

Lianne Darby

From: MWH Hazards Team <MWHHazardsTeam@stantec.com>
Sent: Friday, 19 May 2017 11:14 a.m.
To: Lianne Darby
Subject: RE: Balmoral subdivision 94 Holyhead Street SUB-2017-32

Hello Lianne

I see the reference to the earthworks volumes that you are referring to:

Earthworks will be required within the development site for the following purposes

1. To prepare the new public road (Lot 29) and access allotment (Lot 30) for construction of the proposed formations, and
2. To increase the depth of the detention pond to provide greater stormwater capacity, and
3. To raise ground levels through Lots 17 & 18, and potentially also through parts of Lots 12-16 to achieve heights that are well above the flood risk level in the event that the detention pond exceeds its design capacity.

The attached infrastructure plan illustrates the region which will be subject to the proposed earthworks.

The volume of topsoil expected to be stripped from the site is 4,400m³. This will be taken from an area of 11,000m² at an average depth of 400mm. This stripping will occur from the road and accessway alignments, the detention pond area, and the fill region through Lots 12-18. Approximately half of this topsoil volume is anticipated to be reinstated on-site once re-levelling has occurred. The remaining topsoil will be removed from the site to an approved location (yet to be confirmed).

Following topsoil stripping, cut-to-fill processes will occur in order to re-level the site so that it can better support building levels, access alignments, and stormwater management functions. These processes will involve removing day material from some areas and placing this material in other areas. The cut and fill volumes are intended to balance, meaning that all removed material will be reinstated on-site. Clay material will only be removed from the site except where this material proves to be unsuitable for reinstatement, or where a surplus of material remains once fill processes have been completed.

The total volume of clay material to be cut-to-fill within the development site is 6,600m³. This will occur over an area of 11,000m² (the same area as the topsoil stripping), and to an average depth of around 600mm. The greatest depth of cut-to-fill earthworks is expected to be in the order of 3.0m, at the northern end of the detention pond. All batter grades will be constructed to 2:1 (2 horizontal to 1 vertical) or flatter.

Of the total cut-to-fill volume, 4,800m³ is associated with increasing the capacity of the detention pond. The pond will be excavated to a level of 6.0m at its base, although no excavation will occur within the ORC protected stop bank corridor. The existing spill level, at which height water will pass from the pond onto Holyhead Street, is at 7.25m, thus the pond capacity can be measured using a water depth of 1.25m. The storage capacity of the pond has been calculated to be in excess of 4,000m³, which is consistent with the CPG infrastructure report (copy attached) that formed part of the earlier rezoning application. The lowest existing pond base level is 6.75m, so there will be a minimum excavation depth of 0.75m. The deepest excavation within the pond will be 3.0m, as noted above. The CPG report notes that ground water table to be located between 5.0 and 8.0m below ground level, so the proposed excavations will be well clear of that.

All fill placed within the new vacant residential sites shall be certified by a suitably qualified engineer to appropriate standards.

Earthworks consent is sought as part of this application.

It is anticipated that Council will install a condition of consent that requires a Stormwater Management Plan (SMP) to be supplied to council for approval prior to any earthworks construction starting on-site. It is anticipated that this SMP will include a full assessment of calculated stormwater flows (pre-development and post-development), detailed design plans of the earthworks shape and form as required to satisfy the calculated flows, and details of the proposed sediment control measures to be implemented through the construction phases of the development.

I appreciate that you require some specific commentary.

I note that all batter grades will be constructed to 2:1 (2 horizontal to 1 vertical) or flatter. This is a pragmatic construction and should not result in creation of any instabilities.

- Cut and fill batter slopes shall not exceed 2h:1v without specific engineering design.

The greater excavations appear to be in the order of 3.0m, at the northern end of the detention pond. At present there are no structures in the vicinity, and these slopes should not create any instability.

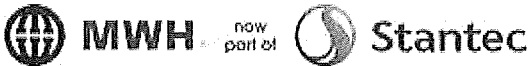
The greater concern is one of sufficient control of overland flows, and the ORC are better placed to comment on this.

In terms of the potential fill on site – I note that an average of 0.6m is proposed, but it is worth having controls in place where fill is intended to support structures.

- Any earth fill over 0.6m thick supporting foundations must be specified and supervised by a suitably qualified person in accordance with NZS 4431-1989 Code of Practice for Earthfill for Residential Development
- The extents and thickness of any un-engineered fill should be marked on an as-built plan for the information of future landowners

Thanks

Lee



Lee Paterson
Geotechnical Engineer

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Please visit www.stantec.com to learn more about how Stantec designs with community in mind.

From: Lianne Darby [mailto:Lianne.Darby@dcc.govt.nz]

Sent: Friday, 19 May 2017 8:38 a.m.

To: 'lee.m.paterson@nz.mwhglobal.com' <lee.m.paterson@nz.mwhglobal.com>; Heveldt, Paul
<Paul.Heveldt@stantec.com>

Subject: Balmoral subdivision 94 Holyhead Street SUB-2017-32

Hi Paul and Lee

Sorry to say I have real time pressures on this one. Could I have a response today please regarding the NES matters and any earthworks comments you might have, Lee.

Many thanks,

Lianne Darby
Planner, City Planning
Dunedin City Council

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9.5.2016

Dunedin City Council

Memo Regarding Contamination Issues for a Residential Sub-Division Consent Application at 94 Holyhead St, Outram

Background

The Dunedin City Council (DCC) has received a sub-division application from Paterson Pitts Group, on behalf of Balmoral Developments (Outram) Ltd, with respect to a two-stage development to create 25 residential sites, plus a number of additional land parcels for infrastructure and other purposes, on a 6.35 hectare site at 94 Holyhead St, Outram. MWH New Zealand Ltd has been requested by DCC to review the contamination issues associated with the proposal.

Historically the land has been used for horticultural activities. As such therefore the land has HAIL status by virtue of the strict interpretation of the current HAIL category A10 "Persistent pesticides bulk storage or use" and, possibly, other HAIL sub-categories under the general heading "A: Chemical manufacture, application and bulk storage". Given this supposed HAIL status of the land, the site would be subject to the requirements of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (the NES), specifically because sub-division of the land is proposed. The extent of soil disturbance inevitably associated with sub-division establishment may also invoke relevant NES requirements.

Regulation 5(9) of the NES allows that, if the concentrations of expected contaminants can be shown by a rigorous soil sampling and analysis regime (i.e. a Detailed Site Investigation) that meets the Ministry for the Environment's (MfE's) requirements for site investigations, to be at or less than background levels of the relevant contaminants in Otago soils the site will be considered not to be contaminated and the provisions of the NES will not apply.

A Preliminary Site Investigation (PSI), with soil sampling, has been carried out by Spiire as part of the sub-division application process and this has therefore been reviewed by MWH to assess its applicability, as per the discussion around levels of contamination referred to above.

Review of PSI

MWH has carried out a detailed review of the PSI prepared by Spiire as part of Balmoral's application for consent from DCC for sub-division (and other) activities. In our view the Spiire document is a good example of a thorough and well-reasoned PSI which reaches unequivocal evidence-based conclusions that are fully explained and supported.

The explanations of the derivation and application of Soil Guideline Values (SGVs) to composite soil sampling are clearly expounded and the conclusions are supported. The only slight query we had was with respect to the rather limited extent of sampling but we accept that the level of sampling is in fact all that is necessary in this PSI, where the emphasis is on the word "Preliminary" given that it seeks, alongside other evidence as to historical land use in particular, to indicate whether more comprehensive sampling would lead to any other conclusions than those reached. We accept Spiire's contention to this effect that the results, coupled with other evidence, lead to the conclusion that no additional sampling is necessary.

We note also Spiire's conclusion that "market gardening in itself is not a HAIL activity". We strongly agree with this statement and retain the hope (which we believe Spiire would agree with) that the current revision of the HAIL being undertaken by the MfE will result in a far more pragmatic approach to the potentially contaminating aspects of various types of land use that are far less "broad brush" and all-encapsulating than the current overly conservative listings and descriptions.

The PSI concludes, correctly, that based on the information obtained it is "highly unlikely" that there will be a risk to human health if the proposed sub-division activity to create residential lots is undertaken on the subject land.

MWH suggests that it could also be cogently argued that, as shown by the (admittedly limited) soil sampling and analysis undertaken that levels of expected contaminants are at or below background concentrations in Otago soils. Under that scenario regulation 5(9) of the NES would be invoked and the NES provisions related to sub-division (and also soil disturbance) would not apply. However, applying the strict requirements of reg 5(9) a Detailed Site Investigation (DSI) is required (rather than a PSI, as in this case).

Conclusion

The PSI prepared by Spiire to support the application is well reasoned and supported by detailed and appropriate evidence, to the extent that the conclusions reached with respect to the non-HAIL status of the site are conclusively established.



Paul Heveldt
Senior Environmental Specialist
MWH New Zealand Ltd

CONTAMINATED LAND INVESTIGATION - ASSESSMENT FORM

Reviewer: Simon Beardmore, Senior Environmental Officer

Date: 5/05/2017

1 REPORT DETAILS

Report Title:

Balmoral Developments Limited
Preliminary Site Investigation Report
94 Holyhead Street Outram

Date Produced:

24 January 2013

Report Author:

Mona Wells, Spiire

SQEP Sign-off:

Phillip Ware, Spiire

Date Received:

2/05/2017

Objective Reference:

A1000761

2 PROPERTY INFORMATION

Current Owner:

Balmoral Developments (Outram) Ltd

Legal Description(s)

Lot 2 DP 20759

Territorial Authority:

DCC

Relevant ORC Consents:

Number	Purpose	Status
-	-	-

3 ENVIRONMENTAL SITE ASSESSMENT SUMMARY

3.1. HAIL land uses

Land Uses (from HAIL)

HAIL ID	Hazardous Activity	Activity Duration		Area (m ²)
		Period From	Period To	
A10	Persistent pesticide bulk storage or use, including sport turfs, market gardens, orchards, glasshouses or spray sheds	1940	2004	63,000

Comments:

Market gardening has occurred on site from approximately 1940 to 2004. It is more likely than not that persistent pesticides have been used for some portion of that time frame. Limited sampling from the PSI has also detected relatively low level DDT residues, which further supports this conclusion.

Adjacent Sites (within 100 m): None

SITE NUMBER	HAIL ID	HAIL Activity	Distance	Direction

3.2 Sampling and analysis

Investigation purpose:	Preliminary sampling as part of PSI	Investigation location:	4 locations within property
Was sampling methodology appropriate:	☐ Yes ☒ No	Was laboratory analysis appropriate? (including holding times, types of analysis)	☒ Yes ☐ No
☐ Suite of metals ☐ Total petroleum hydrocarbons ☐ PAH ☐ BTEX ☐ Organochlorine pesticides	Comments: Four samples were collected from across the site, and composited in one sample for analysis. This sample was analysed for heavy metals and pesticides. All results were below the applicable adjusted soil guideline values except for arsenic. Analysis of individual samples for arsenic confirmed that no sub-sample exceeded the residential soil contaminant standard.		



94 Holyhead Street

☐ Asbestos ☐ Other:	Of the pesticides analysed, only DDT and its breakdown products were detected. Due to the limited number of samples collected, and compositing, which is adequate for a preliminary assessment of the wider property, it is not possible to establish a contamination status for the site. The preliminary analysis does not provide any assessment of the potential hotspots which could include the glasshouses, spray sheds or mixing areas.		
Was contaminated material removed from the site? ☐ YES ☒ NO			
Type:	Volume:	Disposal location	Transport or disposal ☐ Yes documentation provided? ☐ No

4 POTENTIAL RECEPTORS

Human Health

Current Land Use:	Rural residential / production land	Pathways complete? ☐ Yes ☐ No ☒ Unknown
Current Surface Cover:	Unpaved	
Proposed Land Use:	Residential (10%)	
Proposed Surface Cover:	Unpaved	
Soil Type(s):	Literature review states 'sandy loam'	

Ecology

Nearest Surface Water:	Taieri River	Distance (m): 100m	Pathway complete? ☐ Yes ☐ No ☒ Unknown
Surface Water Use:	Stock, Irrigation		Pathway complete? ☐ Yes ☐ No ☒ Unknown
Depth to Groundwater:	3-8m		
Groundwater Flow Direction:	SW		
Aquifer type:	Confined, however site located in GW protection zone.		Pathway complete? ☐ Yes ☐ No ☒ Unknown
Groundwater Used:	☒ Yes ☐ No		
On-site Eco-receptors critical?	☐ Yes ☒ No		Pathway complete? ☐ Yes ☐ No ☒ Unknown

5 SITE CONT

6 AMINATION CLASSIFICATION

Conclusions:

Based on the extensive history of market gardening over a period of 60 years, it is more likely than not that persistent pesticides have been used and/or stored on the site. The low-level detection of DDT and its residues further supports this assessment. As a result, the site is listed as a 'Verified HAI' site.

The limited sampling within the PSI is not sufficient to determine a contamination status for the property. The four samples taken may not be representative of the disposition of all soils on site. The pattern of market gardening seen in the 2003 Google Earth image shows many different cultivated areas, which can be subject to different spray regimes. It also show two additional glasshouses, buildings, now removed on the northern edge of the site. The site investigation did not target any of the potential hot-spots which may be expected at the site, such as glasshouses, spray sheds or mixing areas.



Site number:

HAIL.01453.01

Site name:

94 Holyhead Street

Proposed
HAIL Status:

Verified HAIL

Proposed
Contamination
Status:

Partially Investigated




Simon Beardmore
Senior Environmental Officer

Disclaimer

The above decision was based on the information contained in council files and reflects the Regional Council's understanding of the contaminants associated with the site detailed reports received on this date. The Regional Council accepts no liability for any inaccuracy in, or omission from, information provided to it by the land owner or any other party associated with the above mentioned site, or for any information provided by the land owner or any other party associated with the above mentioned site after the date on which the above decision was made.

Our Ref: A1000759 File No: fA65542

Lianne Darby

From: Heveldt, Paul <Paul.Heveldt@stantec.com>
Sent: Friday, 19 May 2017 09:52 a.m.
To: Lianne Darby
Cc: 'lee.m.paterson@nz.mwhglobal.com'; MWH Hazards Team
Subject: RE: 94 Holyhead Street - ORC report

Hi Lianne

The ORC conclusions are very conservative. The levels of DDT and its decomposition products are very low, although non-zero. Clearly DDT has been used on the site but, tellingly, no other pesticides tested for showed levels above the limits of detection. If other persistent pesticides were used they would have been detected in the same way that DDT residues have been – in other words, while indeed “hot spots” may have been missed by the limited sampling, the ubiquitous use of other persistent pesticides would have shown up as non-zero levels in the samples composited, in the same way that DDT has. In my view the evidence does not lead to the conclusion that persistent pesticides use at the site has occurred, other than some application of DDT.

It is of interest that the land was pasture land prior to 1940. DDT was used for grass grub control from the 1920s and the low levels found may relate historically to that use, rather than for market gardening purposes. This suggestion is reinforced by the fact that no other persistent pesticide residues have been detected.

Are there likely to be hot spots of DDT on the site that have not been detected by the limited sampling? I think not because DDT was not used in a manner that would generate hot spots from mixing or similar use of concentrated base material. DDT was applied as so-called “prills” (small spheres) that were typically spread from a hopper. Spillage from loading the hopper could conceivably have occurred however but the probability of this is low.

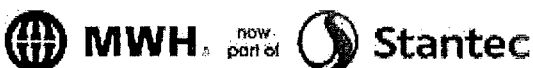
The other factor that has not been considered by the ORC is the site history section of the PSI where the information provided by the current owner, Neville Ferguson is summarised. While this is not conclusive evidence that pesticides were not used it does merit being taken into account.

I agree with Spiire’s conclusion that “the site has been investigated as a potential HAIL site, with negative findings as to same.” However I also note that Spiire has been less certain over whether or not the NES should apply given that, in their view, “the actual HAIL activity of persistent pesticide storage and use is **unlikely**”. [My emphasis added]

From DCC’s perspective I think a consent is required under the NES for the proposed subdivision of the land. Given that a DSI does not exist for the land such a consent would attract discretionary status. However I do not believe any onerous conditions will be necessary on the consent because I agree with Spiire’s contention that the subdivision of this land presents a low risk to human health and the site is “currently suitable for residential living, inclusive of consumption of up to 10% of dietary produce from produce grown on site”.

Regards

Paul



Paul Heveldt Ph D
 National Environmental Science Specialist

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4.7.2017

Comment on a Further Subdivision Consent for Land at 94 Holyhead St, Outram

DCC has received a further subdivision consent application in relation to land at the above address in Outram. Stantec New Zealand Ltd (Stantec; formerly MWH) has considered the contamination aspects of the application which is for a 15-lot subdivision consent (SUB-2017-49) associated with this land.

The area to be subdivided is essentially the second half of a larger area of land for which a similar subdivision application for a 25-lot subdivision was considered, commented on and ultimately was granted in early May 2017 (SUB-2017-32).

In both instances the contamination issues associated with the applications are underpinned by a Preliminary Site Investigation report prepared for the combined 6.3 hectare total site at 94 Holyhead St. Stantec has previously commented favourably on the adequacy and coverage of this PSI (prepared by Spiire Consultants) in a memo sent to DCC on 19 May 2017.

The comments made in that memo are equally applicable to this application that relates to the adjacent other section of the total 6.3 hectare site.

In particular, as suggested in the body of the application prepared by Paterson Pitts, a condition relating to the requirement for the preparation of a Soil Management Plan, with this to be reviewed and signed off as acceptable by DCC, would be an important requirement. The wording suggested for this condition on pg 35 of the application document (item (g)) is endorsed as appropriate.



Paul Heveldt
National Environmental Science Specialist
Stantec New Zealand Ltd

Lianne Darby

From: Heveldt, Paul <Paul.Heveldt@stantec.com>
Sent: Tuesday, 10 October 2017 11:34 a.m.
To: Lianne Darby
Cc: Paterson, Lee
Subject: RE: 94 Holyhead Street SUB2017-49

Hi Lianne

When the Spiire PSI report and its findings/conclusions are combined with the work done by EC Otago in their so-called "Assessment Report" we end up with a compendium of site information that does indeed meet the criteria of a Detailed Site Investigation.

It does not however formally meet some of the DSI criteria set by the Ministry for the Environment in the Contaminated Land Management Guidelines No 1 and No 5 – for example, it is not signed off by a Suitable Qualified and Experienced Practitioner (a SQEP).

On the other hand, the combined Spiire PSI and EC Otago Assessment Report documents do have the following matters covered off (copied from the CMLG No 1):

[The DSI] should give comprehensive information on:

- issues raised in the preliminary inspection
- the type, extent and level of contamination anticipated
- the nature of samples collected and the sampling procedures followed, including quality assurance / quality control requirements
- the analyses undertaken, methodologies used and laboratory quality assurance / quality control procedures.

The site investigation report should also assess:

- the actual extent and concentrations of contaminants in all appropriate media at the site
- any likely dispersal in air, surface water, groundwater, soil and dust from the detected contaminants
- where applicable, the location and magnitude of any on-site or off-site impacts on soil, water, sediment and biota
- any potential effects of contaminants on public health, the environment and structures
- the adequacy and completeness of all information used in decisions on remedial options
- if clean-up, management or ongoing monitoring is intended at the site.

Any investigation undertaken should comply with Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Revised 2011) (Ministry for the Environment, 2004).

The results of chemical analysis of the soil sampled are to be compared with appropriate soil contaminant standards or soil guideline values. Soil contaminant standards have been derived for a group of priority contaminants and a set of scenarios that are legally binding as gazetted under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

Where soil contaminant standards are not applicable, soil guideline values may be derived in accordance with the methods and guidance on site-specific risk assessment provided in the Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (Ministry for the Environment, 2011a).

Alternatively, generic soil guideline values (such as those in the industry-based guidelines published by the Ministry for the Environment) may be applied. The assumptions on which those guidelines are based must be shown to apply to the site and surrounding conditions under investigation.

Each of these matters, as and where actually relevant, is dealt with via a combination of the two reports. The formal omission of a SQEP sign-off and similar matters don't in fact apply given that the two

reports have been combined to accumulate the necessary information to make informed and realistic judgements on the site, and on the extent and relevance of contamination encountered. Neither on its own is a DSI so a SQEP cannot provide sign-off of one or other of the contributing reports.

Taken over all the DSI criteria are comprehensively met by the combination of these two reports. Thus the disturbance of site soils may indeed be deemed to be a controlled activity under the NES (even though a stand-alone DSI is absent) and the subdivision and change of use can each be considered to be permitted activities.

This is an example of a situation where strict adherence to the NES would potentially make the Council seem to be unnecessarily bureaucratic and I believe common sense must prevail. I would also note that we are in no way setting a precedent or lower standard by taking this approach because all the evidence from a DSI is present – it is not just present in a single document.

Regards

Paul

From: Lianne Darby [mailto:Lianne.Darby@dcc.govt.nz]
Sent: Tuesday, 10 October 2017 9:15 a.m.
To: Heveldt, Paul <Paul.Heveldt@stantec.com>
Cc: 'lee.m.paterson@nz.mwhglobal.com' <lee.m.paterson@nz.mwhglobal.com>
Subject: 94 Holyhead Street SUB2017-49

Hi Paul

The applicant has submitted this report by EC Otago Ltd to supplement the Spiire report of 2013. It basically confirms the previous conclusions about contamination.

The question I have is:

Does this report plus the Spiire PSI of 2013 fulfil the requirements of a DSI and therefore the disturbance of soils is a controlled activity under the NES; and the subdivision/change in use is a permitted activity?; or

Is consent still required as a discretionary activity?

Regards

Lianne

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