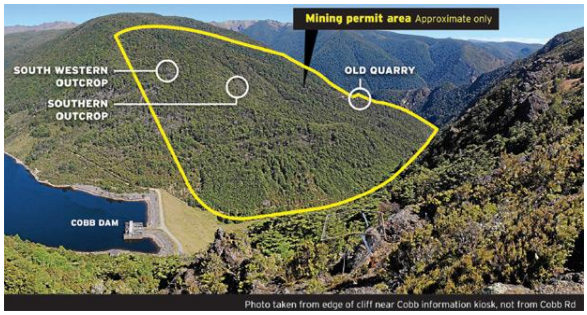
QUARRY QUARREL

…this looks like a nice place… ***to dig a hole!***



Introduction

Do you own a cell phone? What powers it?

Our modern way of life means we have to dig up bits of the world to get the stuff we need to make all our flash gadgets… the lithium in your phone battery does not appear out of thin air, someone dug a hole in the ground to get the ore needed to make it! Heard of NIMBY?

This assessment activity requires you to investigate the quarrying of soapstone from the Cobb Valley.

Your report will include scientific information on the issue, the impact on individuals and society, your personal response to the issue, and a response from a special interest group.

The task will take place over 4 weeks (or thereabouts) including a field trip to the Cobb.

You will be assessed on your ability to comprehensively investigate the scientific issues associated with quarrying soapstone in the Cobb and justify and evaluate the responses to this issue.

Assessment:

AS 91411: Investigate a socio-scientific issue in an Earth and Space Science context (4Cr)

Task

Select and process information

Conduct the investigation by sourcing research material and selecting and processing information from that material to include in your report. You may be able to collect information from a primary source, for example, by interviewing an expert, enthusiast, or scientist, or by making your own observations during the field trip.

Processing information will involve:

- sorting out the relevant information
- highlighting, underlining, or copying relevant information
- listing key points and relevant aspects from your information.

You will need to demonstrate how you have processed the information by writing notes in a logbook (your notebook will do) and/or by annotating your photocopied or printed-out material (for example, by underlining or highlighting). Your logbook and any annotated material must be handed in with your report…. This is needed to show that you did "investigate" the issue.

All sources of information, images, diagrams and data (not generated by you), must be acknowledged in a bibliography.

Write the report

Include the following items in your report:

- what the scientific issue is and how it impacts on individuals and society
- the factors involved in the issue, for example:
  - details of the technology needed to quarry and transport the soapstone
  - impacts (environmental, social) of this technology
- an evaluation of the issue and the impact on individuals and society
- a justification of a personal response to the issue. This can be your own response, that of your family or whānau, or a small group of which you are part. Your response may be written as a narrative.
- an evaluation of a societal response to the issue. This may be a special interest group, iwi, government agency eg DoC, law-making body eg TDC or government.

References (images knicked from):

http://www.stuff.co.nz/nelson-mail/features/weekend/8259232/Quarry-worry
http://stuffucanuse.com/more_images/cobb-valley-jan-2005/cobb-valley.htm

Assessment schedule: Earth and Space Science 91411 …… example of a marking sheet

Evidence/Judgements for Achievement	Evidence/Judgements for Achievement with Merit	Evidence/Judgements for Achievement with Excellence
The student investigates a socio-scientific issue. The student selects and processes a valid range of scientific information (i.e. sorted, highlighted, notes taken) for the report. The issue and its impact on individuals and society is explained. For example *The issue with wind farms is that they use a renewable form of energy, wind. However they have visual impact on the landscape and create noise.* The student's report describes a range of scientific information. For example *When wind turbines turn they convert kinetic energy into mechanical energy, which is used to produce electricity.* Personal and societal responses to the issue are described. For example *Mum and Dad are not pleased that a wind farm has been built on the top of the hills that we can see from our lounge windows. Personally, I don't mind the turbines. I rather like to see them all turning slowly in the wind. (Personal response.)* *Most people think that wind farms are a much better option than burning coal, building more dams, or building nuclear power stations. (Societal response.)*	The student investigates in-depth a socio-scientific issue. The student selects and processes a valid range of scientific information (i.e. sorted, highlighted, notes taken) for the report. The issue and its impact on individuals and society are explained in detail. The student's report describes a range of scientific information, for example, an explanation of the issue and the impact on individuals. A personal response is described and explained. For example *Mum and Dad are not pleased that a wind farm has been built on the top of the hills that our lounge looks out over. They say our million-dollar view has been ruined. While I understand their perspective, I don't share it. In fact, I rather like to see all the turbines turning slowly in the wind. Plus I realise that wind energy is renewable and clean (Personal response).* A societal response is described and explained. For example *Wind power has some strong advocates in our area. They like that the local wind farm will provide enough electricity to power all the houses in our town, which means fossil fuels are not being burned or more dams built. These other options create pollution or have a much greater impact on the environment (including the visual environment) than a row of wind turbines. Also, during the construction of the roads used to service the wind farms, local trades people got employment and now the roads provide better access to outlying areas. This has meant benefits for those who were employed, and some landowners.*	The student investigates comprehensively a socio-scientific issue. The student selects and processes a valid range of scientific information (i.e. sorted, highlighted, notes taken) for the report. The student evaluates the issue and its impact on individuals and society. The student describes and justifies a personal response to the issue. For example *Mum and Dad are not pleased that a wind farm has been built on the top of the hills that our lounge looks out over. They say our million-dollar view has been ruined. While I understand their perspective, I don't share it. We have to get our electricity from somewhere, and given that wind energy is renewable and clean, I believe that wind turbines are our best option. We have to get over the view thing. After all, the Dutch came to look on their windmills with pride and even affection (Justified personal response.)* A societal response to the issue is described and evaluated. For example *Wind power has some strong advocates in our area. They like that the local wind farm provides enough electricity to power all the houses in our town and that means fossil fuels are not being burned, which is good for the environment as the waste gases, especially carbon dioxide, are said to contribute to global warming. While most advocates of 'green' technologies want us to look first at ways of reducing energy use, they are realistic enough to recognise that demand for electricity is going to continue to increase in the foreseeable future and prefer wind energy to all other serious alternatives. The construction of the wind farm is generally supported by local businesses and services because, during the construction of the roads used to service the wind farms, local trades people got employment and the result was more money in our local community. Also we have better road access to outlying areas so that ambulances and fire engines can more quickly attend call-outs.*

The examples above relate to only part of what is required, and are just indicative.