

Troy Palmer

Troy Palmer

Research Area 1

Area: 2.05 ac

Farm Imagery



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Number of Fields: 1 Area: 2.05 ac

Research Area 1 (2.05 ac) Other Fields



Soil Test Point Sample ID

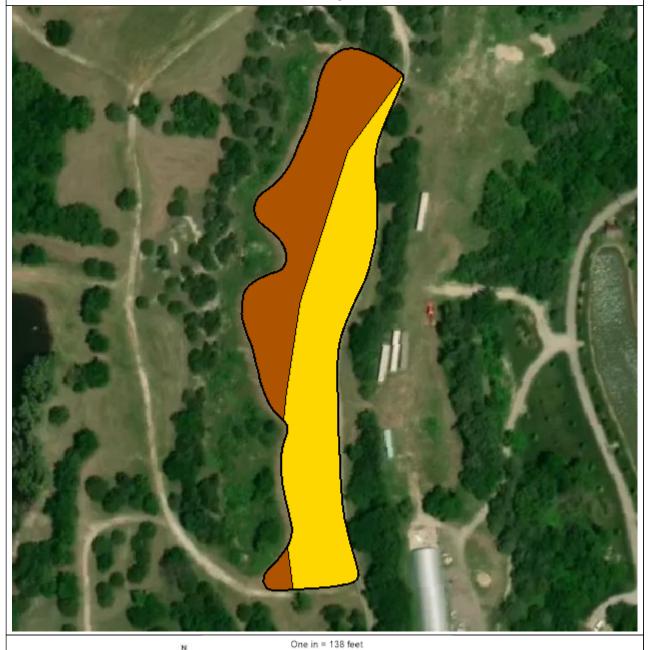


Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac Event Date(s): 3/29/2021

Field Boundary Soil Test Points



Soil Type



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1

Area: 2.05 ac

Field Boundary Soil Type

- Clime-Sogn complex, 3 to 20 percent slopes (0.9 ac) (44.8%)
 Labette-Sogn silty clay loams, 0 to 8 percent slopes (1.1 ac) (55.2%)



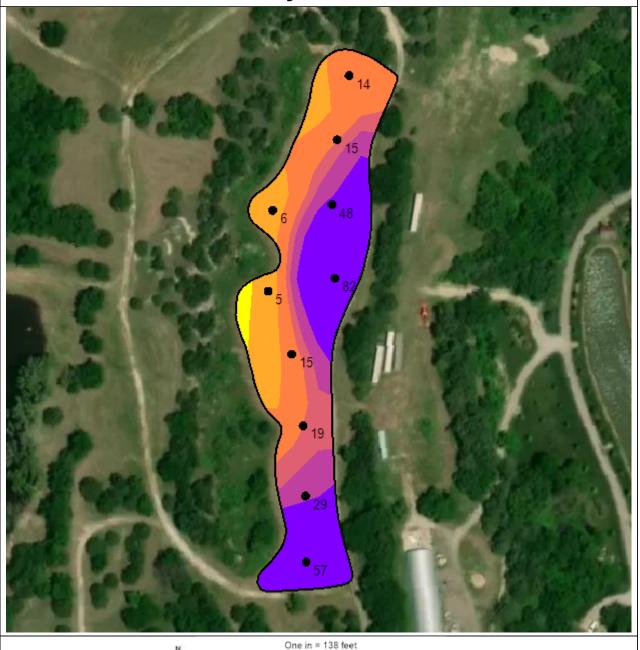
Soil Test Results

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac Event Date(s): 3/29/2021

Min	7 2	7 1	2.0	5	10	12	267	3,058	127	1	10 0	-	2	1 1	0.4	0.5	2	22	82.4	0.1	3.1	1 1
Min:	7.2	7.1	2.9		19	13		•		4	18.0	5	3	1.1	0.4							4.4
Max:	7.7	7.1	8.9	82	115	66		4,745		9	25.8	14		5.0	0.7	1.0	4	55	92.2	0.2	6.0	11.4
Avg:	7.4	7.1	6.4	29	64	31	366	3,830	198	6	21.8	8	5	2.8	0.5	0.7	3	36	87.7	0.1	4.4	7.8
Sampl	рН	BpH	OM	Р	Р	Р	K	Ca	Mg	Na	CEC	NO3-	S	Zn	В	Cu	Mn	Fe	%Ca	%Na	%K	%Mg
ID.	•	•		Brav	Brav	Olsen			Ŭ			Ν	ppm									J
				1	2	0.00						lbs	ρρ									
	7.0	7.4	0.7				4.45	0.400	050	_	40.0		-	4.4	0.5	0.7	_		00.4	0.0	0.0	4.4.4
1	7.2	7.1	8.7	57	110		445	3,139	259	9	19.0	14	7	4.4	0.5	0.7	3	55	82.4	0.2	6.0	11.4
2	7.2	7.1	6.5	29	55		462	3,679	236	6	21.6	7	4	3.1	0.7	1.0	3	47	85.3	0.1	5.5	9.1
3	7.2	7.1	6.1	19	30		330	3,595	193	6	20.5	7	4	2.0	0.4	0.7	3	33	88.0	0.1	4.1	7.8
4	7.6	7.1	5.3	15	98	26	388	4,305	215	6	24.3	5	7	2.4	0.6	0.8	4	36	88.4	0.1	4.1	7.4
5	7.7	7 1	2.9	5	19	13		4,745		6	25.8	5	3	1.1	0.5	0.8	3	30	92.2	0.1	3.3	4.4
		,			_	_		•		~		•	_		0.0		_		~	•		
6	7.6	7.1	8.9	82	115	66	400	3,189	236	9	19.0	11	5	5.0	0.4	0.7	3	42	84.0	0.2	5.4	10.4
7	7.4	7.1	7.9	48	94	44	352	3,058	211	6	18.0	11	4	3.6	0.4	0.6	2	38	85.1	0.1	5.0	9.8
8	7.2	7.1	5.7	6	28		267	4,068	149	6	22.3	5	4	2.0	0.4	0.7	3	23	91.2	0.1	3.1	5.6
9	7.5	7.1	4.9	15	45	23	382	4,510	192	6	25.2	5	5	2.0	0.5	0.7	3	29	89.7	0.1	3.9	6.3
10	7.6	7 1	7 1	14	41	16		4,011	153	4	22.1	9	3	2.4	0.4	0.5	2	22	90.7	0.1	3.4	5.8
10	1.0	1.1	1.1	14	4 1	10	234	4 ,011	100	4	ZZ. I	9	3	۷.4	0.4	0.5	_	~~	30.7	U. I	J.4	5.0



P Bray 1 Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

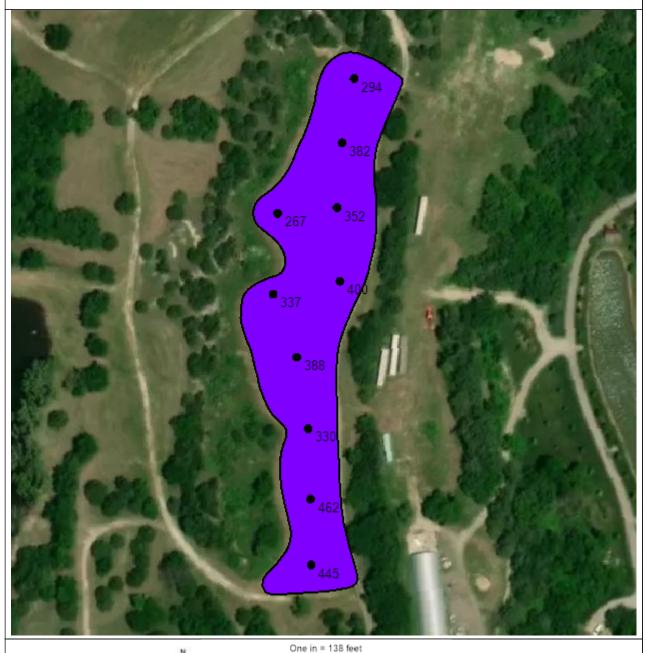
Event Date(s): 3/29/2021

Season: 2021 Min: 1.79 ppm Avg: 29.45 ppm Max: 81.13 ppm

- Field Boundary
 - P Bray 1 Surface ppm
- Very Low 0 5 ppm (0.1 ac) (2.5%)
- Low 5 12 ppm (0.6 ac) (27.3%)
- Medium 12 22 ppm (0.3 ac) (14.0%)
- Optimum 22 27 ppm (0.2 ac) (9.0%)
- High 27 35 ppm (0.3 ac) (13.8%)
- Excess > 35 ppm (0.7 ac) (32.8%)



Potassium Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

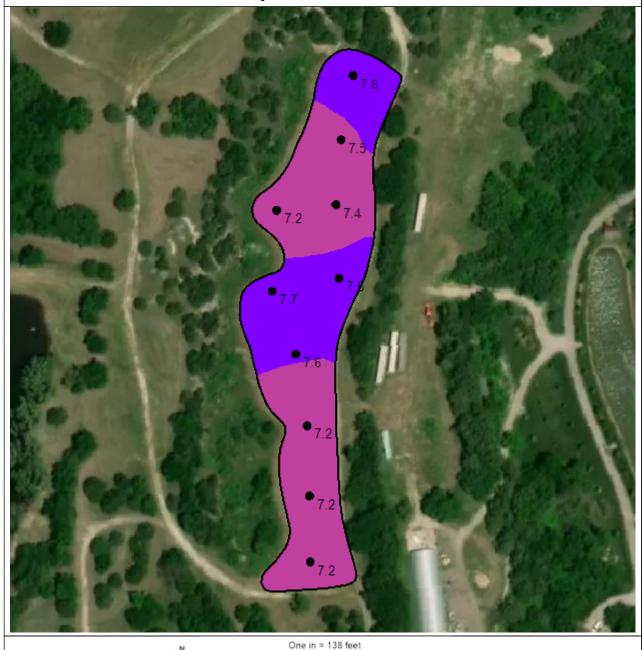
Event Date(s): 3/29/2021

Season: 2021 Min: 281.90 ppm Avg: 368.00 ppm Max: 454.19 ppm

- Field Boundary
 - Potassium Surface ppm
- Very Low 0 40 ppm (0.0 ac) (0.0%)
- Low 40 80 ppm (0.0 ac) (0.0%)
- Medium 80 150 ppm (0.0 ac) (0.0%)
- Optimum 150 200 ppm (0.0 ác) (0.0%)
 - High 200 250 ppm (0.0 ac) (0.0%)
- Very High > 250 ppm (2.0 ac) (100.0%)



pH Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

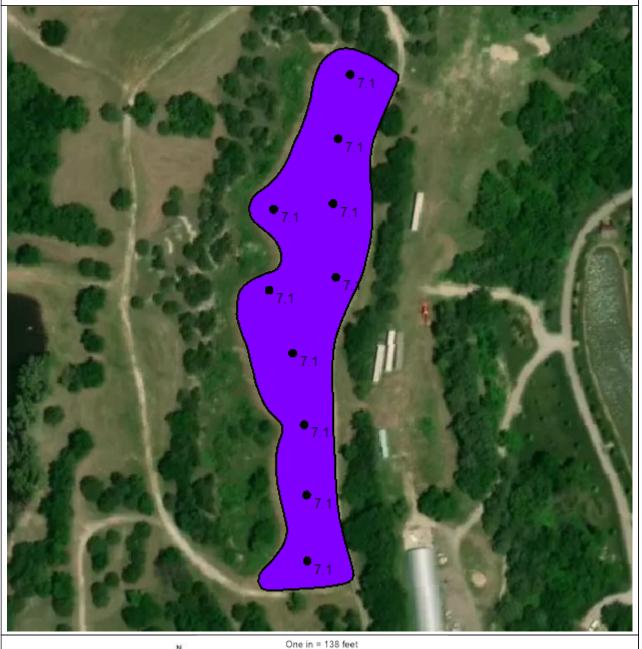
Event Date(s): 3/29/2021

Season: 2021 Min: 7.20 Avg: 7.42 Max: 7.65

- Field Boundary pH Surface
- Excessive Acid 0 5 pH (0.0 ac) (0.0%)
- Acidic 5.1 5.5 pH (0.0 ac) (0.0%)
- Slightly Acidic 5.5 6.1 pH (0.0 ac) (0.0%)
- Grain Optimum 6.1 6.6 pH (0.0 ac) (0.0%)
 - Alfalfa Optimum 6.6 7.5 pH (1.3 ac) (65.3%)
- Alkaline > 7.5 pH (0.7 ac) (34.7%)



BpH Surface



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Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

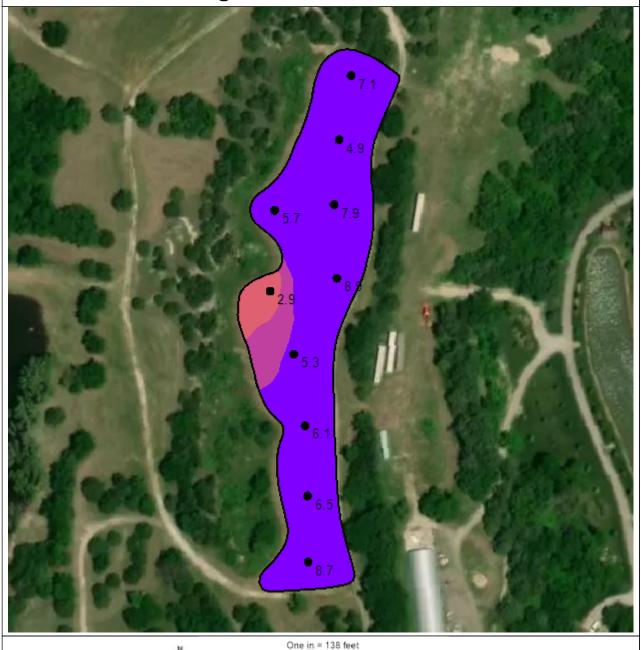
Event Date(s): 3/29/2021

Season: 2021 Min: 7.10 Avg: 7.10 Max: 7.10

- Field Boundary
 BpH Surface
- 0.0 6.2 (0.0 ac) (0.0%)
- 6.2 6.4 (0.0 ac) (0.0%)
- 6.4 6.6 (0.0 ac) (0.0%) > 6.6 (2.0 ac) (100.0%)



Organic Matter Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

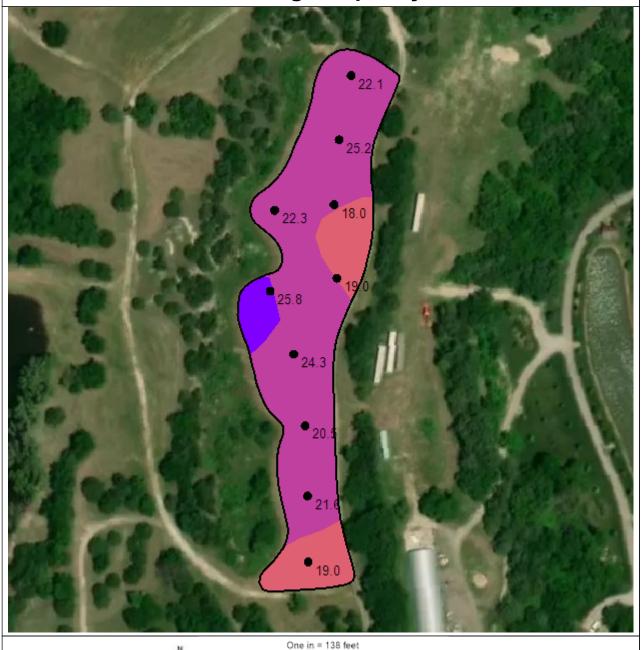
Event Date(s): 3/29/2021

Season: 2021 Min: 3.06 Percent Avg: 6.43 Percent Max: 8.93 Percent

- Field Boundary
 - Organic Matter Surface Percent
- 0.0 1.0 (%) (0.0 ac) (0.0%)
- 1.0 2.0 (0.0 ac) (0.0%)
- 2.0 3.0 (0.0 ac) (0.0%)
- 3.0 4.0 (0.1 ac) (5.6%)
- 4.0 5.0 (0.2 ac) (8.7%)
- > 5.0 (1.8 ac) (85.6%)



Cation Exchange Capacity Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021

Min: 18.31 meq/100 g Avg: 21.77 meq/100 g Max: 25.82 meq/100 g

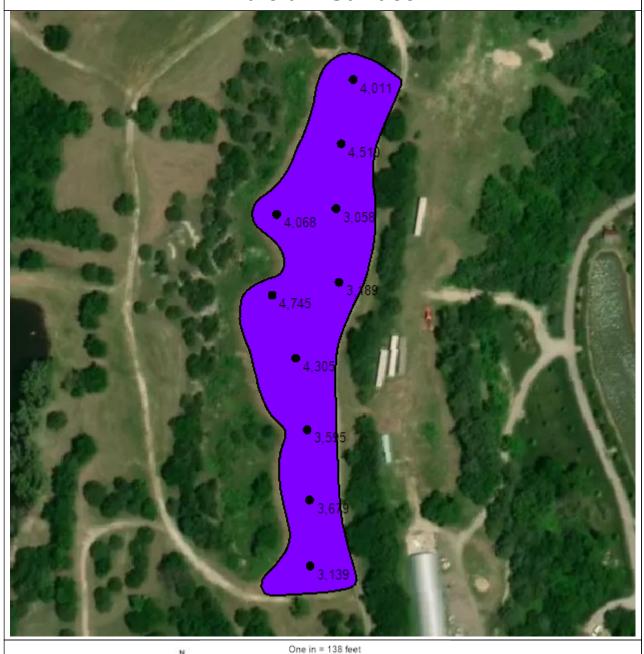
Field Boundary

Cation Exchange Capacity Surface meq/100 g

- Very Light 0 5 (0.0 ac) (0.0%)
- Light 5 10 (0.0 ac) (0.0%)
- Optimum 1 10 15 (0.0 ac) (0.0%)
- Optimum 2 15 20 (0.3 ac) (16.6%)
- Heavy 20 25 (1.6 ac) (76.3%)
- Very Heavy > 25 (0.1 ac) (7.1%)



Calcium Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 3,072.82 ppm Avg: 3,822.59 ppm Max: 4,744.17 ppm

- Field Boundary
 Calcium Surface ppm
- Very Low 0 500 ppm (0.0 ac) (0.0%)
- Low 500 1000 ppm (0.0 ac) (0.0%)
- Medium 1000 1500 ppm (0.0 ac) (0.0%)
- Optimum 1500 2000 ppm (0.0 ac) (0.0%)
 High 2000 2500 ppm (0.0 ac) (0.0%)
- Very High > 2500 ppm (2.0 ac) (100.0%)



Magnesium Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 142.96 ppm Avg: 200.14 ppm Max: 261.28 ppm

- Field Boundary
 - Magnesium Surface ppm
- Very Low 0 37 ppm (0.0 ac) (0.0%)
- Low 37 75 ppm (0.0 ac) (0.0%)
- Medium 75 120 ppm (0.0 ac) (0.0%)
- Optimum 120 250 ppm (1.8 ac) (88.4%)
 - High 250 375 ppm (0.2 ac) (11.6%)
- Excess > 375 ppm (0.0 ac) (0.0%)



Sulfur - ppm



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Area: 2.05 ac Event Date(s): 3/29/2021

Season: 2021 Min: 3.08 ppm Avg: 4.69 ppm Max: 6.88 ppm

- Field Boundary
 Sulfur Surface ppm
- Very Low 0 5 ppm (1.4 ac) (69.8%)
- Low 5 10 ppm (0.6 ac) (30.2%)
- Medium 10 15 ppm (0.0 ac) (0.0%)
- Optimum 15 20 ppm (0.0 ac) (0.0%)
 High 20 25 ppm (0.0 ac) (0.0%)
- Very High > 25 ppm (0.0 ac) (0.0%)



Zinc Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 1.06 ppm Avg: 2.82 ppm Max: 4.98 ppm

- Field BoundaryZinc Surface ppm
- Very Low 0 0.5 ppm (0.0 ac) (0.0%)
- Low 0.5 1.0 ppm (0.0 ac) (0.0%)
- Medium 1.0 2.5 ppm (1.0 ac) (47.0%)
- Optimum 2.5 4.0 ppm (0.8 ac) (40.5%)
 - High 4.0 6.0 ppm (0.3 ac) (12.6%)
- Very High > 6.0 ppm (0.0 ac) (0.0%)



Boron Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 0.40 ppm Avg: 0.48 ppm Max: 0.65 ppm

- Field Boundary Boron Surface ppm
- < 0.3 Very Low (0.0 ac) (0.0%)
- 0.4 0.5 Low (1.2 ac) (57.9%) 0.6 1.2 Medium (0.9 ac) (42.1%)
 - 1.3 2.0 High (0.0 ac) (0.0%)
- > 2 Very High (0.0 ac) (0.0%)



Copper Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

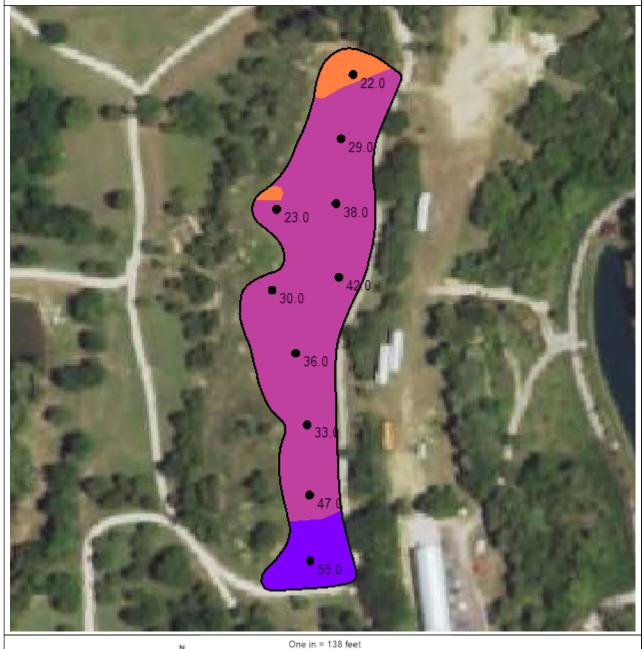
Event Date(s): 3/29/2021

Season: 2021 Min: 0.50 ppm Avg: 0.72 ppm Max: 0.95 ppm

- Field Boundary
 Copper Surface ppm
- < 0.3 Very Low (0.0 ac) (0.0%)
- 0.4 0.8 Low (1.6 ac) (80.0%) 0.9 - 1.5 Medium (0.4 ac) (20.0%)
- 1.6 3.0 High (0.0 ac) (0.0%)
- > 3 Very High (0.0 ac) (0.0%)



Iron Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 21.68 ppm Avg: 35.77 ppm Max: 54.99 ppm

- Field Boundary Iron Surface ppm
- < 3 Very Low (0.0 ac) (0.0%)
- 4 11 Low (0.0 ac) (0.0%) 12 24 Medium (0.2 ac) (9.1%)
- 25 50 High (1.6 ac) (78.0%) > 50 Very High (0.3 ac) (12.9%)



Manganese Surface



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

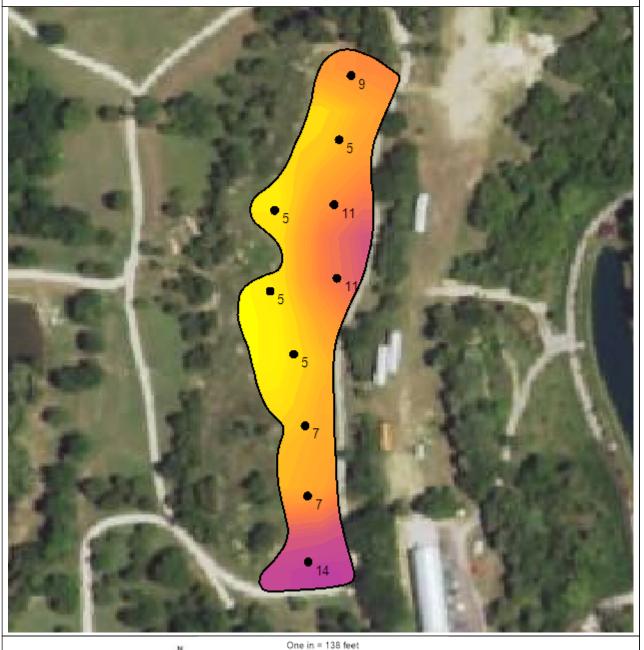
Event Date(s): 3/29/2021

Season: 2021 Min: 2.01 ppm Avg: 2.92 ppm Max: 3.72 ppm

- Field Boundary
 - Manganese Surface ppm
- < 5 Very Low (2.0 ac) (100.0%)
- 6 14 Low (0.0 ac) (0.0%)
- 15 29 Medium (0.0 ac) (0.0%)
- 30 49 High (0.0 ac) (0.0%)
- > 50 Very High (0.0 ac) (0.0%)



NO3-N - lbs



193

258

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac Event Date(s): 3/29/2021

Season: 2021 Min: 4.47 lb/ac Avg: 7.93 lb/ac Max: 13.88 lb/ac

- Field Boundary NO3-N lb/ac
- 4 6 (0.6 ac) (28.5%)
- 6 8 (0.8 ac) (38.2%) 9 - 10 (0.3 ac) (15.7%)
- 11 11 (0.2 ac) (10.0%)
- 13 14 (0.2 ac) (7.6%)



pct Ca



193

258

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 82.29 Avg: 87.59 Max: 92.18

Field Boundary

pct Ca

< 50% Low (0.0 ac) (0.0%)

50 - 65% Mèdium (0.0 ac) (0.0%)

65 - 70% Optimum (0.0 ac) (0.0%) > 70% High (2.0 ac) (100.0%)



pct K



193

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 3.19 Avg: 4.41 Max: 6.06

Field Boundary

pct K

< 1% Low (0.0 ac) (0.0%)

1 - 2% Medium (0.0 ac) (0.0%)

2 - 7% Optimum (2.0 ac) (100.0%) > 7% High (0.0 ac) (0.0%)





pct Mg



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 4.49 Avg: 7.88 Max: 11.47

- Field Boundary pct Mg
 - < 5% Low (0.0 ac) (0.7%)
- 5 10% Medium (1.7 ac) (81.7%) 10 - 15% Optimum (0.4 ac) (17.6%)
- > 15% High (0.0 ac) (0.0%)



pct Na



193

258

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac Event Date(s): 3/29/2021

Season: 2021 Min: 0.09 Avg: 0.12 Max: 0.20

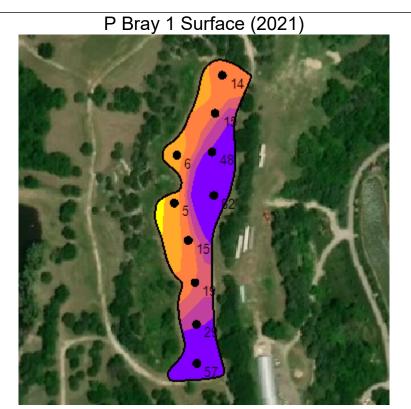
Field Boundary

pct Na

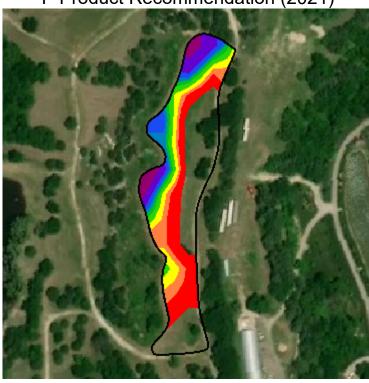
< 2% Optimum (2.0 ac) (100.0%)</pre>

2 - 5% High (0.0 ac) (0.0%) > 5% Very High (0.0 ac) (0.0%)





P Product Recommendation (2021)



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021 Season: 2021 Min: 1.79 ppm Avg: 29.45 ppm Max: 81.13 ppm

Season: 2021 Min Rate: 40.00 lb/ac Avg Rate: 82.72 lb/ac Max Rate: 240.00 lb/ac Total Product: 93.37 lb Applied Area: 1.13 ac Product: 11-52-0 MAP

Order Id: 863132 Order Task Id: 24126075 Crop - Year 1: Hemp Crop Purpose - Year 1: Milling Yield Goal - Year 1: 3000 Task: Midwest Labs - P Rec Field Boundary

P Bray 1 Surface ppm

Very Low 0 - 5 ppm (0.1 ac) (2.5%)

Low 5 - 12 ppm (0.6 ac) (27.3%)

Medium 12 - 22 ppm (0.3 ac) (14.0%) Optimum 22 - 27 ppm (0.2 ac) (9.0%)

High 27 - 35 ppm (0.3 ac) (13.8%)

Excess > 35 ppm (0.7 ac) (32.8%)

Field Boundary

P Product Recommendation lb/ac

40 (0.3 ac) (12.4%)

50 (0.3 ac) (13.6%)

60 (0.1 ac) (4.7%)

80 - 90 (0.1 ac) (2.8%)

100 - 110 (0.2 ác) (7.4%)

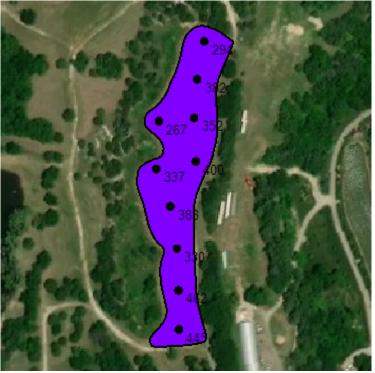
130 (0.2 ac) (9.9%)

170 - 180 (0.1 ac) (3.7%)

240 (0.0 ac) (0.7%)







K Product Recommendation

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021

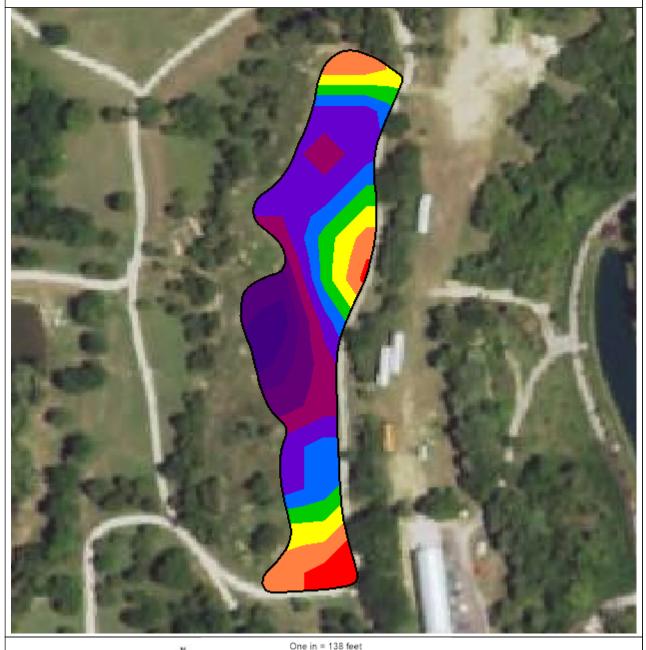
Season: 2021 Min: 281.90 ppm Avg: 368.00 ppm Max: 454.19 ppm Field Boundary

Potassium Surface ppm

Very Low 0 - 40 ppm (0.0 ac) (0.0%)
Low 40 - 80 ppm (0.0 ac) (0.0%)
Medium 80 - 150 ppm (0.0 ac) (0.0%)
Optimum 150 - 200 ppm (0.0 ac) (0.0%)
High 200 - 250 ppm (0.0 ac) (0.0%)
Very High > 250 ppm (2.0 ac) (100.0%)



N Product Recommendation



193

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1

Area: 2.05 ac

Season: 2021

Min Rate: 180.00 lb/ac Avg Rate: 224.18 lb/ac Max Rate: 270.00 lb/ac Total Product: 459.22 lb Applied Area: 2.05 ac Product: 46-0-0 Urea

Credit: 11-52-0 MAP - 11-52-0 MAP

Order Id: 863132 Order Task Id: 24126074 Crop - Year 1: Hemp Crop Purpose - Year 1: Milling

Crop Purpose - Year 1: Milling Yield Goal - Year 1: 3000 Previous Crop: None

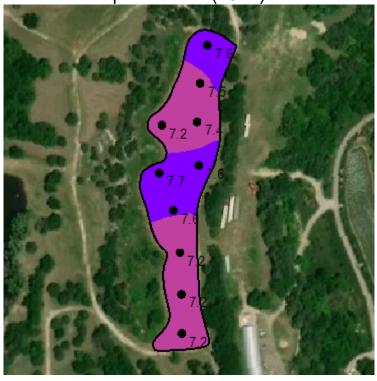
N Zone: 6

Task: Midwest Labs - N Rec

- Field Boundary
 - N Product Recommendation lb/ac
- 180 (0.1 ac) (6.4%)
- 190 (0.2 ac) (11.2%)
- 200 (0.1 ac) (6.3%)
- 210 (0.2 ac) (11.4%)
- 220 (0.1 ac) (6.9%)
- 230 (0.5 ac) (26.7%)
- 240 (0.3 ac) (13.5%)
- 250 270 (0.4 ac) (17.6%)



pH Surface (2021)



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1

Area: 2.05 ac

Event Date(s): 3/29/2021

Season: 2021 Min: 7.20 Avg: 7.42 Max: 7.65 Field Boundary pH Surface

Excessive Acid 0 - 5 pH (0.0 ac) (0.0%)

Acidic 5.1 - 5.5 pH (0.0 ac) (0.0%)

Slightly Acidic 5.5 - 6.1 pH (0.0 ac)

(0.0%)

Grain Optimum 6.1 - 6.6 pH (0.0 ac)

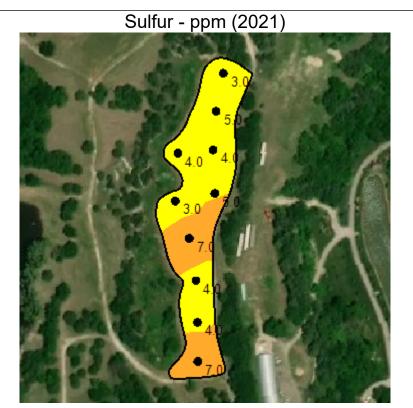
(0.0%)

Alfalfa Optimum 6.6 - 7.5 pH (1.3 ac)

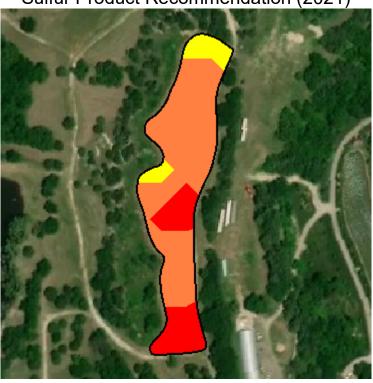
(65.3%)

Alkaliné > 7.5 pH (0.7 ac) (34.7%)





Sulfur Product Recommendation (2021)



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021 Season: 2021 Min: 3.08 ppm Avg: 4.69 ppm Max: 6.88 ppm

Season: 2021 Min Rate: 11.00 lb/ac Avg Rate: 11.86 lb/ac Max Rate: 13.00 lb/ac Total Product: 24.30 lb Applied Area: 2.05 ac Product: Sulfur

Order Id: 863132 Order Task Id: 24126073 Crop - Year 1: Hemp Crop Purpose - Year 1: Milling Yield Goal - Year 1: 3000 Task: MV Heartland - MV Adj Midwest Sulfur Field Boundary Sulfur Surface ppm

Very Low 0 - 5 ppm (1.4 ac) (69.8%)

Low 5 - 10 ppm (0.6 ac) (30.2%)

Medium 10 - 15 ppm (0.0 ac) (0.0%) Optimum 15 - 20 ppm (0.0 ac) (0.0%)

High 20 - 25 ppm (0.0 ac) (0.0%)

Very High > 25 ppm (0.0 ac) (0.0%)

Field Boundary

Sulfur Product Recommendation lb/ac

11 (0.5 ac) (24.1%)

12 (1.3 ac) (65.7%)

13 (0.2 ac) (10.2%)



Zinc Product Recommendation (2021)



Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1 Area: 2.05 ac

Event Date(s): 3/29/2021 Season: 2021 Min: 1.06 ppm Avg: 2.82 ppm Max: 4.98 ppm

Season: 2021 Min Rate: 3.00 lb/ac Avg Rate: 3.05 lb/ac Max Rate: 5.00 lb/ac Total Product: 1.54 lb Applied Area: 0.50 ac Product: Zinc Sulfate

Order Id: 863132 Order Task Id: 24126077 Crop - Year 1: Hemp Crop Purpose - Year 1: Milling Yield Goal - Year 1: 3000 Task: Midwest Labs - Zn Rec Field Boundary Zinc Surface ppm

Very Low 0 - 0.5 ppm (0.0 ac) (0.0%)

Low 0.5 - 1.0 ppm (0.0 ac) (0.0%)

Medium 1.0 - 2.5 ppm (1.0 ac) (47.0%)

Optimum 2.5 - 4.0 ppm (0.8 ac) (40.5%) High 4.0 - 6.0 ppm (0.3 ac) (12.6%)

Very High > 6.0 ppm (0.0 ac) (0.0%)

Field Boundary

Zinc Product Recommendation lb/ac

3 (0.5 ac) (24.0%)

5 (0.0 ac) (0.7%)



Product Summary

Season: 2021

Grower: Troy Palmer Farm: Troy Palmer Field: Research Area 1

Area: 2.05 ac

Nitrogen

		Avg Rec		Avg App	Total
Recommendation	Rec Acres	Rate	App Acres	Rate	Product
46-0-0 Urea 863132 24126074 4/2/2021 2:04:34 PM(local) Hemp Milling 3000 None 6	2.0	224.2 lb/ac	2.0	224.2 lb/ac	459.2 lb

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Recommendation	Rec Acres	Avg Rec Rate	App Acres	Avg App Rate	Total Product
11-52-0 MAP 863132 24126075 4/2/2021 2:04:34 PM(local) Hemp Milling 3000	2.0	45.6 lb/ac	1.1	82.7 lb/ac	93.4 lb

Sulfur

		Avg Rec		Avg App	Total
Recommendation	Rec Acres	Rate	App Acres	Rate	Product
Sulfur 863132 24126073 4/2/2021 2:04:34 PM(local) Hemp Milling 3000	2.0	11.9 lb/ac	2.0	11.9 lb/ac	24.3 lb

Zinc

Recommendation	Rec Acres	Avg Rec Rate	App Acres	Avg App Rate	Total Product	
Zinc Sulfate 863132 24126077 4/2/2021 2:04:34 PM(local) Hemp Milling 3000	2.0	0.8 lb/ac	0.5	3.1 lb/ac	1.5 lb	

