

TSX/PAZ Satellite Update
InSAR Subsidence
October 8, 2023

Lonquist comment:

The PAZ satellite from the TSX/PAZ constellation (4 & 7-day revisit) passed by Sulphur on Sunday October 8. We received the dataset Tuesday and noted that the latest datapoint is above but generally continuing in the direction of the “recent” trends across all AOI regions. The recent trends are currently being plotted on the data span of 3/24/2023 to present. The “historical” data trends continue to be calculated from a data span of 1/24/2023 - 8/3/2023, before trend departure was observed.

As with prior updates, we have appended a review of the distant “Additional” locations of interest to this report, where we are still seeing similar or greater acceleration increases.

Based on communications with TREA we anticipate the next TSX/PAZ dataset will utilize the new baseline model from their data reprocessing effort.



TSX/PAZ Satellite Update

Continuous InSAR Monitoring of Ground Displacement Near Western Caverns and Dome Flank

Sulphur Mines Salt Dome

Prepared for:
Westlake Chemical

Prepared by:
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Date Signed: October 12, 2023
Austin, Texas

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Louisiana License No. 40697

Dataset

Satellite Source

TerraSAR-X - PAZ Constellation

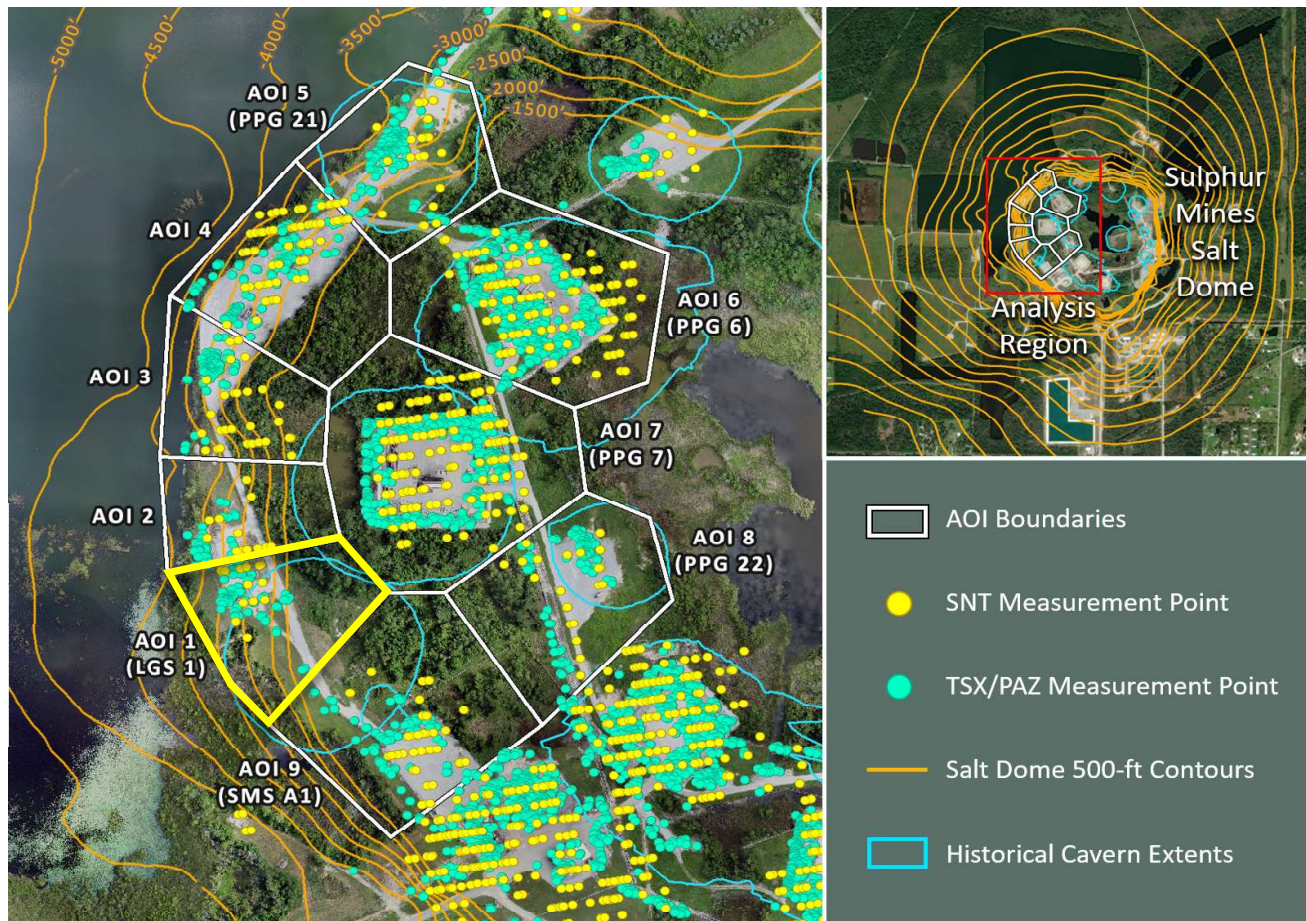
Most Recent Image Date

Sunday, October 8, 2023

Analysis Report Date:

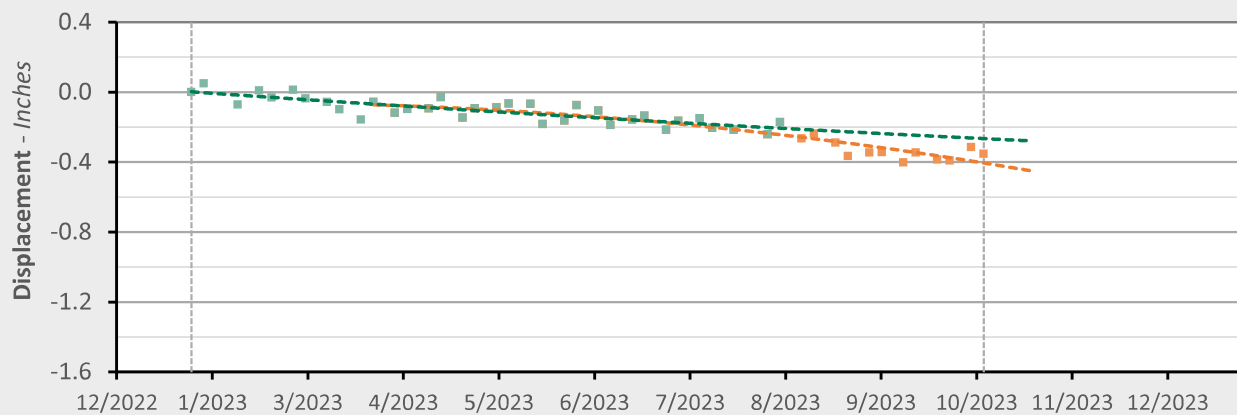
October 12, 2023

AOI 1 (LGS 1) - Location Map



AOI 1 (LGS 1) - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 77



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.35 in/yr	-1.03 in/yr	-0.69 in/yr
Acceleration:	+0.19 in/yr ²	-1.55 in/yr ²	-1.75 in/yr ²

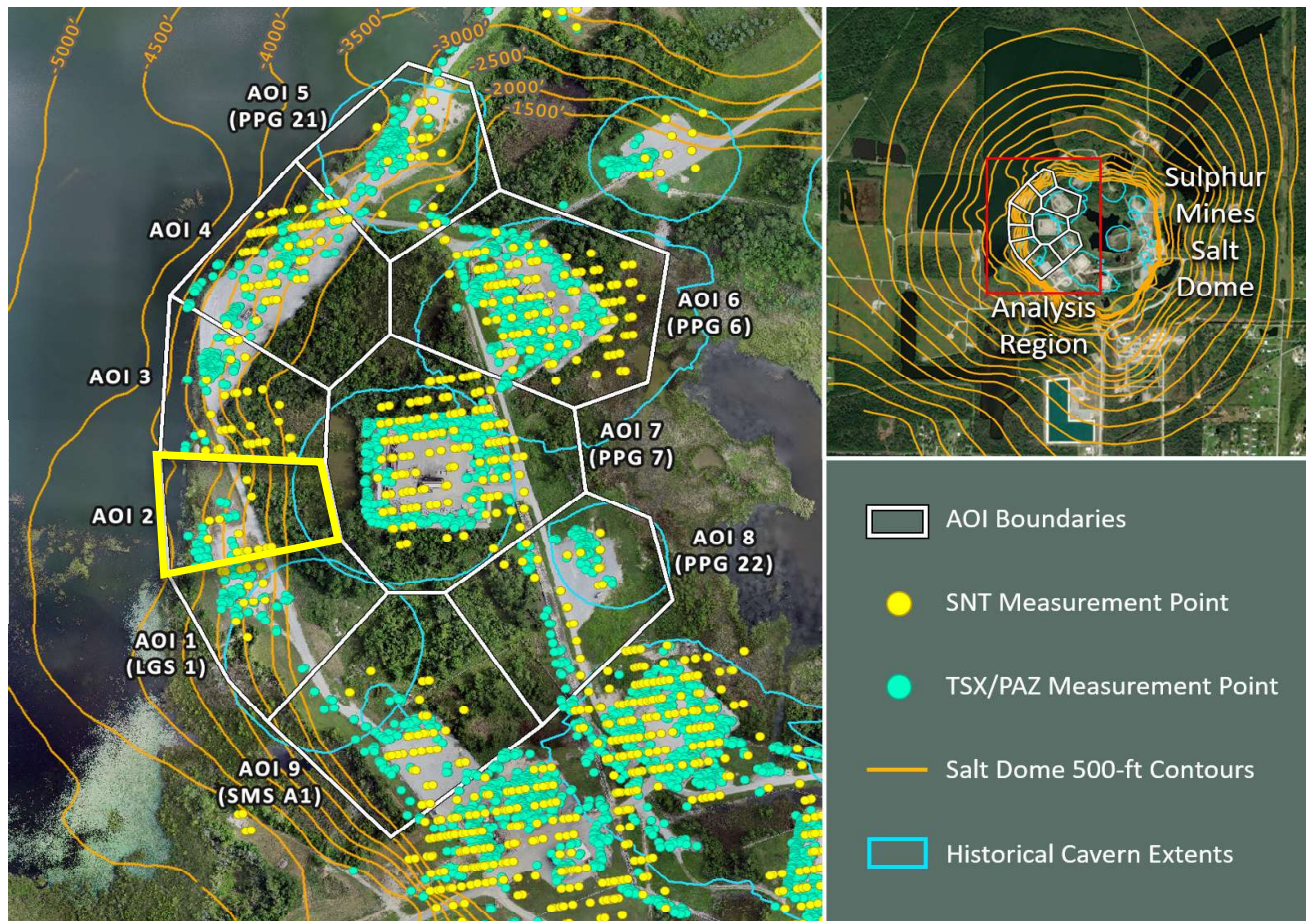
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

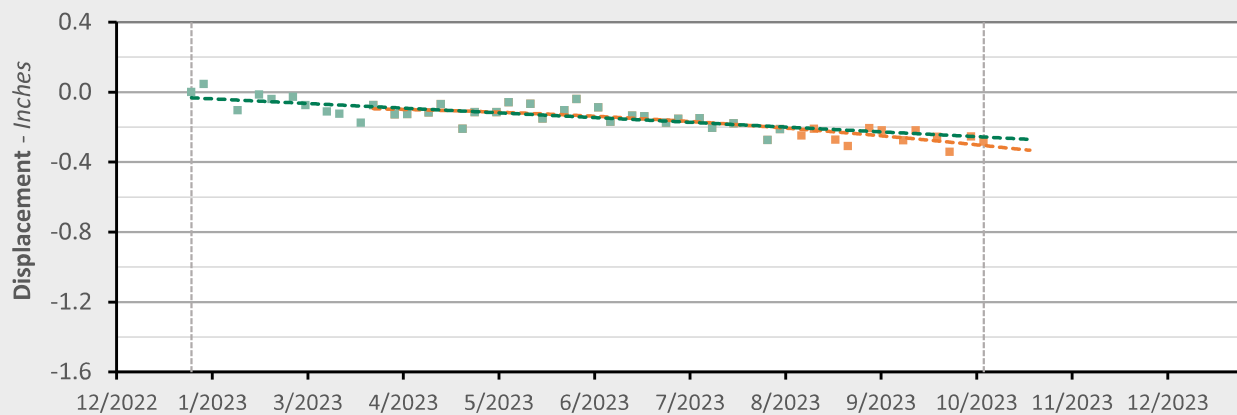
--- Recent Trend Line (Quadratic Regression)

AOI 2 - Location Map



AOI 2 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 42



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.32 in/yr	-0.65 in/yr	-0.33 in/yr
Acceleration:	-0.02 in/yr ²	-0.98 in/yr ²	-0.97 in/yr ²

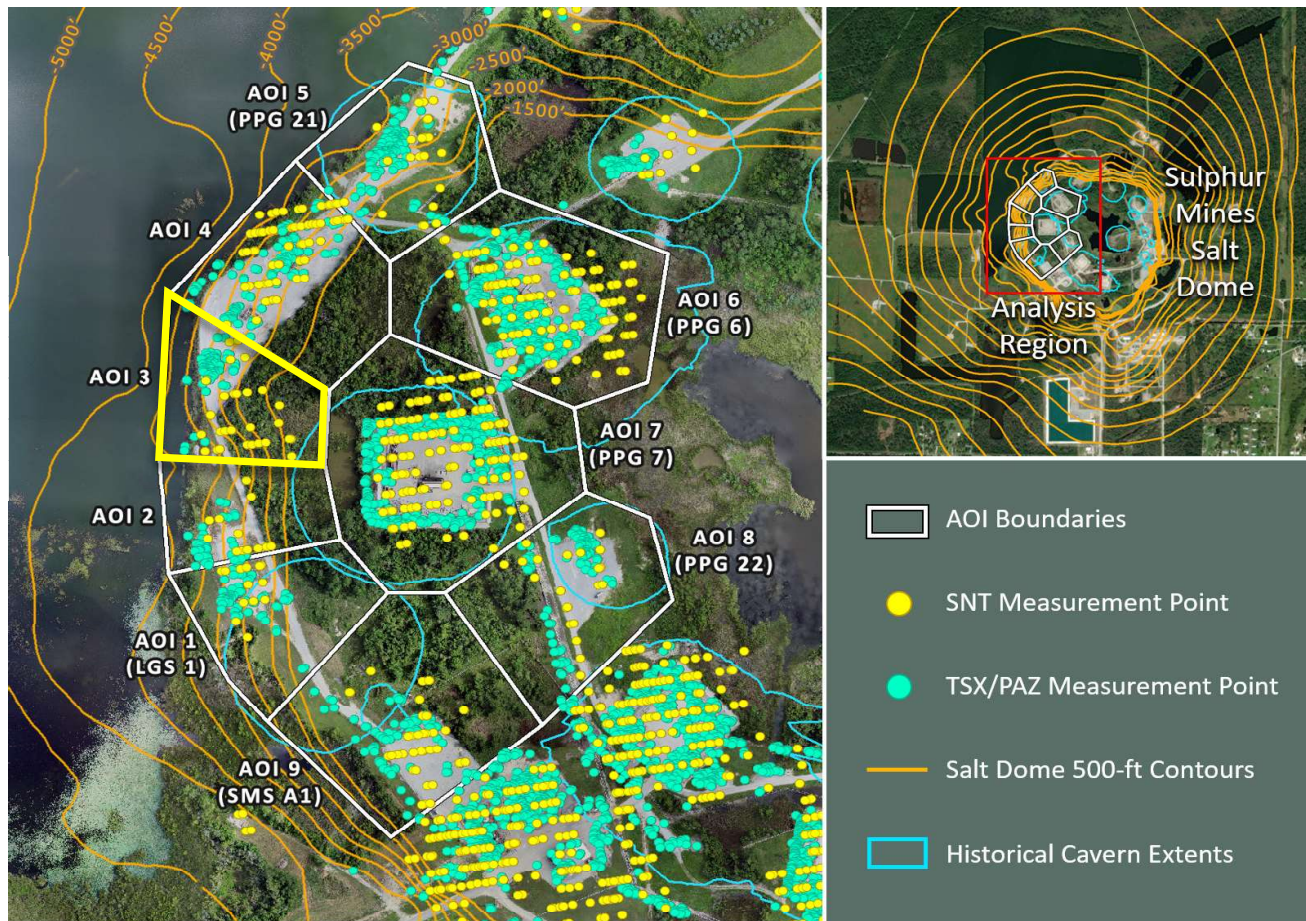
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

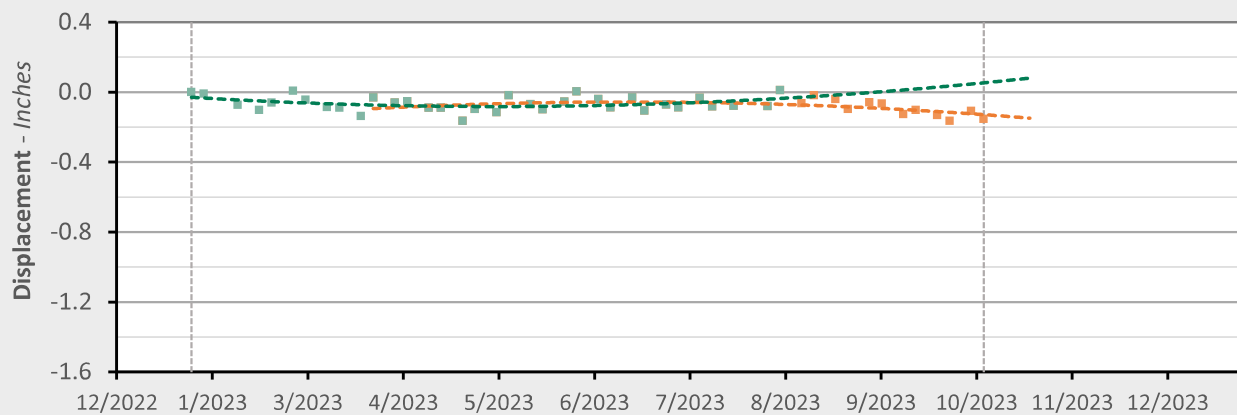
--- Recent Trend Line (Quadratic Regression)

AOI 3 - Location Map



AOI 3 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: **81**



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	+0.36 in/yr	-0.46 in/yr	-0.82 in/yr
Acceleration:	+1.44 in/yr ²	-1.46 in/yr ²	-2.90 in/yr ²

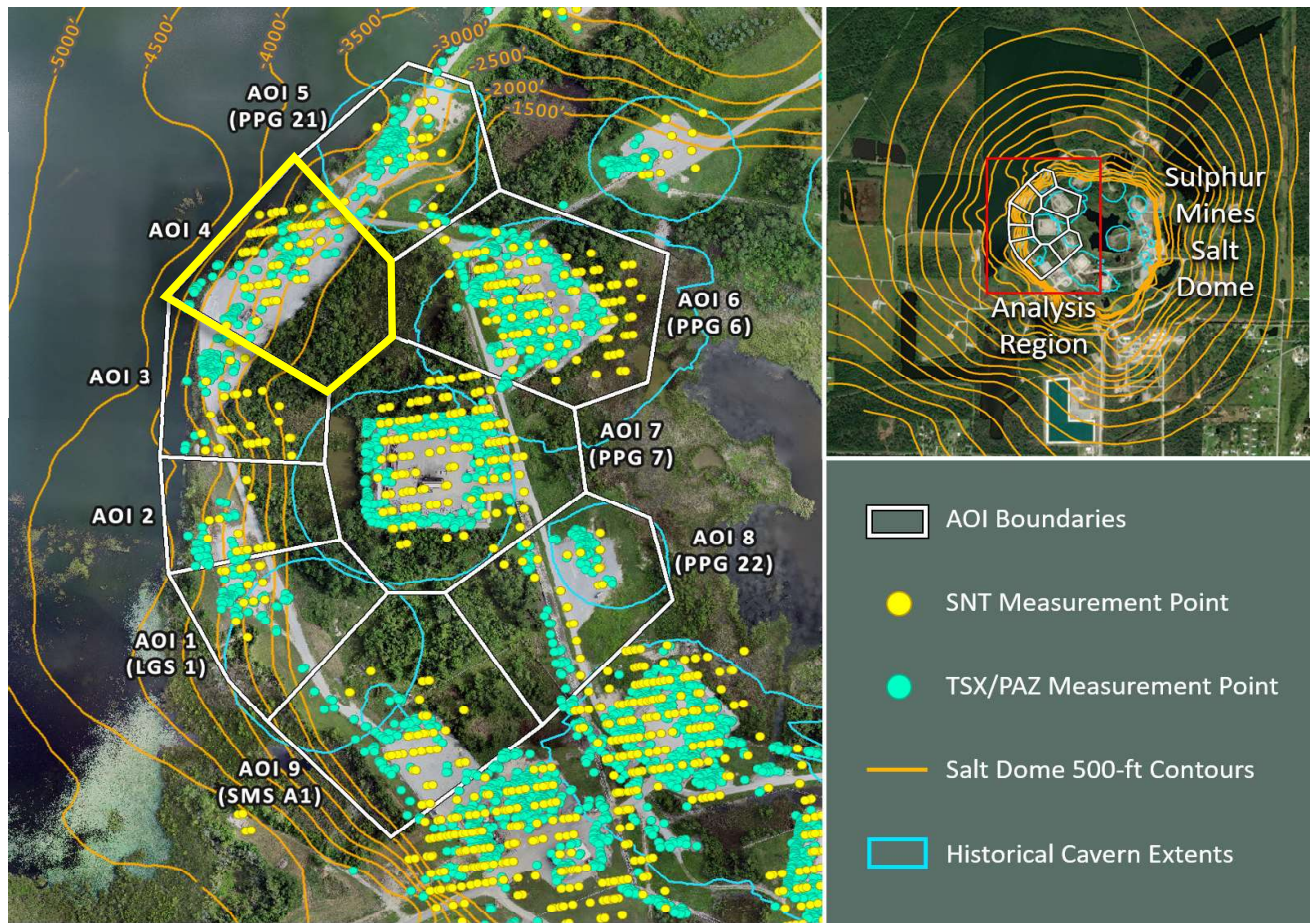
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

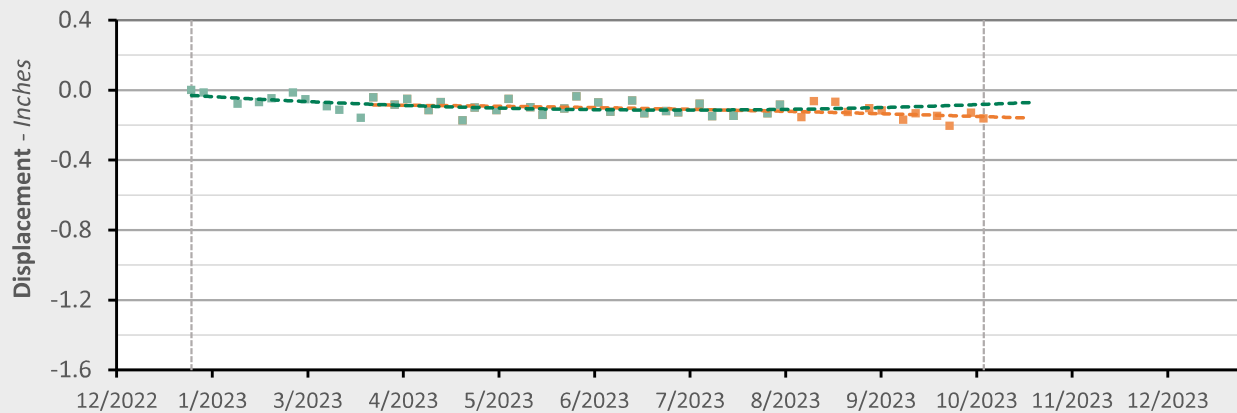
--- Recent Trend Line (Quadratic Regression)

AOI 4 - Location Map



AOI 4 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 140



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	+0.08 in/yr	-0.20 in/yr	-0.28 in/yr
Acceleration:	+0.89 in/yr ²	-0.27 in/yr ²	-1.16 in/yr ²

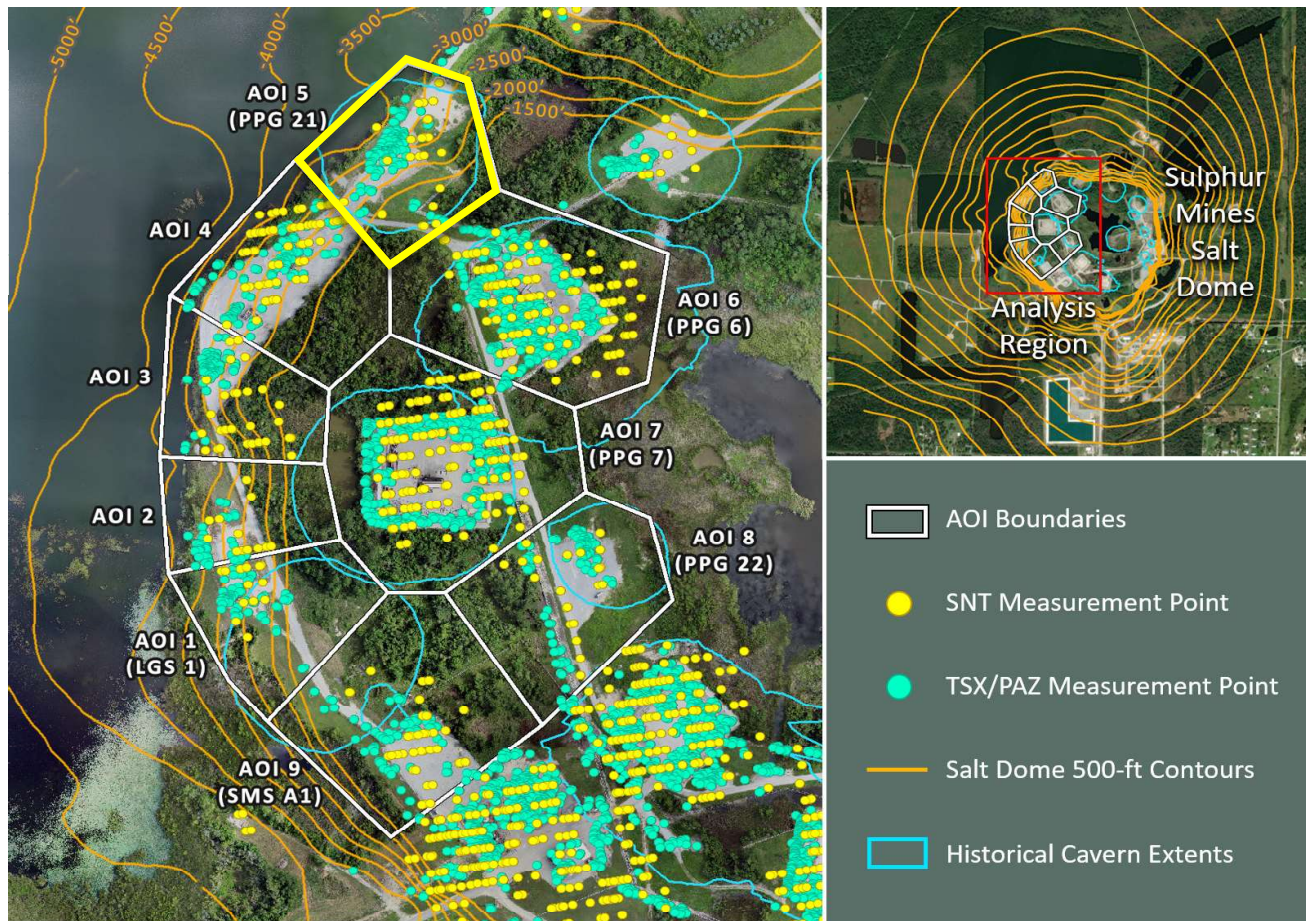
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

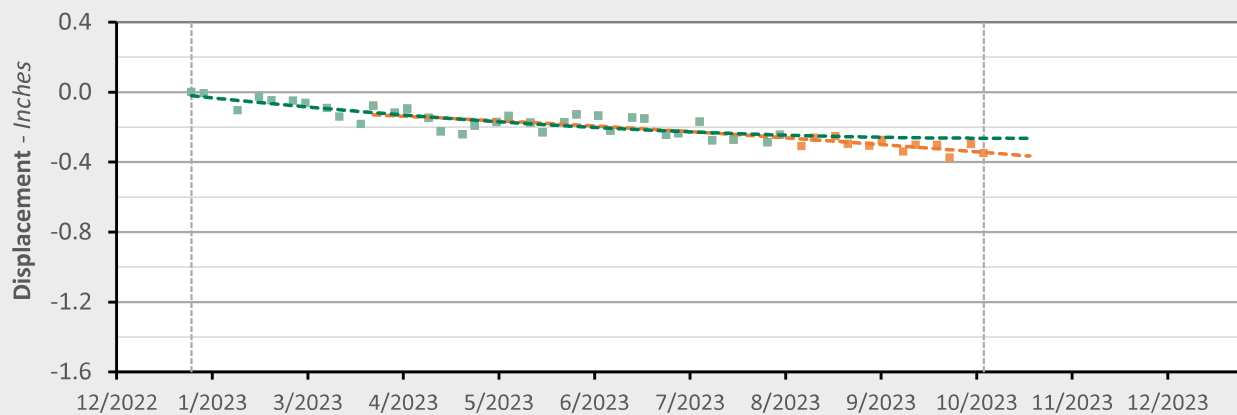
■ Recent LOS Displacement Measurement

--- Recent Trend Line (Quadratic Regression)

AOI 5 (PPG 21) - Location Map



AOI 5 (PPG 21) - Displacement Time Series TSX/PAZ (10/8/2023) Point Count: 136



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.19 in/yr	-0.51 in/yr	-0.32 in/yr
Acceleration:	+0.93 in/yr ²	-0.42 in/yr ²	-1.35 in/yr ²

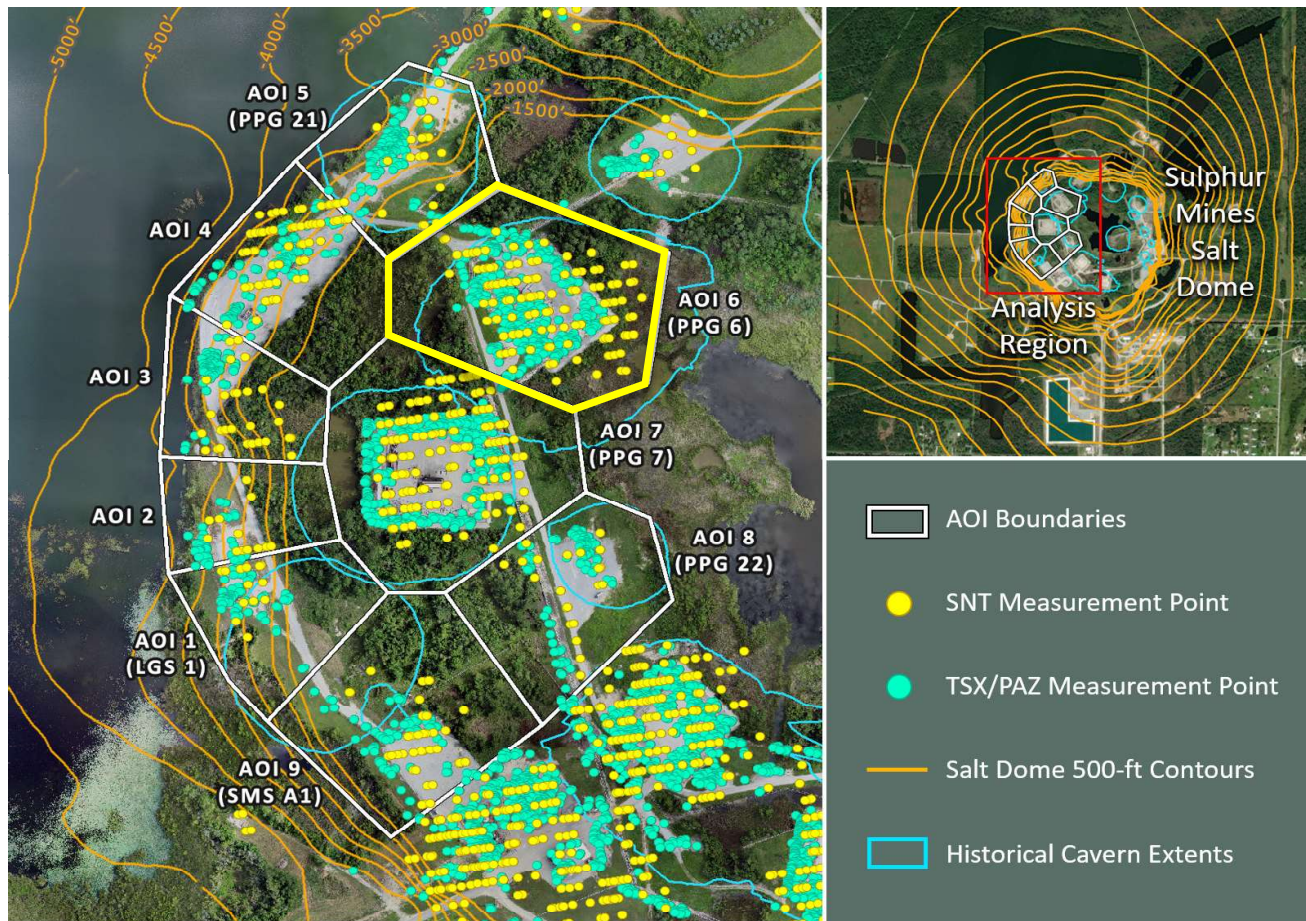
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

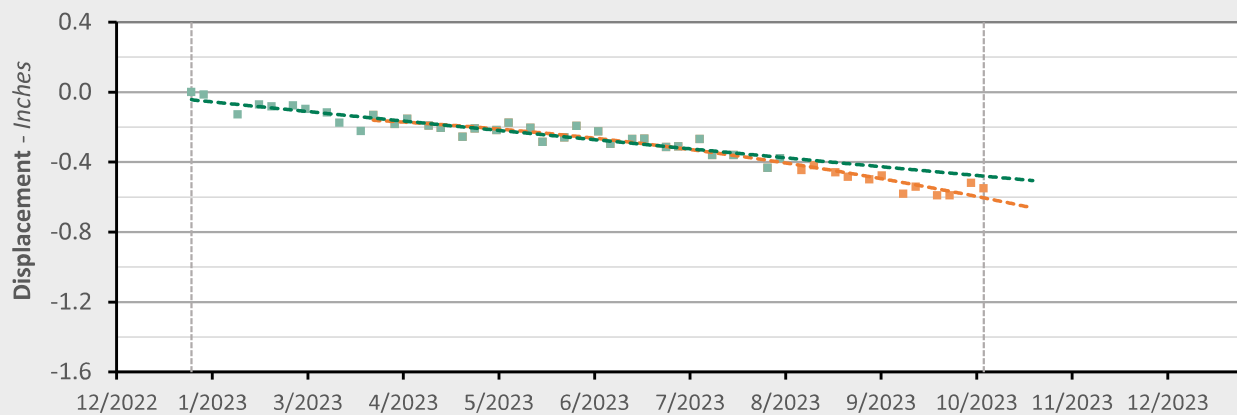
--- Recent Trend Line (Quadratic Regression)

AOI 6 (PPG 6) - Location Map



AOI 6 (PPG 6) - Displacement Time Series

TSX/PAZ (10/8/2023) Point Count: **428**



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.60 in/yr	-1.28 in/yr	-0.68 in/yr
Acceleration:	+0.10 in/yr ²	-1.72 in/yr ²	-1.82 in/yr ²

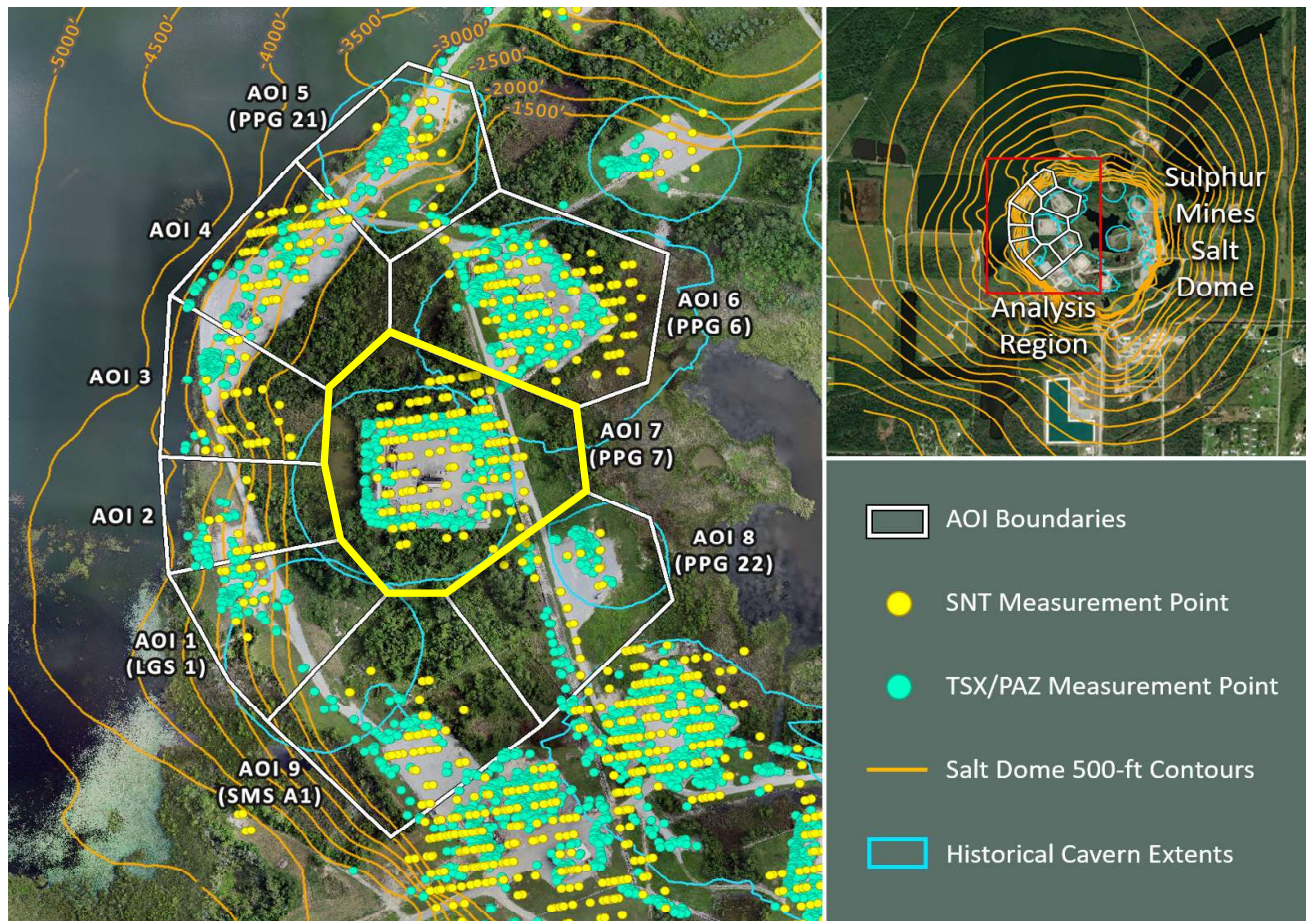
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

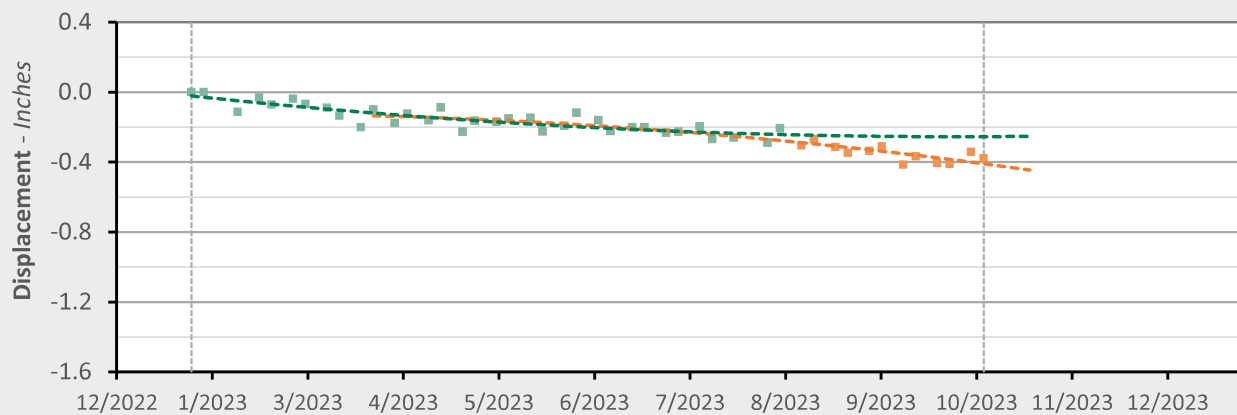
--- Recent Trend Line (Quadratic Regression)

AOI 7 (PPG 7) - Location Map



AOI 7 (PPG 7) - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: **374**



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.16 in/yr	-0.85 in/yr	-0.69 in/yr
Acceleration:	+1.01 in/yr ²	-1.27 in/yr ²	-2.27 in/yr ²

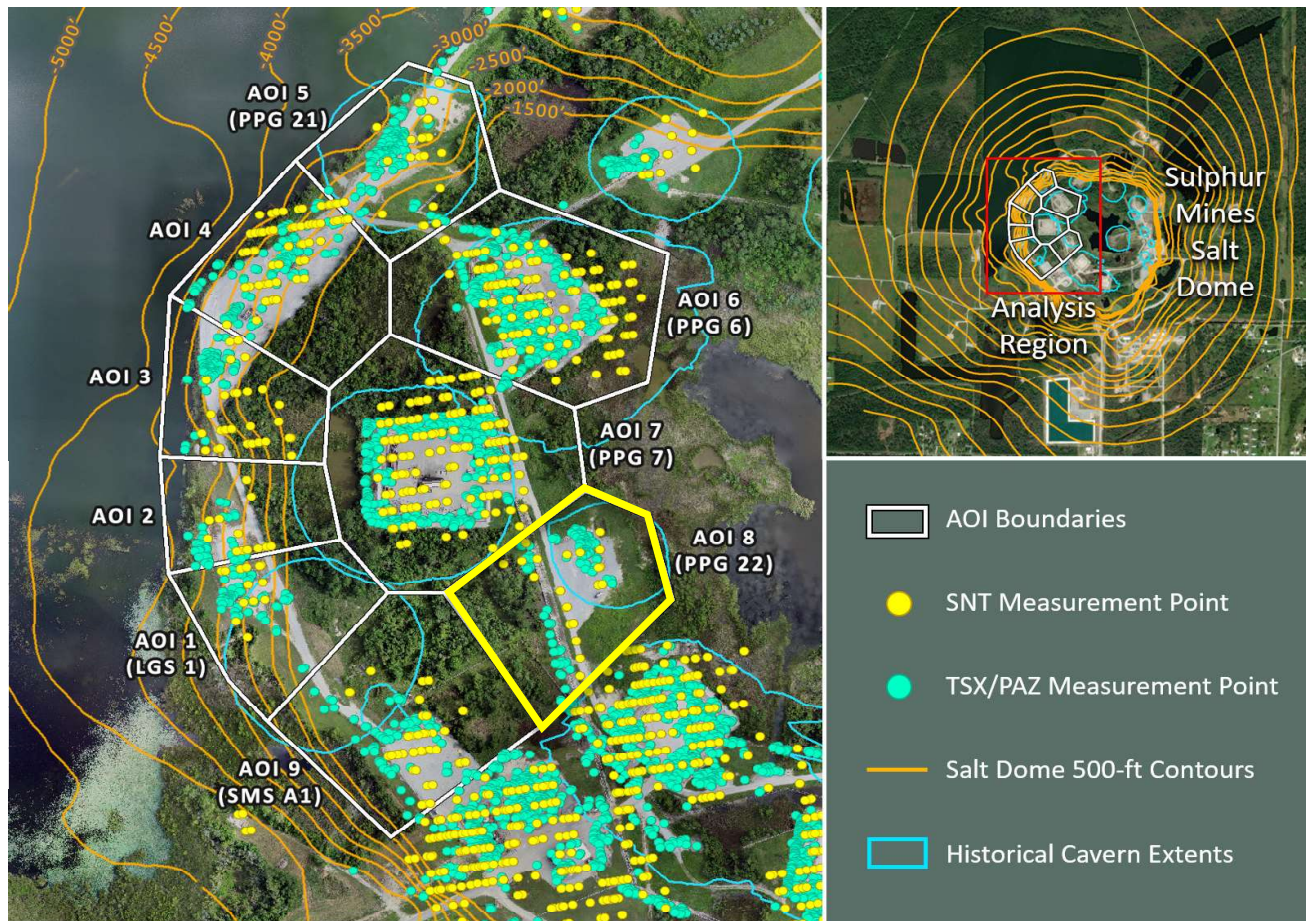
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

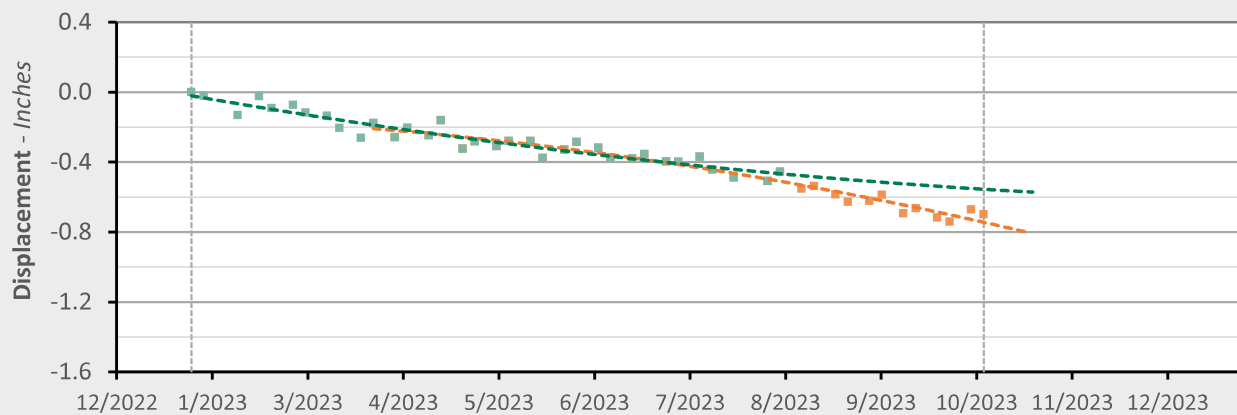
■ Recent LOS Displacement Measurement

--- Recent Trend Line (Quadratic Regression)

AOI 8 (PPG 22) - Location Map



AOI 8 (PPG 22) - Displacement Time Series TSX/PAZ (10/8/2023) Point Count: 111



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.58 in/yr	-1.45 in/yr	-0.86 in/yr
Acceleration:	+1.03 in/yr ²	-1.70 in/yr ²	-2.73 in/yr ²

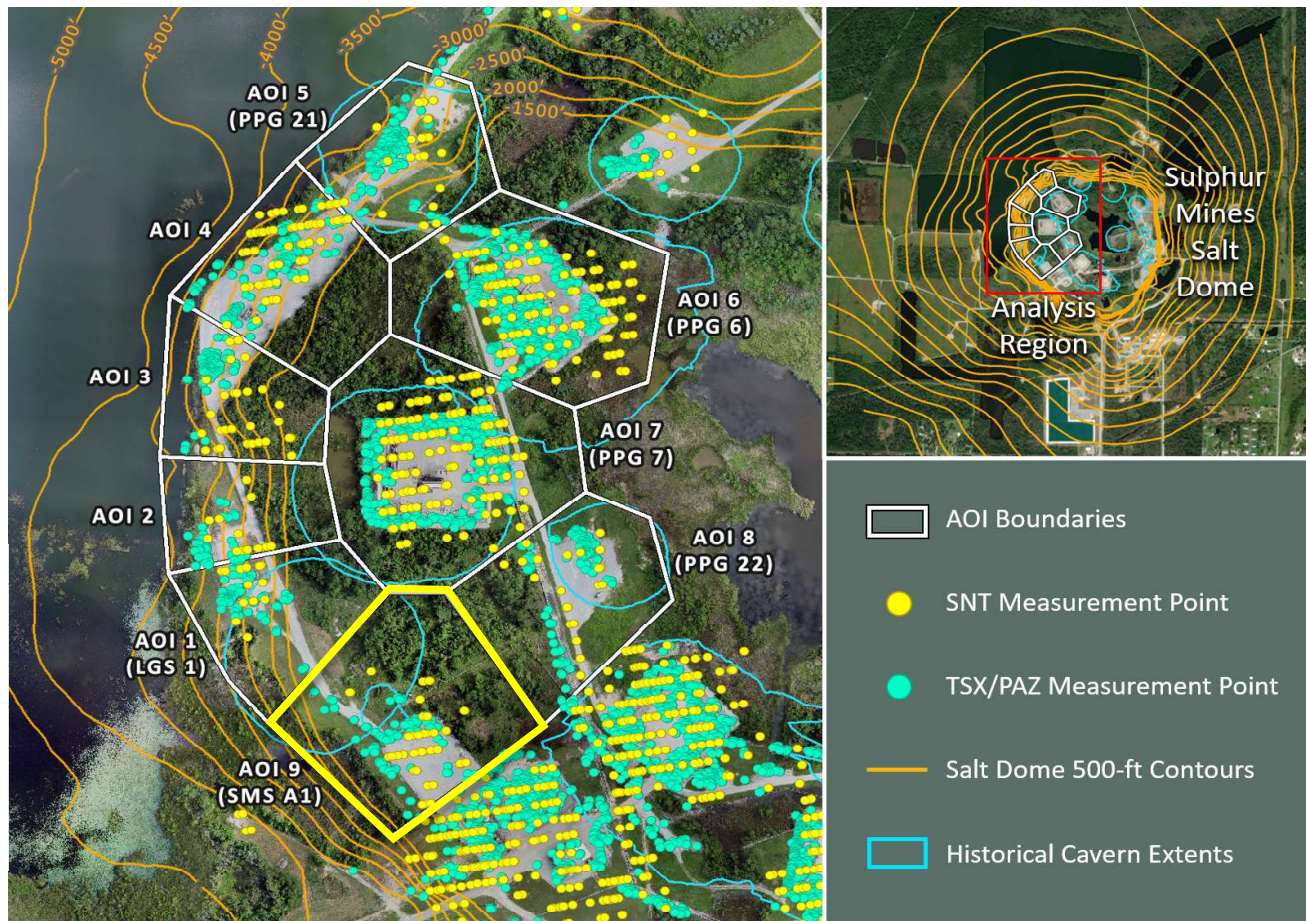
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

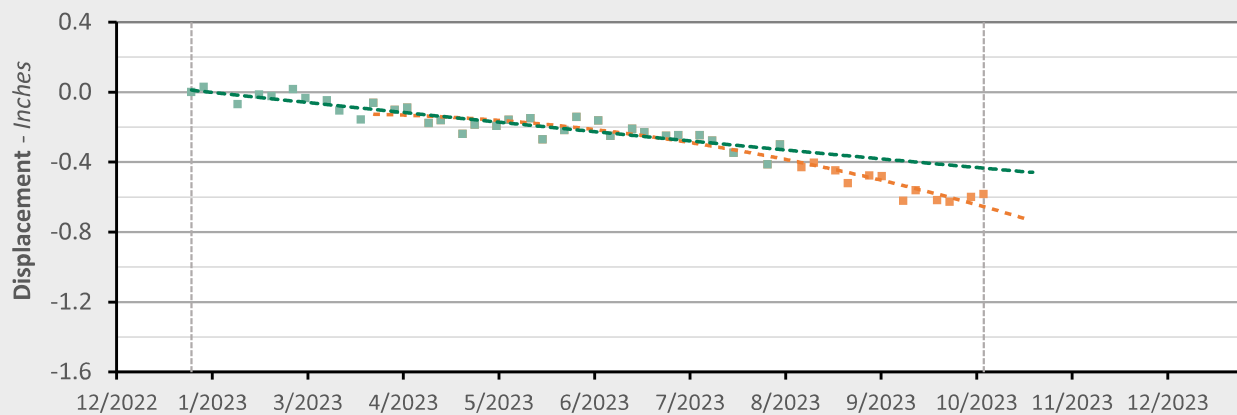
■ Recent LOS Displacement Measurement

--- Recent Trend Line (Quadratic Regression)

AOI 9 (PPG A1) - Location Map



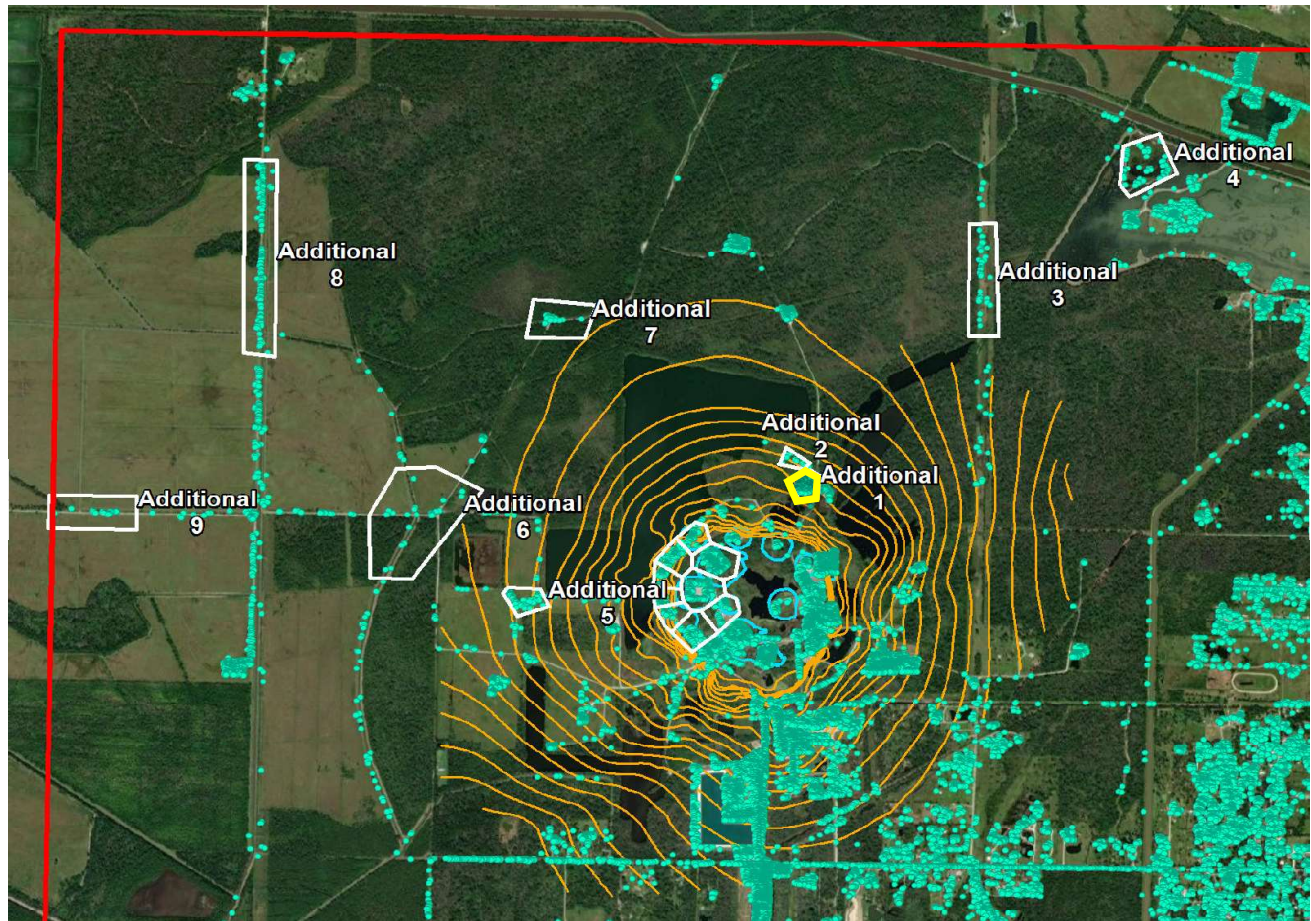
AOI 9 (SMS A1) - Displacement Time Series TSX/PAZ (10/8/2023) Point Count: 85



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.60 in/yr	-1.80 in/yr	-1.20 in/yr
Acceleration:	+0.17 in/yr ²	-3.05 in/yr ²	-3.22 in/yr ²

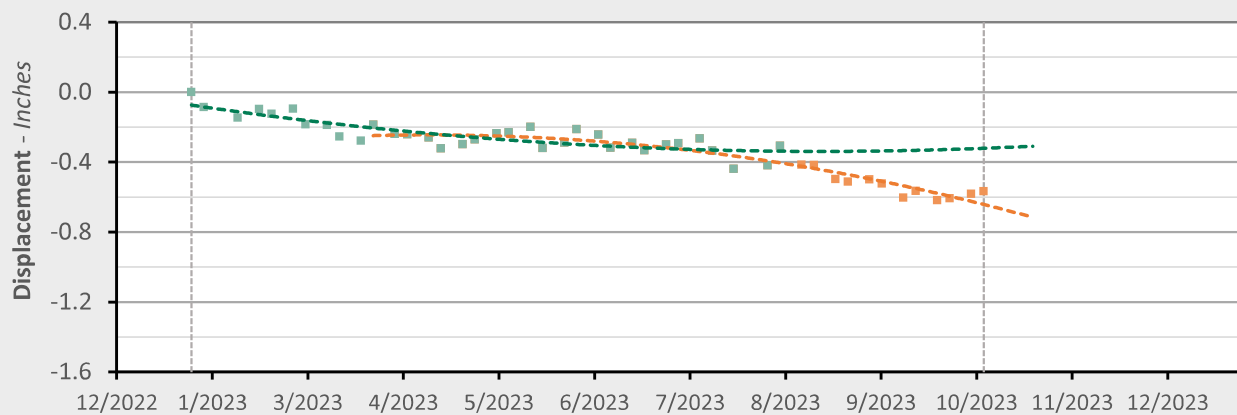
■ Historical LOS Displacement Measurement
 --- Historical Trend Line (Quadratic Regression)
 ■ Recent LOS Displacement Measurement
 --- Recent Trend Line (Quadratic Regression)

Additional 1 - Location Map



Additional 1 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 135



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.06 in/yr	-1.61 in/yr	-1.55 in/yr
Acceleration:	+1.69 in/yr ²	-3.27 in/yr ²	-4.96 in/yr ²

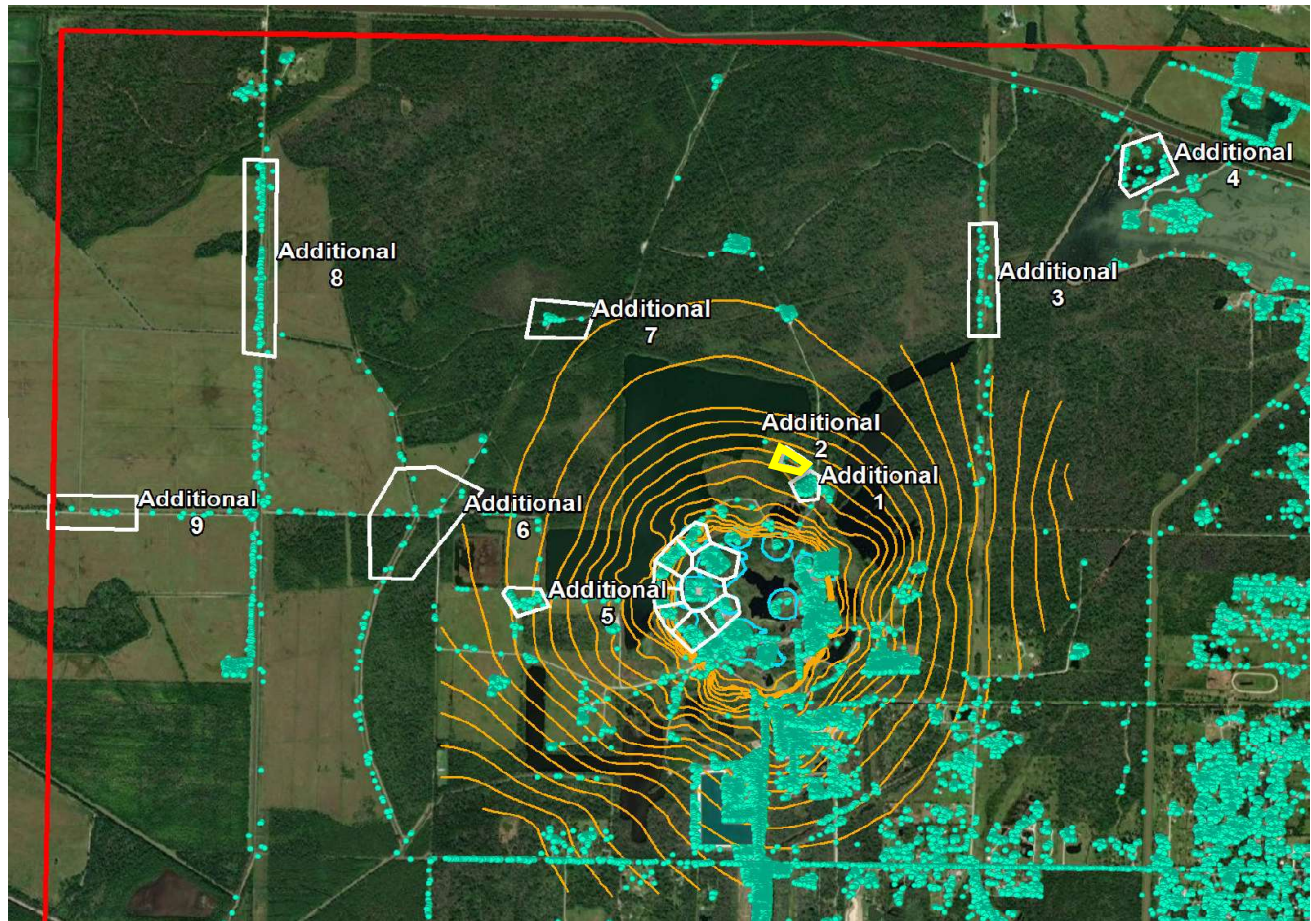
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

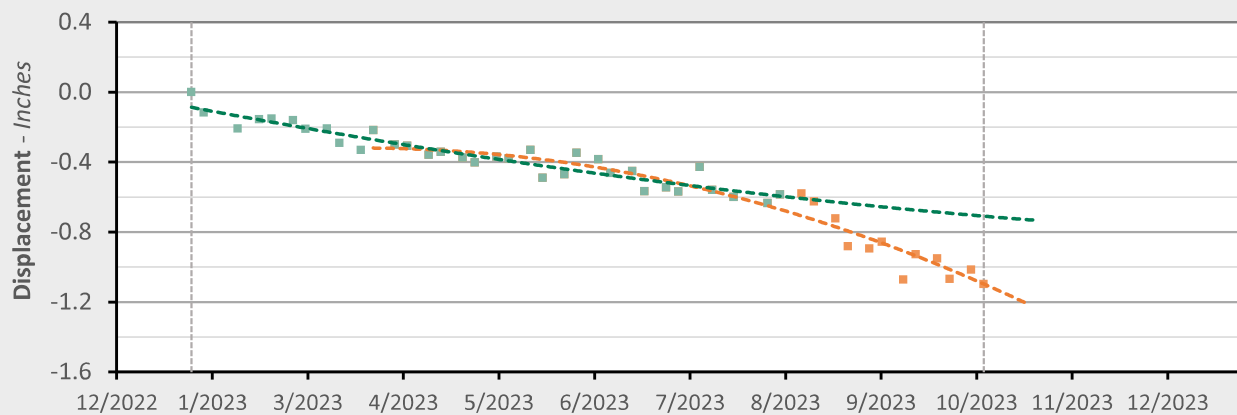
--- Recent Trend Line (Quadratic Regression)

Additional 2 - Location Map



Additional 2 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 18



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.72 in/yr	-2.82 in/yr	-2.10 in/yr
Acceleration:	+0.96 in/yr ²	-5.11 in/yr ²	-6.07 in/yr ²

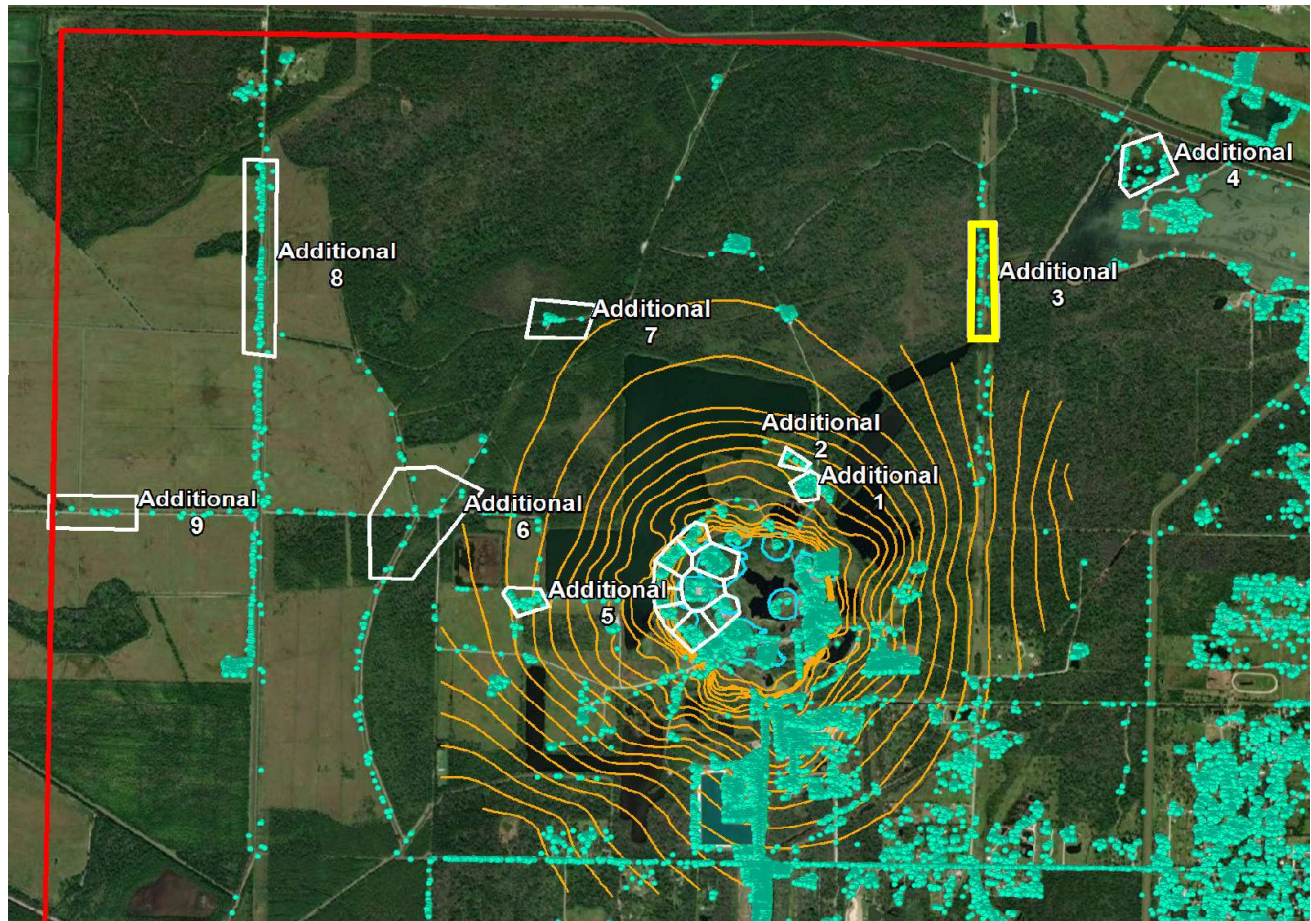
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

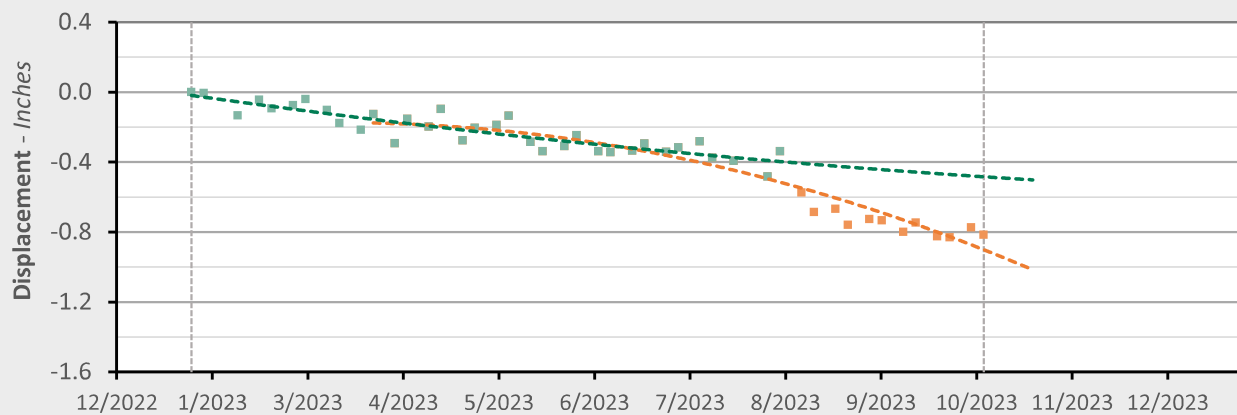
--- Recent Trend Line (Quadratic Regression)

Additional 3 - Location Map



Additional 3 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 40



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.54 in/yr	-2.54 in/yr	-1.99 in/yr
Acceleration:	+0.69 in/yr ²	-4.43 in/yr ²	-5.12 in/yr ²

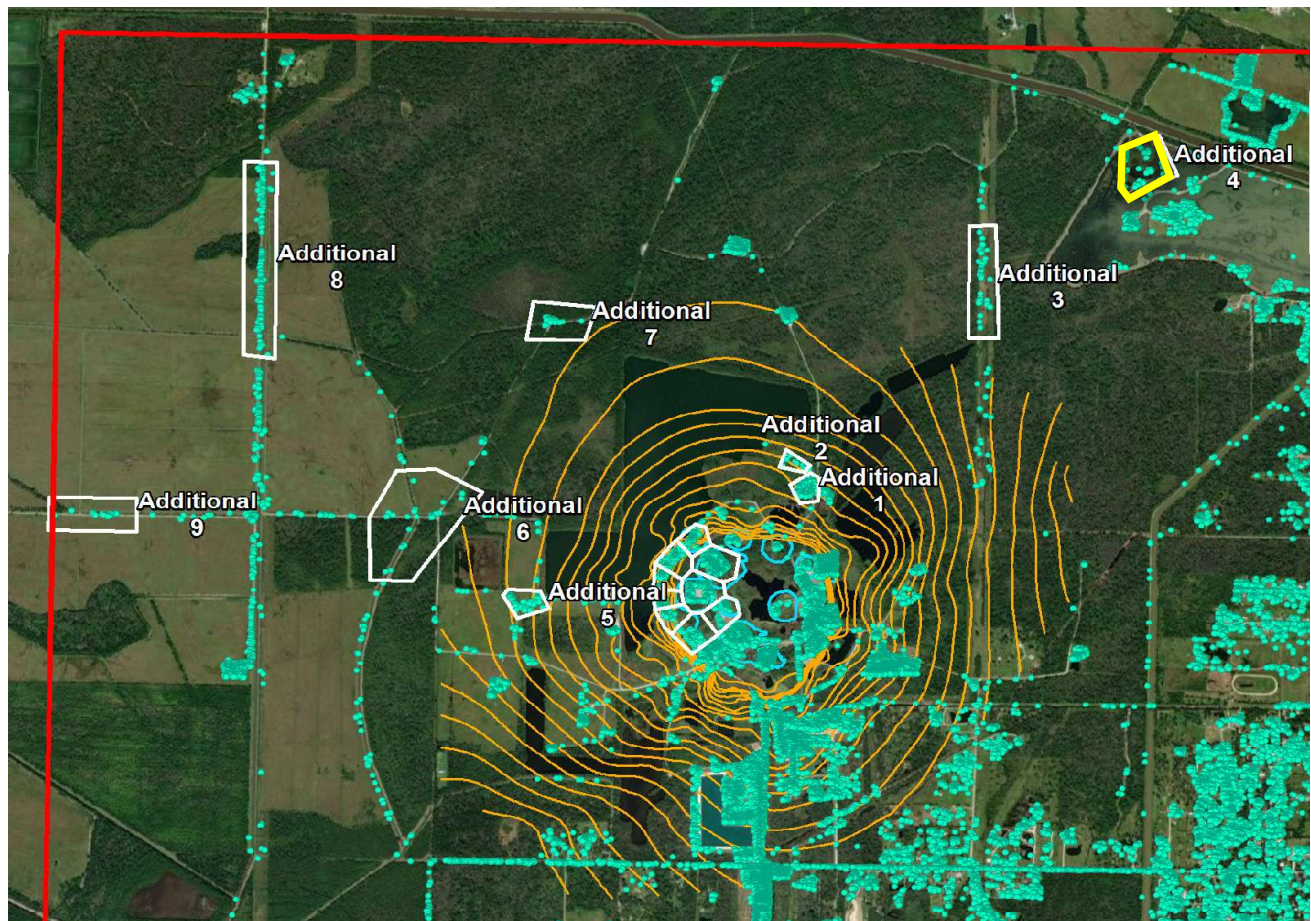
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

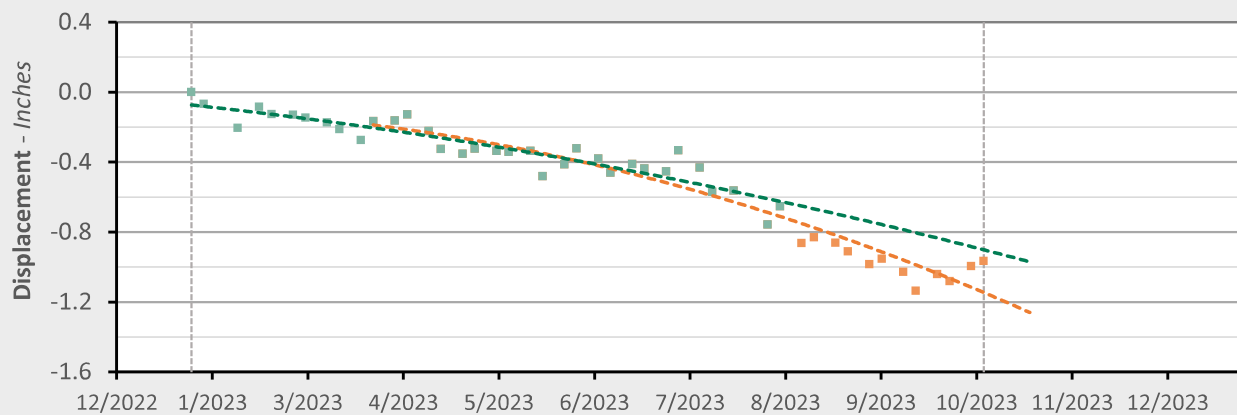
--- Recent Trend Line (Quadratic Regression)

Additional 4 - Location Map



Additional 4 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 71



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-1.41 in/yr	-2.72 in/yr	-1.31 in/yr
Acceleration:	-1.36 in/yr ²	-3.53 in/yr ²	-2.18 in/yr ²

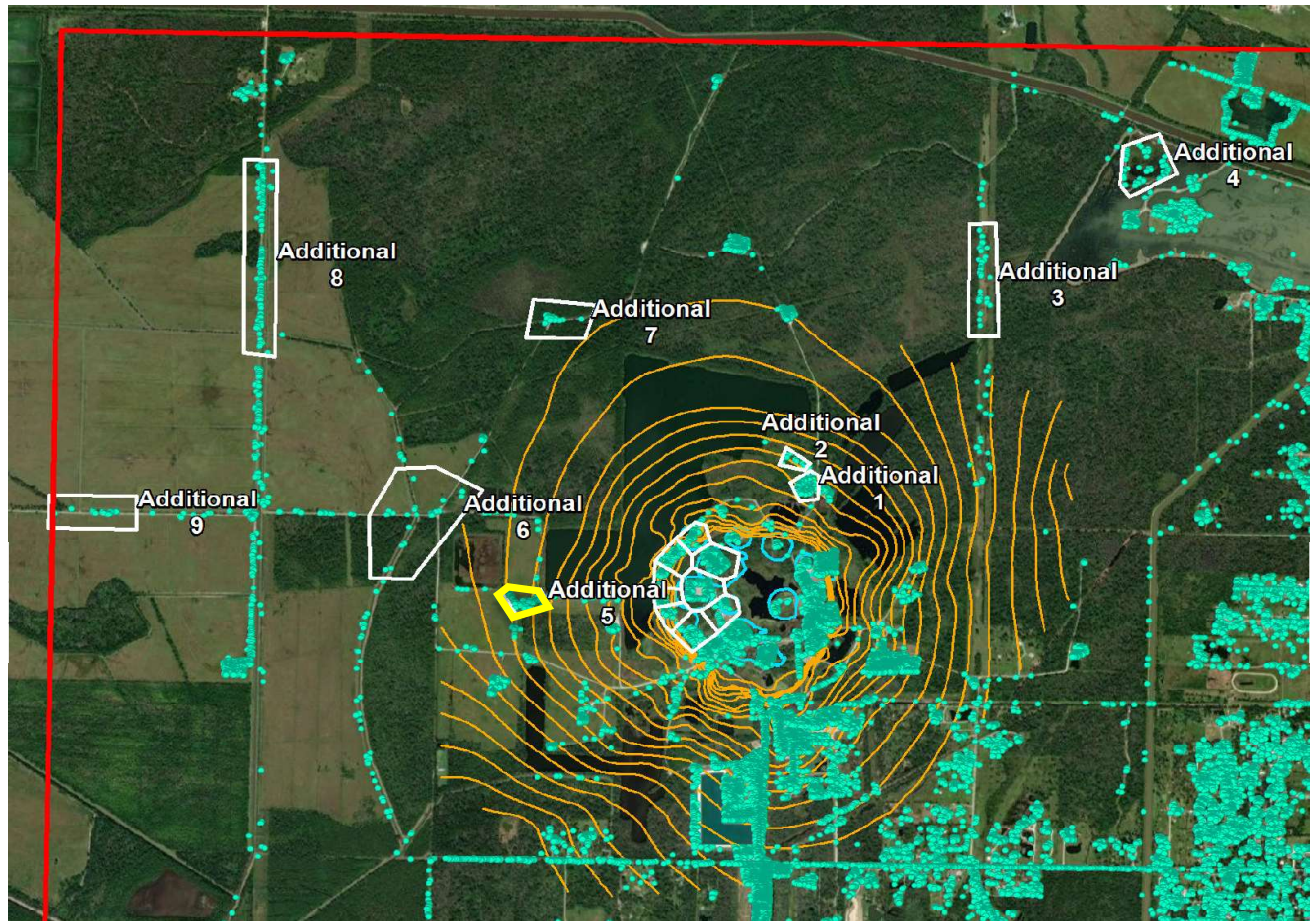
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

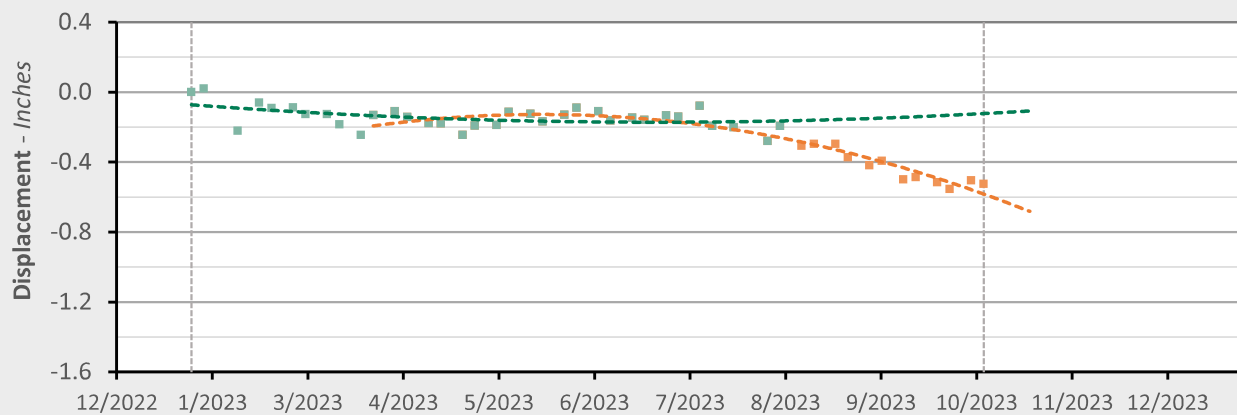
--- Recent Trend Line (Quadratic Regression)

Additional 5 - Location Map



Additional 5 - Displacement Time Series

TSX/PAZ (10/8/2023) Point Count: 76



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	+0.13 in/yr	-2.31 in/yr	-2.44 in/yr
Acceleration:	+1.17 in/yr ²	-5.88 in/yr ²	-7.05 in/yr ²

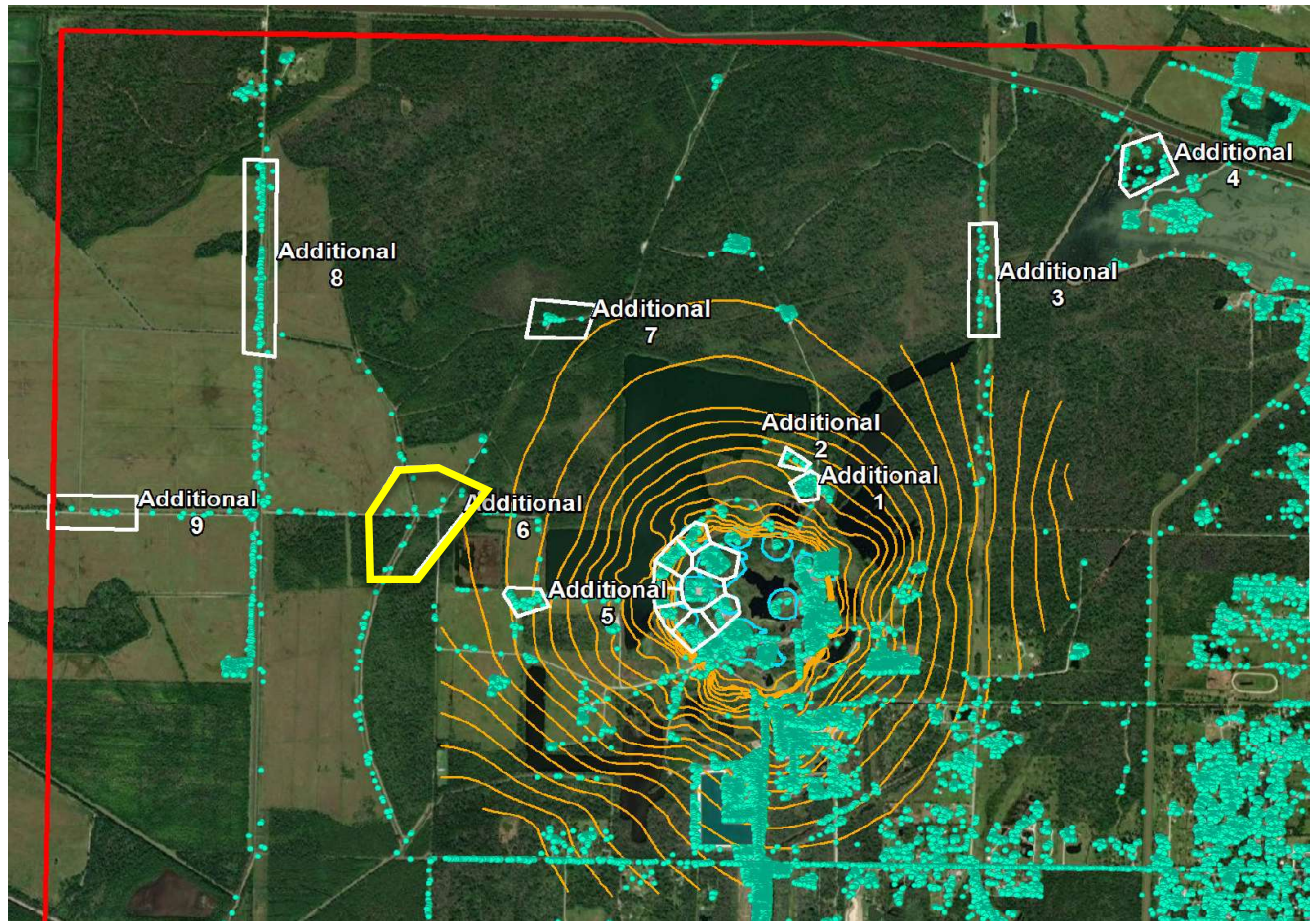
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

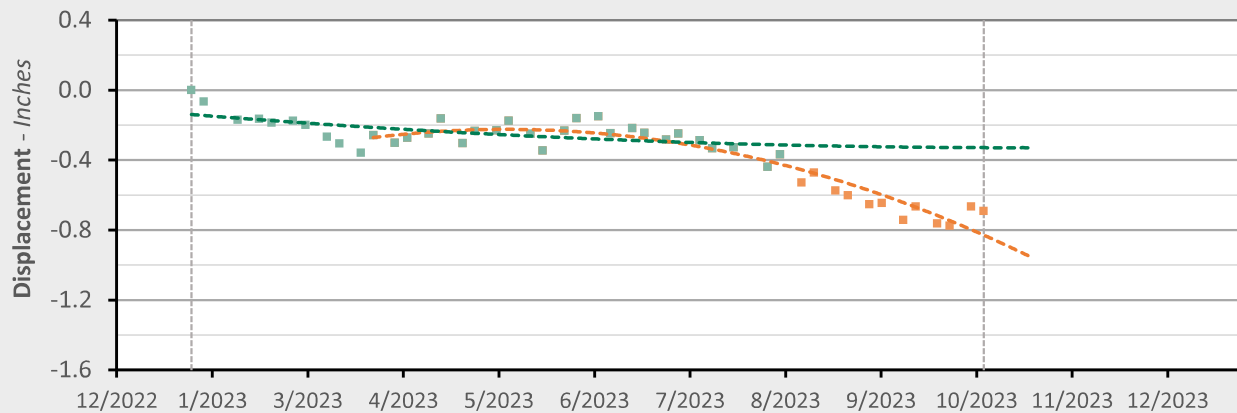
--- Recent Trend Line (Quadratic Regression)

Additional 6 - Location Map



Additional 6 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 24



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	-0.15 in/yr	-2.85 in/yr	-2.70 in/yr
Acceleration:	+0.70 in/yr ²	-6.72 in/yr ²	-7.42 in/yr ²

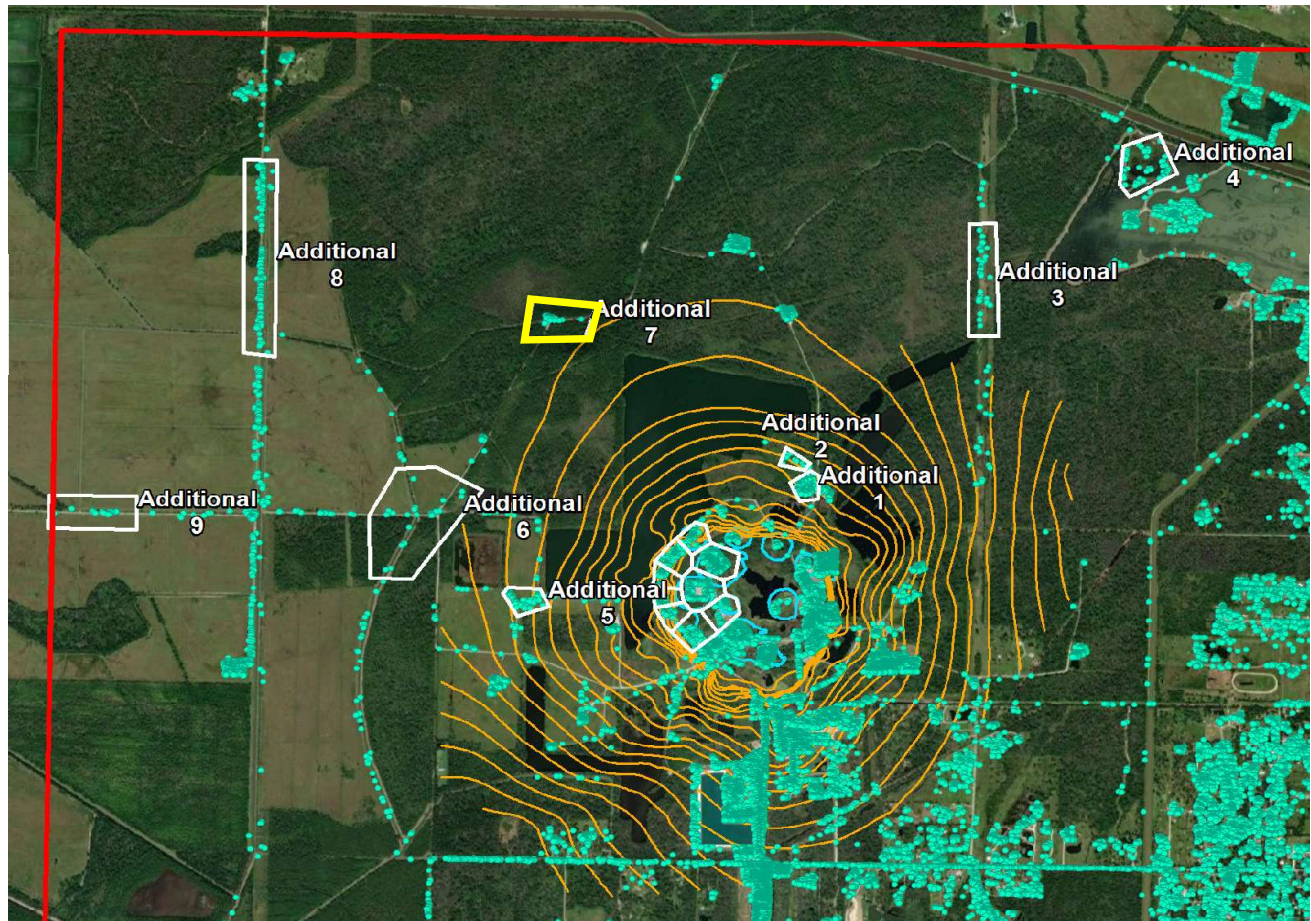
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

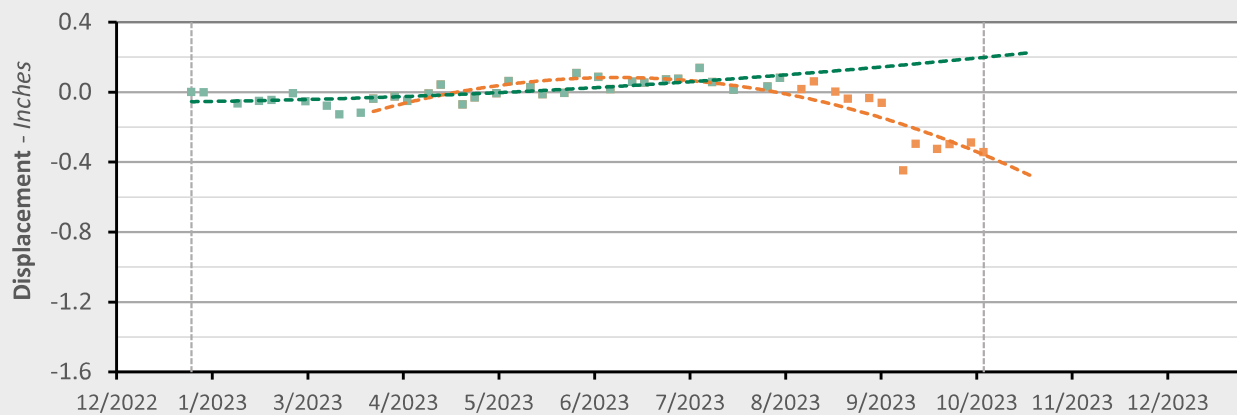
--- Recent Trend Line (Quadratic Regression)

Additional 7 - Location Map



Additional 7 - Displacement Time Series

TSX/PAZ (10/8/2023) Point Count: 26



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	+0.49 in/yr	-2.70 in/yr	-3.20 in/yr
Acceleration:	+0.79 in/yr ²	-8.29 in/yr ²	-9.07 in/yr ²

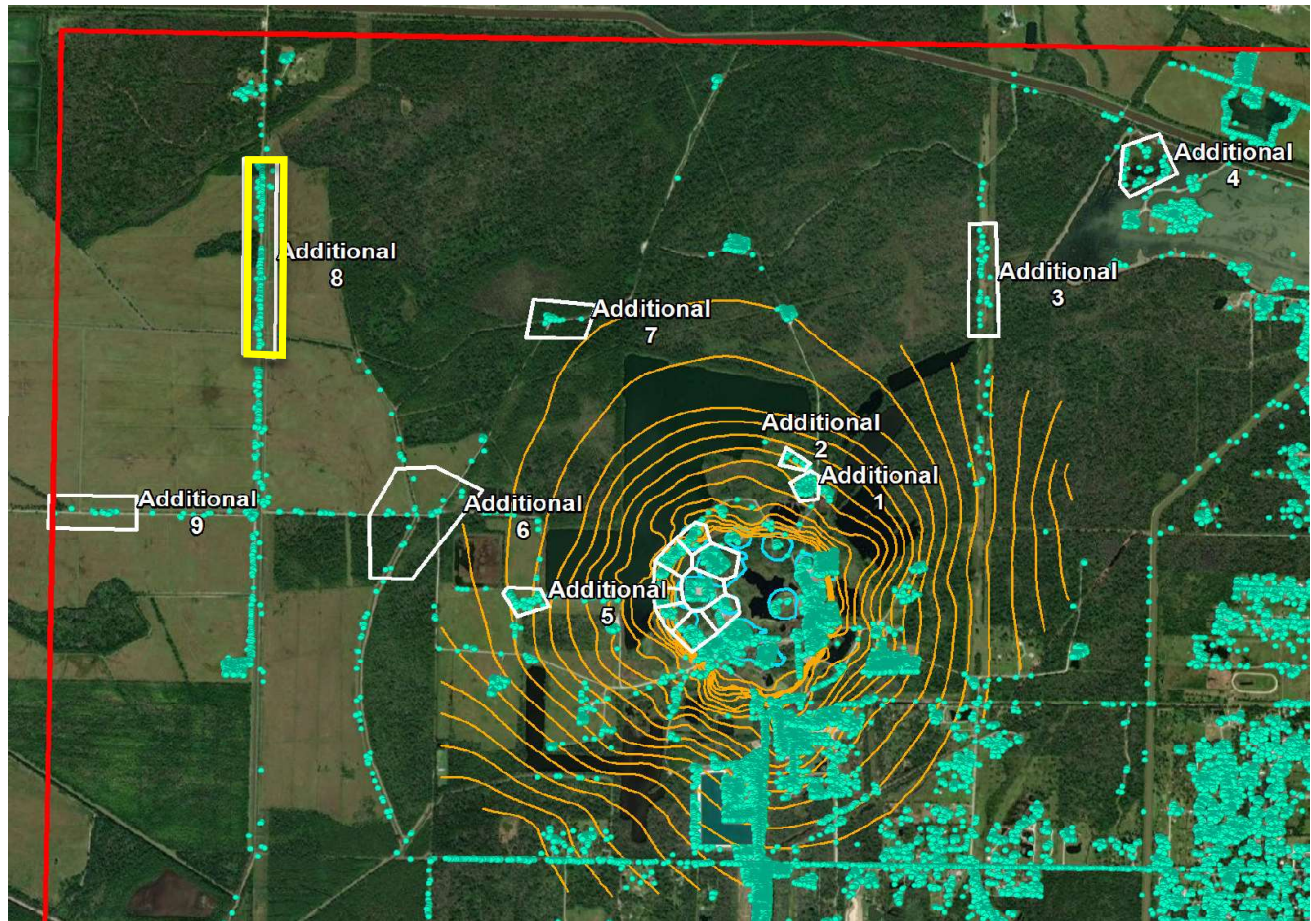
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

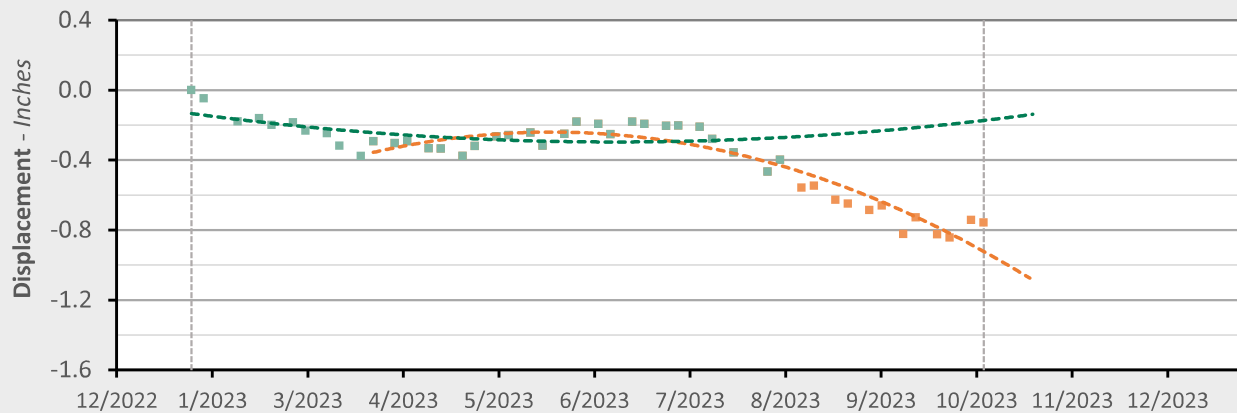
--- Recent Trend Line (Quadratic Regression)

Additional 8 - Location Map



Additional 8 - Displacement Time Series

TSX/PAZ (10/8/2023) Point Count: 203



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	+0.34 in/yr	-3.55 in/yr	-3.89 in/yr
Acceleration:	+2.29 in/yr ²	-9.25 in/yr ²	-11.54 in/yr ²

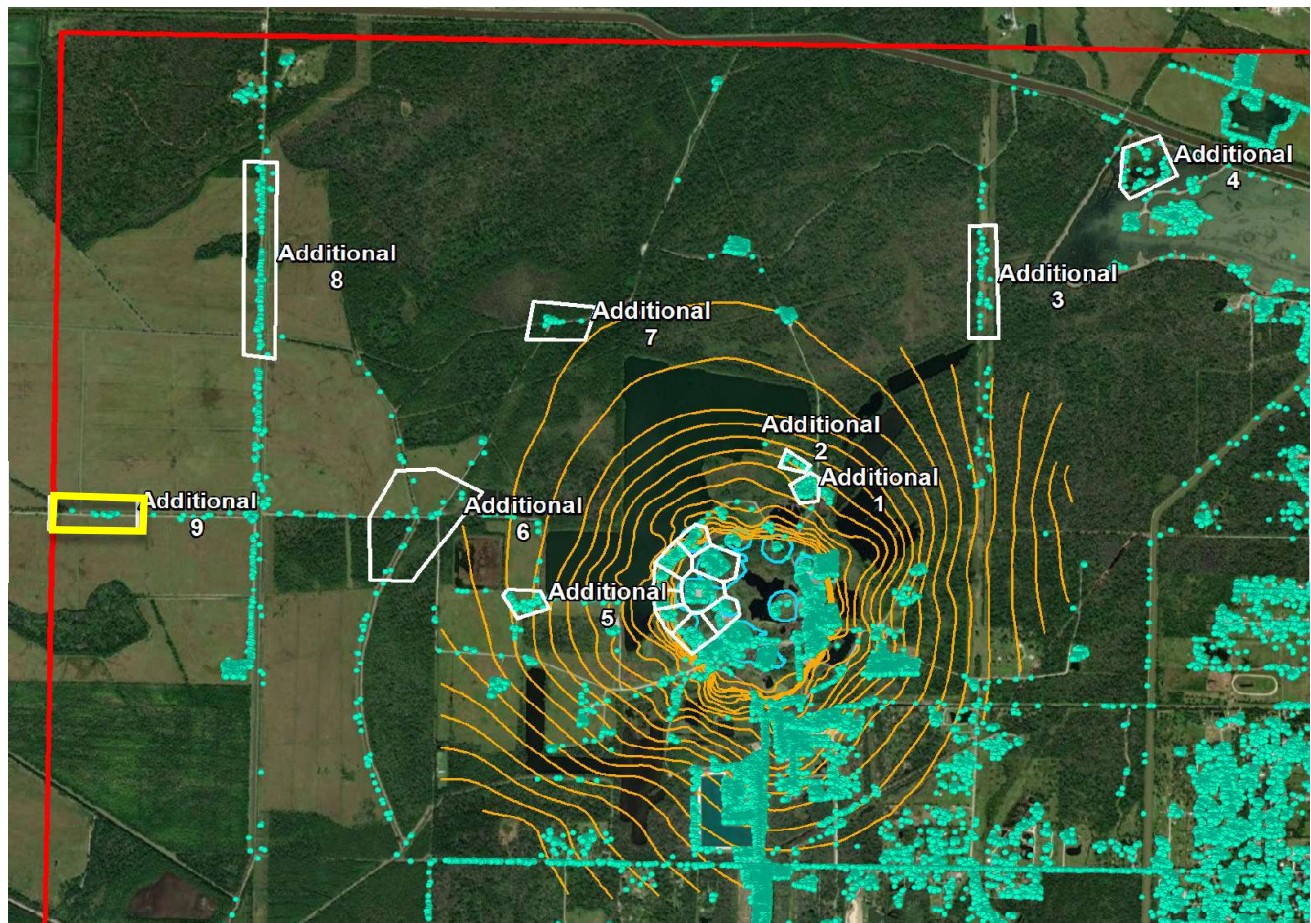
■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

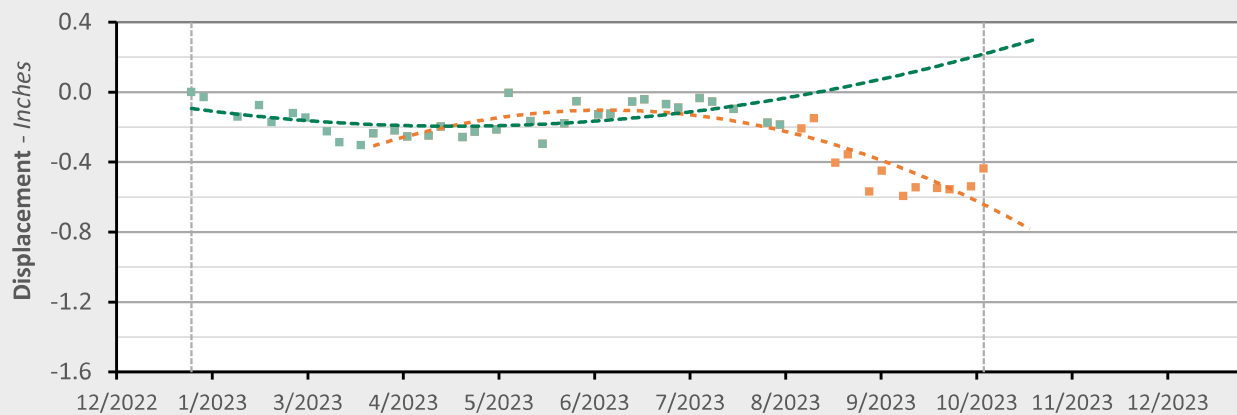
--- Recent Trend Line (Quadratic Regression)

Additional 9 - Location Map



Additional 9 - Displacement Time Series

TSX/PAZ (10/8/23) Point Count: 21



	As of 8/3/23	3/24/2023 - 10/08/23	Trend Change
Velocity:	+1.08 in/yr	-3.22 in/yr	-4.29 in/yr
Acceleration:	+3.73 in/yr ²	-9.58 in/yr ²	-13.31 in/yr ²

■ Historical LOS Displacement Measurement

--- Historical Trend Line (Quadratic Regression)

■ Recent LOS Displacement Measurement

--- Recent Trend Line (Quadratic Regression)