



GEL 2530 - Introduction to Geologic Field Work

FIELD DAY 5 (200 pts)

LOCATION:	1. Owl Canyon Road Cut (Large Pull Out) GPS 40.7629806245676, -105.18129119115997 2. Virginia Dale Ring Dike (Large Pull Out) GPS 40.945785225566716, -105.34320892720818
TIME:	1. Be at the Owl Canyon Road Cut pull-out on US287 (see GPS data) at 9:30 AM <i>(Leave "home" at appropriate time to arrive BEFORE start time)</i> 2. Be at the Ring Dike pull-out on US287 near Virginia Dale (see GPS Data) at 1:00 PM <i>(Leave "The Owl Canyon Location" at appropriate time (~12:30 PM) to arrive BEFORE start time)</i>

GENERAL INFO

This field day 5 exercises will be a little different. Many of the exercises are completely up to you with some minimum standards. Here are the details:

- 1 These are mostly CDOT properties next to the busy US287 highway, which has a reasonably high traffic load. Be extremely careful when crossing the main road, stay alert and far away from traffic.
- 2 Rock collecting is ALLOWED and actually encouraged for the course. See details below.
- 3 Both locations have cliffs. Avoid climbing around on those. I have actually witnessed someone fall at the Owl Canyon Location.
- 4 Bring a Sack Lunch and water. A good place to have lunch with facilities possibly be open (NO guarantee) is the quaint Virginia Dale Community Church (30437 US-287, Livermore, CO 80536; GPS: 40.939970653912404, -105.34301065352254) about 1000 ft from our Ring Dike Pull-Out. There are NO facilities at the Owl Canyon Road Cut.
- 5 Hiking at both locations in minimal, maybe a few hundred feet. You can spend your time where it counts.
- 6 Bring ALL your Course Equipment including writing utensils and Rock Hammer
- 7 Bring any personal item you deem necessary for the day (e.g. sunscreen, hat, jacket, etc.)
- 8 For this day 5 field exercises you do NOT have to turn in your field notebook by the end of the day at 6:00pm. I will need these final copies of your field notebook uploads within 3 days as indicated in the CANVAS module.
- 9 I will need any LOANER BRUNTON™ back. Drop off at my house or office within 3 days the latest, though!

FIELD OBJECTIVES:	1. Applying what you have learned. See details below!
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GRADING:	<p>- All exercises to be answered / documented in Field Notebook - Field Notebook Due on CANVAS that day at MIDNIGHT <i>Use your cell phone (PDF creator app?) to make quality copies of today's notebook entries & exercises for upload</i> You may work in groups of up to 3 people. However, each individual must turn in their individual notebook with ALL notes and data by the end of the day</p>
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General Grading Rubric: Generally my grading is pretty much straight forward. I will deduct points from each exercise below for errors, falsehoods, idiosyncrasies, omissions, non-legibilities, computation discrepancies, missing data, calculation mistakes, etc. etc. Percentages of total points may be deducted for repeated errors or larger omissions. This includes missing (forgotten) essential field equipment.

Apply what you have learned! Owl Canyon Road Cut Location - see details below -	100 points
Apply what you have learned! Ring Dike Location - see details below -	100 points

Field Reconnaissance Exercises

OWL CANYON ROAD CUT	The US-287 large pull-out is right at the location with an abandoned road going east from there. Perfect for field exercises. Note: Do NOT go past the diagonal fence line, even if the fence is down. This is PRIVATE property!!!!
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<i>Self - selected Method(s)</i>	
Your field Field Notebook entry for the Owl Canyon Location should include at minimum the following for full credit. Use quantifiable data (MEASUREMENTS!) Whenever you can:	
<input type="checkbox"/>	Location page with general description observation and overview of the location (20 pts)
<input type="checkbox"/>	4 S&D measurements with correct alphanumeric transcription and symbols on location sketch map (20 pts)
<input type="checkbox"/>	1 height estimation using a method of your choice WITHOUT CLIMBING. Since there are several methods, briefly describe the method used (with sketch) in your field notebook (20pts)
<input type="checkbox"/>	A GENERAL stratigraphic section of the area drawn to scale with GENERAL rock descriptions (20pts)
<input type="checkbox"/>	Sketch map with calcite crystal collecting location and detailed observed description of the calcite crystal. Reference the collecting location with sample numbering in your field notebook (20 pts)

360 Degree Virtual Tour of the Owl Canyon Road Cut

A “clickable” 360 degree virtual tour of the OWL CANYON road cut with geologic information can be viewed at <https://www.geotours.earthscienceeducation.net/OwlCanyon/index.htm>

While doing a virtual walk through of the road cut, all kinds of information can be found. Some are visible by hovering the mouse over certain areas in the 360 images. Others is clickable information. This digital pre-visit may save you time for your field exercises and may already answer a lot of your questions.

VIRGINIA DALE RING DIKE ROAD CUT	The US-287 large pull-out is about 800 ft northward from the Ring Dike Magma mixing location. Actual location for the field exercise is in a small quarry on the West side of US287 (careful when crossing the road) at GPS 40.94378542161838, -105.34339424043105
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Self-selected Method(s)

Your field Field Notebook entry for the Virginia Dale Magma Mixing Location should include at minimum the following for full credit. Use quantifiable data (MEASUREMENTS!) Whenever you can:

- Location page with general description observation and overview of the location (25 pts)
- A detailed sketch of an approx. 10ft x 10 ft area showing the intricate mixing patterns to scale (25pts)
- Detailed description of the TWO main rock-types present (25 pts)
- 1 height estimation using a method of your choice WITHOUT CLIMBING. Since there are several methods, briefly describe the method used (with sketch) in your field notebook (25pts)

360 Degree Virtual Tour of the Virginia Dale Ring Dike Magma Mixing Locality

A “clickable” 360 degree virtual tour of the Ring Dike Magma Mixing with geologic information can be viewed at <https://www.geotours.earthscienceeducation.net/RingDike/index.htm>

While doing a virtual walk through, all kinds of information can be found. Of interest might be a short video lecture (7:31) explaining the observed magma mixing patterns. The lecture can be accessed within the virtual tour by clicking on the “movie camera icon” or by viewing it directly on YouTube at <https://youtu.be/tu5pleHcCT8>. Other information is visible by hovering the mouse over certain areas in the 360 images. In addition, there is lots of clickable information within this virtual tour. This digital pre-visit may save you time for your field exercises and may already answer a lot of your questions.