

John and Diane Smith, trading as JR & DM Smith Ltd farming 1220 ha of sheep and dairy support at Wendonside on the old Mataura physiographic zone. For Environment Southland the issue appears to be nitrate leaching. We have been doing intensive winter grazing for 10 years currently growing 430 ha of fodder crops. In my 38 years at Wendonside only 1 water test has been done, this being about 1 year ago by environment southland. This showed a nitrate level of 1.41 mg/L which is well below the maximum acceptable value of 11.3 mg/L. this would suggest perhaps the problem isn't as great as portrayed.

Going forward we intend to participate with the Wendonside catchment group and environment southland in more bore monitoring to get a more accurate picture of what is happening. Our Overseer report states our overall N leaching is 34 kg N/ha/yr, similar to an average southland dairy farm.

We are open to ways of reducing leaching with no drains or waterways, we have to rely on natural denitrification through the atmosphere and through about 30 metres of clay and stone subsoil. We are growing a catch crop of barley for whole crop balage following fodder crops.

Going forward we have three sons in the process of taking over the business and our concern is that if the new regulations are too restrictive the viability of the operation could be compromised, for example dairy conversions would become a non-compliant activity which in view of our results of water testing and overseer report a discretionary activity would be more appropriate.

I trust this is a brief outline of what our concerns are. Thanks

Submitter No: 419

Submitter Name:
JR + DM Smith Ltd

Date Received: 14/8 /17

Submitter No: 419

Submitter Name:

JR = DM Smith

Date Received: / /17

Groundwater Quality Monitoring Results



Site: F44/0134

Sample Date: 20-Jul-2016 12:10:00

Analyte	Alkalinity (Bicarbonate)	Alkalinity (Carbonate)	Alkalinity (Total)	Anions (Total)	Boron (Dissolved)	Bromide (Total)	Calcium (Dissolved)	Carbon (Dissolved Organic)	Cations (Total)	Chloride (Total)	Conductivity (Field)	Conductivity (Lab)
Units	mg/L as CaCO ₃	mg/L as CaCO ₃	mg/L as CaCO ₃	meq/L	mg/L	mg/L	mg/L	mg/L	meq/L	mg/L	µS/cm	µS/cm
Value	29	<1.000	29	0.85	0.013	<0.05000	8.2	<0.5000	0.85	3	79	85
MAV					1.4							
GV										250		

Analyte	E-Coli <MPN>	Fluoride (Total)	Hardness (Total)	Ion Balance	Iron (Dissolved)	Magnesium (Dissolved)	Manganese (Dissolved)	Nitrogen (Nitrate Nitrite)	Nitrogen (Nitrate)	Nitrogen (Nitrite)	Nitrogen (Total Ammoniacal)	Nitrogen (Total Kjeldahl)
Units	MPN/100 ml	mg/L	mg/L as CaCO ₃	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Value		<0.05000	30	0.54	<0.02000	2.3	<0.0005000	1.41	1.41	<0.002000	<0.01000	0.12
MAV	1	1.5					0.4		11.3	0.2*		
GV			200		0.2		0.04				1.5	

Analyte	Nitrogen (Total)	Oxidation Reduction Potential (Field)	Oxygen (Dissolved Sat, Field)	Oxygen (Dissolved, Field)	Phosphorus (Dissolved Reactive)	Phosphorus (Total)	Potassium (Dissolved)	Silica (Dissolved Reactive)	Sodium (Dissolved)	Sulphate (Total)	Sulphide (Total)	Water Temperature (Field)	pH (Lab)
Units	mg/L	mV	%	mg/L	mg/L	mg/L	mg/L	mg/L as SiO ₂	mg/L	mg/L	mg/L	°C	pH
Value	1.54	50		9.15	0.01	0.008	1.05	14.8	5.2	3.9		11.8	6.9
MAV										200	250		7.0 - 8.5
GV													

MAV = Maximum Acceptable Value

These numbers are specified for substances which can have potential health effects due to prolonged exposure to concentrations above those listed (Ministry of Health, 2008).

GV = Guideline Value

Waters with values exceeding these may have undesirable taste and odour or leave residues (Ministry of Health, 2008).

The values highlighted red exceed the MAV

The values highlighted yellow breach the GV criteria

*For nitrite 0.2 mg/L is the long term exposure MAV. Short term MAV is 3 mg/L.

Ministry of Health. 2008. *Drinking-water Standards for New Zealand 2005 (Revised 2008)*.

JR & DM Smith

Emma Bain
Ballance Agrinutrients
Northern Southland East

Client reference:

Farm name: JR & DM Smith - Nutrient Budget - 2016-17 (2017)

Block Nitrogen

Block name	Total N lost (kg N/yr)	N lost to water (kg N/ha/yr)	N in drainage * (ppm)	N surplus (kg N/ha/yr)	Added N ** (kg N/ha/yr)
Pasture	7396	16	6.2	39	0
Baleage Area	1100	5	1.9	-4	0
Fodder Beet	3230	190	65.0	-236	239
Swedes	3982	87	28.5	-49	33
Kale	21800	61	19.7	-72	133
Whole Crop	3628	32	10.3	-141	0
Other farm sources	127				
Whole farm	41264	34			
Less N removed in wetlands	0				
Farm output	41264	34			

* Estimated N concentration in drainage water at the bottom of the root zone. Maximum recommended level for drinking water is 11.3 ppm (note that this is not an environmental water quality standard).

** Sum of fertiliser and external factory effluent inputs.

N/A: N in drainage not calculated for easy and steep pastoral blocks, or for tree and shrubs, riparian, wetland or house blocks.

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