

LAND APPLICATION SITE

ALVIN POWERS, JR.

KQAPJ 1 - 2

KING & QUEEN COUNTY

**VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION
FORM D: MUNICIPAL EFFLUENT AND BIOSOLIDS**

PART D-VI: LAND APPLICATION AGREEMENT - BIOSOLIDS AND INDUSTRIAL RESIDUALS

A. This land application agreement is made on 4-13-18 between Alvin Powers Jr referred to here as "Landowner", and Recyc Systems, Inc, referred to here as the "Permittee". This agreement remains in effect until it is terminated in writing by either party or, with respect to those parcels that are retained by the Landowner in the event of a sale of one or more parcels, until ownership of all parcels changes. If ownership of individual parcels identified in this agreement changes, those parcels for which ownership has changed will no longer be authorized to receive biosolids or industrial residuals under this agreement.

Landowner:

The Landowner is the owner of record of the real property located in King & Queen Co Virginia, which includes the agricultural, silvicultural or reclamation sites identified below in Table 1 and identified on the tax map(s) attached as Exhibit A.

Table 1.: Parcels authorized to receive biosolids, water treatment residuals or other industrial sludges			
Tax Parcel ID	Tax Parcel ID	Tax Parcel ID	Tax Parcel ID
<u>25-40R-513</u>			

Additional parcels containing Land Application Sites are identified on Supplement A (check if applicable)

Check one: The Landowner is the sole owner of the properties identified herein.
 The Landowner is one of multiple owners of the properties identified herein.

In the event that the Landowner sells or transfers all or part of the property to which biosolids have been applied within 38 months of the latest date of biosolids application, the Landowner shall:

1. Notify the purchaser or transferee of the applicable public access and crop management restrictions no later than the date of the property transfer; and
2. Notify the Permittee of the sale within two weeks following property transfer.

The Landowner has no other agreements for land application on the fields identified herein. The Landowner will notify the Permittee immediately if conditions change such that the fields are no longer available to the Permittee for application or any part of this agreement becomes invalid or the information herein contained becomes incorrect.

The Landowner hereby grants permission to the Permittee to land apply residuals as specified below, on the agricultural sites identified above and in Exhibit A. The Landowner also grants permission for DEQ staff to conduct inspections on the land identified above, before, during or after land application of permitted residuals for the purpose of determining compliance with regulatory requirements applicable to such application.

Class B biosolids Water treatment residuals Food processing waste Other industrial sludges
 Yes No Yes No Yes No Yes No

Alvin Powers Jr. Owner Alvin Powers Jr. 11777 The Trail
 Landowner - Printed Name, Title Signature Mailing Address & Phone Number
Stevensville, Va, 23161
 Tel # 804-769-3274

Permittee:

Recyc Systems, Inc, the Permittee, agrees to apply biosolids and/or industrial residuals on the Landowner's land in the manner authorized by the VPA Permit Regulation and in amounts not to exceed the rates identified in the nutrient management plan prepared for each land application field by a person certified in accordance with §10.1-104.2 of the Code of Virginia.

The Permittee agrees to notify the Landowner or the Landowner's designee of the proposed schedule for land application and specifically prior to any particular application to the Landowner's land. Notice shall include the source of residuals to be applied.

I reviewed the document(s) assigning signatory authority to the person signing for landowner above. I will make a copy of this document(s) available to DEQ for review upon request. (Do not check this box if the landowner signs this agreement)

[Signature] [Signature] PO Box 562 Remington, Virginia 22734
 Permittee - Authorized Representative Signature Mailing Address
 Printed Name

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION: PART D-VI LAND APPLICATION AGREEMENT

Permittee: Recyc Systems, Inc

County or City: King & Queen Co.

Landowner: Alvin Powers, Jr.

Landowner Site Management Requirements:

I, the Landowner, I have received a DEQ Biosolids Fact Sheet that includes information regarding regulations governing the land application of biosolids, the components of biosolids and proper handling and land application of biosolids.

I have also been expressly advised by the Permittee that the site management requirements and site access restrictions identified below must be complied with after biosolids have been applied on my property in order to protect public health, and that I am responsible for the implementation of these practices.

I agree to implement the following site management practices at each site under my ownership following the land application of biosolids at the site:

1. Notification Signs: I will not remove any signs posted by the Permittee for the purpose of identifying my field as a biosolids land application site, unless requested by the Permittee, until at least 30 days after land application at that site is completed.
2. Public Access
 - a. Public access to land with a high potential for public exposure shall be restricted for at least one year following any application of biosolids.
 - b. Public access to land with a low potential for public exposure shall be restricted for at least 30 days following any application of biosolids. No biosolids amended soil shall be excavated or removed from the site during this same period of time unless adequate provisions are made to prevent public exposure to soil, dusts or aerosols;
 - c. Turf grown on land where biosolids are applied shall not be harvested for one year after application of biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by DEQ.
3. Crop Restrictions:
 - a. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after the application of biosolids.
 - b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface for a time period of four (4) or more months prior to incorporation into the soil,
 - c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months when the biosolids remain on the land surface for a time period of less than four (4) months prior to incorporation.
 - d. Other food crops and fiber crops shall not be harvested for 30 days after the application of biosolids;
 - e. Feed crops shall not be harvested for 30 days after the application of biosolids (60 days if fed to lactating dairy animals).
4. Livestock Access Restrictions:

Following biosolids application to pasture or hayland sites:

 - a. Meat producing livestock shall not be grazed for 30 days,
 - b. Lactating dairy animals shall not be grazed for a minimum of 60 days.
 - c. Other animals shall be restricted from grazing for 30 days;
5. Supplemental commercial fertilizer or manure applications will be coordinated with the biosolids and industrial residuals applications such that the total crop needs for nutrients are not exceeded as identified in the nutrient management plan developed by a person certified in accordance with §10.1-104.2 of the Code of Virginia;
6. Tobacco, because it has been shown to accumulate cadmium, should not be grown on the Landowner's land for three years following the application of biosolids or industrial residuals which bear cadmium equal to or exceeding 0.45 pounds/acre (0.5 kilograms/hectare).

Alvin Powers Jr
Landowner's Signature

4-13-18
Date

Farm Operator Signature

Mailing Address & Phone Number

Alvin Powers Jr.
Title of Landowner

Power, Capacity and Authority. Such Party has the right, power, legal capacity, and authority to execute and enter into this Agreement and to execute all other documents and perform all other acts as may be necessary in connection with the performance of this Agreement.

Alvin Powers Jr
Signature

Alvin Powers Jr.
Printed Name of Signer

4-13-81
Date

FARM DATA SHEET

SITE NAME:	Alvin Powers, Jr.	COUNTY:	King & Queen
OWNER:	Alvin Powers, Jr.	OPERATOR:	Carlton & Calhoun Farms Inc. Roger Calhoun
OWNER'S ADDRESS:	11777 The Trail Stevensville, VA 23161	OPERATOR'S ADDRESS:	787 Piedmont Farm Rd. Mascot, VA 23108
OWNER'S TELEPHONE:	804-769-3274	OPERATOR'S TELEPHONE:	-
GENERAL FARM TYPE:	Row Crops	CELL PHONE:	804-241-4717
# CATTLE:	None	EMAIL:	-
LAGOON or SLURRY:	N/A	LATITUDE:	37.711
TOPO QUAD:	King & Queen Courthouse	LONGITUDE:	- 76.943
COMMENTS:		METHOD OF DETERMINATION:	Online Maps

SD8

4-25-18

RECYC SYSTEMS, INC

FIELD DATA SHEET

Field Identification	DEQ Control ID	Gross Acres	Environmentally Sensitive Soils				Hydro Map	Tax Map #	FSA Tract #
			Water Table	Bed Rock/ Shallow	Surf/ Leach	Freq Flood			
KQAPJ 1	51097-00220-0000	20.8	3A Dec.-Apr. 13A Nov.-May 19A Dec.-Apr.	-	-	-	YO 59	1625-40R-512	T 2878 F 5
KQAPJ 2	51097-00221-0000	44.6	3A Dec.-Apr. 5D Nov.-Apr. 10B Dec.-Apr. 13A Nov.-May 19B Dec.-Apr. 21A Dec.-Mar.	-	-	-	YO 59	1625-40R-512	T 2878 F 4
TOTAL ACRES IN SITE		65.4							

4-25-18

Report Number: 16-321-0647

Account Number: 70594



7621 Whitepine Road, Richmond, VA 23237
 Main 804-743-9401 ° Fax 804-271-6446
 www.waypointanalytical.com

Send To: Recyc Systems Inc
 Susan Trumbo
 8455 Whiteshop Road
 Culpepper VA 22701

"Every acre...Every year."™

Grower: Alvin Powers Jr
 King & Queen Co

Submitted By: SD

SOIL ANALYSIS REPORT

Analytical Method(s): SMP Buffer pH Mehlich 3 Loss On Ignition Water pH

Date Received: 11/16/2016

Date Of Analysis: 11/17/2016

Date Of Report: 11/17/2016

Sample ID Field ID	Lab Number	OM	W/V	ENR	Phosphorus			Potassium	Magnesium	Calcium	Sodium	pH		Acidity	C.E.C
		% Rate	Soil Class	lbs/A	M3 ppm Rate	ppm Rate	ppm Rate	K ppm Rate	Mg ppm Rate	Ca ppm Rate	Na ppm Rate	Soil pH	Buffer Index	H meq/100g	meq/100g
1 KQAPJ	18396	1.8 L		80	124	VH		81 M	59 M	592 H		6.2	6.88	0.5	4.2
2A KQAPJ	18397	1.9 L		83	87	H		93 H	43 M	486 H		6.2	6.89	0.4	3.4
2B KQAPJ	18398	1.7 L		79	78	H		92 H	45 M	454 M		6.2	6.89	0.4	3.3

Sample ID Field ID	Percent Base Saturation					Nitrate	Sulfur	Zinc	Manganese	Iron	Copper	Boron	Soluble Salts		
	K %	Mg %	Ca %	Na %	H %	NO ₃ N ppm Rate	S ppm Rate	Zn ppm Rate	Mn ppm Rate	Fe ppm Rate	Cu ppm Rate	B ppm Rate	SS ms/cm Rate		
1 KQAPJ	4.9	11.7	70.5		11.9			3.7 H	12 M						
2A KQAPJ	7.0	10.5	71.5		11.8			2.5 M	17 M						
2B KQAPJ	7.1	11.4	68.8		12.1			2.4 M	17 M						

Values on this report represent the plant available nutrients in the soil. Rating after each value: VL (Very Low), L (Low), M (Medium), H (High), VH (Very High). ENR - Estimated Nitrogen Release. C.E.C. - Cation Exchange Capacity.

Explanation of symbols: % (percent), ppm (parts per million), lbs/A (pounds per acre), ms/cm (milli-mhos per centimeter), meq/100g (milli-equivalent per 100 grams). Conversions: ppm x 2 = lbs/A, Soluble Salts ms/cm x 640 = ppm.

This report applies to sample(s) tested. Samples are retained a maximum of thirty days after testing.

Analysis prepared by: Waypoint Analytical Virginia, Inc.

by: *Paucic McGroary*

Paucic McGroary

Report Number: 16-321-0647

Account Number: 70594



7621 Whitepine Road, Richmond, VA 23237

Main 804-743-9401 ° Fax 804-271-6446

www.waypointanalytical.com

Send To: Recyc Systems Inc
Susan Trumbo
8455 Whiteshop Road
Culpepper VA 22701

"Every acre...Every year."™

Grower: Alvin Powers Jr
King & Queen Co

Submitted By: SD

Date Received: 11/16/2016

Date Of Report: 11/17/2016

SOIL FERTILITY RECOMMENDATIONS

Sample ID Field ID	Intended Crop	Yield Goal	Lime Tons/A	Nitrogen N lb/A	Phosphate P ₂ O ₅ lb/A	Potash K ₂ O lb/A	Magnesium Mg lb/A	Sulfur S lb/A	Zinc Zn lb/A	Manganese Mn lb/A	Iron Fe lb/A	Copper Cu lb/A	Boron B lb/A
1 KQAPJ	Adjust pH to 6.5	0	1.0				21			2			
2A KQAPJ	Adjust pH to 6.5	0	1.0				37			2			
2B KQAPJ	Adjust pH to 6.5	0	1.0				35			2			

Comments:

Sample(s) : 2A,2B Crop: Adjust pH to 6.5

Apply dolomitic lime to raise pH and improve the magnesium level.

If dolomitic lime is not used, apply required magnesium with magnesium oxide. Epsom Salts, K-Mag or Sul-PO-Mag.

"The recommendations are based on research data and experience, but NO GUARANTEE or WARRANTY expressed or implied, concerning crop performance is made."

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Paucic McGeary

Paucic McGeary

THE PLANNER IS NOT STATE CERTIFIED

Nutrient Management Plan Balance Sheet
(Spring, 2018-Summer, 2020)
Alvin Powers
Planner: John Doe

Tract: 2878

Location: King & Queen

(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
5/KQAPJ 1(N)	21/21	2018	Soybeans (FS)	0-20-60	0/0				0-20-60	N/A		
4/KQAPJ 2(N)	45/45	2018	Soybeans (FS)	0-30-60	0/0				0-30-60	N/A		

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

Soil Test Summary

Tract	Field	Acre	Date	P2O5	K2O	Lab	Soil pH	Lime Date	rec. lime tons/Ac
2878	KQAPJ 1	21	2016-Fa	H+ (124 P ppm)	M (81 K ppm)	A&L MIII	6.2		
2878	KQAPJ 2	45	2016-Fa	H (87 P ppm)	M (93 K ppm)	A&L MIII	6.2		

Field Productivities for Major Crops

Tract Name	Tract/ Field	Field Name	Acres	Predominant Soil Series	Corn	Small Grain	Alfalfa	Grass Hay	Environmental Warnings
2878	2878/5	KQAPJ 1	21	Roanoke	IIIb	III	III	III	
	2878/4	KQAPJ 2	45	Tetotum	IIb	I	III	I	

Yield Range

Field Productivity Group	Corn Grain Bu/Acre	Barley/Intensive Wheat Bu/Acre	Std. Wheat Bu/Acre	Alfalfa Tons/Acre	Grass/Hay Tons/Acre
I	>170	>80	>64	>6	>4.0
II	150-170	70-80	56-64	4-6	3.5-4.0
III	130-150	60-70	48-56	<4	3.0-3.5
IV	100-130	50-60	40-48	NA	<3.0
V	<100	<50	<40	NA	NA

Farm Summary Report

Plan: New Plan Spring, 2018 - Summer, 2020

Farm Name: Alvin Powers

Location: King & Queen

Specialist: John Doe

N-based Acres: 65.4

P-based Acres: 0.0

Tract Name: 2878

FSA Number: 2878

Location: King & Queen

Field Name: KQAPJ 1

Total Acres: 20.80 Usable Acres: 20.80

FSA Number: 5

Tract: 2878

Location: King & Queen

Slope Class: A Hydrologic Group: C

Riparian buffer width: 0 ft

Distance to stream: 0 ft

P-Index Summary

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

Soil Test Results:

DATE	PH	P	K		Lab
Fa-2016	6.2	H+(124 P ppm)	M(81 K ppm)	A&L MIII	

Soils:

PERCENT	SYMBOL	SOIL SERIES
12	2A	Bojac1
10	3A	Craven
30	13A	Roanoke

21	16A	State1
4	16B	State1
23	19A	Tetotum

Field Warnings:

Field Name: KQAPJ 2

Total Acres: 44.60 Usable Acres: 44.60

FSA Number: 4

Tract: 2878

Location: King & Queen

Slope Class: B Hydrologic Group: C

Riparian buffer width: 0 ft

Distance to stream: 0 ft

P-Index Summary

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

Soil Test Results:

DATE	PH	P	K		Lab
Fa-2016	6.2	H(87 P ppm)	M(93 K ppm)	A&L MIII	

Soils:

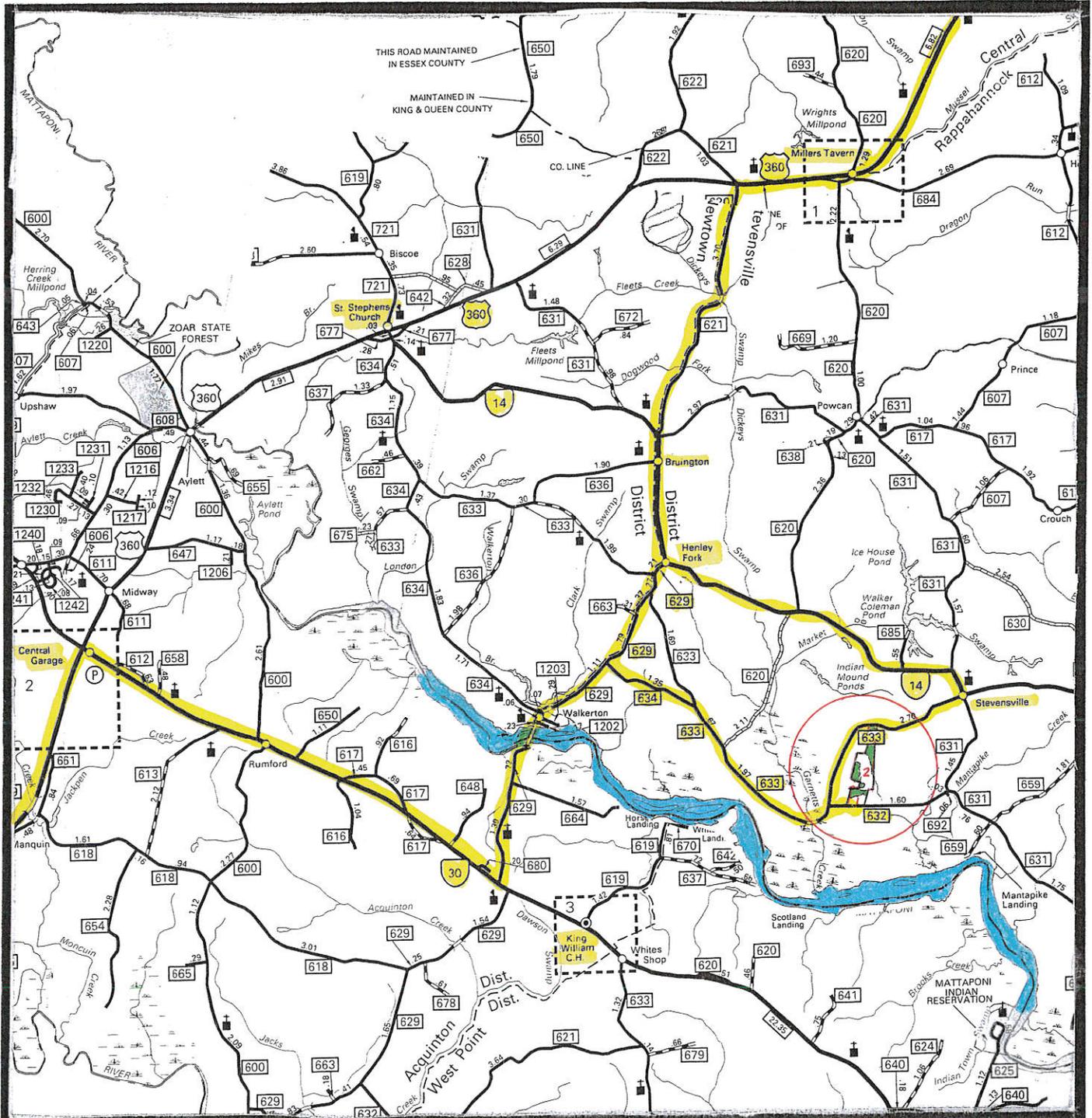
PERCENT	SYMBOL	SOIL SERIES
3	3A	Craven
5	4B	Emporia
2	5D	Emporia Slagle
2	10B	Munden
88	19B	Tetotum

Field Warnings:

MAPS

Recyc Systems™ Inc.

(Biosolids Land Application)

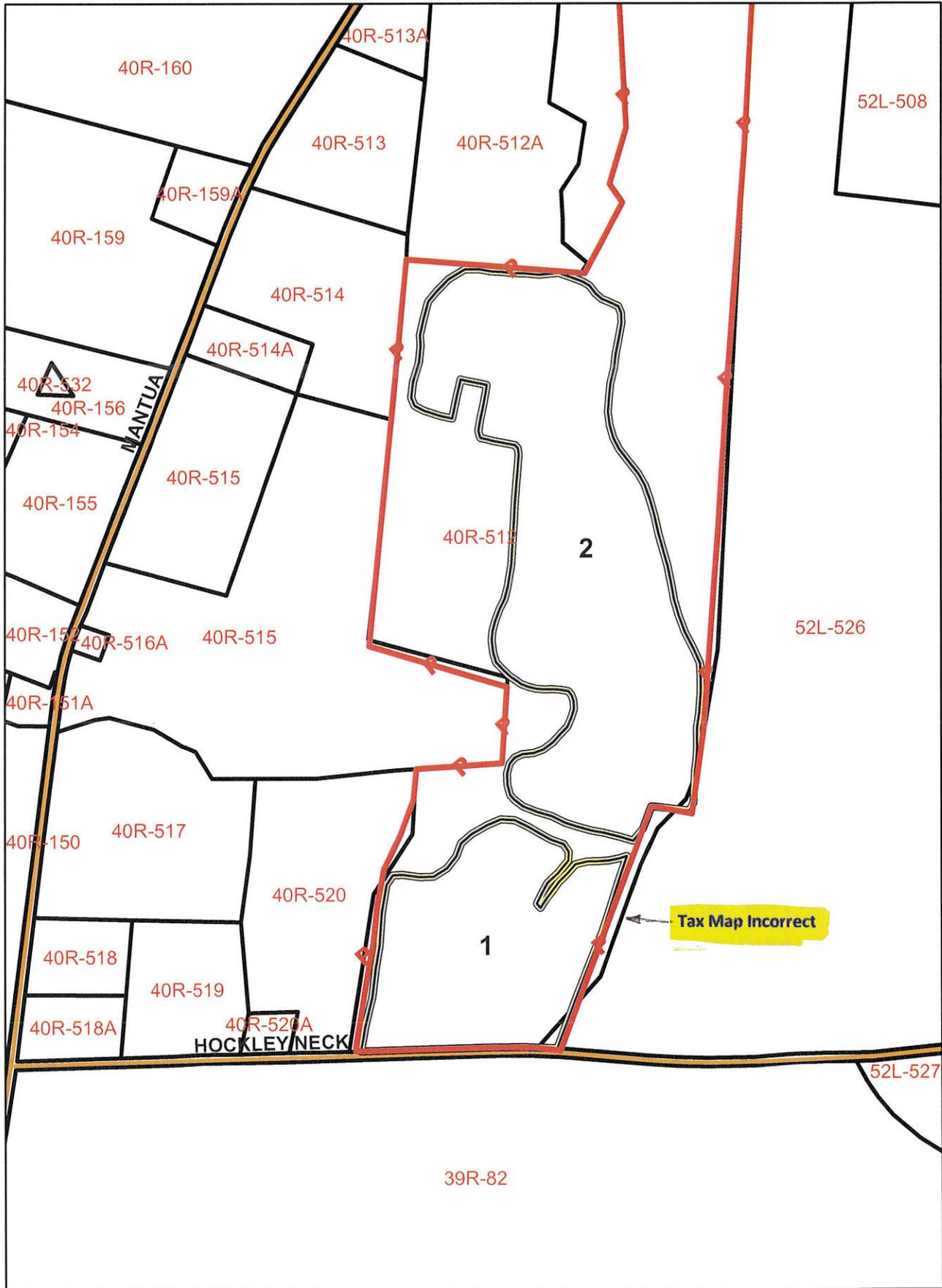


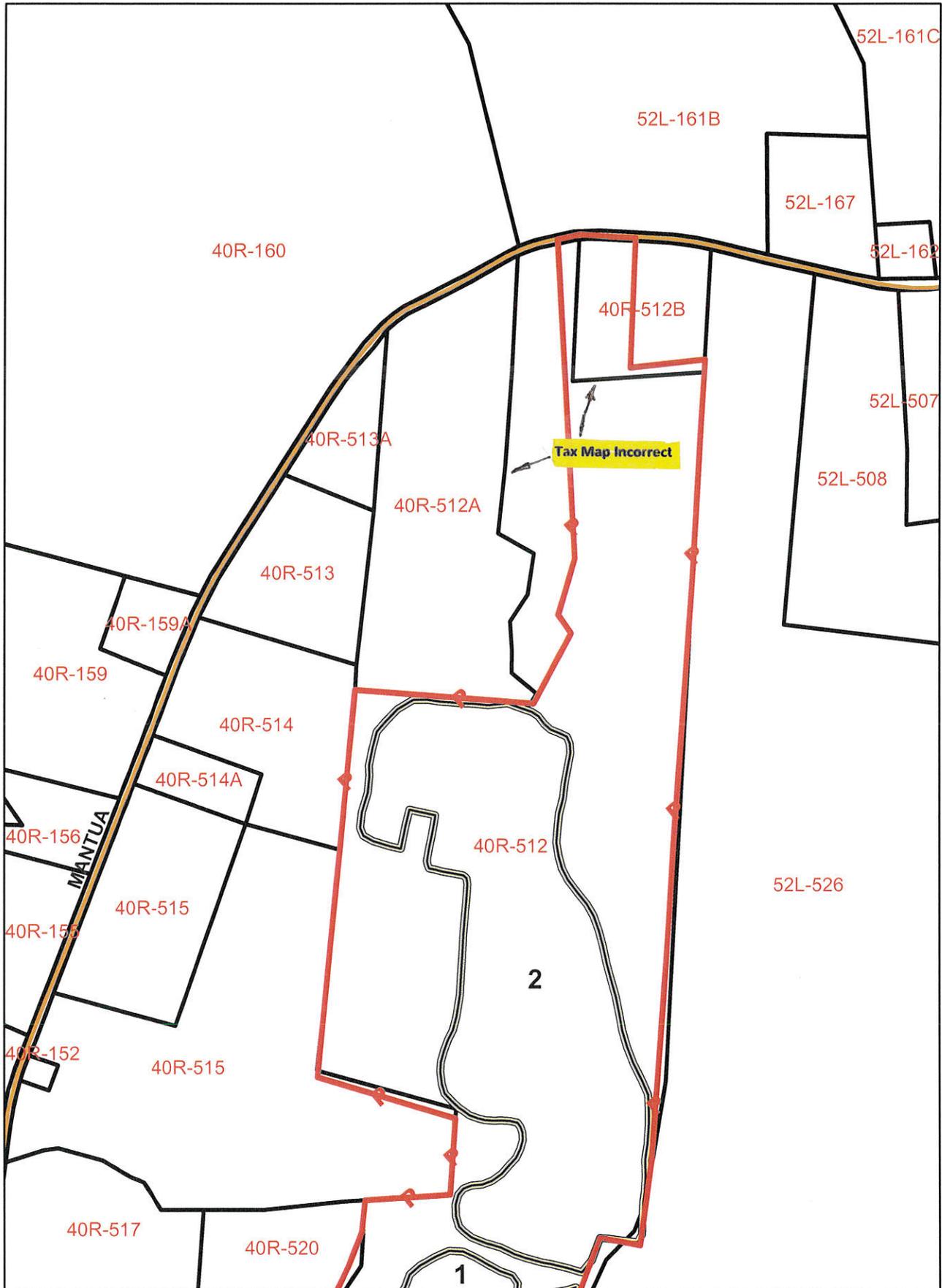
Scale: 1" = 2 miles

KQAPJ 1,2 truck route

VICINITY MAP







TAX MAP

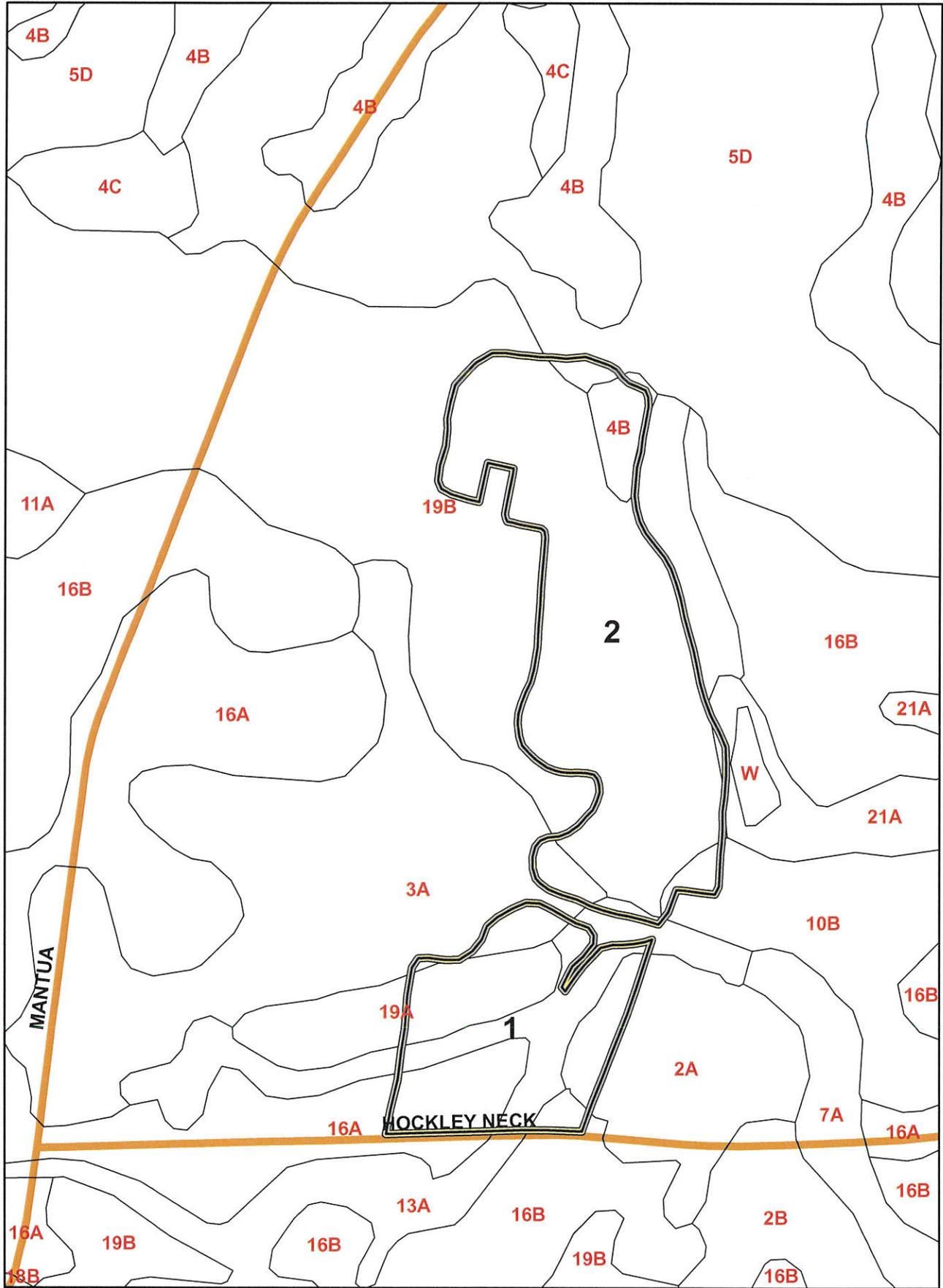
1 in = 660 feet

ADJOINING LANDOWNERS

Alvin Powers, Jr

KING & QUEEN COUNTY

Tax Map	Parcel #	Owner Name(s)
24	52L-161B 52L-508 52L-526	Battlefield Industrial Park LLC Patrick Scott Thomas O. Longest, Jr.
25	39R-82 40R-160 40R-512A 40R-513 40R-514 40R-514A 40R-515 40R-519 40R-520 40R-520A	Vaughan & Bagby Ernest C. Vaughan, Jr. Cecil Culbreth, Jr. and Linda E. Garland F. Coleman Richard E. Gibson, Sr. George F. Gibson, Sr. and Sylvia Henley LLC James and Penny Gibson Brandon and Brandi Thorpe James and Penny Gibson



4-25-18

 Frequently Flooded

SOIL MAP

1 in = 660 feet



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



4-25-18

AERIAL MAP

1 in = 660 feet



Middlesex County, Virginia



- ✓ Non-Cropland
- ✓ Acres
- ✓ HEL

Common Land Unit
 Cropland Non-cropland CRP

Wetland Determination Identifiers

- Restricted Use
- ▽ Limited Restrictions
- Exempt from Conservation Compliance Provisions

2018 Crop Year



Farm 1495 Tract 2878

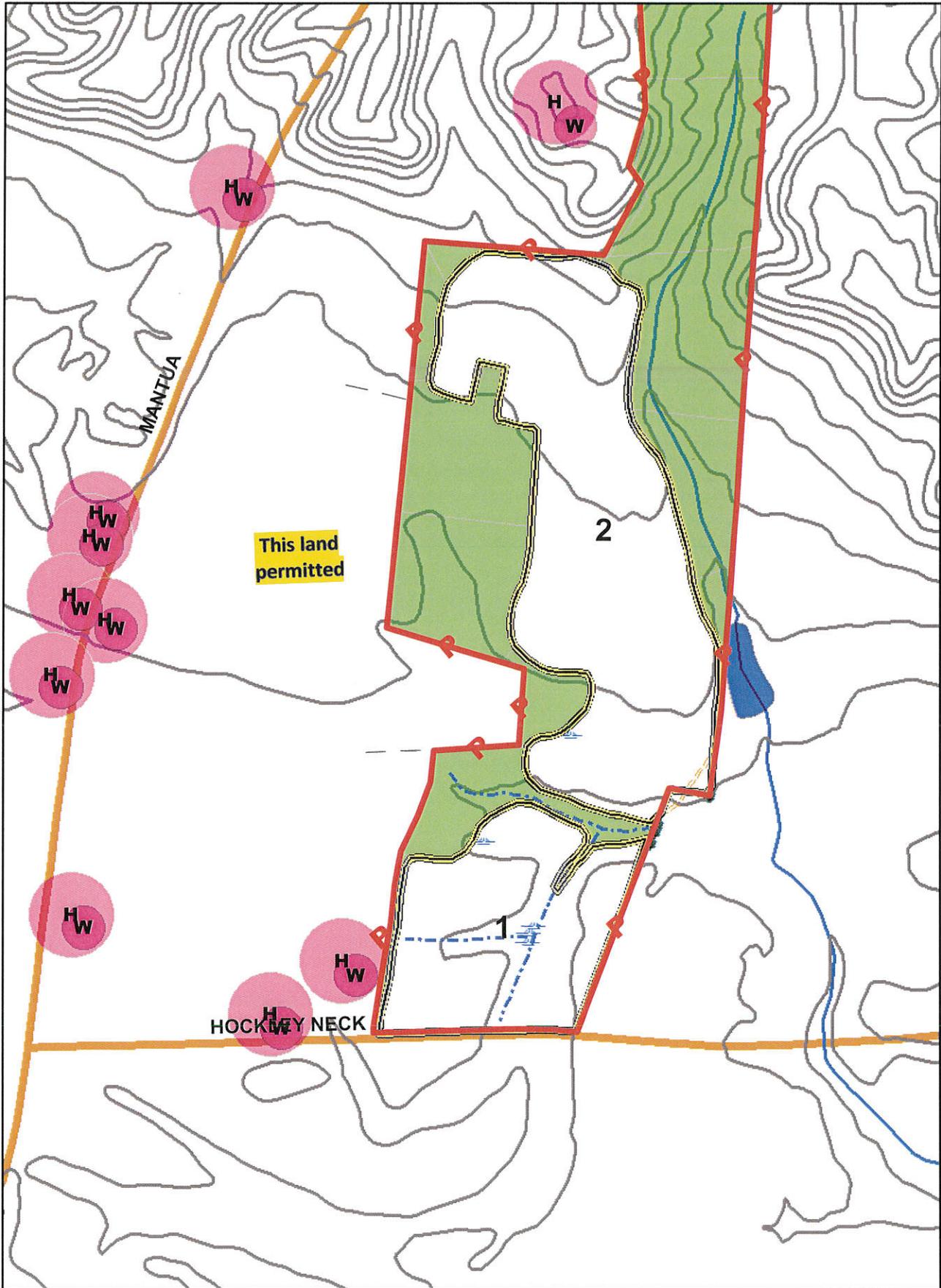
Tract Page: 1 of 1

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data 'as is' and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

Legend For Site Plan

Symbol	Feature	Minimum Setback
	House and Well	200 feet from occupied dwelling * 100 feet from water supply wells or springs
 	Well or Spring	100 feet from water supply wells or springs
	Streams or Surface Water	35 feet with 35 foot vegetated buffer 100 feet without vegetated buffer
	Wet Spot	
	Trees and Woods	
	Private Drive	
	Rock Area/Rock Outcrop	25 feet from rock outcrops 50 feet from limestone rock outcrops
	Severely Eroded Spot	18 Inch minimum depth of soil
  	Sink Hole	100 feet from open sinkholes 50 feet from closed sinkholes
	State Road	10 feet from side of roadway
	Fence / Field Boundary	
	Property Line	100 feet from property line *
 	Slope	15% maximum
	Hashed out Area	No application

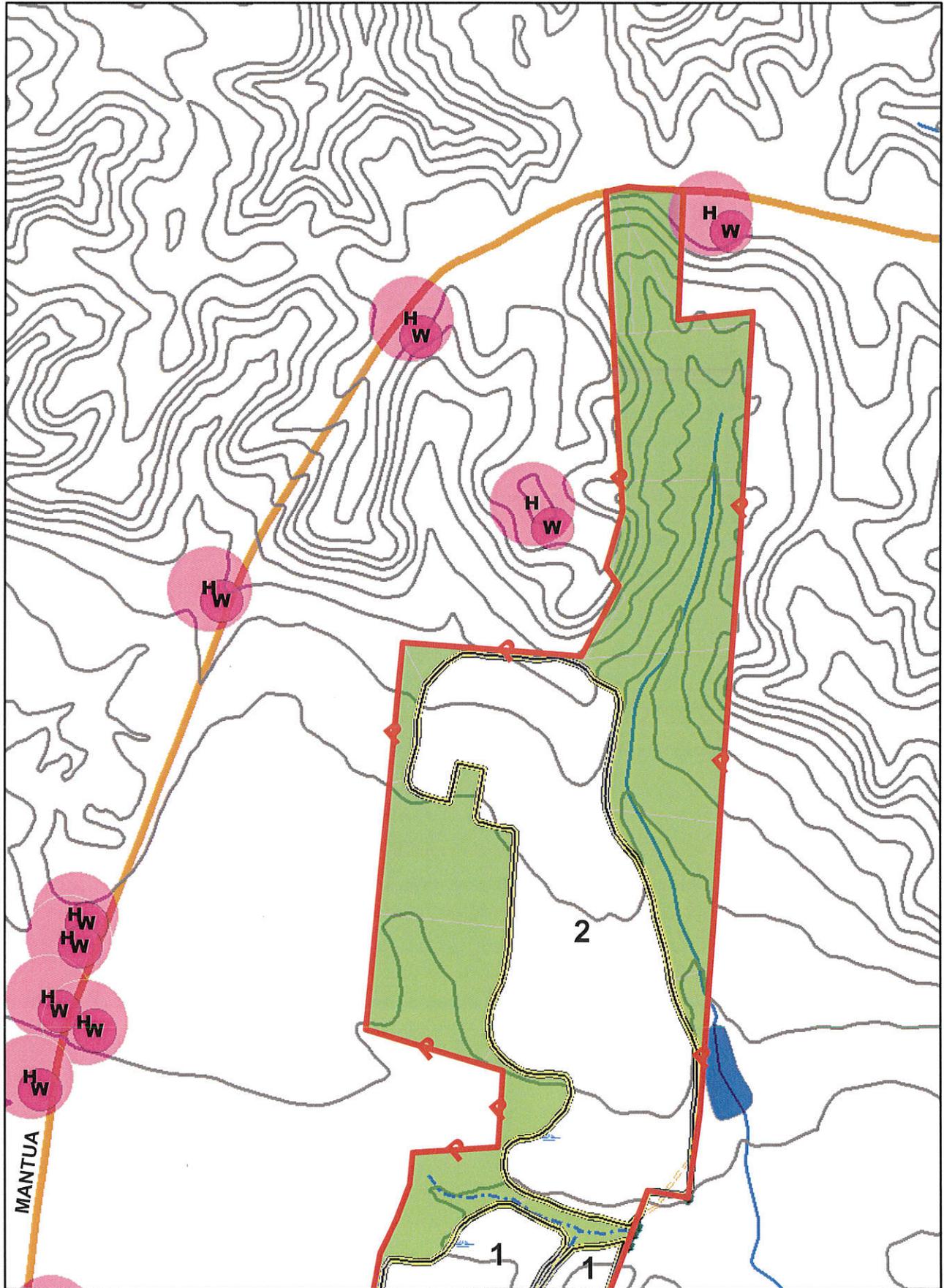
*Buffer can be reduced or waived upon written consent from landowner.



4-25-18

SITE PLAN

1 in = 660 feet



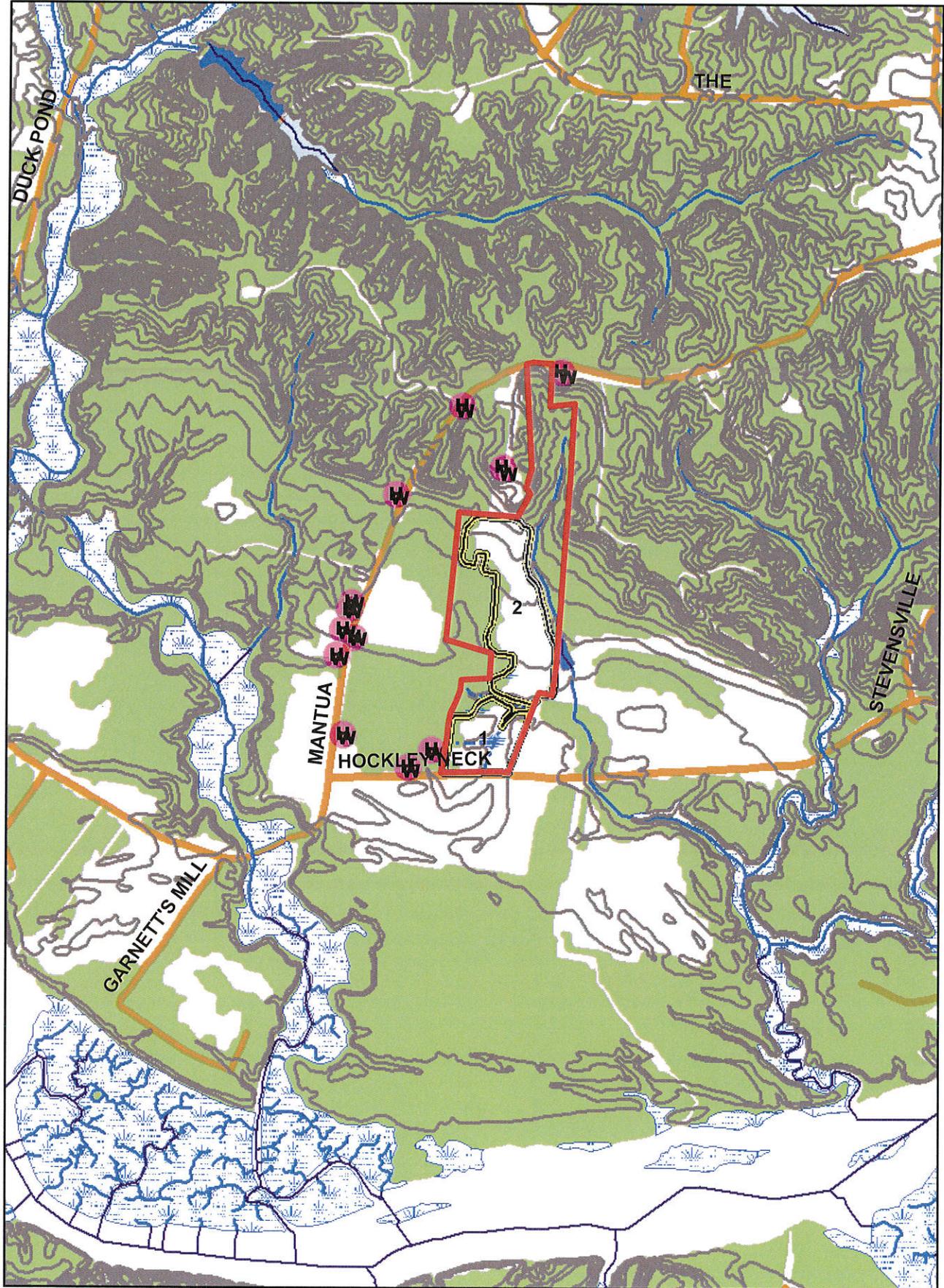
MANTUA

4-25-18

SITE PLAN

1 in = 660 feet





4-25-18

TOPOGRAPHIC MAP

1 in = 2,000 feet