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NEW ZEALAND QUALIFICATIONS AUTHORITY
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Level 3 Agricultural and Horticultural Science 2022

91532 Analyse a New Zealand primary production environmental issue

Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Analyse a New Zealand primary production environmental issue.	Critically analyse a New Zealand primary production environmental issue.	Comprehensively analyse a New Zealand primary production environmental issue.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the parts in this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–11 in the correct order and that none of these pages is blank.

Do not write in any cross-hatched area (///). This area may be cut off when the booklet is marked.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

INSTRUCTIONS

Carefully read ALL parts and questions before answering.

Freshwater and sustainable production

The use of freshwater supports our economy and way of life. We rely on surface water and groundwater (taken from aquifers) for drinking, domestic, and industrial uses. Irrigation from these sources is vital for farming in many areas. Although New Zealand has plenty of fresh water, we are also heavy users.

In farming areas, water pollution affects almost all rivers and many aquifers. Some lakes and estuaries may also be affected. Compared to catchments dominated by native vegetation, waterways in areas of pastoral farming have markedly higher levels of pollution due to excess sediment, pathogens, and nutrients, such as nitrogen.

Recent measurements show that water quality has been improving at some places, but worsening at others. It can be difficult to understand exactly what is causing the changes in water quality because water catchments can contain a mix of different types of farms and land uses; and the effects of natural variations in climate, and the connections between rivers and groundwater are also poorly understood.

PLANNING



20 horizontal lines for writing.



PART C: Course of action to gain sustainable production

When primary producers have a negative impact on the environment, such as in the case of freshwater, they are encouraged / required to find ways to reduce those negative effects. Primary producers are aware that their ability to continue producing into the future requires them to consider / reduce their environmental impact. This will allow them to have sustainable production.

Two examples are:

- Some feeds provided to stock are lower in nitrogen. This means less nitrogen is excreted in their urine.
- Getting animals off pasture during winter will reduce nutrient and sediment loss from saturated cold soils.

Choose a course of action that producers can carry out to further reduce their negative impact on freshwater in New Zealand. Justify your choice by comparing it with another course of action.

You may use the examples above or other recent actions. You should include the positive environmental, social, and economic impacts of your chosen action.

Use recent data (preferably within the past 5 years) and other evidence to support your answer.

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