

THE RESOURCE MANAGEMENT ACT 1991

BEFORE

Environment Canterbury

IN THE MATTER OF

Variation 6 to the Proposed
Natural Resources Regional Plan

EVIDENCE OF

Kim M Seaton, BA, MRRP,
MNZPI

ON BEHALF OF

The Isaac Wildlife Trust
The Diana Isaac Conservation Trust
(42, F122)
Fulton Hogan Ltd (7, F105)
The Isaac Construction Co Ltd (39,
F122)
Winstone Aggregates (32, F107)
KB Contracting and Quarrying Ltd
(40)
Road Metals Co. Ltd (3)
Christchurch Ready Mix Concrete
Ltd (19)

DATE

13 April 2010

INTRODUCTION

1. My name is Kim Seaton and I am an Associate and Senior Resource Planner in the firm of Davie, Lovell-Smith Limited, Consulting Planners, Surveyors and Engineers of Christchurch. I hold a Masters of Regional and Resource Planning and am a full member of the New Zealand Planning Institute. I have over fifteen years planning experience in local and central government, research and consulting.
2. I have been asked to provide evidence on behalf of The Isaac Wildlife Trust, The Diana Isaac Conservation Trust, The Isaac Construction Company Ltd, Winstone Aggregates, KB Contracting and Quarrying Ltd, Road Metals Co. Ltd and Christchurch Ready Mix Concrete Ltd (“the Quarry Operators”).

BACKGROUND

3. Collectively, the Quarry Operators represent in excess of 90% of quarry operations undertaken within the Greater Christchurch area. The vast majority, if not all, of the land-based operations are currently occurring within the Groundwater Protection Zone and have done so for decades.
4. As noted in the Twelfth Knight Consulting December 2009 report (supplied by Mr McCallum), the existing allocated gravel resource within Christchurch City is dwindling and is expected to be exhausted by approximately 2024. Reliable, good quality and economically viable supplies of aggregate are critical to the growth of the region’s economy. Aggregate is needed both to maintain existing infrastructure and buildings and to allow for future growth and construction. Yet economically viable gravel resources, both from dry-land and river sources, are in short supply in Canterbury.
5. The process for achieving zoning and resource consent for new quarries is challenging and the outcome is often uncertain. Matters that need to be considered when looking for suitable quarry areas include the availability and suitability of aggregate resource, the location of residential dwellings and other sensitive receivers (noise, dust, landscape, visual, traffic,

amenity and reverse sensitivity effects), groundwater levels and ponding (bird strike issues) and potential flood hazard. Appropriate locations also need to demonstrate that through location, topography, soil structure, hydrology and mitigation measures that there will not be an increased risk of adverse effects on groundwater quality. All of these issues render finding new quarry sites a sensitive and difficult exercise.

6. Assuming that suitable sites can be found that meet all these criteria, a plan change process then needs to be undertaken. Plan changes to provide for new quarry zones, including expansion of existing quarries, could be expected to take between two and five years to progress from investigation to operative, depending on the complexity of the change, level of opposition presented and whether the decisions are appealed.
7. The alternative to establishing new or expanded quarry zones through plan change is to obtain resource consent. Generally, quarrying activity in rural zones in Christchurch City is a non-complying activity and in Selwyn District is a discretionary activity by virtue of the amount of material that is excavated annually. Obtaining resource consent for non-complying activities, although often less time-consuming than a plan change, is nevertheless a major undertaking in terms of both cost and time and its outcome is by no means guaranteed.
8. A further difficulty in obtaining resource consent is the public perception of quarries, which is almost entirely negative. There is little understanding amongst the general public of the vital role mineral extraction has in the economy. Rather, the focus tends very much to be on the potential adverse effects of quarries such as noise, dust and heavy vehicle traffic. Whilst these concerns are understandable, they do create a further obstacle to obtaining resource consent for new quarry sites. The lead in time until quarrying can be undertaken in a new or expanded quarry can therefore be very long.
9. The long length of time before a new quarry can become established in a new zone or through resource consent is further exacerbated by the additional lead-in time needed to establish the infrastructure of the quarry. There is also a considerable amount of capital

investment required to establish a new quarry, as opposed to expanding an existing quarry where much of the plant and infrastructure is already in place.

10. For all of the reasons listed above and without even delving into the economics of distant sources of gravel, it cannot be assumed that simply because gravel is present outside the Groundwater Protection Zone, that it is therefore available and suitable for quarrying. The resource is not as freely available as the Officer's Report suggests it might be.

REFORMATTED POLICIES: GENERAL COMMENT

11. Whilst appreciating the Officer's intention to clarify the policies through reformatting, the reformatted policies contain considerable repetition, not just between policies but to some extent also within policies. My comments and recommendations below are focused on two particular reformatted policies, being new Policy WQL13 (Zone 1) and new Policy WQL15 (Zone 1B). Where amendments to the policies are requested, such amendments should similarly be applied to other policies with the same text.

REFORMATTED POLICY WQL13: ACTIVITIES IN CHRISTCHURCH GROUNDWATER PROTECTION ZONE 1

12. Comprehensive evidence has been presented by Mr Peter Callander on the issue of the vulnerability of the unconfined aquifer to groundwater contamination. He has concluded that the Officer's view of potential risks to the unconfined aquifer from contaminants is not supported by the evidence of several decades of quarrying activities in Zone 1B, or of other land use activities over other parts of the unconfined aquifer. He further concludes that provided future development in the Groundwater Protection Zone is well managed, it can occur without jeopardising the quality of the Christchurch water supply.
13. I accept Mr Callander's expert opinion on these issues and make the following comments on the basis of that opinion. My comments are also based on there being a clear distinction between quarrying as opposed to the inappropriate use of quarry pits after the quarrying has been completed. For example, the use of quarry pits for municipal or industrial waste

disposal is clearly inappropriate, but is in no way related to the quarrying activity. Furthermore, there can be very appropriate and low risk activities on quarried land after the gravel extraction process has been completed.

14. First paragraph. For the reasons outlined in Mr Callander's evidence, including the lack of historical evidence that quarrying has adversely affected the Christchurch water supply and the much improved management practices of modern quarries, the reference to avoidance of effects is unnecessarily restrictive and should be amended to allow for appropriate mitigation of adverse effects.
15. Clause (2) requires the use of "all" practicable management measures to minimise effects. However the use of all measures may lead to cumbersome management of site activities. A more sensible approach might be to use "best practicable" measures. Similar references occur elsewhere in the policy wording.
16. Clause (4). I understand from the Officer's Report that the reformatted policies are just that, a reformat of existing policies 13-21, inclusive of changes recommended to policies 13-21. However I cannot find the text contained in reformatted Policy WQL13(4) anywhere in existing policies 13-21. There appears to be no basis for the inclusion of clause (4). Further, the reference to '*...large quantities of hazardous substances in excess of those set out in (6) below*' is somewhat nonsensical as clause (6) simply states that large quantities of hazardous substances must not be aggregated on site. Clause (4) should be deleted in its entirety.
17. Clause (6). Mr Callander has stated that given that hazardous substances are well controlled and regulated through HSNO controls and industry codes of practice, the Officer's recommendation to make large quantities of hazardous substances a non-complying activity has no basis and is very restrictive. I accept his opinion and note that provided the best management practices outlined in clause 6(b) are implemented, the risks of groundwater contamination should be minimised. I also note that on some occasions, for example where two old medium sized tanks exist, it may be preferable from the perspective of minimising

groundwater contamination risks to replace them with a single new large tank. Clause 6 as it currently reads could discourage that occurring.

18. Clause (10). The first sentence of clause (10) is essentially a repetition of paragraph 1 and as such is unnecessary. The phrase “*avoiding if possible mineral extraction activities*” is inappropriate for two reasons. Firstly, Mr Callander has stated that mineral extraction activities do not pose a large risk of contaminants entering and persisting in the groundwater and that with good management, quarrying can occur over the unconfined aquifer without jeopardising the quality of the Christchurch water supply. Accepting Mr Callander’s expert opinion that there is not sufficient scientific justification for a policy of complete avoidance of quarry activity in Groundwater Protection Zone 1, the statement of “avoiding if possible mineral extraction activities” is inappropriate. Secondly, the phrase would create a virtually insurmountable policy hurdle for resource consent applications for new quarry sites in Zone 1. Any applicant would be required to prove that there is no other site that could possibly be used for mineral extraction activities. The practicality and cost of providing such proof would be prohibitive. The phrase is therefore without justification, is unnecessary and should be deleted.
19. Clause (11). There is a very high likelihood that quarry operators will seek to establish new quarry sites in Groundwater Protection Zone 1 in future, for the many reasons outlined in the Quarry Operators evidence today. I therefore agree that it is appropriate to provide some policy guidance for the consideration of new quarry sites.
20. Clause (11)(a). I have several issues with this clause. Firstly, it appears to confuse working quarry sites with the rehabilitation phase. It is unclear what is meant by “an impermeable liner”, that is does the Officer mean a clay lining or some form of rubber? In either case, an impermeable liner is only installed during the rehabilitation phase and it is not appropriate in all cases. For example, the Isaac quarry at McLeans Island is to be rehabilitated with a mix of grass and tree plantings for long term use as non-intensive grazing, indigenous forest and recreational use within a Conservation Park setting. Access to groundwater is needed for the trees to grow and in this context an impermeable liner would be unnecessary, inappropriate and, in the case of rubber liners, very expensive to install. I am also unclear

what is meant by “a containment bund”. Bunds are required for stored hazardous substances, but this is covered under other provisions. Bunds for mitigating potential visual, noise and dust nuisance are often required by territorial authorities, but this is not a matter that is related to protecting groundwater quality. The requirement to maintain an appropriate depth between excavations and groundwater is not supported by strong evidence of likely contamination risks, as discussed by Mr Callander.

21. Clause 11(b). As noted in Mr Callander’s evidence, the clause as worded at present is impractical and unrealistic for quarrying, which is an activity that involves machinery powered by hydrocarbons. Therefore, the clause would benefit from some rewording to make it more reasonable by referring to best management practices and minimising the increase in risk.
22. Clauses 11(c-d). These clauses are reasonable and are supported.
23. Clause 11(e). The requirement to cleanfill in accordance with established guidelines is supported. I note however that the Quarry Operators currently operate in accordance with the Christchurch City Cleanfill Licensing Bylaw 2008. I understand that there are some small differences between the provisions of the Bylaw and the MfE guidelines. It would be helpful if clause 11(e) were to also refer to any territorial authority cleanfill bylaws. I understand Selwyn District does not have such a bylaw currently.
24. Clause 11(f). Provided that cleanfill is utilised as backfill then the reference to avoiding adverse effects on groundwater in clause (f) is redundant and causes unnecessary duplication and potential confusion. The key point in clause (f) relates to contouring of the backfill to avoid surface ponding, and that is all that the clause needs to deal with.
25. Clause 11(g). The clause as worded is confusing. Increased risk compared to what? If the land is un-grazed or lightly grazed pasture before hand, anything other than the same activity may present a relative increase in risk, albeit the risk may still be minimal and entirely manageable. On the other hand if the former use of the land was intensive pig

farming, it might be preferable for a less intensive activity to occur following rehabilitation and that may even include an urban use. The clause would benefit from rewording to make it clear that the key issue is about minimising the risks of contaminants entering groundwater.

DECISION SOUGHT

26. To re-word Policy WQL13 as follows:

Policy WQL 13: Activities in Christchurch Groundwater Protection Zone 1
Manage activities in the Christchurch Groundwater Protection Zone 1 so that there is no significant increase in the risk of contamination of ~~groundwater~~ the Christchurch City Council drinking water supply by avoiding or mitigating the effects of activities that may result in contaminants entering and persisting in groundwater, and minimising effects of activities where contaminants will exist in groundwater for only a short period. In particular:

...

(2) Minimise the adverse effects on groundwater of lawfully established existing activities by requiring that ~~all~~ best practicable management measures are implemented.

~~(4) Avoid the development of land for urban purposes that increases the risk of the contamination of groundwater, including the development of land for commercial or industrial purposes listed in Schedule WQL3 that aggregates large quantities of hazardous substances in excess of those set out in (6) below.~~

...

(6) New hazardous facilities and additions or extensions to existing lawfully established hazardous facilities must be designed, constructed and maintained in accordance with best management practice so as to stop minimise the risk of hazardous substances entering groundwater as a result of day-to-day use, leakage, accident or a natural hazard event.

*~~(a) not aggregate large quantities of hazardous substances on a site; and
(b) be designed, constructed and maintained in accordance with best management practice so as to stop hazardous substances entering groundwater as a result of day-to-day use, leakage, accident or a natural hazard event.~~*

...

(10) ~~Avoid all other activities that may result in contaminants entering and persisting in groundwater and which have an adverse effect on groundwater quality, including by avoiding if possible mineral extraction activities, and by prohibiting the establishment of a new municipal solid or hazardous waste landfill.~~

(11) Where mineral extraction activities occur, reduce the potential for contaminants to enter groundwater by requiring:

~~(a) an effective buffer including an appropriate thickness of soils, an impermeable liner, a containment bund, and a depth to groundwater, to be maintained between the bottom of the excavation and the top of the highest level of groundwater to avoid any increased risk of contaminants directly or indirectly entering groundwater; and~~

~~(ab) the extraction site to be developed and worked in accordance with best management practices so as to avoid minimise any increased risk of hydrocarbons entering land, and in the event they do enter land, any contaminated land is removed and reinstated with uncontaminated material; and~~

~~(be) a rehabilitation or re-instatement plan to be adopted prior to excavation ceasing; and~~

~~(ca) a groundwater quality and/or soil quality monitoring programme to be adopted prior to excavation commencing; and~~

~~(de) any rehabilitation or re-instatement that utilises fill material to be undertaken in accordance with the Ministry for the Environment "A Guide to the Management of Cleanfills" (2002) or "Christchurch City Cleanfill Licensing Bylaw 2008"; and~~

~~(ef) any rehabilitation or re-instatement carried out in accordance with the preceding clause (de) to be that utilises inert uncontaminated cleanfill material must not adversely impact on groundwater quality and is contoured so that surface ponding of water does not occur; and~~

~~(fg) the effects of land uses occurring on the site following completion of the extraction are managed so as to minimise the avoid any increased risk of contaminants entering groundwater.~~

27. To make consequential or like changes to other policies containing the same clauses.

REFORMATTED POLICY WQL15: ACTIVITIES IN CHRISTCHURCH GROUNDWATER PROTECTION ZONE 1B

28. Most of Policy WQL15 is a repetition of the wording contained in Policy WQL13. All the comments I have made in respect of WQL13 above therefore also apply to Policy WQL15, including my suggested amendments.

DECISION SOUGHT

29. To re-word Policy WQL15 in accordance with the recommendations contained in paragraph 26 of my evidence.

EXPLANATION AND PRINCIPAL REASONS FOR POLICIES

30. Much of the discussion of mineral extraction contained in the Explanation and Principal Reasons for the policies is a fair and accurate description of the relevant issues. I am however concerned about some of the wording contained in paragraph 3.
31. Paragraph 3 states *'It is anticipated that as sources of material reduce within the existing areas, there will be pressure for new areas of mineral extraction to be established outside of Zone 1 B'*. This is correct. It goes on to state *'While mineral extraction activities outside of Zone 1 B are to be generally avoided, guidance is provided for proposals in locations where it can be clearly demonstrated through location, topography, soil structure, hydrology and the adoption of mitigation measures that these will not increase the risk of adverse effects on groundwater quality'*. Whilst uncontrolled access to the quarry resource throughout Zone 1 is not desirable, neither is avoidance of quarry activity justifiable for the reasons outlined in Mr Callander's evidence, or reasonable for the economic and land use planning reasons outlined in Mr Warren's and my evidence. I suggest that wording such as 'carefully controlled' would be more appropriate and more reasonable. The sentence could otherwise remain as it is currently worded, making it clear that any quarry sites need to be carefully examined in terms of their suitability for quarrying and ability to mitigate potential adverse effects.
32. The last two sentences of paragraph 3 state *'However, it is not essential that gravel extraction occurs in the vulnerable groundwater recharge zone as there is a large area of high quality gravel immediately to the south. Locating extraction in those adjacent areas would avoid unnecessary risk'*. This statement reinforces the misconception that has been discussed in detail by Mr Warren and by myself in relation to obtaining zoning or consent for quarrying, the fact that there is gravel in the ground to the south of the Groundwater

Protection Zone is in no way indicative of the ability to actually obtain that gravel, much less whether it is economic to do so. The sentences should be deleted on the basis that it has not yet been determined that there are viable and sustainable alternative locations for new quarry zones and it has not been proven that quarrying presents a sufficient risk to justify a policy of avoidance in the Groundwater Protection Zone.

33. The last sentence of paragraph 3 states '*It is recognised that mineral extraction activities provide the opportunity to establish long-term land uses following re-establishment that pose very low risk to groundwater quality. If this occurs, it is a long-term benefit that may result from mineral extraction activities*'. I strongly support this sentence.

DECISION SOUGHT

34. Amend paragraph 3 under the heading Mineral Extraction, as follows:

While mineral extraction activities outside of Zone 1 B are to be ~~generally avoided~~ carefully controlled, guidance is provided for proposals in locations where it can be clearly demonstrated through location, topography, soil structure, hydrology and the adoption of mitigation measures that these will not increase the risk of adverse effects on groundwater quality.

~~'However, it is not essential that gravel extraction occurs in the vulnerable groundwater recharge zone as there is a large area of high quality gravel immediately to the south. Locating extraction in those adjacent areas would avoid unnecessary risk.~~

RULE WQL5 – CONDITION 10

35. I support the deletion of Condition 10 from Rule WQL5, which is superfluous following the deletion of Rule WQL55.

DECISION SOUGHT

36. Accept recommendation WQLV6.32 to delete condition 10 of Rule WQL5.

RULE WQL40

37. In discussing this rule, I again rely on the evidence of Mr Callander that historically quarrying activity has not been shown to result in adverse effects on Christchurch's drinking water. I also rely on the evidence of Mr Callander and Mr Francis as to the management and operational procedures of modern quarries that are undertaken to minimise risks of contaminating water quality and the rigorous controls that exist today over the nature of fill that can be put into old pits.
38. Turning firstly to the status of quarrying activity in Zone 1B, Rule WQL40 currently provides that quarrying in this zone is a fully discretionary activity. As noted in Variation 6, Zone 1B recognises those areas identified for mineral extraction in the Christchurch City District Plan and the Selwyn District Plan. The quarry zones were created with the express intention of enabling quarry activity to occur, subject to certain conditions being met, and therefore to provide operators with certainty that the activity could occur. Rule WQL40 in its current form undermines this certainty. Furthermore, it undermines certainty without apparent justification. The purpose of Variation 6 and Rule WQL40 are to protect Christchurch's groundwater supply. Imposition of fully discretionary status on an activity that is already recognised and provided for within the Zone is onerous and suggests that consideration may be given to issues much more wide-ranging than groundwater quality. There is no support in the objectives or policies of the Variation for such an approach and issues other than water quality and air quality (for which separate discharge consent is required), including visual and amenity effects, noise and traffic generation, are more appropriately left to the territorial authorities to deal with. Rule WQL40 should therefore be amended to provide for quarrying activity within Zone 1B as a controlled activity, with matters of control including those matters already listed as Restriction of Discretion in the rule.

39. Turning to the status of quarrying in Zone 1, I reiterate:

- Establishing new quarry sites is a very time-consuming, difficult and costly exercise and the simple presence of gravel unfortunately does not equal guaranteed access to suitable and economically viable resource;
- The risks to groundwater quality from quarrying itself are not high and can be appropriately mitigated;
- Mr Callander has found no historical evidence to suggest quarrying adversely affects water quality in a way that would jeopardise the Christchurch water supply;
- Rehabilitation is carefully controlled through resource consent conditions and no longer includes contaminated fill;
- Associated activities such as hazardous substance storage and use are strictly regulated; and
- The long term use of rehabilitated quarry land and discharges to that land can also be controlled through regional plan rules that are not specifically linked to quarrying, including requirements for discharge consents.

40. With all of these matters in mind and particularly the evidence of Mr Callander as to the reality of the effects of quarrying on groundwater quality, I consider the non-complying status to be have no sound resource management basis and therefore to be unnecessarily onerous and unwarranted. Fully discretionary status would ensure a sufficiently rigorous consenting process is undertaken on a case by case basis and all possible effects on groundwater quality are considered, whilst still giving a clear message that consent may or may not be granted, according to the circumstances of the site.

DECISION SOUGHT

41. Amend Rule WQL40 Activity as follows:

- (d) a ~~discretionary~~ controlled activity if such use complies with conditions 1(a), (b), (c), but does not comply with condition 1(d)*
- (e) a ~~non-complying~~ discretionary activity if such use does not comply with any one or more of the conditions 1(a), (b), (c), or (e).*

RULE WQLYY USE OF LAND TO STORE OR USE A SPECIFIED HAZARDOUS SUBSTANCE

42. Rule WQLYY provides that the storage of large quantities of hazardous substances are a non-complying activity. In the case of petrol and diesel, the substances most likely used in association with quarry activity, large quantities is defined in Schedule WQLZZ as anything more than 5000 litres liquid. It is not uncommon for quarry operators to have tanks holding between 20,000 and 40,000 litres of diesel. Modern storage systems are closely regulated and are required to include containment bunds. Provided such storage systems are appropriately bunded and are managed in accordance with relevant regulations, best management practices and MfE guidelines, the risk to groundwater quality can be mitigated.
43. I also note that the rules as they currently are written apply over large areas of existing urban development, including areas identified for future business growth. Imposing non-complying status over hazardous substance storage in these areas as well as existing Zone 1B areas is contradictory and unnecessarily onerous.

DECISION SOUGHT

44. Amend Rule WQLYY to delete Condition 8(c).

RULES WQL55, WQL59, WQL62, WQL64, WQL 65 AND WQL66

45. I support the deletion of these rules and reformatting that has been undertaken.

DECISION SOUGHT

46. Accept the Officer's recommendation to delete these rules.

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