(c) The proposed hours of work;

(d) Measures to be adopted to maintain the land affected by the works in a tidy condition in terms of disposal / storage of rubbish, storage and unloading of construction materials and similar construction activities;

(e) Location of site infrastructure including site offices, site amenities, contractors yards site access, equipment unloading and storage areas, contractor car parking, and security;

(f) Procedures for controlling sediment run-off, dust and the immediate removal of soil, debris, demolition and construction materials (if any) from public roads and / or other places adjacent to the work site;

(g) Procedures for ensuring that residents, road users and businesses in the immediate vicinity of construction areas are given prior notice of the commencement of construction activities and are informed about the expected duration and effects of the works;

(h) Means of ensuring the health and safety of the general public;

(i) Procedures for the management of works which directly affect or are located in close proximity to existing network utility services;

(j) Procedures for responding to complaints about construction activities;

(k) Procedures for the safe and contained for refuelling of plant and equipment;

(l) A Construction Noise and Vibration Management Plan ("**CNVMP**") for each site containing measures to address the management of construction noise and vibration as identified in Condition 1.10;

(m) Measures for the protection of trees;

(n) Measures to be implemented to avoid, remedy or mitigate effects on and from the high voltage electricity transmission network, including:

- procedures detailing how the proposed works will be carried out in accordance with NZECP 34:2001 New Zealand Electrical Code of Practice for Electrical Safe Distances;
- procedures to manage the effects of dust and any other material potentially resulting from construction activities and able to cause damage, beyond normal wear and tear, to the overhead transmission lines;
- procedures to ensure that no activity is undertaken during construction that would result in ground vibrations or ground instability likely to cause damage to the overhead transmission lines, including supporting structures;

These procedures to be developed in consultation with Transpower NZ Limited.

(o) Measures to address CPTED issues within and around the construction site;

(p) Measures to address the storage of fuels, lubricants, or hazardous or dangerous materials, along with contingency procedures to address emergency spill response and cleanup;

(q) Procedures for the maintenance of machinery to avoid discharges of fuels of lubricants to watercourses or the Coastal Marine Area ("**CMA**"); and

(r) Methods and systems to inform and train all persons working on site of potential environmental issues and how to avoid remedy or mitigate any potential adverse effects.

The CMP shall be implemented and maintained throughout the entire construction period for the Project or relevant Project stage to manage potential adverse effects arising from construction activities and shall be updated as necessary. Any substantive change to the CMP shall be submitted to the Manager for approval at least ten working days prior to the change taking effect.

1.9 The construction programme section of the CMP shall illustrate that the Consent Holder has adequately prepared a programme that will enable the works to be constructed in a manner that is timely, adequately co-ordinated and manages the adverse effects of construction on the environment.

1.10 Construction hours shall be as follows, except where work is necessary outside the specified days or hours for the purposes specified below:

(a) Tunnelling activities – 24 hours a day, 7 days a week operations for all tunnelling activities, including the main tunnel works and the link tunnels;

(b) General site activities – 7 am to 6pm, Monday to Friday, 8am to 6pm Saturday; and

(c) Truck movements – 7am to 6pm, Monday to Friday, 8am to 6pm Saturday, except that Truck movements are restricted from entering and exiting sites in proximity to schools and colleges between 8:15 am and 9:15 am and 2:45pm and 3:15 pm Monday to Friday during school and college term times. This includes, although is not limited to the following sites: Mt Albert War Memorial Reserve (Car Park site), Walmsley Road (AS4), Motions Road (L1S1), Pump Station 25 (L3S1), Lyon Avenue (AS2), and Miranda Reserve (L3S2).

Purposes for which work may occur outside of the specified days or hours are:

(d) where, due to unforeseen circumstances, it is necessary to complete an activity that has commenced;

(e) where work is specifically required to be planned to be carried out at certain times e.g. to tie into the existing network during periods of low flow, or to tie into tidal cycles for works in the CMA;

(f) for delivery of large equipment or special deliveries required outside of normal hours due to traffic management requirements;

(g) in cases of emergency; and

(h) for the securing of the site or the removal of a traffic hazard; and/or

(i) for any other reason specified in the CMP or a Traffic Management Plan required under Condition 1.22.

Where any work is undertaken pursuant to condition 1.10(d) – (i), the Consent Holder shall, within five working days of the commencement of such work, provide a report to Council detailing how the work was authorised under those conditions.

Construction Noise and Vibration

1.11 A Construction Noise and Vibration Management Plan shall be prepared for each site, for Council approval as part of the CMP, and shall be prepared by a suitably qualified person, and shall be submitted to Council with the OPW to which it relates.

1.12 Construction noise shall be measured and assessed in accordance with NZS6803:1999 *Acoustics – Construction Noise*, and shall comply with the following noise limits, unless otherwise agreed in writing with affected persons:

Time and Day	Noise Limits	
	LAeq dB	LAmax dB
Monday to Saturday 0730 – 1800	70	85

At All Other Times and Public Holidays	45	75

1.13 Construction works which exceed a level of LAeq 45dB at the most exposed receiver(s) are restricted to between 0730 to 1800 on weekdays and Saturdays, with no noisy works permitted on Sundays and Public Holidays. Each CNVMP shall define which activities will comply with a limit of LAeq 45dB and can therefore be undertaken outside of these hours in compliance with condition 1.10.

1.14 Each CNVMP shall, in demonstrating compliance with Condition 1.12, as a minimum, address the following aspects with regard to construction noise:

(a) a description of noise sources, including machinery, equipment and construction techniques to be used;

(b) predicted construction noise levels;

(c) hours of operation, including times and days when noisy construction work and blasting would not occur in compliance with condition 1.12;

(d) physical noise mitigation measures, including prohibiting the use of tonal reverse alarms, maintenance of access roads (to ensure they are smooth), acoustic screening around the site, plant selection and maintenance procedures, and site layout;

(e) construction noise criteria for any specific areas and sensitive receivers such as schools, child care centres, medical or aged care facilities;

(f) the identification of activities and locations that will require the design of specific noise mitigation measures;

(g) the measures that will be taken by the Consent Holder to communicate and obtain feedback from affected stakeholders on noise management measures;

(h) methods for monitoring and reporting on construction noise;

(i) methods for receiving and responding to complaints about construction noise; and

(j) construction operator training procedures.

1.15 Where a CNVMP predicts that noise levels from a particular activity will or will likely exceed the noise limits set out in condition 1.12, or where noise measurements show that compliance is not being achieved, the Consent Holder shall prepare and submit for the approval of the Council an Activity Specific Construction Noise Management Plan (**ASCNMP**). The ASCNMP(s) shall be endorsed with the written consent of those persons affected by the exceedances and shall be submitted to the Council for review and approval at least 7 working days prior to the proposed works commencing.

Works subject to the ASCNMP(s) shall not commence until approval is received from the Council. If monitoring shows that levels specified in an ASCNMP are being exceeded, work generating the exceedance shall stop and not recommence until further mitigation is implemented in accordance with an amended ASCNMP approved by the Council.

In addition to the requirements of condition 1.14, an ASCNMP must:

(a) describe the activity (including duration), plant and machinery that is expected not to comply with the noise limits in condition 1.12;

(b) describe the mitigation measures proposed to reduce the noise levels as far as practicable, including any options that have been discounted due to cost or any other reason;

(c) provide predicted noise levels for all receivers where the noise levels will not be compliant with the limits in condition 1.12, including the effect of mitigation specified in 1.14(d);

(d) provide a set of noise limits that are Activity – Specific;

(e) describe the noise monitoring that will be undertaken to determine compliance with the Activity – Specific noise limits; and

(f) describe any additional noise mitigation measures that may be implemented to maintain compliance with Activity Specific noise limits.

1.16 Each CNVMP shall also describe measures adopted to meet the requirements of German Standard DIN4150-3:1999, and as a minimum shall address the following aspects with regard to construction vibration:

(a) vibration sources, including machinery, equipment and construction techniques to be used;

(b) preparation of building condition reports on 'at risk' buildings prior to, during and after completion of works, where for the purposes of this condition an 'at risk' building is one at which the levels in the German Standard DIN4150-3: 1999 are likely to be approached or exceeded;

(c) use of building condition surveys to determine the sensitivity of the building(s) on the adjacent sites to ground movement in terms of the Line 1-3 criteria of the DIN standard;

(d) provision for the determination of buildings that require post-condition surveys to be undertaken following the commencement of blasting;

(e) identification of any particularly sensitive activities in the vicinity of the proposed works (e.g. commercial activity using sensitive equipment such as radiography or mass-spectrometry) including the NZ Institute for Plant and Food Research (at 118-120 Mt Albert Road, Mt Albert), the Institute of Environmental Science and Research (Hampstead Road, Sandringham) and Caltex Western Springs (at 778-802 Great North Road, Grey Lynn), along with the details of consultation with the land owners of the sites where the sensitive activities are located and any management measures that will be adopted based on this consultation;

(f) the measures that will be taken by the Consent Holder to communicate and obtain feedback from affected stakeholders on vibration management measures;

(g) methods for monitoring and reporting on construction vibration; and

(h) methods for receiving and responding to complaints about construction vibration.

1.17 Air overpressure levels from blasting shall comply with the following limits, measured and assessed in accordance with AS2187.2-2006 Explosives – Storage and Use Part 2: Use of Explosives:

(a) For buildings that are not occupied for any blast event, the air overpressure limit shall be 133 dBZ Lpeak unless prior agreement is reached in writing with the owner(s) (in conjunction with a building pre-condition survey) that a higher limit may apply; and

(b) For buildings that are occupied for any blast event, and where there are less than 20 blast events to be undertaken on the site over the entire project, the air overpressure limit shall be 128 dBZ Lpeak; and

(c) For buildings that are occupied for any blast event, and where there are more than 20 blast events to be undertaken on the site over the entire project, the air overpressure limit shall be 120 dBZ Lpeak.

Note: A blast event may comprise the detonation of one or more charges in a period not exceeding three seconds.

1.18 The Guideline vibration limits set out in DIN 4150-3:1999 must be complied with for all blast events at all neighbouring buildings and infrastructure unless varied in accordance with condition 1.20.

1.19 Construction activities shall comply with the Guideline vibration limits set out in DIN 4150-3:1999 unless varied in accordance with condition 1.20.

1.20 The Guideline vibration limits set out in DIN4150 must not be exceeded except where the Consent Holder can demonstrate to the prior satisfaction of the Council:

(a) that the receiving building(s) are capable of withstanding higher levels of vibration and what the new vibration limit is. The investigation required to demonstrate this must include an assessment of the building(s) by a suitably experienced and qualified structural engineer and a full pre-condition survey; and

(b) that the Consent Holder has obtained the written agreement of the building owner(s), that a higher limit may be applied.

1.21 Each CNVMP shall be implemented and maintained throughout the entire construction period. Each CNVMP shall be updated when necessary and any updated CNVMP shall be submitted to the Council in accordance with Condition 1.8.

Traffic Management

1.22 A detailed Traffic Management Plan (**TMP**) or plans shall be prepared for the Project or relevant Project stage for Council approval as part of the CMP, and shall be prepared by a suitably qualified person.

1.23 The TMP(s) shall describe the measures that will be taken to avoid, remedy or mitigate the traffic effects associated with construction of the Project or Project stage. In particular, the TMP(s) shall describe:

(a) Traffic management measures to maintain traffic capacity or minimise the impact on traffic capacity during weekdays and weekends;

(b) Any road closures that will be required and the nature and duration of any traffic management measures that will result, including any temporary restrictions, detours or diversions for general traffic and buses;

(c) Methods to manage the effects of the delivery of construction material, plant and machinery;

(d) Measures to maintain, existing vehicle access to property where practicable, or to provide alternative access arrangements;

(e) Measures to maintain pedestrian and cyclist movements and reduce the impact on mobility impaired users on roads and footpaths adjacent to the construction works. Such access shall be safe, clearly identifiable and seek to minimise significant detours;

(f) Measures to manage any potential effects on children at / around education facilities;

(g) Measures to manage any potential construction traffic related effects on pedestrians and/or traffic associated with large-scale events in parks, reserves, Western Springs Stadium, and Mt Albert War Memorial Reserve;

(h) Any proposed monitoring to measure the impact of the works on traffic and the impact of the traffic management measures. If safety or operational issues are evident, measures to be implemented to address these issues;

(i) Measures to manage the proposed access to the site should the access be unable to cater for two-way traffic passing at the same time, and in particular to minimise reverse movements and blocking of the road; and

(j) The availability of on-street and off-street parking if the designated site is unable to accommodate all contractor parking. This shall include an assessment of available parking (if any) for contractors on street and identify measures to meet and/or reduce contractor parking demand should it be found that there is insufficient on-street parking to meet this demand.

1.24 The TMP(s) shall be consistent with the New Zealand Transport Agency *Code of Practice for Temporary Traffic Management,* which applies at the time of construction.

1.25 Any damage in the road corridor directly caused by heavy vehicles entering or exiting construction sites shall be repaired within two weeks or within an alternative timeframe to be agreed with Auckland Transport.

1.26 Where works in parks or reserves impact on existing pedestrian or cycle ways, alternative temporary accessways shall be provided. Any temporary accessways shall be designed as far as practicable in accordance with Crime Prevention Through Environmental Design ("**CPTED**") principles and provide appropriate lighting and signage where necessary.

1.27 Works within transport corridors shall be undertaken in accordance with the National Code of Practice for Utility Operators Access to Transport Corridors (November 2011), unless otherwise agreed between the Consent Holder and the Corridor Manager.

Dust Management

1.28 Beyond the boundary of the site, there shall be no dust caused by discharges from the site, which in the opinion of an enforcement officer, is noxious, offensive or objectionable.

1.29 All processes on site shall be operated in accordance with the Construction Management Plan as required by Condition 1.8 of this consent.

1.30 The Consent Holder shall ensure that dust management during excavation works generally complies with the Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions, MfE (2001).

Cultural and Archaeological Management Plan

1.31 The Consent Holder shall prepare a Cultural and Archaeological Management Plan ("**CAMP**") in consultation with tangata whenua (as listed in the report referenced in Condition 1.1(a)) and Auckland Council and shall submit this to the Manager for approval prior to the commencement of works. The purpose of the CAMP is to identify areas of potential cultural and archaeological significance and to establish methods, such as further archaeological investigation prior to works or monitoring by tangata whenua during works, at sites having potential archaeological and cultural significance. The CAMP shall also include the Accidental Discovery Protocol required by condition 1.32.

Accidental Discovery Protocol

1.32 Detailed protocols for the management of archaeological and waahi tapu discoveries shall be developed by the Consent Holder in consultation with tangata whenua (as listed in the report referenced in Condition 1.1(a)) and the New Zealand Historic Places Trust prior to construction. These detailed protocols shall confirm the names and contact details for tangata whenua, the New Zealand Historic Places Trust, and Auckland Council to be contacted in accordance with the provisions below.

If any archaeological sites, including human remains are exposed during site works then the following procedures shall apply:

(a) immediately after it becomes apparent that an archaeological or traditional site has been exposed, all site works in the immediate vicinity shall cease;

(b) the Consent Holder shall immediately secure the area so that any artefacts or remains are untouched; and

(c) the Consent Holder shall notify tangata whenua, the New Zealand Historic Places Trust and the Council (and in the case of human remains, the New Zealand Police) as soon as practicable, and advise those parties that an archaeological site has been exposed so that appropriate action can be taken. Works shall not recommence in the immediate vicinity of the archaeological site until approval is obtained from the New Zealand Historic Places Trust.

Lapse and commencement

1.33 For construction related, or construction and operation related consents (i.e. consents R/LUC/2012/2846, PRC40962, R/LUC/2012/2846/1, PRC40963, 40834, 40836, 40835, 40837, 40838, 40839, 40840, 40841, 40843, 40844, 40845, 40846, 40848, and 40849):

This consent shall lapse on the expiry of a period of 10 years after the date on which the last of any appeals on all consents and notices of requirement associated with the Central Interceptor main project works is withdrawn or determined, or, if no appeals are lodged, the date on which the notices of requirement are included in the District Plan(s) in accordance with section 184(1)(c) of the RMA, unless:

(a) it has been given effect before the end of that period; or

(b) the Council determines, on an application made within 3 months before the expiry of that period, that substantial progress or effort has been made towards giving effect to the consent and is continuing to be made, and fixes a longer period for the purposes of this subsection.

1.34 For the operational air discharge consent and EPR discharge consent (i.e. consents 40842 and 40850) the commencement date shall be the date on which the Practical Completion Certificate, or equivalent, is issued for the Mangere Pump Station.

The Consent Holder shall notify the Manager within 5 working days of the Practical Completion Certificate being issued that the consent has commenced.

Advice Note*: This consent will have been given effect to, for the purpose of section 125 of the RMA, once the Central Interceptor main tunnel has been commissioned and there is the potential for an EPR discharge to occur. The consent will therefore have been given effect to regardless of whether a discharge ever does in fact occur.*

1A Site specific conditions for the May Road primary construction site

1A.1 Notwithstanding any other condition of consent that may apply to the May Road site, the following conditions are specific to the May Road site. In the event that there is a conflict with another condition of this consent, the more onerous standard shall apply.

Construction management

1A.2 A site specific CMP shall be prepared for the May Road site, in accordance with Condition 1.8, in consultation with Foodstuffs and other potentially affected adjacent landowners. In addition to the matters listed in Condition 1.8, the site specific CMP for the May Road site shall include procedures for ensuring that residents, road users and businesses in the immediate vicinity of construction areas are given 5 working days prior notice of the commencement of construction activities, including any particularly noisy works, and are informed about the expected duration and effects of the works.

1A.3 The May Road CMP must be submitted to the Council's Manager for approval prior to the commencement of construction activities at the May Road site.

1A.4 The CMPs and associated management plans for the May Road site shall be prepared in a manner which sets out the specific design and construction methods at the May Road site; acknowledges the unique site characteristics, adjacent land use and sensitivity of surrounding neighbours at the May Road site; and allows Foodstuffs and other potentially affected adjacent landowners to be involved in the development of the measures to be taken at the May Road site to avoid, remedy or mitigate adverse effects on the environment.

Construction noise and vibration

1A.5 A CNVMP shall be prepared for the May Road site, in accordance with Conditions 1.11 to 1.21.

1A.6 Any Activity Specific Construction Noise Management Plan ("ASCNMP") for the May Road site shall be endorsed with the written consent of Foodstuffs and any other adjacent landowners affected by the exceedance, and shall be submitted to the Council for review and approval at least 7 working days prior to the proposed works commencing.

1A.7 In accordance with Conditions 1.18 to 1.20, the Guideline vibration limits set out in DIN 4150-3: 1999 must not be exceeded, except where the Consent Holder can demonstrate to the prior satisfaction of the Council:

(a) that the receiving building(s) at the Foodstuffs site and any other potentially affected building(s) are capable of withstanding higher levels of vibration and what the new vibration limit is. The investigation required to demonstrate this must include an assessment of the building(s) by a suitably experienced and qualified structural engineer and a full pre-condition survey; and
(b) that the Consent Holder has obtained the written agreement of the building owner(s), that a higher limit may be applied.

1A.8 In accordance with Conditions 4.10 to 4.18 of this consent, internal and external building condition surveys shall be prepared for the buildings identified on the diagram titled "Foodstuffs Pre-Condition Survey Recommendation" dated 11 August 2014 and submitted to the Environment Court on 22 September 2014, and any other building(s) identified as 'at risk'. The purpose of the building condition survey is to identify and quantify any adverse effects on those buildings in respect of vibration, dewatering, ground settlement, and consequential damage to structures. An additional building condition survey shall be undertaken during the construction phase, no later than 24 months from the commencement of construction activities at the site. The timing for the during-construction building condition survey shall take into account the programme and duration of shaft sinking and tunnelling activities and shall be agreed with the building owner. The during-construction building condition survey shall incorporate all of the applicable requirements of Conditions 4.15 to 4.18.

The Consent Holder shall ensure that a copy of the during-construction building condition survey report is forwarded to the building owner and the Manager (unless the building owner has instructed the Consent Holder not to do so) within 15 working days of completing the reports.

Earthworks

1A.9 All earthworks shall be managed to avoid any discharge of dust, debris, soil, silt, sediment or sediment-laden water beyond the boundary of the May Road site to either land, air, stormwater drainage systems, watercourses or receiving waters. In the event that a discharge occurs, the activity which resulted in the discharge shall cease immediately and the discharge shall be mitigated and / or rectified to the satisfaction of the Manager.

1A.10 The Construction Discharges Management Plan ("CDMP") for the May Road site required by Condition 3.2 shall be prepared with the involvement of Foodstuffs and other potentially affected adjacent landowners.

Stormwater

1A.11 A Stormwater Management Plan ("SMP") shall be developed for the May Road site in consultation with Foodstuffs and other potentially affected adjacent landowners. The SMP shall be developed in accordance with Conditions 6.2 and 6.3 to ensure that there will be no increase in stormwater flows or adverse stormwater effects (including changes to overland flows and flooding) experienced offsite as a result of the Central Interceptor Project.

In particular, the SMP for the May Road site shall set out the measures which the Consent Holder will avoid, remedy or mitigate the potential adverse effects on the adjacent properties and shall include:

(a) a description of how the 100 Year ARI attenuation to pre-development levels objective at the May Road site shall be met; and
(b) an assessment of the potential effects of site development on existing flooding and overland flow paths at the May Road site and the proposed measures to ensure that the properties owned by Foodstuffs' and other potentially affected adjacent sites are not adversely affected by the construction or permanent works.

2. <u>Vegetation and Ecology</u>
(applies to consent PRC40962 only)

2.1 The following matters shall be included in the CMP required under Condition 1.8 to address how the potential impacts of construction on trees and vegetation will be managed:

(a) identification of trees to be protected, pruned, removed, or transplanted and procedures for marking these out on site;
(b) the proposed location for any transplanted trees, including those required for visual screen purposes, and detail of any required landowner agreements if these locations are outside of the designated area; and
(c) procedures for identifying and protecting significant trees to be retained where works occur in the dripline of such trees as identified by a suitably qualified person.

2.2 The trenching of Link Sewer 4 across Kiwi Esplanade Reserve (Lot 2 DP 77585 and Lot 3 DP 77585) shall be undertaken between 1 August and 31 December in any year so as to limit potential effects on roosting shorebirds.

3. <u>Earthworks</u>
(applies to consents 40834 and 40835 only)

3.1 All earthworks shall be managed to minimise any discharge of debris, soil, silt, sediment or sediment-laden water beyond the site to either land, stormwater drainage systems, watercourses or receiving waters. In the event that a discharge occurs, the activity which resulted in the discharge shall cease immediately and the discharge shall be mitigated and/or rectified to the satisfaction of the Manager.

3.2 The Consent Holder shall ensure that all discharges from tunnel dewatering activities, wheel washes and other occasional construction site related discharges are treated to an appropriate standard prior to discharge to either land or stormwater drainage systems, watercourses or other receiving waters.

A Construction Discharges Management Plan ("**CDMP**") shall be prepared which describes how these discharges will be managed to avoid, remedy or mitigate potential adverse effects on receiving environments. The CDMP shall be submitted to the Manager for approval prior to any discharges occurring.

3.3 The standards for construction discharges to receiving environments shall be:

(a) Turbidity of less than 50 NTU and pH within a range of between 5.5 - 8.

Alternative discharge quality standards for turbidity and pH may be implemented if:

(b) a receiving environment monitoring programme is submitted to and approved by the Manager;

(c) the receiving environment monitoring programme is implemented for a sufficient period of time to demonstrate that alternative standards for turbidity and pH are appropriate for the site; and

(d) written approval is provided by the Manager.

3.4 The CDMP shall include a monitoring programme which shall address:

(a) the monitoring to be undertaken to ensure that the discharges from all devices are complying with the discharge standards detailed in condition 3.3;

(b) the erosion and sediment control and water management devices that require maintenance;

(c) the time when the maintenance was completed; and

(d) areas or incidents of non compliance with the discharge standards and monitoring plan (if any) and the reasons for the non compliance.

Any incidents in (d) above shall be reported to the Auckland Council on a monthly basis.

3.5 Prior to the commissioning of chemical treatments for sediment management and construction discharge purposes, the Consent Holder, shall provide the Manager, Auckland Council with a Chemical Treatment Management Plan ("**CTMP**"), for confirmation by the Manager that it will achieve the standards set out in the CDMP required under Condition 3.2. The CTMP shall follow the principles and chemical treatment details outlined within the AEE and supporting technical documents and shall include as a minimum:

(a) specific design details of the chemical treatment system;

(b) monitoring, maintenance (including post-storm) and contingency programme (including a Record Sheet);

(c) details of optimum dosage (including assumptions);

(d) results of the initial flocculation trials; and

(e) a spill contingency plan.

Any amendments to the CTMP shall be approved by the Manager in writing, at least 10 working days prior to implementation.

3.6 Prior to earthworks commencing at any site, a detailed Erosion and Sediment Control Plan ("**ESCP**") for that area which clearly identifies the type and location of the controls proposed, shall be submitted to the Manager for approval. The ESCP(s) shall be in general accordance with TP90 and any amendments to that document, except where a higher standard is detailed in the documents referred to in Condition 1.1, in which case that higher standard shall apply.

3.7 Erosion and sediment control measures shall be carried out in accordance with the approved ESCP(s) required by this consent.

3.8 Any subsequent amendments to the approved ESCP(s) and / or methodology must be approved by the Manager in writing prior to any such amendment being implemented.

3.9 Prior to earthworks commencing at any site, a certificate signed by a suitably qualified person, confirming that the erosion and sediment controls have been constructed and completed in general accordance with the ESCP(s), shall be forwarded to the Manager.

3.10 In accordance with Condition 1.7, the Consent Holder or their agent shall arrange and conduct a pre-construction site meeting between representatives of the Council, the Consent Holder and their contractor, prior to any works commencing on a site. The purpose of the pre-construction site meeting is to discuss the proposed site access arrangements, ESCP(s) and other measures to be taken to comply with conditions of this consent. If as a result of that meeting any amendments are required to the erosion and sediment control methodology, those amendments shall be submitted to the Manager for approval in accordance with condition 3.6.

3.11 All perimeter controls shall be operational before earthworks begin.

3.12 All cleanwater runoff from stabilised surfaces including catchment areas above the site shall be diverted away from earthwork areas via a stabilised system, so as to prevent surface erosion.

3.13 All sediment laden runoff shall be treated on site by sediment control measures, as described in the consent application or modified under condition 3.6. These measures are to be constructed or installed in accordance with best practice, be operational before commencement of works and be maintained to perform at full operational capacity until the site has been adequately secured against erosion.

3.14 Sediment control measures shall be inspected on a weekly basis and after a significant storm event to ensure effective operation.

3.15 The site shall be stabilised in accordance with the ESCP in a progressive manner as earthworks are completed across various areas of the site.

3.16 To prevent discharge of sediment-laden water or other debris into any public stormwater drainage systems or watercourses and therefore into receiving waters, and to prevent nuisance and amenity impacts on users of the road reserve, there shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the site. In the event that such

deposition does occur, it shall immediately be removed. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.

3.17 If works on a site are abandoned or will be unused for any reason, adequate preventative and remedial measures shall be taken to control sediment discharge and shall thereafter be maintained for as long as necessary to prevent sediment discharges from the site. All such measures shall be of a type and to a standard which are to the prior satisfaction of the Manager.

4. Groundwater
(applies to consent 40836 only)

4.1 This consent shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

4.2 The Consent Holder shall ensure that all excavation, dewatering systems, retaining structures and associated works for the construction of the shafts, tunnels, underground structures and associated works, including all temporary and permanent works, shall be designed, constructed and maintained so as to avoid, as far as practicable, any damage to buildings, structures and services (including road infrastructure assets such as footpaths, kerbs, catch-pits, pavements and street furniture).

4.3 The Consent Holder shall ensure that all backfilling of temporary shafts is designed and constructed to the required engineering standard, so as to avoid any damage to buildings, structures and services.

4.4 The Consent Holder shall, at least 10 working days prior to the commencement of shaft sinking or tunnelling, advise the Manager, in writing, of the date of the proposed commencement of this work.

4.5 The Consent Holder shall, at least 10 working days following completion of shaft sinking or tunnelling, advise the Manager, in writing, of the date of completion.

Monitoring and Contingency Plan

4.6 The Consent Holder shall, before commencement of shaft sinking or tunnelling, prepare a Monitoring and Contingency Plan or Plans ("**M&CP**") addressing groundwater and settlement monitoring for each of the relevant Project stages. The M&CP shall demonstrate how the conditions of this consent will be implemented and shall include the following:

(a) details of the building risk assessment process and building condition surveys required by Conditions 4.10 to 4.18 of this consent;

(b) details of the groundwater monitoring programme required by Conditions 4.19 – 4.21, 4.23 and 4.25 of this consent;

(c) details of the ground surface settlement and building movement monitoring required by Conditions 4.26 – 4.29, 4.31 and 4.34 of this consent;

(d) location Plan of settlement and building deformation marks and the location of existing and proposed groundwater monitoring bores.

(e) details of the shaft retaining wall monitoring programme required by Conditions 4.26 and 4.29 of this consent.

(f) the groundwater, deformation and settlement Alert and Alarm Levels (Trigger Levels) to be utilised for early warning of settlement with the potential to cause damage to buildings and services and details of the processes used to establish, and if necessary, to review these triggers;

(g) details on the procedures for notification of the Manager in the event that Trigger Levels are exceeded;

(h) options for additional investigations and analyses to determine the potential for groundwater effects or settlement and for damage to structures, including additional groundwater or settlement monitoring and building condition surveys;

(i) details of the contingency measures to be implemented in the event of trigger levels being exceeded, including details on the practicable methodologies to avoid, remedy, or mitigate surface settlements with the potential to cause damage to buildings; and

(j) A methodology to identify trenched sections where there is potential for ground settlement to cause damage to houses or buildings and the measures that will be taken to ensure such damage does not occur.

4.7 The Consent Holder shall submit to the Manager for written approval:

(a) at least 14 months prior to the Commencement of Dewatering for shaft sinking or tunnelling of any Project stage, those aspects of the M&CP dealing with pre-construction monitoring, including the pre-construction monitoring required under conditions 4.12, 4.13, 4.21 and 4.28; and

(b) at least 20 working days prior to Commencement of Dewatering for shaft sinking or tunnelling of any Project stage, the M&CP.

4.8 The Consent Holder shall comply with the M&CP at all times.

4.9 The Consent Holder may amend the M&CP from time to time, as necessary for the Project or any Project stage. Any amendments to the M&CP must be approved by the Manager in writing prior to any such amendment being implemented.

Building Condition Surveys

4.10 The Consent Holder shall undertake a risk assessment to identify existing buildings and structures at risk of damage due to settlement caused by shaft sinking or tunnelling activities. The risk assessment process shall be set out in the M&CP required by Condition 4.6 and shall be based upon the final tunnel alignment and construction methodology, the groundwater and settlement monitoring required under this consent, and groundwater and settlement modelling completed using this data. The risk assessment shall include:

(a) identification of the zone of influence where differential settlements of greater (steeper) than 1:1,000 are predicted due to shaft sinking or tunnelling activities;

(b) identification of the building types in this zone, and their susceptibility to settlement induced damage; and

(c) identification of the buildings and structures at risk of damage due to shaft sinking or tunnelling activities.

4.11 A schedule of the addresses of existing buildings and structures identified as being potentially at risk of damage through the building risk assessment process defined in Condition 4.10 shall be included in the M&CP required by Condition 4.6.

Pre-construction Condition Survey

4.12 The Consent Holder shall consult with owners of existing buildings and structures identified through the building risk assessment process defined in Condition 4.10, and subject to the owner's approval on terms acceptable to the Consent Holder, undertake a detailed pre-construction condition survey of these structures to confirm their existing condition and enable the sensitivity of the existing buildings and structures to any groundwater and ground settlement changes to be accurately

determined. The survey shall be completed at least three months prior to the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling. The intent of the survey is to assist in enabling the magnitude of allowable effects from changes in groundwater pressure and ground settlement movements to be reasonably determined.

The survey shall include but not necessarily be limited to the following:

(a) major features of the buildings and site developments, including location, type, construction, age and existing condition;

(b) type and capacity of foundations;

(c) existing levels of aesthetic damage;

(d) existing level of structural distress or damage;

(e) assessment of structural ductility;

(f) susceptibility of structure to movement of foundations, including consideration of the local geological conditions; and

(g) susceptibility of scheduled heritage buildings to movement of foundations.

A photographic record of the inspection shall be included.

Note: '*Commencement of Dewatering' means excavation below the groundwater table and/or commencing taking any groundwater from a shaft excavation (after construction of the pile walls (if required) and/or dewatering prior to excavation*).

4.13 Where neighbouring building/property owners indicate, to the satisfaction of the Manager by way of a recommendation from a qualified and experienced vibration consultant, the presence of particularly sensitive structures (examples include old or brittle structures, vibration sensitive equipment, unusually heavy loads or settlement sensitive machinery) the Consent Holder shall undertake a full engineering assessment to determine what, if any, additional avoidance, design, remedial or monitoring works are required in this vicinity. The Manager may require an independent review of that assessment by a Chartered Professional Engineer

4.14 The building condition surveys required by this consent shall be undertaken by an independent and suitably qualified person.

Post-construction Condition Surveys

4.15 Unless otherwise agreed in writing with the building owner that such survey is not required, the Consent Holder shall (subject to the owner(s) approval on terms acceptable to the Consent Holder), within six months of the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, undertake a postconstruction survey covering the matters identified in Condition 4.12 for any building located in an area where differential settlement of greater (steeper) than 1:1,000 occurs between two adjacent settlement monitoring points measured in accordance with the M&CP and a pre-construction condition survey was undertaken in accordance with condition 4.12 or condition 4.13. The Consent Holder may, if they are able to provide evidence to show the deformation was not caused by activities related to this consent, seek written approval from the Manager to waive this condition. If, since the pre-construction survey, any building damage is identified, the survey shall determine the likely cause of damage.

Note: 'Completion of Dewatering' means when all the permanent shaft lining, base slab and walls are complete and the tunnel lining is complete, and effectively no further groundwater is being taken for the construction of the shaft/tunnel.

4.16 The Consent Holder shall, at the direction of the Manager, and subject to the owner's approval on terms acceptable to the Consent Holder, undertake an additional survey

on any existing building or structure located within the zone of settlement influence determined under Condition 4.10, or any existing building or structure surveyed in accordance with Condition 4.13, for the purpose of checking for damage and for following up on a report of damage to that building. The requirement for any such survey will cease six months after the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling.

4.17 The Consent Holder shall ensure that a copy of the pre, post-construction and any additional building survey reports are forwarded to the respective property owner(s) and the Manager (unless the property owner(s) has instructed the Consent Holder not to do so) within 15 working days of completing the reports.

Repair of Damage

4.18 If the exercise of this consent causes any unforeseen damage to buildings, structures or services not assessed under Conditions 4.15 and 4.16, the Consent Holder shall notify the Manager as soon as practicable, and provide in writing to the Manager a methodology for repair of the damage caused that has been approved by a Chartered Professional Engineer and shall urgently undertake such repairs in accordance with the approved methodology, at its cost, unless written approval for this damage is provided from the owners.

Note: *Unforeseen damage* – means damage to buildings and structures that has occurred outside the area identified as the zone of influence under Condition 4.10 or to buildings or structures that are located within the zone of influence but were not considered to be at risk at the time of the approval of the M & CP.

Groundwater Monitoring

4.19 The Consent Holder shall install and maintain groundwater monitoring boreholes at the locations described in the M&CP for the period required by the conditions of this consent. Should any of the monitoring bores be damaged and become in-operable or unsuitable for monitoring, then the Manager is to be informed and a new monitoring bore shall be installed at a nearby location in consultation with the Manager.

4.20 The Consent Holder shall monitor groundwater levels in the groundwater monitoring boreholes and keep records of the water level measurement and corresponding date. All water level data shall be recorded to an accuracy of at least ± 5mm. These records shall be compiled and submitted to the Manager at six monthly intervals.

4.21 The Consent Holder shall monitor groundwater levels monthly in boreholes identified in the M&CP and keep records for a period of at least 12 months before the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling. The variability in groundwater levels over this period will be utilised to establish the seasonal groundwater level variability. The Consent Holder shall monitor groundwater levels monthly in any proposed boreholes for a period of at least two months (three readings indicating steady state) before the Commencement of Dewatering of any Project stage involving shaft sinking or dewatering.

4.22 Prior to the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling, the Consent Holder shall assess the potential groundwater effects resulting from the exercise of this consent. The output of this assessment shall be used to define the expected groundwater level at each borehole and to establish groundwater Trigger Levels for each borehole that minimise the potential for damage to existing buildings or structures. The process for establishing groundwater Trigger Levels shall be set out in the M&CP and shall be based upon the final tunnel alignment and construction methodology, and any groundwater monitoring required under this consent, and shall be based upon groundwater modelling completed using this data. A factor of natural seasonal variability shall be allowed for in this review based on the survey completed under Condition 4.21.

4.23 From Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling, the Consent Holder shall monitor groundwater levels in each borehole at a minimum of monthly intervals and records shall be kept of each monitoring date and the corresponding water level in each borehole. In addition to the above, all boreholes located within 100 metres of active shaft construction sites or within 100 metres of the tunnel excavation face shall be monitored for groundwater level at least once every week. These records shall be compiled and submitted to the Manager at six monthly intervals.

4.24 All monitoring data obtained pursuant to Condition 4.23 shall be compared to the predicted groundwater levels for each borehole. Where Trigger Levels are exceeded the actions as set out in the M&CP shall be undertaken and the Manager shall be notified within three working days, advising of the trigger exceedance, the risk of settlement causing damage to buildings, and details of the actions taken.

4.25 The Consent Holder shall continue to monitor groundwater levels in each borehole at monthly intervals for a period of 12 months following Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, or for a lesser period if groundwater levels in any particular borehole show either:

(a) recovery of the groundwater level to within 2 metres of the pre-construction groundwater level and is above trigger levels; or
(b) a trend of increasing groundwater level in at least three consecutive monthly measurements and is above trigger levels, in which case monitoring at that borehole may cease.

After 12 months following the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, monitoring of groundwater levels shall continue at the direction of the Manager if groundwater levels are not recovering from construction effects and there is a risk of adverse effects.

Settlement Monitoring

4.26 The Consent Holder shall establish and maintain a settlement monitoring network of Ground Settlement Monitoring Marks and Building Movement Marks to detect any deformation (vertical and/or horizontal movements) at the locations described in the M&CP and for the period required by the conditions of this consent.

The Ground Settlement Monitoring Marks shall be located generally as follows:

(a) at least one mark within 5 metres of each of the groundwater monitoring boreholes described in Condition 4.19;

(b) at locations along the alignment of the tunnels, and around each of the shafts, such that:

(i) the marks are more closely spaced in areas of higher settlement risk, and more widely spaced in areas of low settlement risk, these areas being identified in the risk assessment carried out under Condition 4.10;

(ii) the marks are of sufficient number and are located such that they provide a reliable basis for assessing, monitoring and responding to settlement risk during shaft sinking and tunnelling construction work and for confirming compliance with the limits set out in Condition 4.33; and

(iii) the marks shall extend out on each side of the tunnel alignment and around each of the shafts by at least 50 metres beyond the zone of influence identified in the risk assessment carried out under Condition 4.10.

<u>Shaft Retaining Wall Deformation Monitoring:</u>

At shaft locations identified in the risk assessment under Condition 4.10 as being in an area of high settlement risk, sufficient inclinometers shall be installed, in accordance with industry best practice, in temporary shaft retaining walls to measure wall deformation. Measurement accuracy shall be to best practice.

Building Movement Monitoring Marks

Subject to the owner's approval, and on terms acceptable to the Consent Holder, the Building Movement Monitoring Marks shall be located generally on or around buildings or structures identified in the risk assessment process under Condition 4.10 as being at risk of damage due to settlement caused by shaft sinking or tunnelling activities.

The final location and number of Building Movement Monitoring Marks shall take into account the number of buildings, building type and size, accessibility to survey the marks and the risk of damage due to ground settlement. Building Movement Monitoring Marks need not be installed on ancillary buildings such as garages and sheds or any other structure for which the Manager has given written approval.

4.27 In the event of any of the monitoring marks required under Condition 4.26 being destroyed or becoming inoperable, the Consent Holder shall, unless otherwise agreed in writing by the Manager, replace the monitoring marks with new monitoring marks.

4.28 The Consent Holder shall survey and record the elevation of each Ground Settlement Monitoring Mark and record the corresponding date. Ground Settlement Monitoring Marks shall be surveyed at least three times over a 12 month period prior to commencement of any Project stage involving shaft sinking or tunnelling to establish seasonal variability, and the minimum level of these baseline surveys shall be used to establish the pre-construction reference ground level. All surveys are to be completed to an accuracy of at least ± 2mm for level and ± 5mm for plan position, or as otherwise achieved by best practice precise levelling.

4.29 The Consent Holder shall survey and record the readings of each inclinometer as required in condition 4.26 at an average of each 2 metres depth of shaft excavation, and at a minimum frequency of fortnightly intervals from the Commencement of Dewatering of any Project stage involving shaft sinking for a period of one month after the Completion of shaft Excavation, thence monthly until the Completion of Dewatering for any Project stage involving shaft sinking. At least two baseline surveys shall be completed before Commencement of Dewatering.

4.30 Prior to the Commencement of Dewatering of any Project stage involving shaft sinking or tunnelling, the Consent Holder shall assess the potential settlement effects resulting from the exercise of this consent. The output of this assessment shall be used to define the expected settlement levels and to establish settlement Trigger Levels (Alert Levels and Alarm Levels) that minimise the potential for damage to existing buildings or structures. The process for establishing settlement Trigger Levels shall be set out in the M&CP and shall be based upon the final tunnel alignment and construction methodology, any groundwater, deformation or settlement monitoring required under this consent, and groundwater and settlement modelling completed using this data. A factor of natural seasonal variability shall be allowed for in this review based on the survey completed under Condition 4.28.

Note:
'Alert Level' is the Differential and Total Settlement Limit set at a threshold less than the Alarm Level, at which the Consent Holder shall implement further investigations and analyses as described in the M&CP to determine the cause of settlement and the likelihood of further settlement.

'Alarm Level' is the Differential and Total Settlement Limit set in Condition 4.33, or which has the potential to cause damage to buildings, structures and services, at which the Consent Holder shall immediately stop dewatering the site and cease any activity which has the potential to cause deformation to any building or structure or adopt the alternative contingency measures approved by the Manager.

4.31 During construction in any Project stage involving shaft sinking or tunnelling, the Consent Holder shall survey the complete settlement network described in Condition 4.26 at six monthly intervals and keep records of each date and the corresponding ground surface and building level. In addition to the above, all Ground Surface Monitoring Marks located within 50 metres of the excavated tunnel and within 100 metres of an excavated shaft or the tunnel excavation face shall be monitored at least once every month. These records shall be compiled and submitted to the Manager at six monthly intervals.

4.32 The Consent Holder shall compare all settlement monitoring data obtained during shaft sinking and tunnelling construction work to the pre-construction minimum levels in accordance with the M&CP. Where Trigger Levels are exceeded the appropriate actions as set out in the M&CP shall be undertaken and the Manager shall be notified within three working days, advising of the trigger exceedance, the risk of settlement causing damage to buildings, and details of the actions taken.

4.33 The Consent Holder shall use all reasonable endeavours to ensure that the exercise of this consent does not cause:

(a) greater (i.e. steeper) than 1:1,000 differential settlement (the Differential Settlement Limit) between any two adjacent settlement monitoring points required under this consent; or
(b) greater than 50mm total settlement (the Total Settlement Limit) at any settlement monitoring point required under this consent.

4.34 The Consent Holder shall continue to monitor the Ground Settlement Monitoring Marks at six monthly intervals for 12 months after Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, or for a shorter period if approved by the Manager.

At 12 months following the Completion of Dewatering of any Project stage involving shaft sinking or tunnelling, monitoring of ground and settlement marks shall continue at the direction of the Manager if settlement marks have breached trigger levels and there is risk of adverse effects.

5. <u>Stormwater – During Construction</u>
(applies to consents 40841 and 40848)

5.1 This consent shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

5.2 At the Western Springs and May Road sites, rain tanks shall be installed to provide attenuation of the runoff from the shed enclosure roof areas. Design volumes for the raintanks shall be submitted to the Manager for approval prior to the construction of the shed enclosure roof areas.

5.3 The works shall be undertaken in accordance with the following specific conditions of Consent No. 40834:

- Earthworks conditions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13 and 3.14.

6. Stormwater - Permanent Works
(applies to consents 40837, 40838, 40839, 40840 and 40849 only)

Duration

6.1 This permit shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

Stormwater Works

6.2 The Consent Holder shall submit a Stormwater Management Plan ("**SMP**") or plans for the approval of the Manager no less than 20 working days prior to the construction of permanent impervious surfaces and stormwater works at each site. The plan or plans shall address stormwater management in relation to permanent works at the following sites:

- Western Springs;
- Haverstock Road;
- PS 25 (Miranda Reserve);
- May Road;
- PS 23 (Frederick Street); and
- Mangere Pump Station.

Provided that, no SMP need be submitted if the final design of the works demonstrates that the impervious surfaces will be less than 1,000m² in area.

6.3 The Stormwater Management Plan(s) shall include, but not be limited to:

(a) design details for the proposed stormwater management system, if required, including confirmation of the site impervious area and the contributing site catchment area;

(b) a description of how the general provisions of TP10 and TP108 have been applied in developing the design details;

(c) a description of how the following stormwater management objectives shall be met for the following sites:

100 Year ARI attenuation to predevelopment levels	May Road
2 & 10 year ARI attenuation to predevelopment levels	Western Springs Haverstock Road PS25 May Road
Extended detention of the first 34.5mm and release over 24 hours	
Water quality treatment to 75% removal of TSS on a long term average basis	All sites - all vehicle movement areas greater than 1,000m²

(d) a description of the extent to which Low Impact Design has been included as part of the stormwater management system;

(e) supporting calculations for the sizing of pipework and associated stormwater systems;

(f) a description of how stormwater flows in excess of the primary system are to be provided for, up to the critical storm event with a 1% Annual Exceedance Probability;

(g) an assessment of the potential effects of site development on existing overland flow paths and the proposed measures to ensure adjacent properties are not adversely affected by the Consent Holders' construction or permanent works; and

(h) a description of any relevant provisions to minimise erosion and flood safety hazards.

6.4 The Consent Holder shall construct the stormwater management systems in accordance with the SMP as required by Condition 6.2. Any amendments that may affect the capacity or performance of the stormwater management systems shall be approved by the Manager in writing, prior to construction of the stormwater management systems.

Construction Meetings

6.5 Five working days prior to initiation of any construction of permanent stormwater devices on the site, a pre-construction site meeting between the Manager and all relevant parties, including the site stormwater engineer, shall be arranged.

6.6 The following information shall be provided at the pre-construction meeting:

(a) Timeframes for key stages of the works authorised under this consent;

(b) Contact details of the site contractor and site stormwater engineer; and

(c) Approved (signed/stamped) construction plans.

6.7 Within 30 working days of the practical completion of the stormwater management systems, a post construction site meeting shall be arranged and conducted between the Manager and all relevant parties, including the site stormwater engineer.

6.8 Within 30 working days of the practical completion of the stormwater management systems, "as-built" plans and documentation of the stormwater system which are certified as a true record of the stormwater management systems by a suitably qualified person shall be supplied to the Manager.

Operation and Maintenance

6.9 An Operation and Maintenance Plan for the stormwater management system shall be submitted to the Manager within 30 working days of completion of the installation of the permanent stormwater works set out in the SMP.

6.10 The Operation and Maintenance Plan shall set out how the permanent stormwater management system is to be operated and maintained to ensure adverse environmental effects are minimised. The plan shall include, but not be limited to:

(a) a programme for regular maintenance and inspection of the stormwater management system;

(b) a programme for the collection and disposal of debris and sediment collected by the stormwater management devices or practices;

(c) a programme for post storm inspection and maintenance;

(d) a programme for inspection and maintenance of the outfall (where relevant);

(e) general inspection checklists for all aspects of the stormwater management system, including visual checks;

(f) a program for inspection and maintenance of vegetation associated with the stormwater management devices (where relevant); and

(g) details of who will hold responsibility for long-term maintenance of the stormwater management system and the organisational structure which will support this process.

6.11 The stormwater management and treatment system shall be managed in accordance with the approved Operation and Maintenance Plan.

6.12 Any amendments to the Operation and Maintenance Plan shall be submitted to and approved by the Manager, in writing prior to implementation.

6.13 A maintenance report shall be provided to the Manager on request. The maintenance report shall include but not be limited to the following:

(a) details of who is responsible for maintenance of the stormwater management system and the organisational structure supporting this process;

(b) details of any maintenance undertaken; and

(c) details of what inspections were completed over the preceding twelve months.

Proprietary Devices

6.14 Where proprietary devices are installed, a written maintenance contract with an appropriate stormwater management system operator, shall be entered into, and maintained, for the ongoing maintenance of the proprietary stormwater management device.

6.15 Within 30 working days of the completion of stormwater works, a signed copy of the contract required by condition 6.14 shall be forwarded to the Manager. An operative contract shall be provided to the Manager upon request throughout the term of the consent.

7. <u>Discharges to Air</u>
(applies to consent 40842 only)

7.1 This permit shall expire 35 years from the date of commencement unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

7.2 The Consent Holder shall, at all times operate, monitor and maintain the Central Interceptor tunnel so that odour discharges authorised by this consent are maintained at the minimum practicable level.

7.3 Within any private property there shall be no odour caused by discharges from the normal operation of the Central Interceptor tunnel which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.

***Advice Note**: the storage and transfer of wastewater within the Central Interceptor as well as scheduled maintenance activities, and any discharges into air arising from this, are considered part of the normal operation of the tunnel.*

7.4 Except during maintenance, cleaning, or other inspections all access hatches shall be adequately covered to ensure fugitive discharges to atmosphere are kept to a minimum practicable level.

7.5 The Consent Holder shall give consideration to the wind direction, wind strength and weather conditions and the likelihood of neighbours present prior to undertaking any tunnel maintenance activities on site that have the potential to generate odour effects beyond the site boundary.

7.6 All access hatches, fans, ducting and emissions control equipment shall be designed and maintained in good condition and be free from leaks so that fugitive discharges to the atmosphere are kept to a minimum practicable level.

7.7 All relevant fans and ducting to emissions control equipment shall draw sufficient negative pressure so that fugitive discharges to the atmosphere are kept to a minimum practicable level.

7.8 The Consent Holder shall undertake on-going monitoring and reporting to Auckland Council of odour discharges from sites containing access shafts, drop shafts, air vents or air treatment facilities along the alignment of the Central Interceptor tunnel. In the event that there are ongoing elevated levels of odour at sites, remedial action

shall be taken by the Consent Holder to reduce those discharges so that there are no objectionable or offensive effects beyond the site boundary, in the opinion of an enforcement officer.

7.9 Prior to constructing any air treatment facility, final details relating to the design and operation of that air treatment facility shall be submitted to the Manager to demonstrate how the facility will achieve compliance with Conditions 7.2 and 7.3.

7.10 All odour complaints that are received arising from the operation of the Central Interceptor tunnel shall be recorded. The complaint details shall include:

(a) the date, time, location and nature of the complaint;

(b) the name, telephone number and address of the complainant, unless the complainant elects not to supply these details;

(c) weather conditions, including approximate wind speed and direction, at time of the complaint; and

(d) any remedial actions undertaken.

Details of any complaints received (as recorded above) shall be provided to the Manager within 7 days of receipt of the complaint(s).

7.11 All records required by the conditions of this consent shall be made available upon reasonable request by an enforcement officer during working hours and shall be kept for a minimum period of two years from the date of each entry.

7.12 Should persistent objectionable or offensive odour discharges occur at any air treatment facility referred to in Condition 7.9, the Consent Holder shall amend the design and / or operation of the facility to avoid, remedy or mitigate the effects in this regard to the satisfaction of Auckland Council.

8. Contaminated Land
(applies to consents R/LUC/2012/2846/1, PRC40963 and 40843 only)

Expiry Date

8.1 This consent shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

Pre-works Requirements

8.2 Any amendments to the documents listed in General Condition 1.1 shall be submitted to the Manager prior to implementation, for approval that it complies with the Ministry for the Environment Contaminated Land Management Guideline No. 1 and the conditions of this consent:

(a) changes to the documents shall not be implemented until confirmation has been received;

(b) notwithstanding (a), changes may be implemented if 10 working days have passed since the documents were submitted and no correspondence has been received from the Council regarding the changes or immediately in the case of an emergency; and

(c) all confirmed changes shall be incorporated into respective replacement documents.

8.3 The Consent Holder shall review The Central Interceptor Project Contaminated Land Site Management Plan (Rev 1) dated December 2012 ("**the CLSMP"**), prepared by Tonkin & Taylor, and submit a revised or final CLSMP prior to commencement of any Project stage. The CLSMP shall include mitigation measures to ensure that discharges from the sites to land or water are minimised, and to ensure that the risks to the health of workers on the site and nearby sites is less than minor. Where minor

enabling works or isolated works are to be undertaken prior to commencement of the main works, a site specific CLSMP may be prepared, commensurate with the scale and effects of the proposed works. The CLSMP or plans shall be submitted to the Manager for approval.

The CLSMP shall include, but not be limited to:

(a) measures to be undertaken in the handling, storage and disposal of contaminated surficial soils excavated during the construction works;

(b) soil validation testing and groundwater testing;

(c) a process for confirming potential for contamination and soil testing at the identified potentially contaminated sites to determine the nature of the excavated soil and potential reuse or disposal options;

(d) measures to be undertaken in the event of unexpected contamination being identified during construction activities; and

(e) measures to be undertaken for the handling of asbestos containing material.

8.4 The Consent Holder shall engage a suitably qualified and experienced practitioner (SQEP) as defined in the User's Guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (April, 2012). In accordance with the User's Guide, the SQEP shall be a person with a tertiary degree in environmental science or engineering or a related field and at least five years experience in environmental investigations. The SQEP shall carry out any soil and groundwater sampling work and observe construction site earthworks in areas identified in the CLSMP, including the excavation and removal of contaminated surficial soils from the site. The SQEP shall be available during the excavation works and be in regular contact with the Watercare Project Manager and/or contractor over the course of the project to ensure that the procedures set out in the CLSMP are being followed.

8.5 Confirmatory soil sampling and testing shall be undertaken at the following construction sites prior to works commencing at these sites, or as described in the CLSMP:

- Rawalpindi Reserve;
- Mt Albert War Memorial Reserve;
- Lyon Avenue;
- Haverstock Road;
- Walmsley Park;
- PS25 (Miranda Reserve);
- Keith Hay Park;
- PS23 (Frederick Street);
- Western Springs Depot; and
- Miranda Reserve.

The sites at Mt Albert War Memorial Reserve, Lyon Avenue and Haverstock Road, shall be investigated prior to any construction activities, rather than during construction. Where sampling is undertaken during construction, the excavated soil shall be treated as potentially contaminated while awaiting laboratory results and relevant procedures set out in the CLSMP shall be followed.

Sampling and testing shall be undertaken as outlined in the CLSMP. The results of these investigations shall determine appropriate handling and surplus soil disposal locations as well as appropriate health and safety requirements at these sites. For the sites at Mt Albert War Memorial Reserve, Lyon Avenue and Haverstock Road the findings of the investigations and any site-specific requirements shall be provided to the Construction Manager prior to the commencement of excavation works.

8.6 The Consent Holder shall ensure that excavation workers (which excludes workers associated with excavations in natural uncontaminated ground for underground tunnelling or shaft construction works) are appropriately informed and trained regarding potential health and safety risks and corresponding mitigation measures associated with contamination, in accordance with the CLSMP.

Specific Conditions During Works

8.7 The Consent Holder shall ensure that the public is excluded from the work area.

8.8 When excavating actual or potentially contaminated soil (which excludes excavations in natural uncontaminated ground for underground tunnelling or shaft construction works), the contractor shall maintain weekly records of the excavation areas, the type and volume of soil removed to landfill, and the location of the landfill. The records shall be retained and provided to the Auckland Council on request.

8.9 During the works, regular inspections of the excavation of actual or potentially contaminated areas (which excludes excavations in natural uncontaminated ground for underground tunnelling or shaft construction works) shall be carried out to ensure that the site management procedures are implemented in accordance with the CLSMP.

8.10 For sites where asbestos has previously been identified, or could potentially be present, or is discovered during the works, all excavation work shall be observed by a person certified under the Asbestos Regulations (Health and Safety in Employment Act (Asbestos) Regulations 1998, and Department of Labour Guidelines for the Management and Removal of Asbestos 1999).

8.11 All excavation works shall be carried out in a manner that will minimise the potential for mixing contaminated soils with uncontaminated soils.

8.12 Where possible, contaminated soils identified for off-site disposal shall be loaded directly onto trucks. Any contaminated soil removed from the site shall be covered during transportation.

8.13 Stockpiling of contaminated soil shall be avoided so far as practicable. If required, the stockpiles shall follow the procedures set out in the SLSMP.

8.14 Any contaminated material removed from the site shall be disposed of in accordance with the CLSMP, at a facility which holds a consent to accept the relevant level of contamination, unless it has been appropriately demonstrated that the materials removed from the site meet the definition of 'cleanfill', as described in 'A Guide to the Management of Cleanfills', Ministry for the Environment (2002).

8.15 Any excavated material re-used on site shall have soil concentrations that are the lower of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health for the site final land use or the Auckland Council Regional Plan: Air, Land and Water Schedule 10 permitted activity criteria.

8.16 All imported fill shall:

(a) comply with the definition of 'cleanfill' as per 'A Guide to the Management of Cleanfills', Ministry for the Environment (2002);

(b) be solid material of an inert nature; and

(c) not contain hazardous substances or contaminants above natural background levels of the receiving site.

8.17 The Consent Holder shall ensure that any groundwater, perched groundwater or stormwater which may become contaminated through contact with contaminated soil or some other means shall be isolated while work is in progress. The water shall be tested prior to discharge to the stormwater system. In accordance with the CLSMP, if contaminant concentrations meet the 80% trigger level for protection of freshwater species in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality ("ANZECC") (2000), the water shall be allowed to be discharged to the stormwater system. In the absence of confirmatory testing, or if levels exceed the ANZECC criteria, the water shall be disposed to trade waste/sewer.

8.18 Should any unexpected contamination be found during the works, the appointed SQEP is to be consulted and is to advise on the best option for managing the affected material (including sampling and testing, if required), in accordance with the CLSMP.

8.19 All sampling, testing and analysis carried out in accordance with this consent shall be:

(a) undertaken or supervised by the SQEP; and

(b) in accordance with Contaminated Land Management Guidelines No.5, Ministry for the Environment, revised 2011.

8.20 The Consent Holder shall notify the Manager within 10 working days of identification of any contamination which was not identified in the reports submitted with the application, or subsequent investigations, including contaminated soil, surface water or groundwater. If the contamination is considered by the SQEP to pose significant environmental and/or health and safety issues, the Manager shall be notified immediately.

8.21 In the event that unexpected contaminated material is encountered, a further review of site procedures is to take place to ascertain if additional measures are required, and the SMP updated accordingly.

Post Works

8.22 With the exception of soils excavated as part of the underground tunnelling works, the Consent Holder shall submit to the Manager separate Excavation Summary Reports for each construction site identified as contaminated no later than three months after the completion of the earthworks at each site. The Reports shall be prepared in accordance with the Ministry for the Environment *Guidelines for Reporting on Contaminated Sites in New Zealand* (Revised 2011) and include:

(a) results of any soil and groundwater testing and imported material testing carried out to ensure compliance with the CLSMP;

(b) volumes of soil removed from the site and confirmed disposal location as well as disposal receipts; and

(c) reports of any non-compliance with the CLSMP procedures or complaints received while undertaking the works.

8.23 On completion of the excavation works in sites of identified contamination, the Consent Holder shall ensure that plant and equipment is cleaned and decontaminated in a controlled area of the site and that any residues are collected and properly disposed of.

9. <u>Coastal (Works)</u>
(applies to consents 40844, 40845, 40846 and 40849 only)

Duration

9.1 This permit shall expire on 28 November 2048 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

Pre-construction

9.2 Permanent structures in the CMA shall be designed as far as practicable to integrate with the immediately surrounding coastal environment.

9.3 The Consent Holder shall provide a minimum horizontal separation distance of 10 metres between the outside edge of the Central Interceptor tunnel and the nearest foundation of Tower 36 of the Henderson to Otahuhu A (HEN-OTA A) 220 kV transmission line.

9.4 At least 20 working days prior to commencement of any Project Stage involving works in the CMA, the Consent Holder shall submit detailed engineering designs and drawings of all related structures and specifications for the works approved by this consent to the Manager for approval. The scope of that approval process is to confirm that the works are generally in accordance with the information included in support of the application, in particular, the potential effects of the works.

9.5 In addition to details required under general Condition 1.8, the CMP for works in the CMA shall include confirmation of the following:

(a) details of all temporary structures in the CMA and their associated

(b) construction methodology including their expected duration of occupation;

(c) identification of all access points to the CMA and along the foreshore; and

(d) details of all practicable steps to be taken to minimise disturbance of the seabed during the construction activities.

9.6 A Site Restoration and Landscape Plan shall be prepared in consultation with the relevant Local Board and tangata whenua (as listed in the report referenced in Condition 1.1(a)), and submitted for the approval of the Manager, prior to commencement of works in the CMA at the PS23 (Frederick Street) site and the Emergency Pressure Relief Structure. Among other things, this plan shall include:

(a) methods for removal of the temporary construction platform at PS23; and

(b) measures, methodology and timetable for reinstating disturbed areas of the CMA and coastal margins.

9.7 Work in the CMA shall not commence until the Manager has provided written approval of the plans and details required under Conditions 9.4 – 9.6.

Works

9.8 The Consent Holder shall notify the Manager in writing of the proposed date of commencement of works in the CMA, at least 10 working days prior to the proposed start date.

9.9 The site shall be maintained in good order for the duration of the work, and all damage and disturbance to the foreshore caused by vehicle traffic, plant and equipment (or otherwise as part of the works) shall be remedied, to the satisfaction of the Manager.

9.10 The Consent Holder shall ensure that all reasonable steps are taken to minimise sediment loading and increased turbidity in the CMA due to the construction works. All erosion and sediment control measures used on site shall be in accordance with TP90.

9.11 The Manager shall be notified in writing of the expected date of completion of works in the CMA two weeks prior to the expected completion date.

Post-construction

9.12 Within one week following completion of the works, all damage and disturbance to the foreshore and seabed shall be remedied, and all equipment, surplus soil and construction materials removed from the CMA, to the satisfaction of the Manager.

9.13 A suitably qualified person shall provide confirmation in writing that the permanent works have been constructed in accordance with the detailed engineering designs and drawings submitted to the Manager under Condition 9.4. The written confirmation shall be submitted to the Manager within one month of the completion of works.

9.14 Within six months of the completion of works, a complete set of "as-built" plans shall be supplied to the Manager.

9.15 A copy of the "as-built" plans shall also be supplied to the Hydrographic Office (Chief Hydrographer, National Topo/Hydro Authority, Land Information New Zealand, Private Box 5501, Wellington) within six months of the completion of the works authorised by this consent.

Extent of Occupation

9.16 The right to occupy part of the CMA shall be limited to the area of the structures identified in the plans included in the application documents listed in General Condition 1.1 and Condition 9.4.

9.17 The Consent Holder may restrict public access to, and use of, any structures in the CMA authorised by this consent.

9.18 All structures permitted to occupy the CMA by this consent shall be maintained at all times in a good and sound condition.

10. <u>Coastal (Emergency Pressure Relief discharge)</u>
(applies to consent 40850)

Duration

10.1 This permit shall expire 35 years from the date of commencement unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

Management of Operation

10.2 The Consent Holder shall take all steps and necessary contingency measures to manage the operation of the Central Interceptor tunnel, the contributing wastewater network, and Mangere Pump Station to minimise the frequency and volume of any discharge from the Emergency Pressure Relief Structure to the CMA.

10.3 Prior to commissioning the Central Interceptor the consent holder shall provide a dedicated in situ power generation capability at the Mangere pump station sufficient to provide power supply to ensure uninterrupted operation of the pumps in the pump station in the event of loss of external power supply to the pump station, and shall provide to the Council an annual report detailing the results of maintenance and testing required to ensure that the generator is maintained in good working order.

10.4 A discharge from the Emergency Pressure Relief Structure shall only occur in the event of a failure of the Mangere pump station's ability to pump flows to the Mangere WWTP as a result of an extended period of loss of power supply to the pump station and exhaustion of all contingency measures.

10.5 As part of detailed design and prior to commissioning of the Central Interceptor, the Consent Holder shall prepare an Emergency Pressure Relief ("**EPR**") Discharge Management Plan, which shall be in accordance with the Wastewater Overflow

Regional Response Manual (May 2013) and any updates to this manual and the conditions of this consent, and should include:

(a) a summary of the key reasonable operational and contingency procedures the Consent Holder should follow to minimise the potential need for an EPR discharge, including a description of the operation of gates controlling tributary flows to the main tunnel and how they will be operated to limit inflows when the tunnel becomes full, including manual operation in the event of power supply or mechanical failure;

(b) a description of the how ongoing monitoring and recording of sewage/stormwater levels within the wet well of the new Mangere pump station will be carried out to allow recording and review of all discharges through the EPR, including assessment of duration and of discharge flow rates;

(c) the EPR Discharge Monitoring Plan required under Condition 10.9;

(d) the procedure for the rapid provision of signage and any other health warnings at potentially affected locations to warn the public of the potential public health risk. This should include at any other coastal foreshore areas that may also be affected by the discharge that may be accessed by the public for water recreation or shellfish collection purposes signage and include warnings in the language of ethnic groups that are known or can be expected to gather shellfish;

(e) a procedure for determining suitable locations for signage based on an estimate of the extent of marine waters and shellfish that may be affected by the mixing zone plume of the discharge depending on relevant variables that may apply, including relative tidal conditions and the duration and rate of the discharge; and

(f) provision for the clean-up and recovery of wastewater debris in the event that it is stranded on mudflats or beaches.

Prior to the commissioning of the Central Interceptor, the draft EPR Discharge Management Plan shall be provided to interested organisations with a direct and established interest in the Manukau Harbour for review and comment, providing at least one month for those organisations to comment. The Consent Holder shall prepare a response to those comments indicating the matters that are able to be implemented in the EPR Discharge Management Plan and how, and the matters that were not implemented and the reasons why. The Consent Holder shall circulate the response to organisations that commented on the draft EPR Discharge Management Plan. The EPR Discharge Management Plan shall then be finalised and submitted to the Manager for approval. The Consent Holder shall also provide the Manager with a list of the organisations provided with a copy of the draft EPR Discharge Management Plan, the comments received from those organisations, and the Consent Holder's response to those comments. The Consent Holder shall then comply with the approved EPR Discharge Management Plan.

10.6 The Consent Holder shall respond to discharge incidents from the Emergency Pressure Relief Structure in accordance with the EPR Discharge Management Plan.

10.7 The Consent Holder shall notify the Auckland Council Pollution Control Hotline and the Auckland Regional Public Health Service of a discharge from the EPR structure in accordance with the notification requirements set out in the Wastewater Overflow Regional Response Manual (May 2013). In addition, the Consent Holder shall provide Auckland Council and the Auckland Regional Public Health Service follow-up notification within six hours of a discharge commencing from the EPR structure, and shall include the following information in the follow-up notification:

(a) the duration and approximate discharge rate/s and approximate discharge volume (if known);

(b) an explanation of the cause of the discharge;

(c) the response time to attend to and resolve the discharge; and

(d) details of remedial actions undertaken.

The Consent Holder shall, at the same time, provide a copy of the follow-up notification to the interested groups that were invited to comment on the draft EPR Discharge Management Plan in condition 10.5.

10.8 Within one month of a discharge occurring from the EPR structure, the Consent Holder shall report the incident to the Manager and shall include the following information:

(a) a copy of the Incident Notification Report required by Condition 10.7;
(b) details on the extent of the discharge and an explanation of the cause of the discharge;
(c) details of the response measures taken and the time once the matter was fully resolved;
(d) monitoring undertaken, monitoring results and a date by which any outstanding monitoring results will be provided;
(e) details on the signage deployed and when the signage was or is proposed to be removed; and
(f) details of remedial actions taken and any measures still proposed to avoid, remedy or mitigate adverse effects of this or potential future EPR discharges, with an estimated timeframe for their completion.

The Consent Holder shall, at the same time, provide a copy of the report to the interested groups that were invited to comment on the draft EPR Discharge Management Plan in condition 10.5.

10.9 As part of the EPR Discharge Management Plan required under Condition 10.4, the Consent Holder shall prepare an EPR Discharge Monitoring Plan, which shall be in accordance with the conditions of this consent and shall include:

(a) The receiving environment water quality and shellfish monitoring sites, including representative control sites, and the monitoring procedures to establish background conditions and conditions immediately following the discharge and subsequent further monitoring;

(b) The collection of shellfish samples in the potentially affected receiving environment and from representative control sites. Samples shall be analysed for:

(i) Faecal coliforms (unless the shellfish are at a location that may be affected by treated WWTP wastewater quality); and

(ii) Other contaminants indicative of risks to public health;

(c) the collection of samples of marine water in the potentially affected receiving environment and from representative control sites. Samples shall be analysed for:

(i) Biochemical oxygen demand (BOD5) mgO/l

(ii) Total suspended solids (TSS) mg/l

(iii) Total nitrogen (TN) mgN/l

(iv) Ammonia nitrogen (NH3) mgN/l

(d) the collection of samples of marine sediments in the potentially affected receiving environment and from representative control sites. Samples shall be analysed for:

(i) Copper mg/kg

(ii) Lead mg/kg

(iii) Zinc mg/kg

(e) details on the timing for collecting samples. As a minimum, the samples shall be collected within 24 hours of the discharge and again approximately 72 hours after the discharge has ceased and shall be in accordance with the EPR Discharge Monitoring Plan. In the event of elevated contaminant levels in shellfish, which exceed levels in the control samples, the shellfish monitoring shall be repeated one month following the discharge.

Advice Note: *A suitable EPR discharge monitoring programme needs to take into account the particular aspects of the proposed discharge point, the untreated nature of the full wastewater flow and the anticipated relatively large scale but one-off short term nature of the EPR discharge. When developing the details of a receiving environment monitoring programme, the Consent Holder should have regard for the monitoring sites in the established receiving environment WWTP bypass monitoring programme, and in particular those sites deemed potentially affected by the WWTP bypass flows.*

10.10 The conditions of this consent may be reviewed by the Manager pursuant to Section 128 of the RMA, by the giving of notice pursuant to Section 129 of the RMA, in the year after a discharge event, in order:

(a) to vary the conditions in light of increased understanding of the pump station discharge system or further information, changed circumstances, or the results of monitoring; or

(b) to alter monitoring requirements in light of previous monitoring results and/or changed environmental conditions or circumstances; or

(c) to deal with any adverse effect on the environment which may arise from the exercise of the consent and which was not apparent at the time of the granting of the consent; or

(d) to require the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment resulting from the discharge; or

(e) to deal with any adverse effect on the environment arising or potentially arising from the exercise of this consent, through altering or providing specific performance standards; or

(f) to address any matter arising from the post-EPR incident report required by condition 10.8.

Advice Notes

AN.1 The Consent Holder shall obtain all other necessary consents and permits, including those under the Building Act 2004, and the Historic Places Trust Act 1993. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007), regulations, relevant Bylaws, and rules of law. This consent does not constitute building consent approval. Please check whether a building consent is required under the Building Act 2004. Please note that the approval of this resource consent, including consent conditions specified above, may affect a previously issued building consent for the same project, in which case a new building consent may be required. If not all resource consents have been applied for and the Council has not required these consents be sought as part of the consent applications for this proposal, it remains the responsibility of the Consent Holder to

obtain any and all necessary resource consents required under the relevant requirements of the RMA.

AN.2 The granting of this resource consent does not in any way allow the applicant to enter and construct drainage within neighbouring properties, without first obtaining the agreement of all owners and occupiers of said land to undertake the proposed works. Any negotiation or agreement is the full responsibility of the applicant, and is a private agreement that does not involve the Council. Should any disputes arise between the private parties, these are civil matters, which can be taken to independent mediation or disputes tribunal for resolution. It is recommended that the private agreement be legally documented to avoid disputes arising.

AN.3 Compliance with the consent conditions will be monitored by the Council in accordance with section 35(d) of the RMA. This will typically include site visits to verify compliance (or non compliance) and documentation (site notes and photographs) of the activity established under the Resource Consent. In order to recover actual and reasonable costs, inspections, in excess of those covered by the base fee paid, shall be charged at the relevant hourly rate applicable at the time.

Foodstuffs Pre-Condition Survey Recommendation

⊗ external survey only
● internal and external survey

11 August 2014

APPENDIX G - COUNCIL CORRESPONDENCE REGARDING DUNDALE AVE DEWATERING

Attachment 5: Correspondence from Iwi groups

From: Randy Leung <Randy.Leung@aucklandcouncil.govt.nz>
Sent: Friday, 5 March 2021 1:42 PM
To: XMeier (Xenia)
Cc: Sandra Edwards; Lean Phuah
Subject: RE: Discharge of groundwater

Hi Xenia,

Further to my email yesterday I understand Andrew had made contact with Lean already.

Therefore I can now confirm the proposed discharge of the Dundale Avenue shaft dewatering water can be accepted as proposed.

In addition, based on the same justification, Andrew recommended that similar discharges of the dewatering water from the other shaft sites in the same catchment be accepted, provided that no soil contamination above the Permitted Activity soil acceptance criteria, set out in the AUP(OP) is present or dewatering takes place at depth, isolated from the shallow potentially contaminated soils, and that the construction methodology is similar to that proposed at the Dundale Avenue shaft site.

Many thanks and have a great weekend.

Kia kaha, stay strong.

Ngā mihi | Kind Regards

Randy Leung | Senior Compliance Monitoring Officer | Licensing & Regulatory Compliance
Auckland Council | T: +64 (09) 353 9101 | M: 027 272 0302
Location: Level 1 | 35 Graham Street | CBD Auckland
Postal: Private Bag 92300 | Wellesley Street | Auckland | 1036
mailto: randy.leung@aucklandcouncil.govt.nz |

From: Randy Leung
Sent: Thursday, 4 March 2021 2:48 PM
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Sandra Edwards <sedwards@ga-jv.com>; Lean Phuah <LPhuah@tonkintaylor.co.nz>
Subject: RE: Discharge of groundwater

Kia ora Xenia,

Interesting video with the struggling eel!

Yes doing well at Level 3, hope we can go back down soon.

Anyway Andrew has reviewed Lean's letter and he advised he will give Lean a call (possibly today) regarding a few issues before making a recommendation for Council.

Many thanks.

Kia kaha, stay strong.

Ngā mihi | Kind Regards

Randy Leung | Senior Compliance Monitoring Officer | Licensing & Regulatory Compliance
Auckland Council | T: +64 (09) 353 9101 | M: 027 272 0302
Location: Level 1 | 35 Graham Street | CBD Auckland
Postal: Private Bag 92300 | Wellesley Street | Auckland | 1036
mailto: randy.leung@aucklandcouncil.govt.nz |

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Wednesday, 3 March 2021 2:49 PM
To: Randy Leung <Randy.Leung@aucklandcouncil.govt.nz>
Cc: Sandra Edwards <sedwards@ga-jv.com>; Lean Phuah <LPhuah@tonkintaylor.co.nz>
Subject: RE: Discharge of groundwater

Tēnā koe

I hope Level 3 is being kind to you! It was a pity not to catch up at the last inspection. I don't know if Blayn mentioned it but we spotted this (attached) as we were returning back to our (3) cars. A rare treat.

Have you had a chance to discuss the Dundale memo with Andrew? I do think it would be a good idea to get the two experts to talk it through kanohi ki te kanohi (but via Teams). Your thoughts?

Thanks! Xenia

From: Randy Leung <Randy.Leung@aucklandcouncil.govt.nz>
Sent: Monday, 22 February 2021 3:28 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Sandra Edwards <sedwards@ga-jv.com>
Subject: RE: Discharge of groundwater

CAUTION:External Email!
Thanks Xenia,

I have passed this to Andrew for review and confirm if a meeting is needed.

Will update you later this week.

Kia kaha, stay strong.

Ngā mihi | Kind Regards

Randy Leung | Senior Compliance Monitoring Officer | Licensing & Regulatory Compliance
Auckland Council | **T: +64 (09) 353 9101** | **M: 027 272 0302**
Location: Level 1 | 35 Graham Street | CBD Auckland
Postal: Private Bag 92300 | Wellesley Street | Auckland | 1036
mailto: randy.leung@aucklandcouncil.govt.nz |

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Monday, 22 February 2021 10:20 AM
To: Randy Leung <Randy.Leung@aucklandcouncil.govt.nz>
Cc: Sandra Edwards <sedwards@ga-jv.com>
Subject: Discharge of groundwater

Dear Randy

Re: Dundale Avenue dewatering

Dewatering at the Dundale Avenue shaft site commenced on 9 November 2020 during secant piling operations. While the site was not considered to be contaminated in line with Chapter E30, heavy metal concentrations were present on site. As a precautionary approach, samples of groundwater removed from within the piles were taken for comparison to ANZECC 80% freshwater guidelines. These results indicated that zinc and copper concentrations were slightly above ANZECC guidelines but well within acceptable discharge limits generally included in consent conditions (5 – 10x ANZECC 80% guidelines).

At this point we sought the advice of Lean Phuah, Discipline Director – Science and Principal Environmental Engineer at Tonkin and Taylor. She confirmed that, in her expert opinion:

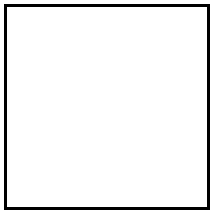
a) The site is no longer considered contaminated as asbestos had been removed during site establishment and metals concentrations were at or below the anticipated background concentrations as published by Auckland Council for Auckland soils and are not contaminated. Condition 8.17 does therefore not apply.
b) Discharge into the adjacent Whau Creek would be acceptable from an effects perspective.

She also recommended that the Contaminated Land Site Management Plan be updated to reflect this approach.

Can you please confirm this is acceptable to Council? I attach Lean's technical memo used as a basis of this request. As discussed, I'll send a meeting invite to discuss further for next week. Ngā mihi. Xenia

Xenia Meier | Environmental Manager – Central Interceptor

Watercare Services Limited
Mobile: 021 574 585
Customer service line: +64 9 442 2222
Postal address: Private Bag 92 521, Victoria Street West, Auckland 1142, New Zealand
Physical address: Eden Park - Gate F, Reimers Avenue, Kingsland, Auckland, New Zealand
Website: www.watercare.co.nz
Email: xenia.meier@water.co.nz



XMeier (Xenia)

From: TokiTaiao <tokitaiao@ngatiwhatuaorakei.com>
Sent: Wednesday, 24 February 2021 9:33 am
To: XMeier (Xenia)
Subject: RE: Central Interceptor - Western Springs Haul Road Update

CAUTION:External Email!

Mōrena Xenia,

Thank you for sending through this update and the presentation. We look forward to seeing the AEE and other application docs.

Ngā manākitanga,

Toki Taiao Team

Īmera: tokitaiao@ngatiwhatuaorakei.com

NGĀTI WHĀTUA ŌRĀKEI
WHAI MĀIA
230 Kupe Street, Ōrākei, Tāmaki Makaurau, 1071
PO Box 42 045, Ōrākei, Auckland, 1071
www.ngatiwhatuaorakei.com

Toi tū te whenua, toi tū te tangata, toi tū te mana o Ngāti Whātua ki runga o Tāmaki.
Everlasting land, everlasting people, everlasting the mana of Ngāti Whātua upon Tāmaki.

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Tuesday, 23 February 2021 1:04 pm
To: TokiTaiao <tokitaiao@ngatiwhatuaorakei.com>
Cc: Watercare Kaitiaki Communications <kaitiaki@water.co.nz>
Subject: Central Interceptor - Western Springs Haul Road Update

Tēnā koe

The application for a new access way at Western Springs is almost complete and I expect to be able to circulate the final draft to you in mid-March.

This application was on the agenda to discuss at our February hui and I attach the presentation I had prepared. The application will consist of:
An AEE
A Preliminary Site Investigation
A Stormwater Memo.

Consent is required for two matters: land disturbance associated with a HAIL site (although, sampling in the area has not identified elevated levels of contaminants) and discharge of runoff from the access way. The runoff will be directed to a new rain garden.

Any questions, please let me know. I will send a further update when I have an ETA for the application documents.

Ngā mihi. Xenia

Xenia Meier | Environmental Manager – Central Interceptor

Watercare Services Limited
Mobile: 021 574 585
Customer service line: +64 9 442 2222
Postal address: Private Bag 92 521, Victoria Street West, Auckland 1142, New Zealand
Physical address: Eden Park - Gate F, Reimers Avenue, Kingsland, Auckland, New Zealand
Website: www.watercare.co.nz
Email: xenia.meier@water.co.nz

XMeier (Xenia)

From: XMeier (Xenia)
Sent: Thursday, 22 April 2021 12:30 pm
To: Colin Hopkins
Cc: Mark Ross
Subject: LUC6037634: Western Springs accessway application

Kia ora Colin

As per the 22 April meeting minutes, "*Western Springs accessway: submitted on 21 April lodged on LUC60376346.* ***Application sent to Te Ākitai Waiohua, Ngāti Whātua Ōrākei and the project's Cultural Outcome Group. Geoff Cook provided comment and Xenia will forward the email to Colin****. Paul V confirmed this will go to Mark Ross*".

Please see below for communication of Geoff Cook (Ngāti Maru). He is a member of the project's CI Cultural Outcomes Group – a group of three from the wider Watercare Mana Whenua Kaitiaki Forum that support the CI project team with specialist advice particularly in the areas of consent compliance, new consent applications and social outcomes as well as reporting back to the Forum's Managers' Group.

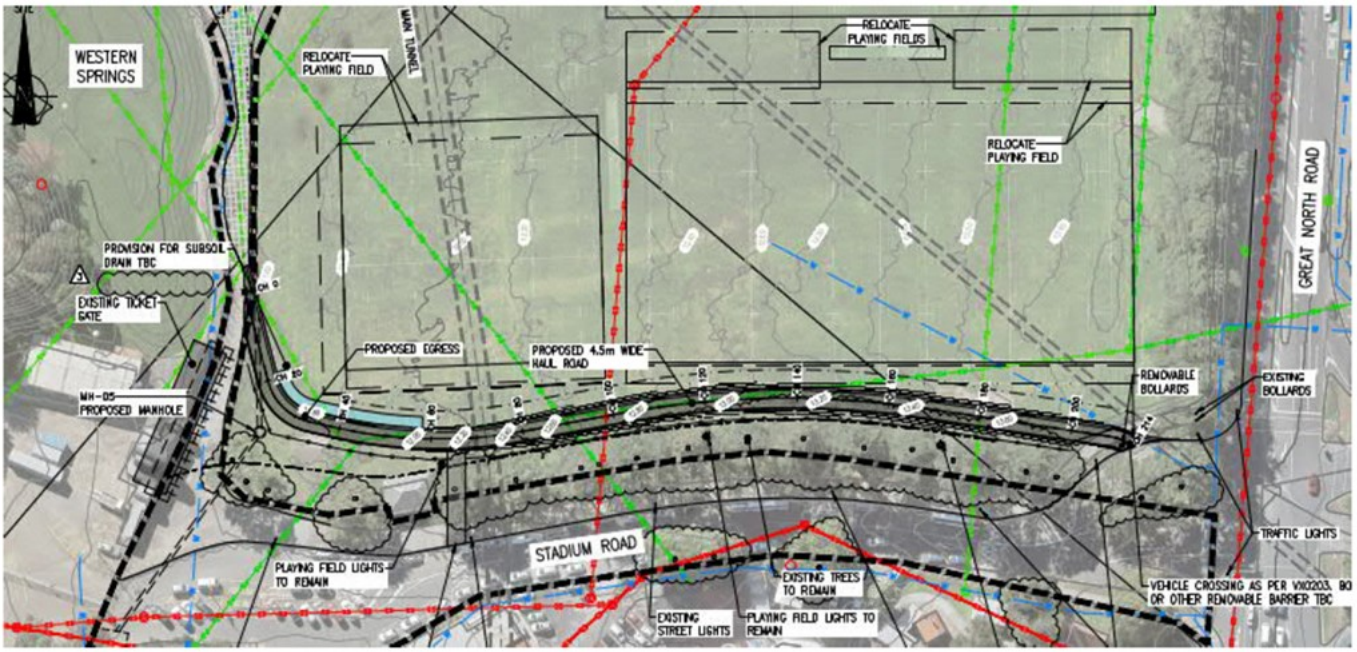
Ngā mihi. Xenia

From: geoff@ngatimaru.iwi.nz <geoff@ngatimaru.iwi.nz>
Sent: Wednesday, 21 April 2021 10:38 am
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: RE: Western Springs accessway application

Thanks for that Xenia
I have yet to read the documents, however if the outcomes in the long term are going to assist the Park and other facilities in the long term, good with me
Have great day
Regards
Geoff

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Tuesday, 20 April 2021 7:21 pm
To: geoff@ngatimaru.iwi.nz
Subject: RE: Western Springs accessway application

It runs parallel to Stadium Road as below and along the boundary of the playing fields. In the permanent case, it will be used for activities ancillary to the Stadium, which may include parking, but I'm not fully across their plans. It is not a matter for consent as activities that support the function of the Stadium are permitted.



From: geoff@ngatimaru.iwi.nz <geoff@ngatimaru.iwi.nz>
Sent: Tuesday, 20 April 2021 7:09 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: RE: Western Springs accessway application

CAUTION:External Email!
All good
Does the road encroach on the Park, and if not, can it be used in the future to assist parking?
Regards
Geoff

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Tuesday, 20 April 2021 6:57 pm
To: geoff@ngatimaru.iwi.nz
Subject: RE: Western Springs accessway application

Too true. Let me know if you just want to chat through it. There's not much to it really, it's just building a road.

From: geoff@ngatimaru.iwi.nz <geoff@ngatimaru.iwi.nz>
Sent: Tuesday, 20 April 2021 6:41 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: RE: Western Springs accessway application

CAUTION:External Email!
Thanks Xenia
Reading this will assist the cure of insomnia 😊
Regards
Geoff

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Tuesday, 20 April 2021 11:20 am
To: Tame TeRangi <Tame.TeRangi@ngatiwhatua.iwi.nz>; geoff@ngatimaru.iwi.nz; 'Gavin Anderson' <gavinanderson065@gmail.com>
Cc: Sandra Edwards <sedwards@ga-jv.com>; BChiam (Bernice) 1 <Bernice.Chiam@water.co.nz>
Subject: Western Springs accessway application

Kia ora koutou

The application for the Western Springs accessway is attached for your review. We are submitting it to Council this week (today hopefully).

Bests. Xenia

Xenia Meier | Environmental Manager – Central Interceptor

Watercare Services Limited
Mobile: 021 574 585
Customer service line: +64 9 442 2222
Postal address: Private Bag 92 521, Victoria Street West, Auckland 1142, New Zealand
Physical address: Eden Park - Gate F, Reimers Avenue, Kingsland, Auckland, New Zealand
Website: www.watercare.co.nz
Email: xenia.meier@water.co.nz

XMeier (Xenia)

Subject: FW: Western Springs - Final AEE

From: Jeff Lee <teteconsultancy@gmail.com>
Sent: Tuesday, 18 May 2021 6:58 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: Re: Western Springs - Final AEE

CAUTION:External Email!

Kia ora Xenia,
Just confirmed interest with AC so will be in touch .
Can you please send me s92 if issued yet ??

Ngaa Mihi
Jeff

On Tue, 20 Apr 2021 at 11:17 AM, XMeier (Xenia) <Xenia.Meier@water.co.nz> wrote:

> Kia ora Jeff
>
> Please see attached the application for the Western Springs haul road. This application is to authorise land disturbance associated with constructing the accessway (discretionary) and for the impervious surface to be managed via a rain garden (controlled).
>
> Please let me know if you have any queries or require a PO for your review.
>
> Bests. Xenia
>
> **Xenia Meier** | Environmental Manager – Central Interceptor
>
> **Watercare Services Limited**
>
> **Mobile:** 021 574 585
>
> **Customer service line:** +64 9 442 2222
>
> **Postal address:** Private Bag 92 521, Victoria Street West, Auckland 1142, New Zealand
>
> **Physical address:** Eden Park - Gate F, Reimers Avenue, Kingsland, Auckland, New Zealand
>
> **Website:** www.watercare.co.nz

Email: xenia.meier@water.co.nz

--

Ngaa Mihi Nui
Jeff Lee
Tete Consultancy
Mobile : 0272026158
Email : teteconsultancy@gmail.com

XMeier (Xenia)

Subject: FW: Western Springs haul road application: section 91 attached
Attachments: BUN60376317 - s92 and s37 letter.pdf

From: XMeier (Xenia)
Sent: Thursday, 3 June 2021 1:57 pm
To: Tame TeRangi <Tame.TeRangi@ngatiwhatua.iwi.nz>; geoff@ngatimaru.iwi.nz; gavinanderson065@gmail.com
Cc: RWaiwai (Richard) <Richard.Waiwai@water.co.nz>; BChiam (Bernice) 1 <Bernice.Chiam@water.co.nz>
Subject: Western Springs haul road application: section 91 attached

Kia ora koutou

I hope you are all well!

Please see attached the section 92 letter from Council for the Western Springs temporary haul road/permanent accessway.

I will circulate the response once it has been finalised.

Bests. Xenia

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Wednesday, 19 May 2021 8:20 am
To: Jeff Lee <teteconsultancy@gmail.com>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: RE: Info requests - TAWWTI-Weekly RC Lodged Applications for week ending 24 April 2021

CAUTION:External Email!
Cheers Jeff, understood.

Please find a copy of the s92, issued yesterday.

You'll note my query on iwi consultation in point 7.

MARK ROSS
CONSULTANT PLANNER
SENTINEL PLANNING
mark@sentinelplanning.co.nz
PH (09) 551 6205
MOB 021 619 282
WEB www.sentinelplanning.co.nz
123A Kitchener Road, Milford,
PO Box 33995, Takapuna 0740

From: Jeff Lee <teteconsultancy@gmail.com>
Sent: Wednesday, 19 May 2021 8:10 AM
To: Mark Ross <mark@sentinelplanning.co.nz>

Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: Re: Info requests - TAWWTI-Weekly RC Lodged Applications for week ending 24 April 2021

Arohamai Mark,
Will progress assessment with formal response to follow.
WC is aware of active interest (Xenia) so can you advise timings around when you require response by and please send s92 if issued already ??

Xenia unfortunately I was unable to get to this prelodgement .

Ngaa Mihi
Jeff

- DIS60376318 / DIS60376450 / LUC60376346 at 731 Great North Road Grey Lynn

--
Ngaa Mihi Nui
Jeff Lee
Tete Consultancy
Mobile : 0272026158
Email : teteconsultancy@gmail.com

XMeier (Xenia)

Subject: FW: Western Springs - Section 92
Attachments: BUN60376317 - s92 and s37 letter.pdf

From: XMeier (Xenia)
Sent: Friday, 4 June 2021 11:41 am
To: 'tokitaiao@ngatiwhatuaorakei.com' <tokitaiao@ngatiwhatuaorakei.com>
Subject: Western Springs - Section 92

Kia ora

Apologies for the delay. Please see attached the Council's section 92 request for this application. Our response will follow shortly.

Ngā mihi.

From: XMeier (Xenia)
Sent: Tuesday, 20 April 2021 11:16 am
To: tokitaiao@ngatiwhatuaorakei.com
Subject: Western Springs - Final AEE

Tēnā koe

Please see attached the application for the Western Springs haul road. This application is to authorise land disturbance associated with constructing the accessway (discretionary) and for the impervious surface to be managed via a rain garden (controlled).

Please let me know if you have any queries or require a PO for your review.

Bests. Xenia

Xenia Meier | Environmental Manager – Central Interceptor

Watercare Services Limited
Mobile: 021 574 585
Customer service line: +64 9 442 2222
Postal address: Private Bag 92 521, Victoria Street West, Auckland 1142, New Zealand
Physical address: Eden Park - Gate F, Reimers Avenue, Kingsland, Auckland, New Zealand
Website: www.watercare.co.nz
Email: xenia.meier@water.co.nz

XMeier (Xenia)

From: XMeier (Xenia)
Sent: Wednesday, 24 February 2021 2:41 pm
To: Tame TeRangi
Cc: BChiam (Bernice) 1
Subject: Western Springs haul road

Tēnā koe Tame

Further to the minutes of our Cultural Outcomes Group hui in January and February, I have provided the update below to Te Ākitai Waiohua and Ngāti Whātua Ōrākei, the other parties that have confirmed interest in the Western Springs haul road. For completeness, I provide you with the same update as Te Rūnanga o Ngāti Whātua has confirmed interest. This item will also be on the agenda for our March hui.

The application for a new access way at Western Springs is almost complete and I expect to be able to circulate the final draft to you in mid-March.

This application will consist of:
An AEE
A Preliminary Site Investigation
A Stormwater Memo.

Consent is required for two matters: land disturbance associated with a HAIL site (although, sampling in the area has not identified elevated levels of contaminants) and discharge of runoff from the access way. The runoff will be directed to a new rain garden.

Any questions, please let me know. Otherwise, I will provide a further update on 10 March.

Ngā mihi. Xenia

Xenia Meier | Environmental Manager – Central Interceptor

Watercare Services Limited
Mobile: 021 574 585
Customer service line: +64 9 442 2222
Postal address: Private Bag 92 521, Victoria Street West, Auckland 1142, New Zealand
Physical address: Eden Park - Gate F, Reimers Avenue, Kingsland, Auckland, New Zealand
Website: www.watercare.co.nz
Email: xenia.meier@water.co.nz

XMeier (Xenia)

From: XMeier (Xenia)
Sent: Friday, 23 April 2021 1:39 pm
To: Colin Hopkins
Cc: Mark Ross
Subject: LUC60376346 - 210323 Reply Western Springs access-way application

Kia ora ano Colin

As per my email yesterday, the application for the Western Springs accessway (LUC60376346) was sent to the members of our Cultural Outcomes Group.

Please see below for communication from Tame Te Rangi (Te Rūnanga o Ngāti Whātua). He is a member of the project's CI Cultural Outcomes Group – a group of three from the wider Watercare Mana Whenua Kaitiaki Forum that support the CI project team with specialist advice particularly in the areas of consent compliance, new consent applications and social outcomes as well as reporting back to the Forum's Managers' Group. Tame is also Chair of the Forum's Managers' Group.

Ngā mihi. Xenia

From: Tame TeRangi <Tame.TeRangi@ngatiwhatua.iwi.nz>
Sent: Friday, 23 April 2021 12:46 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>; geoff@ngatimaru.iwi.nz; 'Gavin Anderson' <gavinanderson065@gmail.com>
Cc: Sandra Edwards <sedwards@ga-jv.com>; BChiam (Bernice) 1 <Bernice.Chiam@water.co.nz>; Tame TeRangi <Tame.TeRangi@ngatiwhatua.iwi.nz>
Subject: 210323 Reply Western Springs access-way application

Tēnā ano koe e Xenia arā koutou katoa. Thanks for this email along with my apologies for this delayed response.

Western Springs Stadium Access-Way

In summary:

- Watercare proposes to construct a new access-way at the Western Springs Stadium, within the outer playing fields. The access-way will support the construction of the Central Interceptor [CI] project. In the long-term, it may be used for foot, vehicle / bicycle traffic or for any other purpose ancillary to Regional Facilities Auckland [RFA] who manage Western Springs Stadium;

- This Assessment of Effects on the Environment [AEE] supports the application for resource consent for construction of an access-way and its ongoing use to support the operation of Western Springs Stadium. Construction works associated with the CI project are underway along the project's alignment, with works due to commence at Western Springs Stadium within the next five years. The contamination, construction traffic, noise and sediment control measures required to support the works proposed in this application will be addressed through the existing environmental management plans approved as part of the wider CI project;

- Watercare is seeking resource consent for a discretionary activity under the Resource Management Act 1991 [RMA]. A regional resource consent is required for the discharge of contaminants to land, air or water and the discharge and diversion of stormwater [section 15] as a discretionary activity. A district resource consent is required as per the provisions of the National Environmental Standard for Assessing and

Managing Contaminants in Soil to Protect Human Health as a discretionary activity under Regulation 11 [section 9[3]]; and,

- The AEE includes a statutory assessment which confirms that the proposal is consistent with the relevant objectives and policies of the Auckland Unitary Plan: Operative in Part [AUP[OP]] that also meets the relevant statutory requirements of the RMA. Overall, the project will have positive effects on the environment. These are associated from the creation of a temporary access-way which will also provide for future use by RFA. The adverse effects generated are considered to be less than minor and can be adequately avoided, remedied or mitigated.

This response is provided in support of the application for resource consent for this component of the overall CI project. It is also provided on a pro-bono basis in support of the overall public good anticipated from the CI project. Trust that assists, Tame

---

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Tuesday, 20 April 2021 11:20 a.m.
To: Tame TeRangi <Tame.TeRangi@ngatiwhatua.iwi.nz>; geoff@ngatimaru.iwi.nz; 'Gavin Anderson' <gavinanderson065@gmail.com>
Cc: Sandra Edwards <sedwards@ga-jv.com>; BChiam (Bernice) 1 <Bernice.Chiam@water.co.nz>
Subject: Western Springs accessway application

Kia ora koutou

The application for the Western Springs accessway is attached for your review. We are submitting it to Council this week (today hopefully).

Bests. Xenia

Xenia Meier | Environmental Manager – Central Interceptor

Watercare Services Limited
Mobile: 021 574 585
Customer service line: +64 9 442 2222
Postal address: Private Bag 92 521, Victoria Street West, Auckland 1142, New Zealand
Physical address: Eden Park - Gate F, Reimers Avenue, Kingsland, Auckland, New Zealand
Website: www.watercare.co.nz
Email: xenia.meier@water.co.nz

XMeier (Xenia)

From: XMeier (Xenia)
Sent: Monday, 19 July 2021 9:09 am
To: Mark Ross
Cc: Colin Hopkins; PJones (Paul)
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - final draft of conditions - 16 July 2021
Attachments: BUN60376317 - Draft Conditions 19 July 2021.docx

Ngā mihi Mark.

I have amended as follows.

Condition 2 – changed lapse date to seven years as per our email discussion on 8 July

Condition 7 – removed "The excavation areas shall be dampened during the day to suppress the generation of dust during the works" as per our email discussion on 8 July

Condition 17(d) – added reference to condition 12 as requested

Condition 17(e) – my view remains that, as the regulator, it should be Auckland Council's responsibility to work with the landowner, not Watercare's so, while this is not an issue we would appeal, please note that this is not a condition we agree with.

Bests. Xenia

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Friday, 16 July 2021 5:23 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: Western Springs haul road application, 731 Great North Road - BUN60376317 - final draft of conditions - 16 July 2021

Hi Xenia

Apologies for the delay with this one.

Attached is the final set of conditions following consultation with the specialist contamination advisor.

In summary:

Condition 1 – stays as 'in accordance' not 'general accordance'. Reference to submitted plan removed.

Condition 3 – expiry period included.

Condition 7 – the AEE, section 8.3 states that the works will be undertaken in accordance with GD05. Accordingly, this condition as recommended is valid.

Condition 9 – condition amended as requested.

Condition 13 – NES requirement and consistent with other issued consents – condition remains.

Condition 16 – insertion accepted.

Condition 17 – rewording proposed generally accepted, but long term monitoring and management plan remains, noting that this is an 'if required' condition and that you would need to work with the landowner if this is necessary. This is not a unique or unusual circumstance. Can you please also complete the end of 17. d., because as worded, it doesn't make sense.

Any queries, please let me know.

Regards

MARK ROSS
CONSULTANT PLANNER
SENTINEL PLANNING
mark@sentinelplanning.co.nz
PH (09) 551 6205
MOB 021 619 282
WEB www.sentinelplanning.co.nz
121A Kitchener Road, Milford,
PO Box 33995, Takapuna 0740

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Thursday, July 8, 2021 8:10 AM
To: Mark Ross <mark@sentinelplanning.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

Morena Mark

Thanks for that. I see what you mean re. the long term monitoring and management plan. It is unlikely that one will be needed but it would be the landowner's responsibility to prepare one and the consent is in Watercare's name. If we are dependent on a third party to comply with our consent that is *ultra vires.*

It would still be a requirement under E30 so Auckland Unlimited would still be legally obliged to apply for a long term discharge consent once Watercare surrenders BUN60376317.

I think our responsibility would be to advise Auckland Unlimited that a management plan is required so we could add that Watercare is required to provide the Excavation Summary Report to the landowner (which we would do anyway).

Thanks. Xenia

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Thursday, 8 July 2021 5:58 am
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

CAUTION:External Email!
Comments in red

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Wednesday, July 7, 2021 5:37 PM
To: Mark Ross <mark@sentinelplanning.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

Ngā mihi Mark.

A couple of additional queries from me:

1. To confirm, we can have a longer lapse date? Yes, that's fine with me. I'll have to include a blurb on this in my report. Normally when an applicant wants a longer lapse date than 5 years, it is identified and assessed in the AEE.
2. Condition 6: if it is still required, is it possible to remove "The excavation areas shall be dampened during the day to suppress the generation of dust during the works"? This should be adequately addressed in condition 8/9 [**emphasis added**] "During soil disturbance works all necessary action shall be taken to prevent dust generation and **sufficient water shall be available to dampen exposed soil**"? Yes, that's fine.
3. I see what you mean about the long term monitoring and management plan. The way it was drafted, we would just need to address the requirement for it. I have changed the main paragraph to "include" (subject to specialist review) so we would have to write it. Could we redraft it to "Commentary on the requirement for a long term monitoring and management plan" if the specialist is OK with our suggested changes? I'm not comfortable with this, as if there is a need for one, as worded, this doesn't actually require it to be produced.

And, yes please, to avoid future confusion, can you please remove reference to the drawing 2011811.043? Yes, that's fine.

Much appreciated. Xenia

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Wednesday, 7 July 2021 4:21 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; PJones (Paul) <Paul.Jones@water.co.nz>; SSanjeshni (Shalini) <Shalini.Sanjeshni@water.co.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

CAUTION:External Email!
Hello Xenia

My response on your queries as attached.

Have sent it off to the contamination advisor to respond as per my comments.

Regards

MARK ROSS
CONSULTANT PLANNER
SENTINEL PLANNING
mark@sentinelplanning.co.nz
PH (09) 551 6205

MOB 021 619 282
WEB www.sentinelplanning.co.nz
123A Kitchener Road, Milford,
PO Box 33995, Takapuna 0740

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Wednesday, 7 July 2021 9:52 AM
To: Mark Ross <mark@sentinelplanning.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; PJones (Paul) <Paul.Jones@water.co.nz>; SSanjeshni (Shalini) <Shalini.Sanjeshni@water.co.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

Morena Mark

Please see our comments attached.

Happy to talk them through. It would be most helpful if the conditions could align with Central Interceptor's. Firstly, they are proven to appropriately manage effects. It also it makes it more efficient from a compliance perspective both for the Contractor and for Randy and the Council team.

Let me know if you want to schedule in a 15 – 30 min catchup. Thanks!

From: XMeier (Xenia)
Sent: Monday, 5 July 2021 3:35 pm
To: Mark Ross <mark@sentinelplanning.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

Confirmed. Thanks Mark.

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Monday, 5 July 2021 10:53 am
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

All good Xenia

Please confirm your agreement on a s37 to allow for this, as I think we are tight on timeframes.

MARK ROSS
CONSULTANT PLANNER
SENTINEL PLANNING
mark@sentinelplanning.co.nz
PH (09) 551 6205
MOB 021 619 282
WEB www.sentinelplanning.co.nz
123A Kitchener Road, Milford,
PO Box 33995, Takapuna 0740

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Monday, 5 July 2021 10:51 AM
To: Mark Ross <mark@sentinelplanning.co.nz>
Subject: RE: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

Thanks Mark. We will get back to you by C.o.B Wednesday.

Bests. Xenia

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Friday, 2 July 2021 12:25 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: Western Springs haul road application, 731 Great North Road - BUN60376317 - draft conditions

Hi Xenia

Please find attached the draft conditions for this one.

Please note that there are no stormwater conditions, as the application it deemed to be compliant with permitted activity Rule E8.4.1(A1). So this one is now for contamination only.

Any queries, please let me know.

Regards

MARK ROSS
CONSULTANT PLANNER
SENTINEL PLANNING
mark@sentinelplanning.co.nz
PH (09) 551 6205
MOB 021 619 282
WEB www.sentinelplanning.co.nz
123A Kitchener Road, Milford,
PO Box 33995, Takapuna 0740