

## Irrigation@ Maintenance Ltd comments on document Amisfield Amended Conditions

Original text black and green.

Comments in red.

### Clause 13 revision

1. Should the measured value of any of the determinants (except for turbidity) in a sample from monitoring bores exceed a NZ Drinking Water Standard Maximum Acceptable Value or Guideline Value (as specified in the New Zealand Drinking Water Standards), then the consent holder shall:

Dr Freeman remarked that the baseline for turbidity was exceeded in present sampling. A current notification/complaint to ORC from Irrigation and Maintenance is that the present operation of the quarry causes at times excessive turbidity. Excepting turbidity from the suit of drinking water qualities makes a permitted activity of contamination of a water body, the Pisa Aquifer. The contention is that the Quarry is causing the high base line. Dr Freemans remarks were not that turbidity should be excluded.

#### Clause 13.d.1

- a. Within one month of receipt of the elevated sample results, submit a report signed by a suitably qualified water quality expert to the Consent Authority and the bore owner on the investigation undertaken, any potential sources of contamination identified, the likely cause(s) of the contamination and recommend any remedial measures to prevent or mitigate the contamination.
- b. In the event that the report concludes that it is highly likely that the contamination was caused by the consent holder; and
  - (i) the contamination was in potable drinking water supply, the Consent Holder shall, within 72 hours of receipt of the report, provide the bore owner with an alternative supply of potable drinking water sufficient to provide 2,000 litres per day to each household provided by the supply until such time as monitoring demonstrates compliance with the relevant MAV or Guideline values. All costs associated with this shall be borne by the consent holder.

The conditions fail to account that the affected party(ies) exist in real time and take potable water on a daily basis. The timing for an alternative supply of potable water to affected parties from the time of contamination is up to 3 months for sampling plus test time plus one month for a report plus 72hours. The proposed mitigation is ineffective.

The conditions fail to account the our take includes water for an export winery (declared in our submission). No account has been made for the quantity used by the vineyard from our bore/take or the quality of water needed. Our present complaint /notification to ORC relating to contamination of the aquifer has not been concluded by ORC. Our records indicate that contamination problems have only existed since the quarry breached the protective mantle of the aquifer. An effective mitigation is needed.

#### Condition 13.d ii

- (i) the contamination was in a monitoring bore, sampling frequency at the closest downgradient sensitive bore identified in Condition **Error! Reference source not found.** (c) shall increase to 1 per week until the issue has been rectified.

For turbidity, instead of the NZDWS aesthetic guideline of 2.5 NTU, a guideline of 4.0 NTU shall apply. Should the measured value of turbidity of samples taken from the monitoring bores exceed 4.0 NTU, conditions (a) – (d) above shall apply.

There is no way of determining which bore is upgrade or downgrade at any particular time. The quarry operations are altering the natural dynamic gradient of the aquifer by extracting water at one place and discharging into another. The use of the wording downgrade is a convenient expression to argue that turbidity sampling should be ignored because it cannot be proved that the bore is downgrade. With a dynamic gradient that is changeable, all bores should be considered.

The increase of allowable turbidity from 2.5NTU to 4.0 NTU can only be viewed as an attempt to make the present contamination a permitted activity. The alternative is to stop contaminating the Pisa Aquifer by constructive mitigation which would be to replace the original mantle for the aquifer (sealing exposed areas caused by quarrying) and discharge contaminants to land where there is sufficient vertical distance and low permeability to filter out the contaminants.

*Advice Note:*

1. *The Guideline Values and Maximum Acceptable Values (MAV) are specified in the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2018)', Ministry of Health or its replacement. The Guideline Values are the limits for aesthetic determinants that, if exceeded, may render the water unattractive to consumers. These standards are primarily aimed at water supply authorities who generally treat water to ensure that these standards are met.*

2. *Shallow groundwater in this area is vulnerable to increases in turbidity and other contaminants such as nitrate nitrogen, following heavy rainfall. It is likely that if groundwater quality monitoring is undertaken within days or weeks of heavy rainfall that there will be increases in these contaminants in groundwater.*

By including this advice note in the conditions the conditions have the effect of making a contamination a permitted activity. The natural mantle of the Pisa Aquifer (groundwater) in its undisturbed state is sufficient to filter out/stop all contamination. Noted in ORC reports that it is a closed Aquifer which shows that under original conditions the local groundwater does not enter the aquifer. Recharge is from the Mt Pisa rock interface a number of kilometres away. The quarry is the only entity in the area that has breached/reduced the protective mantle and has/is /will facilitate contamination following heavy rainfall.

## Condition 8

- a. No machinery shall be maintained, cleaned, stored or refuelled within 10 metres of any waterbody, water flow channel or stormwater system.
- b. Permanent storage of fuel and lubricants shall only occur within the workshop area identified on 'Site Plan Rev F' attached as Appendix 1 to this consent. Lubricant shall be stored in a bunded area capable of containing 125% of the volume being stored. Fuel

shall be stored in a double skinned tank certified in accordance with the manufacturers specifications and capable of containing a spill at maximum capacity;

- c. Refuelling and maintenance of all vehicles or machinery except for the excavator shall be undertaken within the workshop area identified on 'Site Plan Rev F' attached as Appendix 1 to this consent ;
  - d. Mobile refuelling of the excavator shall only be undertaken using a nozzle that incorporates a shut off valve and sensor system to avoid fuel leaks or overfilling of the excavator fuel tank;
  - e. Mobile refuelling occurs in accordance with best practice and spill kits are available at the mobile refuelling locations;
  - f. The origin and location of deposition within the site of any externally sourced cleanfill shall be recorded;
1. Externally sourced cleanfill shall not be placed within 10 metres of any waterbody, water flow channel or stormwater system and shall be located above the level of groundwater.

The condition fails to address discharge of human waste from the site facilities whereby overflow from holding tanks are below original ground level and direct discharge into the Aquifer is available.