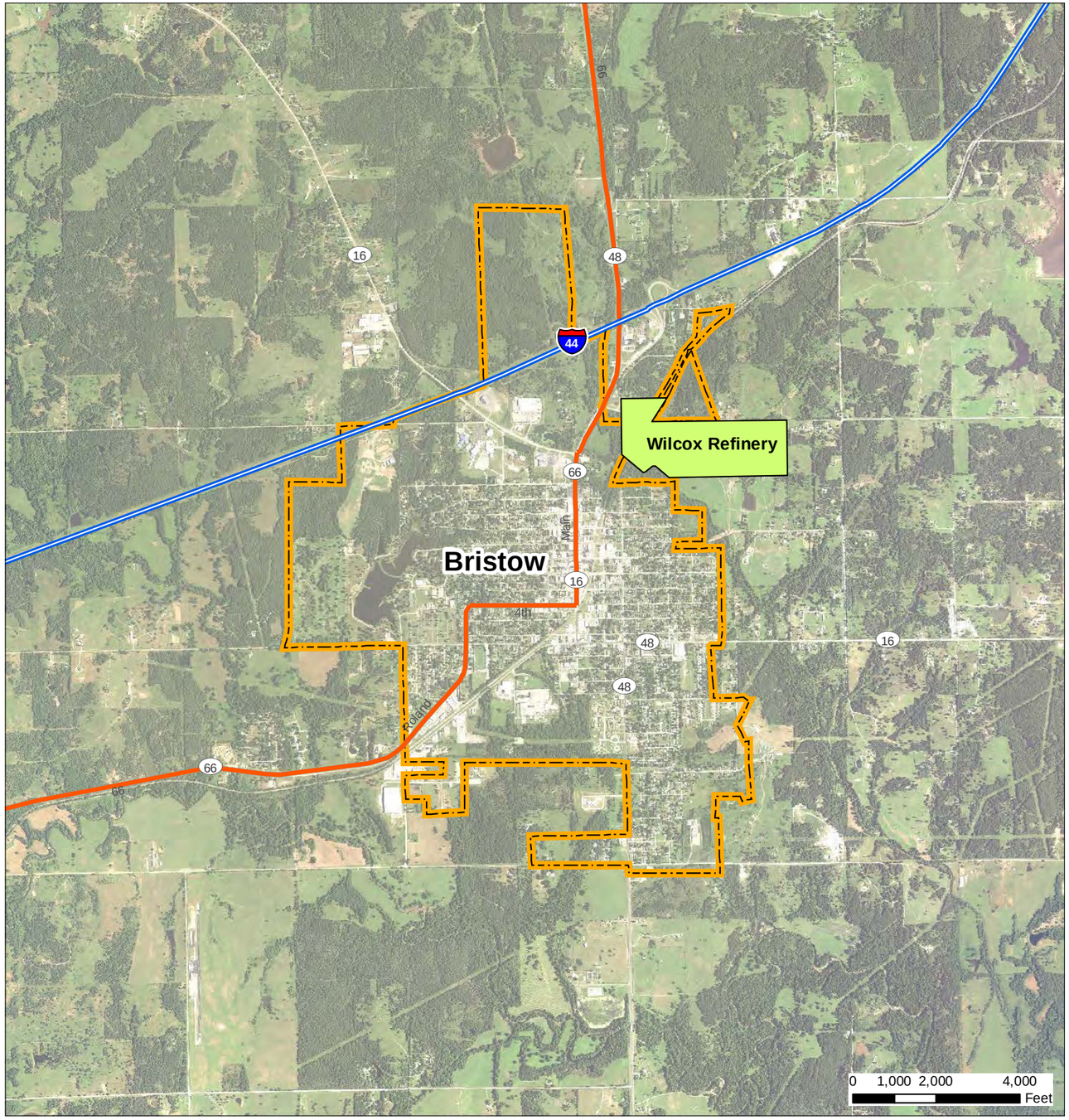
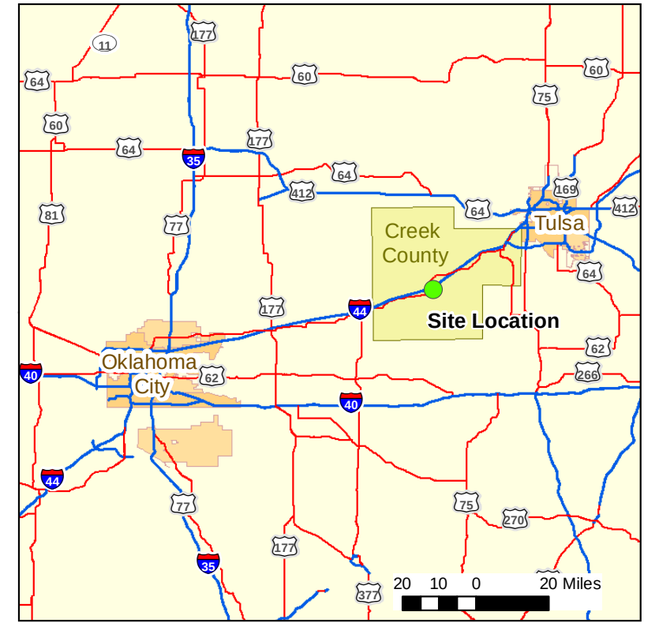
P:\gis\Projects\Wilcox\MXDs\SAP\2-Wilcox Location Map.mxd 4/14/2016 EA rmullen





Legend

- Interstate
- Highway
- Bristow City Boundary

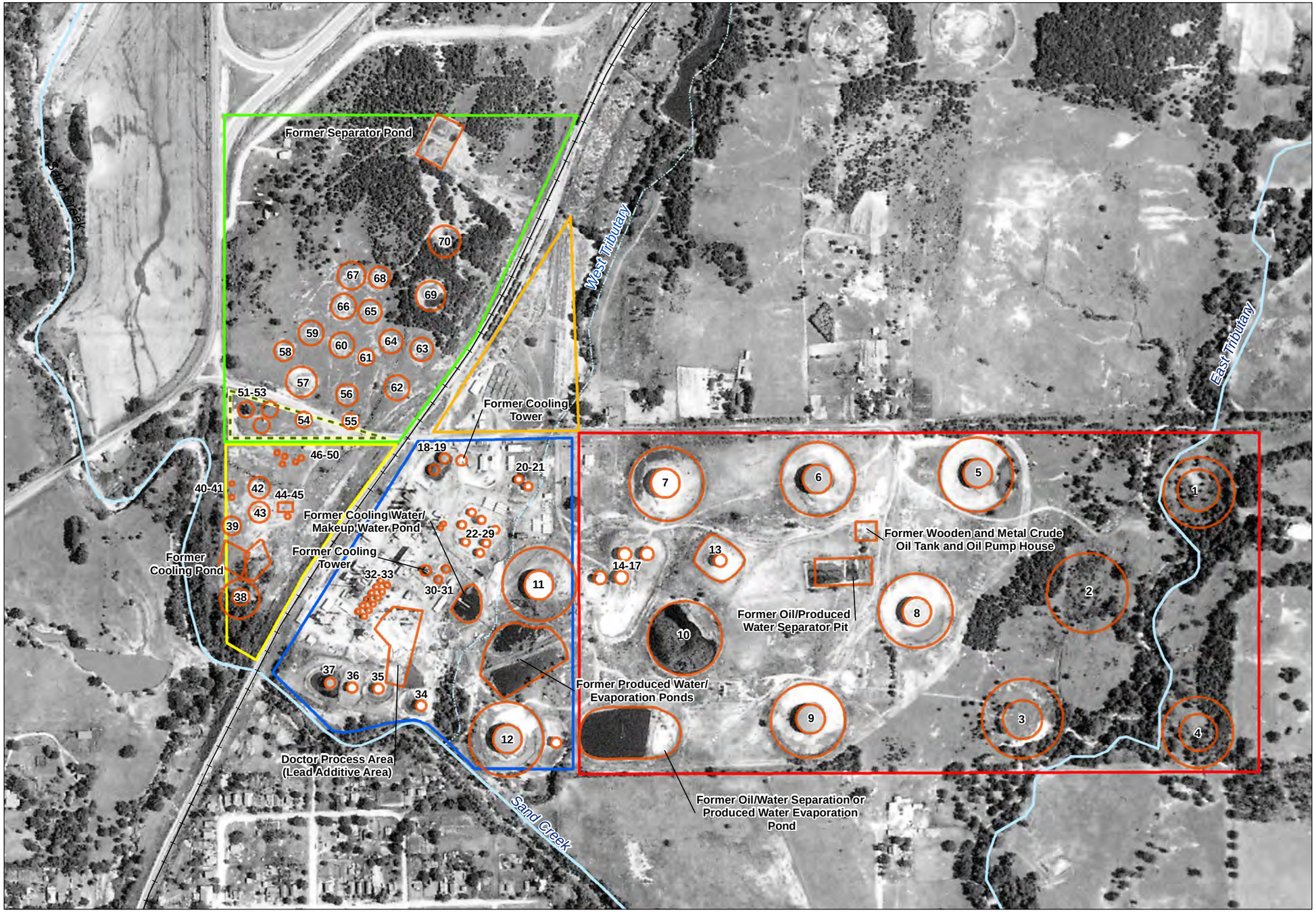
Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

Image Source: National Agriculture Imagery Program 2015

9957415

FIGURE 2
SITE LOCATION

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\3-Historical Site Features.mxd 6/17/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

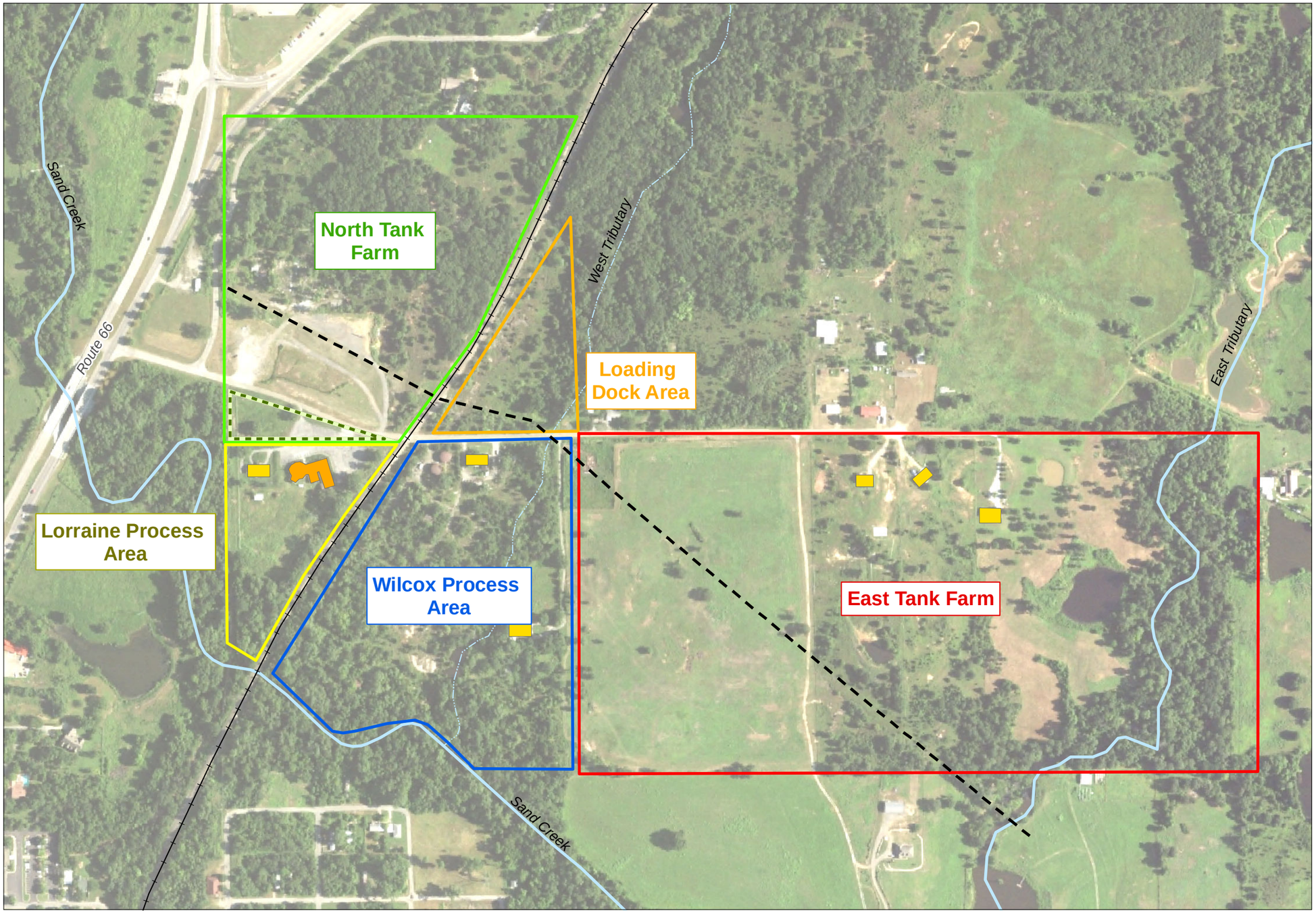
- Historical Feature
- Railroad
- Stream, Intermittent
- Stream, Perennial
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area
- Area will be designated as part of Lorraine Process Area for this investigation.

Image Source: 1956 Aerial Photograph.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 3
HISTORICAL SITE FEATURES

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\4-Site Layout.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

- Stream, Intermittent
- Stream, Perennial
- Pipeline
- Railroad

On-Site Building

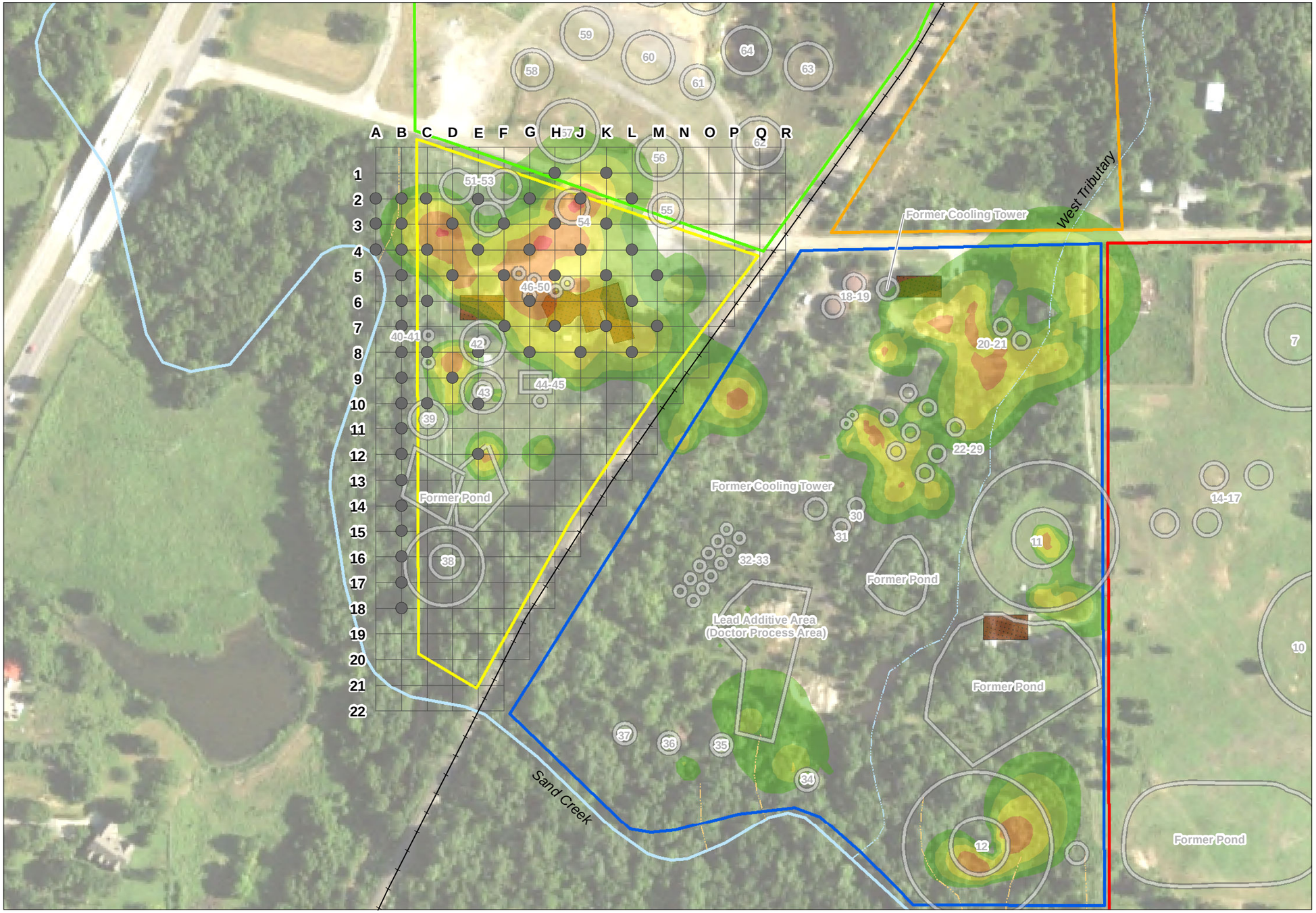
- Church
- Residence
- Area will be designated as part of Lorraine Process Area for this investigation.

Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 4
SITE LAYOUT

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\5-PSG_Lorraine.mxd 6/23/2016 EA rmullen



0 50 100 200 300 Feet

1 inch = 200 feet

Legend

- Proposed Passive Soil Gas Sample
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- Sample Grid (Cells 50 feet by 50 feet)
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

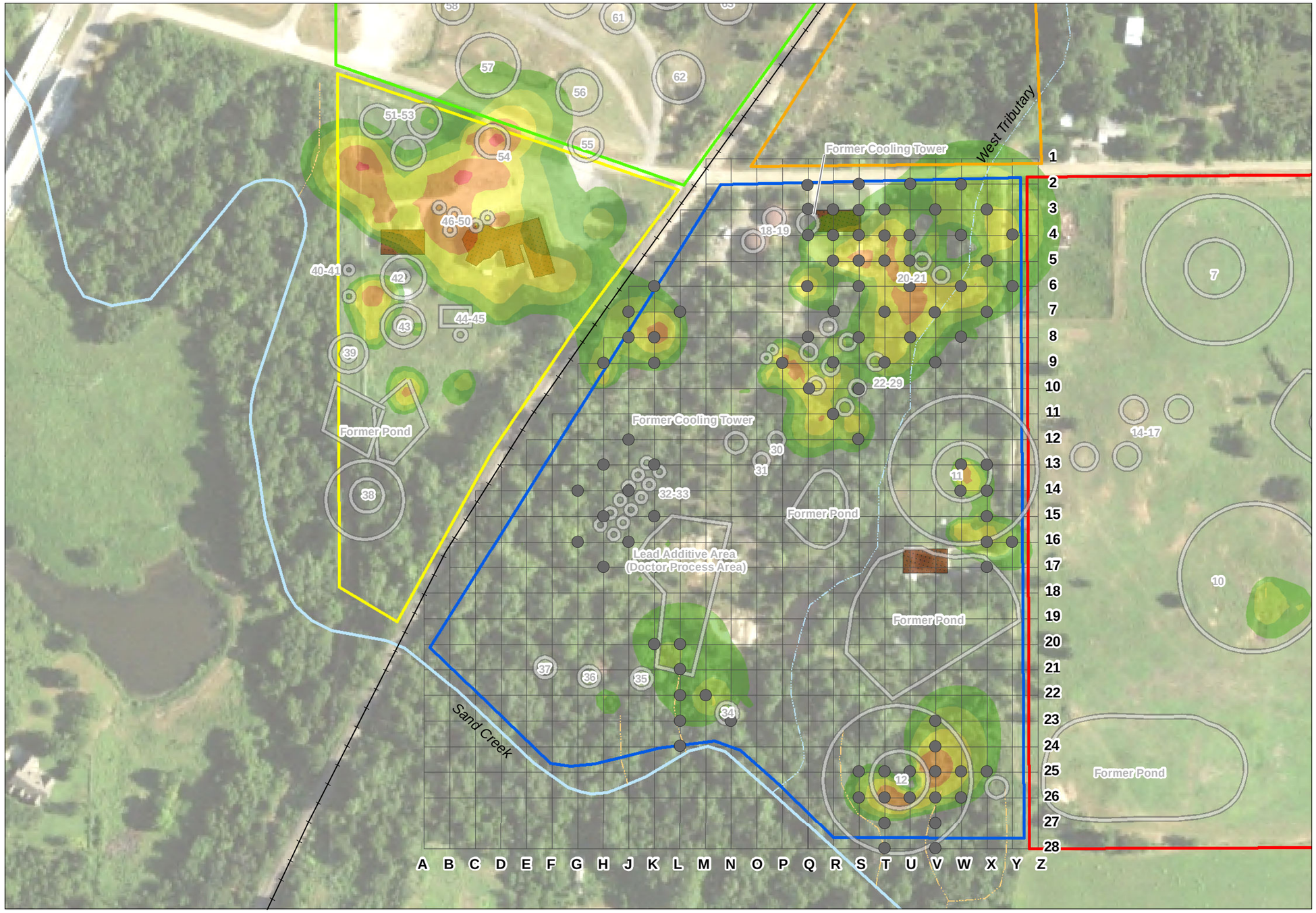
* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 5

PROPOSED PASSIVE SOIL GAS SAMPLE LOCATIONS - LORRAINE PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\6-PSG_Wilcox.mxd 6/23/2016 EA rmullen



0 50 100 200 300 Feet

1 inch = 200 feet

Legend

- Proposed Passive Soil Gas Sample
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- Sample Grid (Cells 50 feet by 50 feet)
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

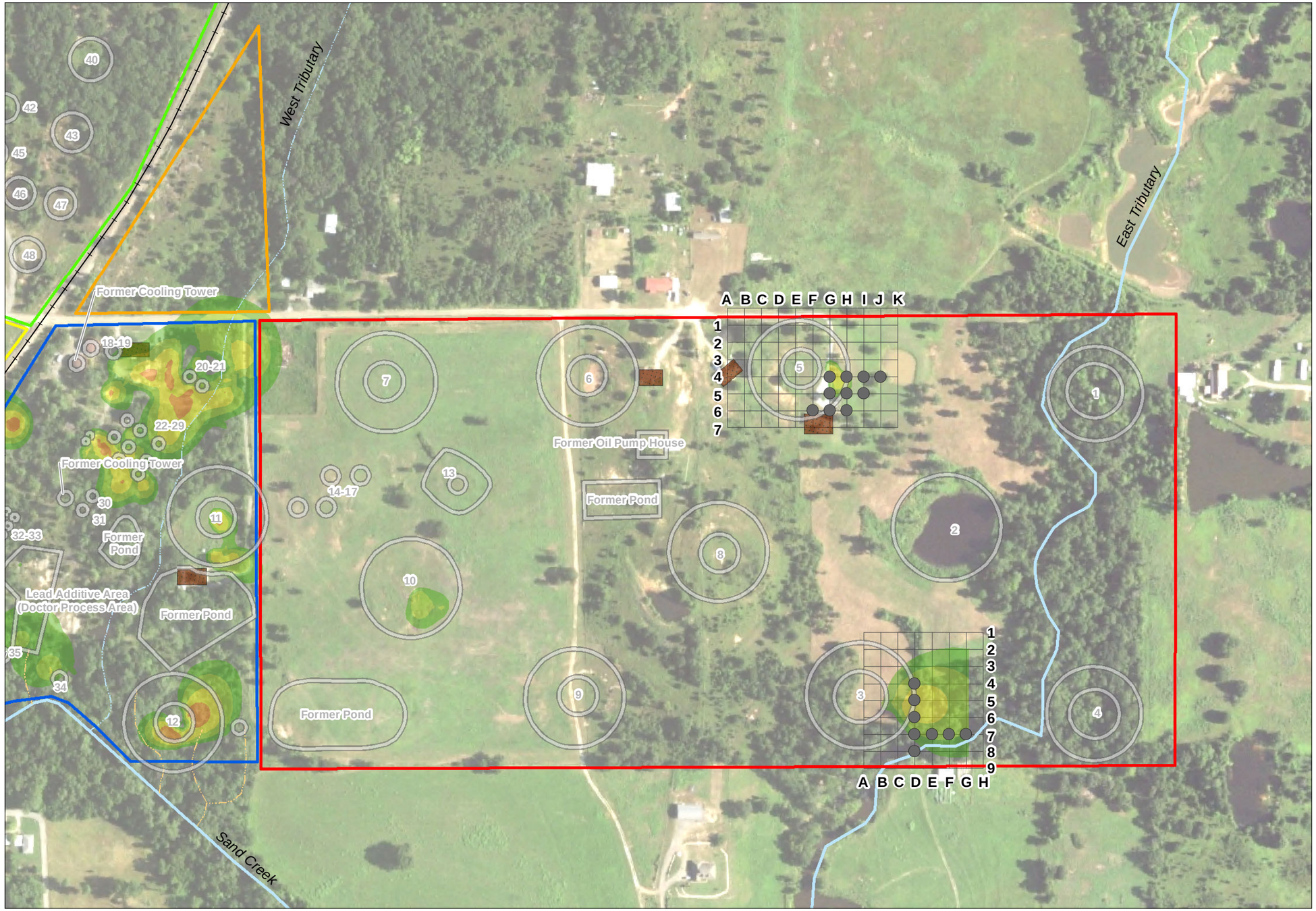
* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 6

PROPOSED PASSIVE SOIL GAS SAMPLE LOCATIONS - WILCOX PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\7-PSG_ETF.mxd 6/23/2016 EA rmullen



0 150 300 600 Feet

1 inch = 300 feet

Legend

- Proposed Passive Soil Gas Sample
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- Sample Grid (Cells 50 feet by 50 feet)
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

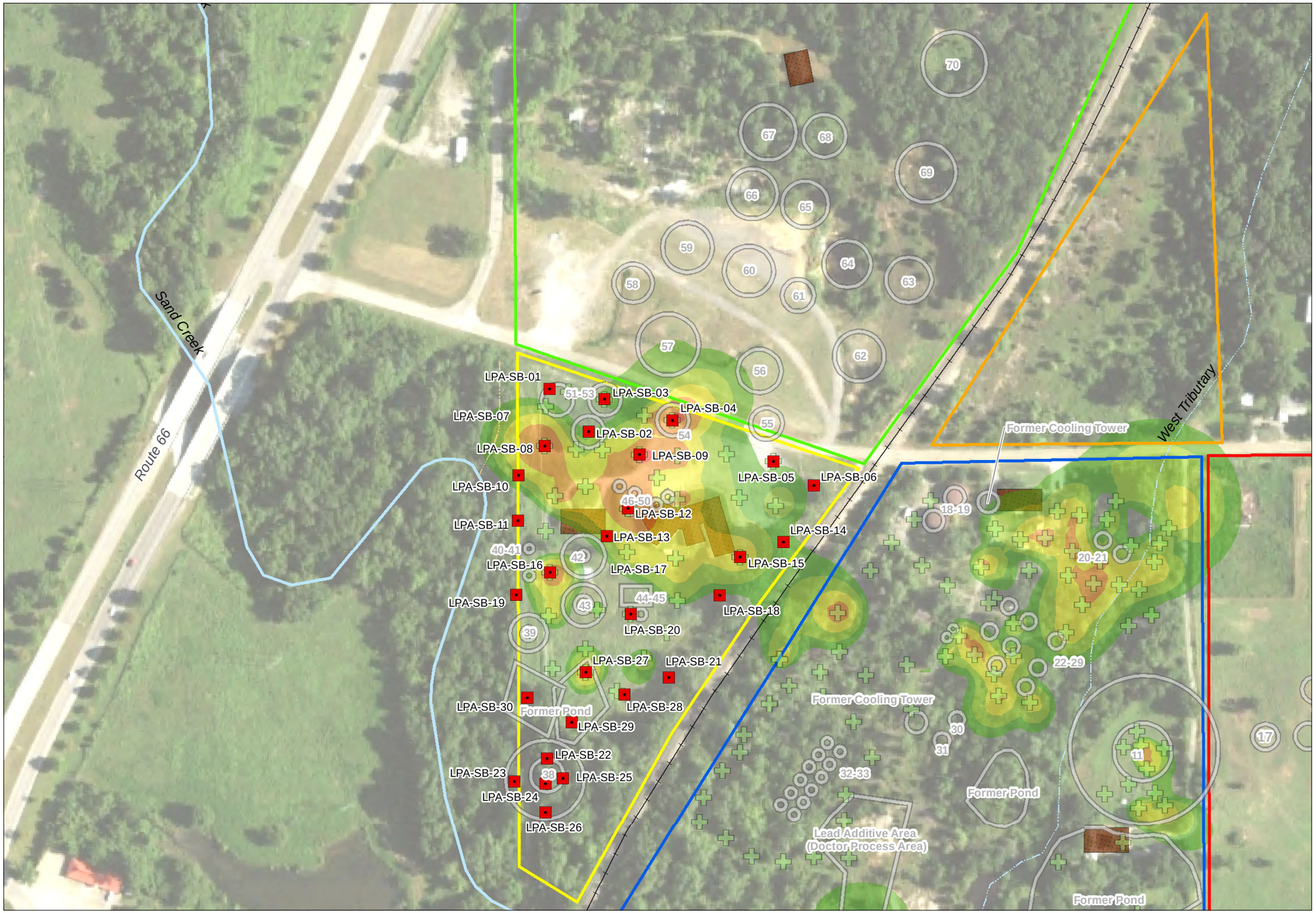
- <5
- 5-10
- 10-25
- 25-100
- >100

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 7
PROPOSED PASSIVE SOIL GAS SAMPLE LOCATIONS - EAST TANK FARM

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\8-Soil_Lorraine.mxd 6/27/2016 EA rmullen



0 100 200 400 Feet

1 inch = 200 feet

Legend

- Proposed Soil Boring
- 2015 ROST LIF Location*
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

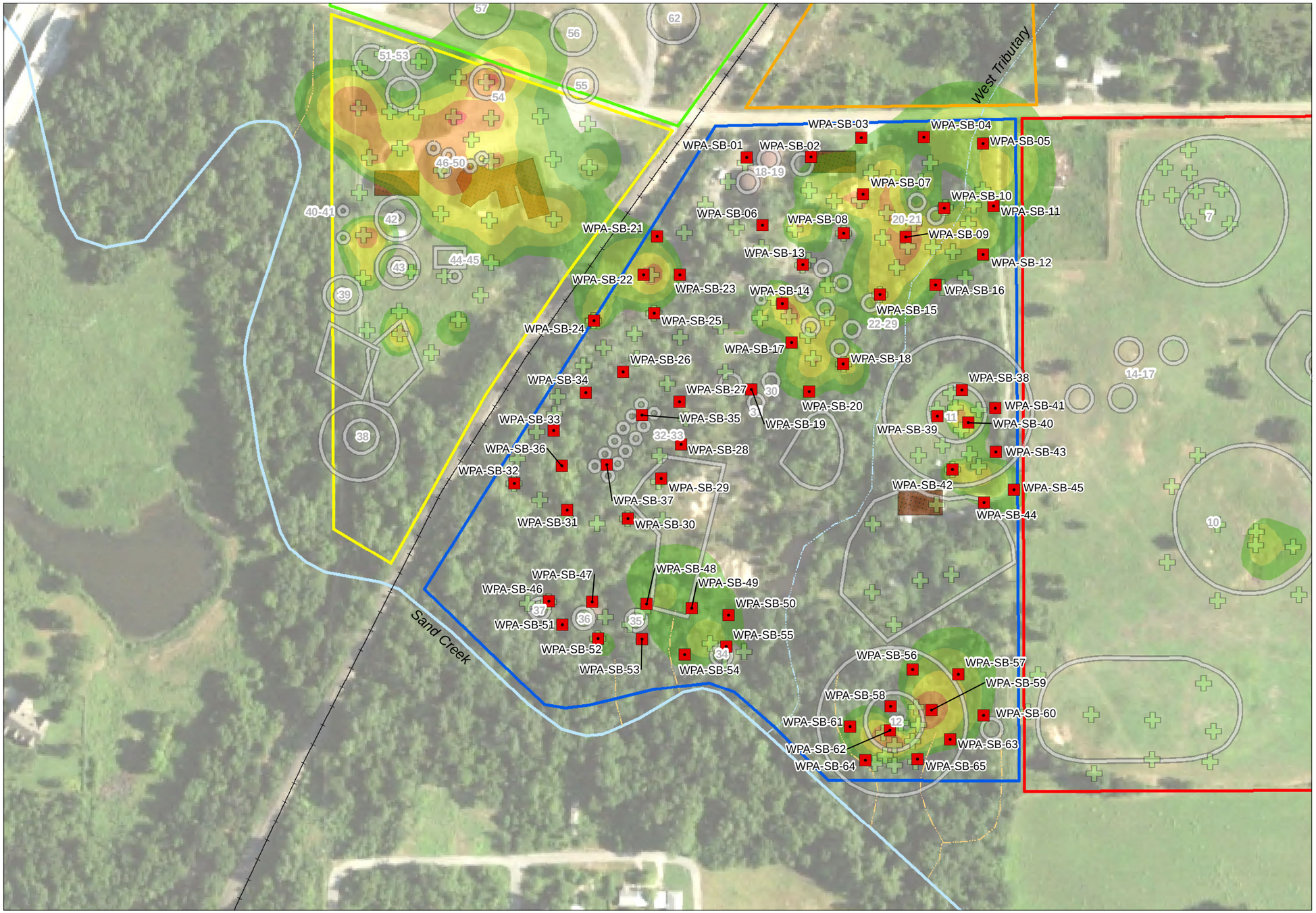
Abbreviations and Acronyms
< - Less than
> - Greater than
% - Percent
LIF - Laser-induced fluorescence
RE - Reference emittance
ROST - Rapid Optical Scanning Tool
SERAS - Scientific, Engineering, Response, and Analytical Services

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 8
PROPOSED LOCATIONS FOR SOIL SAMPLES - LORRAINE PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\9-Soil_Wilcox_2.mxd 6/23/2016 EA rmullen



0 50 100 200 300 Feet

1 inch = 200 feet

Legend

- Proposed Soil Boring
- 2015 ROST LIF Location*
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

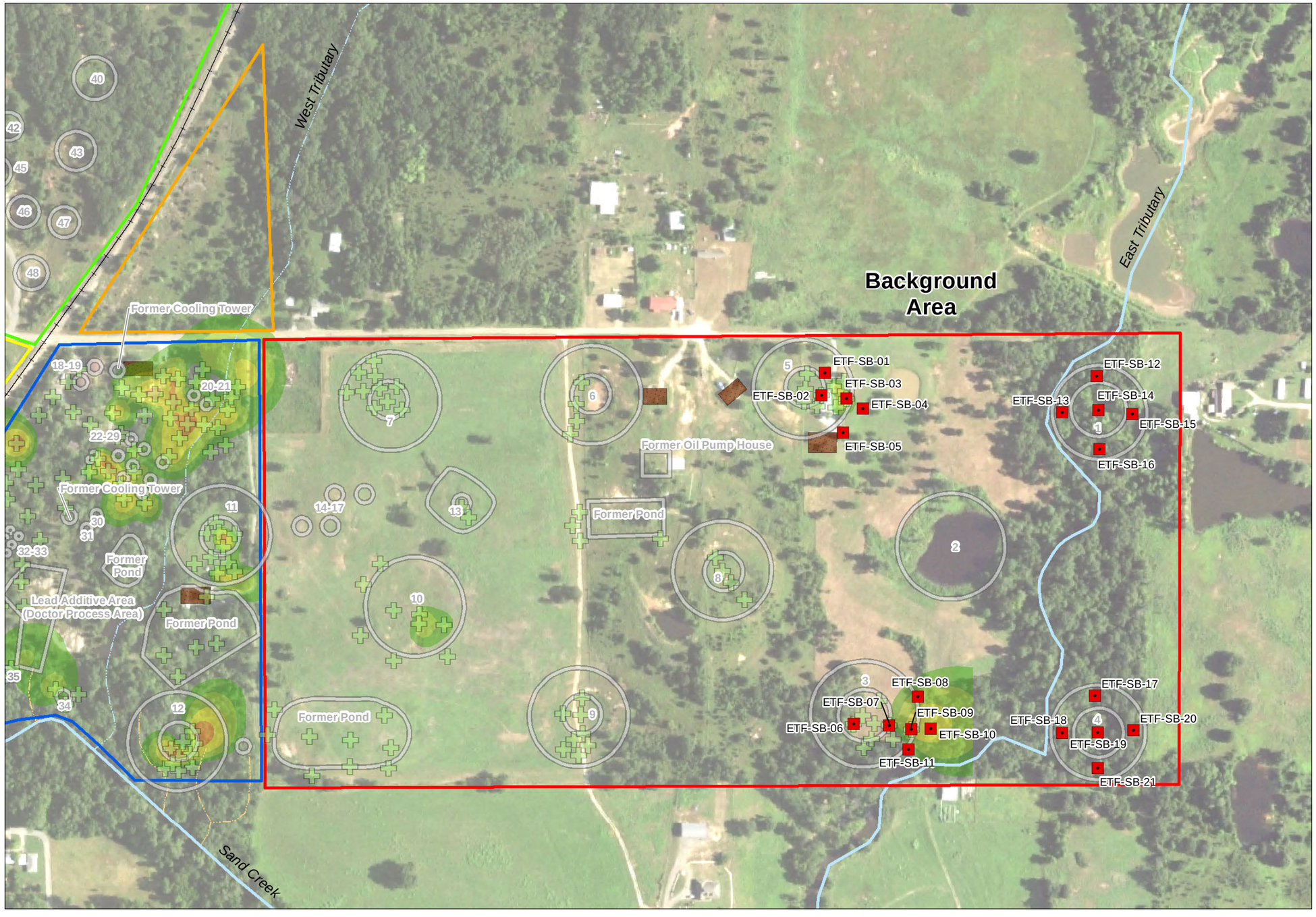
Abbreviations and Acronyms
< - Less than
> - Greater than
% - Percent
LIF - Laser-induced fluorescence
RE - Reference emitter
ROST - Rapid Optical Scanning Tool
SERAS - Scientific, Engineering, Response, and Analytical Services

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 9
PROPOSED LOCATIONS FOR SOIL SAMPLES - WILCOX PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\10-Soil-ETF_Background.mxd 6/23/2016 EA rmullen



0 150 300 600 Feet

1 inch = 300 feet

Legend

- Proposed Soil Boring
- 2015 ROST LIF Location*
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

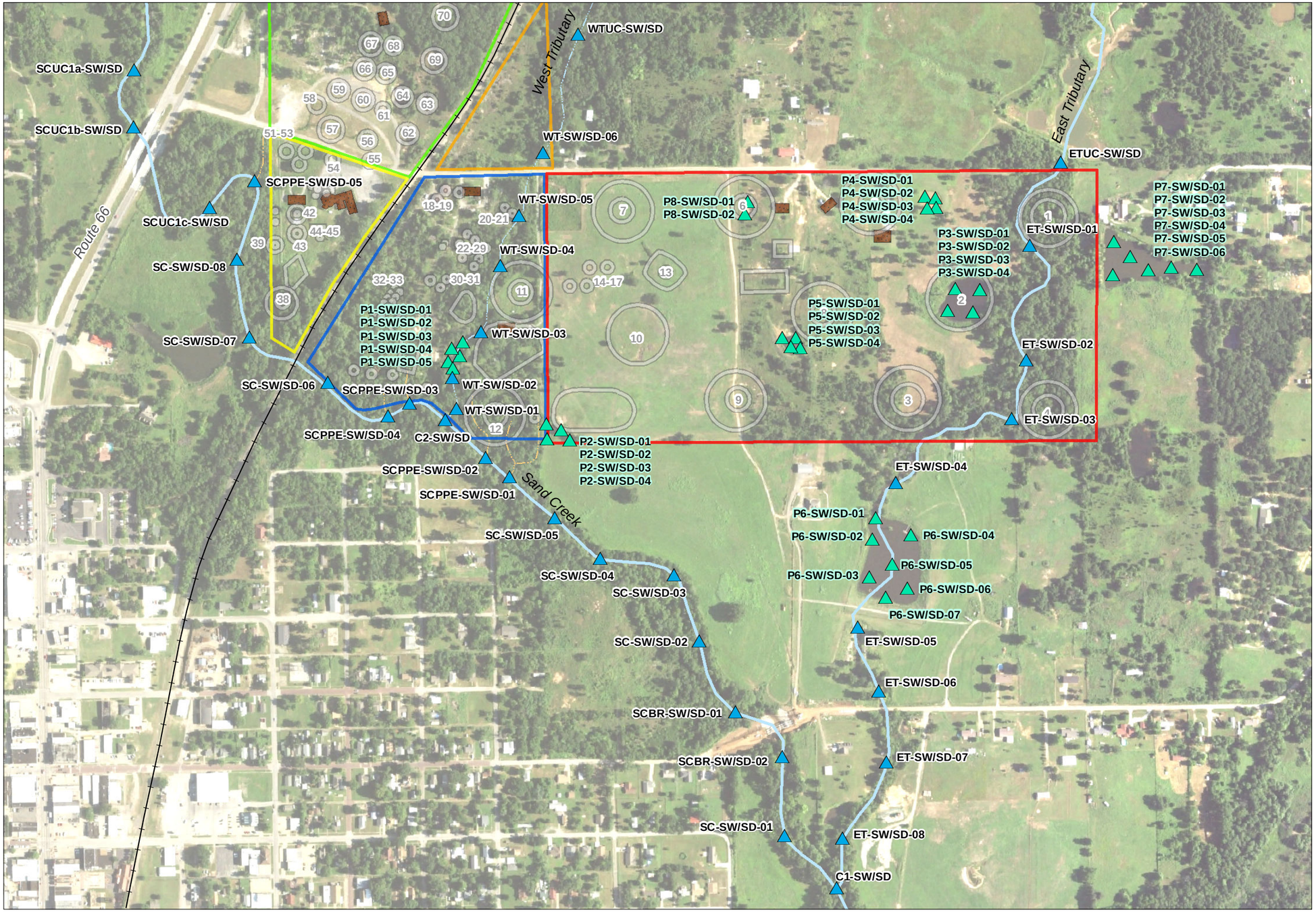
Abbreviations and Acronyms
< - Less than
> - Greater than
% - Percent
LIF - Laser-induced fluorescence
RE - Reference emitter
ROST - Rapid Optical Scanning Tool
SERAS - Scientific, Engineering, Response, and Analytical Services

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 10
PROPOSED LOCATIONS FOR EAST TANK FARM SOIL SAMPLES AND BACKGROUND AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\11-SW_Sediment.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 500 feet

Legend

Proposed Sample

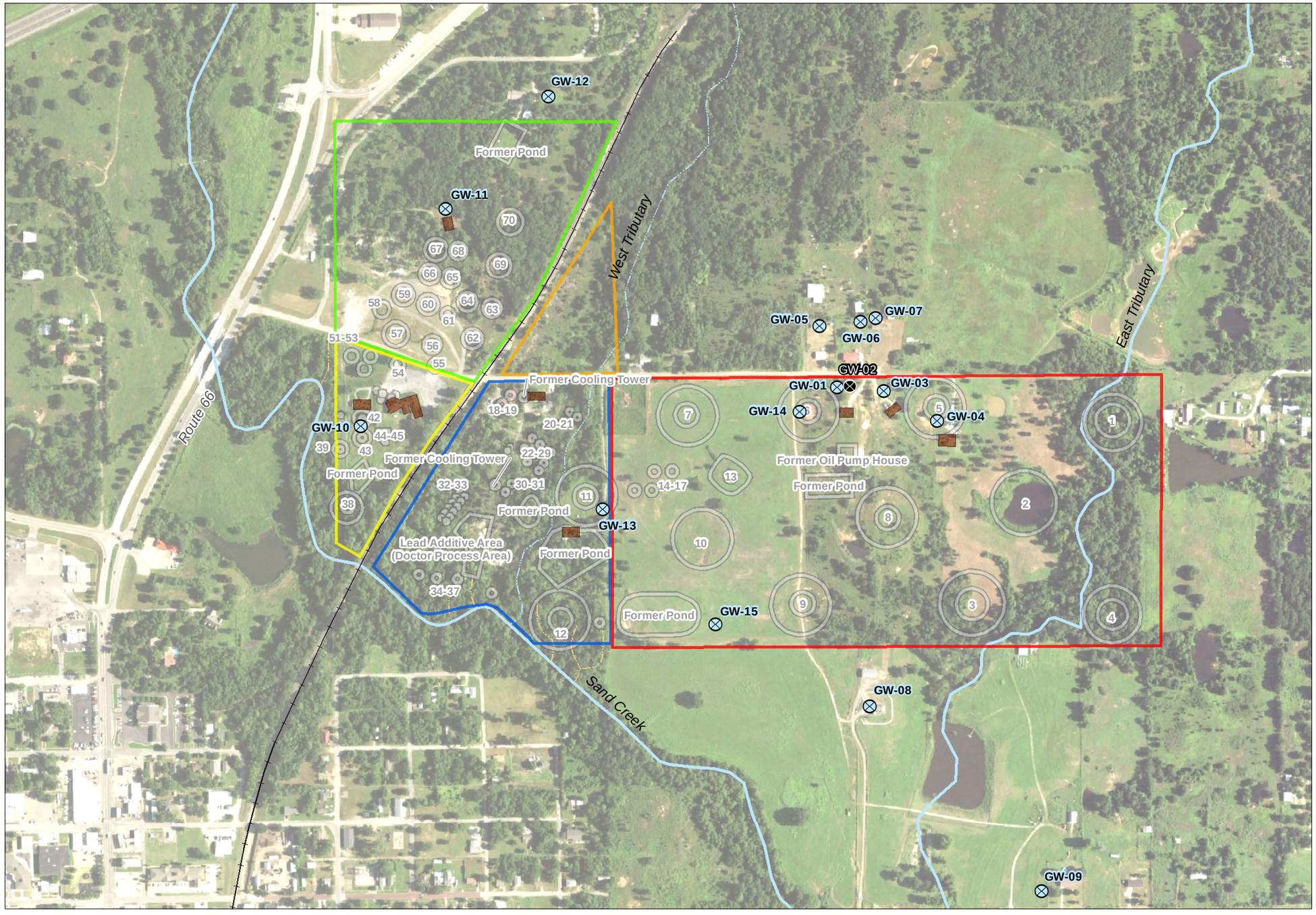
- Surface Water/Sediment, Pond
- Surface Water/Sediment, Stream
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 11
PROPOSED LOCATIONS FOR SURFACE WATER AND SEDIMENT SAMPLES

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\12-PrivateWaterSupplySamples.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 500 feet

Legend

- Former Private Supply Well (Plugged and Abandoned)
- Private Supply Well
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

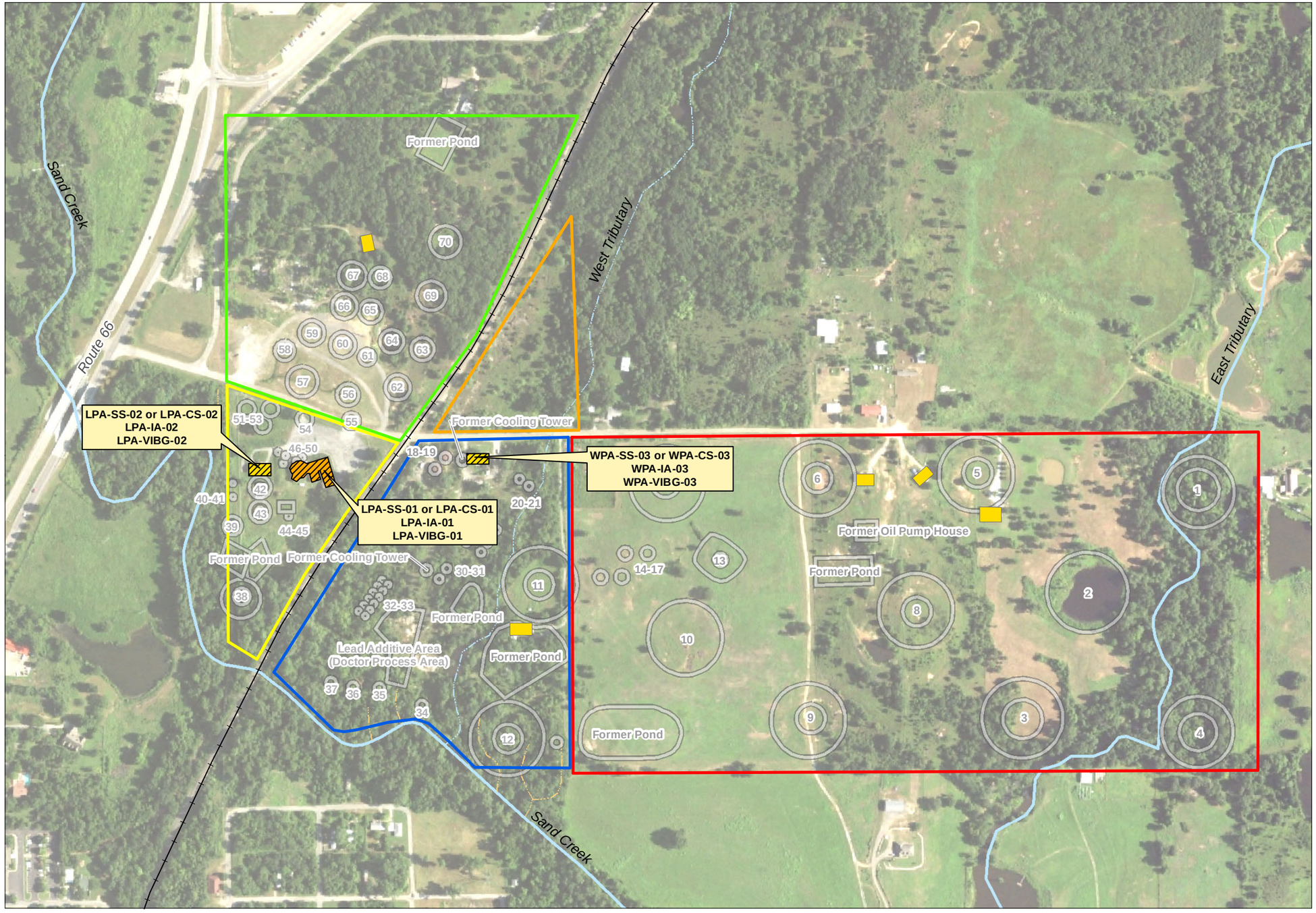
Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 12

PROPOSED LOCATIONS FOR PRIVATE WATER SUPPLY WELL SAMPLES

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\13-SVI.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area
- Proposed Vapor Intrusion Sampling

On-Site Building

- Church
- Residence

Image Source: National Agriculture Imagery Program 2015.

Sampling and Analysis Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 13
PROPOSED LOCATIONS FOR VAPOR INTRUSION SAMPLES