Submission on Plan Change 7 to the Canterbury Land and Water Regional Plan

By **Twelfth Knight Consulting** – Richard English

Submitter Identification number: **PC7-507**

Wishes to be heard: **No**

Would consider making a joint submission at the hearing: **No**

Submitted on: **07/09/2019**

This submission was submitted via Environment Canterbury's online submission portal. The Submissions portal generates pdf files of submissions (as attached). However, some of the information that appears in the pdf files is not consistent with information the submitter entered into the portal, specifically, where submitters have ticked:

- "I wish to be heard in support of my submission" ; and
- "If others make a similar submission I will consider presenting a joint case with them at a hearing".

Additionally, the submissions portal has generated submitter and submission point numbers that are not consistent with the numbering applied in the Summary of Decisions Requested. Submission points in the Summary of Decisions Requested (SODR) are numbered using the following format:

PC7 – Submitter ID #.Submission point #

The correct submitter identification number and submitter information is specified above. This will be the number referred to in the SODR.

Proposed Plan Change 7 to the Land and Water Regional Plan

Form 5 Submission on publically notified proposal for policy statement or plan, change or variation

Clause 6 of Schedule 1, Resource Management Act 1991

To Environment Canterbury - Tavisha Fernando
Date received 7/09/2019 1:59:26 PM
Submission #25

Address for service:
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Wishes to be heard? No
Is willing to present a joint case? No

Proposed Plan Change 7 has been developed to respond to emerging resource management issues, to give effect to relevant national direction, to implement recommendations from the Hinds Drains' Working Party, and to implement recommendations in the Waimakariri and Orari-Temuka-Opihi-Pareora (OTOP) Zone Implementation Programme Addenda (ZIPA).

- Could you gain an advantage in trade competition in making this submission?
  - No
- Are you directly affected by an effect of the subject matter of the submission that
  (a) adversely affects the environment; and
  (b) does not relate to trade competition or the effects of trade competition
  - No

Submission points

Point 25.1

Submission

Qualifications, Membership and Relevant Experience.

I hold a BSc (Hons) degree from Birmingham University (England) and am a Member of the Institution of Civil Engineers (UK). I have over twenty five years of experience in the fields of quarrying, cleanfilling, road construction and maintenance and associated materials testing. In these roles I have been employed directly by contractors and local councils and have consulted to both as an independent practitioner .I am the Principal at Twelfth Knight Consulting.

Of particular relevance to this submission, I was a co-author of the original Christchurch City Cleanfill Bylaw and had input into both the Ministry for the Environment sponsored WasteMINZ Disposal to Land guidelines and the Auckland Unitary Plan with respect to the disposal to land of construction materials.

With reference to proposed Plan Change 7, I wish to comment on:-

Section 2.9: Definitions;

Section 5, Rules 5.175 – 5.178 relating to "*Excavation and Deposition over Aquifers"* and

Dr Lisa Scott's associated report "*Technical memo: Effects of cleanfill deposition on groundwater quality"* as follows:

Highest Groundwater Level Definition.

I support the ECan proposal to revert to the earlier definition.

I recommend that ECan produce a map, at least of the Canterbury Plains area, that indicates what these levels are. A map would, in most cases, save the re-litigation of the issue each time a consent application is made relevant to HGWL's.

Acceptable Materials - General

A specific list of acceptable materials is preferable to the common definition of "cleanfill" used in ECan consents. The industry have repeatedly stated that it is far easier for all to understand and to administer a specific list rather than a somewhat woolly definition. The definition approach often leaves an accept or decline decision on the shoulders of people not technically qualified to do so. With a list it is clear. If its not on the list then it cannot be accepted. If something unusual is presented for disposal (i.e.

not on the list) the cleanfill operator would continue to have the option of applying to ECan for a specific variation to their consent.

“Cured asphalt”

I am unsure as to how, when or where the word "cured" appeared originally - it is certainly a more recent addition to matters relating to cleanfills - but unfortunately it is a misnomer.

The production of asphalt involves the heating of bitumen above its melting point, its mixing with similarly heated and dried aggregates, its laying and subsequent compaction. The latter must take place before the bitumen in the mix effectively re-solidifies as it cools. There is no chemical reaction taking place (i.e. the bitumen does not "cure".) It simply cools and re-solidifies. If the bitumen is re-heated it softens and eventually becomes fully liquid again. Over time (years) the bitumen will oxidize and loose some of its flexibility but this has nothing to do with "curing".

If we set aside the non-issue of curing the question becomes does bitumen leach contaminants into the environment. Many studies have been undertaken over the years and none, for example as referenced in Dr Scott's report, have ever found there to be a problem even in far more aggressive leaching environments than those that exist within the local cleanfills.

In conclusion I believe the word is totally superfluous, leads to confusion and consequently should be omitted..

It should be noted however that the bitumen used in chip-sealing is "cut back" (or temporarily softened) by the addition of small quantities of diesel and / or kerosene. Over time the volatile components of these "cutters" evaporates into the atmosphere. Consequently this could potentially be described as a "curing" process. I have not seen any relevant leaching tests carried out on chip seal but I suspect that it is unlikely to be a problem in local cleanfills, particularly given that (a) the quantities involved are small in comparison to overall cleanfill volumes and (b) in the vast majority of cases the chip seal will be old (i.e. well passed the point when all of the cutters will have evaporated.).

Coal Tar:

I compiled a report on the general issues and options relating to coal tar in 2005 for the Christchurch City Council. I am aware that some trial work was carried out in 2008 and 2010 (and possibly later) however I am not aware if one of my recommendations to conduct leaching tests was ever acted upon. If not I suggest that these tests should be conducted in a manner that replicates the environment in local cleanfills. (i.e. use of the LEAF testing regime I have referred to in the past, not TCLP or SPLP which, in this specific case, are likely to produce unrepresentative results.) I recommend that these tests are conducted before a decision is made on the acceptability or otherwise of these materials into local cleanfills.

Plasterboard:

Plasterboard only becomes a potential source of contaminants when it is exposed to moist, low pH environments (e.g. where a lot of vegetative matter is also present such as in municipal landfiils**).** Local cleanfills are not moist, are of almost neutral pH and there is little to none vegetative matter present. Hence I believe plasterboard is not an issue.

However it was prohibited from deposition into local cleanfills by the Christchurch Cleanfill Bylaw because it should be recycled (There was a viable recycling option at the time of the inception of the Bylaw but I am not aware of the current situation.) Hopefully none has been deposited into cleanfills in the Christchurch area post the start of the Bylaw in 2004 but I am aware that some sites accepted significant quantities pre 2004

Hydro-excavated waste

I am in general agreement with Dr Scott's comments.

Vegetative matter:

At the time of drafting of the Cleanfill Bylaw there was much discussion about what the maximum allowable concentration of vegetative matter would be per load. It was agreed by all that 2.5% (roughly equivalent to one barrow full per truck load) would be a workable figure that would neither impose unnecessary costs on the industry nor create an indirect hazard in the cleanfill (Please note the "per load" which was added to remove the temptation to average the percentage over multiple loads.) I consequently believe that the figure should be 2.5% per load

Cleanfill Effects on Groundwater.

I am again generally in agreement with Dr Scot's comments, although I am not sure how much of what she notes has been influenced by the specific problem emanating from the quarries in the Old West Coast Road area (I have commented further on the Old West Coast Road quarry issues separately below.)

Whilst I also agree with Dr Scott's statement about exceedances I am uncomfortable with strictly placing the bar at the NZDWS figures with respect to aesthetic qualities. For example I believe that if a consumer has historically accessed soft water then they should not be expected to tolerate a change to hard water just because it still falls within the NZDWS. Hard water brings with it a number of issues including furring of kettles and hot water cylinder elements, marks on glassware etc and of course taste.

Concrete Slurry deposition in cleanfills.

The problems associated with the deposition of concrete slurries at Winstones quarry on the Old West Coast Road at Yaldhurst

is exactly what I was trying to prevent when concrete slurries were specifically excluded from the list of acceptable materials stated in the Christchurch Cleanfill Bylaw back in 2003. Unfortunately ECan at a later date provided Winstones with a specific consent for their slurry operation - which incidentally is still arguably in breach of the Bylaw. The outcome of this consent was I am sorry to say inevitable, but it does neatly serve to demonstrate what happens when there is sufficient water present to flush contaminants into the groundwater.

Future land use over cleanfill sites

I agree with Dr Scott's comments and note specifically that irrigation other than for the establishment of initial grass cover should not be permitted over areas that have been cleanfilled. Covenants may need to be placed over the relevant land parcels to ensure that this prohibition is continued in perpetuity.

Relief sought

Partial support - Refer submission points

Section: Section 5 Region-wide Rules
Sub-section: Section 5 Region-wide Rules
Provision
5.177

The use of land for the deposition of more than 50 m^3 of material in any consecutive 12 month period onto land which is excavated to a depth in excess of 5 m below the natural land surface and is located over an unconfined or semi-confined aquifer, where the ~~seasonal high water table~~highest groundwater level is less than 5 m below the deepest point in the excavation, and the associated discharge of contaminants onto or into land where it may enter water, is a controlled activity, provided the following conditions are met:

1. The material is only cleanfill; and
2. The volume of vegetative matter in any cubic metre of material deposited does not exceed 3%; and
3. The material is ~~not deposited into groundwater~~ placed in the land at least 1 m above the highest groundwater level at the site; and
4. ~~Any cured asphalt deposited is placed in the land at least 1 m above the highest groundwater level expected at the site~~The material is not concrete slurry, coal tar or hydro-excavated waste; and
5. The material is not deposited onto or into land that is listed as an archaeological site; and
6. A management plan has been prepared in accordance with Section 8.1 and Appendix B of “A Guide to the Management of Cleanfills”, Ministry for the Environment, January 2002; and
7. A site rehabilitation plan has been prepared for the site and is submitted with the application for resource consent.

The CRC reserves control over the following matters:

1. The potential for adverse effects on the quality of water in aquifers, rivers, lakes, wetlands and mitigation measures; and
2. The content and adequacy of the management plan prepared in accordance with Section 8.1 and Appendix B of “A Guide to the Management of Cleanfills”, Ministry for the Environment, January 2002; and
3. The content and adequacy of the site rehabilitation plan to address any adverse effects after the deposition of material is completed.