





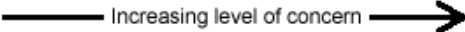



## Living on the Edge Unit 5: SEISMOLOGISTS

- 6) What type of observations or data would you like to have access to (and why) in order to better understand the state of Mount Rainier at this time?

**Table S**

Date	Type of data	Pattern/description of activity	Interpretation
May 15	Seismogram	1 earthquake event, recorded at 2 stations — at summit and NE flank	Single event most similar to a VT (volcano-tectonic) event indicating rock movement from magma migration
May 6-May 31	EQ locations		
June 1-7	EQ locations		
May 10-June 8	RSAM		
June 1-8	Seismic Events (histogram)		

Standard Volcano Icons			
Ground-based Volcano Alert Levels			
Normal	Advisory	Watch	Warning
			
Aviation Color Codes			
Green	Yellow	Orange	Red
 Increasing level of concern			
 Unassigned (Insufficient monitoring to make assessment)			

ALERT LEVEL	DESCRIPTION
NORMAL	Volcano is in typical background, non-eruptive state <i>or, if changing from a higher level:</i> The activity has ceased and volcano has returned to non-eruptive background state.
ADVISORY	Volcano is exhibiting signs of elevated unrest above known background level; <i>or, if changing from a higher level:</i> Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.
WATCH	Volcano is exhibiting heightened or escalating unrest with increased potential of eruption, timeframe uncertain OR eruption is underway but poses limited hazards.
WARNING	Hazardous eruption is imminent, underway, or suspected.

From: <http://volcanoes.usgs.gov/activity/alertsystem/index.php#alertlevel>

## Living on the Edge Unit 5: GAS GEOCHEMISTS + ASH DISPERSAL

A report on the gas emissions and fumarolic activity must be prepared in order to assess and forecast future activity. Complete the following components of the gas geochemistry report:

1) Briefly describe how  $\text{SO}_2$  gas emissions are related to potential volcanic eruptions (in general) and how gas emission data helps monitor volcanoes.

2) What do **increased**  $\text{SO}_2$  gas emissions indicate about a potential eruption? Why?

What do **decreased**  $\text{SO}_2$  gas emissions indicate about a potential eruption? Why?

3) What does the Ash Dispersal tell you about activity at the volcano up to this point?

4) Use **Table G** on the back of this sheet to describe type of the gas data and fumaroles activity information you have. This should help organize your description of the evolution of gas and fumarole activity at the volcano since April.

5) What is your interpretation of the  $\text{SO}_2$  gas emission data in terms of the potential for volcanic activity in the future? Use the Mount Rainier area hazard map and the USGS Volcano Alert system to decide what alert level the volcano should be at today. Explain your answer (use space on back of page as needed).

## Living on the Edge Unit 5: GAS GEOCHEMISTS + ASH DISPERSAL

5) What type of observations or data would you like to have access to (and why) in order to better understand the state of Mount Rainier at this time?





**Table G**

Date	Type of activity	Pattern/description of activity	Interpretation
April 2	Ground deformation		
May 13-May 25	SO <sub>2</sub> emissions (ton/day)		
May 26- May 28	SO <sub>2</sub> emissions (ton/day)		
May 30- June 8	SO <sub>2</sub> emissions (ton/day)		

**Standard Volcano Icons**

**Ground-based Volcano Alert Levels**

Normal    Advisory    Watch    Warning

**Aviation Color Codes**

Green    Yellow    Orange    Red

Increasing level of concern

Unassigned (Insufficient monitoring to make assessment)

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From: <http://volcanoes.usgs.gov/activity/alertsystem/index.php#alertlevel>

## Living on the Edge Unit 5: TILT DATA

- 1) Briefly describe what a tiltmeter measures and how a tiltmeter assists in monitoring magma movement in volcanoes (what does the volcano do and how does the tiltmeter help in measuring that)?
  
- 2) What do **increases** and **decreases** in tilt indicate about the movement of magma inside a volcano?
  
- 3) Make a simple sketch of how a tiltmeter is used at volcanoes.
  
- 4) Use **Table T** on the back of this sheet to describe the type of tilt data and activity you have. This should help organize your description of the evolution of tilt activity at the volcano since May.
  
- 5) What is your overall interpretation of the tilt data in terms of the potential for volcanic activity in the near future? Use the Mount Rainier area hazard map and the USGS Volcano Alert system to decide what alert level the volcano should be at today. Explain your answer (use space on back of page as needed).

## Living on the Edge Unit 5: TILT DATA





6) What type of observations or data would you like to have access to (and why) in order to better understand the state of Mount Rainier at this time?

**Table T**

Date(s)	Type of activity	Pattern/description of activity	Interpretation
May 31-June 4			
June 4- June 8			

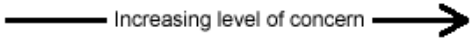
**Standard Volcano Icons**

**Ground-based Volcano Alert Levels**

Normal	Advisory	Watch	Warning
			

**Aviation Color Codes**

Green	Yellow	Orange	Red
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 Increasing level of concern

△ Unassigned (Insufficient monitoring to make assessment)

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