It Does That:

A Deep Dive of Post Dormancy Sawmill Group Activity

Me

- I have been Geyser Gazing since 2022, but have been visiting the park since 2019.
- I got into the Sawmill Group after seeing the Oct 18th 2022 Penta Water Phase, and having been tracking the eruptions of the group since 2024.
- My favorite Geyser is Penta, but after that is Probably Grand.

Scope

Sawmill: Sawmill is the largest geyser of the group, erupting to up to 70’ high for sometimes many hours in a row. Sawmill is very influential on the group’s water levels.

Penta: Is a very pretty classical cone type geyser with five vents as its name suggests with water phase eruptions getting up to 35’. It needs very high water levels to erupt.

Spasmodic: Is a very fun geyser with many vents and two blue pools, and is also very influential on water levels. How full the pools are is a great way to judge the water levels in the group.

Tardy: Has a similar style of eruption to Sawmill, but smaller. It can do both before eruptions with Sawmill or take over and erupt instead of Sawmill during a Tardy Cycle.

Sawmill:

Tardy:

Penta:

Spasmodic:

The Basics: Water Levels

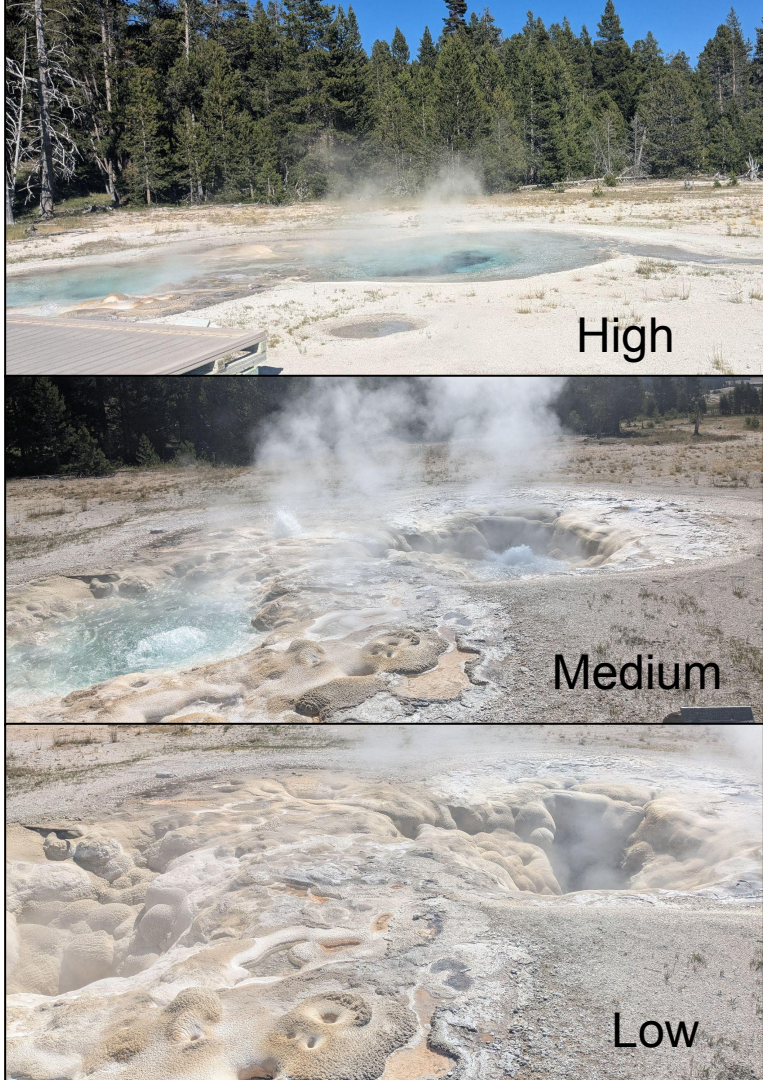
The Entire Sawmill Group is very governed by how high the water levels are.
Solo:

- Sawmill: **Strong Negative** on water levels
- Spasmodic: **Strong Positive**
- Tardy: **Slight Negative**
- Penta: **Slight Negative**

Combinations:

- Sawmill + Spasmodic: **Slight Negative**
- Tardy + Spasmodic: **Slight Positive**

Generally Medium to High water levels mean something in the group will erupt soon, if something isn't already.



General Notes

- All of the statistics presented in the presentation are based only on my data from 2025.

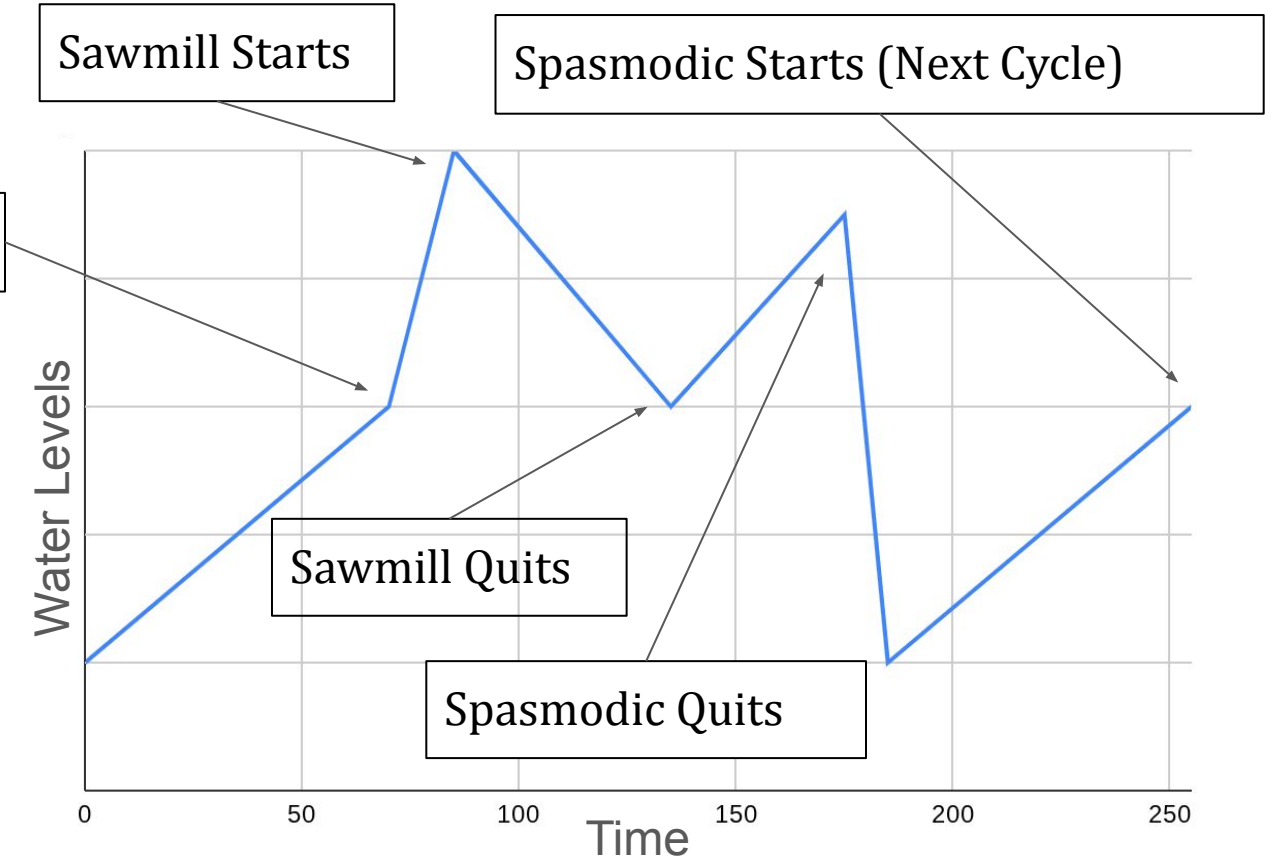
- Due to the long durations of the Geysers in the Group, intervals from the End of the last eruption to the start of the next eruption tend to be most useful.

- Most of my data is collected from the wc with supplemental data from in-basin, which does create some biases due to non constant coverage of the group, not being able to see water levels, etcetera.

“Normal” Cycles

Medium and Deep Drain Sawmills, and Tardy Cycles

Graph of a medium duration Sawmill



This graph shows the water levels during cycle wirth a Medium duration Sawmill, which is the most common cycle from the group.

Note: A cycle is defined as the time form Spasmodic starting to Spasmodic quitting.

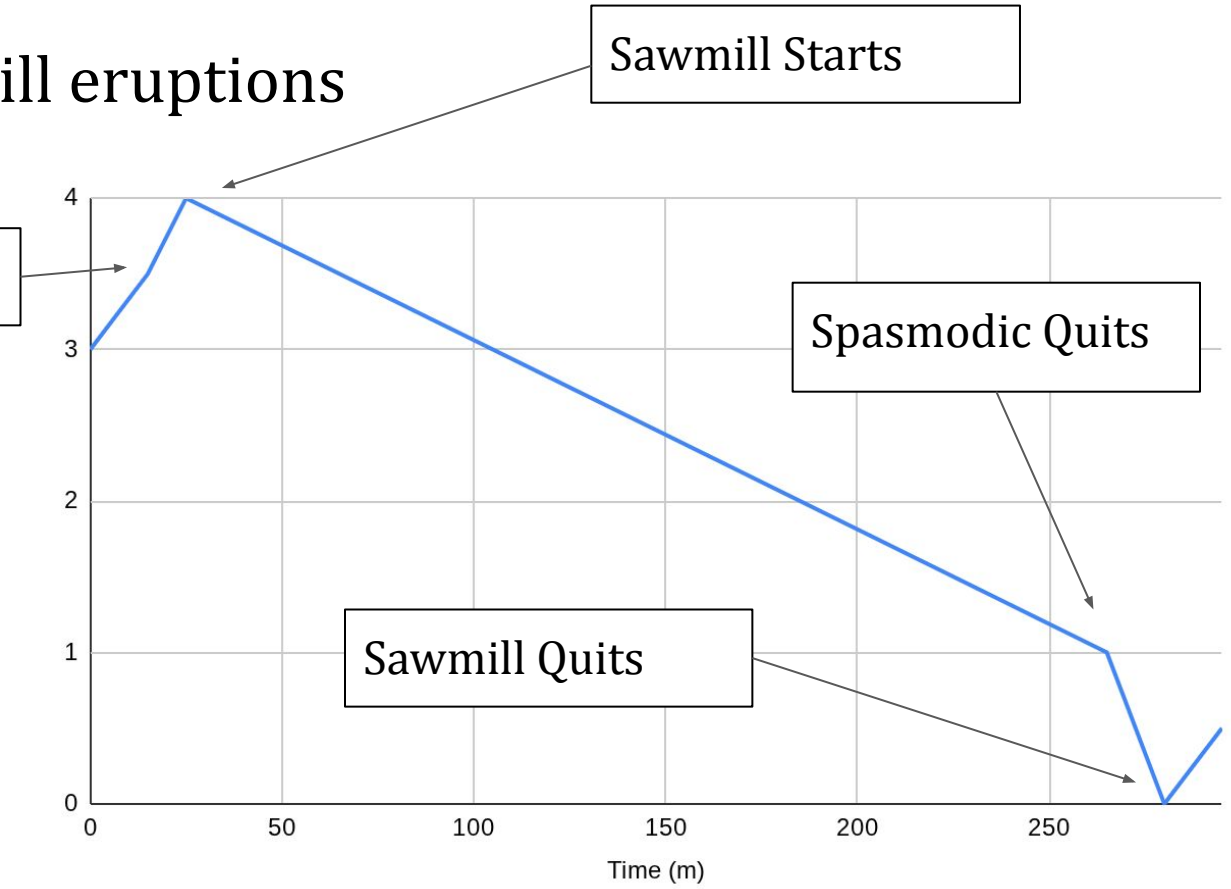
Medium Sawmill Statistics

Definition: A Cycle where Sawmill erupts for 30 to 1h 30m, followed by Spasmodic Quitting about 45m after Sawmill quits.

- **47m duration** on average
- **1h 55m End to Start** interval on average
- **2h 41m Start to Start** interval on average
- Are about **32% of cycles**
- Second most common type of eruption, just after Deep Drains
- *Note: A Cycle with a medium Sawmill ends with water levels slightly higher than it started with.*

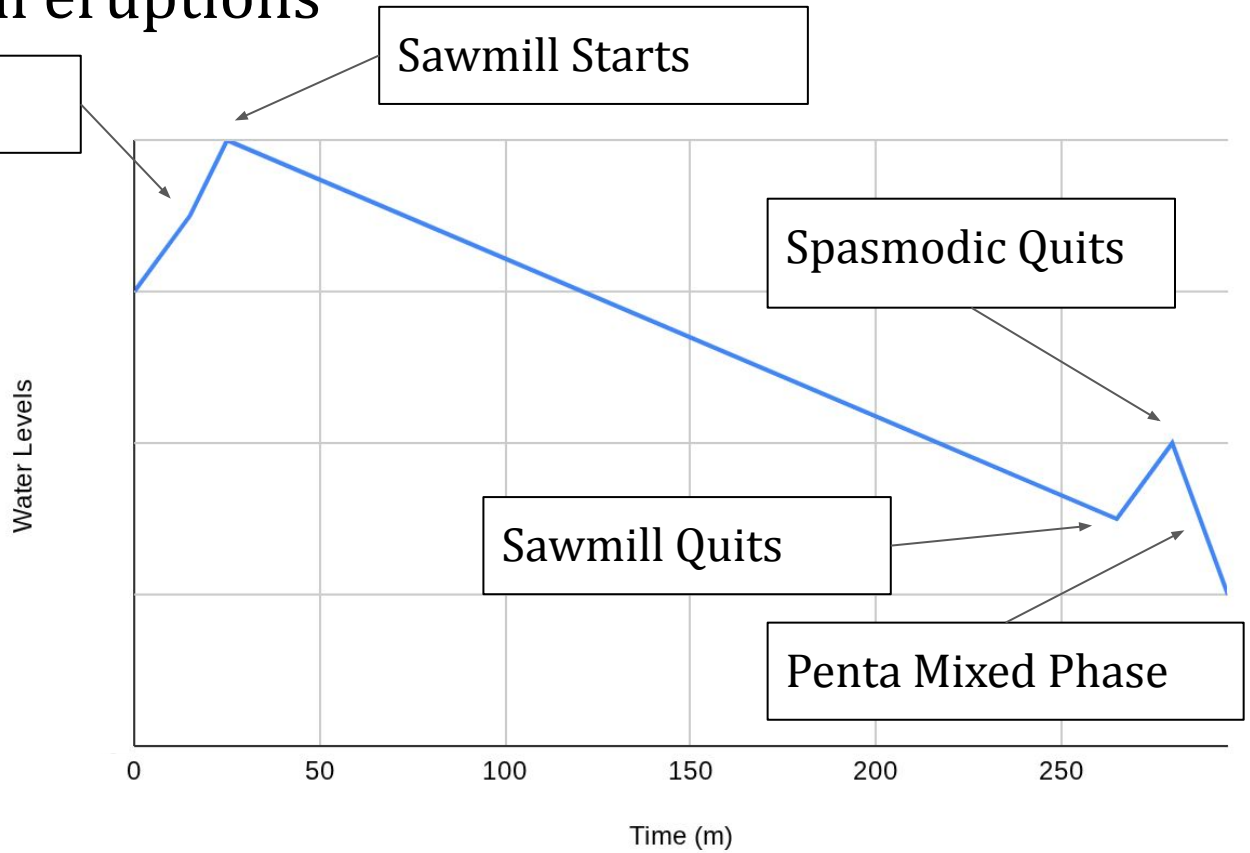
Deep Drain Sawmill eruptions

The graph shows the variation where Spasmodic quits first, this causes a Deeper Drain and only lets Steam Phase Penta eruption happen after.



Deep Drain Sawmill eruptions

When Sawmill quits before Spasmodic, then the water levels can briefly rise, and then when they drop they can cause a Penta Mixed Phase. More detail on this in the Penta section.



Deep Drain Sawmill Statistics

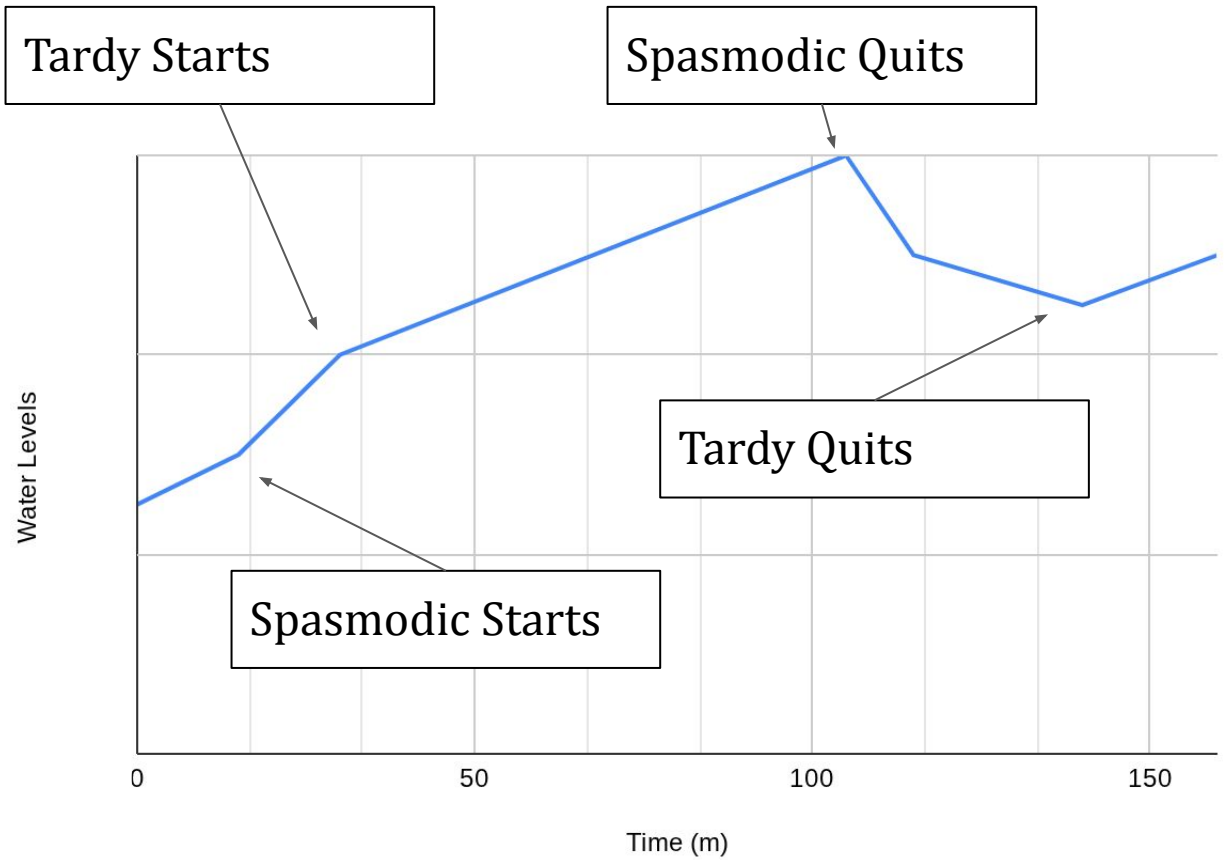
Definition: I define a Deep Drain as an Eruption of Sawmill that is 3h 30m to 6h long.

- Deep Drains drop the water levels a lot and usually require at least two medium cycles to recover back to “normal” water levels
- The most common type of eruption
- Make up **37% of cycles**
- **4h 17m Duration** on average
- **5h 52m Start to Start** interval
- **1h 35m End to Start** interval
- Often the 1st Sawmill after has a ~40m Spasmodic lead time

Tardy Cycles

Tardy Cycles follow the same general cycle as with Sawmill, with Tardy mostly just taking the place of Sawmill.

Note: Tardy's eruption is weaker during a Cycle than its normal during Sawmill eruptions.



Tardy Cycles Statistics

Definition: A cycle where Sawmill does not erupt and instead Tardy erupts, causing the water levels in the group to rise.

- Longer Spasmodic lead time, usually ~20m
- **1h 41m duration** on average not counting the 4h+ eruptions during the Tardy Mode
- These made up about **6.21% of cycles** in 2025
- **1h 9m End to Start** interval on average
- **2h 50m Start to Start** interval on average
- Much more common during the winter, while the group is in winter mode.

Variations

Variations Overview

Overall, I have found 12 other Cycles that can happen not including the three “Normal” cycles talked about already (Medium ,Deep Drain, Trady Cycles)

- **Short Duration Sawmills**
- **Follow-Up Sawmills**
- **Quasi Deep Drain Sawmills**
- **Super Deep Drain Sawmills**
- **Failed Cycles**
- **Split Cycles Sawmill-Sawmill**
- **Split Cycles Sawmill-Tardy**
- **Aborted Tardy Cycles**
- **Long Tardy Cycles**
- **Mid Cycle Tardy**
- **Quasi Tardy Cycles**
- **Attempted Tardy Cycles**

Each of these behaviors has been observed at least twice, though some are a lot more common than others.

Short Sawmill eruptions

Definition: A normal Sawmill eruption that has a duration between 10m and 30m.

- These are a variation on a Medium with a shorter duration.
- Shorts can usually only happen on the **1st cycle after a Deep Drain**.
- Most often occur during Winter Mode but can happen at other times.
- Are fairly common, making up **7.5%** of eruptions in 2025.
- **2h 24m Start to Start** interval
- **2h 0m End To Start** interval
- **24m duration** on average

Follow-Up Sawmill eruptions

Definition: a Sawmill eruption that starts under 40 from the end of the Deep Drain with durations greater than 3m.

- Variable durations from 5m to 50m, **20m on Average**
- Most commonly start 10m to 20m after the Deep Drain ends, **Average 16m**
- Does not need Spasmodic to be ie
- Multiple can happen in a row
- Follow-ups occur more frequently in winter mode
- **2h 3m End To Start** interval

Quasi Deep Drain Sawmill eruptions

Definition: a Cycle with a Sawmill duration of 2h to 3h 30m with water levels not dropping into a Deep drain.

- **Twilight does not Drain**
- Spasmodic Continues for ~1h after Sawmill quits
- Rare in 2025 with only a few recorded
- More common in 2026, 9 recorded so far
- Can Cause Intermediate Penta eruptions when Spasmodic quits
- Average of a **2h 46m Duration**
- **2h 37m End to Start** interval on average

Super Deep Drain Sawmill Eruptions

Definition: A Sawmill Deep Drain eruption with a Greater than 6h duration.

- Water levels drop even farther than during a Deep Drain
- On Average there is a longer **2h 30m End To Start Interval**
- On average a **6h 42m Duration**
- I have recorded up to 11h durations
- Most commonly occur during Winter Mode

Failed Cycles

Description:

1. ~1h 20m after the Deep Drain Quits, Spasmodic Starts
2. Spasmodic Continues for ~50m, then Spasmodic Quits
3. ~1h 20m later, Spasmodic Restarts and a normal cycle continues

Definition: A Cycle after a Deep Drain where only Spasmodic erupts

- With a Failed Cycle, **End to Start intervals ~3h 30m**
- Spasmodic **Durations of ~50m**
- Fairly rare behavior, especially during 2025
- Mostly only happen during Winter Mode
- **Requires a Deep Drain before**

Split Cycles Sawmill-Sawmill

Description:

1. The Cycle starts like usual with normal Spasmodic start and the Sawmill
2. 1h 30m to 2h 30m into the eruption, Sawmill quits with Spasmodic Still ie.
3. 30m to 60m after the Phase, water levels rise enough for Sawmill to restart
4. Sawmill quits at the normal time, ~4h after its initial start

Definition: A Deep Drain Cycle where Sawmill pauses briefly in the 1h 30m to 2h 30m range.

- Water levels rise to near Overflow in Sawmill, Tardy and Spasmodic during the pause
- Quite rare, I have only seen about 10 so far
- **After restart the group goes into a normal Deep Drain**

Quasi Tardy Cycles & Split Cycles Sawmill-Tardy

Description:

1. Sawmill does its normal 1st half of the Split Cycle with 1h 30m to 2h 30m durations.
2. Water levels rise for 45m to 1h 30m before Tardy starts
3. Tardy erupts until Spasmodic quits

Definition: A Split Cycle with Tadry erupting for the 2nd half instead of Sawmill

- Water levels in both Sawmill and Tardy are Close to overflow while Tardy is erupting
- Tardy lasts until Spasmodic quits, then drops
- **Very rare,** I have only observed one in person and one from the webcam in total.

Mid Cycle Tardy

Definition: A quick Tardy Cycle after a Medium Sawmill eruption.

- Durations can range from 3m to 45m normally
- Average **duration of 21m**
- These are fairly rare, with only 11 observed total
- These often happen on the cycle before a Tardy Cycle.
- Long Duration Mid Cycles often happen before attempts at a Tardy Mode

Long Tardy Cycles

Definition: A Tardy Cycle with Tardy and Spasmodic durations of 2h+

- Long Trady Cycles so far seem to only occur during Trady Modes.
- Rare, they only make up about 10% of eruptions during a Tardy Mode
- Average **duration of 3h 50m**
- Often cause **many Churn eruptions**
- Often cause Uncertain to erupt ~2h after
- Water levels don’t rise much

Attempted vs Aborted Tardy Cycles

Attempted Tardy Cycle Definition: A Cycle with an Attempted start of a Tardy Cycle before Sawmill with as more than 10s of Tardy erupting, but less than 3m of Tardy erupting.

Aborted Tardy Cycle Definition: A Cycle with an Attempted start of a Tardy Cycle before Sawmill with Tardy erupting for more than 3m.

- Small splashing for <10s from Tardy is common and happens on most cycles
- Can occur during both Winter and Summer Mode
- Common, 20% of Tardy Cycle were Aborted Tardy Cycle in 2025

Long Term Behaviors

Winter Mode

During Winter Mode the group does a few distinct behaviors:

- **Longer Deep Drain durations, and Super Deep Drains can occur**
- Less Penta Mixed Phases and almost no Penta Water Phases
- **More Tardy Cycles** and, Aborted Trady Cycles and Attempted Trady Cycles
- More Sawmill Follow Ups and Sawmill Shorts
- Failed Cycles
- Tardy Modes or Attempted Tardy Modes

Summer Mode

Summer Mode behavior is sort of the opposite of Winter mode in almost every way.

- **Shorter Deep Drains**, almost all are right at the 4h duration mark
- Very few Tardy Cycles, and at least in 2025 all Tardy Cycles during Summer Mode lead to a Penta Water Phase
- At least in 2025, much more Penta Mixed Phase eruptions
- **Frequent Attempted Tardy Cycles**
- The trend of Multiple Mediums in a row eventually leading to Tardy cycles only seems to happen in Summer Mode.

Attempted Tardy Modes

Tardy modes seem to be a recurring activity that occur during Winter Mode.

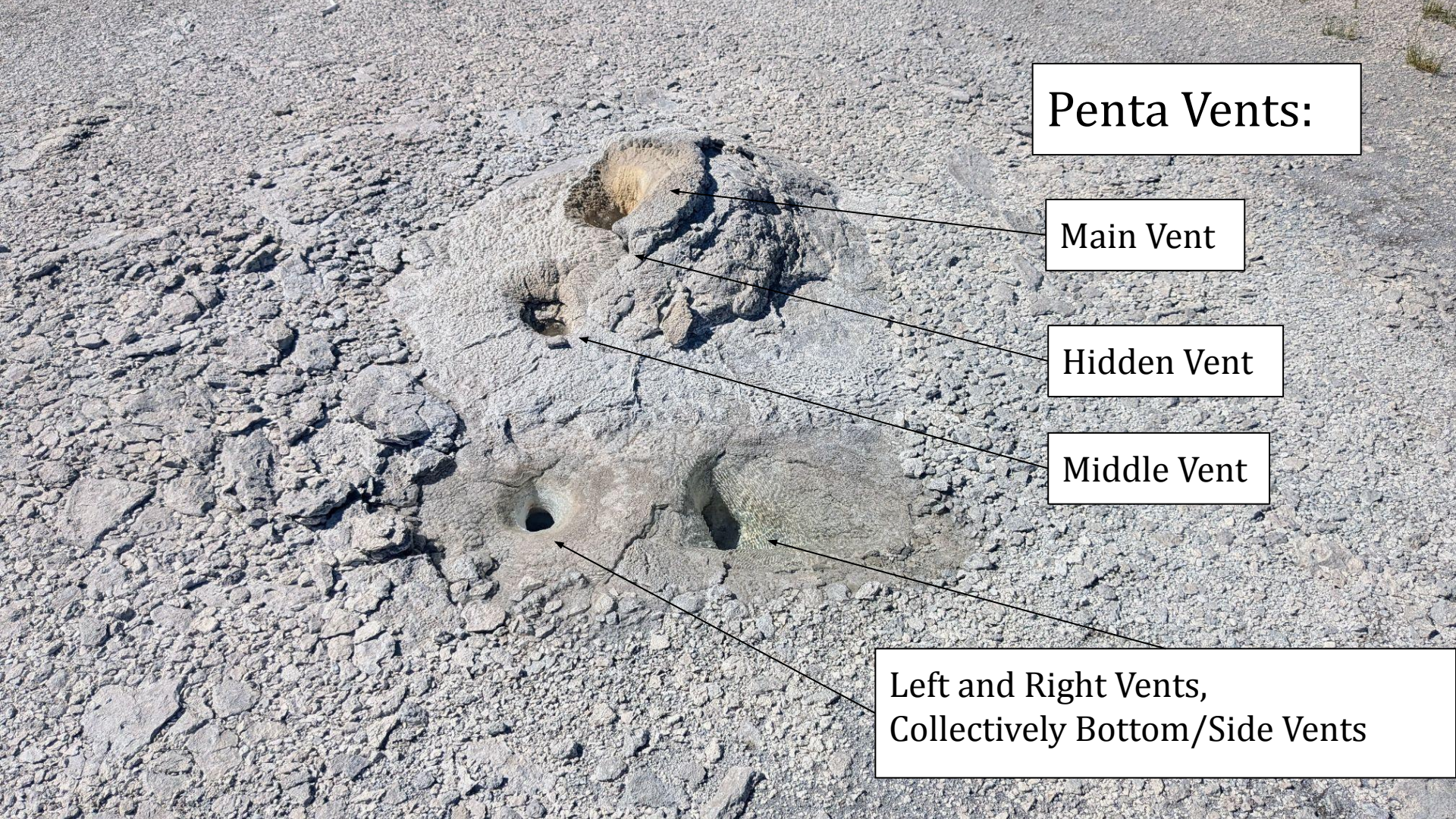
They fall into two categories: Attempted Tardy Modes and Trady Modes

- Attempted Tardy Modes have effectively one day of only Tardy Cycles, which usually gets **3-6 Trady Cycles before Sawmill Restarts**
- I have recorded two Attempted Tardy Modes, one in January of 2024 and another in December of 2025.
- An important note is that during these there seem to not every be the Long duration Tardy Cycles, and **no Churn eruptions.**

Tardy Modes

- Currently I only know of one full Tardy Mode, which occurred from April 10th to April 17th.
- Some Sawmill Short eruptions occurred during the Tardy Mode
- Penta did not erupt during this time
- 70 eruptions of Churn were recorded, often with multiple per cycle. **These were the first recorded Churn eruptions since the Dormancy Recovery in 2021.**
- **Overall 56 Tardy Cycles occurred** during the Tardy Mode
- **6 of these were long duration**, with greater than 3h 30m duration

Penta


Penta Vents:
Main Vent
Hidden Vent
Middle Vent
Left and Right Vents,
Collectively Bottom/Side Vents

Penta Steam Phases

Definition: An eruption of Penta containing majority forced steam, sometimes with some spritzes of water.

- Occur after Deep Drains with Spasmodic quitting first
- Common, occur on the majority of Deep Drains
- Can start anytime after Spasmodic quit up to ~1h, even before Sawmill
- **Indicate too low water levels for a Mixed Phase**

Penta Mixed Phase

- Mixed Phase eruptions are the **2nd most common type of Penta eruption**
- **Weak**: steam/spray from main, small splashing in sides
- **Medium**: steam-driven water in main, tall splashing from sides
- **Strong**: Forced mixed water-steam in main, full water in sides
- **Need a Deep Drain before**

Penta Mixed Phase

Definition: A medium strength Penta eruption occurring after a Deep Drain.

- Mixed Phases on average **start 24m after a Deep Drain ends**
- Range starting from 2m to 50m after the Drain Drain ends
- On average have a **20m Duration**
- Almost solely start when **Spasmodic quits near the end to after Sawmill quits**

Note: A good sign to look for in-basin is Twilight Spring to have not drained when Sawmill Quits

Intermediate Penta

Definition: A Penta eruption with a strength between a Water and Mixed Phase, starting after high water levels.

- Three known setups:

1) Starts after the drop from one **Tardy Cycle**
2) Starts after the drop from a **Quasi Tardy Cycle**
3) Starts after a **Quasi Deep Drain**

- Usual **duration of ~15m**,
- Rare, Two seen in 2025, One in 2024
- Start from high water levels, but not ones high enough for a Water Phase
- Are **initiated by water levels dropping**, like in a Mixed Phase

Classical Penta Water Phase

Definition: A Water Phase Penta starting during Spasmodic, with long 30m+ durations.

- They are **full water from all vents** except at end where it can change to forced mixed water steam in main
- Tall, often in the 30'+ range
- **Start during a Tardy cycle with Spasmodic ie**, and from a Bottom vent pool height just below overflow, initiated by splashing from either Main vent or the Bottom Vents.
- Historically the main type of Water Phase Penta eruptions
- **Only three seen post dormancy**, durations ~1h 30m, ~45m, and 30m

Post-Cycle Penta Water Phase

Definition: A full strength Penta Water Phase starting after Spasmodic quits

- **Same strength as a Classical Penta Water Phase**
- **Durations are ~15m**, Similar to Intermediates
- **Starts from splashing in all vents with cycling water** levels in the Bottom Vents before the pools come up to overflow with Main Vent building into eruption.
- Two have been seen since dormancy
- Possibly an only post dormancy behavior

Dormancy Recovery Penta Water Phase

- These happened when the group was coming back from its 2017 to 2021 dormancy
- **I am aware of only two happening**, one a few days before Sawmill came back, the other a month after
- One had a known ~2h 29m duration
- **Weaker than a normal Penta Water Phase**, strengths similar to maybe weaker than that of an intermediate
- Started with little warning due to the weird water levels in the group at the time

Penta Water Phase Notes:

- Penta needs very high water levels to erupt
- This means you usually need at least **one Tardy Cycle, but often two** for an eruption from Penta
- Watch for multiple Medium Sawmill eruptions in a row, indicating rising water levels
- 3-5 Mediums in a Row occurred before every Water Phase in 2025
- **All known Tardy Cycles over the 2025 summer lead to Water Phases from Penta**

What you can do to help:

- **Note any activity you see in-basin about the Sawmill Complex to GT**, and especially the starts and ends of Sawmill, Spasmodic and Tardy Cycles.
- If you know that one of those geysers started over a range of time, please enter that also. All of this helps me get a more complete picture and fill in gaps that happen when the webcam is not downbasin.
- Water levels are also important to note on GT, **especially over time**
- For Cam-ops checking on the Sawmill Group every 15m or so is very helpful.

And thanks to everyone who contributed Data to GT or me directly, and for those who helped edit this presentation and provided pictures. It would not be possible without you!

Questions:

Any questions about the Sawmill Group or my data are welcome!