

TSX/PAZ Satellite Update
InSAR Subsidence
October 30, 2023

Lonquist comment:

The PAZ satellite from the TSX/PAZ constellation (4 & 7-day revisit) passed by Sulphur on Monday October 30. 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 respective trends.

As requested in our recent call, we have added a linear trend to the attached time series plots. Each plot now shows nonlinear and linear trends overlaid on the data with the associated trend values listed below each chart.



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: November 4, 2023
Austin, Texas

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Louisiana License No. 40697

Dataset

Satellite Source

TerraSAR-X - PAZ Constellation

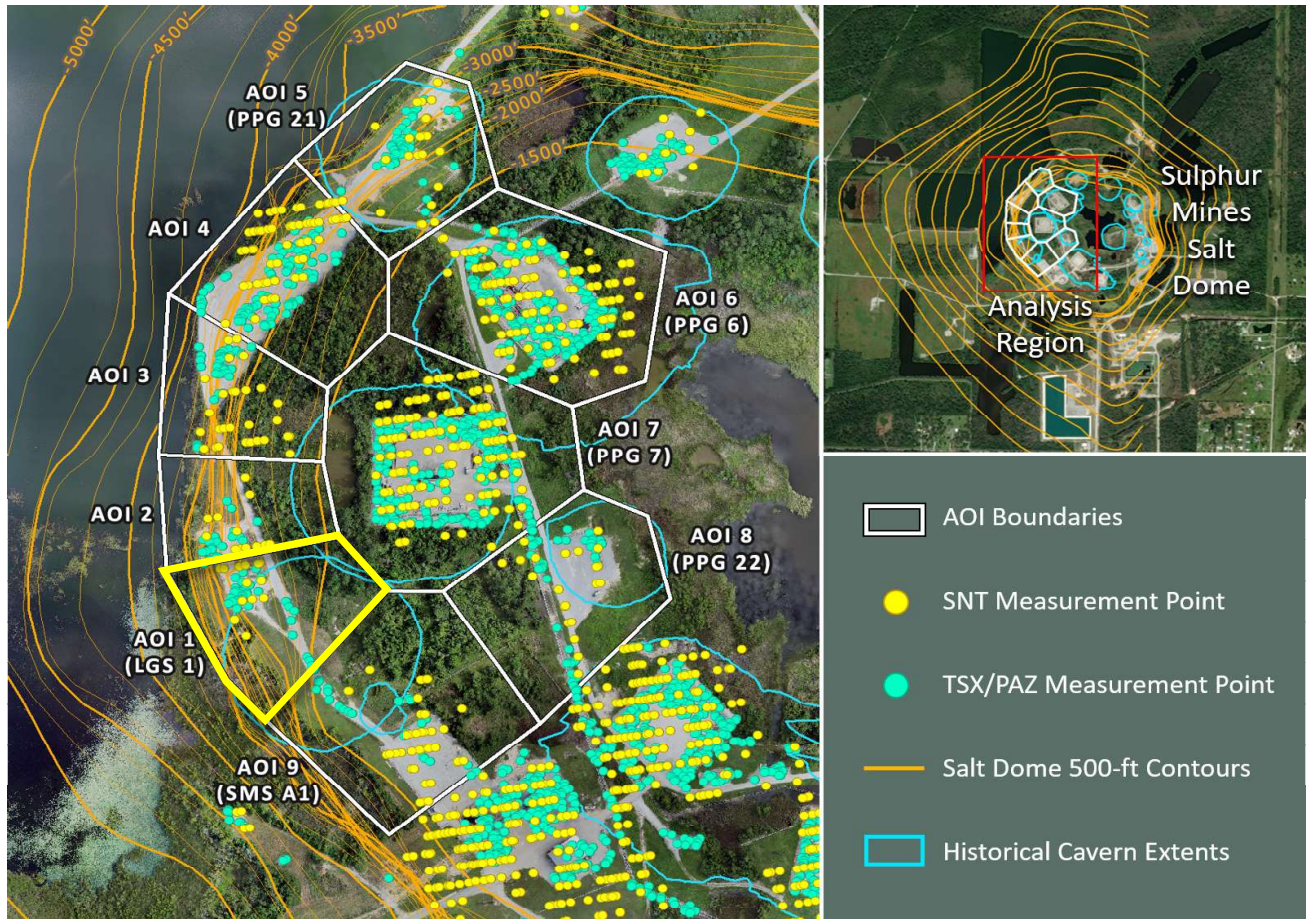
Most Recent Image Date

Monday, October 30, 2023

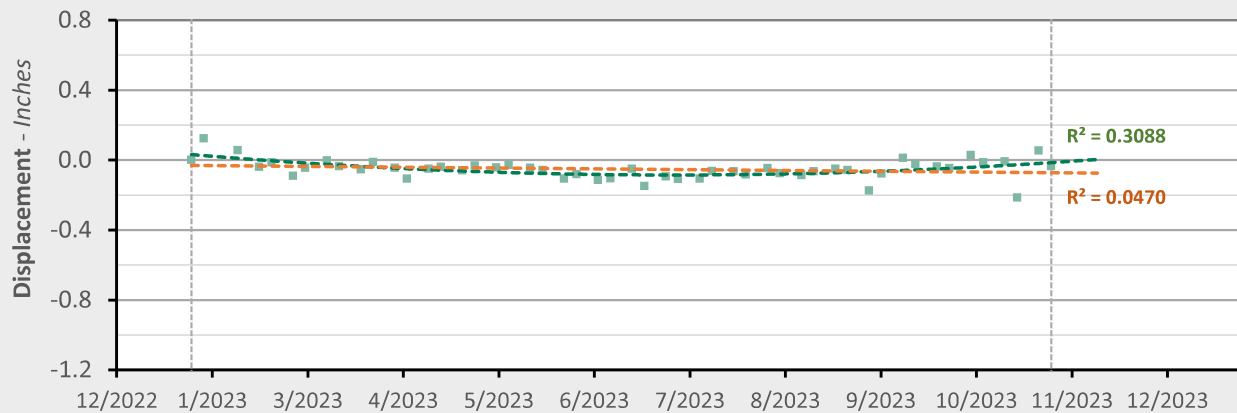
Analysis Report Date:

November 3, 2023

AOI 1 (LGS 1) - Location Map



AOI 1 (LGS 1) - Displacement Time Series TSX/PAZ (10/30/2023) Point Count: 38

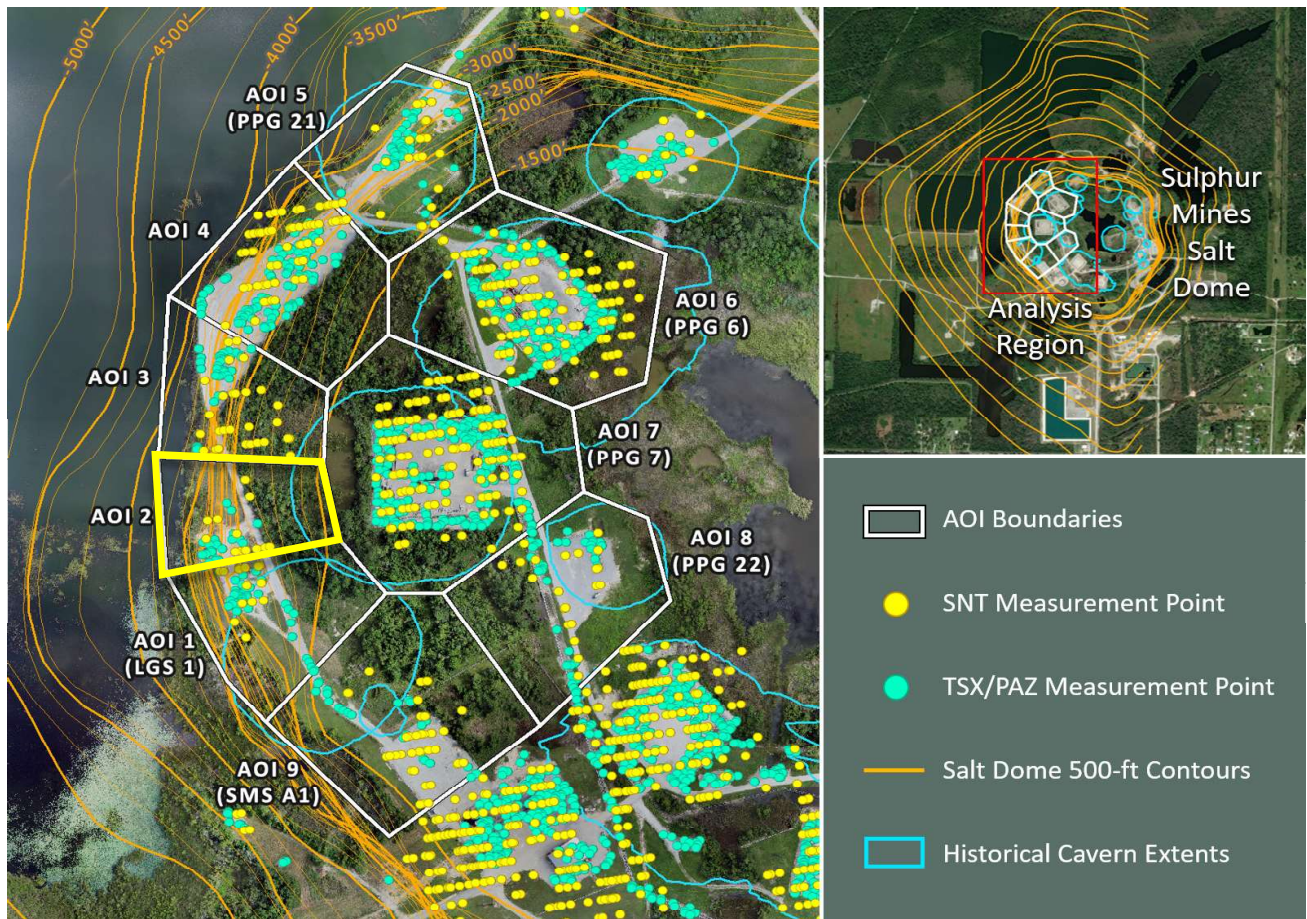


	Nonlinear Trend	Linear Trend
Velocity:	+0.39 in/yr	-0.05 in/yr
Acceleration:	+1.27 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

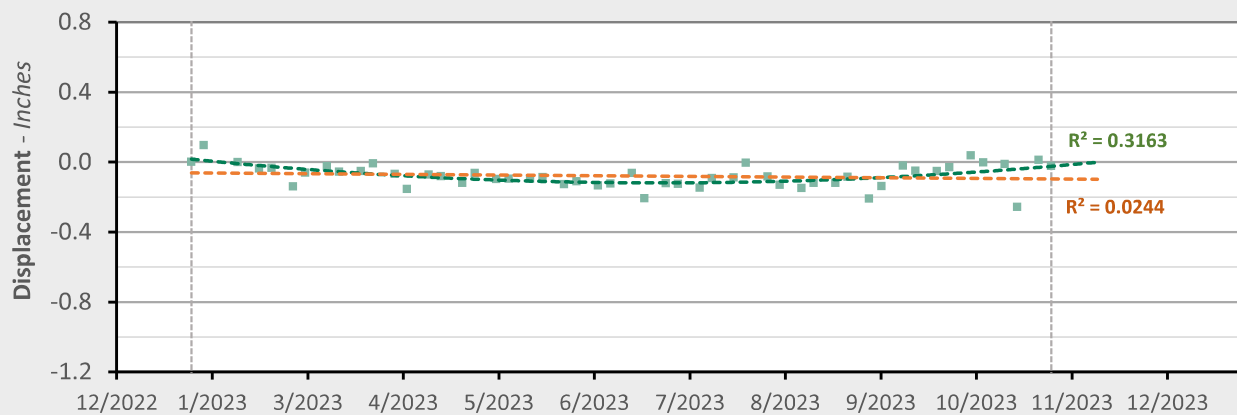
--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

AOI 2 - Location Map



AOI 2 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 23



Nonlinear Trend

Linear Trend

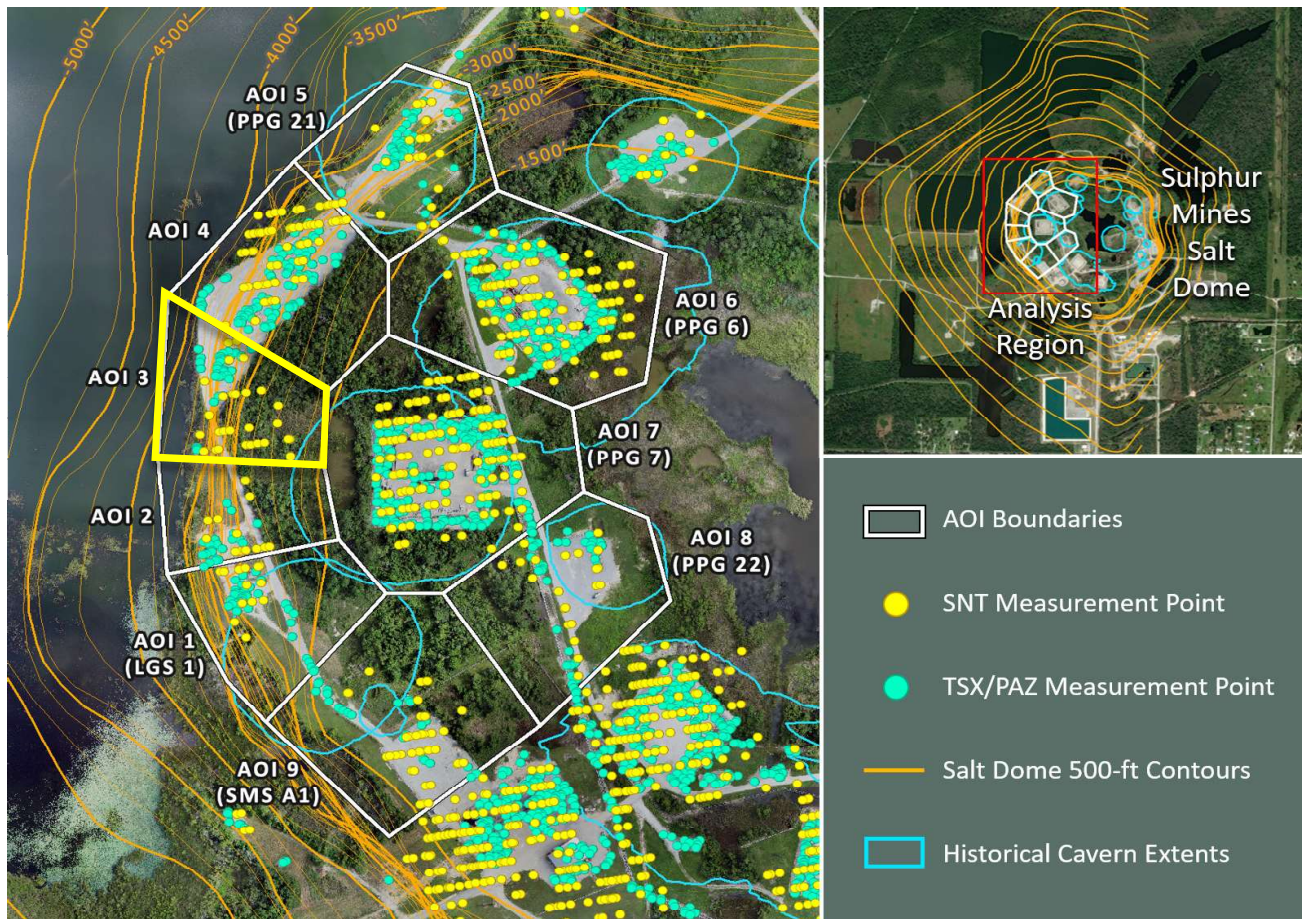
Velocity: +0.50 in/yr
Acceleration: +1.56 in/yr²

-0.05 in/yr
0.00 in/yr²

■ LOS Displacement Measurement

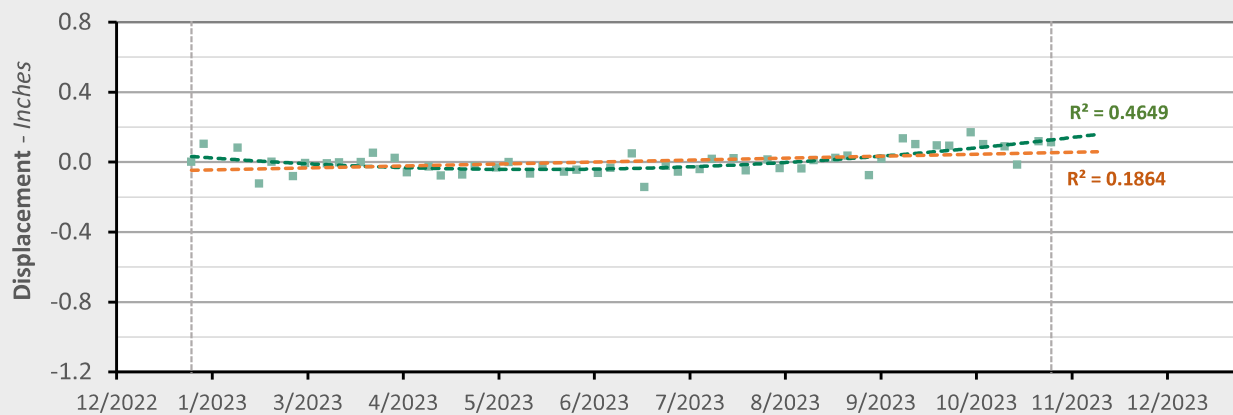
--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

AOI 3 - Location Map



AOI 3 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 39



Nonlinear Trend

Linear Trend

Velocity: +0.69 in/yr

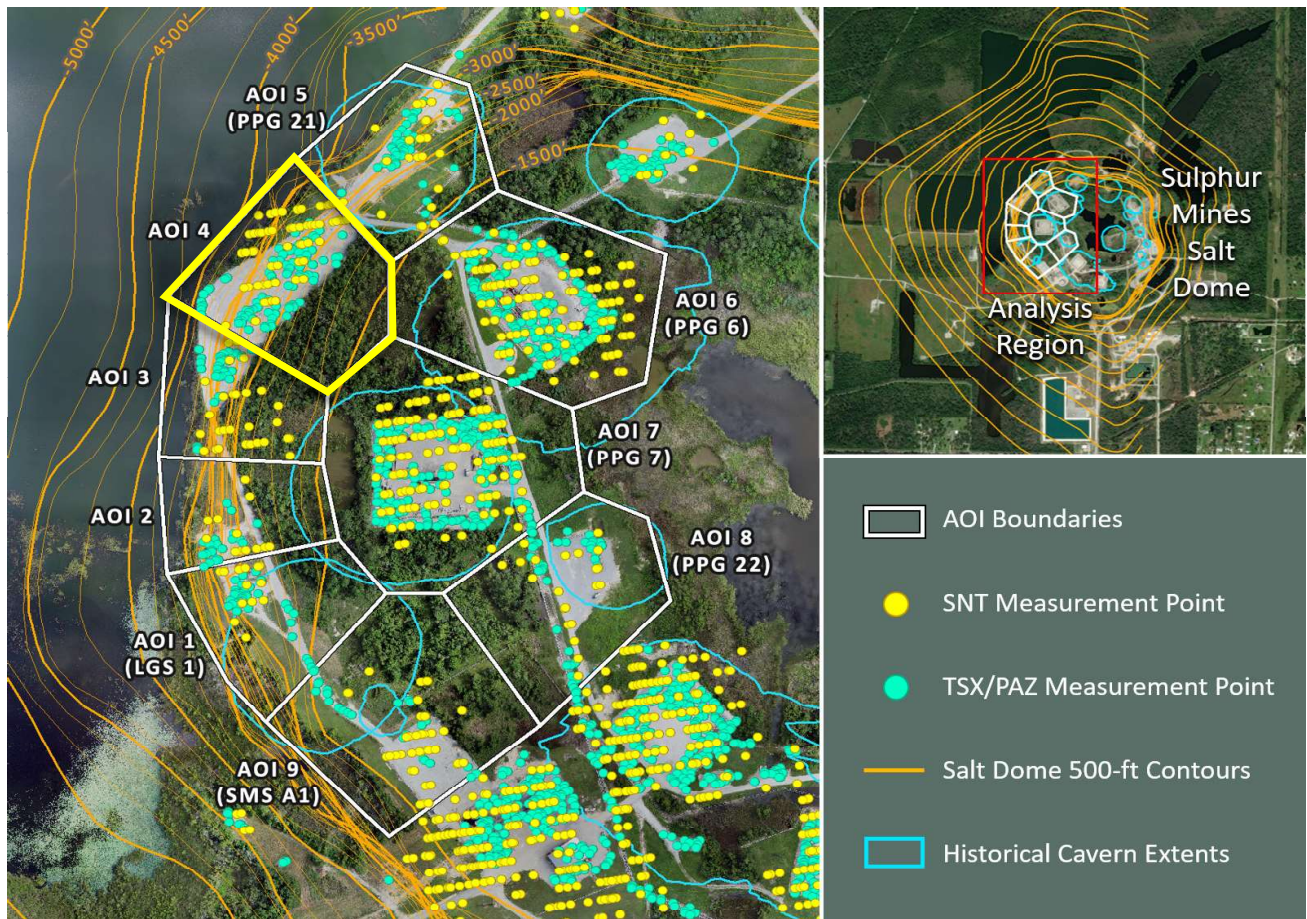
+0.13 in/yr

Acceleration: +1.60 in/yr²0.00 in/yr²

■ LOS Displacement Measurement

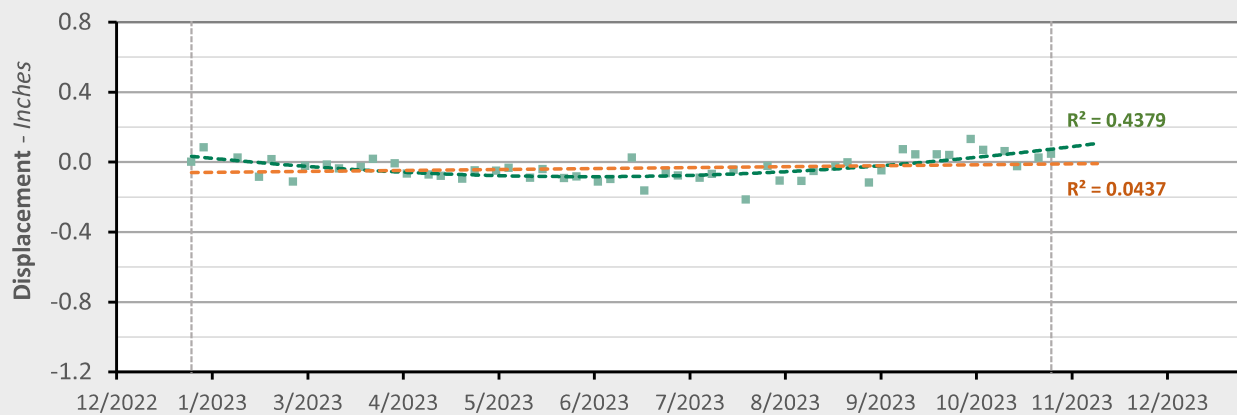
--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

AOI 4 - Location Map



AOI 4 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 103

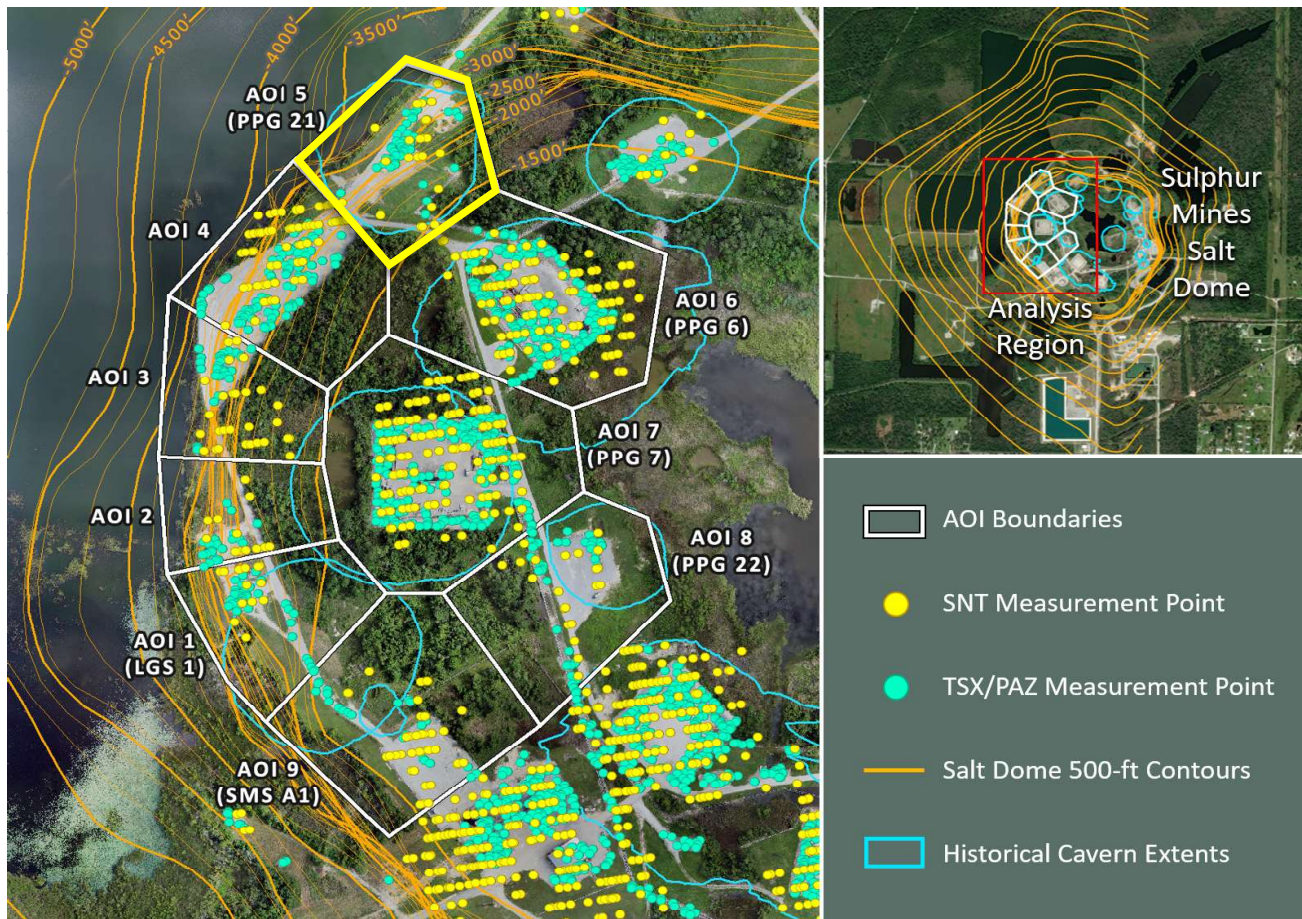


	Nonlinear Trend	Linear Trend
Velocity:	+0.71 in/yr	+0.06 in/yr
Acceleration:	+1.87 in/yr ²	0.00 in/yr ²

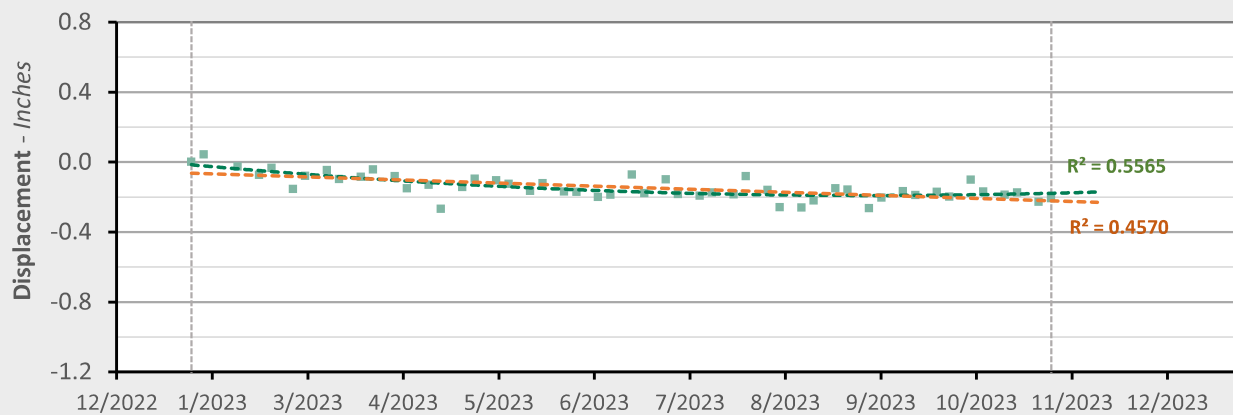
■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

AOI 5 (PPG 21) - Location Map



AOI 5 (PPG 21) - Displacement Time Series TSX/PAZ (10/30/2023) Point Count: 46



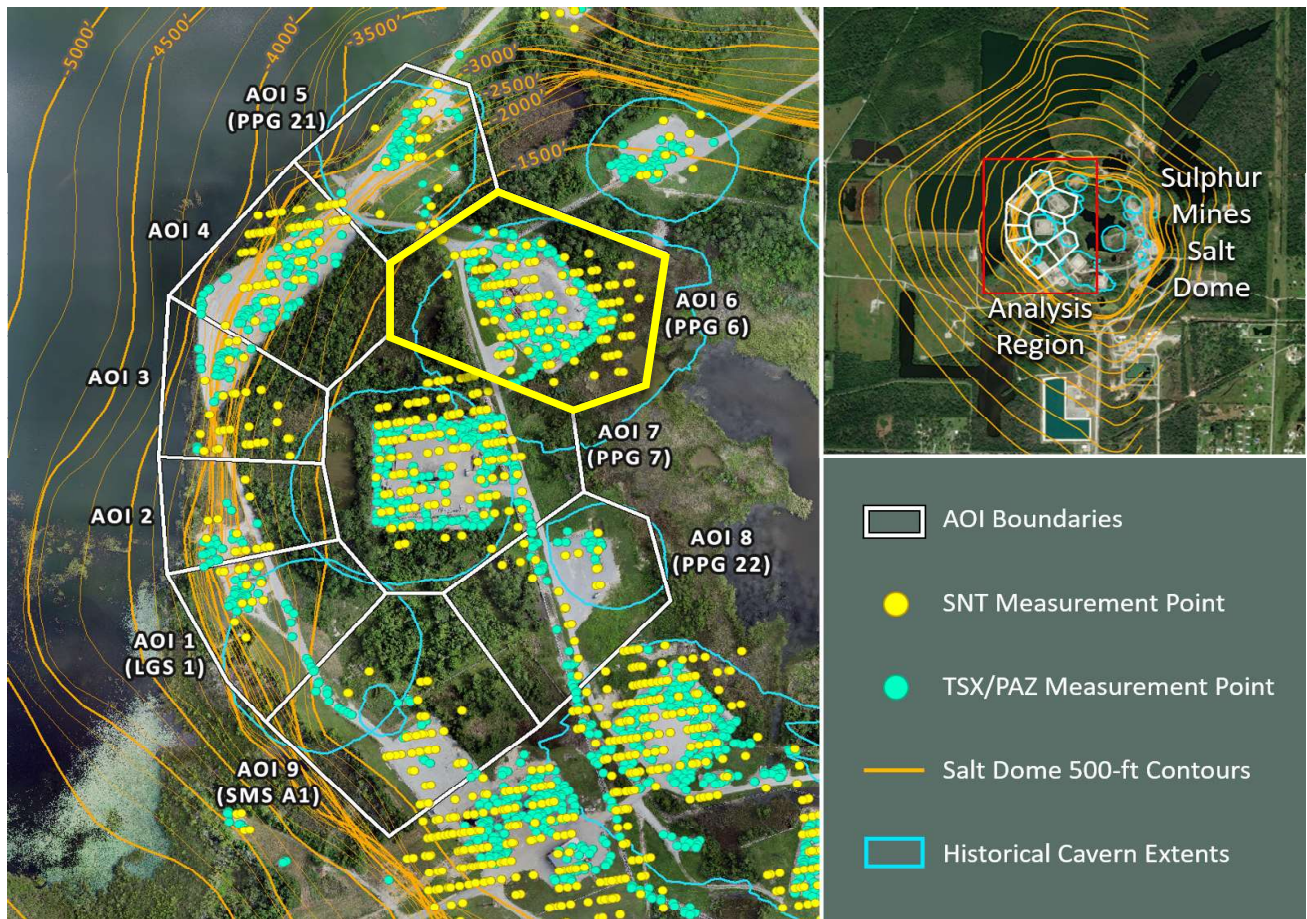
	Nonlinear Trend	Linear Trend
Velocity:	+0.13 in/yr	-0.21 in/yr
Acceleration:	+0.97 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)

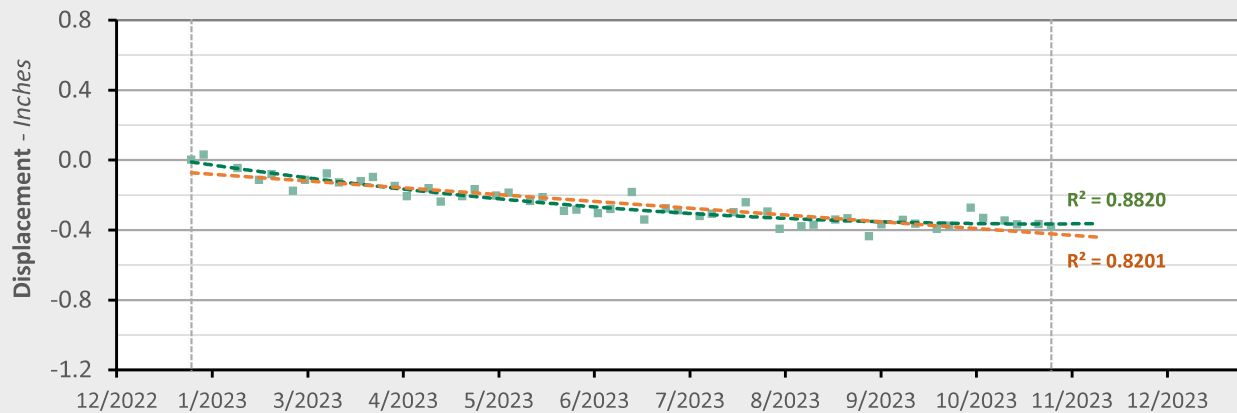
--- Linear Trend Line
(Linear Regression)

AOI 6 (PPG 6) - Location Map



AOI 6 (PPG 6) - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 212

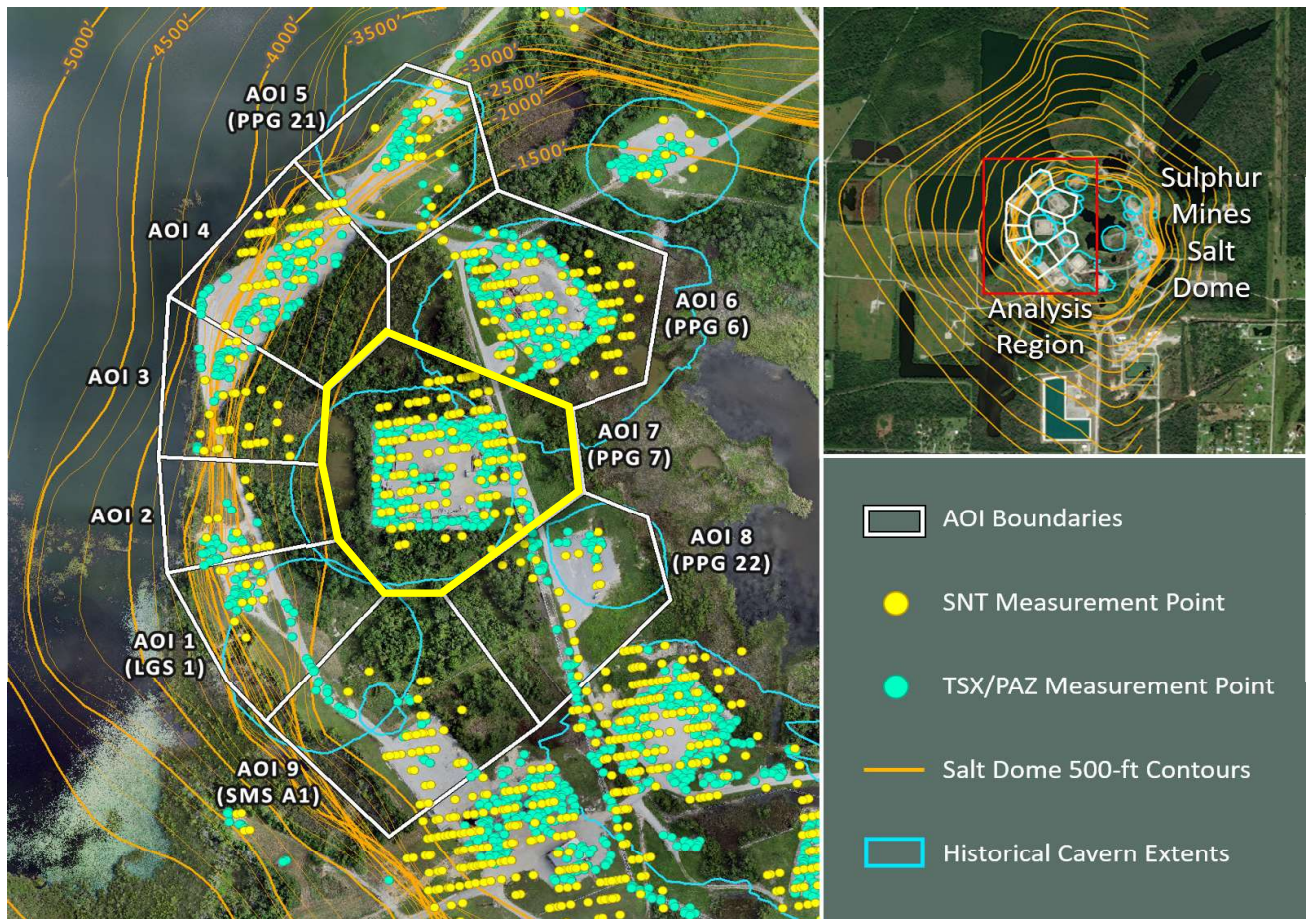


	Nonlinear Trend	Linear Trend
Velocity:	-0.02 in/yr	-0.46 in/yr
Acceleration:	+1.25 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

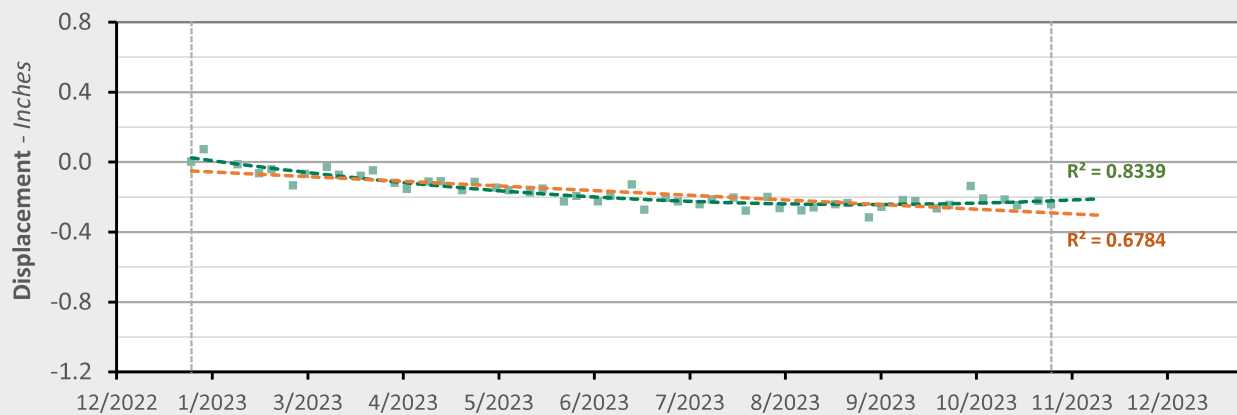
--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

AOI 7 (PPG 7) - Location Map



AOI 7 (PPG 7) - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 214

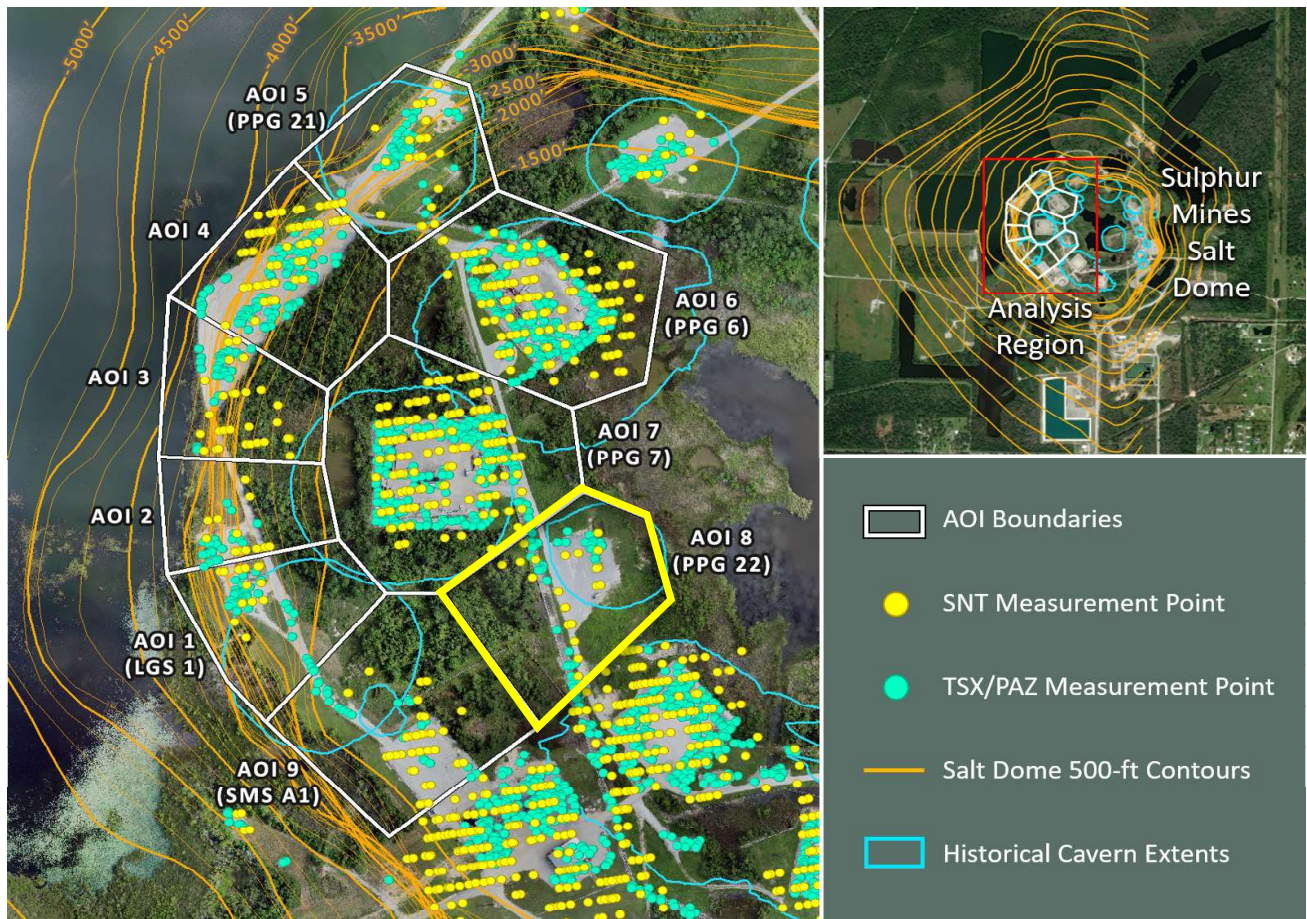


	Nonlinear Trend	Linear Trend
Velocity:	+0.20 in/yr	-0.31 in/yr
Acceleration:	+1.49 in/yr ²	0.00 in/yr ²

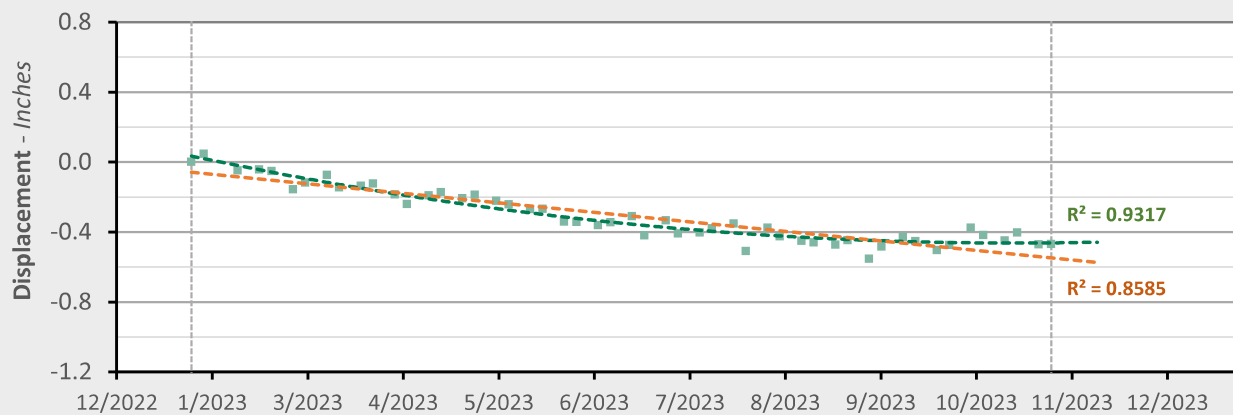
■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

AOI 8 (PPG 22) - Location Map



AOI 8 (PPG 22) - Displacement Time Series TSX/PAZ (10/30/2023) Point Count: 40



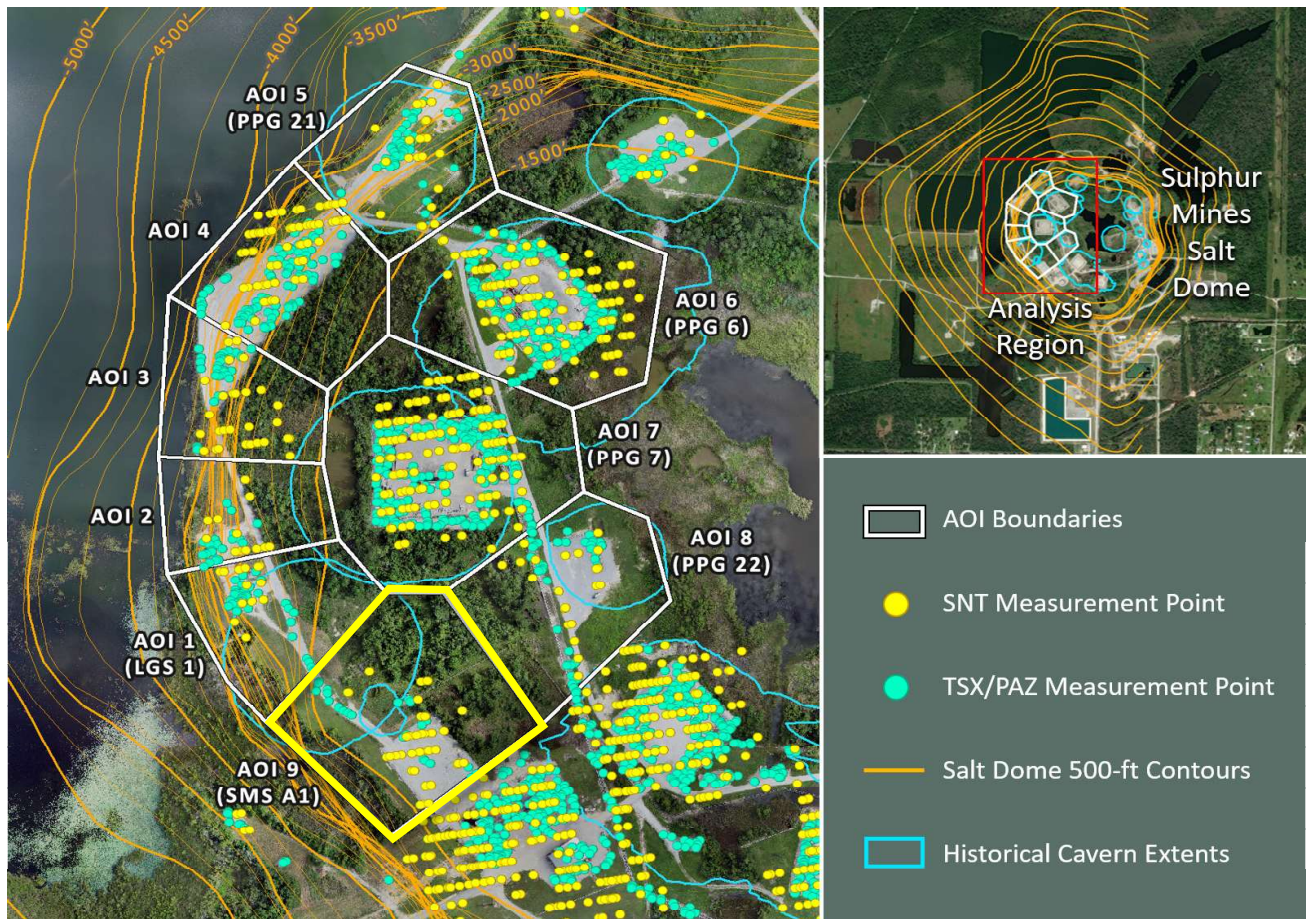
	Nonlinear Trend	Linear Trend
Velocity:	+0.00 in/yr	-0.64 in/yr
Acceleration:	+1.86 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)

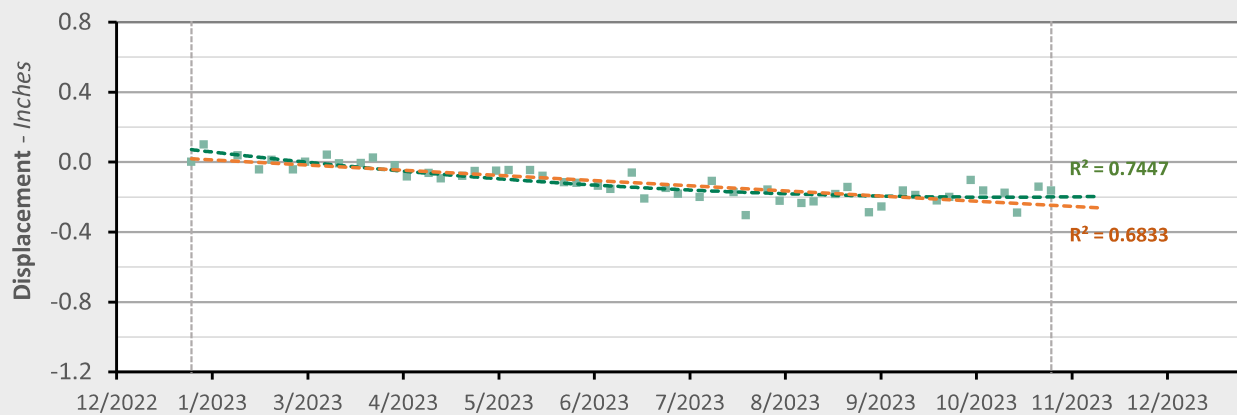
--- Linear Trend Line
(Linear Regression)

AOI 9 (PPG A1) - Location Map



AOI 9 (SMS A1) - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 26



Nonlinear Trend

Linear Trend

Velocity: +0.01 in/yr

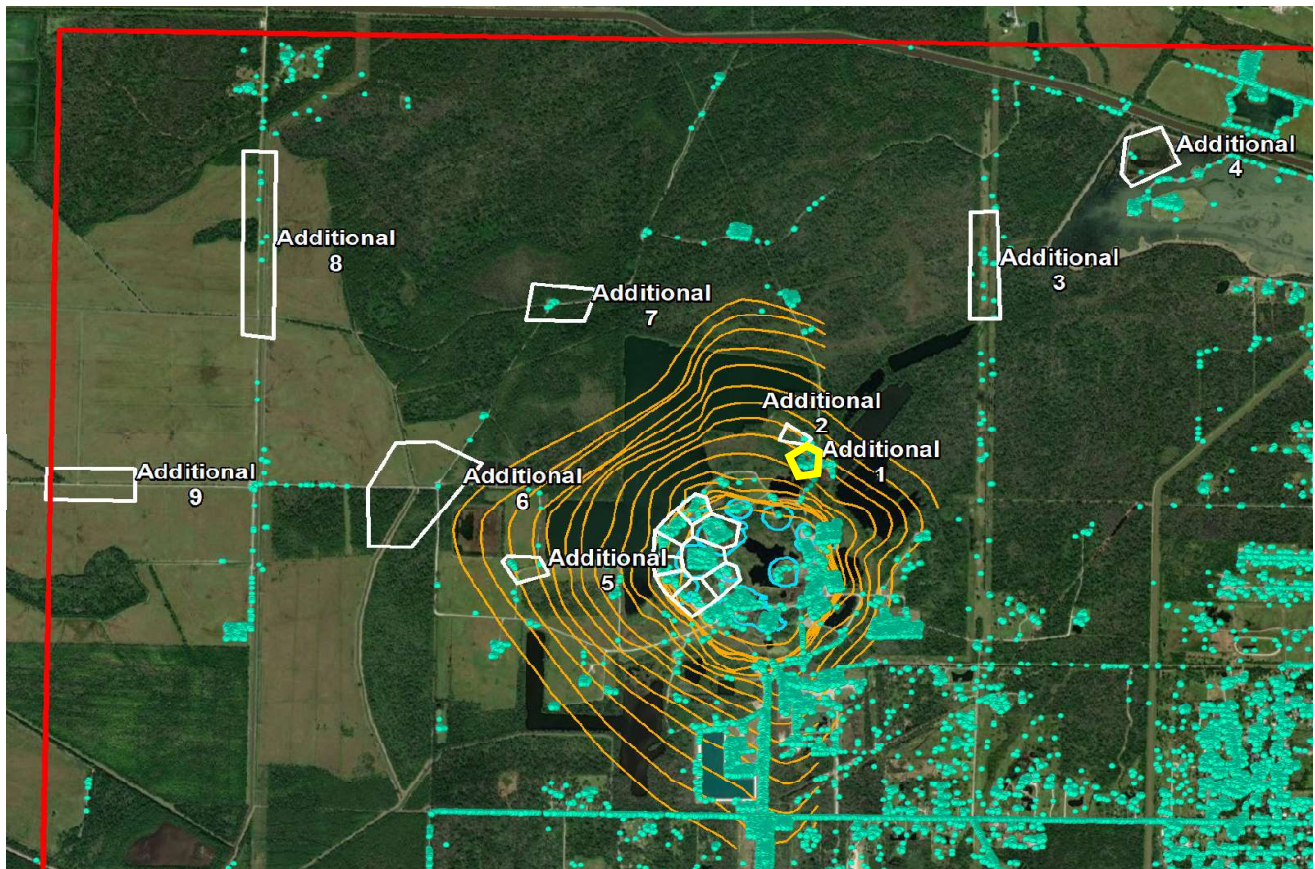
-0.35 in/yr

Acceleration: +1.04 in/yr²0.00 in/yr²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

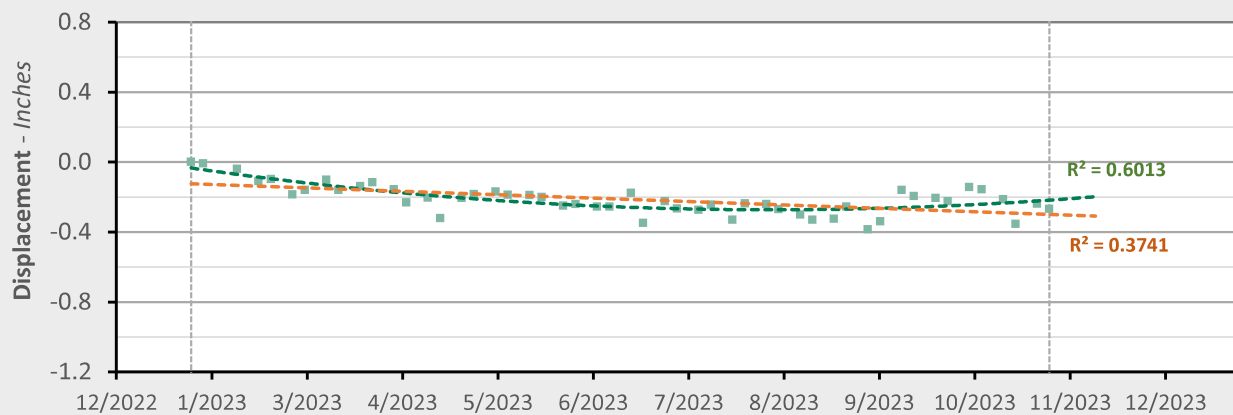
Additional 1 - Location Map



Additional 1 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count:

63

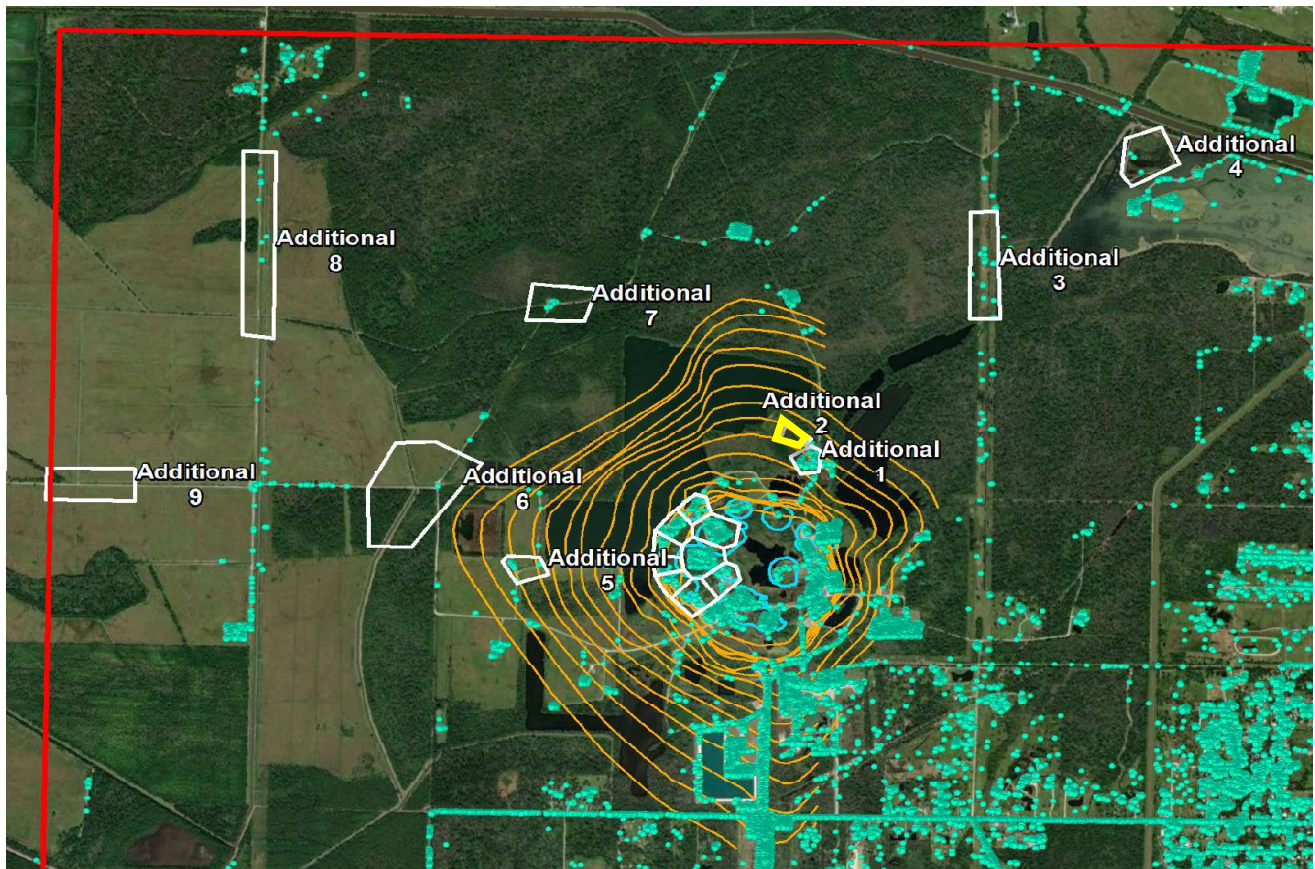


	Nonlinear Trend	Linear Trend
Velocity:	+0.39 in/yr	-0.23 in/yr
Acceleration:	+1.79 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

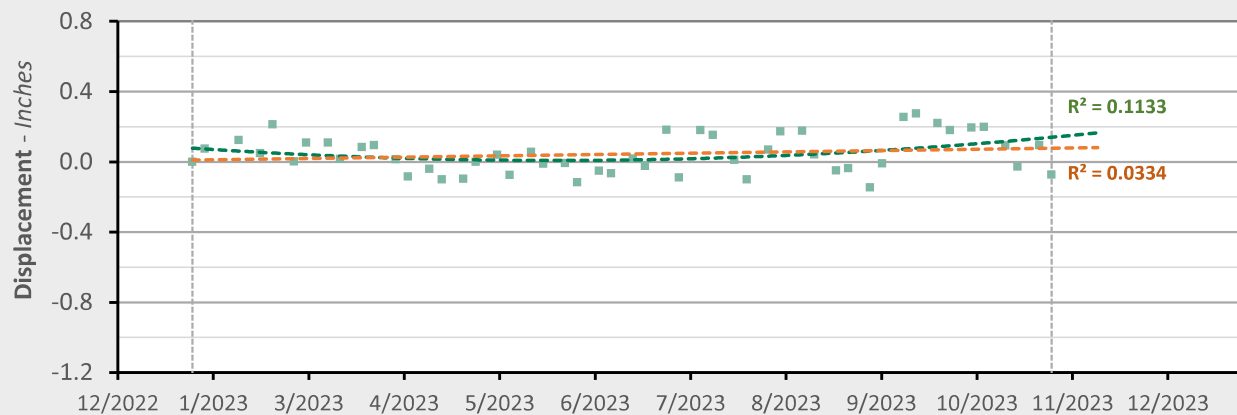
Additional 2 - Location Map



Additional 2 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count:

2

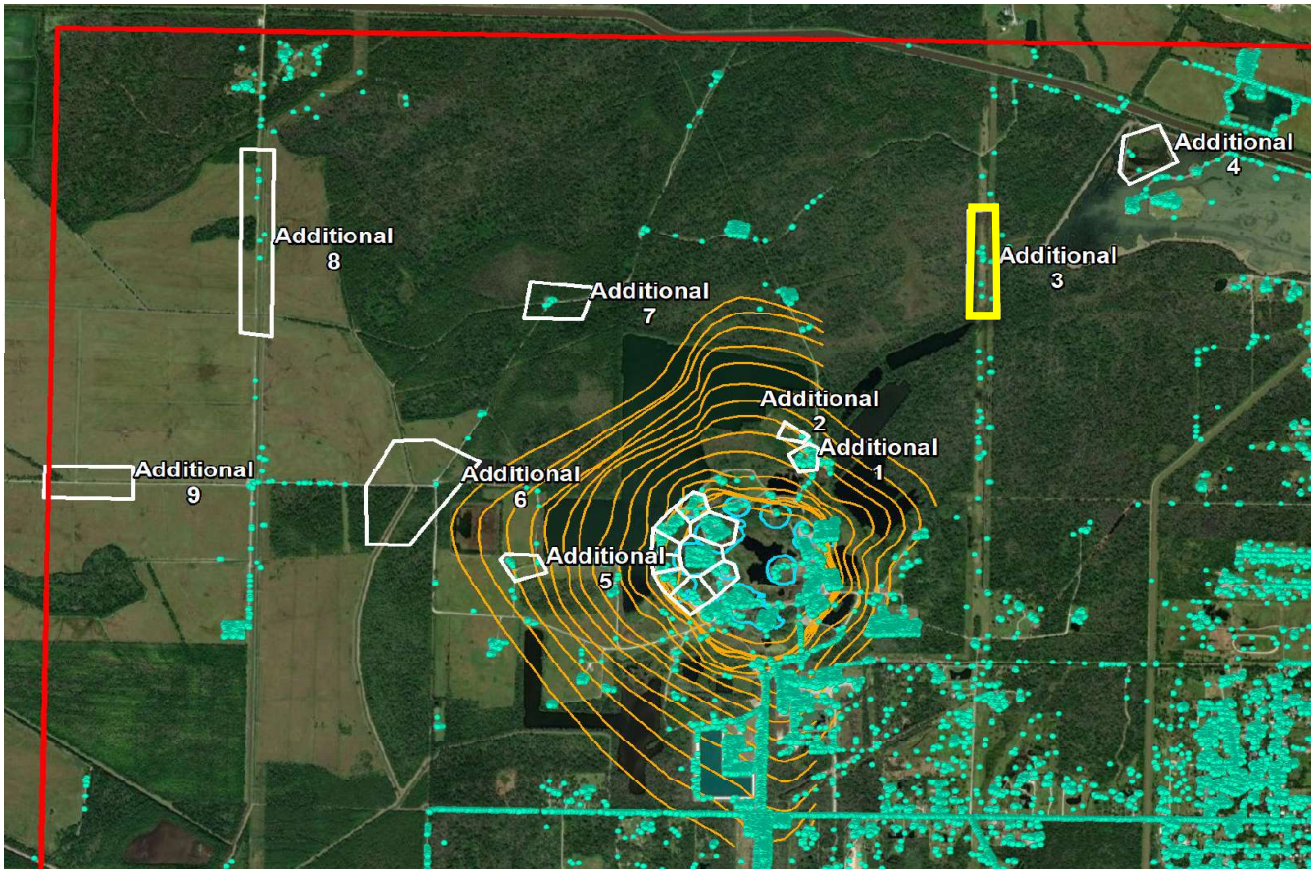


	Nonlinear Trend	Linear Trend
Velocity:	+0.56 in/yr	+0.09 in/yr
Acceleration:	+1.35 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

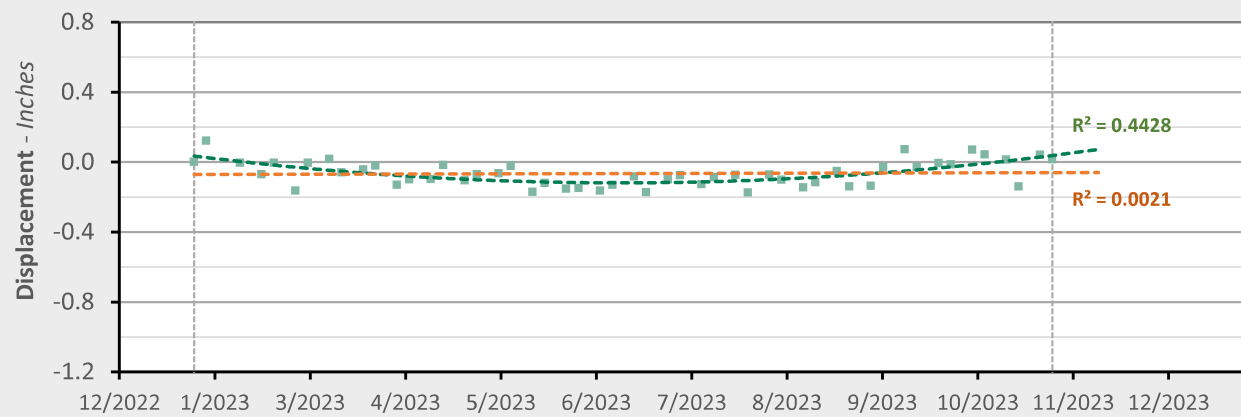
--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

Additional 3 - Location Map



Additional 3 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 26



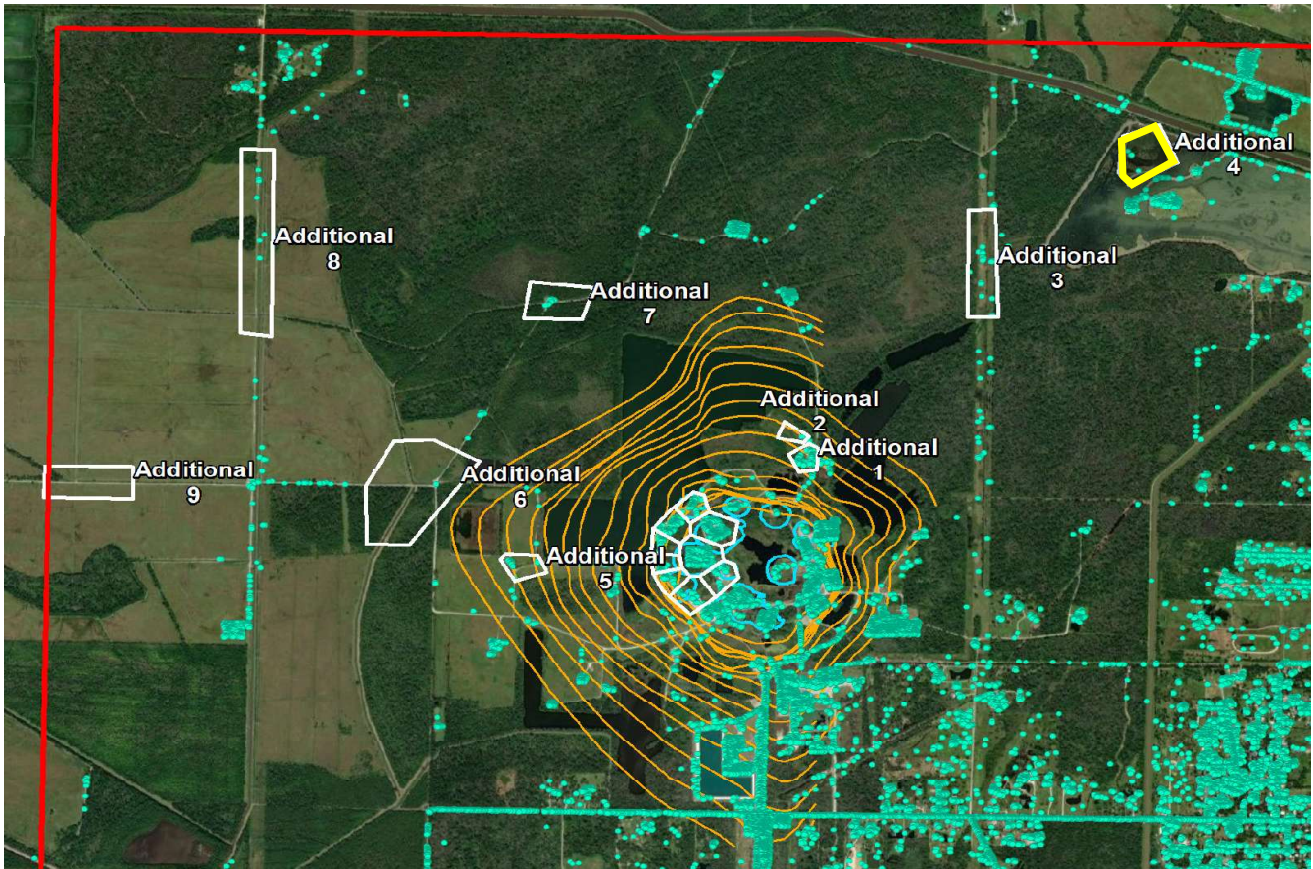
	Nonlinear Trend	Linear Trend
Velocity:	+0.75 in/yr	+0.01 in/yr
Acceleration:	+2.12 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line (Quadratic Regression)

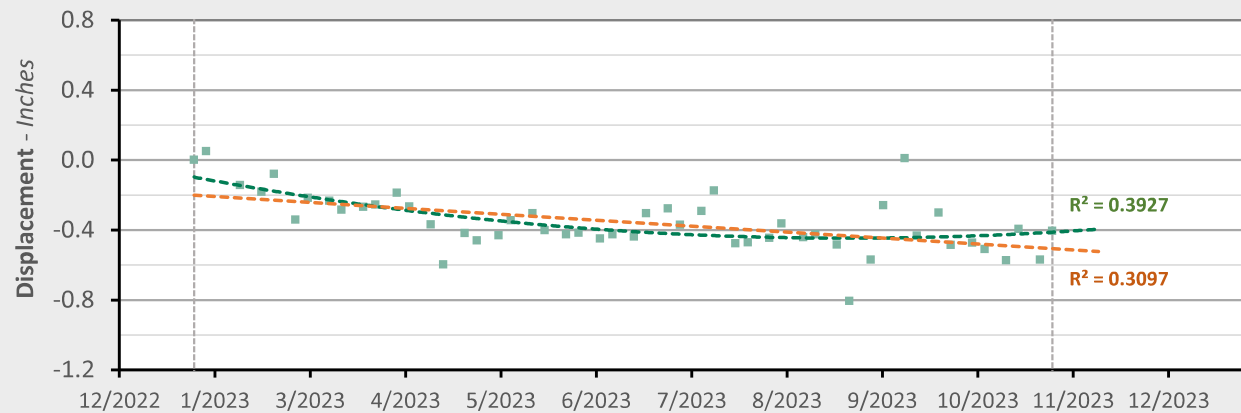
--- Linear Trend Line (Linear Regression)

Additional 4 - Location Map



Additional 4 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 3



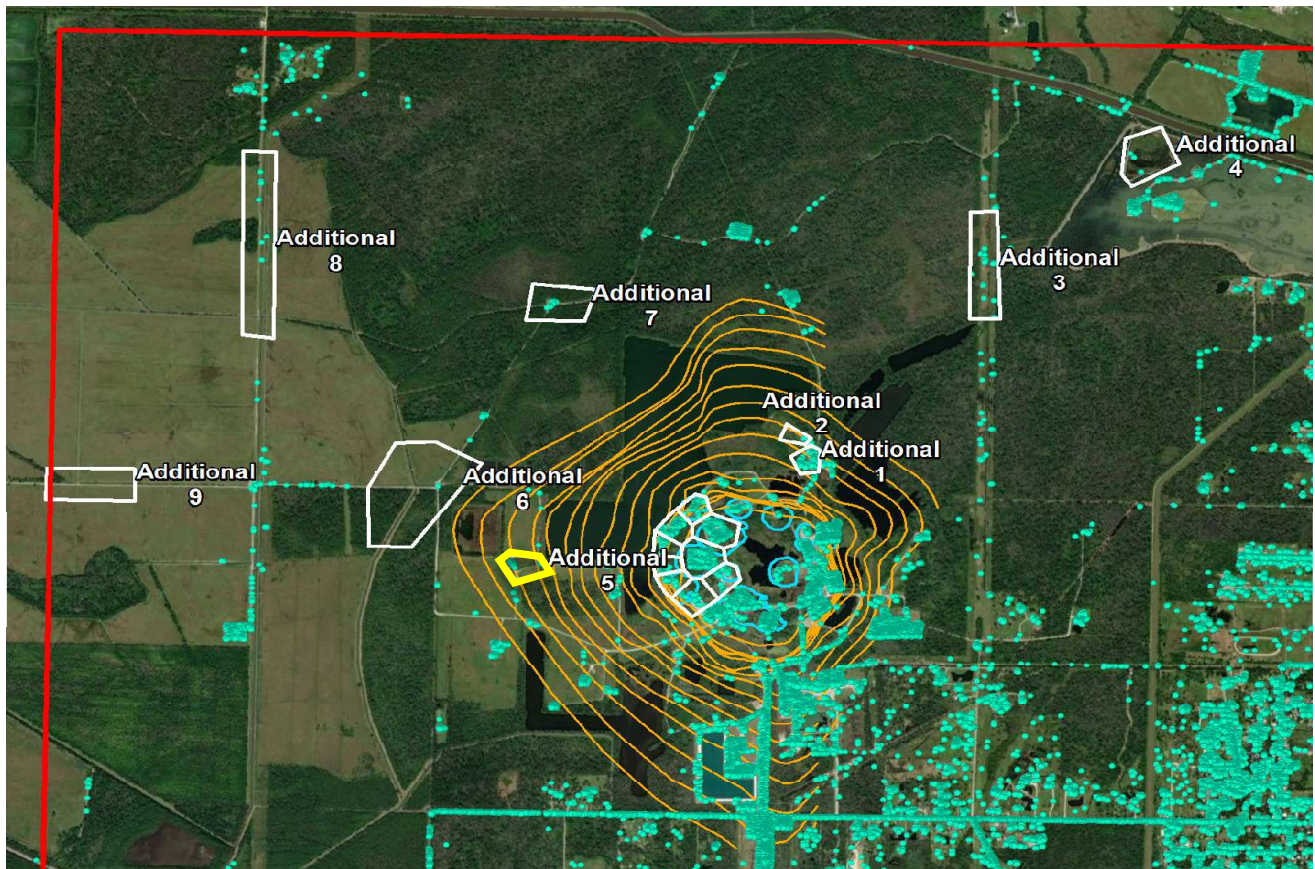
	Nonlinear Trend	Linear Trend
Velocity:	+0.31 in/yr	-0.40 in/yr
Acceleration:	+2.06 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)

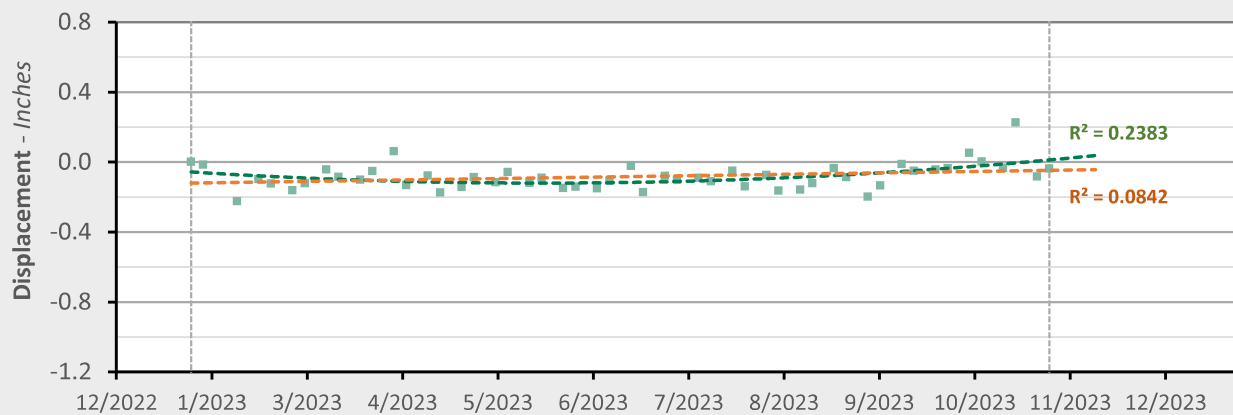
--- Linear Trend Line
(Linear Regression)

Additional 5 - Location Map



Additional 5 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 14

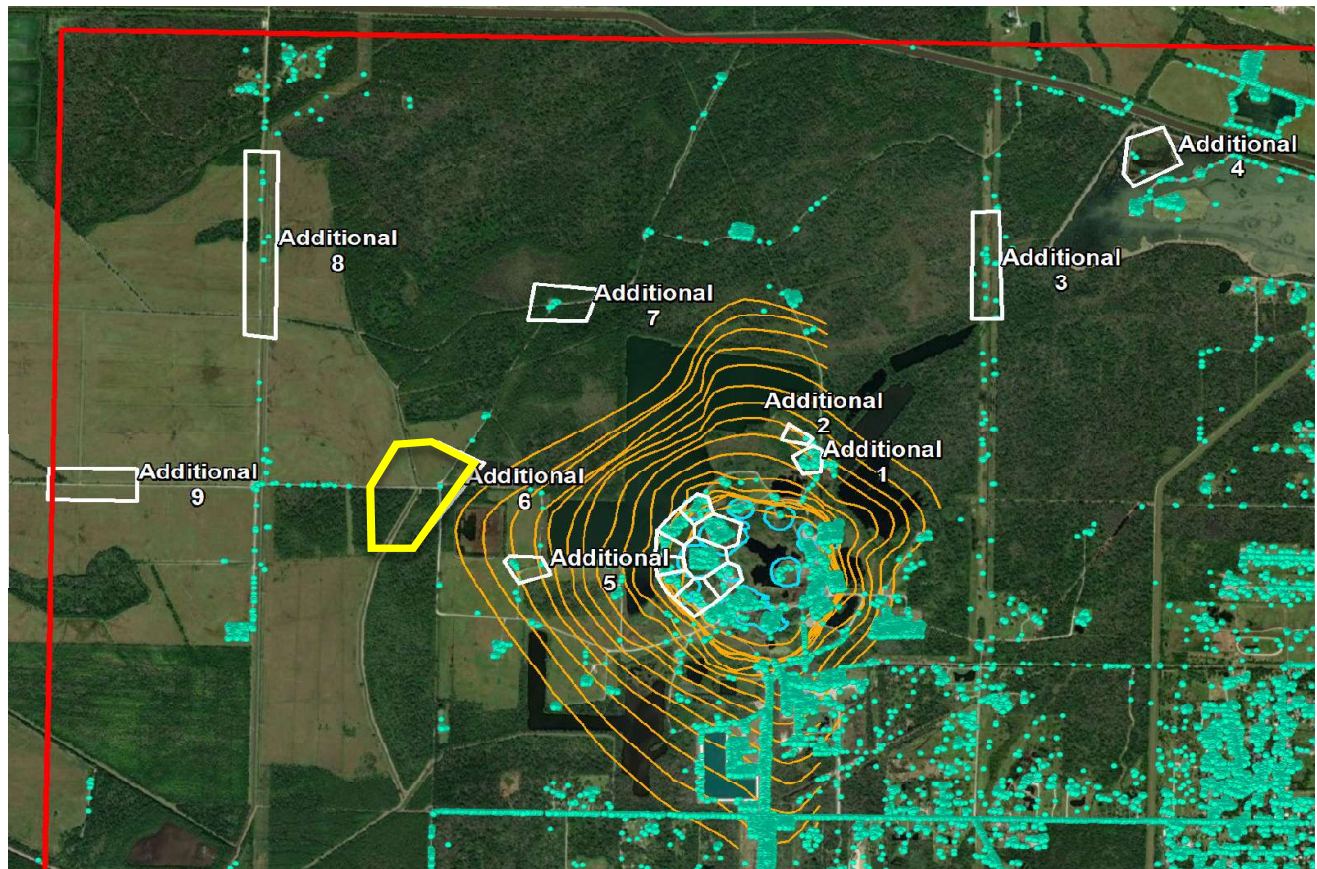


	Nonlinear Trend	Linear Trend
Velocity:	+0.55 in/yr	+0.10 in/yr
Acceleration:	+1.30 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

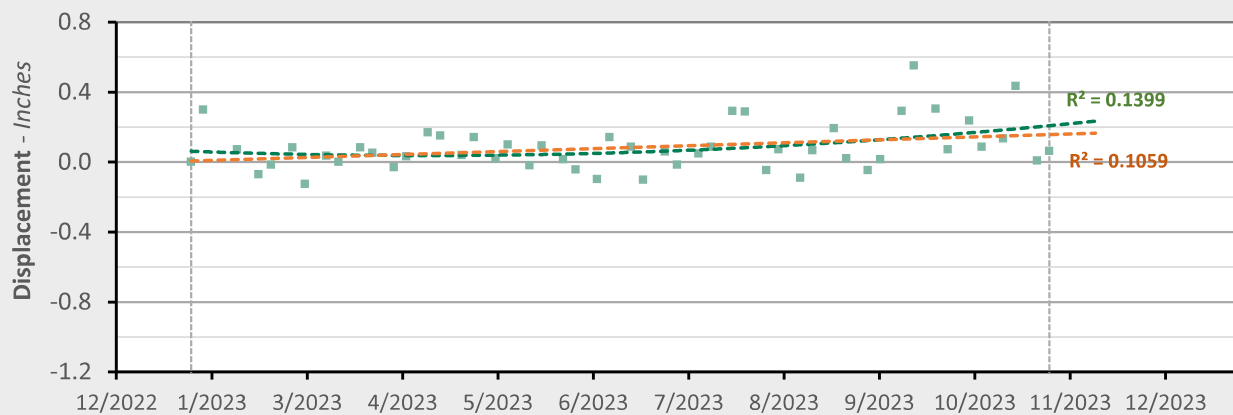
Additional 6 - Location Map



Additional 6 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count:

1



Nonlinear Trend

Linear Trend

Velocity: +0.58 in/yr

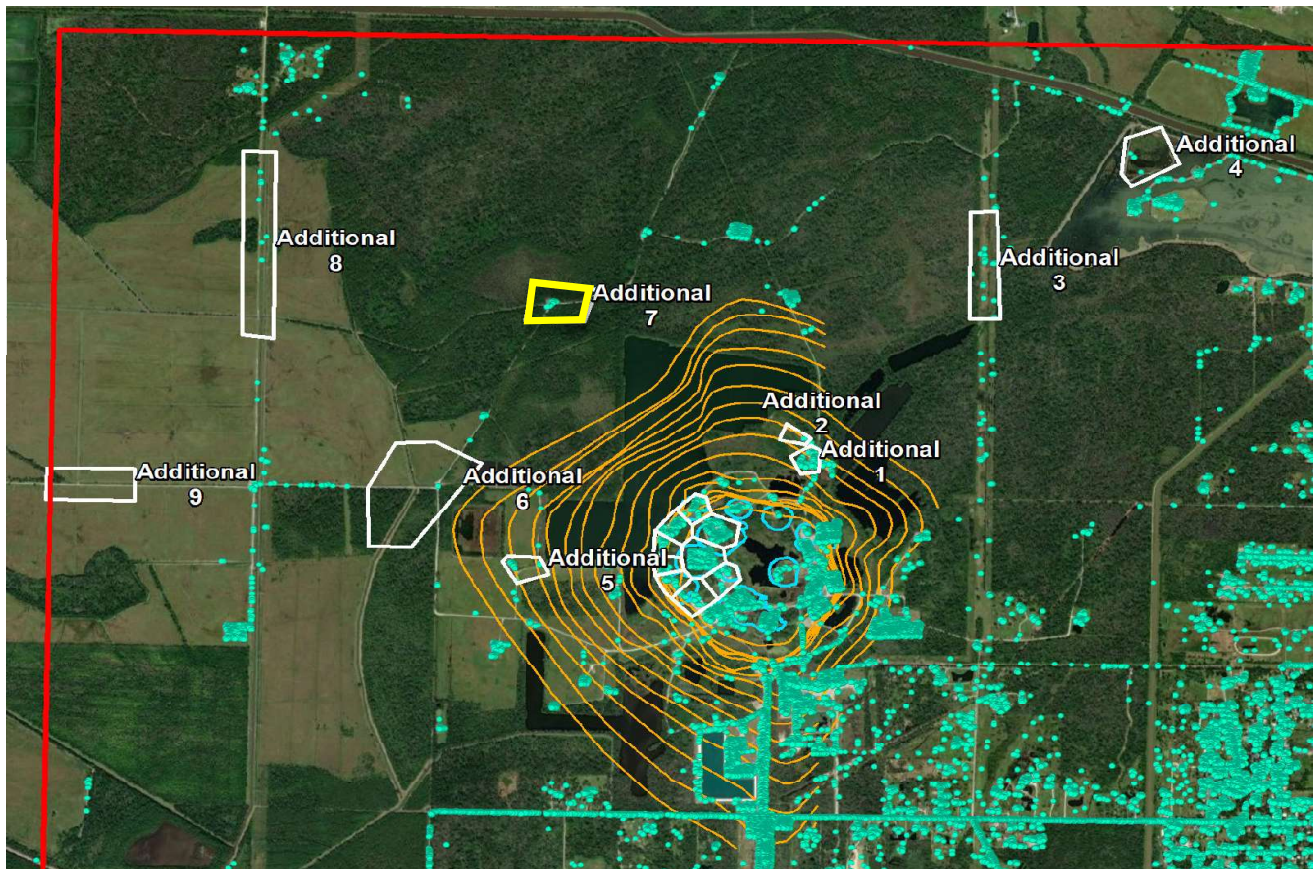
+0.20 in/yr

Acceleration: +1.11 in/yr²0.00 in/yr²

■ LOS Displacement Measurement

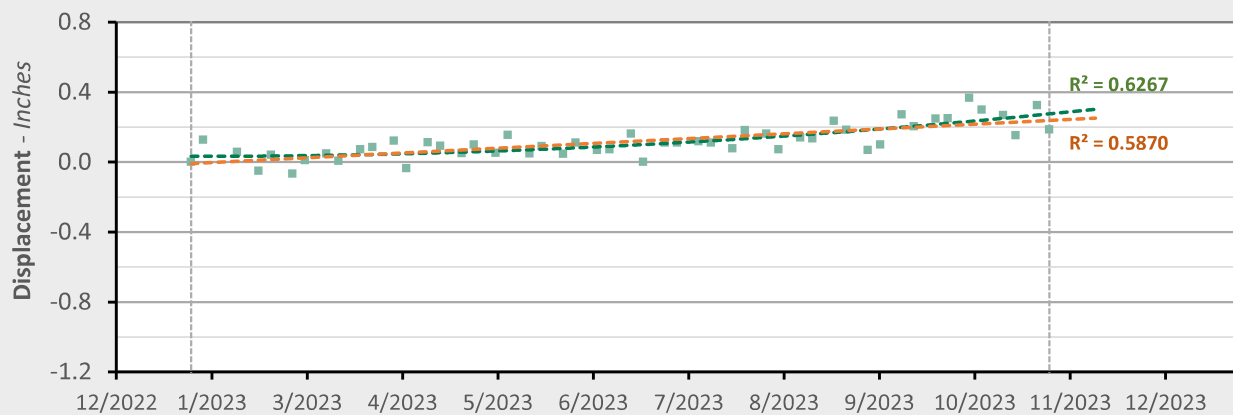
--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

Additional 7 - Location Map



Additional 7 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 10

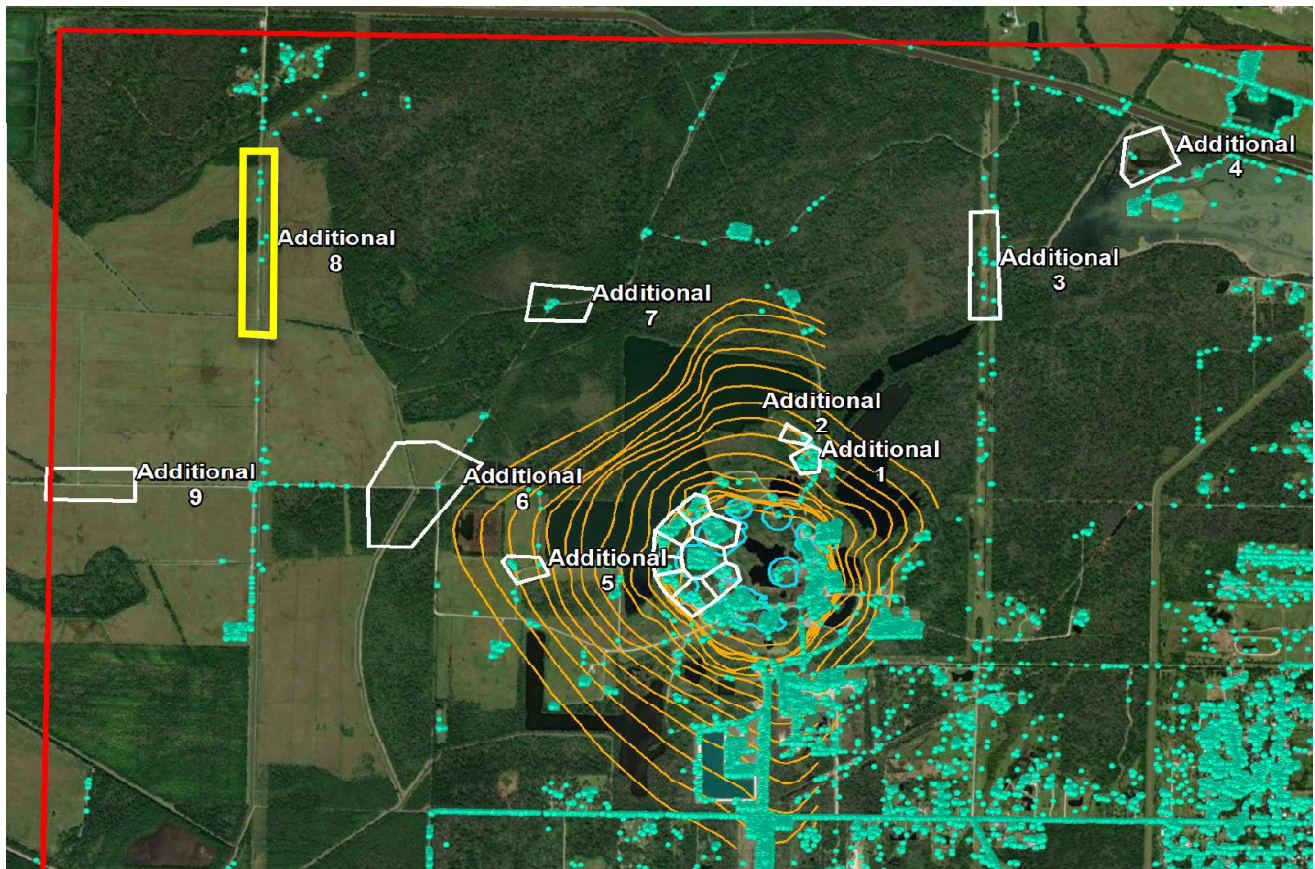


	Nonlinear Trend	Linear Trend
Velocity:	+0.61 in/yr	+0.32 in/yr
Acceleration:	+0.83 in/yr ²	0.00 in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

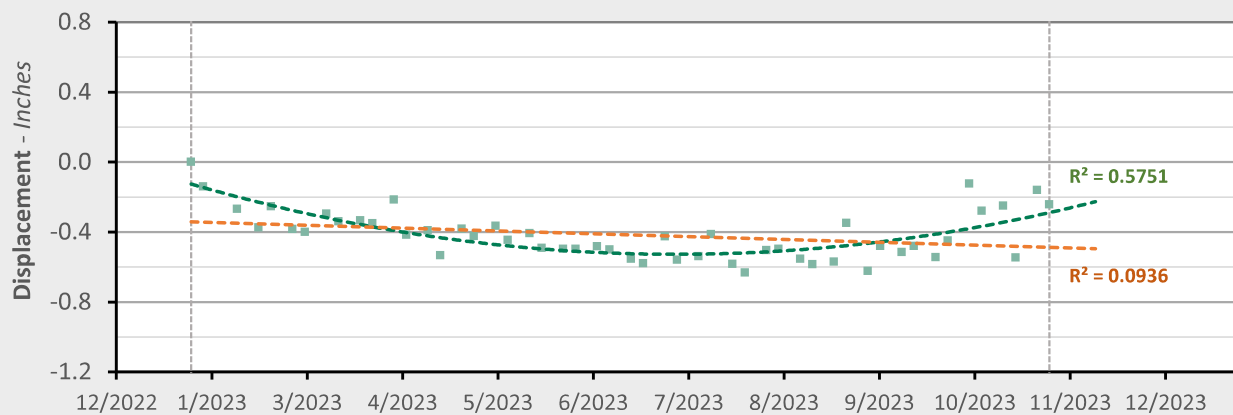
Additional 8 - Location Map



Additional 8 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count:

7



Nonlinear Trend

Linear Trend

Velocity: +1.30 in/yr

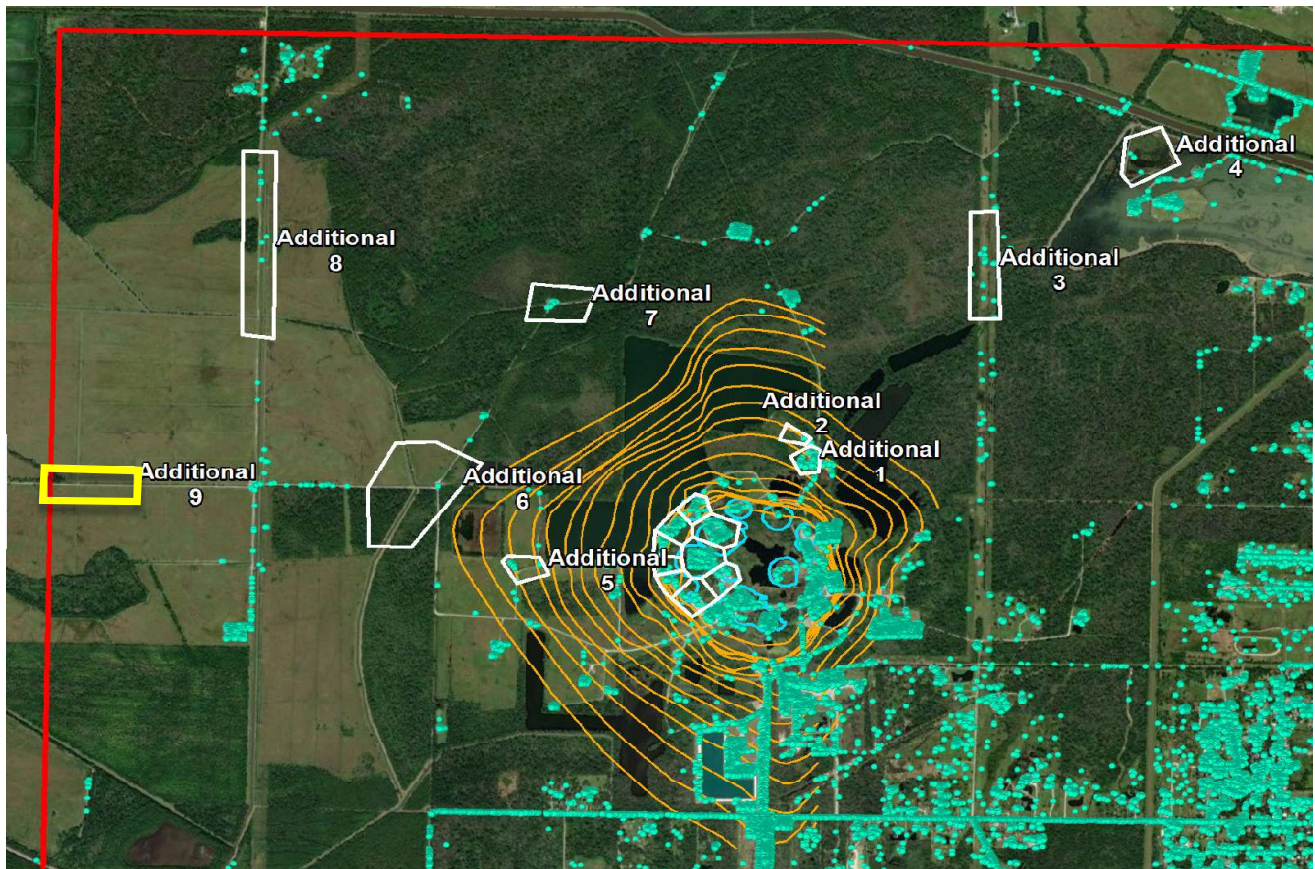
-0.19 in/yr

Acceleration: +4.32 in/yr²0.00 in/yr²

■ LOS Displacement Measurement

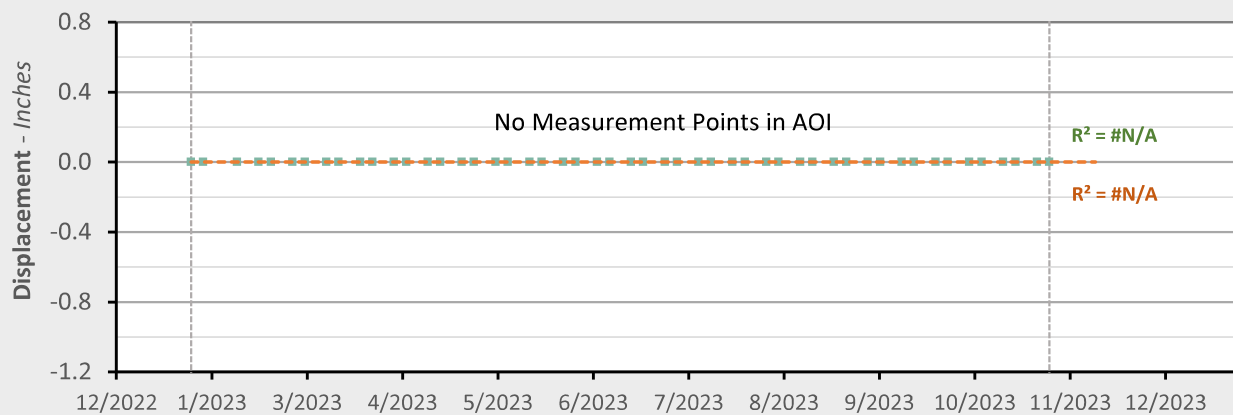
--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)

Additional 9 - Location Map



Additional 9 - Displacement Time Series

TSX/PAZ (10/30/2023) Point Count: 0



	Nonlinear Trend		Linear Trend	
Velocity:	#VALUE!	in/yr	#VALUE!	in/yr
Acceleration:	#VALUE!	in/yr ²	0.00	in/yr ²

■ LOS Displacement Measurement

--- Nonlinear Trend Line
(Quadratic Regression)--- Linear Trend Line
(Linear Regression)