ME571/Geol571 Advanced Topics—Geology and Economics of Strategic and Critical Minerals Spring 2015

Final Examination, Take-home exam

Due in McLemore mailbox or e-mail ginger@nmbg.nmt.edu by 5 pm on May 7

1. All minerals and mineral products could be or could become critical to some degree, depending on their importance and availability. Explain this statement. Provide an example. 10%

2. Define the minerals life cycle. Provide an example (commodity). 10%

3. Discuss one of the other students’ oral reports in class by subject, information given, strong points, weak points and delivery. How would you do it better? 10%

4. How would you convince a mining company to use sustainability development principles in developing a critical or strategic minerals commodity? Discuss in terms of the Seven Questions. 10%

5. Develop an exploration program for a specific critical or strategic mineral. Explain geologic model, potential mining method, community relations, sampling plans, QA/QC, etc. 10%

6. What must be considered in developing a critical and strategic minerals deposit? 10%

7. Why are critical and strategic minerals different from metals and energy minerals and similar to industrial minerals? 10% (Hint go to the class text book Industrial Minerals and Rocks, 7th edition)

8. Describe how the physical or chemical characteristics of a critical or strategic mineral allow for that commodity to be used by society. For example; diamond is used in drill bits because of its hardness. 10%

9. What are the responsibilities of a geologist during the stages of mining? 5%

10. What is the greatest invention of all time and what minerals are used to manufacture it? Are any of these minerals critical and strategic? Could any of these minerals become critical and strategic? 10%

11. Why isn’t tellurium being produced at the Cripple Creek & Victor Gold Mining Company mine? 5%

Be sure to cite your references and sources. You may work together on this Final but each student is responsible for answering these questions in their own words.