Westlake US 2 6/1/2023

#### TSX/PAZ Satellite Update InSAR Subsidence May 29, 2023

#### Longuist comment:

The PAZ satellite from the TSX/PAZ constellation (4 & 7-day revisit) passed by Sulphur on Monday May 29. We received the dataset Wednesday and verified that none of the datapoint areas around the dome and caverns near the western flank are showing deviation from their linear trend. The attached time series plots have been prepared for reference.

As noted in the prior update email the SNT data from May 25 showed a greater than typical negative displacement in AOI 4. The new TSX/PAZ dataset was evaluated to compare. The below contours show the change in displacement between the average of the 5/25 and 5/29 satellite images and the average displacement values from one month of images prior to 5/25. This shows that the two latest images do not indicate a concentration of increased subsidence in that region. The next SNT dataset will likewise be reviewed to verify a continuance of the prior trend.





# TSX/PAZ Constellation Update Continuous InSAR Monitoring of Ground Displacement Near Western Caverns and Dome Flank



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May 29, 2023 Update



### Parameters of InSAR Dataset and Collection Frequency

- Satellite Data Delivery Frequency as of April 2023:
  - Sentinel 1 (SNT) 12 days
  - TSX / PAZ Constellation 4 & 7 days
  - <u>3.96-day avg. frequency</u>

			TSX/PAZ Constellation	
	Sentinel-1	TerraSAR-X	TerraSAR-X	PAZ
Mode / Resolution	16 x 65 ft	Spotlight (3 x 3 ft)	Spotlight (3 x 3 ft)	Spotlight (3 x 3 ft)
Track	T136	T29	T67	T120
Band (wavelength)	C-Band (2.32 in)	X-Band (1.22 in)	X-Band (1.22 in)	X-Band (1.22 in)
Nominal frequency	12- day	11- day	11- day	11- day
Orbit (LOS angle)	Ascending 43°	Descending 17°	Descending 37°	Descending 37°
Date range	04 Oct 2016 – 20 Jan 2024	16 Jun 2022 – 01 May 2023	24 Jan 2023 – 11 Jan 2024	28 Jan 2023 – 15 Jan 2024
Number of images	199	30	34	33



Continuous Monitoring of Ground Subsidence

6/1/2023

Overview and Monitoring History

- Beginning in late January, ground displacement over the western portion of the Sulphur Mines Salt Dome has been evaluated following the delivery of each dataset update from TRE-Altamira
- An automated process and set of deliverables to convey the results of the datasets is being developed that will evaluate multiple factors including trend consistency and mapped acceleration of ground displacement
- Current updates are focused on the review of time series charts of averaged data for selections of points around the dome and caverns on the western flank
- The TSX/PAZ satellite constellation (4 & 7-day revisit) passed by Sulphur on <u>Monday May 29, 2023</u>
- The following slides present the time series and associated linear trends for each location evaluated from this dataset
- To-date there has been <u>no material deviation</u> from the established subsidence trends in the areas investigated

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# TSX/PAZ Constellation – May 29, 2023 Update

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### PPG 21



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## PPG 6



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### PPG 7



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### PPG 22



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Continuous Monitoring of Ground Subsidence

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## AOI #1



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### AOI #2



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### AOI #3



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### AOI #4



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