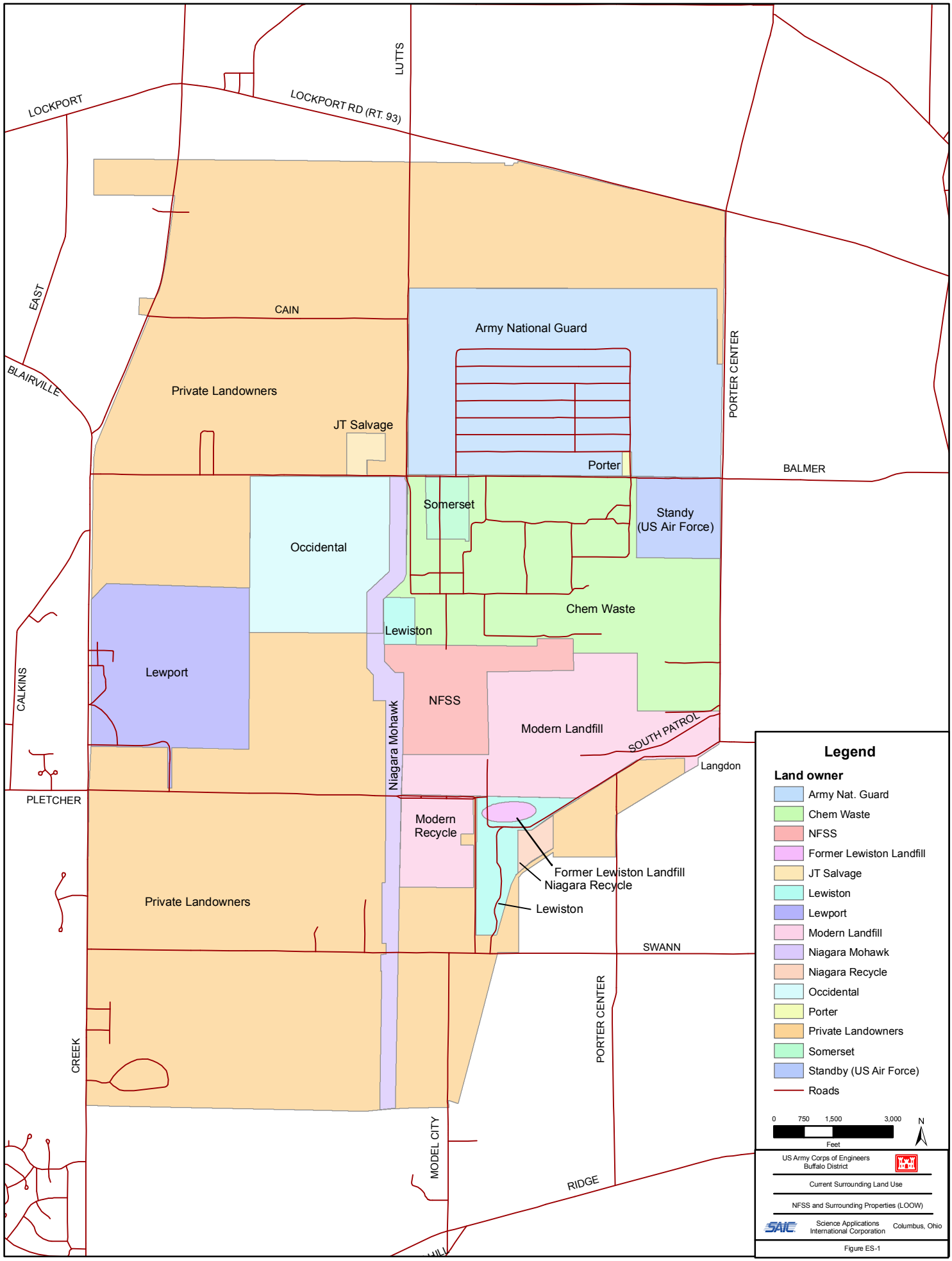
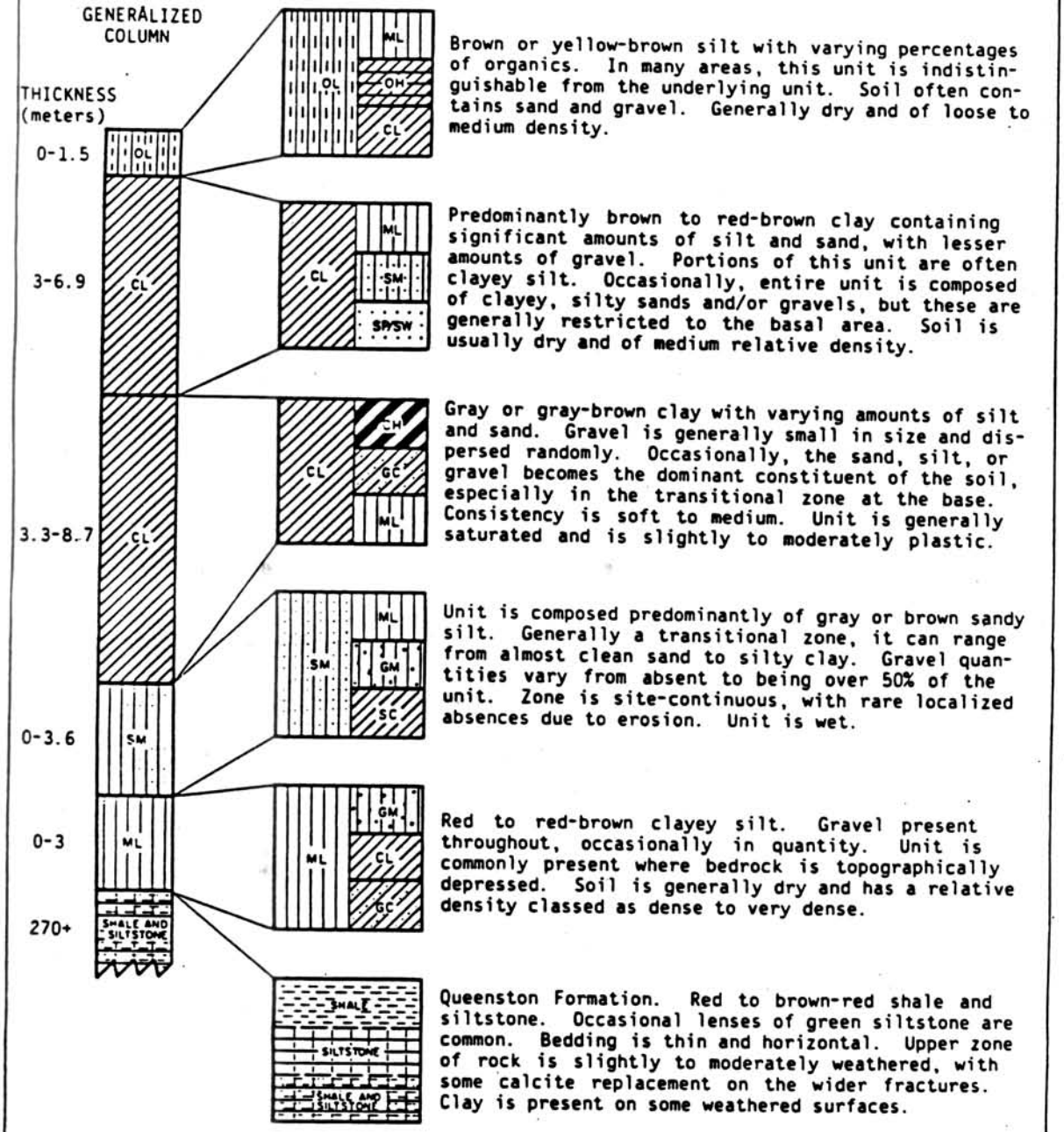

LOCKPORT
LOCKPORT RD (RT. 93)
LUTTS
EAST
CAIN
BLAIRVILLE
Private Landowners
JT Salvage
Army National Guard
PORTER CENTER
Porter
BALMER
Somerset
Standy
(US Air Force)
Occidental
Chem Waste
Lewiston
Lewport
CALKINS
NFSS
Niagara Mohawk
Modern Landfill
SOUTH PATROL
Langdon
PLETCHER
Modern
Recycle
Former Lewiston Landfill
Niagara Recycle
Lewiston
Private Landowners
SWANN
CREEK
PORTER CENTER
MODEL CITY
RIDGE
Legend
Land owner
Army Nat. Guard
Chem Waste
NFSS
Former Lewiston Landfill
JT Salvage
Lewiston
Lewport
Modern Landfill
Niagara Mohawk
Niagara Recycle
Occidental
Porter
Private Landowners
Somerset
Standby (US Air Force)
Roads
0 750 1,500 3,000
Feet
N
US Army Corps of Engineers
Buffalo District
Current Surrounding Land Use
NFSS and Surrounding Properties (LOOW)
SAIC
Science Applications
International Corporation
Columbus, Ohio
Figure ES-1



Generalized Geologic Column of Formations Under the Niagara Falls Storage Site

Source: Adapted From Acres American, Inc. (1981a)

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: ES-2
SCALE: Not to Scale	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: DEG

Baker Smith Area
New Naval Waste Area
Approximate Location of Former Radium Storage Vault
Acid Area
Pipes Sealed at Property Boundary
Pipes Sealed at Property Boundary
N ST.
N ST. SOUTH POND
O ST. NORTH POND
O ST.
O ST.
W ST.
X ST. (Also known as P St.)
Z ST. (Also known as Q St.)
SOUTH 16 DITCH
SOUTH 31 DITCH
MODERN DITCH
R ST.
Pipe Sealed at Property Boundary
WEST DITCH
LUTTS RD.
WEST PATROL RD.
WEST PATROL RD DITCH
CENTRAL DITCH
CAMPBELL ST.
EIGHTH ST.
SIXTH ST.
SEVENTH ST.
CASTLE GARDEN RD
MCARTHUR ST.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
431/432
434
Thawhouse
434 Pond
Stockpile
445
443
444
428
430
458
425
421
423
422
420
427
Pond 5
Pond 4
Pond 3
Pond 2
Pond 1
IWCS
North Pond
South Pond
West Pond
East Pond
403
429
401
411
414
413
410
412
409
Decon Pad
Laydown Area
Stockpile Areas
Shops Area
Debris Pile
Power Area
Sludge Pit
Organic Burial Area
Niagara Mohawk Property
Former Freshwater Treatment Plant

Sitewide Legend

- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- Test trenches
- IWCS cutoff wall
- Former remedial structures
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- EU boundaries
- Niagara Mohawk property boundary
- Site boundary

0 120 240 480
Feet
N

EU 15 is comprised of all interconnected drainageways on site.

EU 16 is comprised of all site utilities and pipelines.

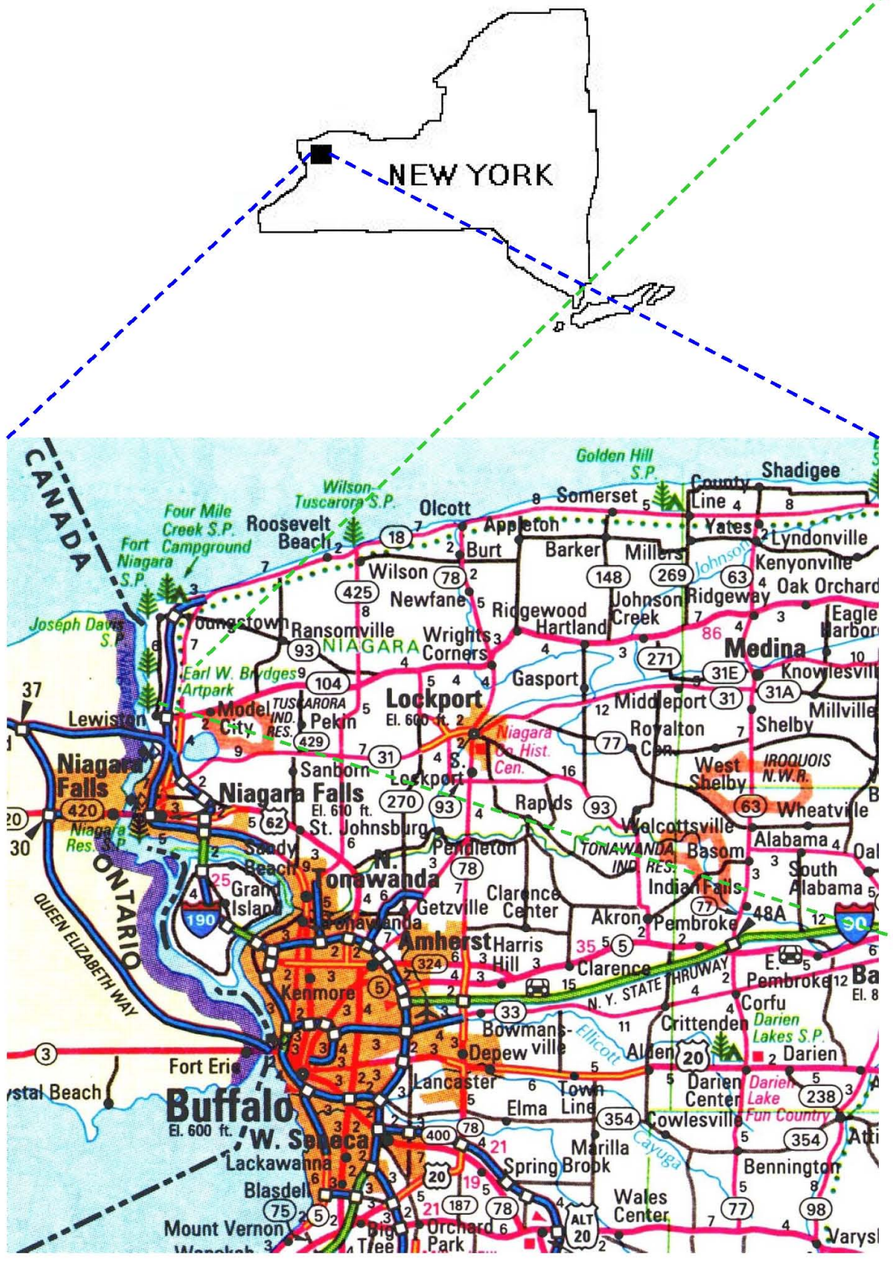
US Army Corps of Engineers
Buffalo District

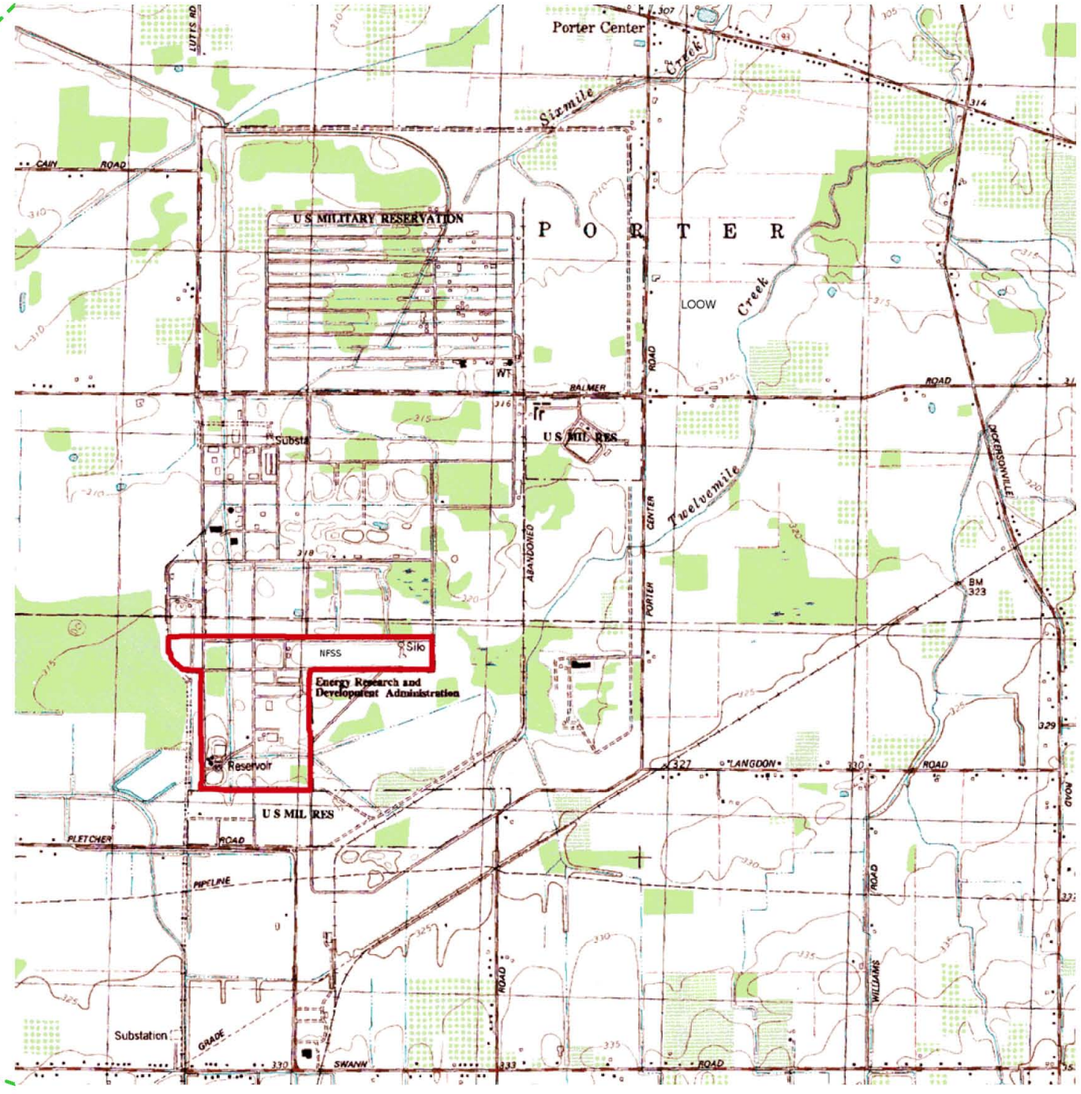
Site Layout with EU Boundaries

Sitewide

Science Applications International Corporation
Columbus, Ohio

Figure ES-3





USGS Map from 1948

SCALE 1:25 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

Site Vicinity Map

Niagara Falls Storage Site
Lewiston, New York

Drawn By:	Reviewed By:	Date:	Figure No.:
DWC	DEG	3/02/2004	1-1
Checked By:	Approved By:	Project No.	File Name:
DWG	DEG	15892	Site Map

Tetra Tech
1634 Eastport Plaza Drive
Collinsville, Illinois 62234
Phone: (618)343-2300
Fax: (618)345-1281

Baker Smith Area
New Naval Waste Area
Approximate Location of Former Radium Storage Vault
Acid Area
Pipes Sealed at Property Boundary
Pipes Sealed at Property Boundary
N ST.
N ST. SOUTH POND
O ST. NORTH POND
O ST.
O ST.
WEST DITCH
LUTTS RD.
WEST PATROL RD.
WEST PATROL RD DITCH
MCARTHUR ST.
Thawhouse
434 Pond
Stockpile
1
2
3
4
5
6
7
8
9
10
11
12
13
14
445
443
444
431/432
434
428
430
425
458
421
427
423
422
420
401
403
429
411
414
413
410
412
409
Pond 5
Pond 4
Pond 3
Pond 2
Pond 1
CENTRAL DITCH
CAMPBELL ST.
EIGHTH ST.
SIXTH ST.
SEVENTH ST.
W ST.
X ST. (Also known as P St.)
Z ST. (Also known as Q St.)
SOUTH 16 DITCH
SOUTH 31 DITCH
MODERN DITCH
CASTLE GARDEN RD
CAMPBELL ST.
IWCS
North Pond
South Pond
West Pond
East Pond
Decon Pad
Laydown Area
Stockpile Areas
R ST.
Pipe Sealed at Property Boundary
Shops Area
Debris Pile
Power Area
Sludge Pit
Organic Burial Area
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Former Freshwater Treatment Plant

Sitewide Legend

- Structure abandoned above grade
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- Former structure
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- Storm sewer
- Former K-65 transfer pipeline
- Test trenches
- IWCS cutoff wall
- Former remedial structures
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- EU boundaries
- Niagara Mohawk property boundary
- Site boundary

0 120 240 480
Feet
N

EU 15 is comprised of all interconnected drainageways on site.

EU 16 is comprised of all site utilities and pipelines.

US Army Corps of Engineers
Buffalo District

Site Layout with EU Boundaries

Sitewide

Science Applications International Corporation
Columbus, Ohio

Figure 1-2

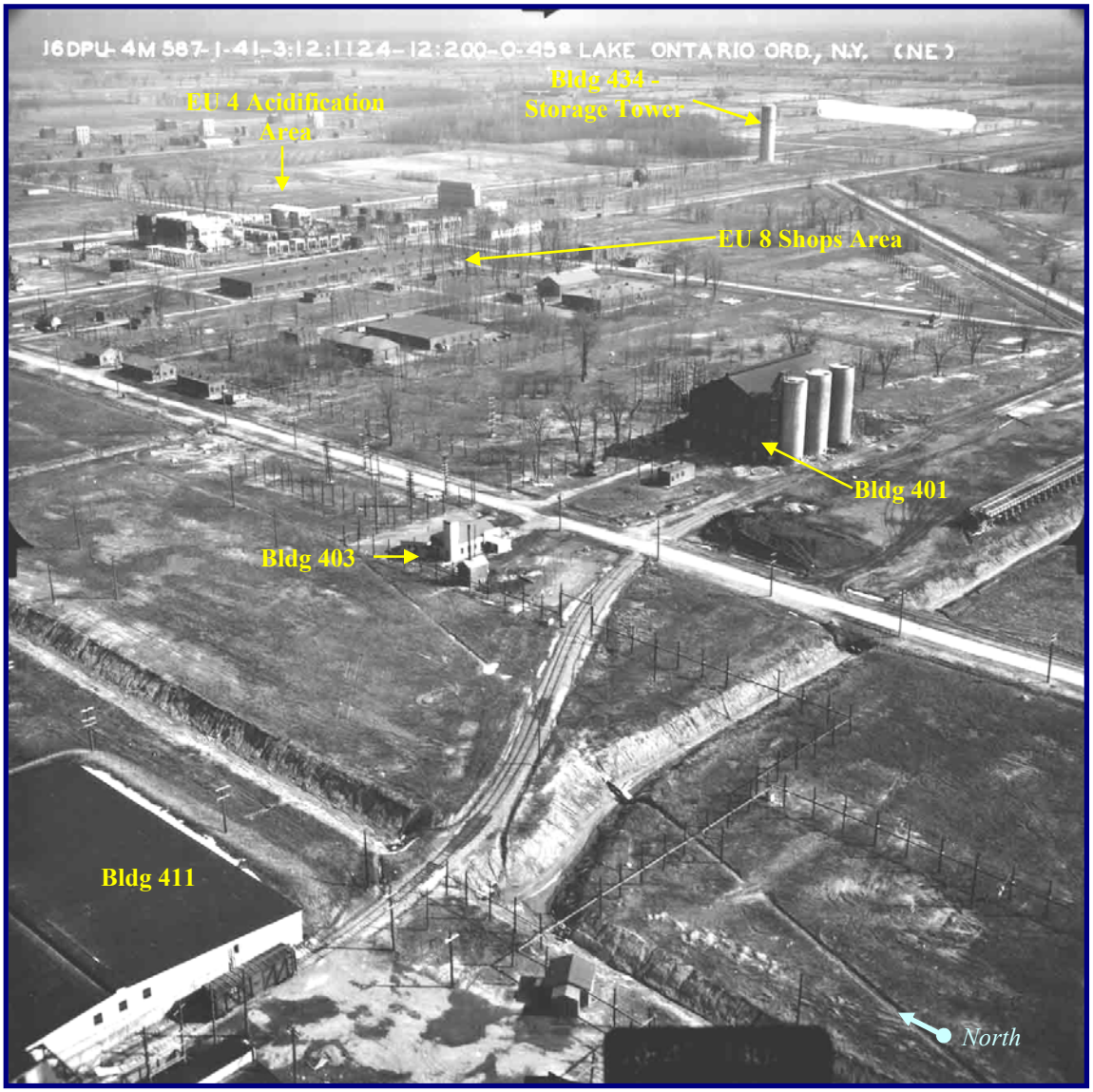


Figure 1-3. 1944 Aerial Photo of the NFSS (Looking North-East)

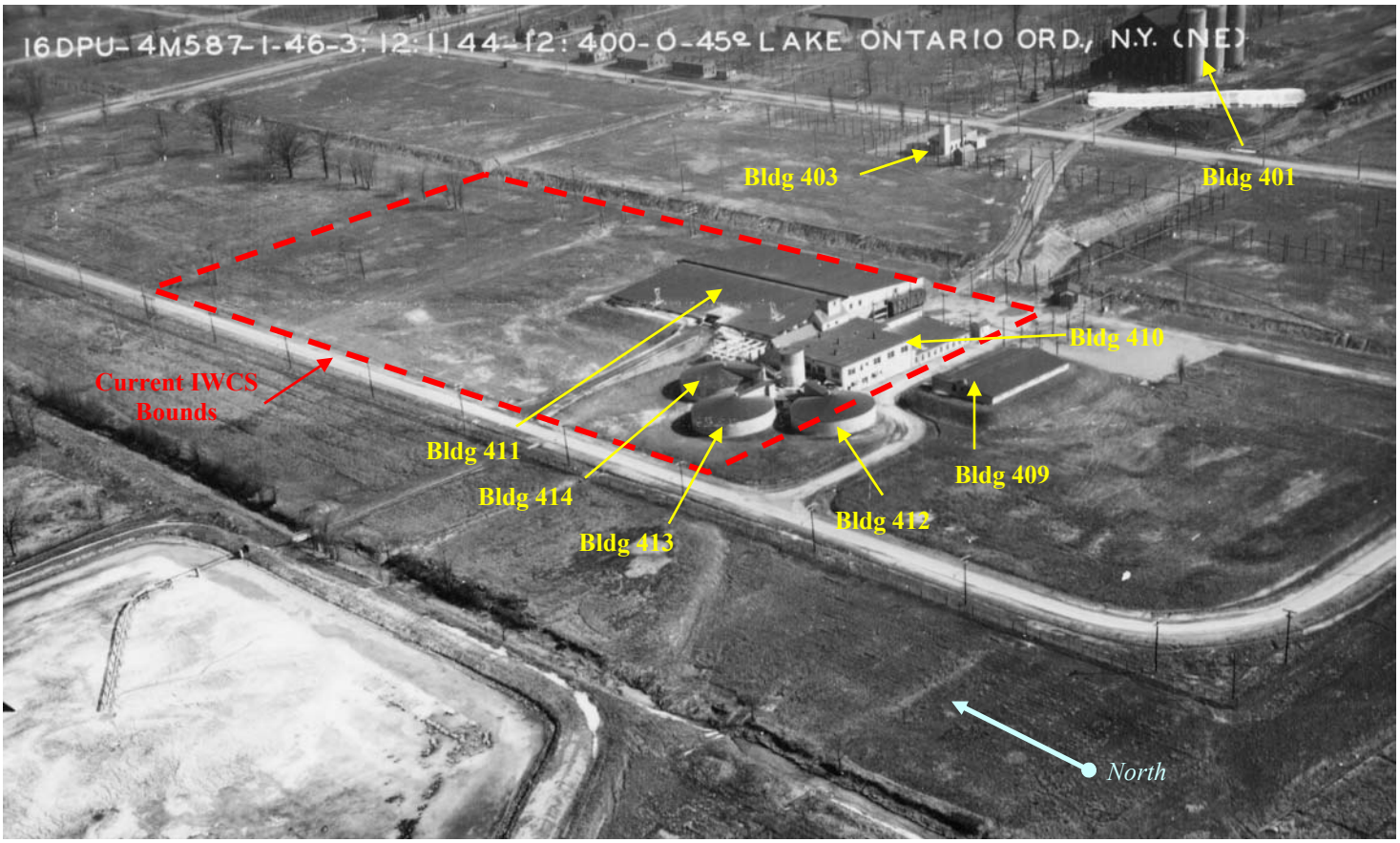
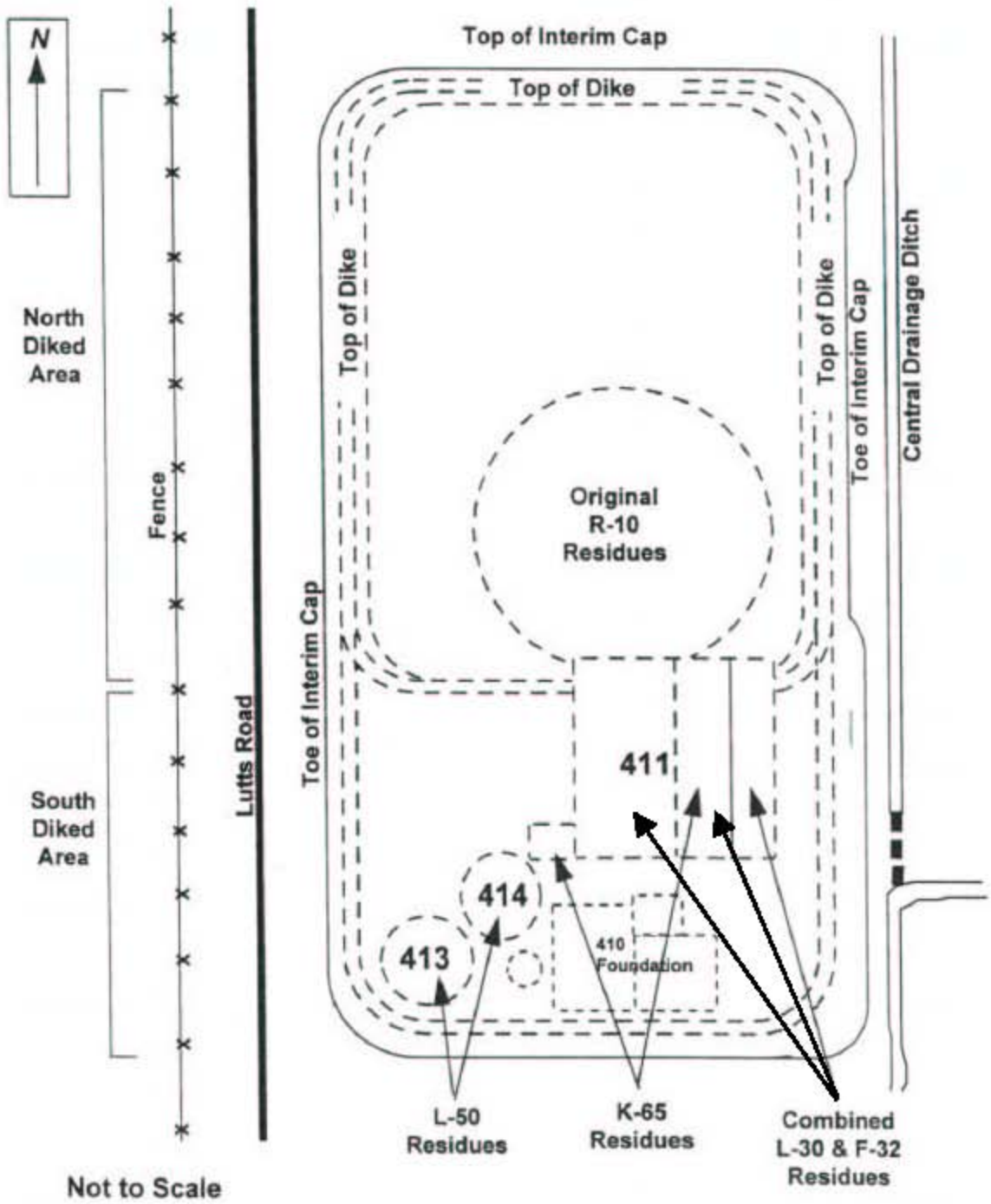


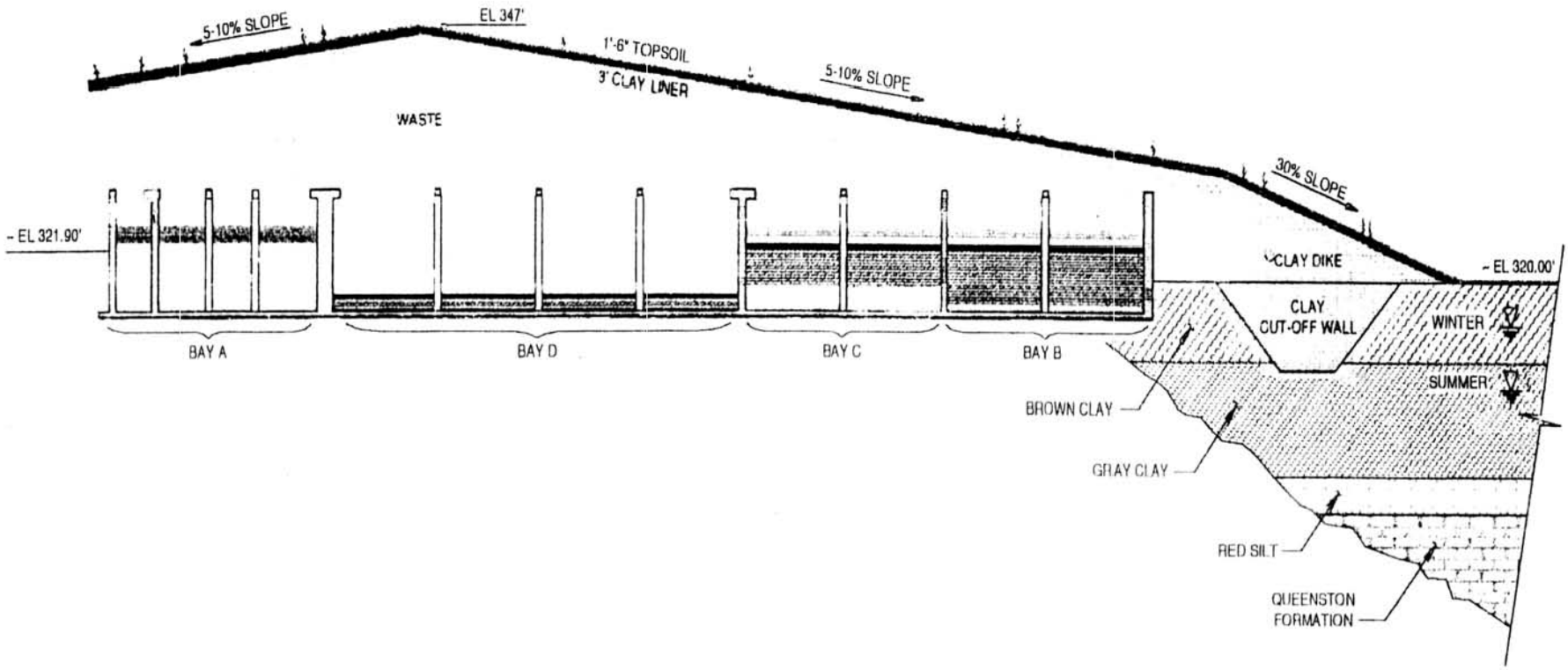
Figure 1-4. 1944 Aerial Photo of the NFSS (Looking North-East over Future Site of IWCS)



Plan View of the Interim Waste Containment Structure (IWCS), Showing Locations of Foundations of Cellars of Buildings 410, 411, 413, and 414 that Contain Residues (modified from DOE 1986)

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15982	FIGURE #: 1-5
SCALE: As Indicated	DATE: 11/10/2006
DRAWN BY: DWC	CHECKED BY: DEG

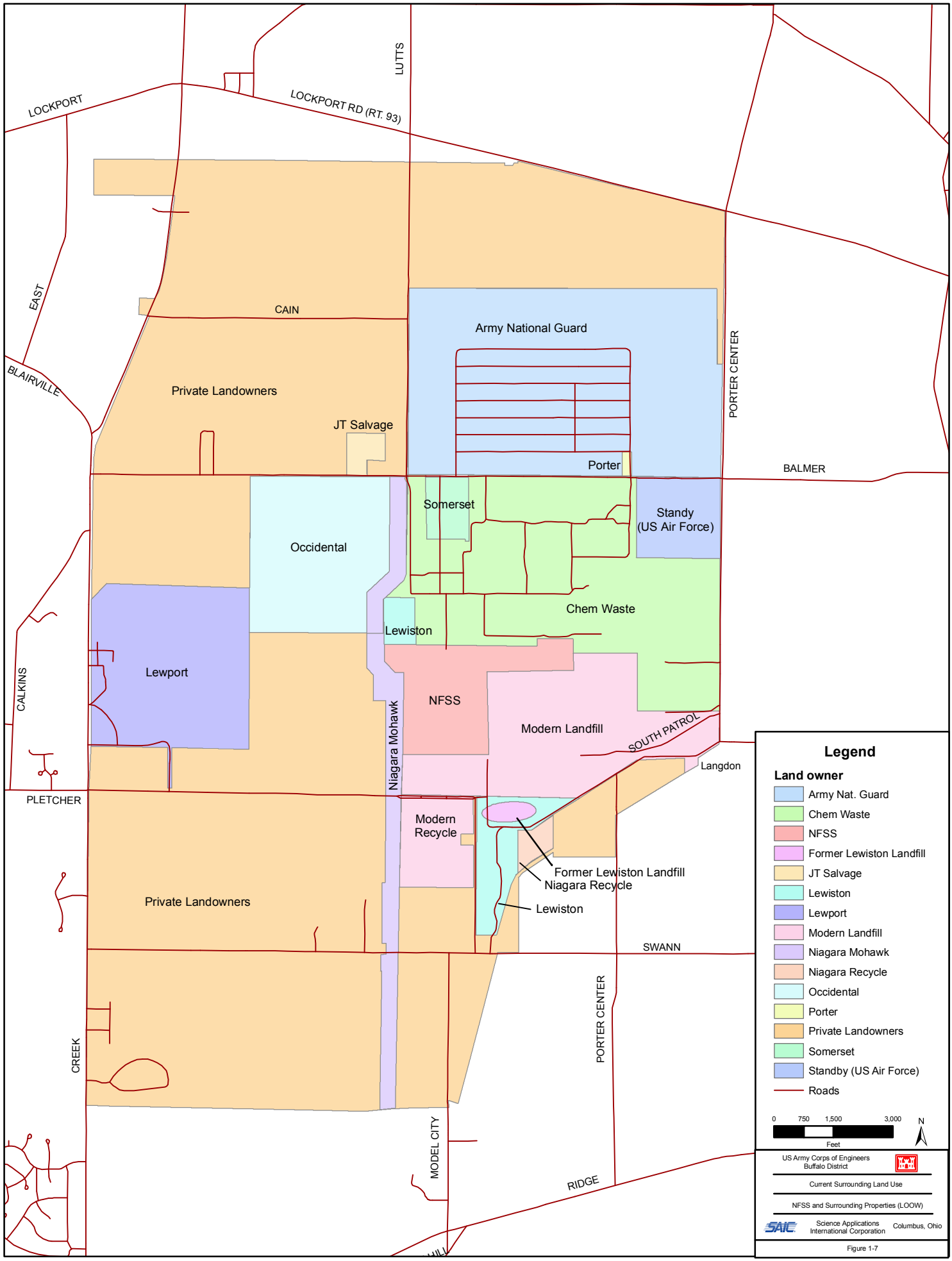


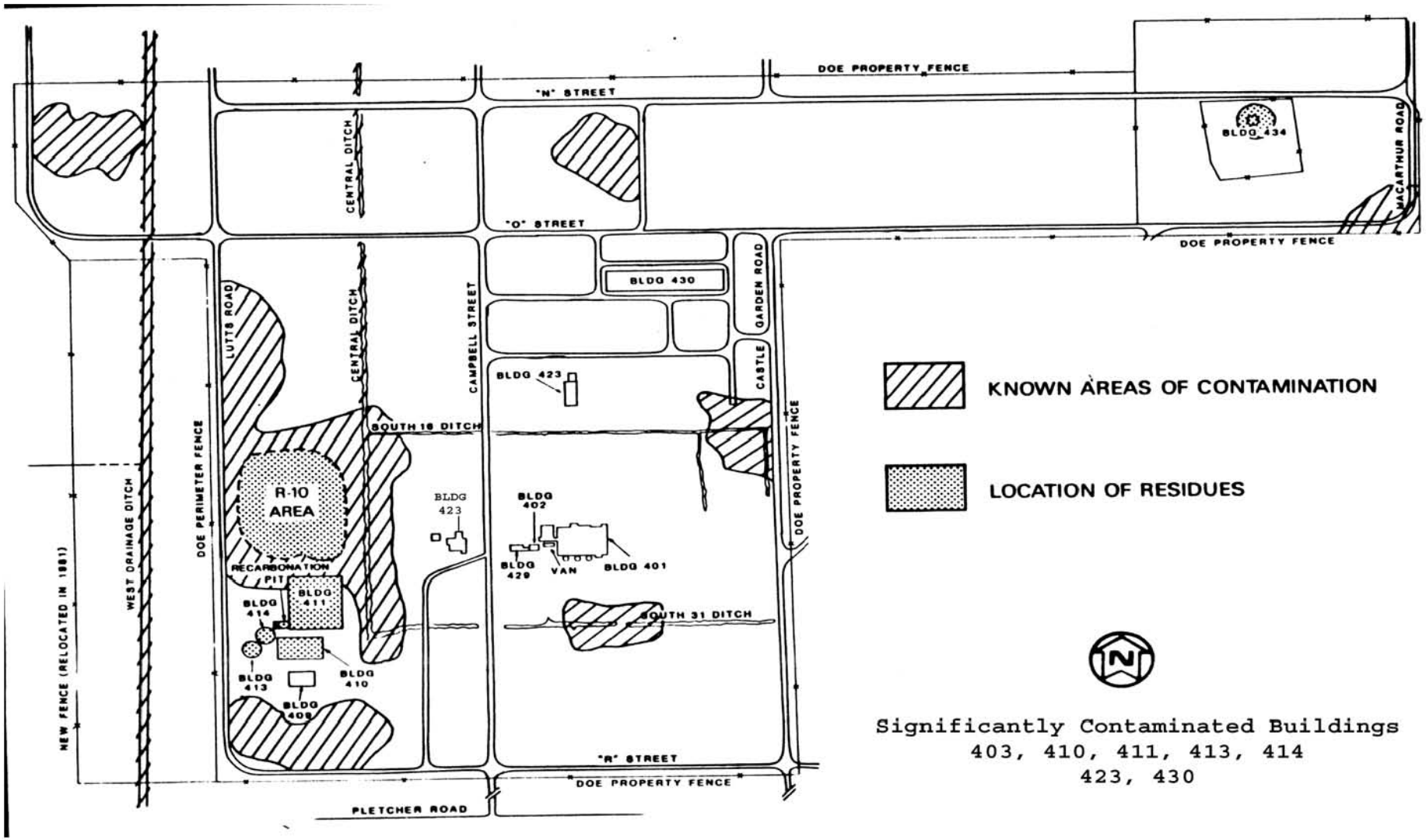
NIAGARA FALLS STORAGE SITE

CROSS SECTION OF INTERIM WASTE CONTAINMENT STRUCTURE
AND BUILDING 411
SOURCE: DOE 1994

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 9905006	FIGURE #: 1-6
SCALE: Not to Scale	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: DEG


LOCKPORT
LOCKPORT RD (RT. 93)
LUTTS
EAST
CAIN
BLAIRVILLE
Private Landowners
JT Salvage
Army National Guard
PORTER CENTER
Porter
BALMER
Somerset
Standy
(US Air Force)
Occidental
Chem Waste
Lewiston
Lewport
CALKINS
NFSS
Niagara Mohawk
Modern Landfill
SOUTH PATROL
Langdon
PLETCHER
Modern
Recycle
Former Lewiston Landfill
Niagara Recycle
Lewiston
Private Landowners
SWANN
CREEK
PORTER CENTER
MODEL CITY
RIDGE
Legend
Land owner
Army Nat. Guard
Chem Waste
NFSS
Former Lewiston Landfill
JT Salvage
Lewiston
Lewport
Modern Landfill
Niagara Mohawk
Niagara Recycle
Occidental
Porter
Private Landowners
Somerset
Standby (US Air Force)
Roads
0 750 1,500 3,000
Feet
N
US Army Corps of Engineers
Buffalo District
Current Surrounding Land Use
NFSS and Surrounding Properties (LOOW)
SAIC
Science Applications
International Corporation
Columbus, Ohio
Figure 1-7



Significantly Contaminated Buildings
403, 410, 411, 413, 414
423, 430

RADIOLOGICALLY CONTAMINATED AREAS IN 1979

SOURCE BATELLE 1981a

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 1-8
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: DEG

Figure 1-9. 1985 Aerial Photo of the NFSS (Looking East) Showing Construction Activities Taking Place at IWCS

Figure 1-10. Aerial Photo of Former K-65 Storage Tower (Silo)

Figure 1-11. Former K-65 Storage Tower Being Demolished During Residue Removal

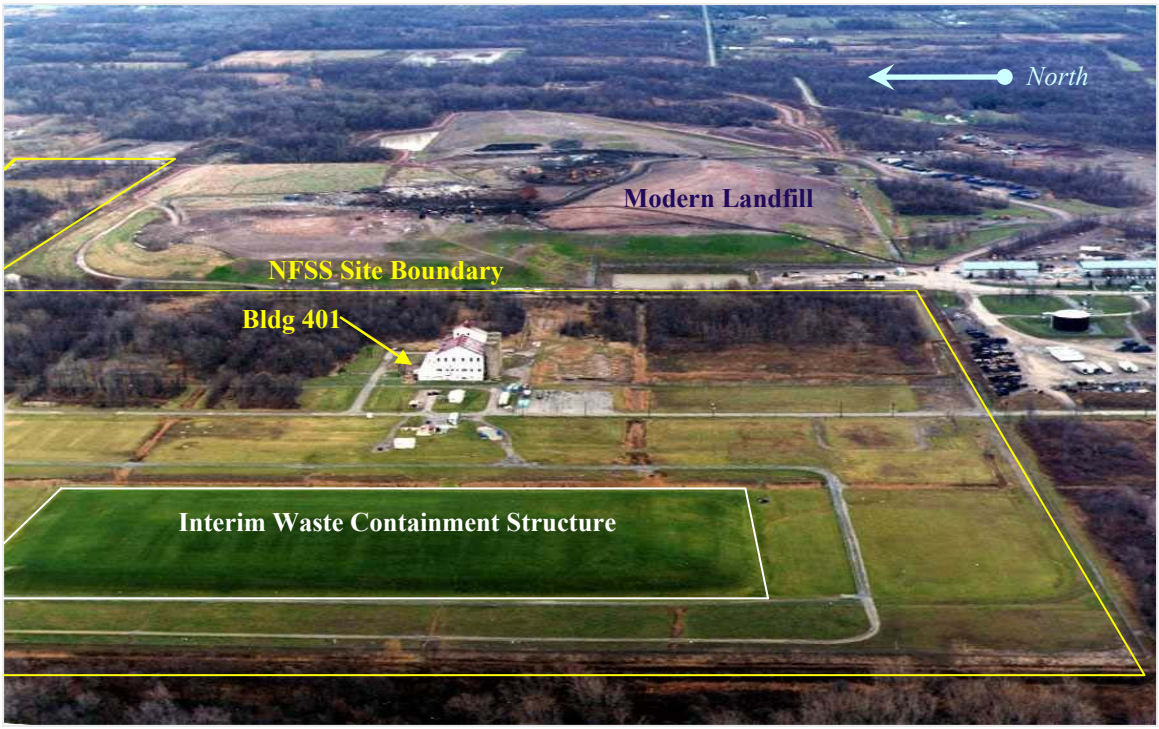
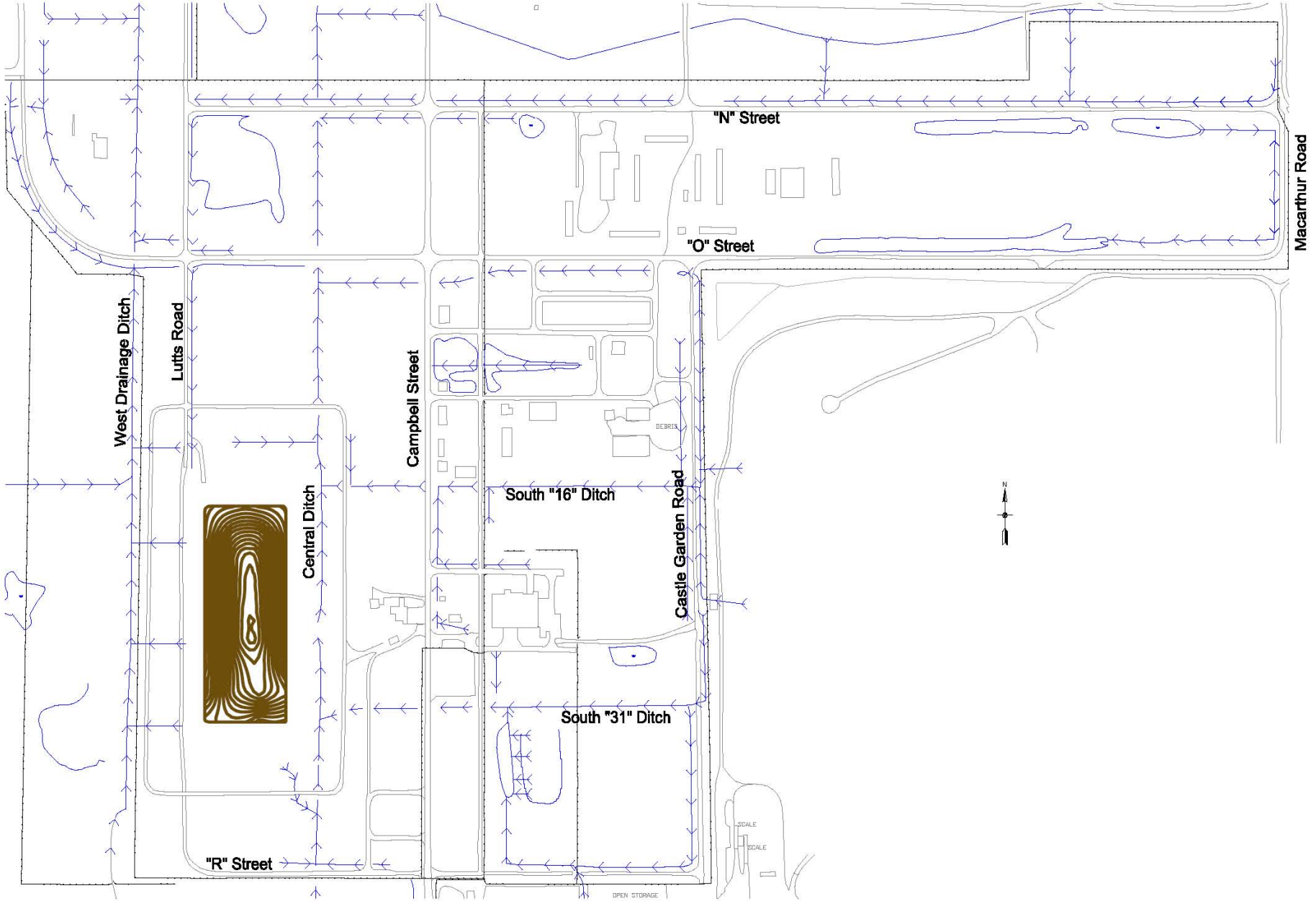


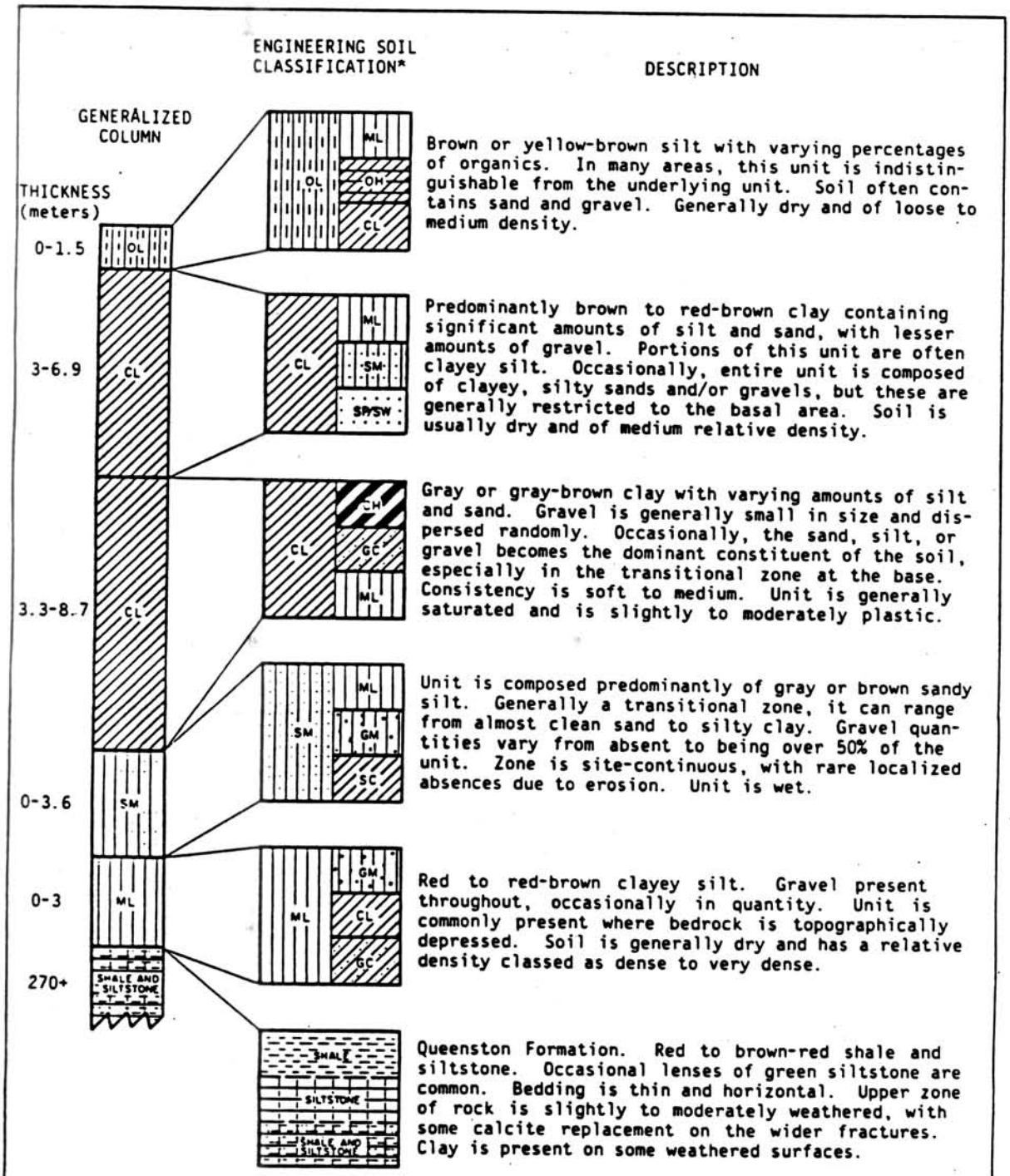
Figure 1-12. 2002 Aerial Photo of the Current IWCS



Site Surface Drainage

Tetra Tech
1634 Eastport Plaza Drive
Collinsville, Illinois 62234
Phone: (618)343-2300
Fax: (618)345-1281

PROJECT NO. 15892	FIGURE #: 2-1
SCALE: Not to Scale	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: TL

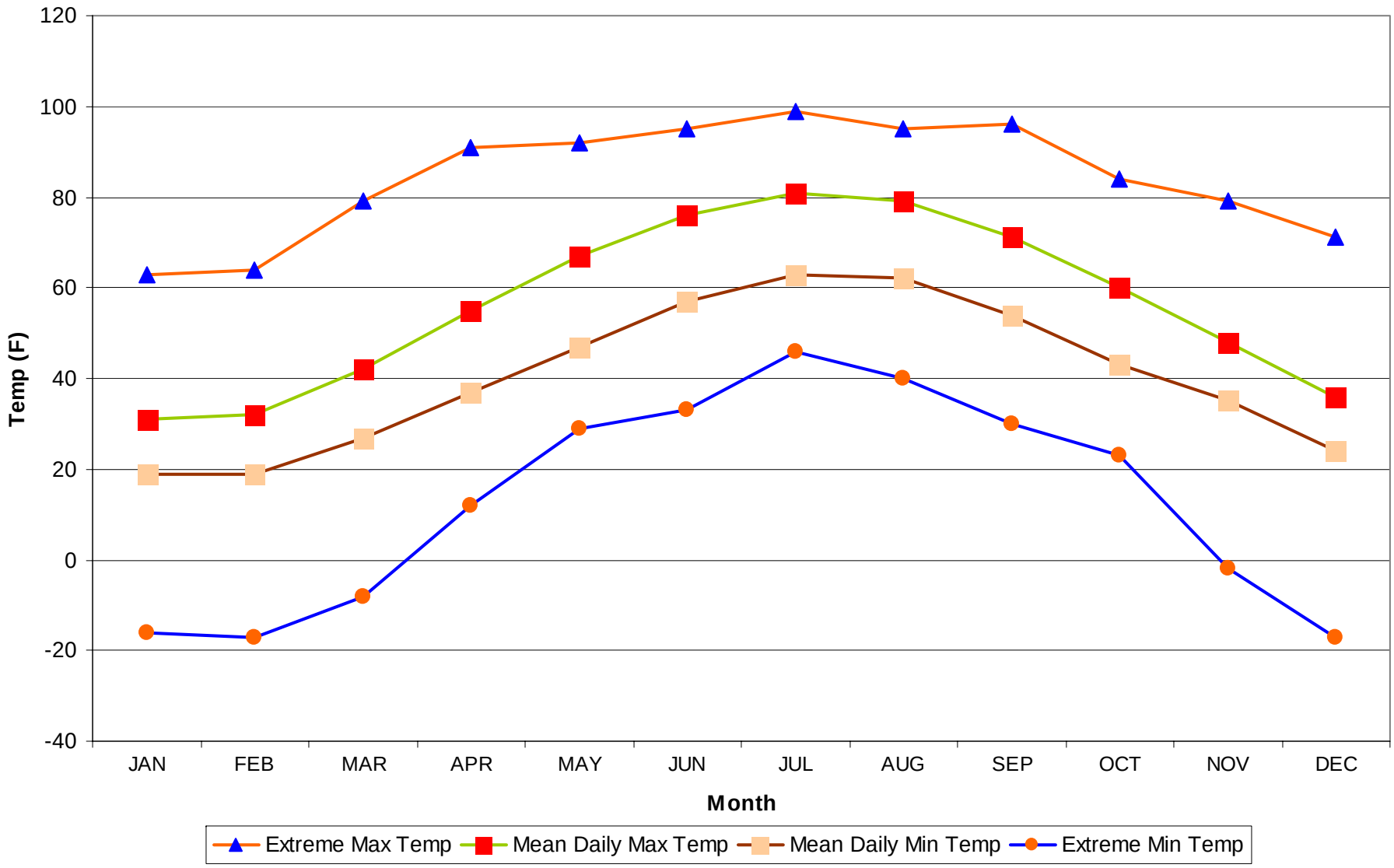


Generalized Geologic Column of Formations Under the Niagara Falls Storage Site

Source: Adapted From Acres American, Inc. (1981a)

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 2-2
SCALE: Not to Scale	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: DEG

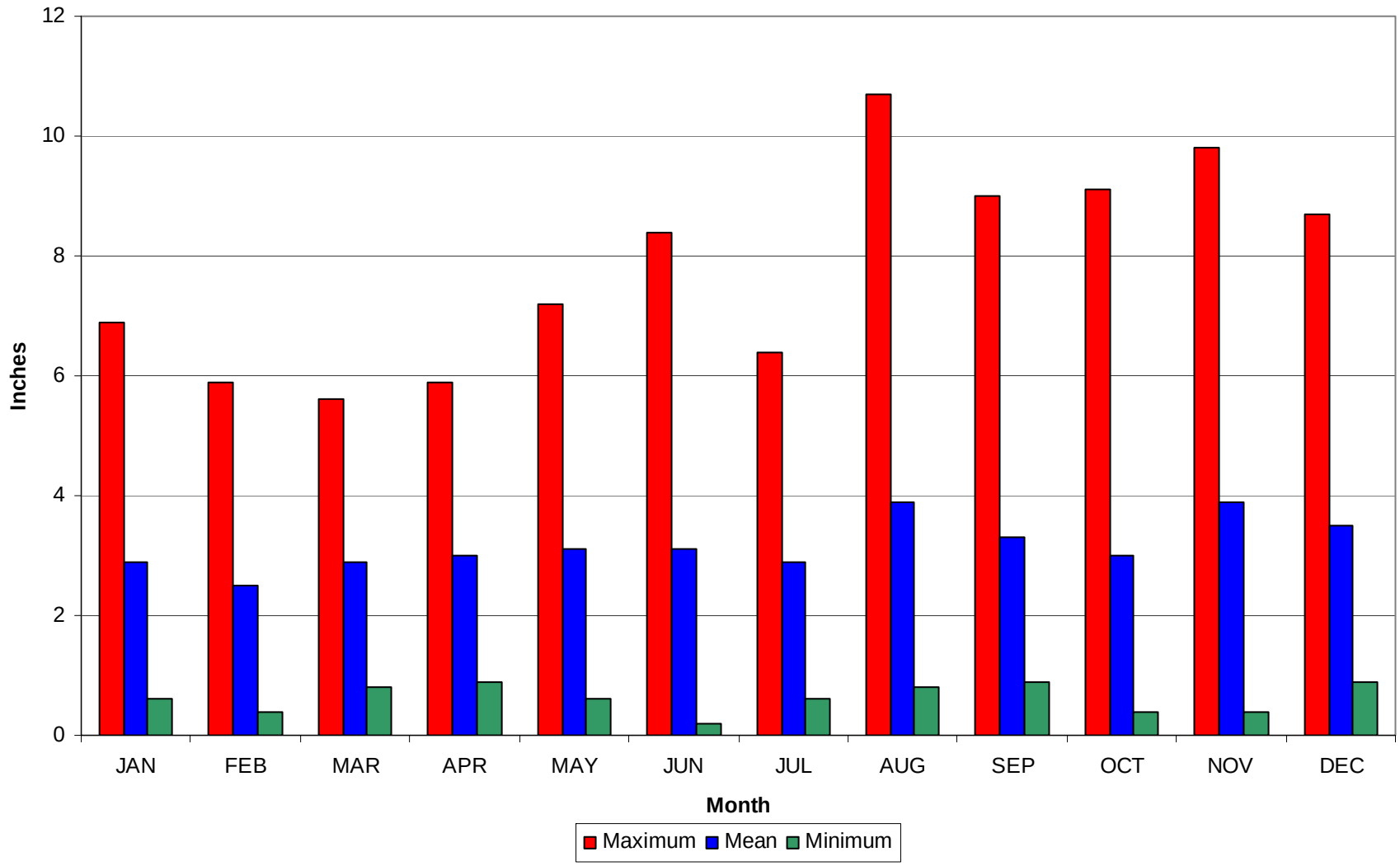


Period of Record 1973-1995, SOURCE: Air Force Combat Climatology Center

Maximum, Minimum and Mean Monthly Temperatures at Niagara Falls international Airport
1973-1995

Tetra Tech
1634 Eastport Plaza Drive
Collinsville, Illinois 62234
Phone: (618)343-2300
Fax: (618)345-1281

PROJECT NO. 15892	FIGURE #: 2-3
SCALE: Not to Scale	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: TL

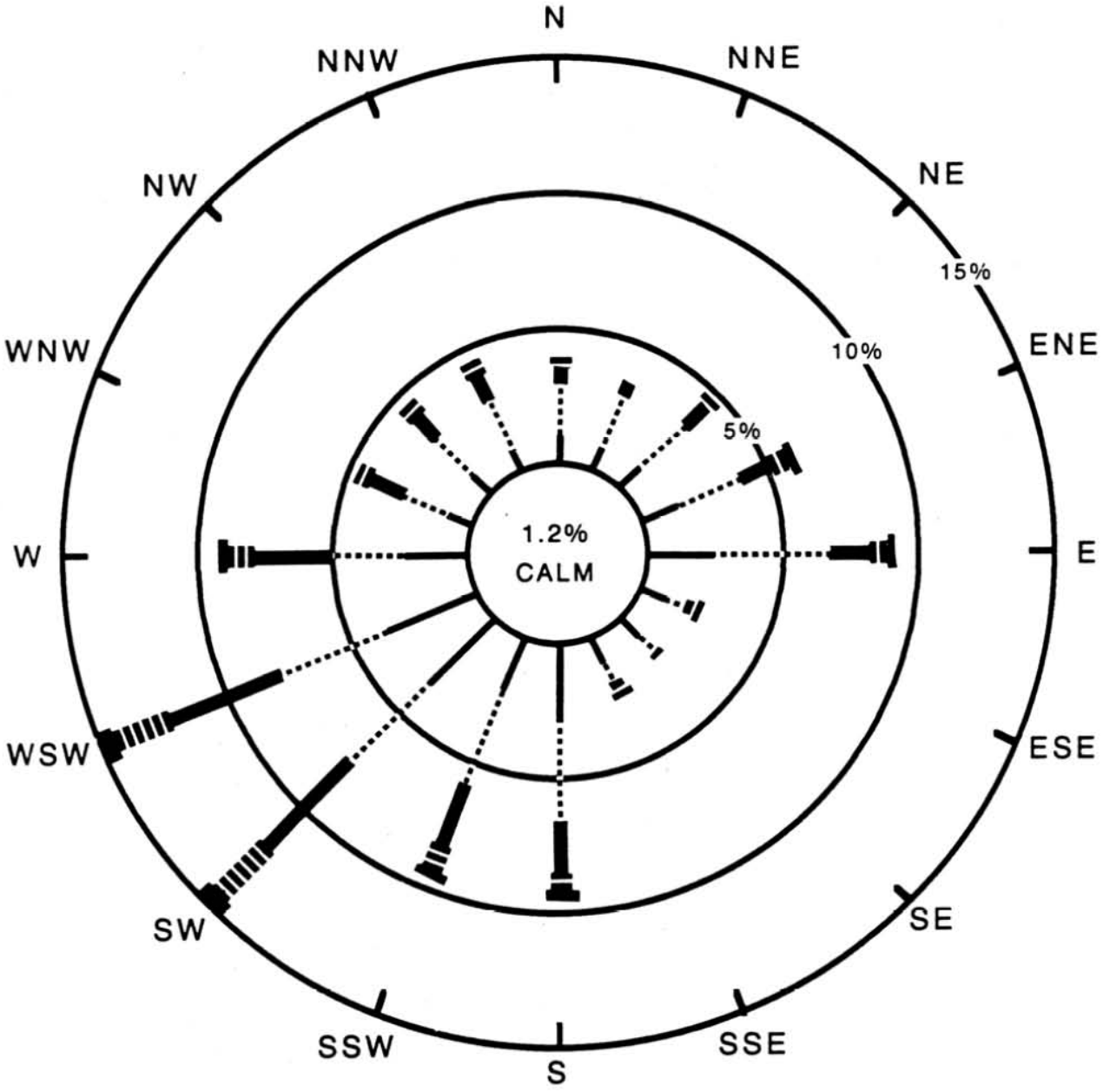


Period of Record 1973-1995, Source: Air Force Combat Climatology Center

Maximum, Minimum and Mean Monthly Precipitation at Niagara Falls International Airport
1973-1995

Tetra Tech
1634 Eastport Plaza Drive
Collinsville, Illinois 62234
Phone: (618)343-2300
Fax: (618)345-1281

PROJECT NO. 15892	FIGURE #: 2-4
SCALE: Not to Scale	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: TL



WIND SPEED

MPH 0 2.2 6.7 11 18 24.5

BASED ON DATA FROM ON-SITE METEOROLOGICAL STATION DURING 1985

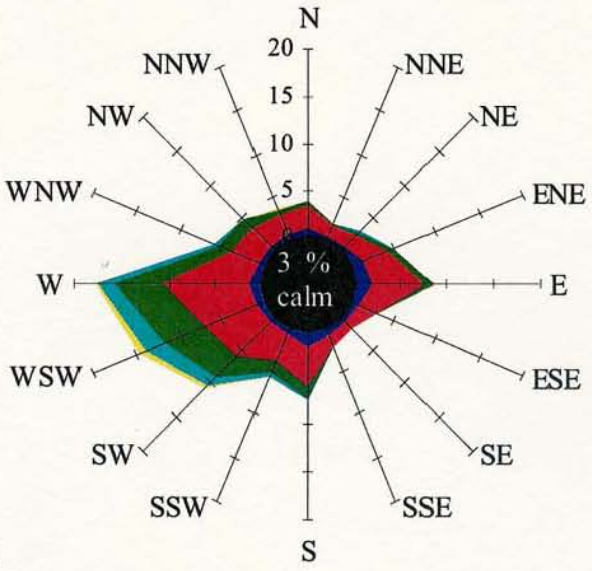
Annual Wind Rose for the NFSS

Tetra Tech
1634 Eastport Plaza Drive
Collinsville, Illinois 62234
Phone: (618)343-2300
Fax: (618)345-1281

PROJECT NO. 15892	FIGURE #: 2-5
SCALE: NA	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: TL

Wind Summary - December, January, and February

Labels of Percent Frequency on North Axis

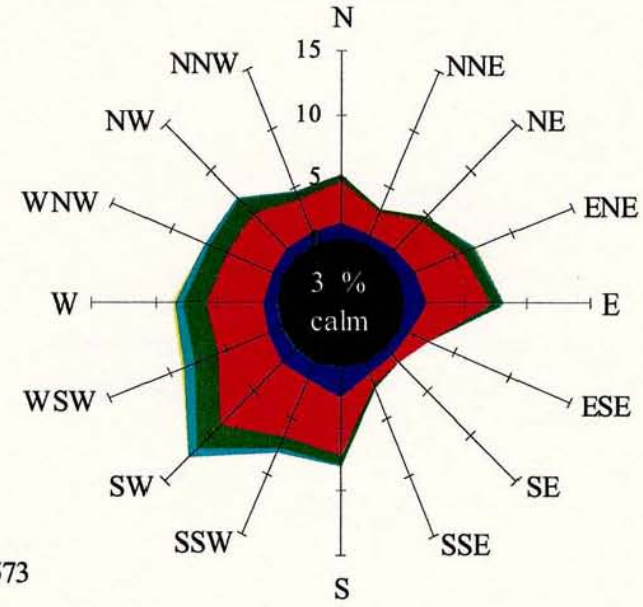


# of Observations: 61064

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | Calm

Wind Summary - March, April, and May

Labels of Percent Frequency on North Axis



# of Observations: 61573

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | calm

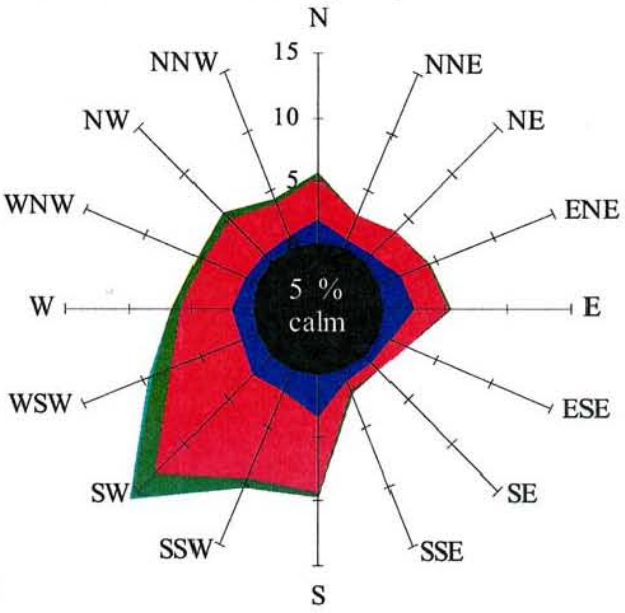
December through May Wind Summary at NFSS

Tetra Tech
1634 Eastport Plaza Drive
Collinsville, Illinois 62234
Phone: (618)343-2300
Fax: (618)345-1281

PROJECT NO. 15892	FIGURE #: 2-6
SCALE: NA	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: TL

Wind Summary - June, July, and August

Labels of Percent Frequency on North Axis

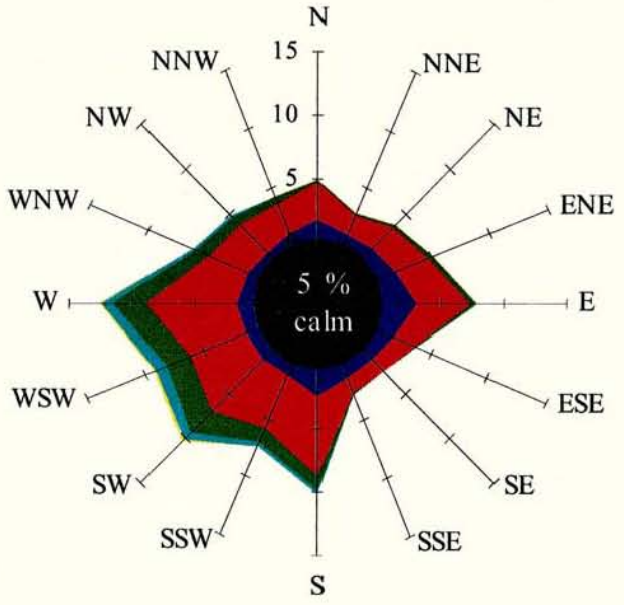


# of Observations: 61422

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | calm

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



# of Observations: 61206

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | calm

June through November Wind Summary at NFSS

Tetra Tech
1634 Eastport Plaza Drive
Collinsville, Illinois 62234
Phone: (618)343-2300
Fax: (618)345-1281

PROJECT NO. 15892	FIGURE #: 2-7
SCALE: NA	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: TL

Area of elevated activity (1m x 1m) up to 23,000 CPM. Reinvestigation readings up to 30,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (5m x 3m) up to 30,000 CPM in ditch.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Concrete structures from 11,000 CPM to 16,000 CPM.

Area of slag/soil mix, activity (25m x 25m) up to 25,000 CPM.

Area of slag/soil mix, activity (10m x 10m) up to 20,000 CPM. Reinvestigation readings up to 21,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (3m x 3m) up to 21,000 CPM.

Area of slag/soil mix, activity (20m x 20m) up to 20,000 CPM. Reinvestigation readings up to 22,000 CPM.

Area of elevated activity (3m x 2m) up to 22,000 CPM in ditch.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (3m x 3m) up to 20,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM in ditch.

Area of elevated activity (5m x 4m) up to 66,000 CPM in ditch.

Area of elevated activity (1m x 1m) up to 23,000 CPM.

Area of elevated activity (4m x 5m) up to 36,000 CPM in ditch.

Area of elevated activity (1m x 1m) up to 22,000 CPM.

Area of elevated activity (2m x 2m) up to 22,000 CPM in ditch.

Area of elevated activity (4m x 4m) up to 37,000 CPM.

Area of elevated activity (7m x 10m) up to 20,000 CPM.

Area of elevated activity (11m x 5m) up to 27,000 CPM on asphalt.

Area of elevated activity (9m x 5m) up to 40,000 CPM.

Area of elevated activity (3m x 15m) up to 17,000 CPM on gravel.

Area of elevated activity (3m x 4m) up to 27,000 CPM.

Area of elevated activity (1m x 1m) centered on large rock up to 30,000 CPM. Reinvestigation readings up to 39,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity located on a railroad tie laying on the ground surface with readings up to 65,000 CPM. Reinvestigation readings up to 80,000 CPM.

"Water > 1"

"N" Street

"O" Street

"O" Street South Ditch

West Patrol Rd.

West Patrol Ditch

West Ditch

Lutts Road

General Notes:

1) Outlined circles depict elevated activity identified beyond walkover survey path.

Niagara Falls Storage Site
Gamma Walkover Survey

Investigation Location
- Soil
- Soil
- Soil

CPM Values on Asphalt
- 0 - 10500
- 10501 - 15750
- 15751 - 17500
- 17501 - 19500
- 19501 - 100000

CPM Values on Gravel
- 0 - 8000
- 8001 - 12000
- 12001 - 14000
- 14001 - 16000
- 16001 - 1000000

CPM Values on Soil
- 0 - 9000
- 9001 - 13000
- 13001 - 16000
- 16001 - 18000
- 18001 - 30000
- 30001 - 1000000

GWS Data Sector

Surface Features
- Roads
- Fence
- Tree Line
- Creek/Ditch
- Building
- Concrete Pad
- Debris Pile
- Area of Water > 1"
- Area of Slag/Soil

N

New York West State Plane NAD83 Meters

20 0 20 Meters

Sector 1 Sector 2 Sector 3 Sector 4 Sector 5 Sector 6

FUSRAP

TETRA TECH, INC.

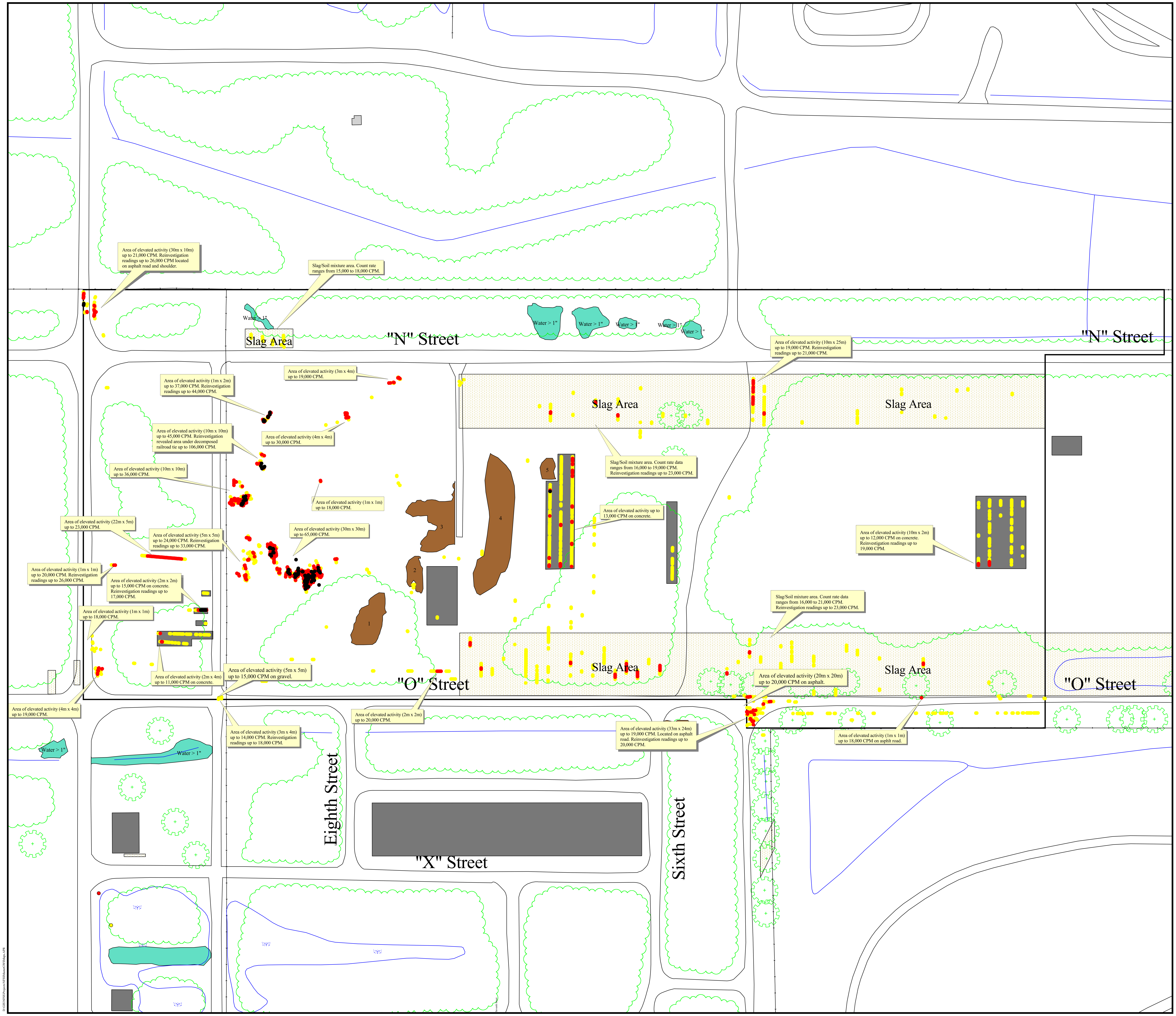
Niagara Falls Storage Site
Gamma Walkover Survey
Elevated Areas in Sector 1
Lewiston, New York

Source: SAIC 2003

REVISION	DRAWN BY:	CHECKED BY:	DATE
0	S. Kitchings	Doug Haas	10/02/2001
1	DWC	TL	10/30/2005

FIGURE 3-1

D:\GIS\NFSS\Projects\NFSSMaster\GWSMaps.APR



General Notes:

1) Debris pile 1: inaccessible due to piles of rebar, concrete, and sharp metal debris.
   Debris pile 2: inaccessible due to brush debris mixed with chainlink fencing and concrete piles.
   Debris pile 3: inaccessible due to sharp scrap metal concrete pile and old culverts.
   Debris pile 4: inaccessible due to concrete piles, asphalt pile and unknown piles of rubble.
   Debris pile 5: inaccessible due to concrete piles, asphalt pile and unknown piles of rubble.
2) Natural radioactivity in concrete may be higher than that of reference area concrete.
3) Areas of Slag/Soil use the Soil background.

Niagara Falls Storage Site
Gamma Walkover Survey

Investigation Location
- Soil/Slag
- Soil
- Soil

CPM Values on Asphalt
- 0 - 10500
- 10501 - 15750
- 15751 - 17500
- 17501 - 19500
- 19501 - 20864

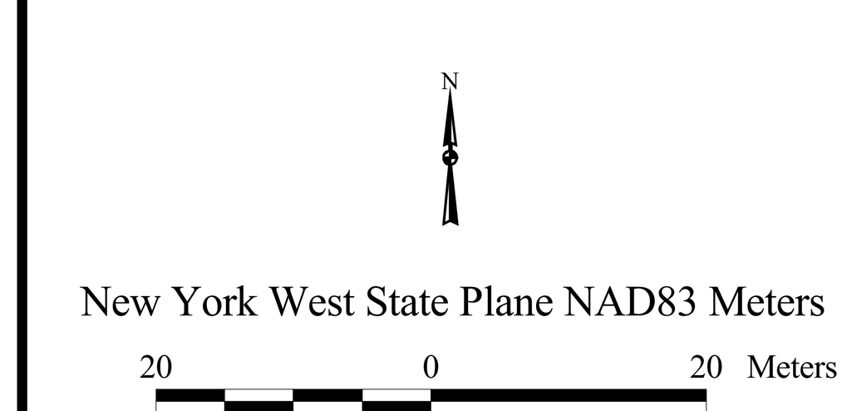
CPM Values on Concrete
- 0 - 5700
- 5701 - 8500
- 8501 - 10500
- 10501 - 12500
- 12501 - 14262

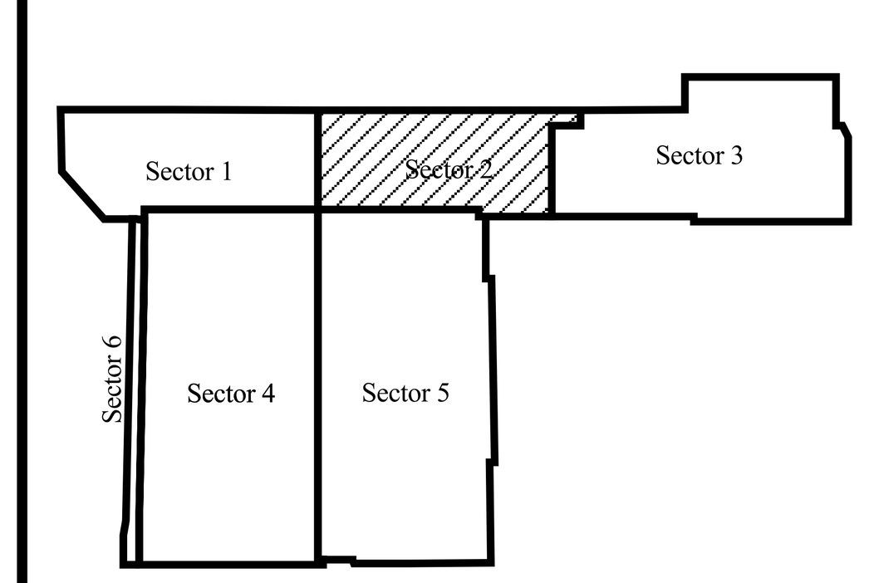
CPM Values on Gravel
- 0 - 8000
- 8001 - 12000
- 12001 - 14000
- 14001 - 16000
- > 16001

CPM Values on Soil
- 0 - 9000
- 9001 - 13000
- 13001 - 16000
- 16001 - 18000
- 18001 - 30000
- 30001 - 64273

GWS Data Sector

Surface Features
- Roads
- Fence
- Tree Line
- Creek/Ditch
- Building
- Concrete Pad
- Debris Pile
- Area of Water > 1"
- Area of Slag/Soil





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TETRA TECH, INC.

Niagara Falls Storage Site
Gamma Walkover Survey
Elevated Areas in Sector 2
Lewiston, New York
Source: SAIC 2003

REVISION	DRAWN BY:	CHECKED BY:	DATE
0	S. Kitchings	Doug Haas	10/02/2001
1	DWC	TL	10/30/2005

Figure 3-2

"N" Street

"Q" Street

MacArthur Street

Slag Area

Area of elevated activity (1m x 1m) up to 50,000 CPM. Located between transects 8 & 9.

Area of elevated activity (1m x 1m) up to 44,000 CPM. Reinvestigation readings up to 100,000 CPM. Located on a buried cable.

Area of elevated activity (1m x 1m) up to 20,000 CPM. Located between transects 4 & 5.

Area of elevated activity (30m x 5m) up to 14,000 CPM. Reinvestigation readings up to 22,000 CPM.

Slag/Soil mixture area (1m x 1m) count rate range from 16,000 to 18,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (6m x 12m) up to 17,000 CPM on concrete.

Slag/Soil mixture area (Length of sector 3) count rate range from 16,000 to 18,000 CPM.

Area of elevated activity (2m x 2m) up to 56,000 CPM. Reinvestigation readings up to 120,000 CPM.

Activity (20,000 CPM) coming from a rock at the end of the transect.

Area of elevated activity (1m x 1m) up to 43,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM. Reinvestigation readings up to 19,000 CPM on asphalt.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 25,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 82,000 CPM.

Area of elevated activity (1m x 1m) up to 23,000 CPM.

Area of elevated activity (1m x 1m) up to 32,000 CPM.

Area of elevated activity (1m x 1m) up to 42,000 CPM.

Water > 1"

General Notes:

1) Areas of Slag/Soil use the Soil background.
2) All Survey data within the NFSS fence. Fenceline may contain positional innaccuracies.

Niagara Falls Storage Site
Gamma Walkover Survey

Investigation Location
- Soil
- Soil
- Soil

CPM Values on Asphalt
- 0 - 10500
- 10501 - 15750
- 15751 - 17500
- 17501 - 19500
- 19501 - 32405

CPM Values on Concrete
- 0 - 5700
- 5701 - 8500
- 8501 - 10500
- 10501 - 12500
- 12501 - 17065

CPM Values on Gravel
- 0 - 8000
- 8001 - 12000
- 12001 - 14000
- 14001 - 16000
- 16001 - 17710

CPM Values on Soil
- 0 - 9000
- 9001 - 13000
- 13001 - 16000
- 16001 - 18000
- 18001 - 30000
- 30001 - 81393

GWS Data Sector

Surface Features
- Roads
- Fence
- Tree Line
- Creek/Ditch
- Building
- Concrete Pad
- Debris Pile
- Area of Water > 1"
- Area of Slag/Soil

N

New York West State Plane NAD83 Meters

20 0 20 Meters

Sector 1 Sector 2 Sector 3 Sector 4 Sector 5 Sector 6

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TETRA TECH, INC.

Niagara Falls Storage Site
Gamma Walkover Survey
Elevated Areas in Sector 3
Lewiston, New York
Source: SAIC 2003

REVISION	DRAWN BY:	CHECKED BY:	DATE
0	S. Kitchings	Doug Haas	10/12/2001
1	DWC	TL	10/30/2005

Figure 3-3

D:\GIS\NFSS\Projects\NFSSMaster\GWXMaps.APR

trol Ditch

Rd.

"O" Street

"O" S

"O" Street South Ditch

Area of elevated activity (5m x 1m) up to 19,000 CPM.

Area of elevated activity (10m x 6m) up to 37,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (6m x 18m) up to 25,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (2m x 1m) up to 28,000 CPM.

Area of elevated activity (6m x 5m) up to 47,000 CPM.

Area of elevated activity (2m x 2m) up to 24,000 CPM.

Area of elevated activity (2m x 2m) up to 22,000 CPM.

Area of elevated activity (1m x 3m) up to 22,000 CPM.

Water > 1"

Small area of slag/soil (3m x 3m) with activity up to 24,000 CPM in ditch.

Area of elevated activity (2m x 2m) up to 20,000 CPM.

Area of elevated activity (1m x 1m) up to 27,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (5m x 2m) up to 29,000 CPM.

Area of elevated activity (2m x 2m) up to 35,000 CPM.

Area of elevated activity (4m x 7m) up to 36,000 CPM.

Area of elevated activity (1m x 3m) up to 20,000 CPM.

Area of elevated activity (6m x 4m) up to 25,000 CPM.

Area of elevated activity (7m x 2m) up to 22,000 CPM.

Area of elevated activity (6m x 6m) up to 23,000 CPM.

Area of elevated activity (3m x 1m) up to 20,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM in ditch.

Area of elevated activity (1m x 2m) up to 29,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (8m x 4m) up to 100,000 CPM. Reinvestigation readings up to 107,000 CPM.

Area of elevated activity (5m x 7m) up to 73,000 CPM.

Area of elevated activity (1m x 1m) up to 26,000 CPM.

Water > 1"

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

"Z" Street

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (5m x 8m) up to 20,000 CPM.

Water > 1"

Area of elevated activity (5m x 2m) up to 20,000 CPM.

Area of elevated activity (3m x 5m) up to 31,000 CPM.

Area of elevated activity (8m x 4m) up to 22,000 CPM.

Area of elevated activity (3m x 1m) up to 15,000 CPM on gravel.

West Ditch

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (3m x 2m) up to 28,000 CPM.

Area of elevated activity (1m x 2m) up to 53,000 CPM.

Area of elevated activity (1m x 1m) up to 33,000 CPM.

South 16 D

Area of elevated activity (1m x 2m) up to 19,000 CPM in ditch.

Area of elevated activity (1m x 1m) up to 19,000 CPM in ditch.

Area of elevated activity (4m x 4m) up to 30,000 CPM in ditch.

Area of elevated activity (4m x 4m) up to 100,000 CPM. Reinvestigation readings up to 120,000 CPM.

Central Ditch

Area of elevated activity (50m x 40m) up to 34,000 CPM.

Area of elevated activity (5m x 4m) up to 20,000 CPM.

Area of elevated activity (2m x 2m) up to 17,000 CPM on gravel.

Area of elevated activity (2m x 2m) up to 16,000 CPM on gravel.

Area of elevated activity (2m x 2m) up to 21,000 CPM.

South 3

Area of elevated activity (1m x 1m) up to 19,000 CPM in ditch.

Area of elevated activity (1m x 2m) up to 21,000 CPM in ditch.

Area of elevated activity (1m x 2m) up to 25,000 CPM in ditch.

Area of elevated activity (1m x 1m) up to 22,000 CPM in ditch.

Area of elevated activity (2m x 2m) up to 47,000 CPM.

Area of elevated activity (2m x 3m) up to 22,000 CPM.

Area of elevated activity (1m x 1m) up to 16,000 CPM on gravel.

Campbell Street

Modern Ditch

Area of elevated activity (1m x 1m) up to 21,000 CPM on gravel.

Area of elevated activity (1m x 3m) up to 15,000 CPM on gravel.

Area of elevated activity (3m x 4m) up to 21,000 CPM on gravel.

Area of elevated activity (5m x 4m) up to 18,000 CPM on gravel.

Area of elevated activity (2m x 1m) up to 17,000 CPM on gravel.

Area of elevated activity (1m x 1m) up to 15,000 CPM on gravel.

"R" Street

Area of elevated activity (1m x 1m) up to 40,000 CPM.

Area of elevated activity (1m x 8m) up to 19,000 CPM on gravel.

Area of elevated activity (5m x 8m) up to 26,000 CPM.

Area of elevated activity (7m x 10m) up to 22,000 CPM on gravel.

Area of elevated activity (1m x 1m) up to 18,000 CPM on gravel.

Area of elevated activity (2m x 2m) up to 36,000 CPM.

Area of elevated activity (2m x 2m) up to 28,000 CPM.

Area of elevated activity (4m x 7m) up to 23,000 CPM.

Niagara Falls Storage Site - Gamma Walkover Survey

Investigation Location	CPM Values on Asphalt	CPM Values on Concrete	CPM Values on Gravel	CPM Values on Soil
Soil	0 - 10500	0 - 5700	0 - 8000	0 - 9000
Soil	10501 - 15750	5701 - 8500	8001 - 12000	9001 - 13000
Soil	15751 - 17500	8501 - 10500	12001 - 14000	13001 - 16000
	17501 - 19500	10501 - 12500	14001 - 16000	16001 - 18000
	> 19501	> 12501	16001 - 28309	18001 - 30000
				30001 - 99991

GWS Data Sector

Surface Features
- Roads
- Fence
- Tree Line
- Creek/Ditch

- Building
- Concrete Pad
- Debris Pile
- Area of Water > 1"
- Area of Slag/Soil

N

New York West State Plane NAD83 Meters

20 0 20 40 Meters

Sector 1 | Sector 2 | Sector 3

Sector 4 | Sector 5 | Sector 6

FUSRAP

TETRA TECH, INC.

REVISION	DRAWN BY:	CHECKED BY:	DATE
0	S. Kitchings	Doug Haas	10/02/2001
1	DWC	TL	10/30/2005

Figure 3-4

Niagara Falls Storage Site
Gamma Walkover Survey
Elevated Areas in Sector 4
Lewiston, New York

Source: SAIC 2003

D:\GIS\NFSS\Projects\NFSSMasterGWSMaps.APR

"O" Street

"O" Street

"O" Street

Slag Area

Slag Area

Eighth Street

Sixth Street

Seventh Street

Garden Road

"X" Street

"Z" Street

South 31 Ditch

Central Ditch

Campbell Street

Modern Ditch

Water > 1"

Water > 1"

Water > 1"

Water > 1"

Water > 1"

Area of elevated activity (5m x 5m) up to 15,000 CPM on asphalt.

Area of elevated activity (20m x 20m) up to 20,000 CPM on asphalt.

Area of elevated activity (3m x 3m) up to 25,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (2m x 3m) up to 12,000 CPM on concrete.

Area of elevated activity (1m x 6m) up to 52,000 CPM.

Area of elevated activity (1m x 1m) up to 13,000 CPM on concrete.

Area of elevated activity (4m x 4m) up to 22,000 CPM.

Area of elevated activity (5m x 5m) up to 23,000 CPM.

Area of elevated activity (5m x 5m) up to 21,000 CPM.

Area of elevated activity (1m x 1m) up to 21,000 CPM.

Area of elevated activity (2m x 2m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (1m x 2m) up to 11,000 CPM on concrete.

Area of elevated activity (1m x 2m) up to 19,000 CPM.

Area of elevated activity (1m x 2m) up to 19,000 CPM.

Area of elevated activity (3m x 5m) up to 20,000 CPM.

Area of elevated activity (8m x 0.6m) up to 22,000 CPM.

Area of elevated activity (2m x 2m) up to 19,000 CPM.

Area of elevated activity (2m x 2m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (6m x 12m) up to 24,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (5m x 5m) up to 17,000 CPM on concrete and 24,000 CPM on soil.

Slag/Soil mixture area. Maximum activity 20,000 CPM using the soil background data.

Area of elevated activity (1m x 8m) up to 19,000 CPM.

Area of elevated activity (2m x 5m) up to 19,000 CPM.

Area of elevated activity (2m x 2m) up to 21,000 CPM.

Area of elevated activity (4m x 4m) up to 17,000 CPM on gravel.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (2m x 2m) up to 23,000 CPM.

Area of elevated activity (2m x 4m) up to 19,000 CPM.

Area of elevated activity (10m x 2m) up to 13,000 CPM on concrete.

Concrete slab up to 13,000 CPM, which is elevated as compared to the concrete reference activity.

Area of elevated activity (4m x 2m) up to 21,000 CPM.

Area of elevated activity (5m x 17m) up to 26,000 CPM. Activity located on a pile of rubble and broken concrete.

Concrete slab up to 13,000 CPM, which is elevated as compared to the concrete reference activity.

Concrete slab up to 14,000 CPM, which is elevated as compared to the concrete reference activity.

Area of elevated activity (2m x 2m) up to 19,000 CPM.

Area of elevated activity (2m x 7m) up to 37,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM on asphalt. Reinvestigation readings up to 19,000 CPM.

Various Slag/Soil rubble piles. Positioning information less reliable due to the uneven terrain. Elevated activity up to 21,000 CPM.

Area of elevated activity (1m x 2m) up to 21,000 CPM.

Area of elevated activity (2m x 2m) up to 19,000 CPM.

Area of elevated activity (3m x 4m) up to 15,000 CPM on gravel.

Area of elevated activity (2m x 3m) up to 23,000 CPM. Reinvestigation readings up to 26,000 CPM.

Area of elevated activity (2m x 3m) up to 18,000 CPM on asphalt.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (1m x 2m) up to 20,000 CPM.

Area of elevated activity (2m x 4m) up to 18,000 CPM on asphalt.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (1m x 5m) up to 20,000 CPM.

Area of elevated activity (3m x 3m) up to 20,000 CPM on asphalt.

Area of elevated activity (1m x 3m) up to 18,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (12m x 12m) up to 31,000 CPM.

Area of elevated activity (1m x 2m) up to 20,000 CPM.

Area of elevated activity (<1m x 1m) up to 20,000 CPM.

Area of elevated activity (<1m x 1m) up to 30,000 CPM.

Slag/Soil mixture area. Maximum activity 40,000 CPM using the soil background data.

Area of elevated activity (1m x 6m) up to 24,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM on asphalt.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (<1m x 1m) up to 30,000 CPM.

Area of elevated activity (1m x 10m) up to 20,000 CPM.

Area of elevated activity (1m x 7m) up to 22,000 CPM on soil.

Area of elevated activity (1m x 1m) up to 22,000 CPM on asphalt.

Area of elevated activity (2m x 2m) up to 23,000 CPM on asphalt. Reinvestigation readings up to 40,000 CPM.

Area of elevated activity (1m x 2m) up to 18,000 CPM.

Area of elevated activity (6m x 8m) up to 53,000 CPM in ditch.

Area of elevated activity (0.2m x 0.2m) up to 20,000 CPM. Reinvestigation readings up to 30,000 CPM.

Area of elevated activity (2m x 2m) up to 18,000 CPM on asphalt.

Area of elevated activity (1m x 5m) up to 20,000 CPM.

Area of elevated activity (4m x 6m) up to 32,000 CPM. Reinvestigation readings up to 107,000 CPM.

Slag/Soil mixture area. Maximum activity 20,000 CPM using the soil background data.

Slag/Soil mixture area. Maximum activity 20,000 CPM using the soil background data.

Area of elevated activity (6m x 12m) up to 32,000 CPM on asphalt.

Area of elevated activity (7m x 5m) up to 20,000 CPM. Reinvestigation readings up to 26,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (1m x 1m) up to 18,000 CPM.

Area of elevated activity (6m x 12m) up to 61,000 CPM on concrete.

Area of elevated activity (1m x 1m) up to 18,000 CPM on asphalt.

Area of elevated activity (2m x 4m) up to 48,000 CPM.

Area of elevated activity (1m x 1m) up to 19,000 CPM.

Area of elevated activity (2m x 2m) up to 28,000 CPM.

Area of elevated activity (4m x 2m) up to 34,000 CPM.

Area of elevated activity (1m x 2m) up to 25,000 CPM.

Area of elevated activity (8m x 12m) up to 93,000 CPM.

Area of elevated activity (6m x 6m) up to 80,000 CPM.

South 31 Ditch

Area of elevated activity (1m x 1m) up to 23,000 CPM.

Area of elevated activity (10m x 80m) up to 33,000 CPM.

Area of elevated activity (1m x 1m) up to 20,000 CPM.

Area of elevated activity (2m x 2m) up to 19,000 CPM.

Area of elevated activity (4m x 3m) up to 21,000 CPM.

Area of elevated activity (1m x 1m) up to 14,000 CPM on concrete.

Area of elevated activity (2m x 4m) up to 18,000 CPM on concrete.

Area of elevated activity (1m x 1m) up to 46,000 CPM.

Area of elevated activity (20m x 20m) up to 188,000 CPM. Located in a gravel/soil mixture area.

Area of elevated activity (10m x 45m) up to 20,000 CPM on gravel and asphalt.

Slag/Soil mixture area. Maximum activity 21,000 CPM using the soil background data.

Area of elevated activity (1m x 2m) up to 19,000 CPM on asphalt.

Area of elevated activity (24m x 2m) up to 33,000 CPM near the road.

Niagara Falls Storage Site - Gamma Walkover Survey

Investigation Location	CPM Values on Asphalt	CPM Values on Concrete	CPM Values on Gravel	CPM Values on Soil
Soil	0 - 10500	0 - 5700	0 - 8000	0 - 9000
Soil	10501 - 15750	5701 - 8500	8001 - 12000	9001 - 13000
Soil	15751 - 17500	8501 - 10500	12001 - 14000	13001 - 16000
	17501 - 19500	10501 - 12500	14001 - 16000	16001 - 18000
	19501 - 808345	12501 - 60624	16001 - 187971	18001 - 30000
				30001 - 1000000

GWS Data Sector

Surface Features
- Roads
- Fence
- Tree Line
- Creek/Ditch

- Building
- Concrete Pad
- Debris Pile
- Area of Water > 1"
- Area of Slag/Soil

General Notes:

1) Debris pile 6: inaccessible area due to construction and demolition piles including broken concrete with rebar, asphalt piles, and brush piles.
Debris pile 7: inaccessible area due to construction and demolition piles including broken concrete with rebar, asphalt piles, and brush piles.

New York West State Plane NAD83 Meters

20 0 20 40 Meters

Sector 1 Sector 2 Sector 3 Sector 4 Sector 5 Sector 6

FUSRAP

TETRA TECH, INC.

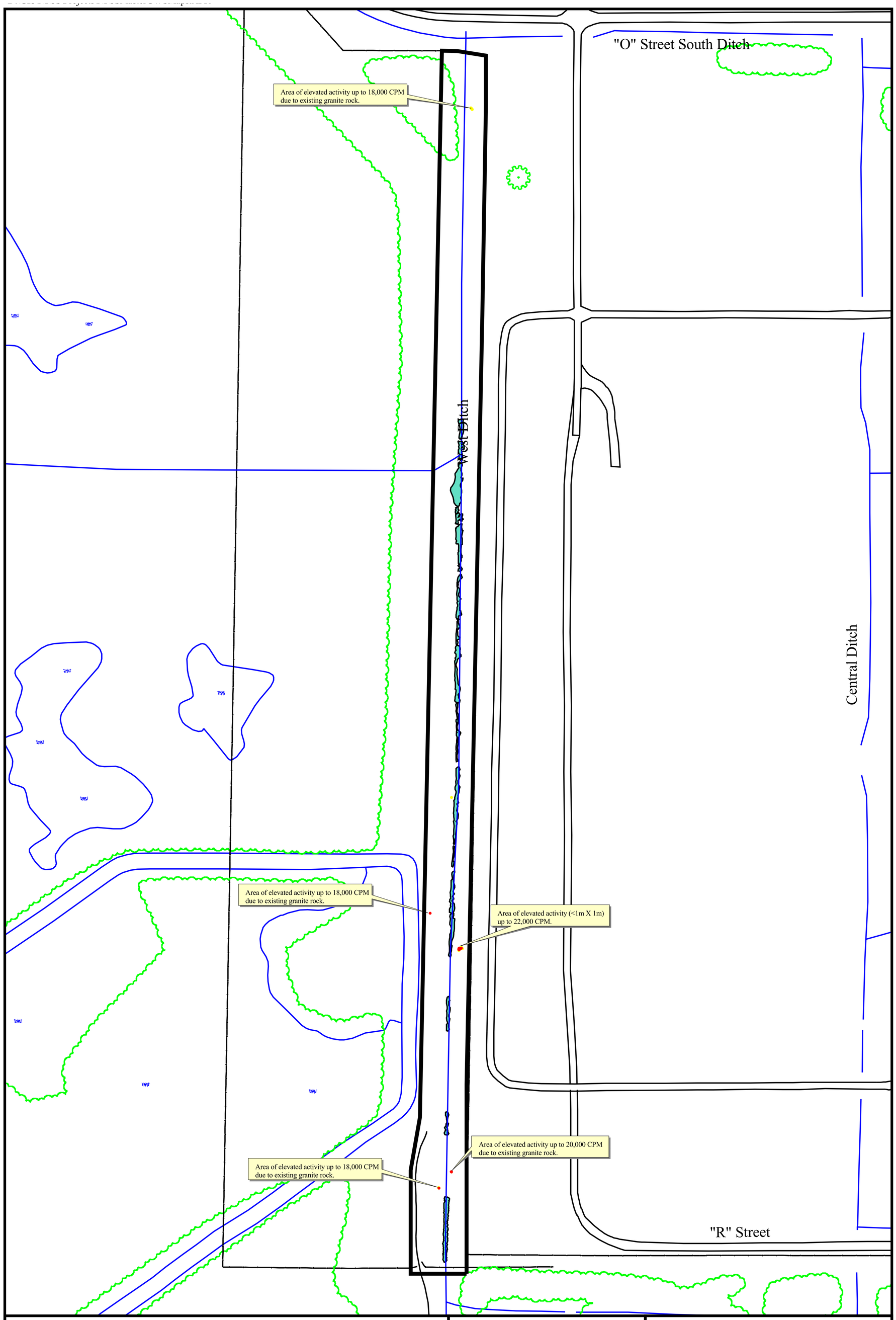
REVISION	DRAWN BY:	CHECKED BY:	DATE
0	S. Kitchings	Doug Haas	10/12/2001
1	DWC	TL	10/30/2005

Niagara Falls Storage Site
Gamma Walkover Survey
Elevated Areas in Sector 5
Lewiston, New York

Figure 3-5

Source: SAIC 2003

D:\GIS\NFSS\Projects\NFSSMasterGWSMaps.APR


"O" Street South Ditch
Area of elevated activity up to 18,000 CPM due to existing granite rock.
West Ditch
Central Ditch
Area of elevated activity up to 18,000 CPM due to existing granite rock.
Area of elevated activity (<1m X 1m) up to 22,000 CPM.
Area of elevated activity up to 18,000 CPM due to existing granite rock.
Area of elevated activity up to 20,000 CPM due to existing granite rock.
"R" Street
Niagara Falls Storage Site - Gamma Walkover Survey in Sector 6
Investigation Location
Soil
Soil
Soil
CPM Values on Soil
0 - 9000
9001 - 13000
13001 - 16000
16001 - 18000
18001 - 30000
> 30001
Surface Features
GWS Data Sector
Area of Water > 1"
Building
Concrete Pads
Surface Features
Roads
Fence
Tree Lines
Creek/Ditch
New York West State Plane NAD83 Meters
20 0 20 40 Meters
N
Figure 3-6
Source: SAIC 2003
FUSRAP
Niagara Falls Storage Site
Gamma Walkover Survey
Elevated Areas in Sector 6
Lewiston, New York
REVISION | DRAWN BY: | CHKD. BY: | DATE:
0 | S. Kitchings | Doug Haas | 11/01/01
1 | DWC | TL | 10/30/2005
TETRA TECH, INC.

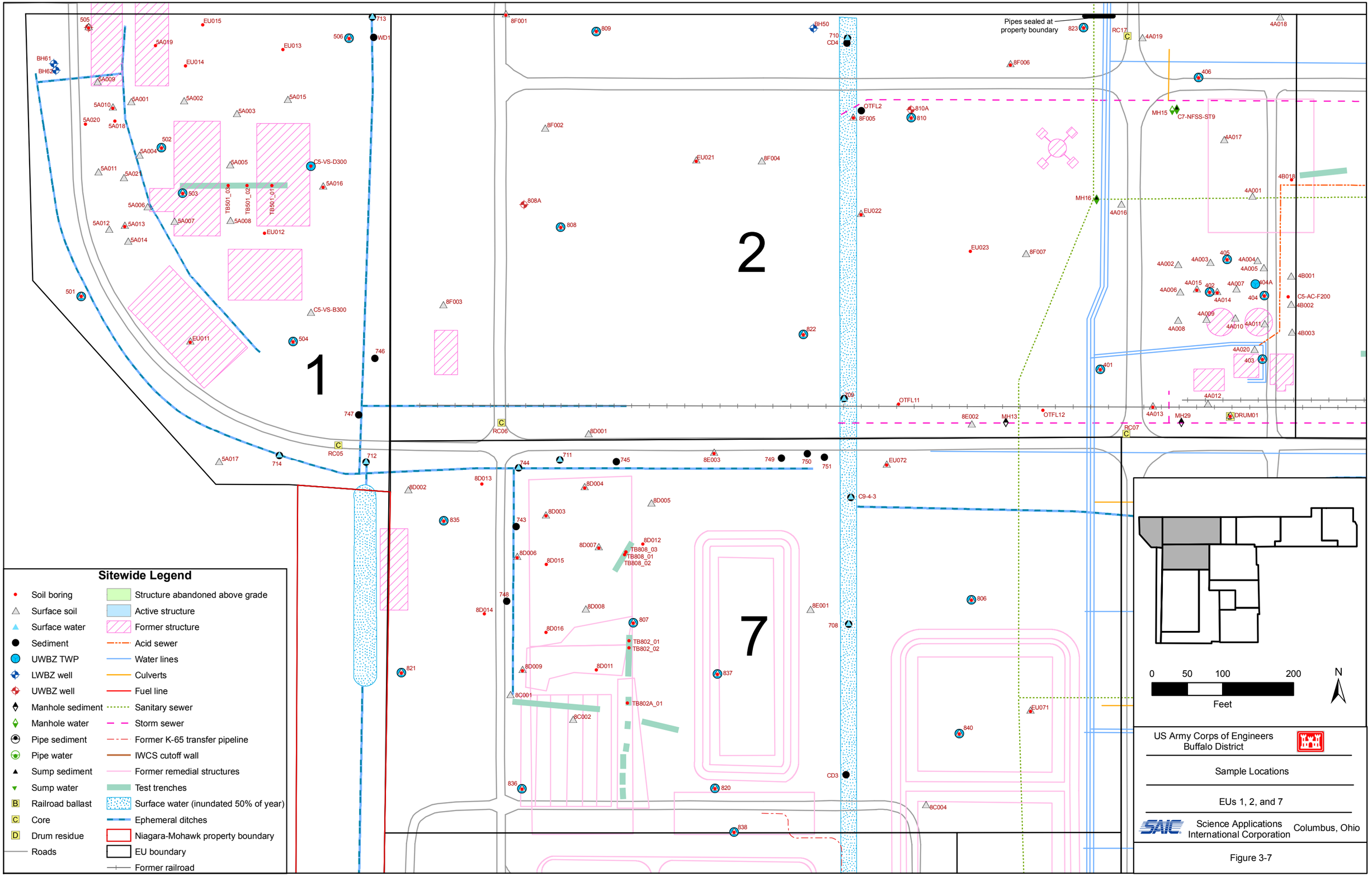

1
2
7
Pipes sealed at property boundary
Sitewide Legend
Soil boring
Surface soil
Surface water
Sediment
UWBZ TWP
LWBZ well
UWBZ well
Manhole sediment
Manhole water
Pipe sediment
Pipe water
Sump sediment
Sump water
Railroad ballast
Core
Drum residue
Roads
Structure abandoned above grade
Active structure
Former structure
Acid sewer
Water lines
Culverts
Fuel line
Sanitary sewer
Storm sewer
Former K-65 transfer pipeline
IWCS cutoff wall
Former remedial structures
Test trenches
Surface water (inundated 50% of year)
Ephemeral ditches
Niagara-Mohawk property boundary
EU boundary
Former railroad
0
50
100
200
Feet
N
US Army Corps of Engineers
Buffalo District
Sample Locations
EUs 1, 2, and 7
Science Applications International Corporation
Columbus, Ohio

Figure 3-7

Pipes sealed at property boundary

3

4

Sitewide Legend

- Soil boring
- Surface soil
- Surface water
- Sediment
- UWBZ TWP
- LWBZ well
- UWBZ well
- Manhole sediment
- Manhole water
- Pipe sediment
- Pipe water
- Sump sediment
- Sump water
- Railroad ballast
- Core
- Drum residue
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Test trenches
- Structure abandoned above grade
- Active structure
- Former structure
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Former remedial structures
- Roads
- Former railroad
- EU boundary

0 40 80 160 N

Feet

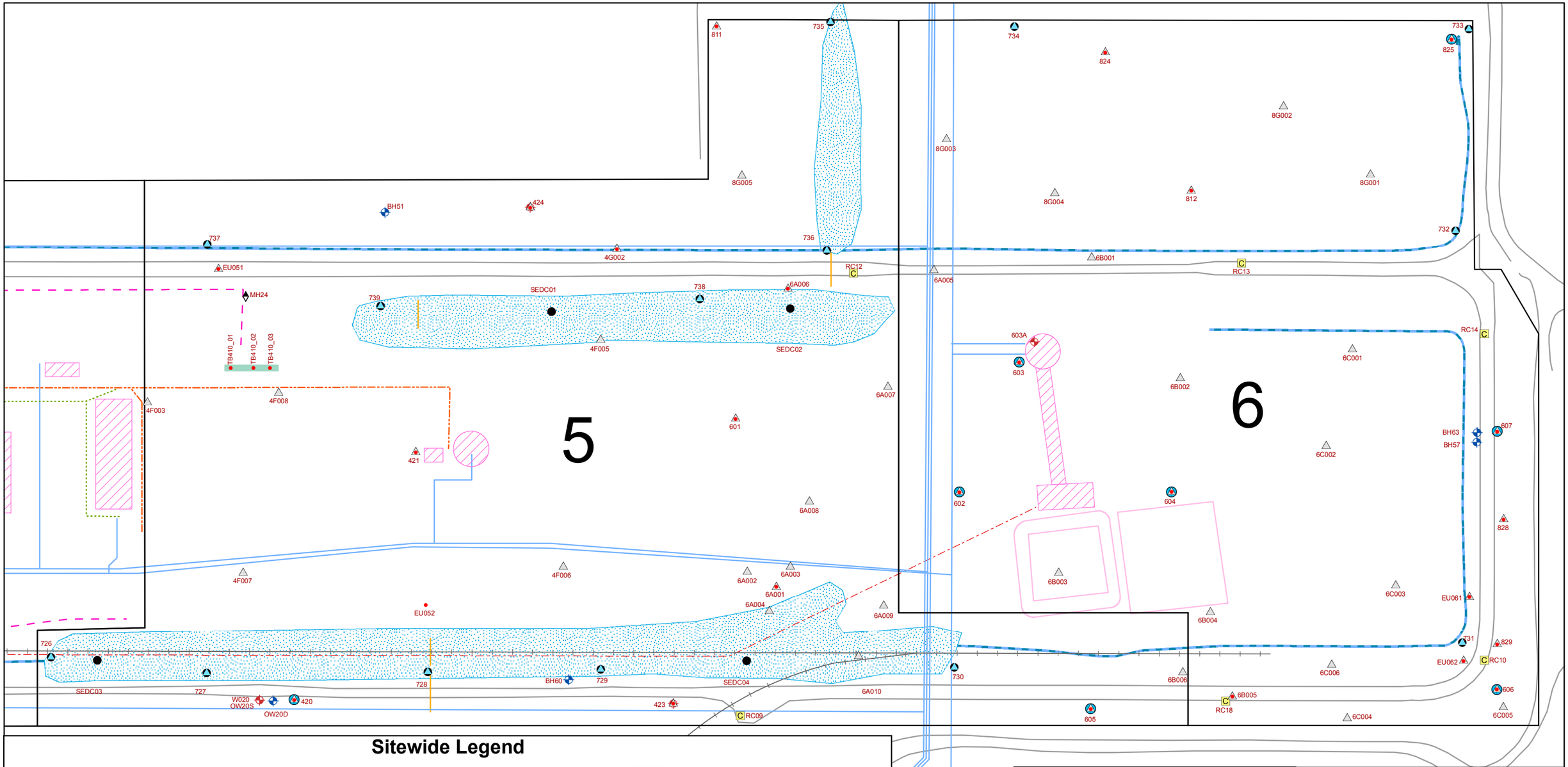
US Army Corps of Engineers
Buffalo District

Sample Locations

EUs 3 and 4

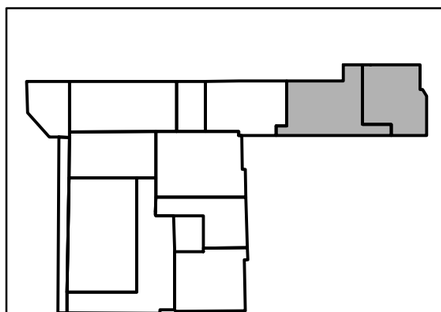
Science Applications International Corporation — Columbus, Ohio

Figure 3-8



Sitewide Legend

- Soil boring
- Surface soil
- Surface water
- Sediment
- UWBZ TWP
- LWBZ well
- UWBZ well
- Manhole sediment
- Manhole water
- Pipe sediment
- Pipe water
- Sump sediment
- Sump water
- Railroad ballast
- Core
- Drum residue
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Test trenches
- Structure abandoned above grade
- Active structure
- Former structure
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Former remedial structures
- Roads
- Former railroad
- EU boundary



0 60 120 240 Feet

N

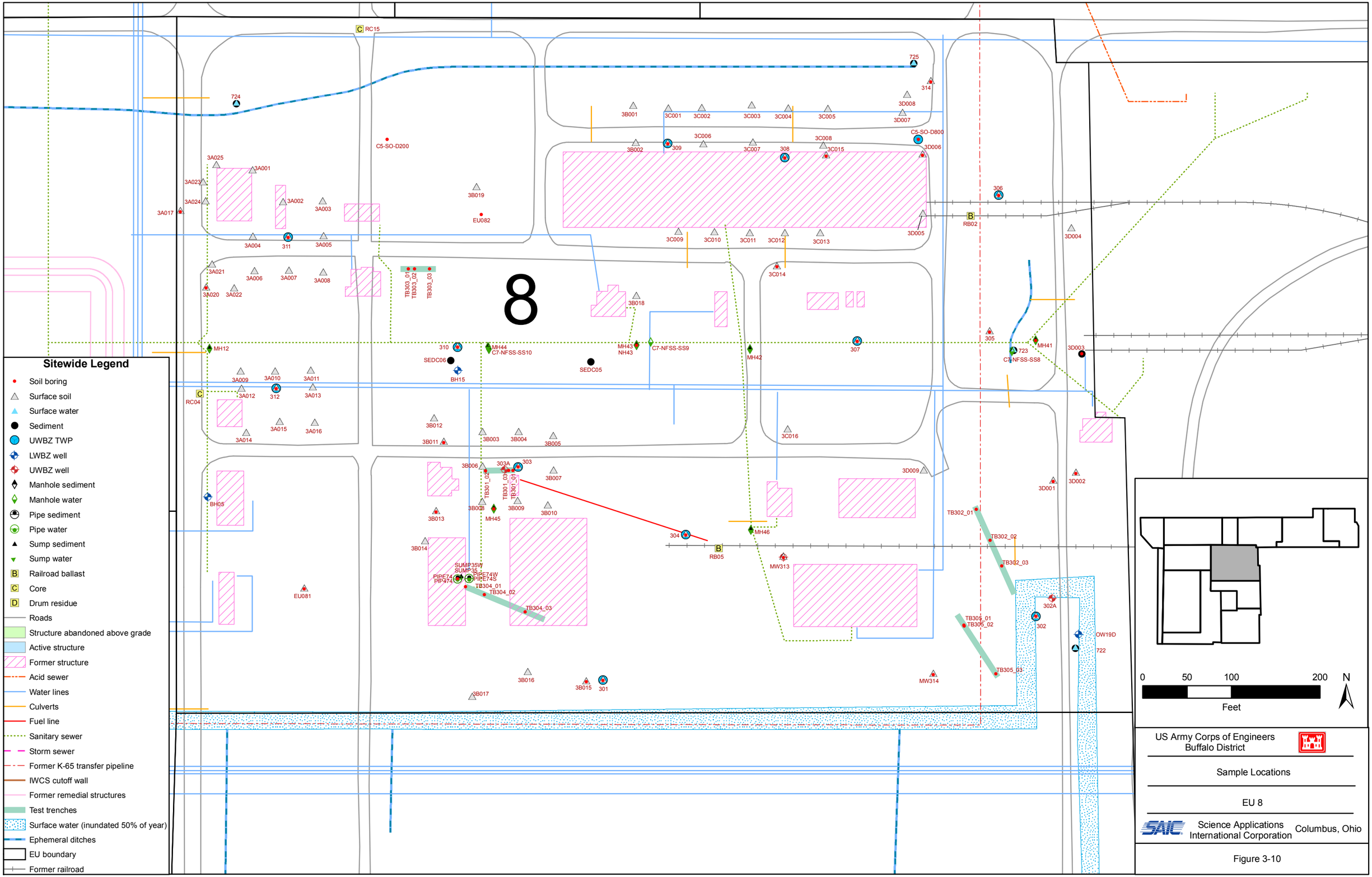
US Army Corps of Engineers
Buffalo District

Sample Locations

EUs 5 and 6

Science Applications International Corporation — Columbus, Ohio

Figure 3-9



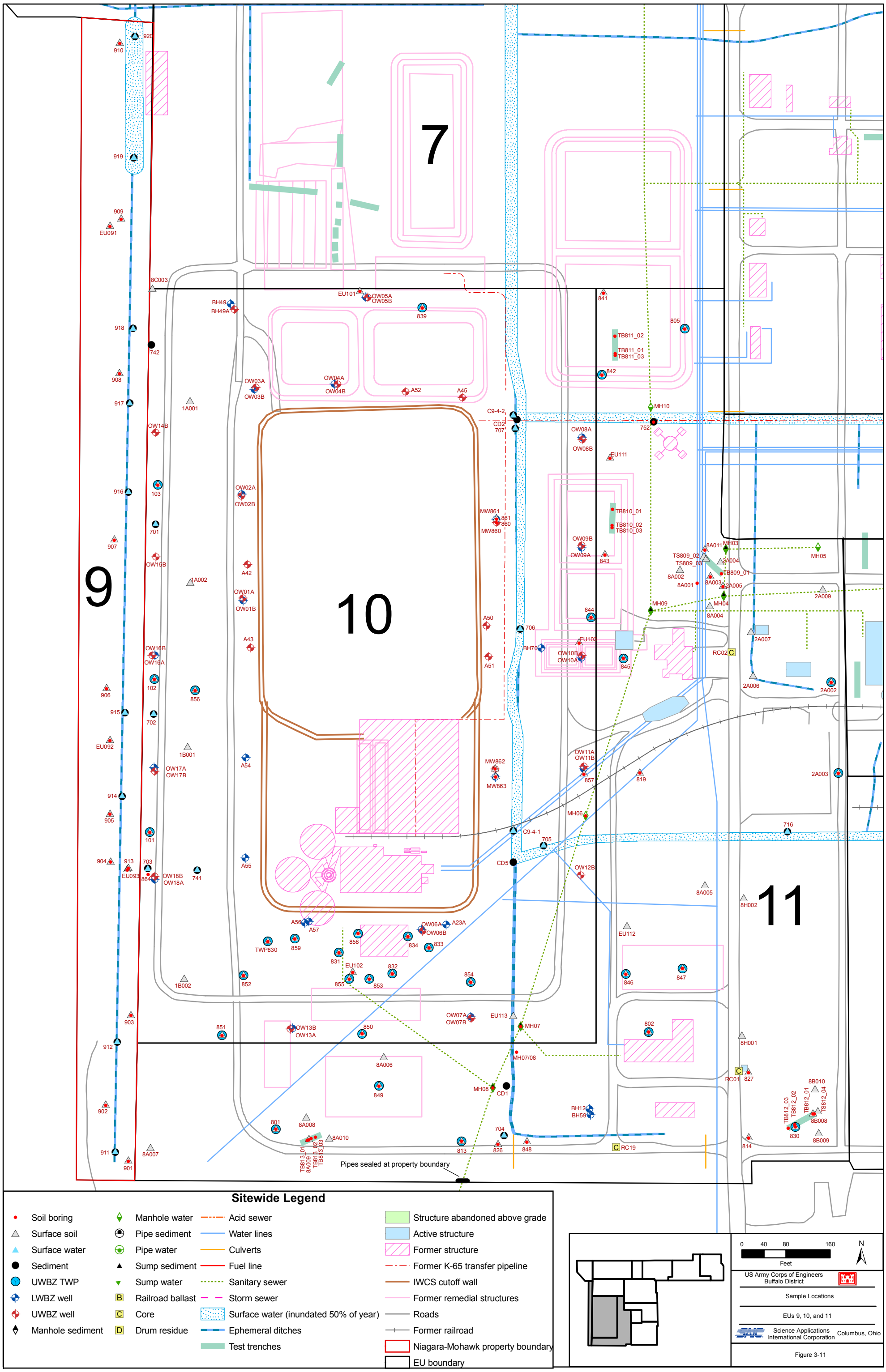
US Army Corps of Engineers
Buffalo District

Sample Locations

EU 8

SAIC Science Applications International Corporation Columbus, Ohio

Figure 3-10



Sitewide Legend

- Soil boring
- Surface soil
- Surface water
- Sediment
- UWBZ TWP
- LWBZ well
- UWBZ well
- Manhole sediment
- Manhole water
- Pipe sediment
- Pipe water
- Sump sediment
- Sump water
- Railroad ballast
- Core
- Drum residue
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Test trenches
- Structure abandoned above grade
- Active structure
- Former structure
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Former remedial structures
- Roads
- Former railroad
- Niagara-Mohawk property boundary
- EU boundary

0 40 80 160 Feet

N

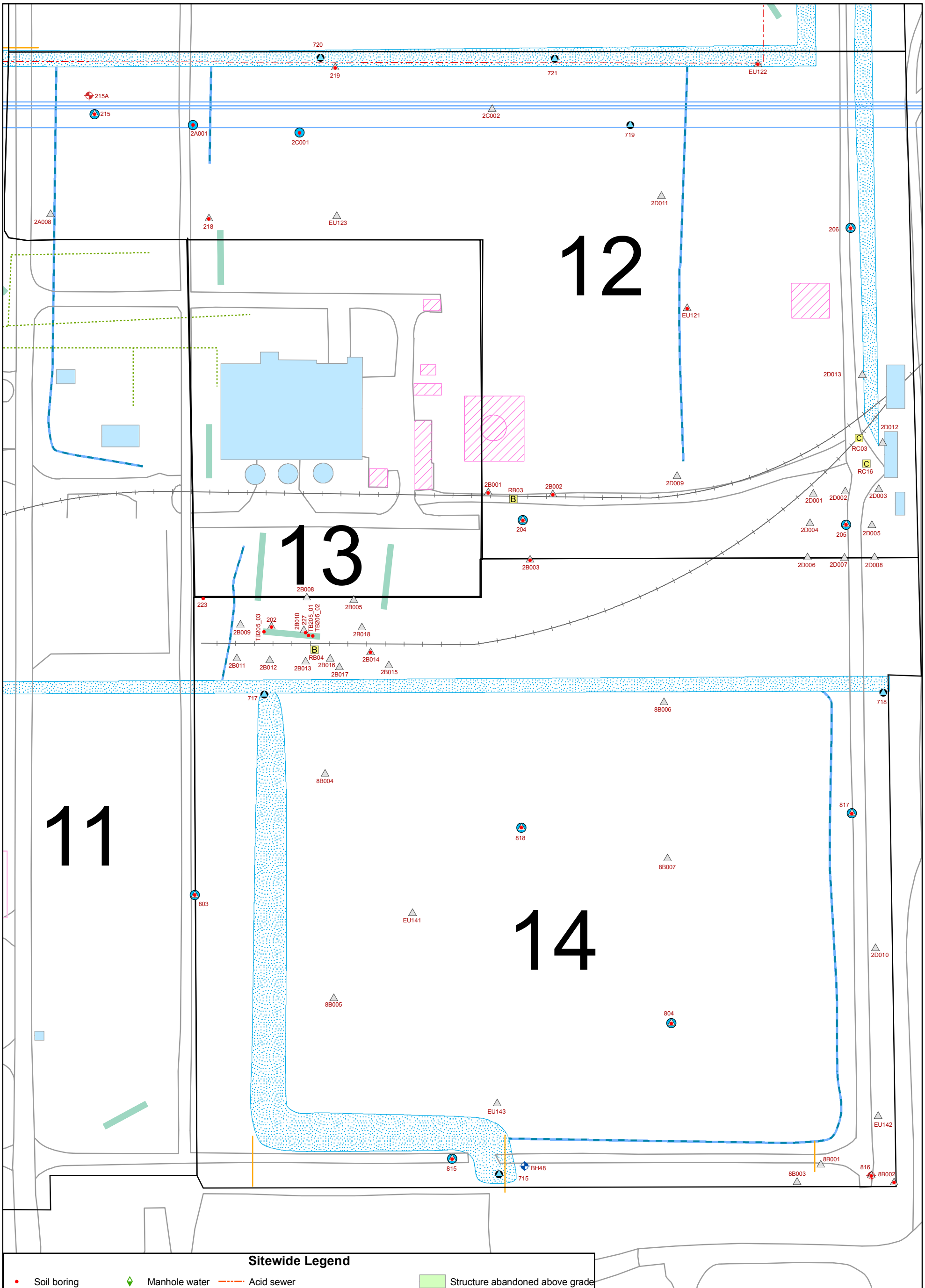
US Army Corps of Engineers
Buffalo District

Sample Locations

EUs 9, 10, and 11

SAIC Science Applications International Corporation Columbus, Ohio

Figure 3-11



Sitewide Legend

- Soil boring
- Surface soil
- Surface water
- Sediment
- UWBZ TWP
- LWBZ well
- UWBZ well
- Manhole sediment
- Manhole water
- Pipe sediment
- Pipe water
- Sump sediment
- Sump water
- B Railroad ballast
- C Core
- D Drum residue
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Test trenches
- Structure abandoned above grade
- Active structure
- Former structure
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Former remedial structures
- Roads
- Former railroad
- EU boundary

0 30 60 120 Feet

N

US Army Corps of Engineers
Buffalo District

Sample Locations

EUs 12 and 14

Science Applications International Corporation Columbus, Ohio

Figure 3-12

TB203_01
TS203_03
213
213A
214
212
TB203_02
210
220
MH01
211
209
221A
216
CORE02
CORE03
Drain02
CORE07
CORE08
Drain07
CORE04
Drain11
Drain01
CORE06
Drain03
Drain06
CORE01
CORE05
Drain12
Drain14
Drain05
Drain04
Drain08
EU131
Drain09
CORE09
CORE10
TB201_03
TB201_02
TB201_04
Drain13
Drain10
207
TB201_01
217
208
221
222
226
EU132
225
201A
203A
MH02
EU133
201
203
13
TB202_02
224
TB202_01
TB204_01
TB204_02
TB202_03
2B004
2B006
2B007
MW229
MW228
TB204_03

Sitewide Legend

- Soil boring
- Surface soil
- Surface water
- Sediment
- UWBZ TWP
- LWBZ well
- UWBZ well
- Manhole sediment
- Manhole water
- Pipe sediment
- Pipe water
- Sump sediment
- Sump water
- Railroad ballast
- Core
- Drum residue
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Test trenches
- Structure abandoned above grade
- Active structure
- Former structure
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Former remedial structures
- Roads
- Former railroad
- EU boundary

0 10 20 40 Feet

N

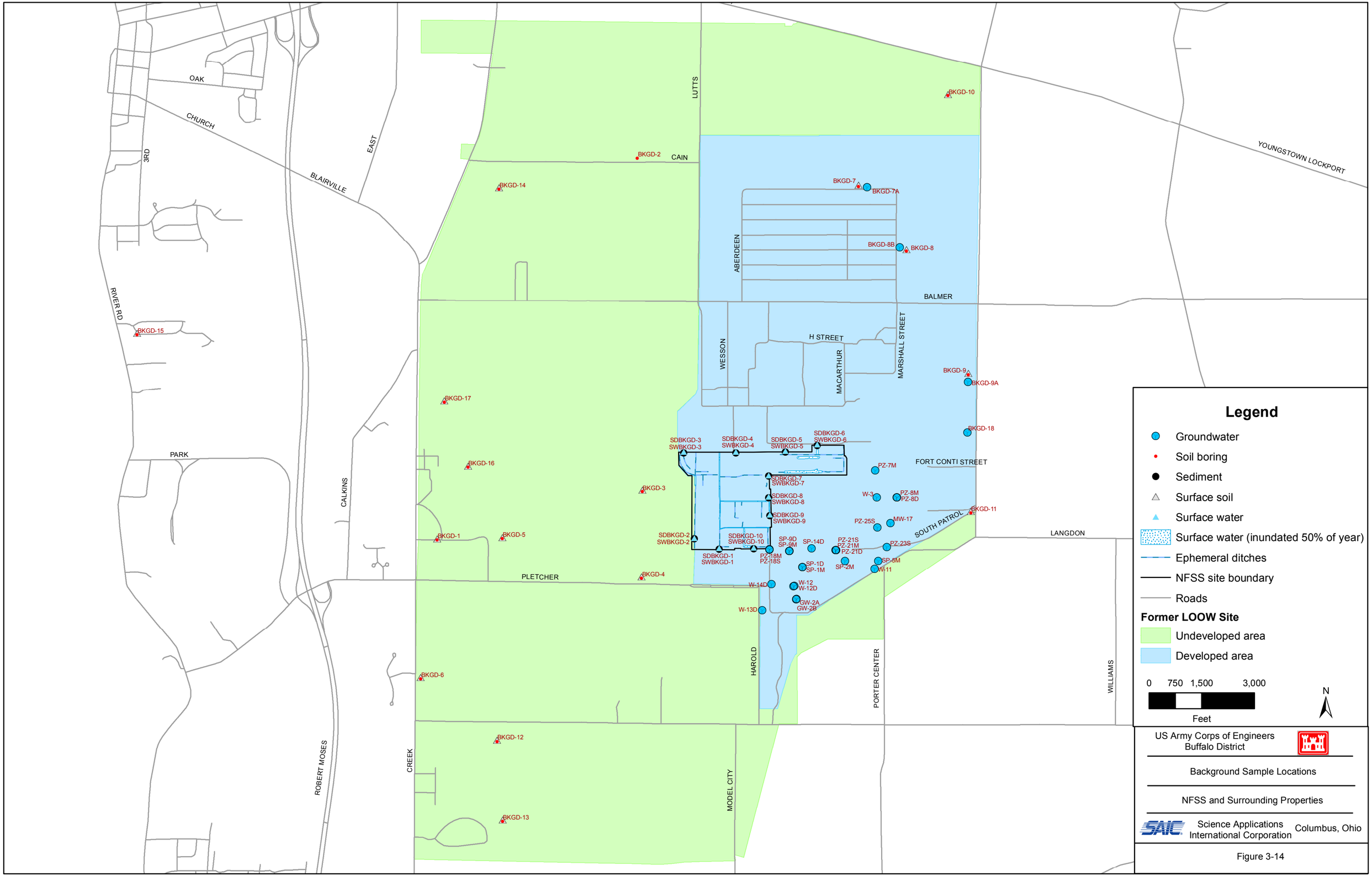
US Army Corps of Engineers
Buffalo District

Sample Locations

EU 13

SAIC Science Applications International Corporation Columbus, Ohio

Figure 3-13



Legend

- Groundwater
- Soil boring
- Sediment
- Surface soil
- Surface water
- Surface water (inundated 50% of year)
- Ephemeral ditches
- NFSS site boundary
- Roads

Former LOOW Site

- Undeveloped area
- Developed area

0 750 1,500 3,000

Feet

N

US Army Corps of Engineers
Buffalo District

Background Sample Locations

NFSS and Surrounding Properties

SAIC Science Applications International Corporation Columbus, Ohio

Figure 3-14

Pipes sealed at property boundary

1 2 3 4 5 6 7 8 9 10 11 12 13 14

TB501_03 TB501_02 TB501_01
TB412_03 TB412_02 TB412_01
TB411_01 TB411_02 TB411_03
TB404_01 TB404_02 TB404_03
TB406_03 TB406_02 TB406_01
TB408_02 TB408_03 TB408_04
TB410_01 TB410_02 TB410_03
TB403_01 TB403_02 TB403_03
TB414_01 TB414_02 TB414_03
TB413_01 TB413_02 TB413_03
TB808_03 TB808_01 TB808_02
TB802_01 TB802_02
TB802A_01
TB303_01 TB303_02 TB303_03
TB301_02 TB301_03 TB301_01
TB811_02 TB811_01 TB811_03
TB304_01 TB304_02 TB304_03
TB302_01 TB302_02 TB302_03
TB305_01 TB305_02 TB305_03
TB810_01 TB810_02 TB810_03
TS809_02 TS809_03 TB809_01
TB203_01 TS203_03 TB203_02
TB201_03 TB201_02 TB201_04 TB201_01
TB202_02 TB202_01 TB202_03
TB204_01 TB204_02 TB204_03
TB205_03 TB205_01 TB205_02
TB813_01 TB813_02 TB813_03
TS812_04 TB812_01 TB812_02 TB812_03

Legend

- Test trenches
- Soil boring
- Surface soil
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- Surface water (inundated 50% of year)
- Ephemeral ditches
- IWCS cutoff wall
- Former remedial structures
- Roads
- Former railroad
- Niagara-Mohawk property boundary
- EU boundary

0 120 240 480 Feet

N

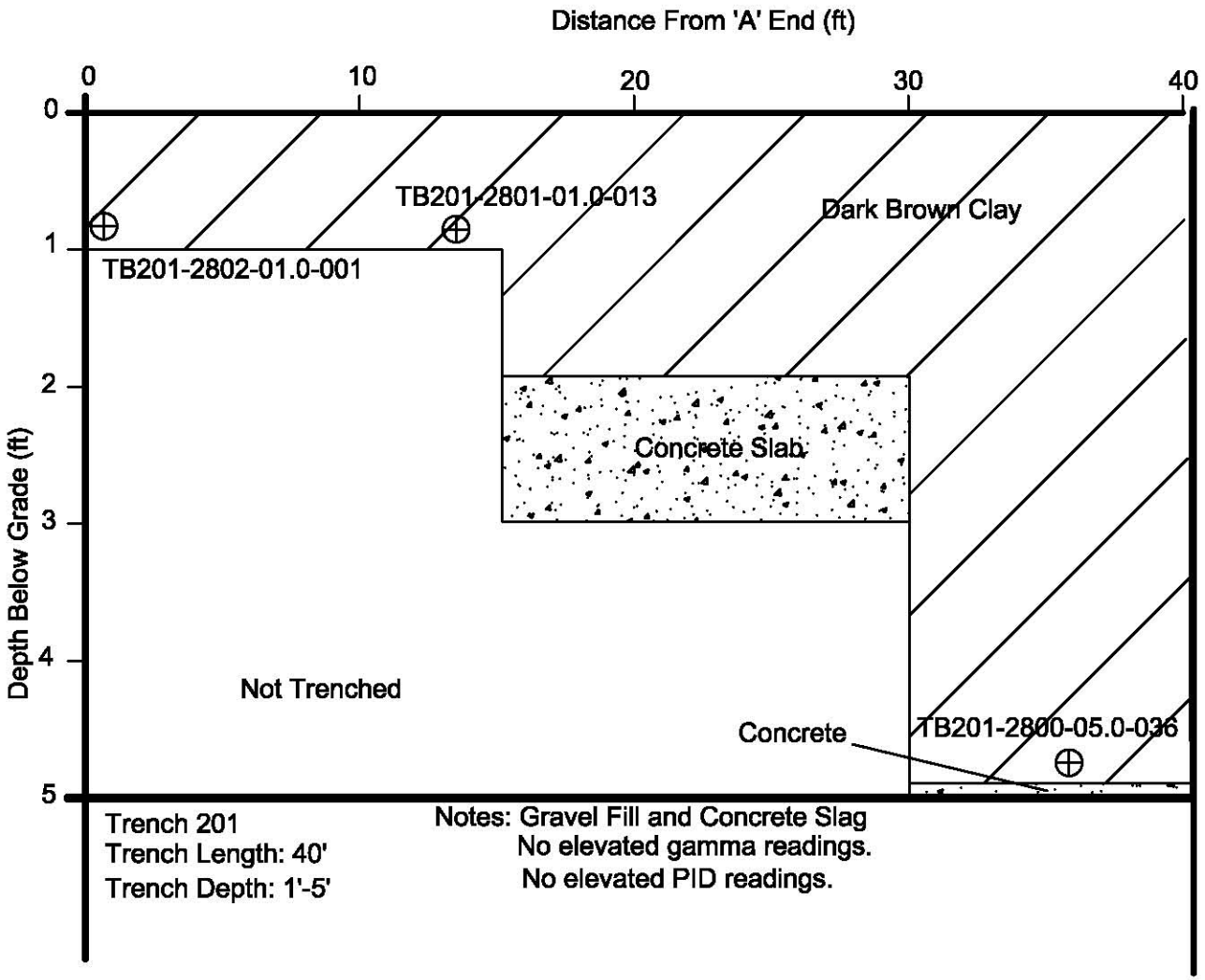
US Army Corps of Engineers
Buffalo District

Test Trench Sample Locations

Sitewide

Science Applications International Corporation
Columbus, Ohio

Figure 3-15

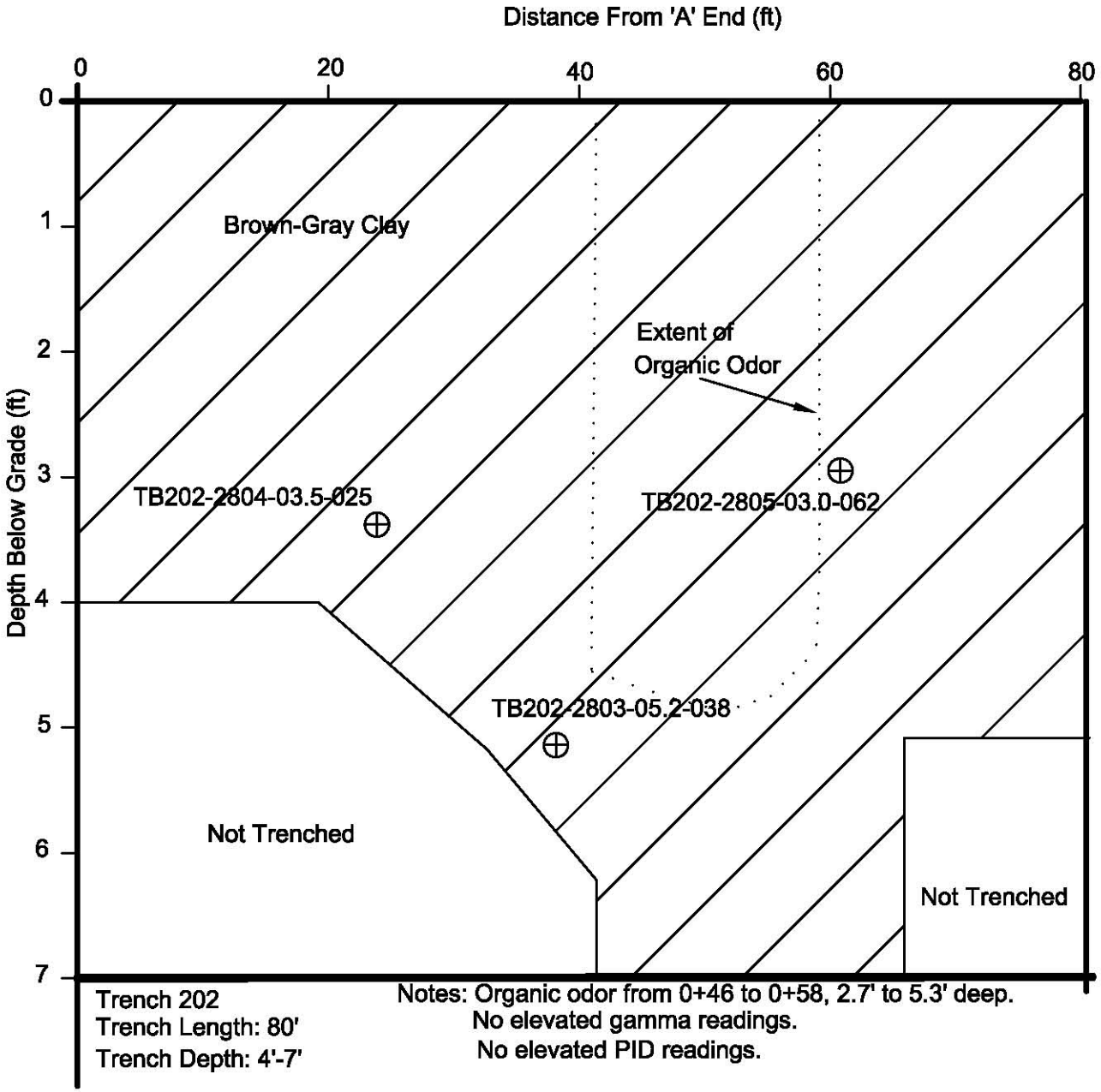


TRENCH 201

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-16
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS

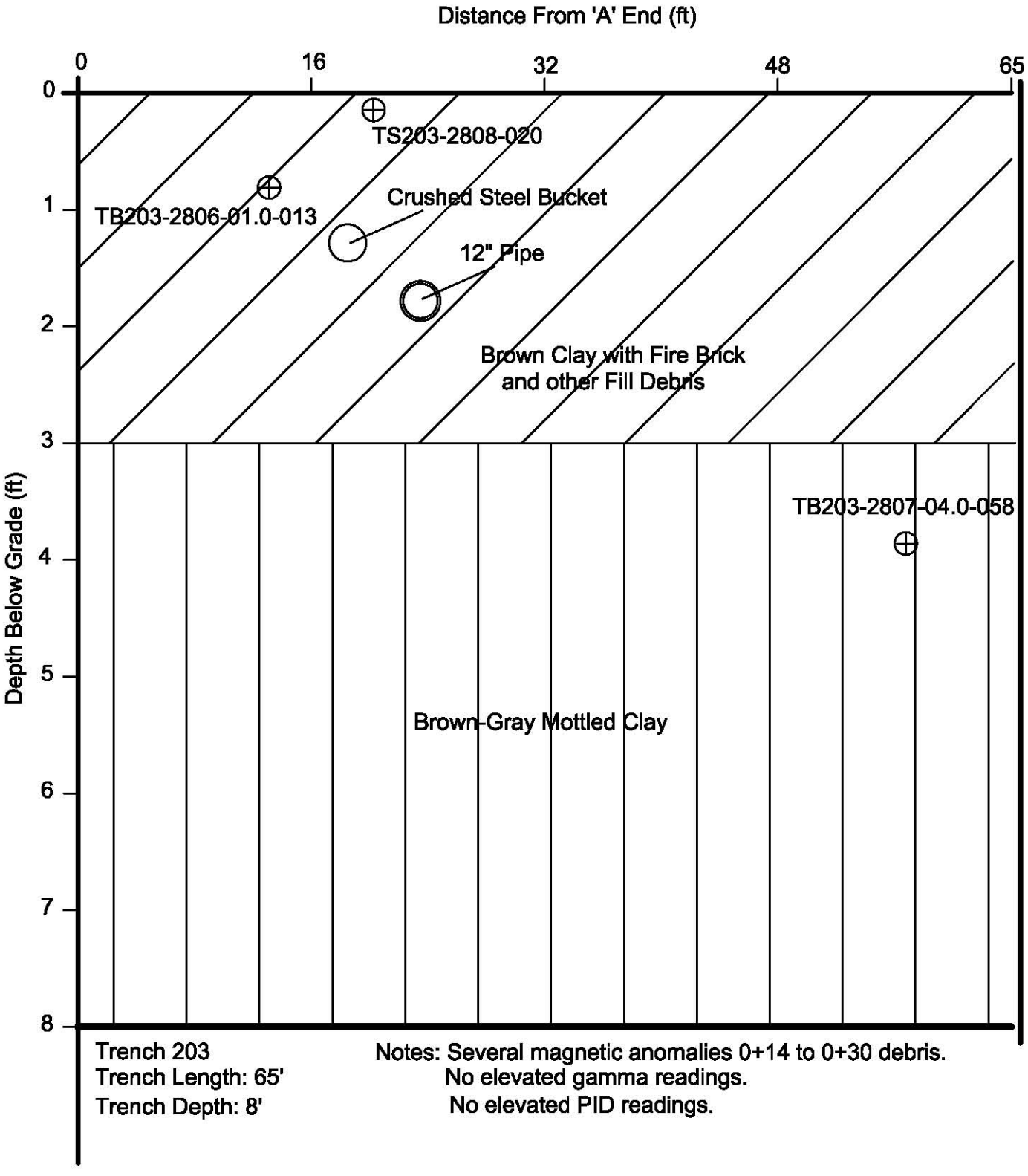


TRENCH 202

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3–17
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS

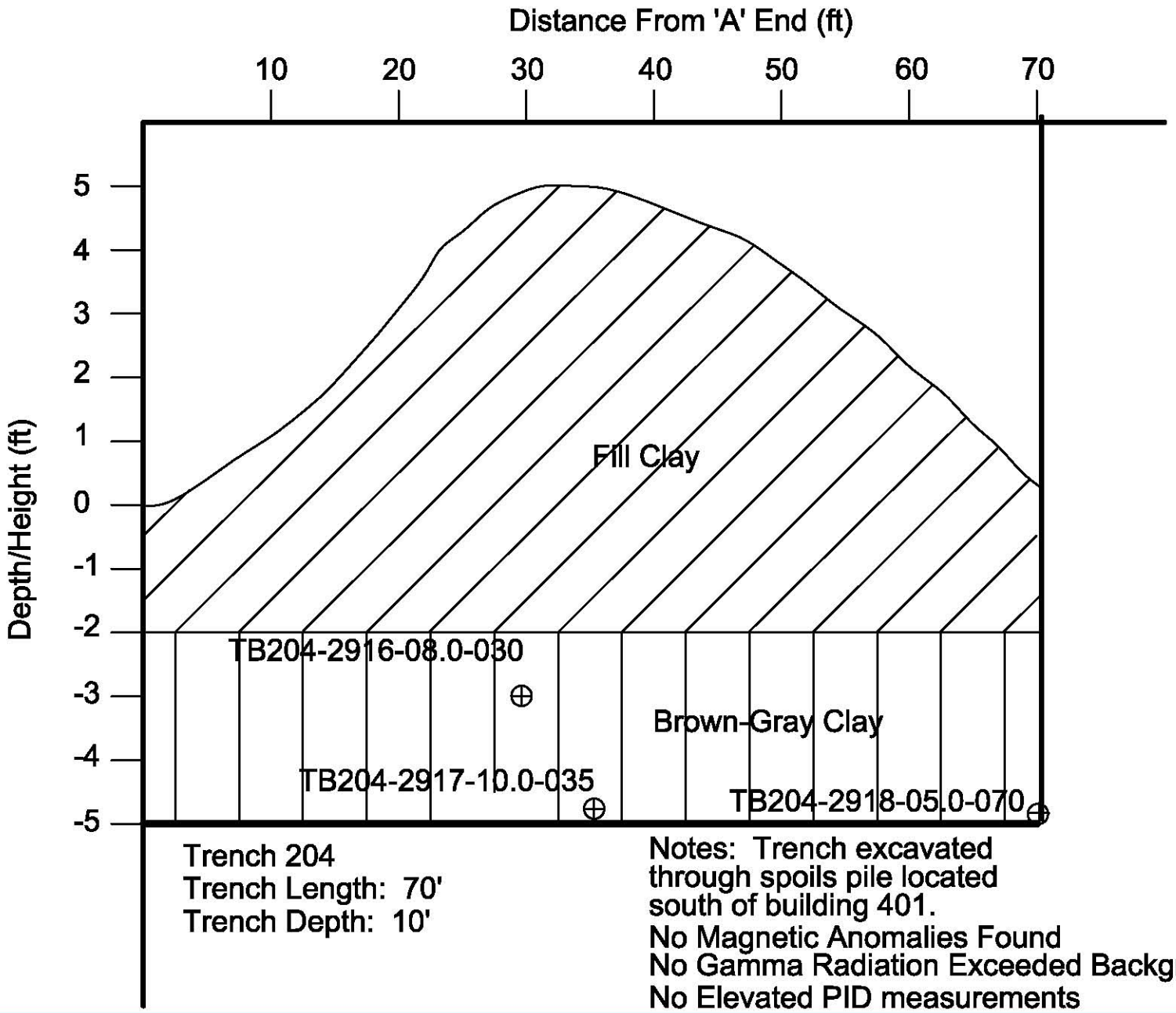


TRENCH 203

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-18
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY:

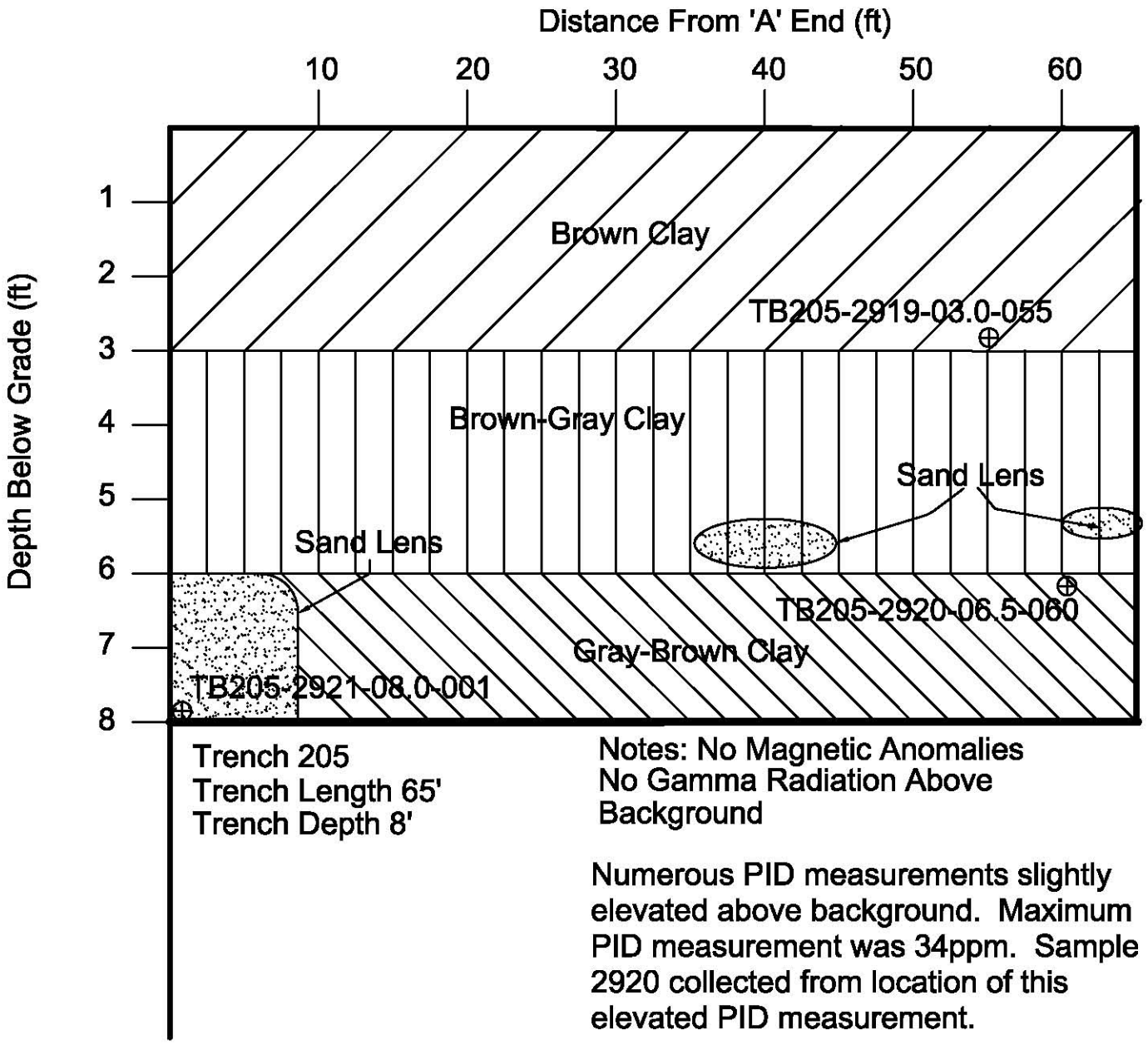


TRENCH 204

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-19
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 205
Trench Length 65'
Trench Depth 8'

Notes: No Magnetic Anomalies
No Gamma Radiation Above Background

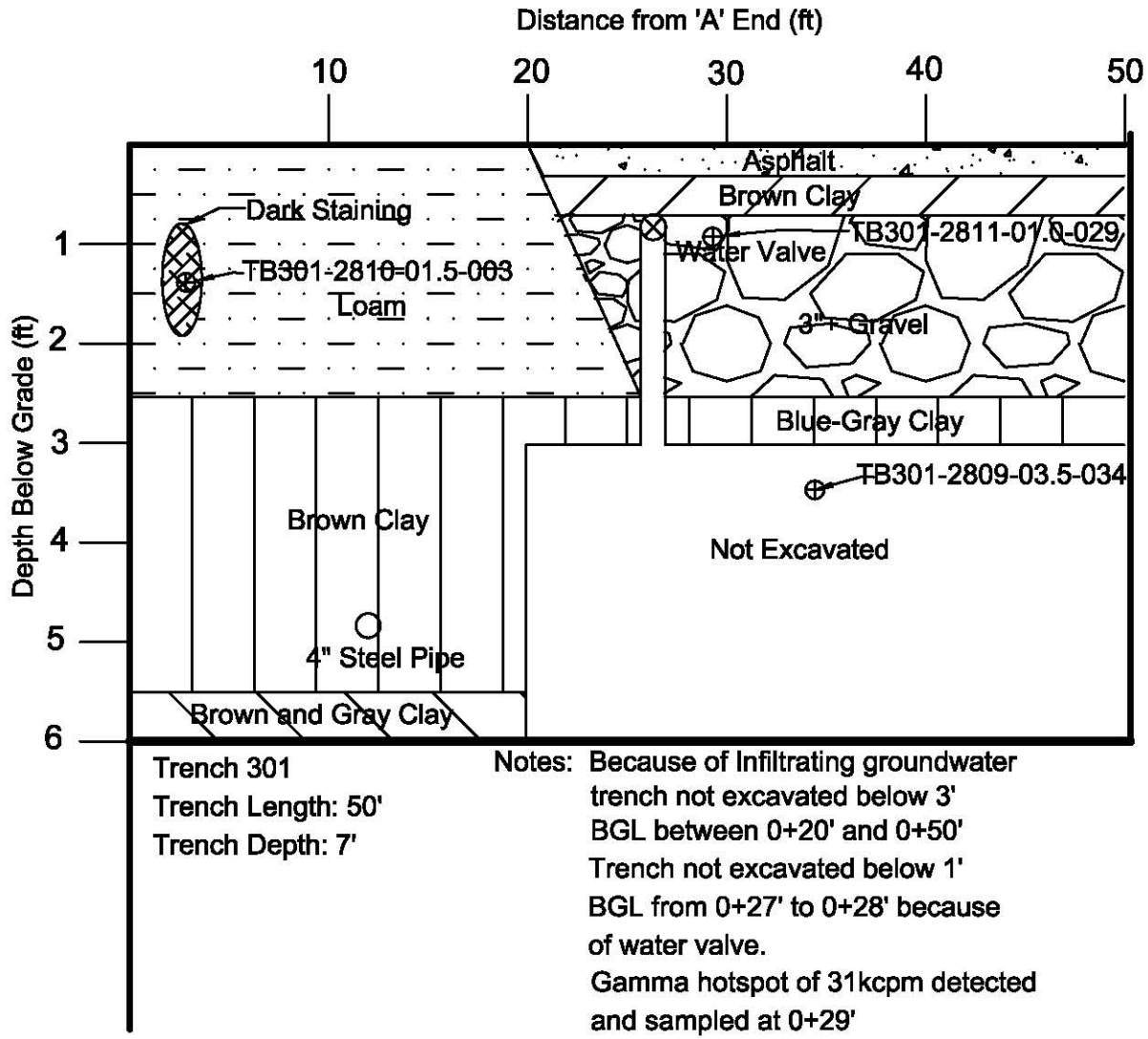
Numerous PID measurements slightly elevated above background. Maximum PID measurement was 34ppm. Sample 2920 collected from location of this elevated PID measurement.

TRENCH 205

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-20
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 301
Trench Length: 50'
Trench Depth: 7'

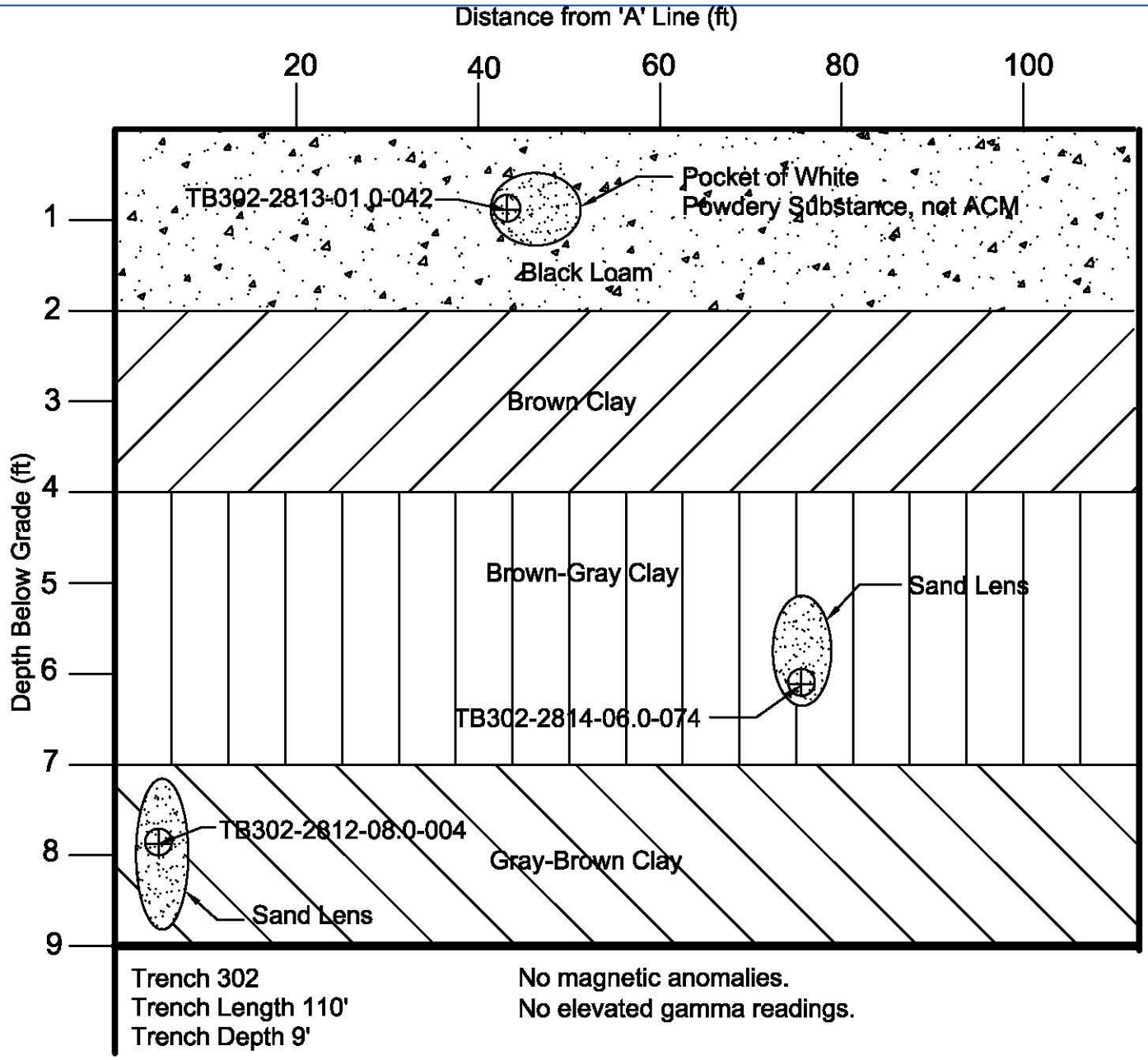
Notes: Because of Infiltrating groundwater trench not excavated below 3' BGL between 0+20' and 0+50'
Trench not excavated below 1' BGL from 0+27' to 0+28' because of water valve.
Gamma hotspot of 31kcpm detected and sampled at 0+29'
No elevated PID measurements
Magnetic anomalies detected between 0+00' and 0+20'. Attributed to steel pipe and rebar.

TRENCH 301

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-21
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS

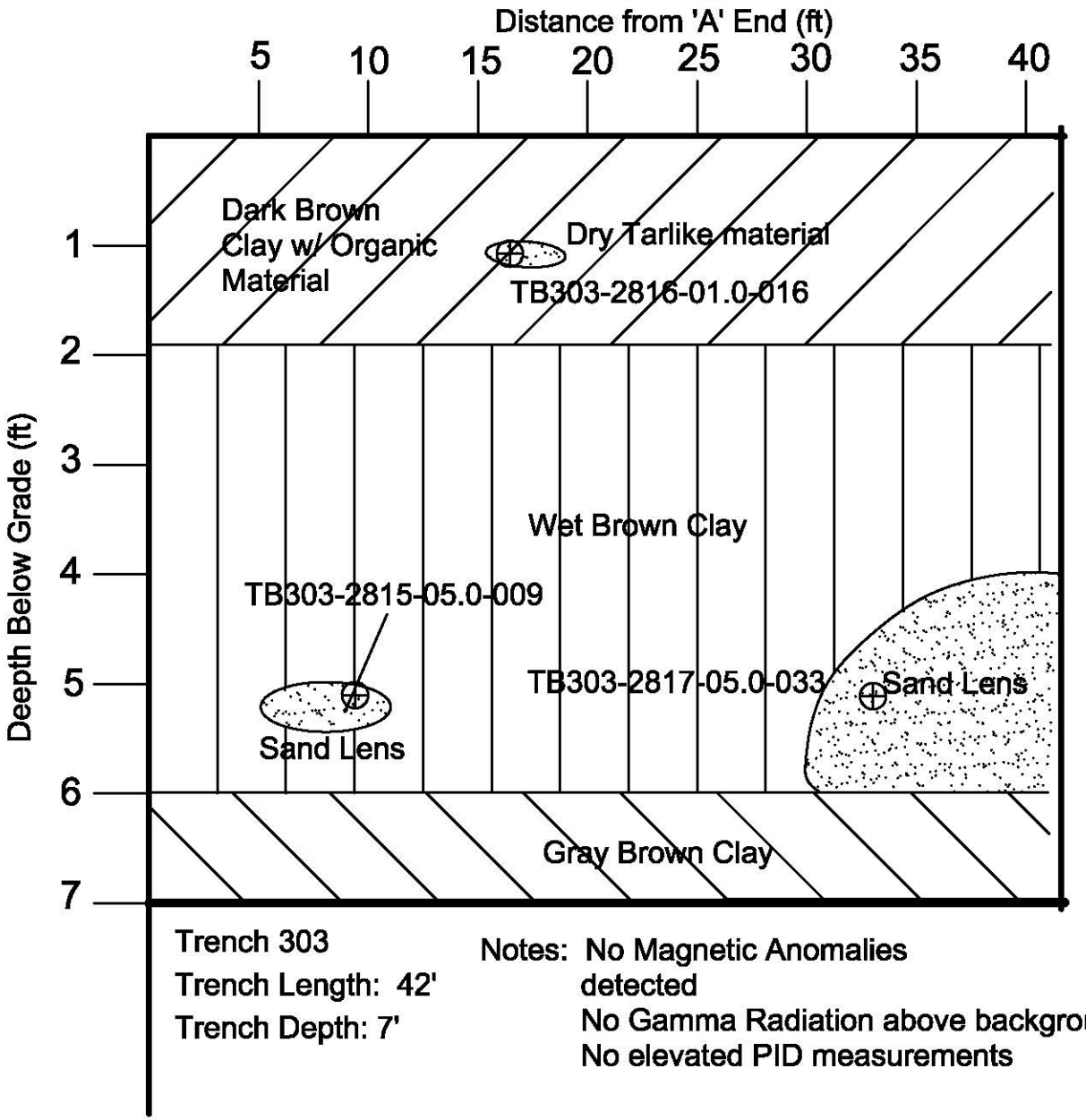


TRENCH 302

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-22
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 303
Trench Length: 42'
Trench Depth: 7'

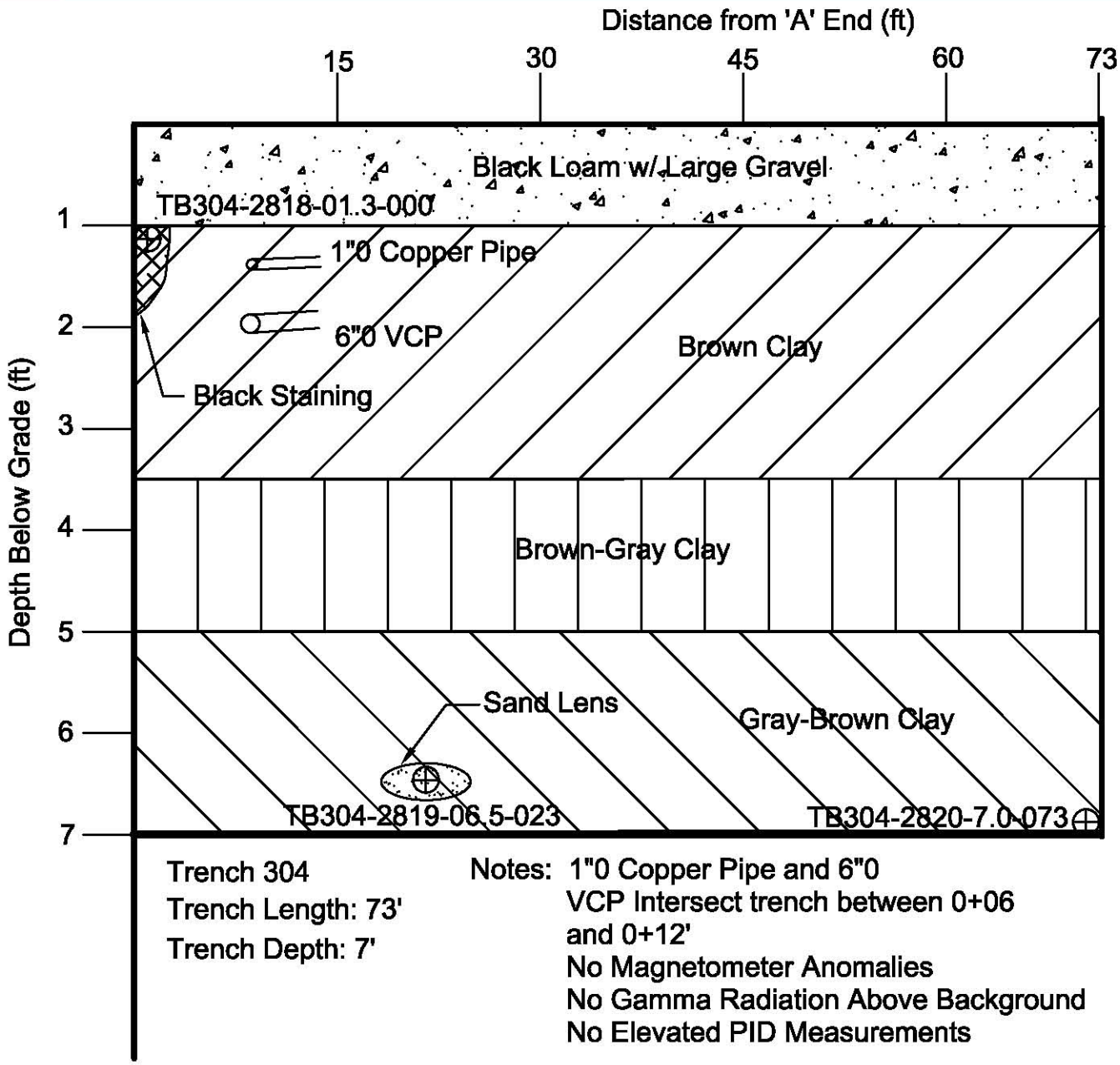
Notes: No Magnetic Anomalies detected
No Gamma Radiation above background
No elevated PID measurements

TRENCH 303

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-23
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 304
Trench Length: 73'
Trench Depth: 7'

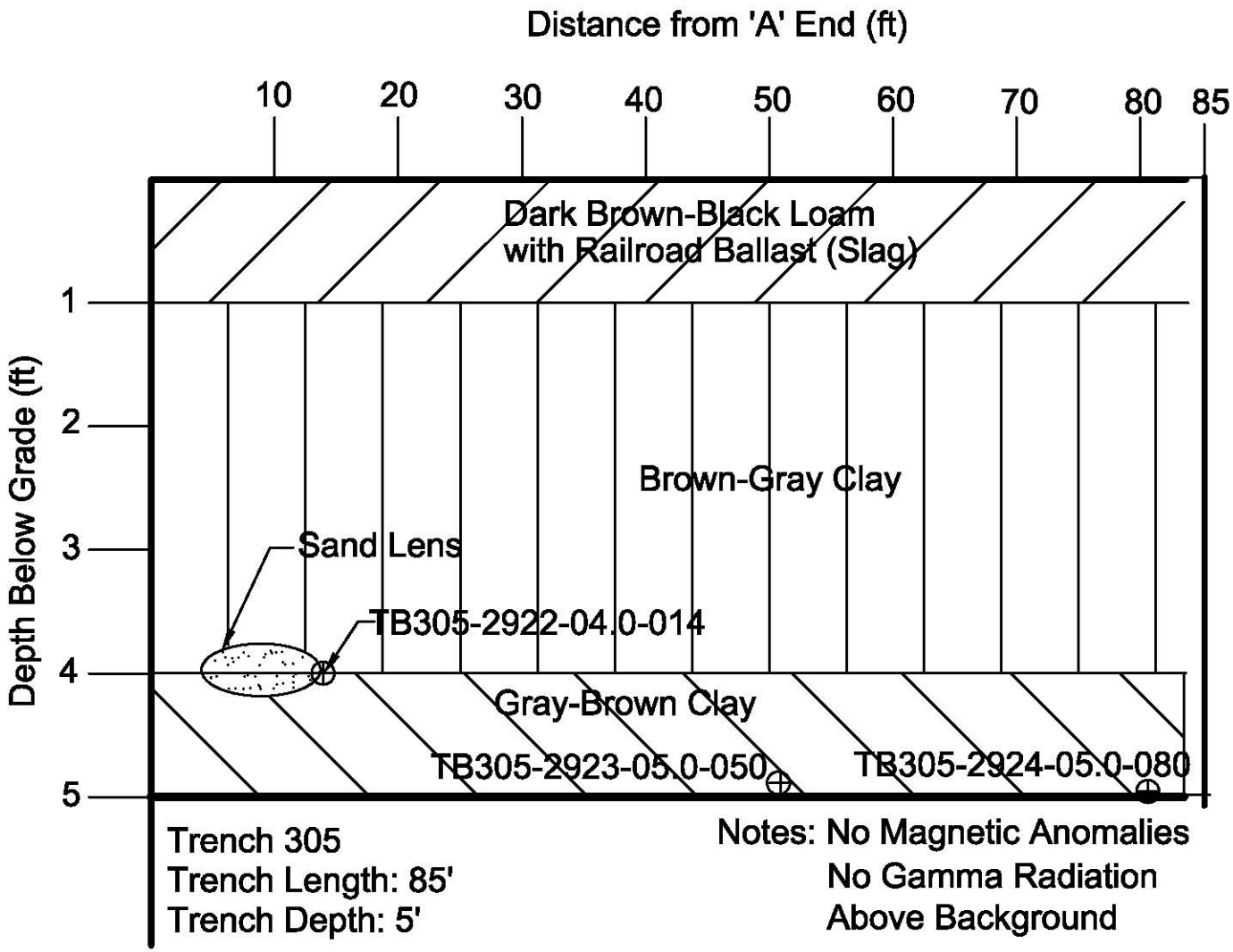
Notes: 1"0 Copper Pipe and 6"0 VCP Intersect trench between 0+06 and 0+12'
No Magnetometer Anomalies
No Gamma Radiation Above Background
No Elevated PID Measurements

TRENCH 304

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-24
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS

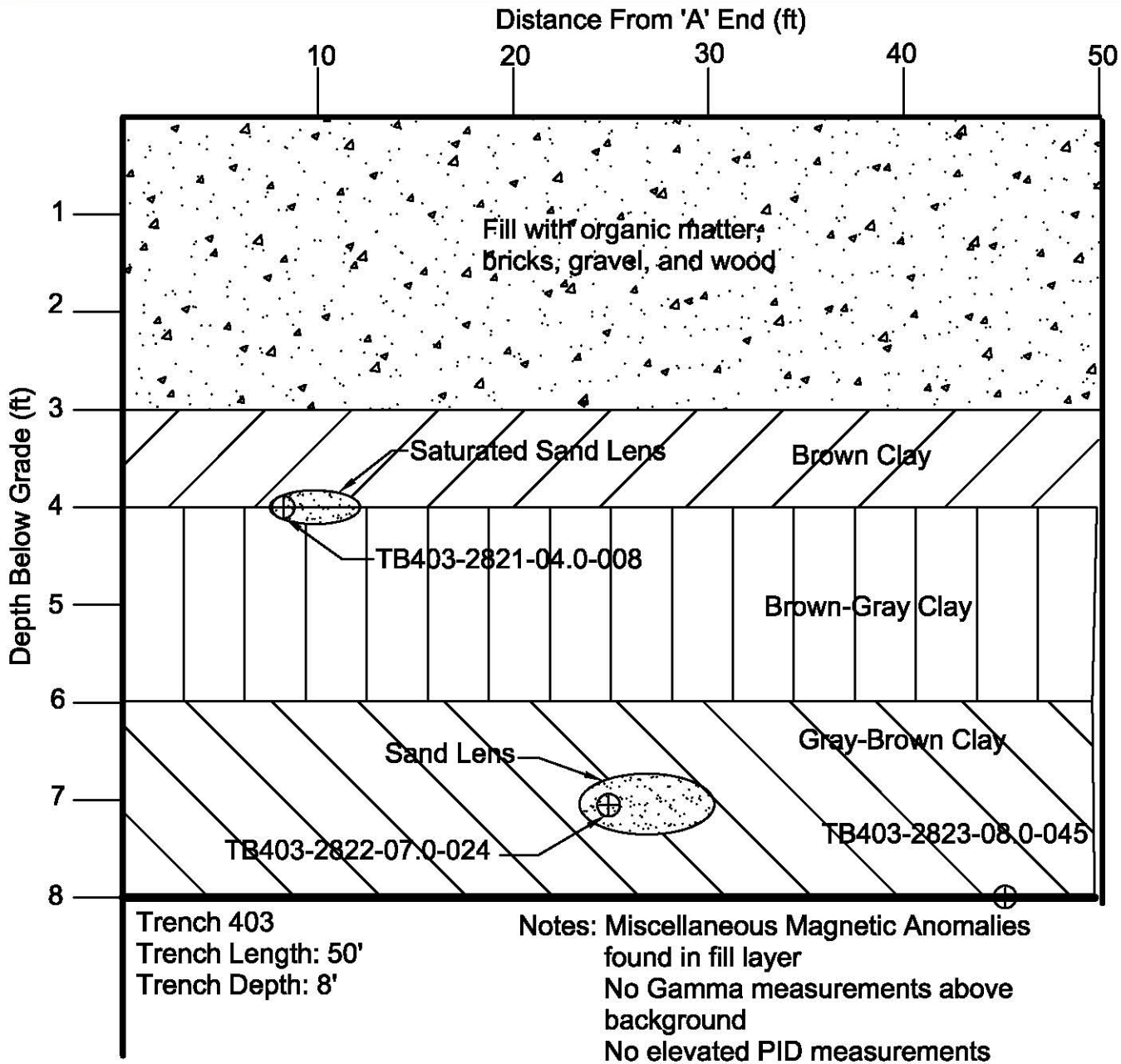


TRENCH 305

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-25
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 403
Trench Length: 50'
Trench Depth: 8'

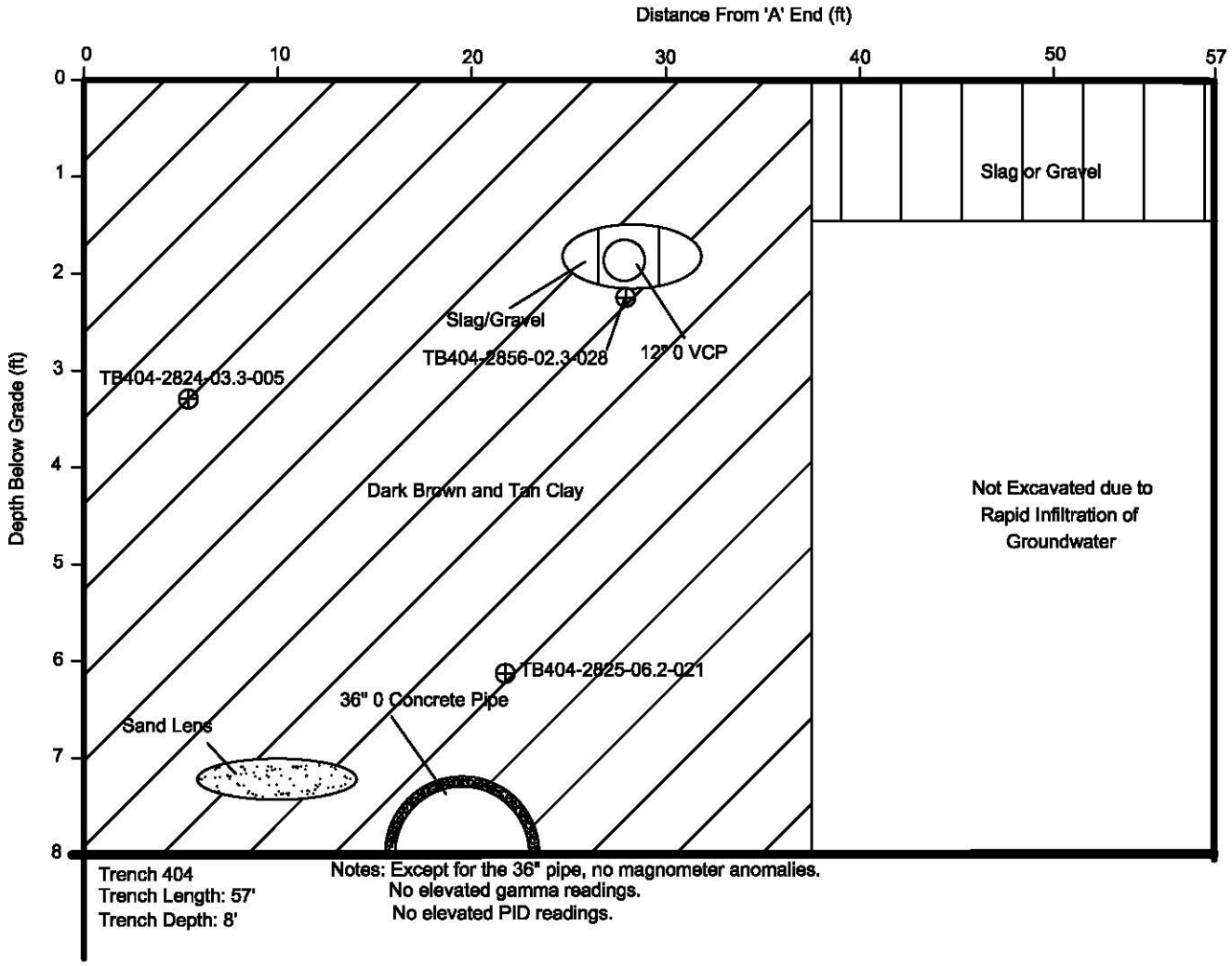
Notes: Miscellaneous Magnetic Anomalies found in fill layer
No Gamma measurements above background
No elevated PID measurements

TRENCH 403

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-26
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS

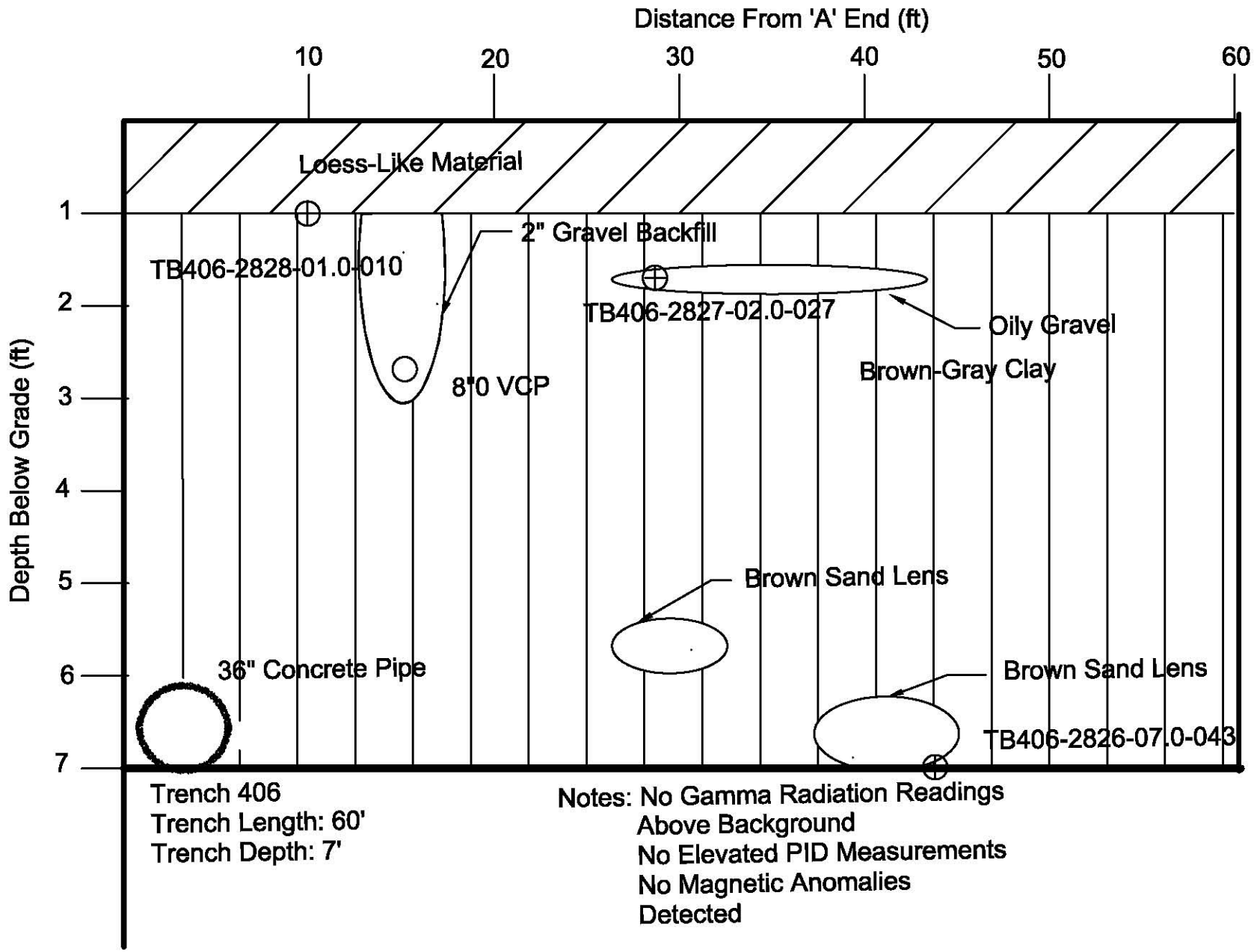


TRENCH 404

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-27
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS

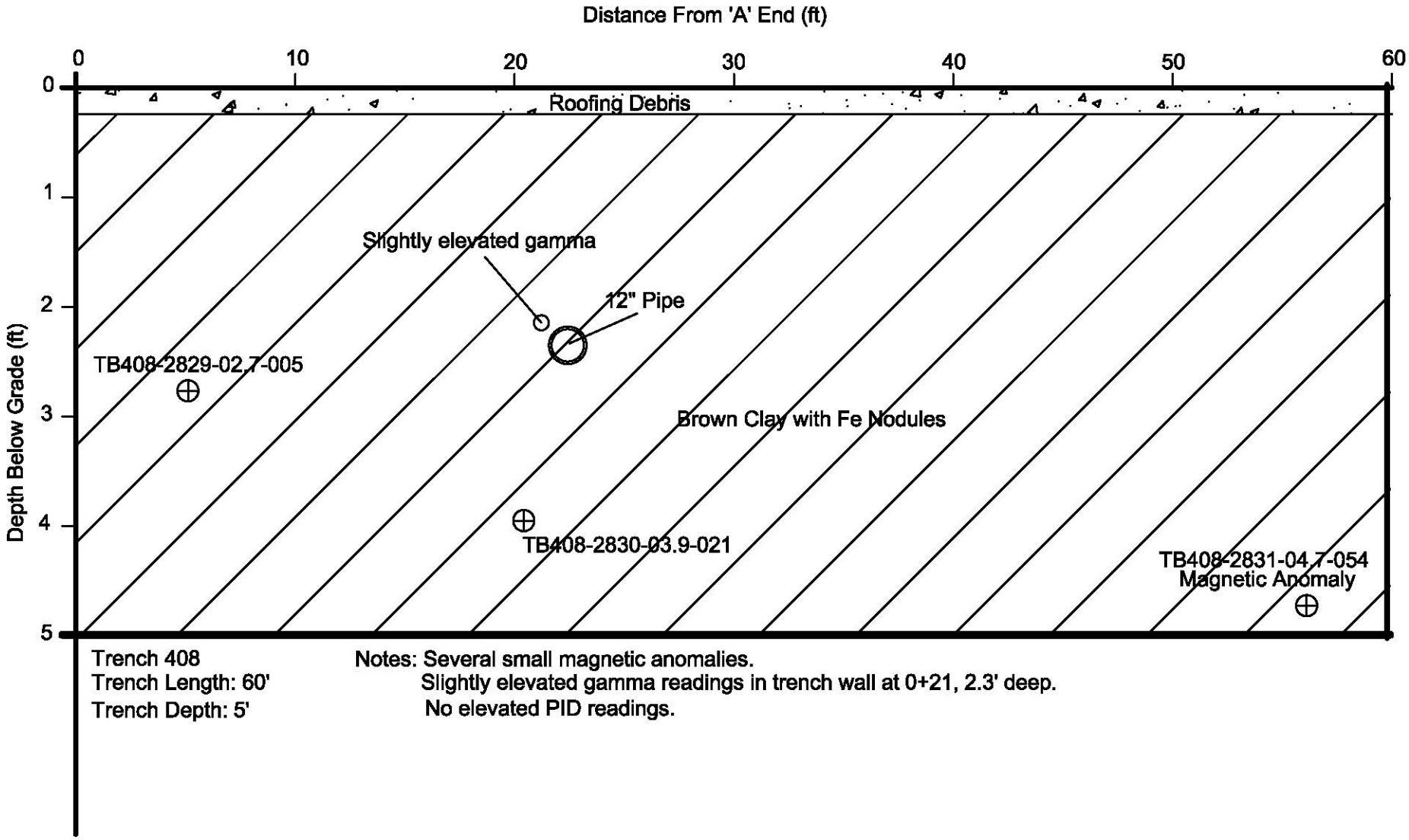


TRENCH 406

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-28
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 408
Trench Length: 60'
Trench Depth: 5'

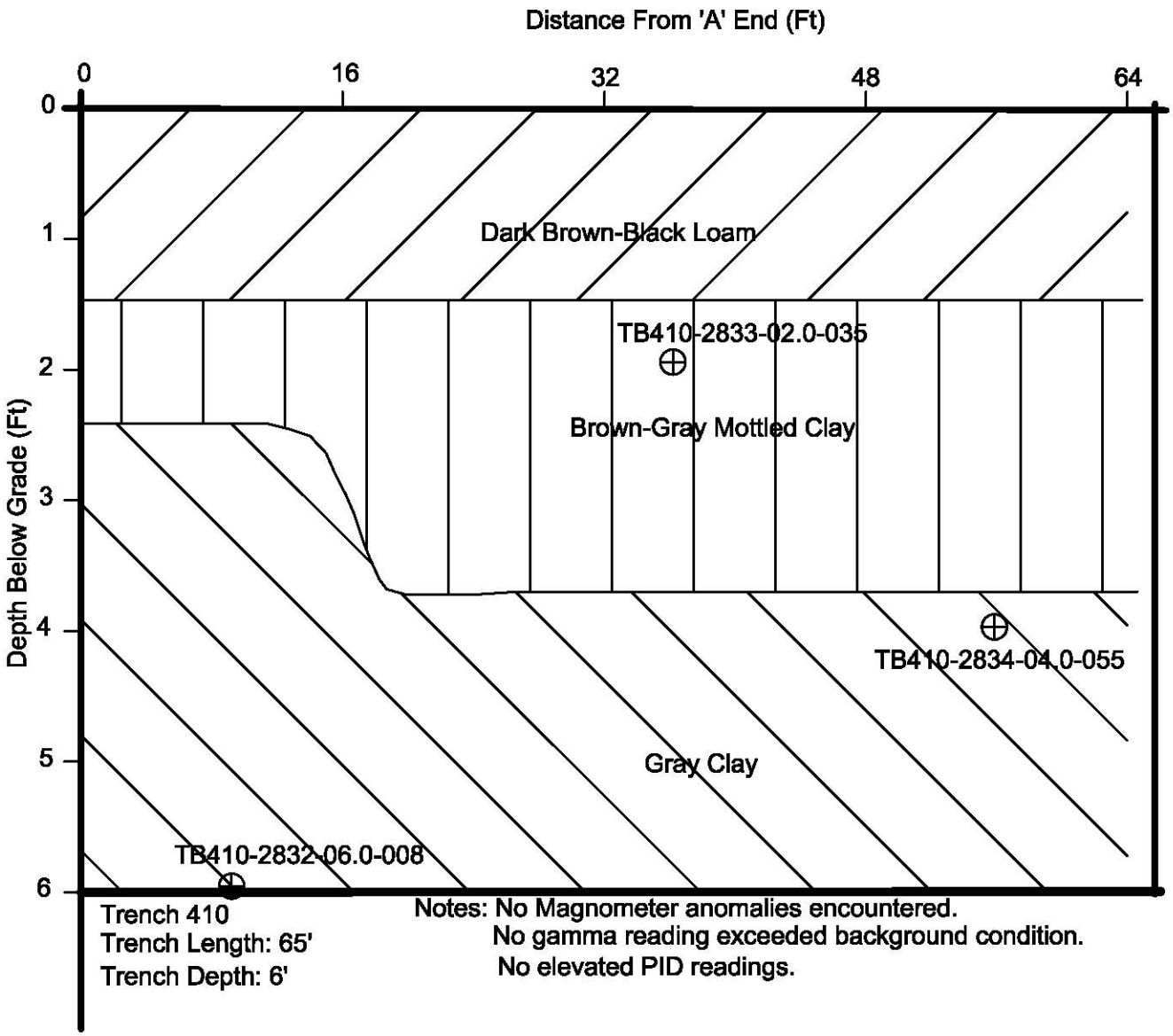
Notes: Several small magnetic anomalies.
Slightly elevated gamma readings in trench wall at 0+21, 2.3' deep.
No elevated PID readings.

TRENCH 408

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

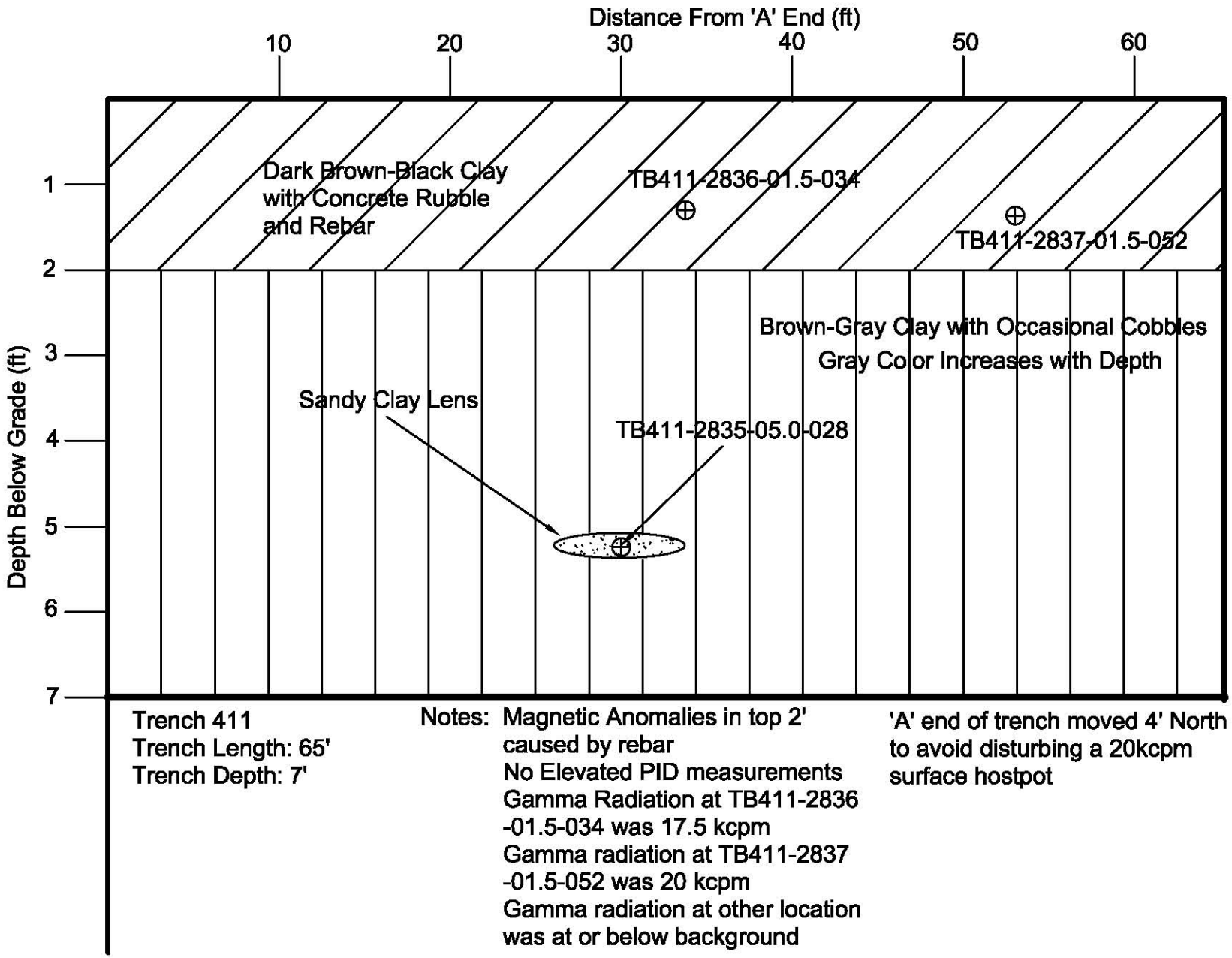
PROJECT NO. 15892	FIGURE #: 3-29
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



TRENCH 410

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.	
PROJECT NO. 15892	FIGURE #: 3-30
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 411
Trench Length: 65'
Trench Depth: 7'

Notes: Magnetic Anomalies in top 2' caused by rebar
No Elevated PID measurements
Gamma Radiation at TB411-2836 -01.5-034 was 17.5 kcpm
Gamma radiation at TB411-2837 -01.5-052 was 20 kcpm
Gamma radiation at other location was at or below background

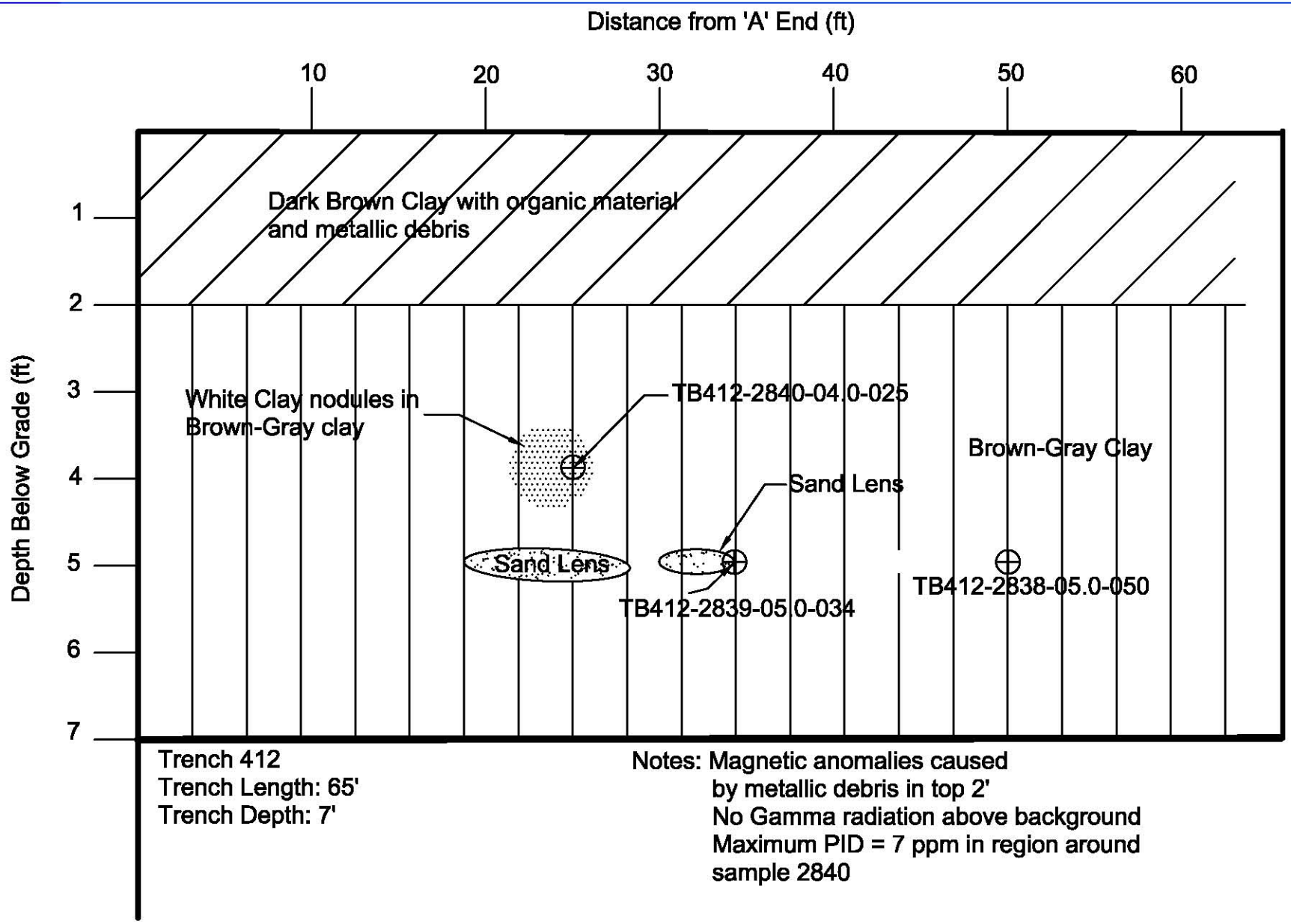
'A' end of trench moved 4' North to avoid disturbing a 20kcpm surface hostpot

TRENCH 411

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-31
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS

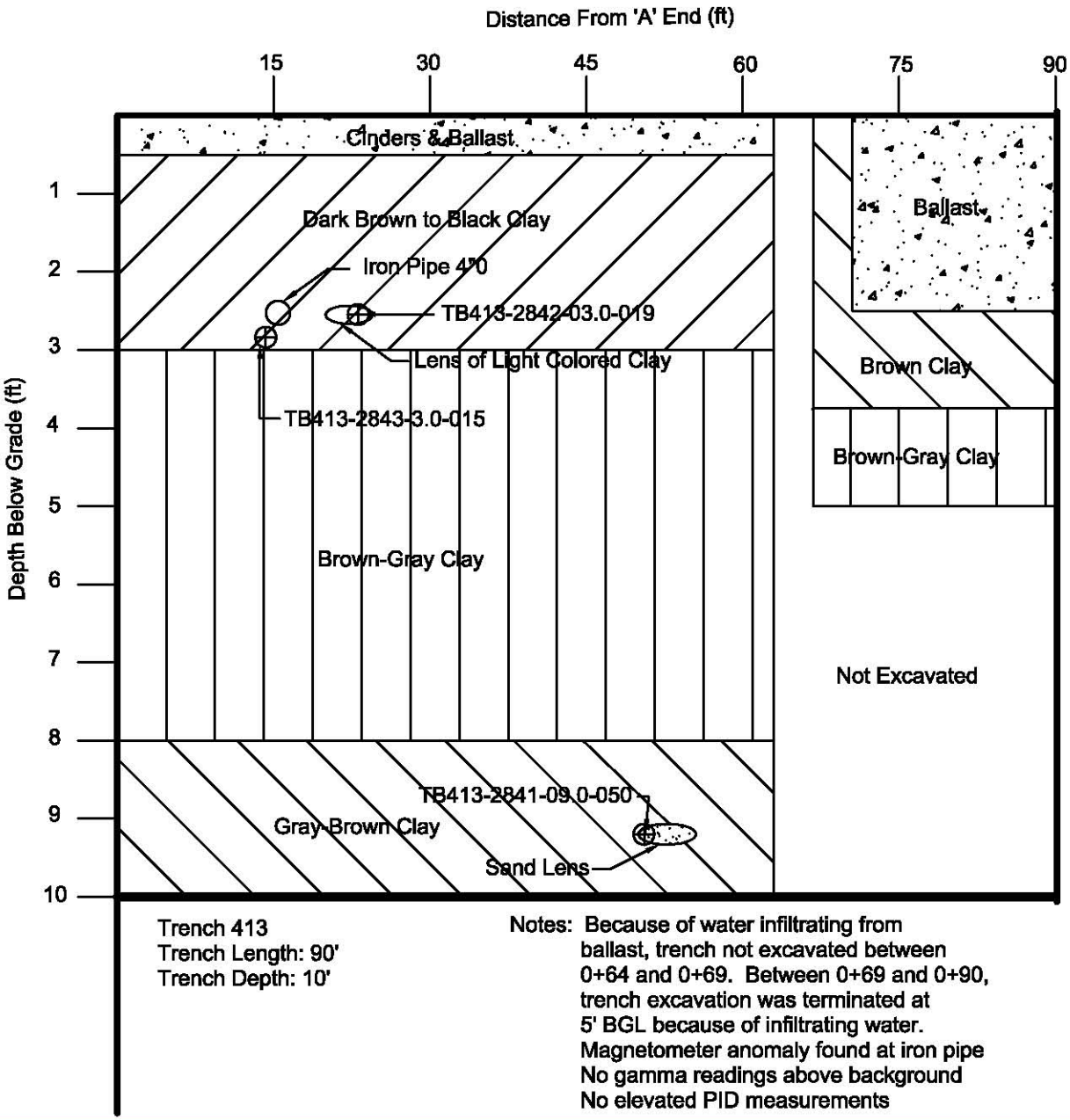


TRENCH 412

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-32
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 413
Trench Length: 90'
Trench Depth: 10'

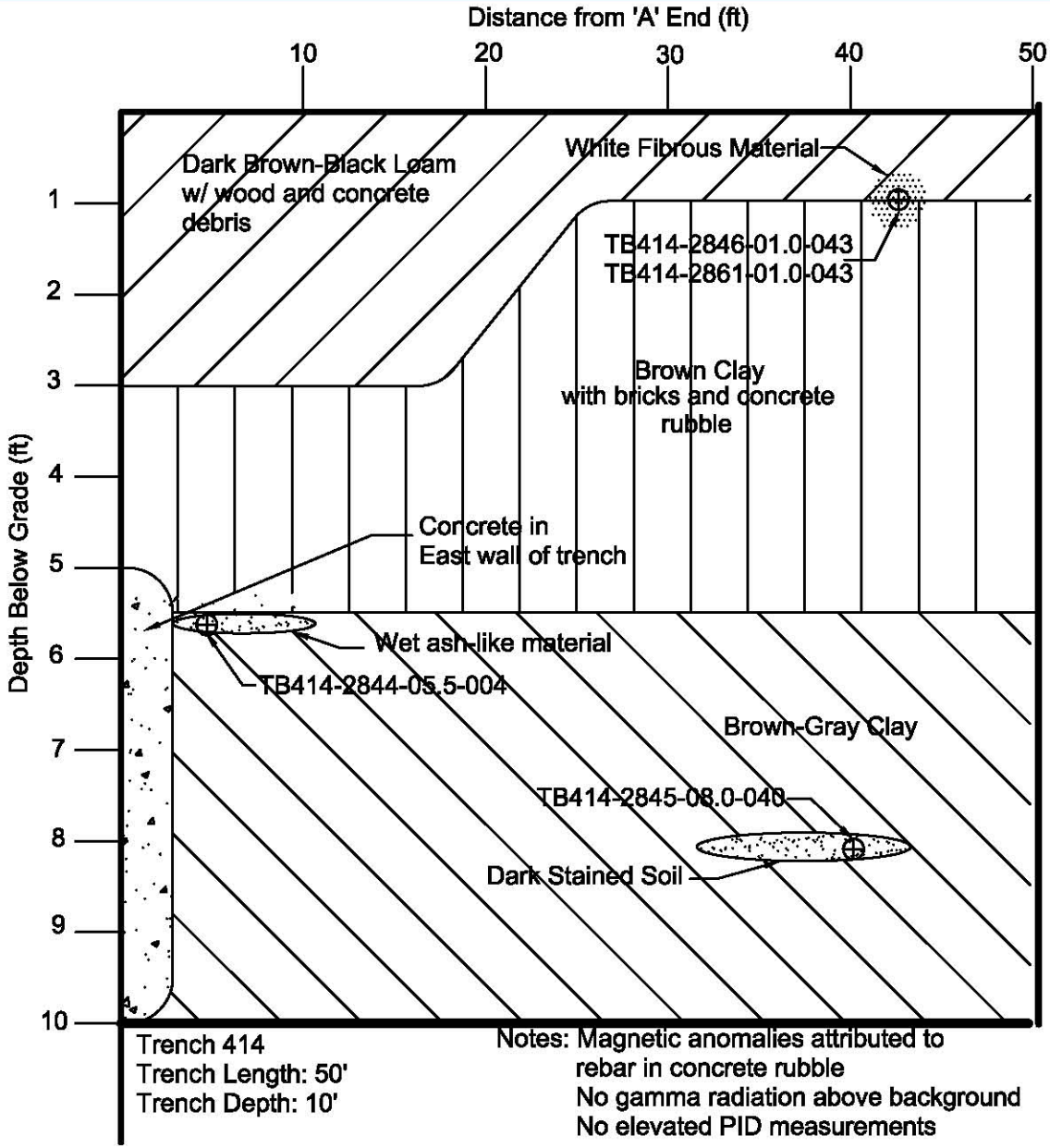
Notes: Because of water infiltrating from ballast, trench not excavated between 0+64 and 0+69. Between 0+69 and 0+90, trench excavation was terminated at 5' BGL because of infiltrating water.
Magnetometer anomaly found at iron pipe
No gamma readings above background
No elevated PID measurements

TRENCH 413

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-33
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS

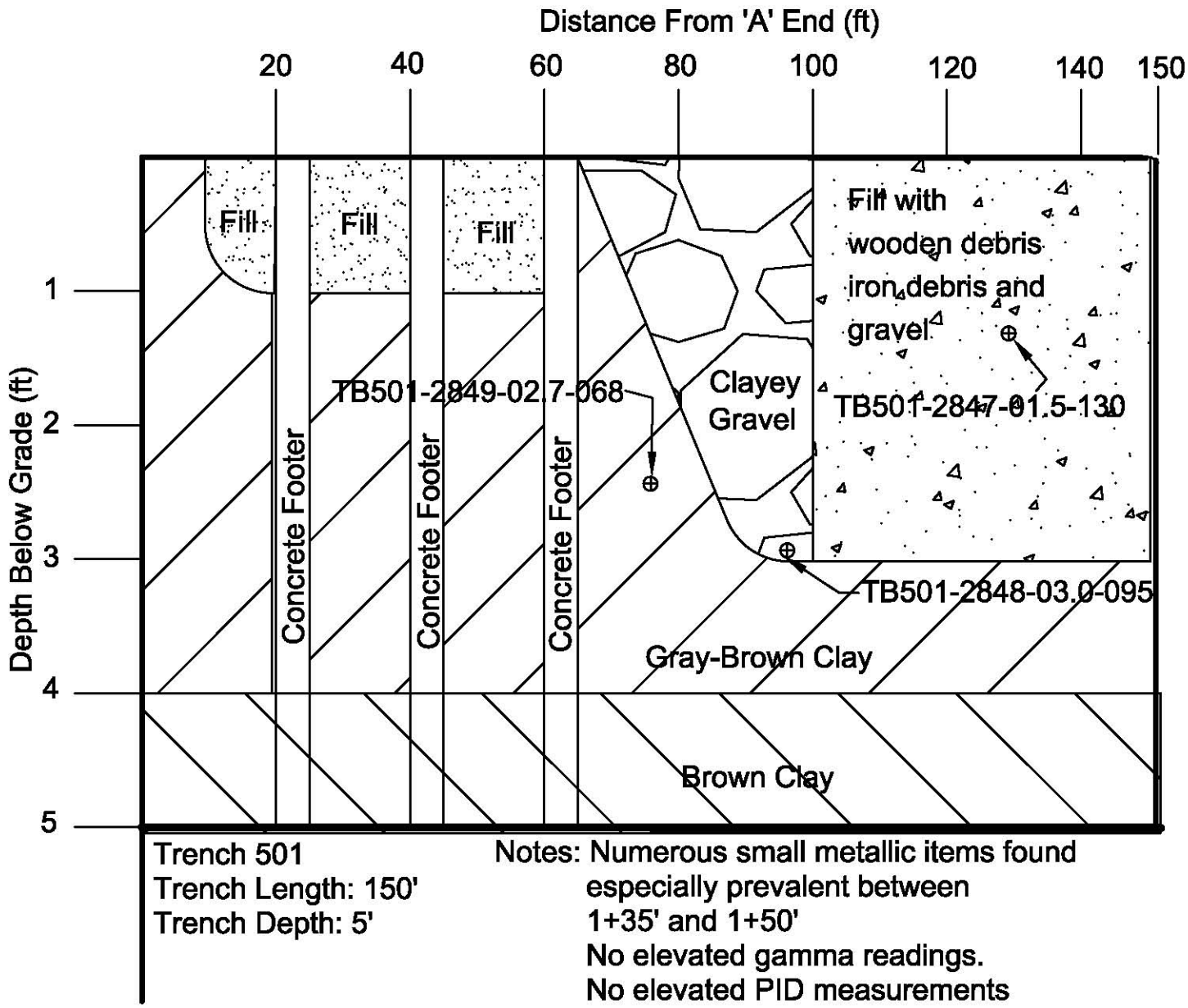


TRENCH 414

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-34
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 501
Trench Length: 150'
Trench Depth: 5'

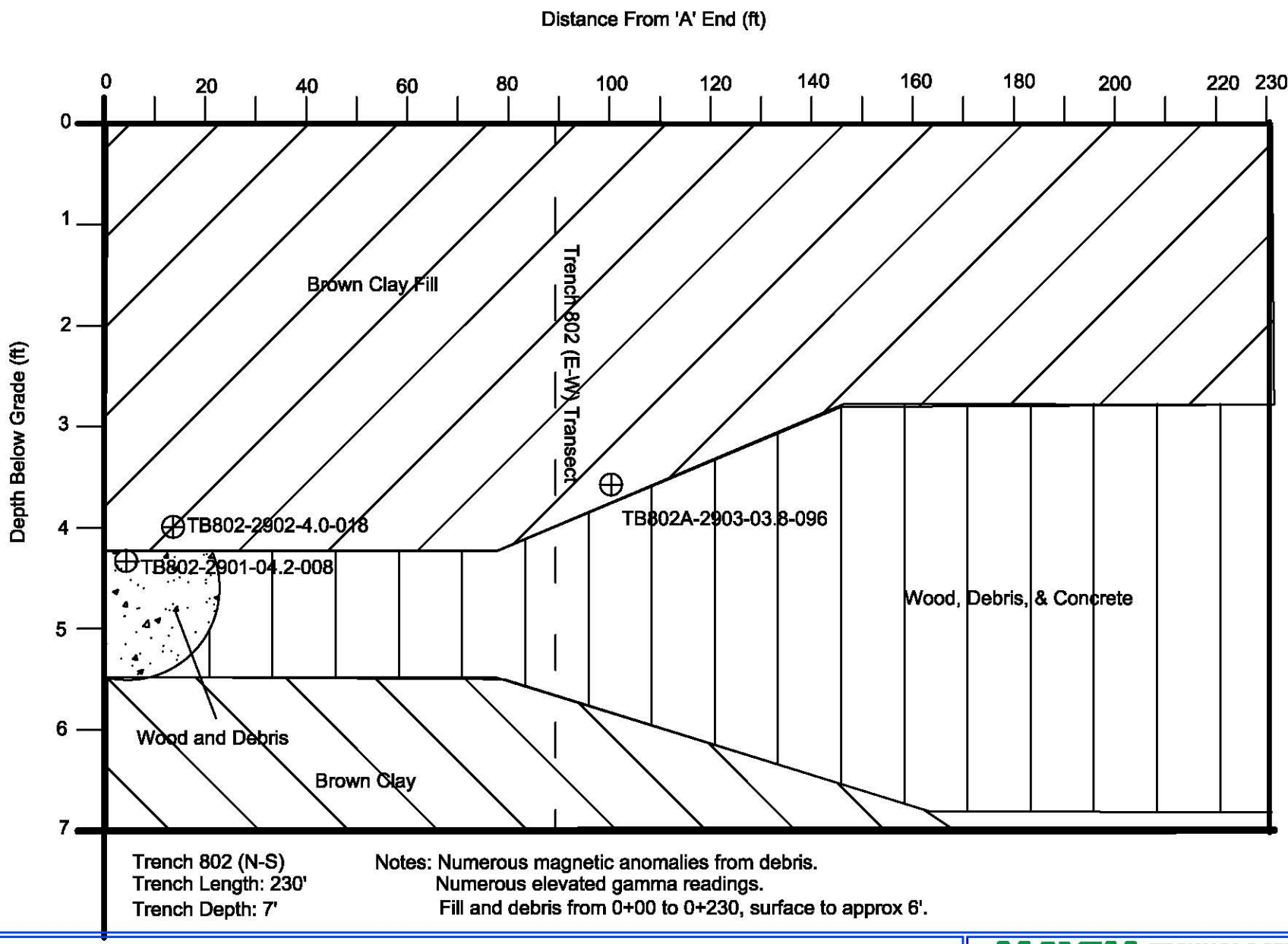
Notes: Numerous small metallic items found especially prevalent between 1+35' and 1+50'
No elevated gamma readings.
No elevated PID measurements

TRENCH 501

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-35
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 802 (N-S)
Trench Length: 230'
Trench Depth: 7'

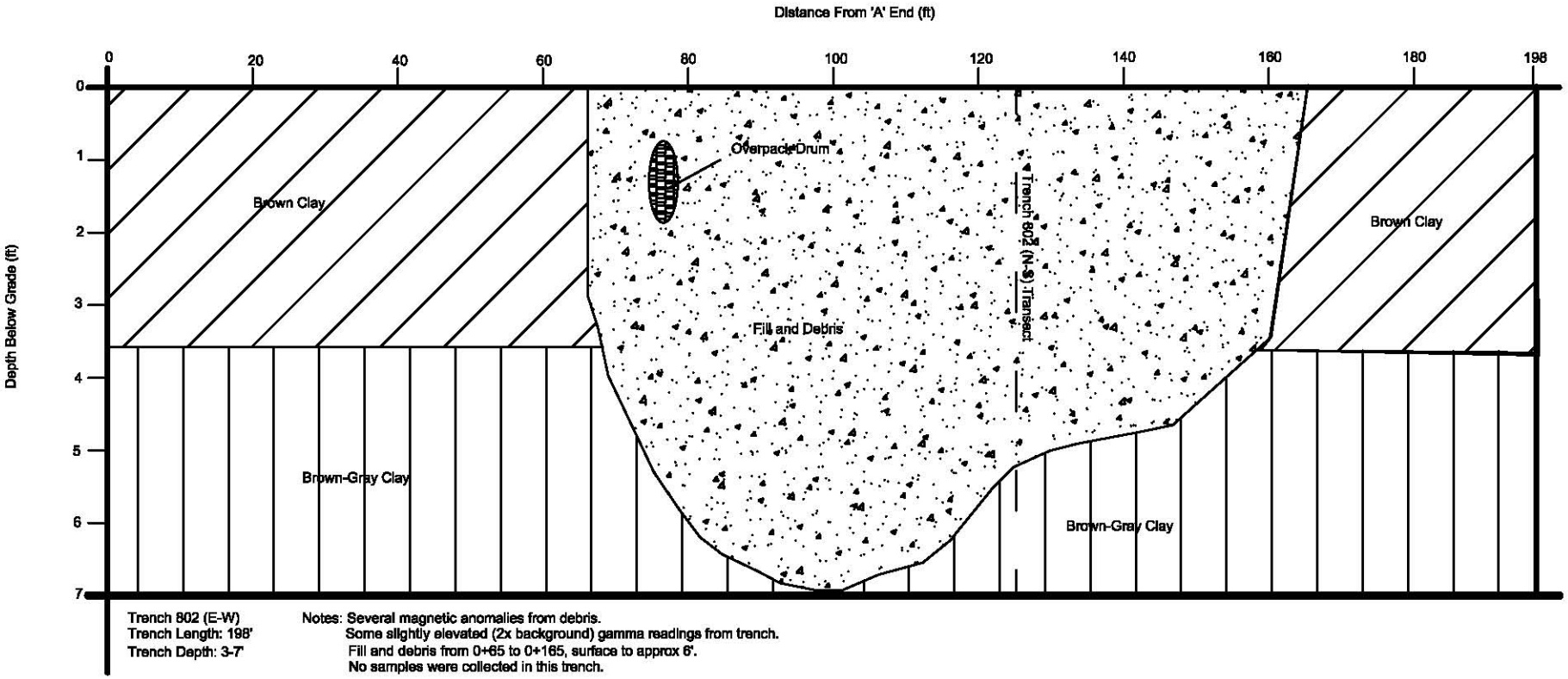
Notes: Numerous magnetic anomalies from debris.
Numerous elevated gamma readings.
Fill and debris from 0+00 to 0+230, surface to approx 6'.

TRENCH 802 (N–S)

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3–36
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



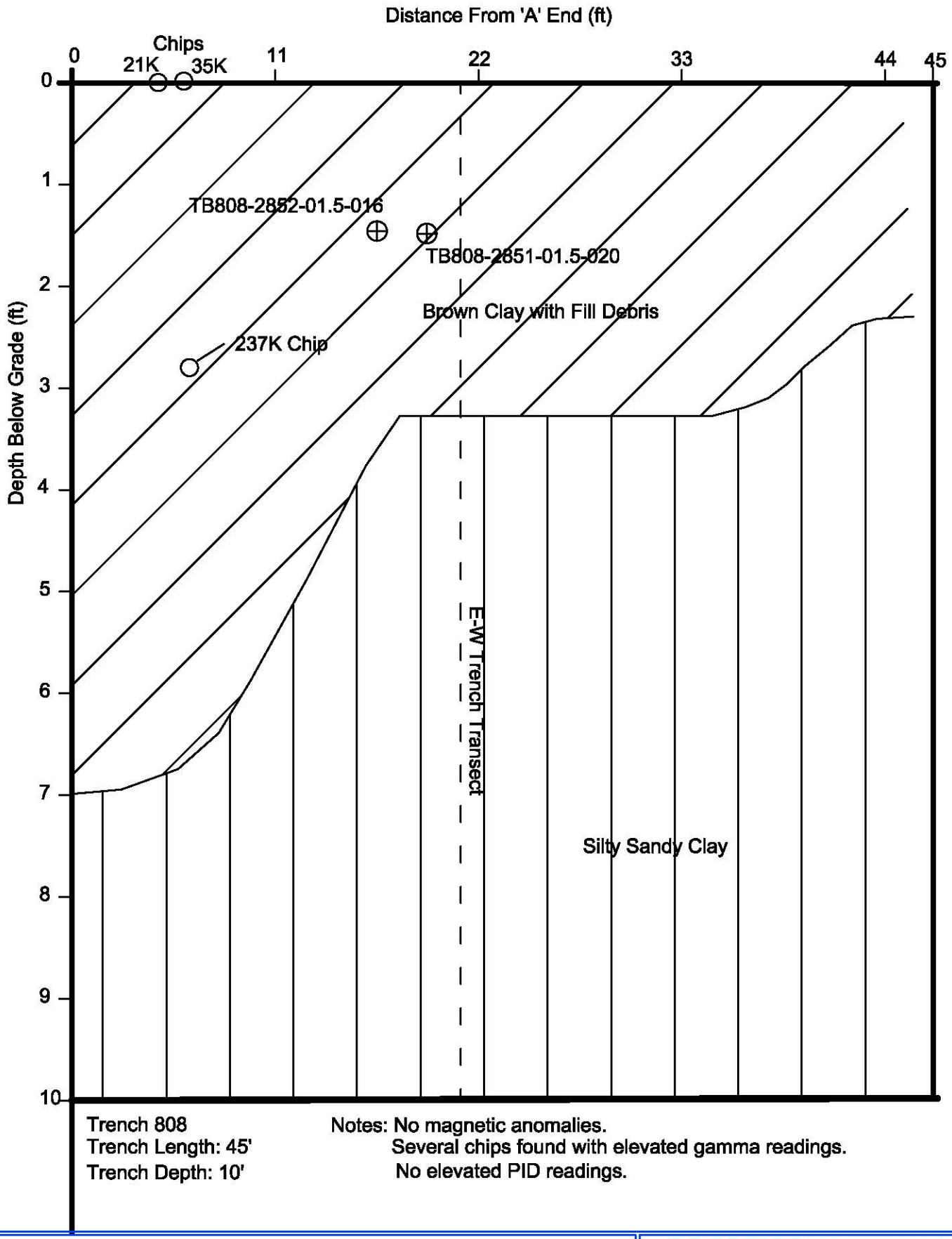
Trench 802 (E-W)
Trench Length: 198'
Trench Depth: 3-7'

Notes: Several magnetic anomalies from debris.
Some slightly elevated (2x background) gamma readings from trench.
Fill and debris from 0+65 to 0+165, surface to approx 6'.
No samples were collected in this trench.

TRENCH 802 (E–W)

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.	
PROJECT NO. 15892	FIGURE #: 3–37
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 808
Trench Length: 45'
Trench Depth: 10'

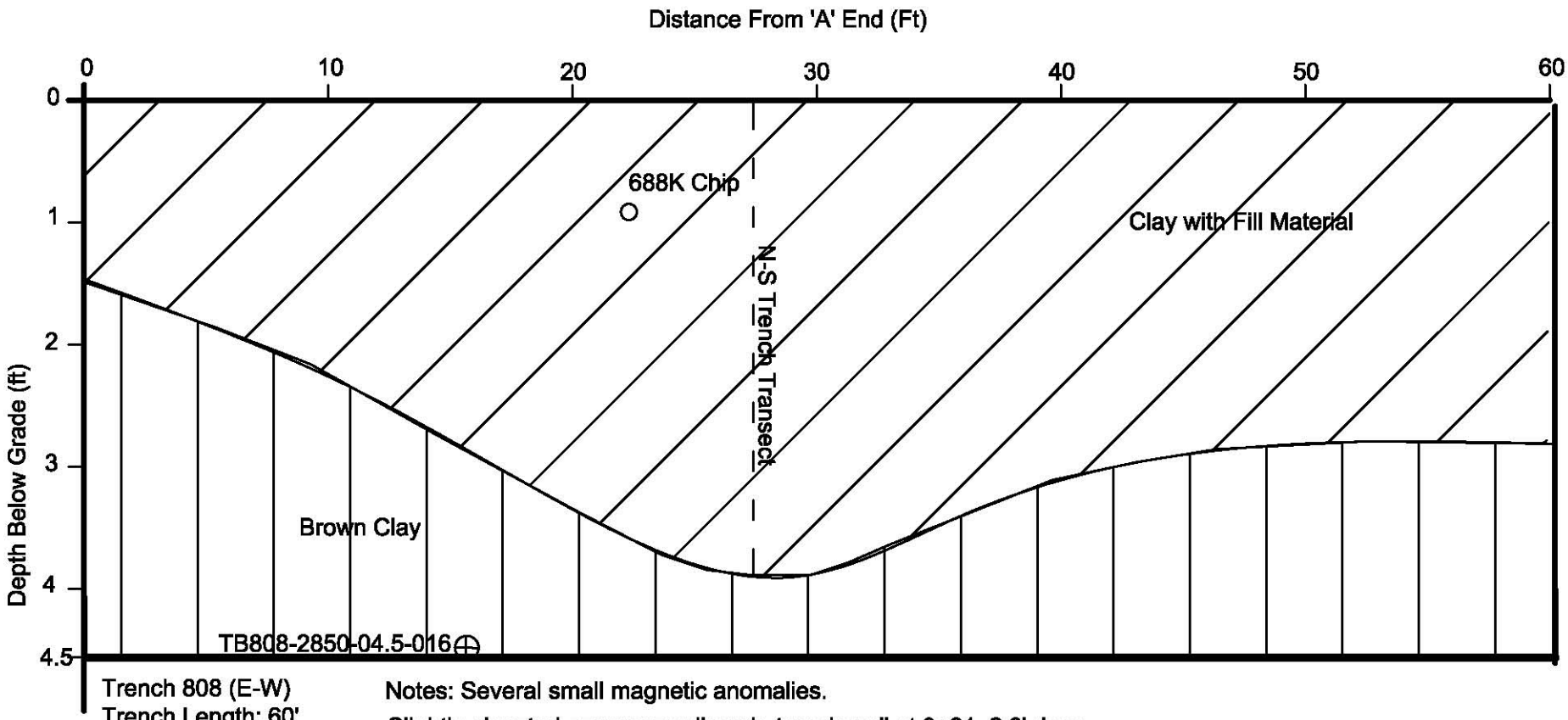
Notes: No magnetic anomalies.
Several chips found with elevated gamma readings.
No elevated PID readings.

TRENCH *808 (N–S)

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3–38
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 808 (E-W)
Trench Length: 60'
Trench Depth: 4.5'

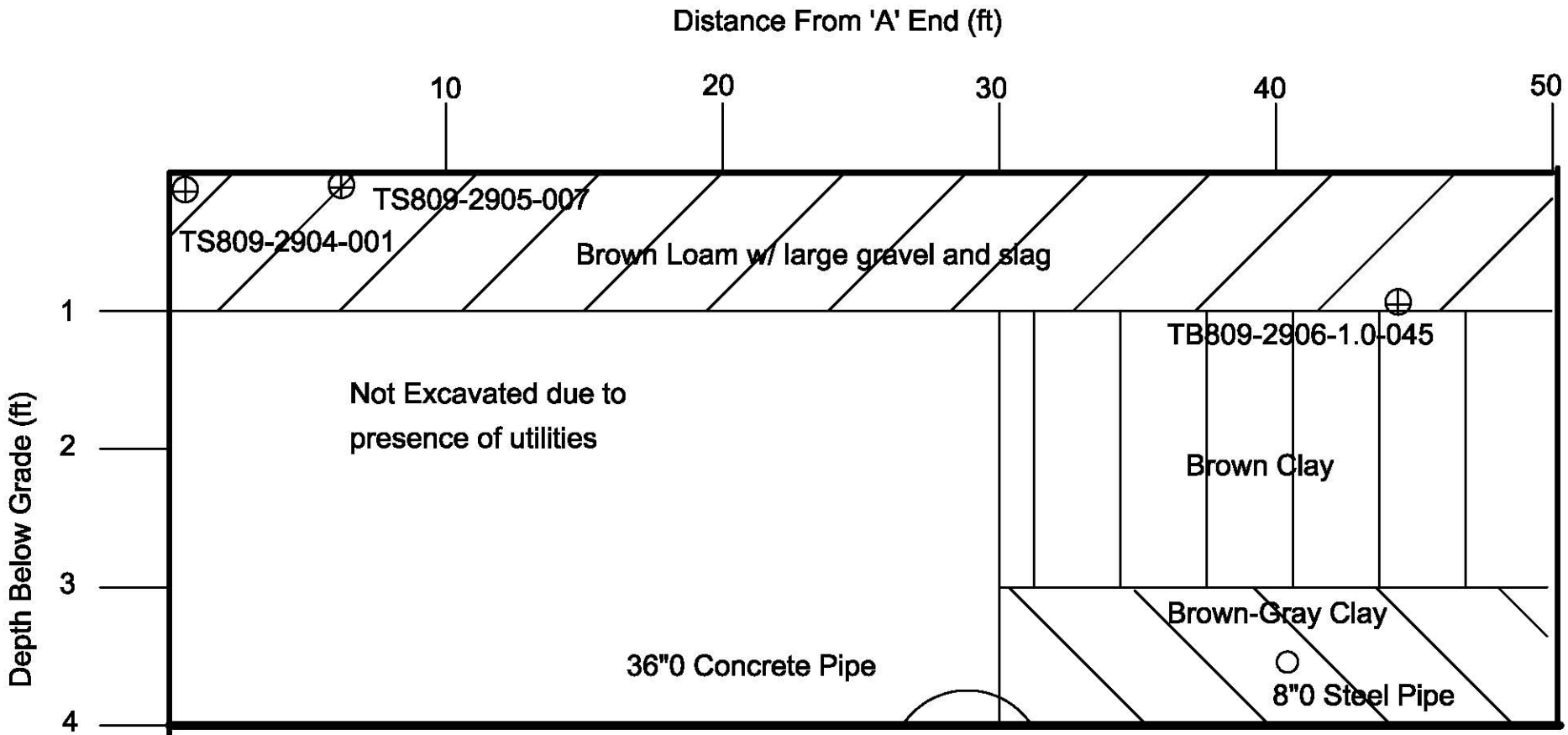
Notes: Several small magnetic anomalies.
Slightly elevated gamma readings in trench wall at 0+21, 2.3' deep.
No elevated PID readings.
3 Chips found

TRENCH 808 (E-W)

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-39
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 809
Trench Length: 50'
Trench Depth: 4'

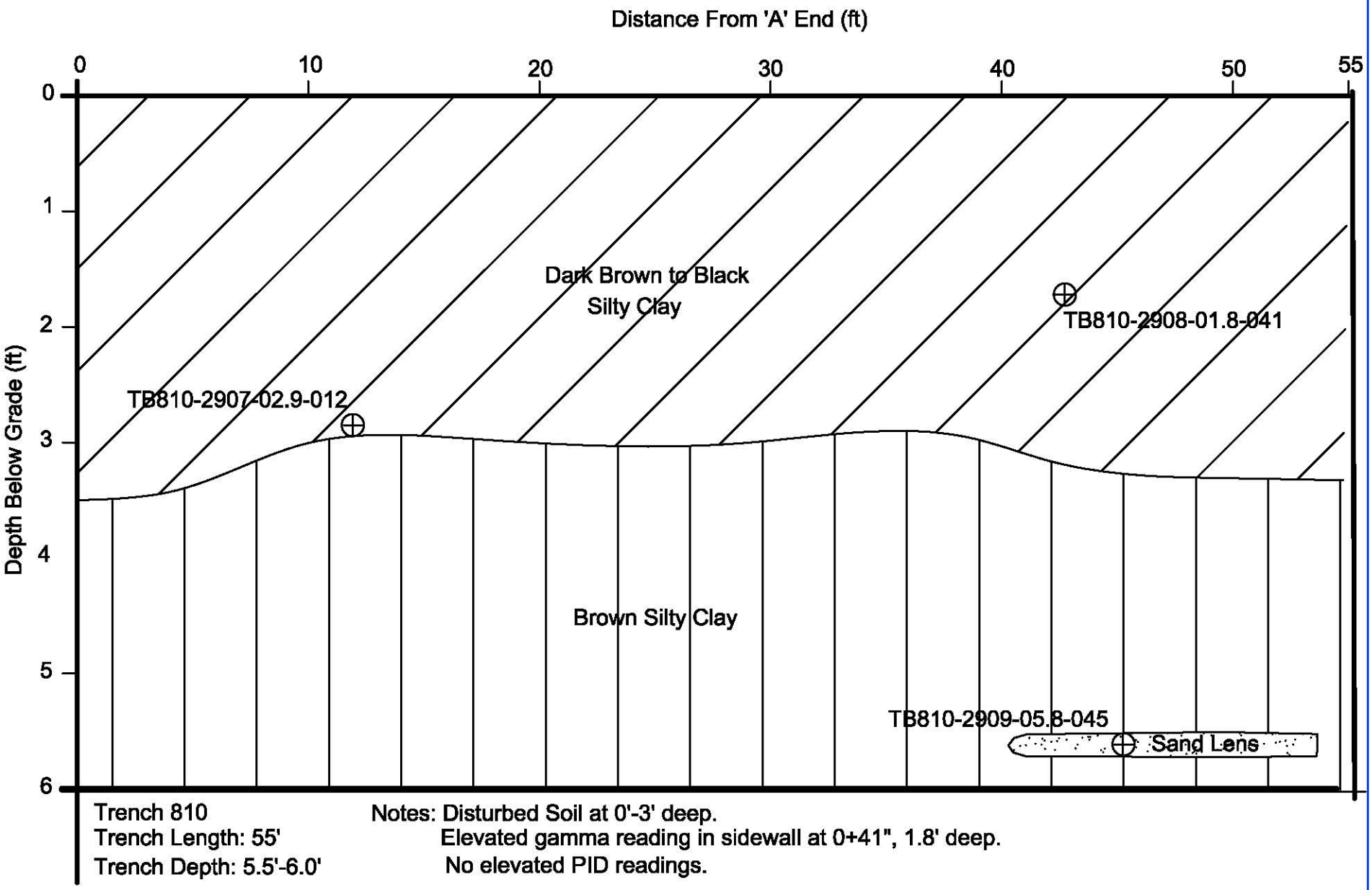
Notes: Numerous small magnetic anomalies in top 1'. Magnetic anamoly at +30' attributed to reinforcement in concrete pipe
Elevated gamma radiation (20 kcpm) on surface at 0+07'
Elevated gamma radiation (50 kcpm) at 1' Bgl at 0+45'
No Elevated PID measurements

TRENCH 809

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC. ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-40
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY:



Trench 810
Trench Length: 55'
Trench Depth: 5.5'-6.0'

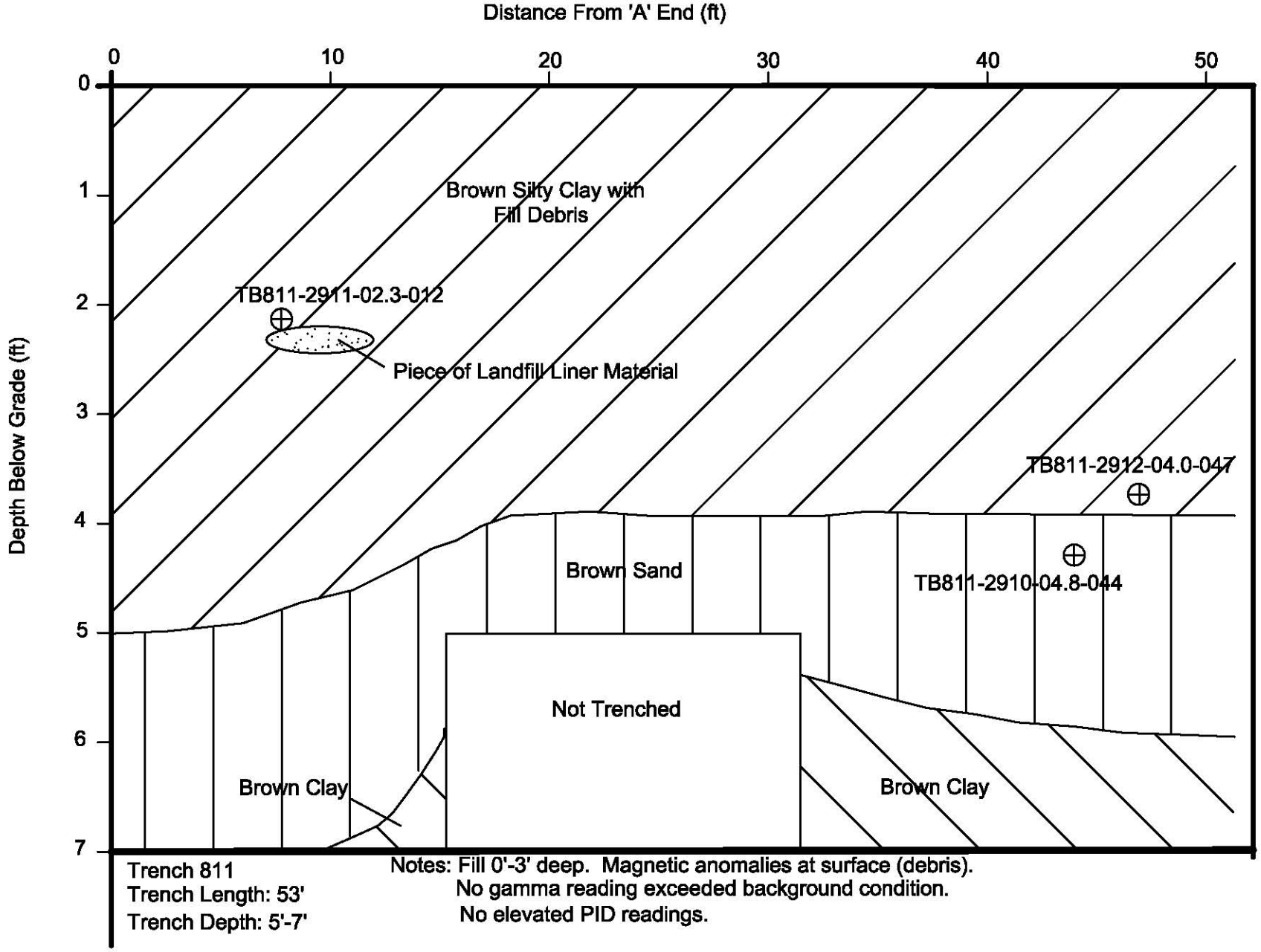
Notes: Disturbed Soil at 0'-3' deep.
Elevated gamma reading in sidewall at 0+41", 1.8' deep.
No elevated PID readings.

TRENCH 810

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-41
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS

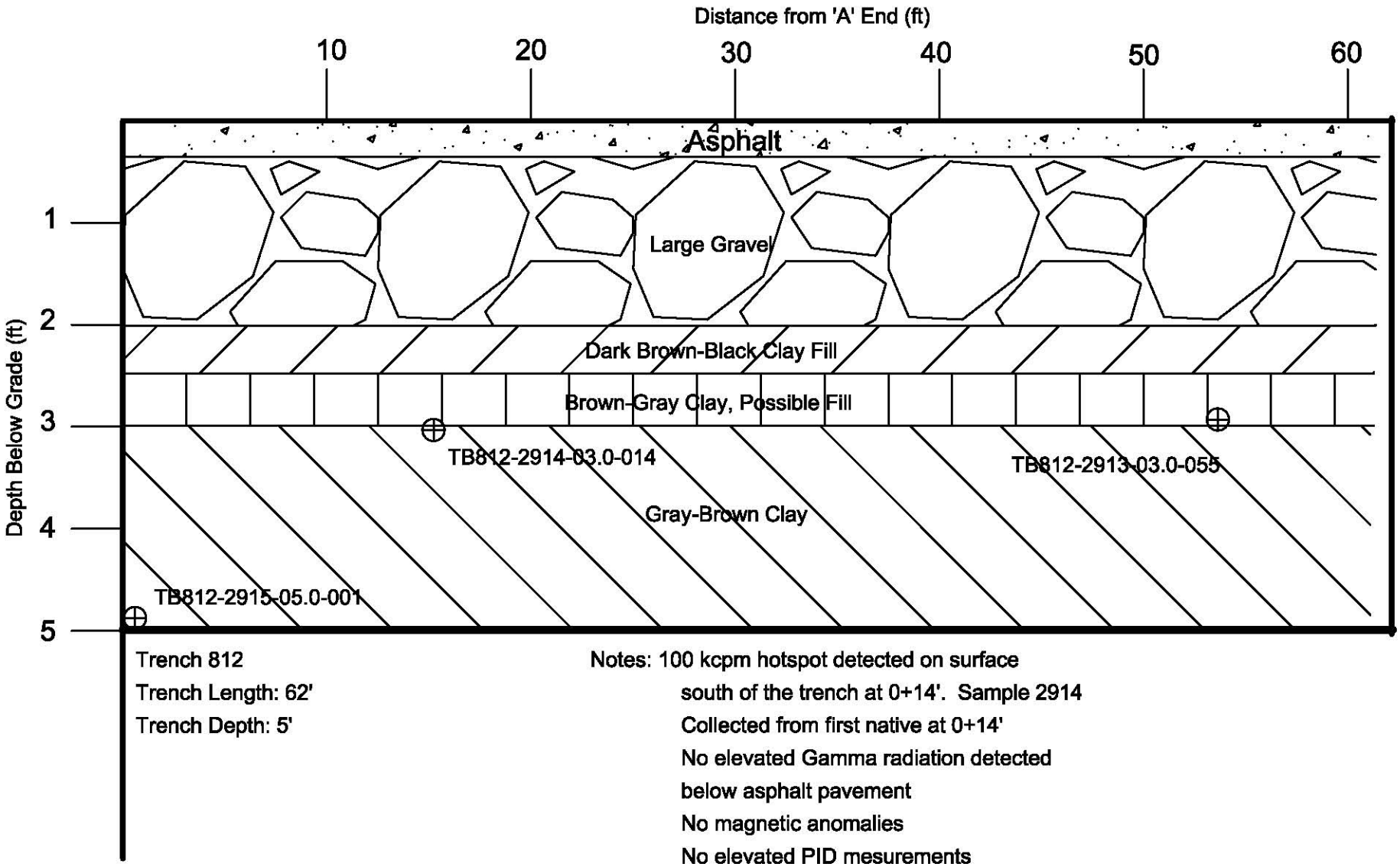


TRENCH 811

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-42
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS



Trench 812
Trench Length: 62'
Trench Depth: 5'

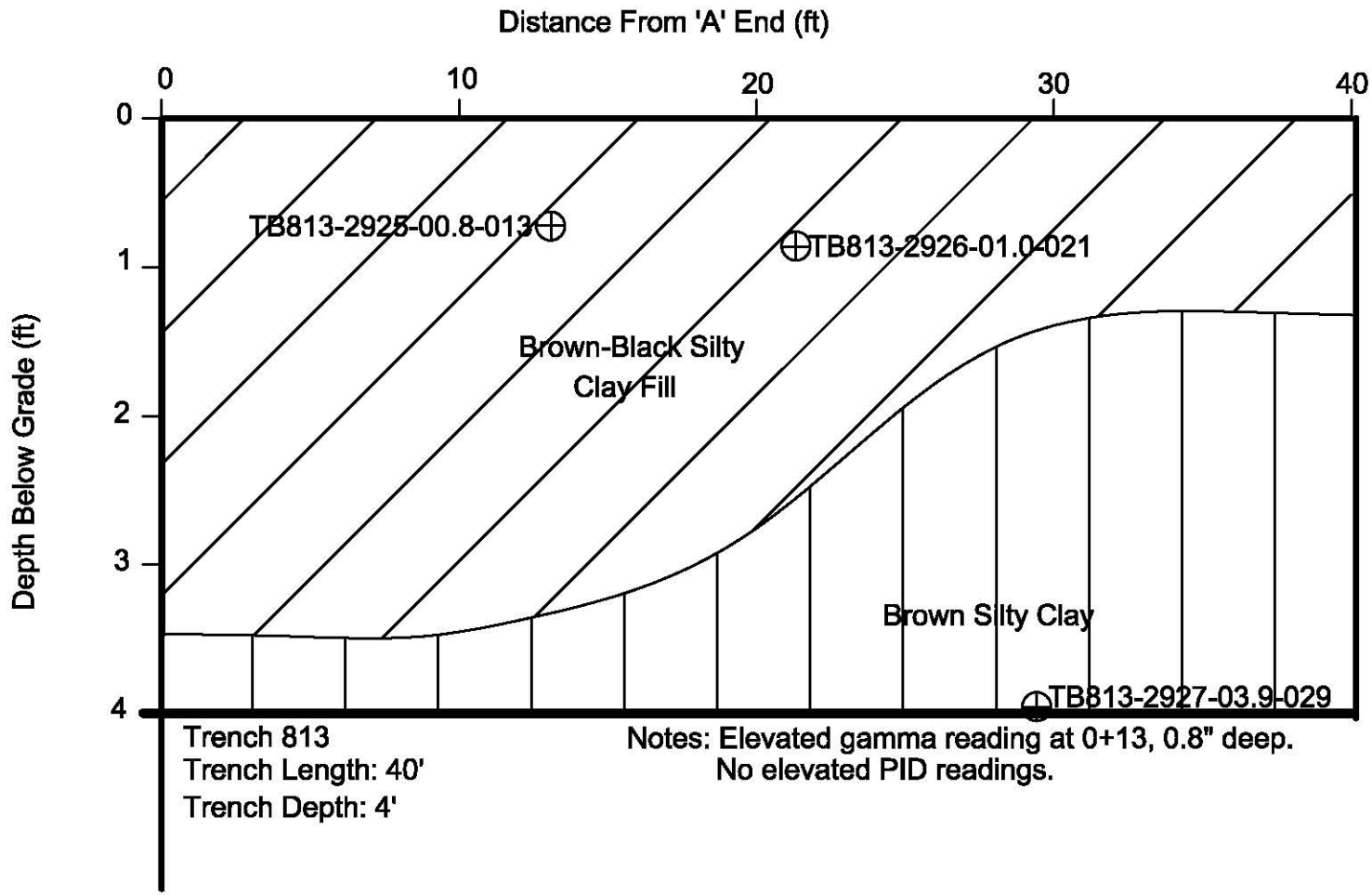
Notes: 100 kcpm hotspot detected on surface
south of the trench at 0+14'. Sample 2914
Collected from first native at 0+14'
No elevated Gamma radiation detected
below asphalt pavement
No magnetic anomalies
No elevated PID mesurements

TRENCH 812

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-43
SCALE: As Shown	DATE: 11/14/2006
DRAWN BY: DWC	CHECKED BY: MLS



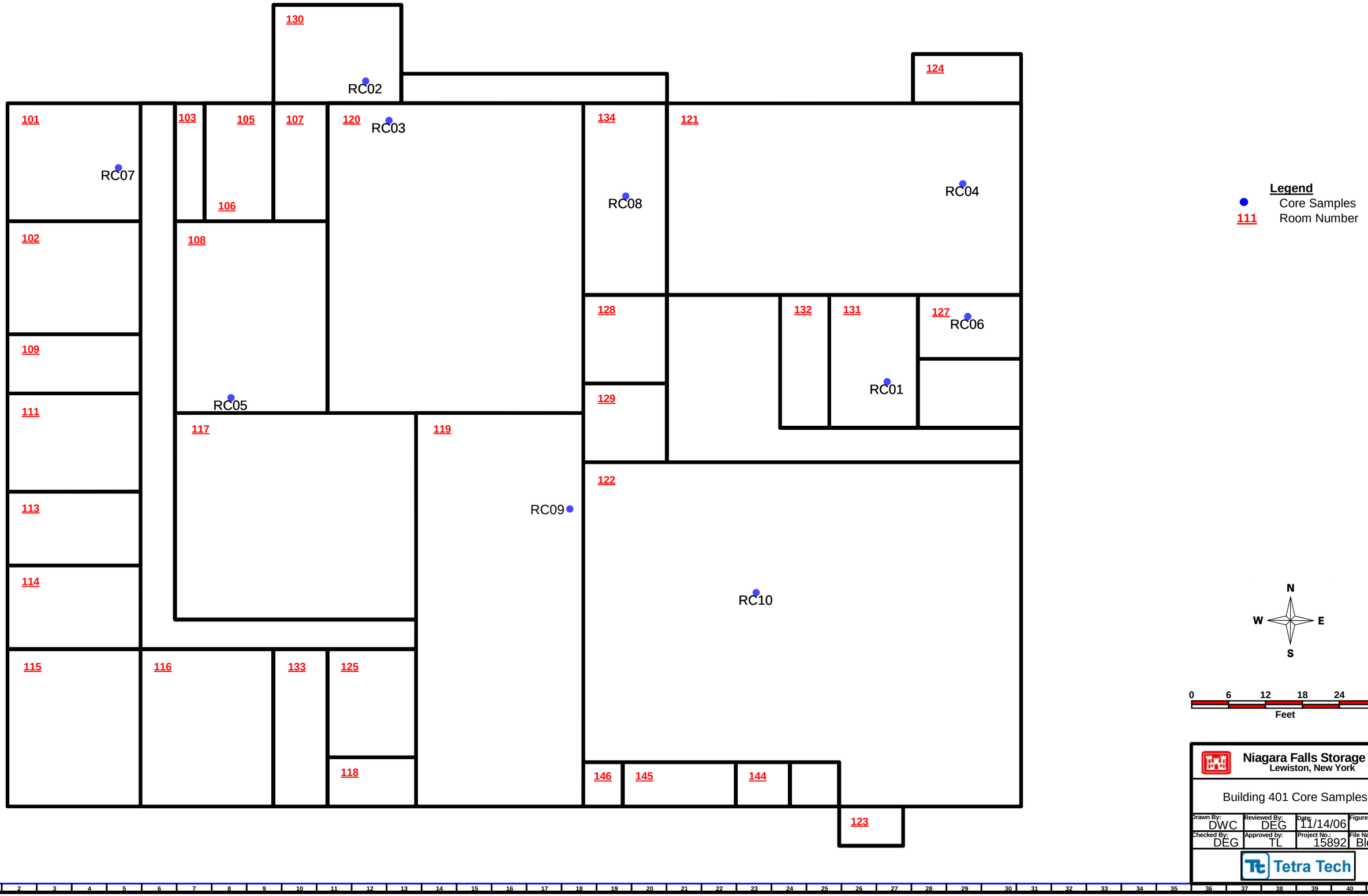
TRENCH 813

NIAGARA FALLS STORAGE SITE

MAXIM TECHNOLOGIES INC.
ST LOUIS, MO.

PROJECT NO. 15892	FIGURE #: 3-44
SCALE: As Shown	DATE: 11/13/2006
DRAWN BY: DWC	CHECKED BY: MLS


130
124
101
103
105
107
120
Drain02
134
121
106
Drain11
Drain01
Drain07
102
108
128
132
131
127
Drain03
Drain06
109
129
Drain05
111
Drain14
Drain12
117
119
Drain04
Drain08
113
Drain09
122
114
115
116
Drain13
133
125
Drain10
118
146
145
144
123
Legend
Drain Samples
111 Room Number
N
W
E
S
0 6 12 18 24 30
Feet
Niagara Falls Storage Site
Lewiston, New York
Building 401 Drain Samples
Drawn By: DWC
Reviewed By: DEG
Date: 11/14/06
Figure No.: 3-45
Checked By: DEG
Approved by: TL
Project No.: 15892
File Name: Bldg401
Tetra Tech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103
105
107
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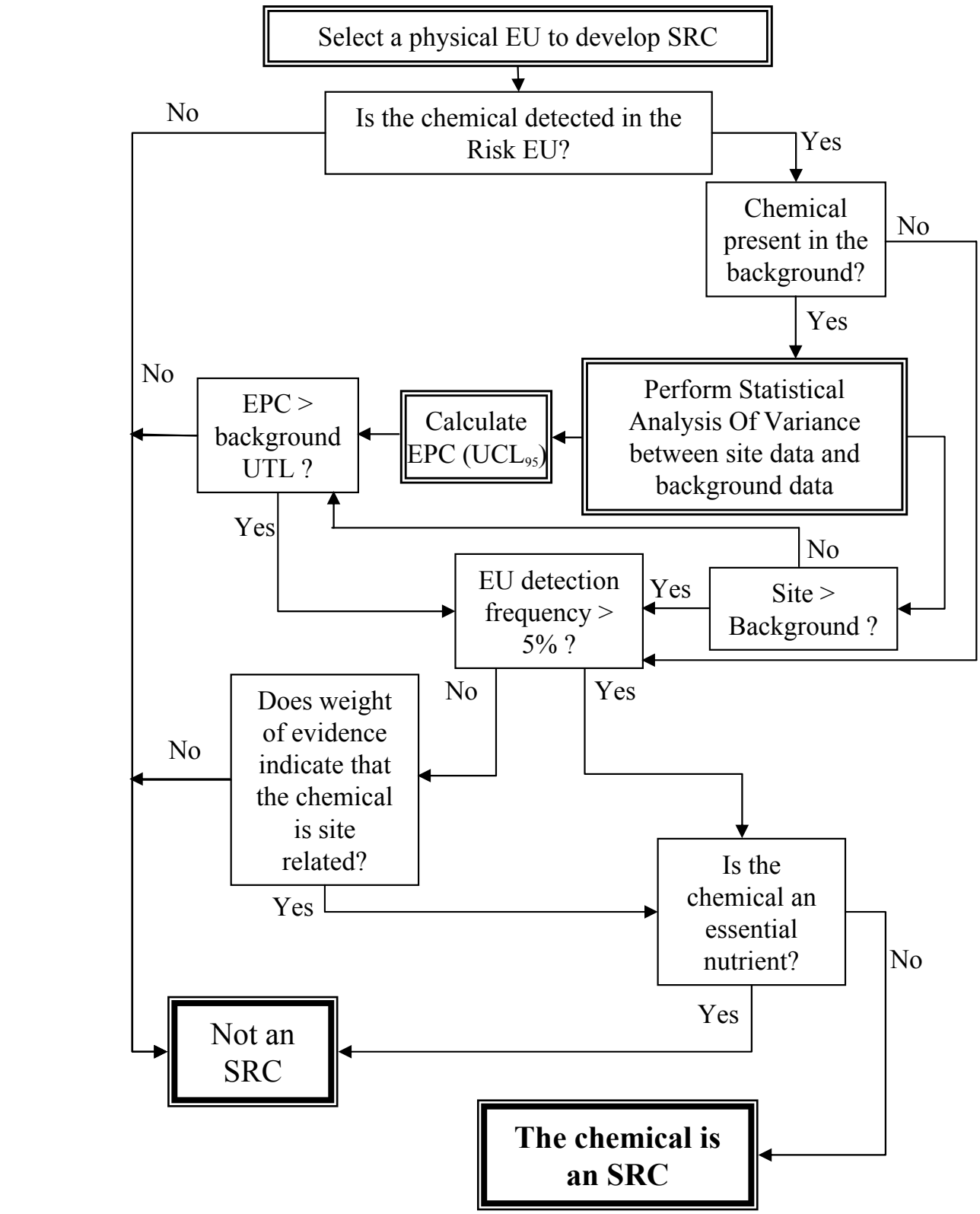
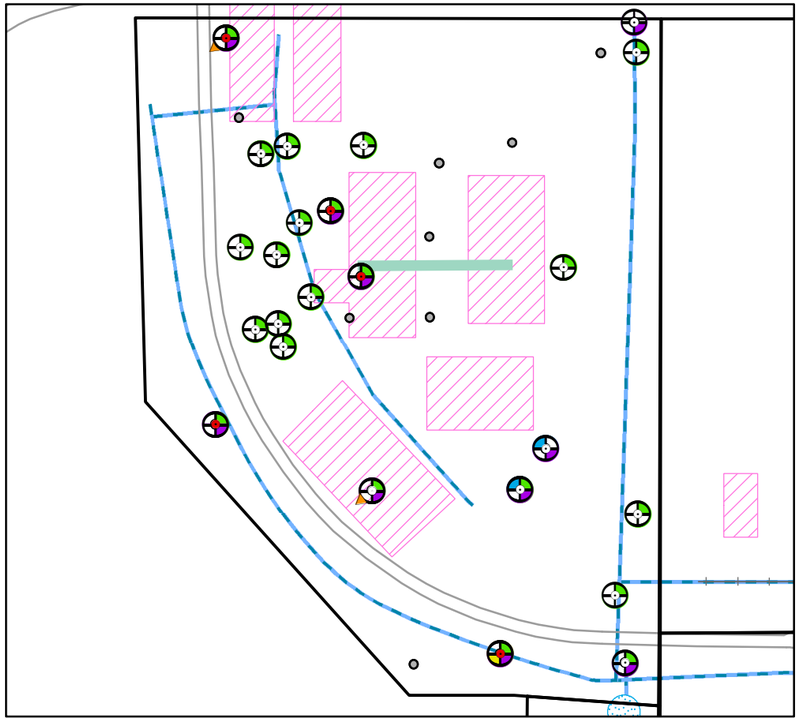
RC03
134
121
RC07
RC08
RC04
106
102
108
128
132
131
127
RC06
109
RC01
129
111
RC05
117
119
122
113
RC09
114
RC10
115
116
133
125
118
146
145
144
123
Legend
Core Samples
111 Room Number
N
W
E
S
0 6 12 18 24 30
Feet
Niagara Falls Storage Site
Lewiston, New York
Building 401 Core Samples
Drawn By: DWC
Reviewed By: DEG
Date: 11/14/06
Figure No.: 3-46
Checked By: DEG
Approved by: TL
Project No.: 15892
File Name: Bldg401
Tetra Tech



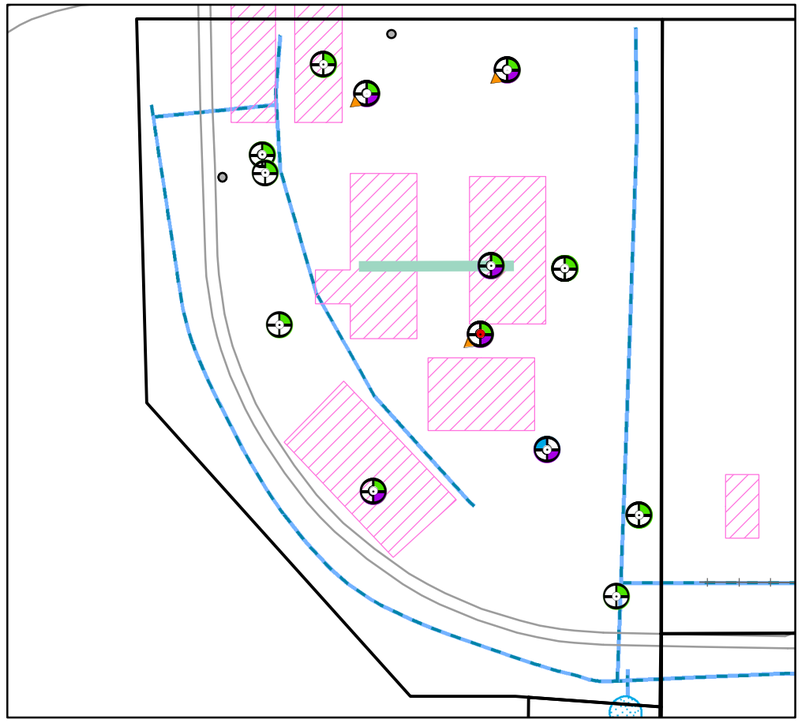
EPC = exposure point concentration
EU = exposure unit
SRC = site related constituent
UCL_{95} = 95 percentile upper confidence limit of the mean
UTL = 95 percentile upper tolerance limit with 95 percentile coverage

Figure 4-1 Identification of SRCs

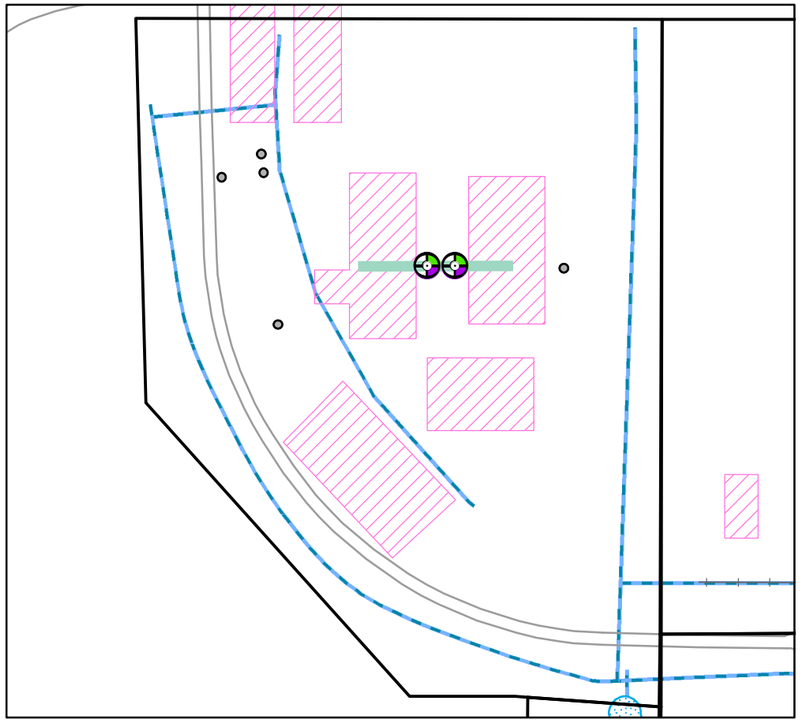
Surface Soil 0-0.5'



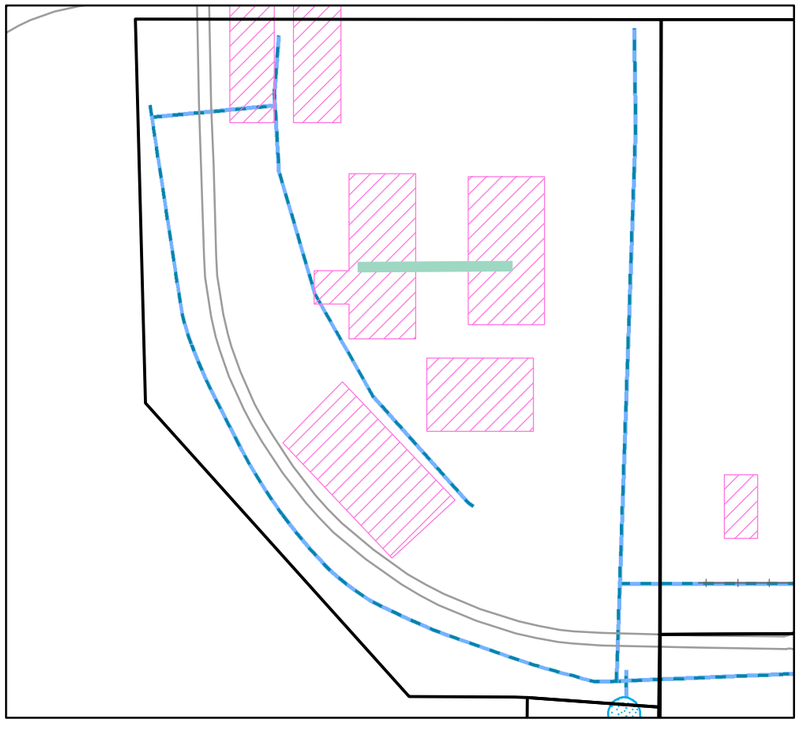
Subsurface Soil 0.5-2'



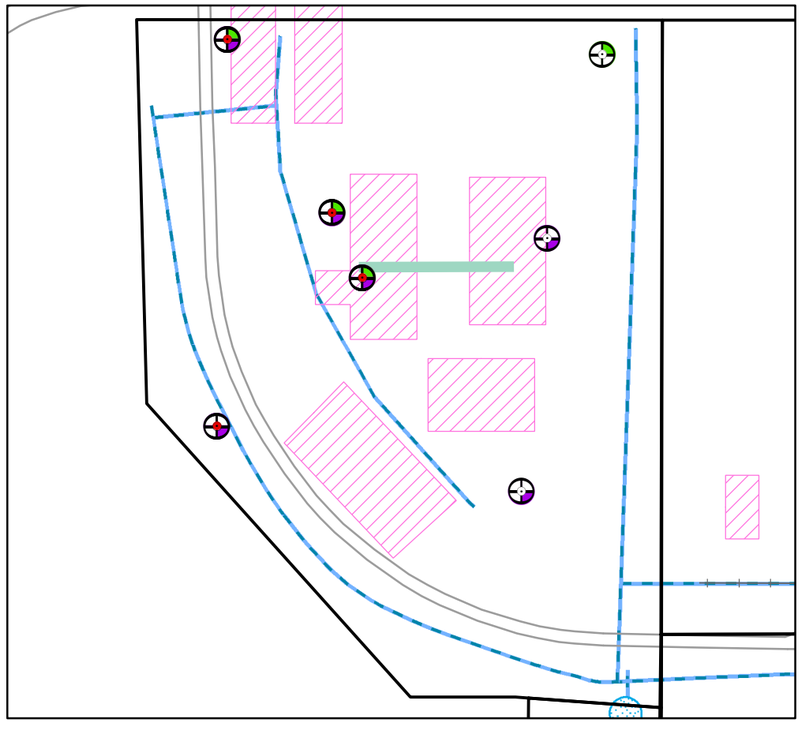
Subsurface Soil 2-5'



Subsurface Soil 5-10'

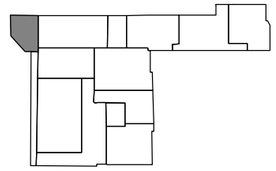


Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No Exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- IWCS cutoff wall
- Test trenches
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



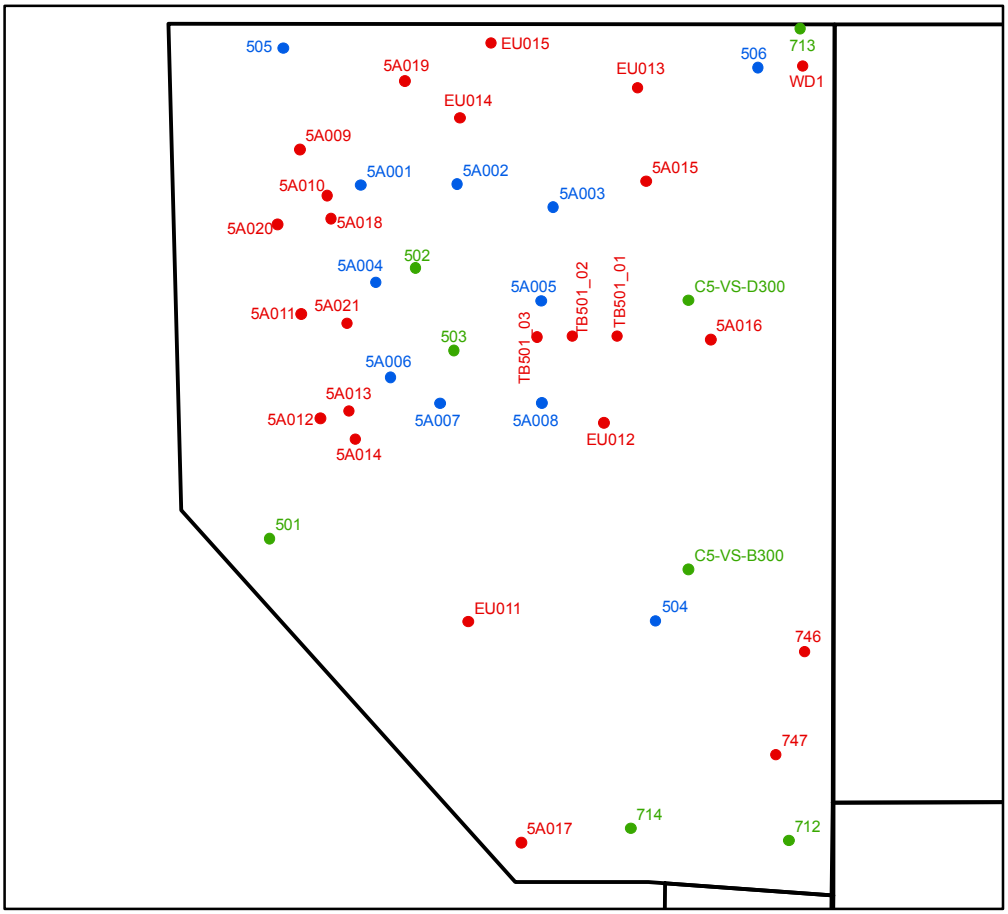
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 1

Science Applications International Corporation Columbus, Ohio

Figure 4-2a



Phase 1
Phase 2
Phase 3

0 120
Feet

N

US Army Corps of Engineers
Buffalo Distirict

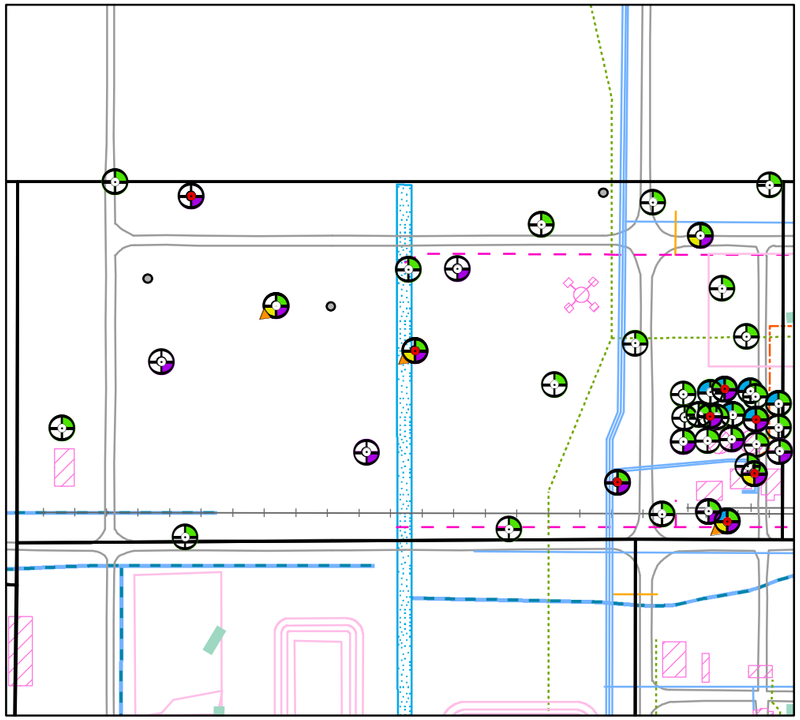
Sample Locations

EU 1

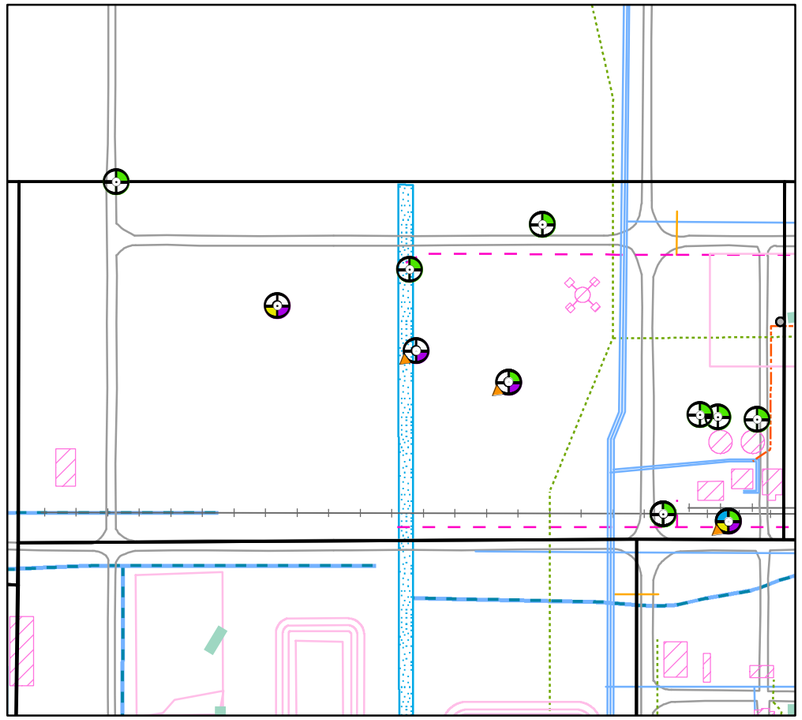
Science Applications International Corporation
Columbus, Ohio

Figure 4-2b

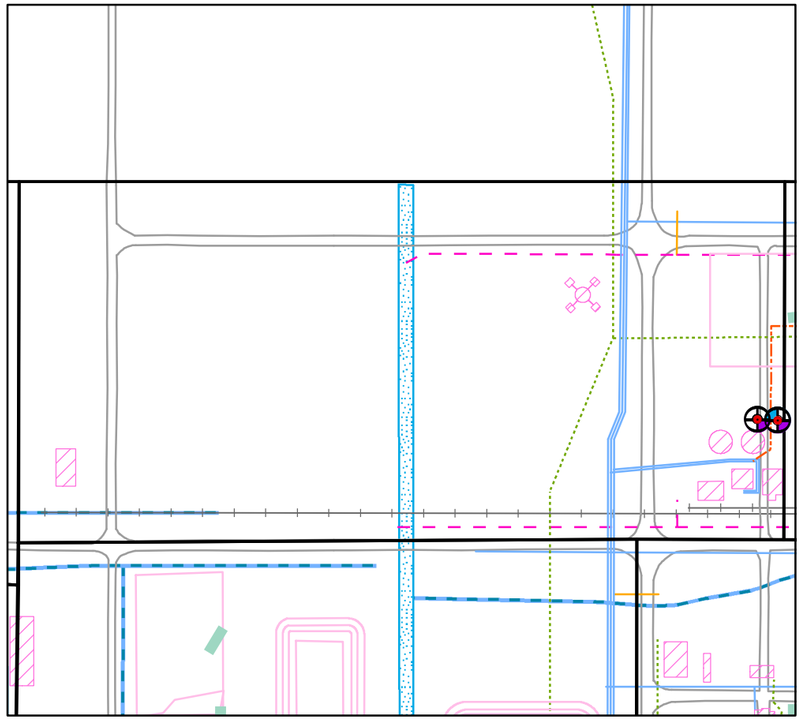
Surface Soil 0-0.5'



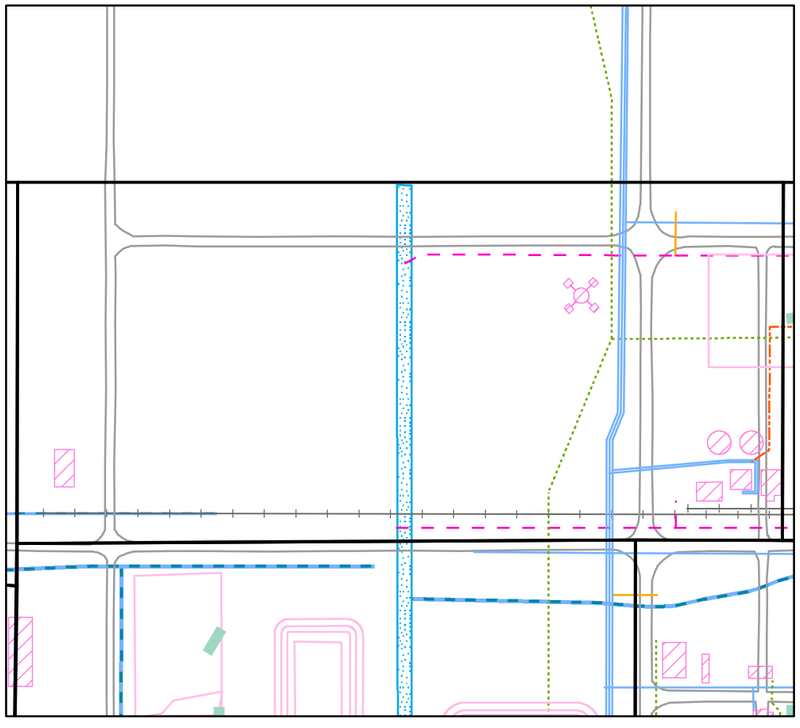
Subsurface Soil 0.5-2'



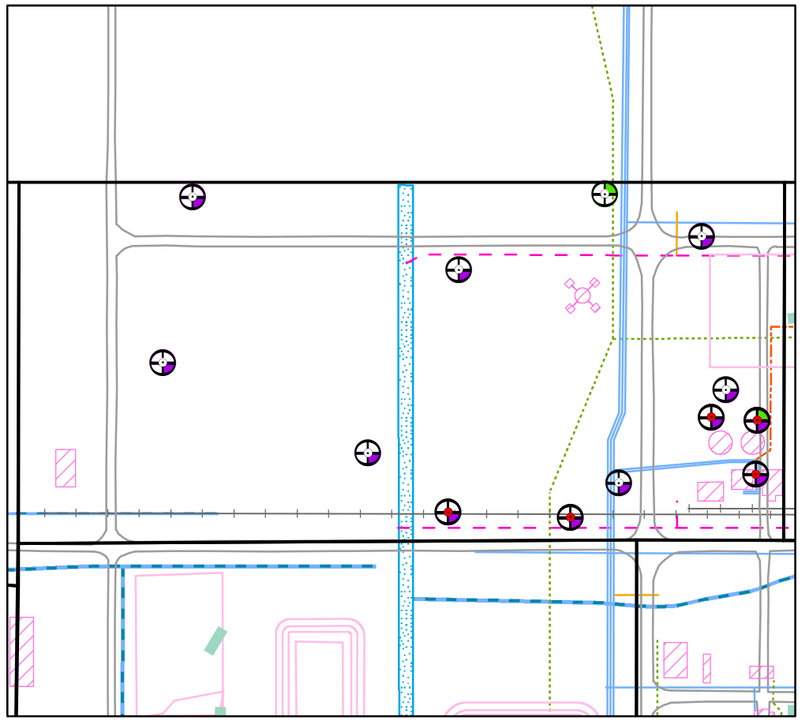
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

- Metal
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- VOC
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- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary

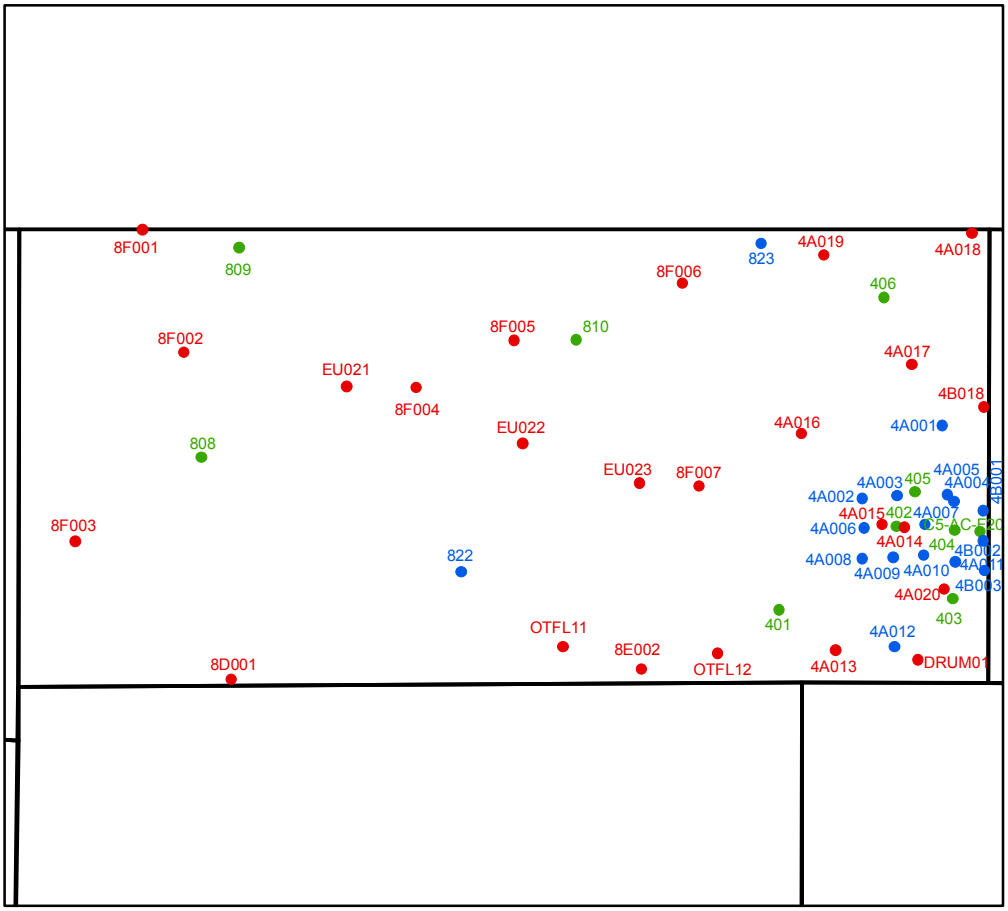
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 2

Science Applications International Corporation Columbus, Ohio

Figure 4-3a



Phase 1
Phase 2
Phase 3

0 120
Feet

N

US Army Corps of Engineers
Buffalo Distirict

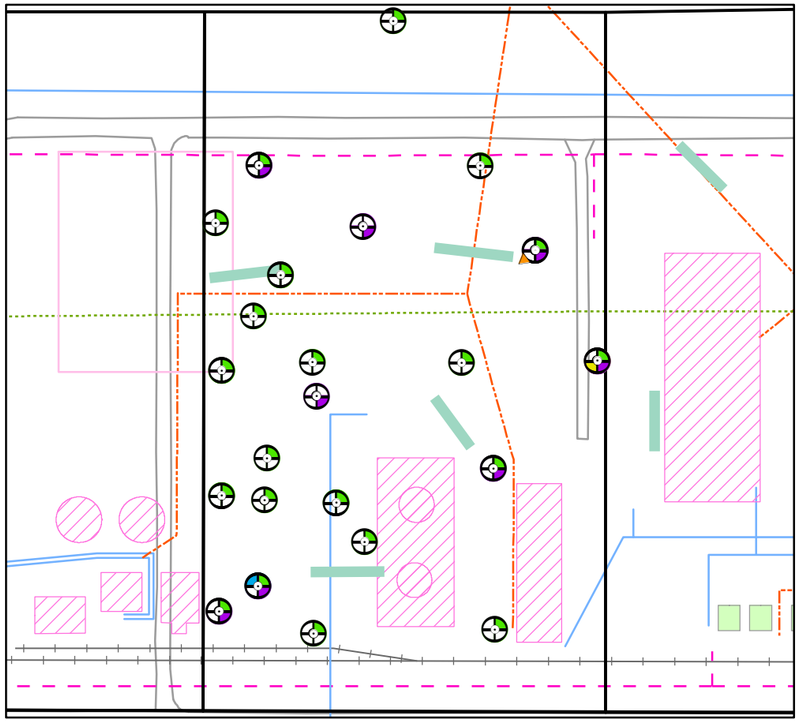
Sample Locations

EU 2

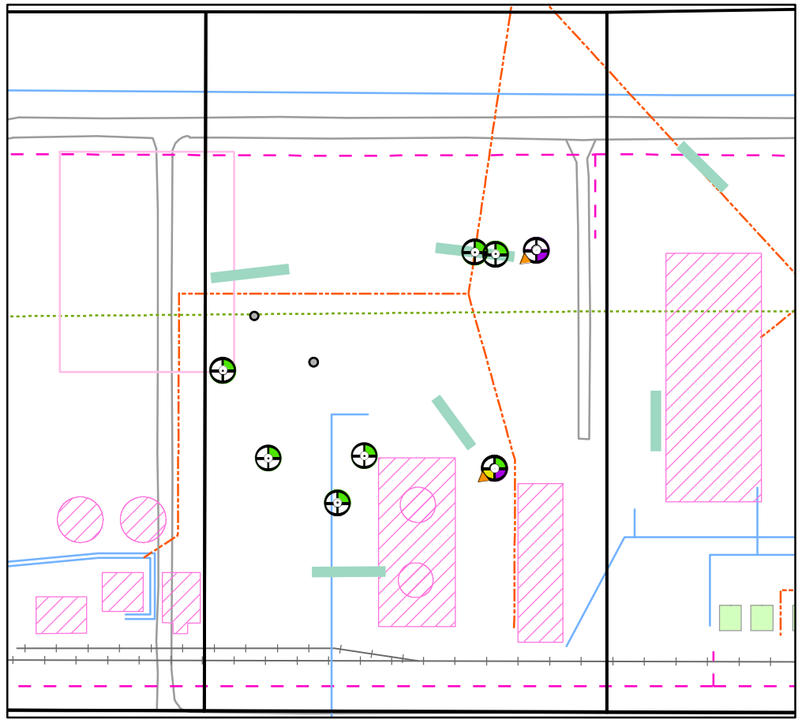
Science Applications International Corporation
Columbus, Ohio

Figure 4-3b

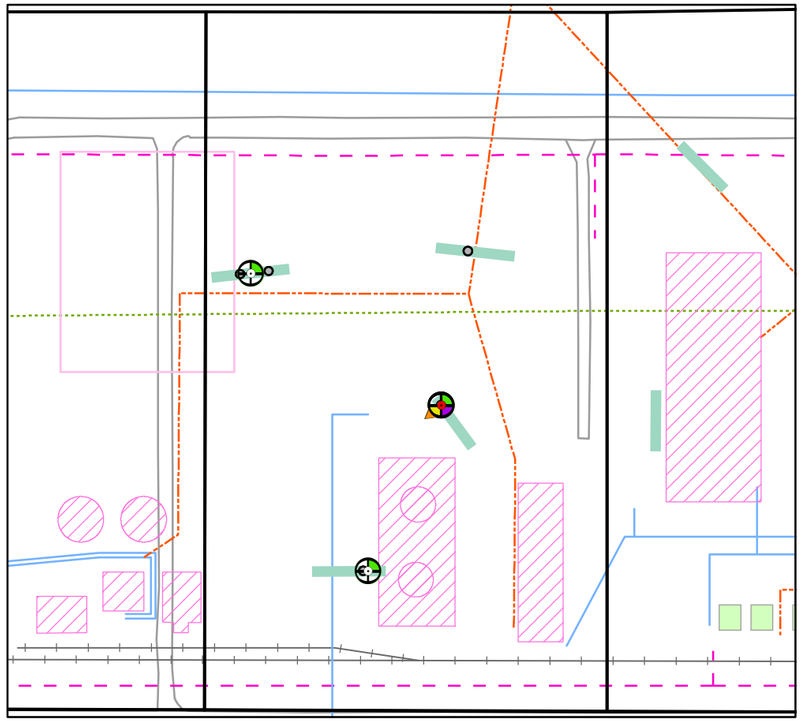
Surface Soil 0-0.5'



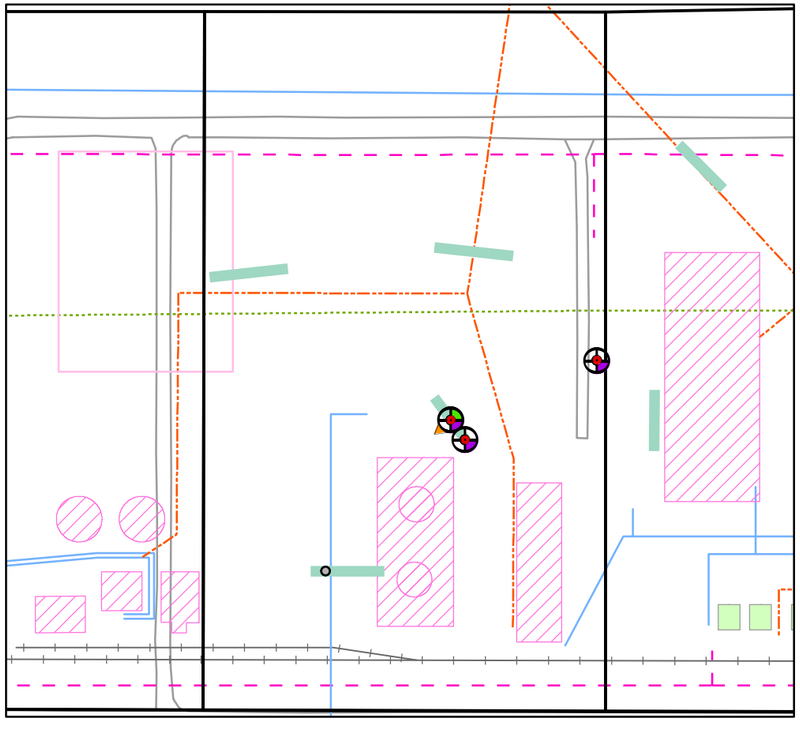
Subsurface Soil 0.5-2'



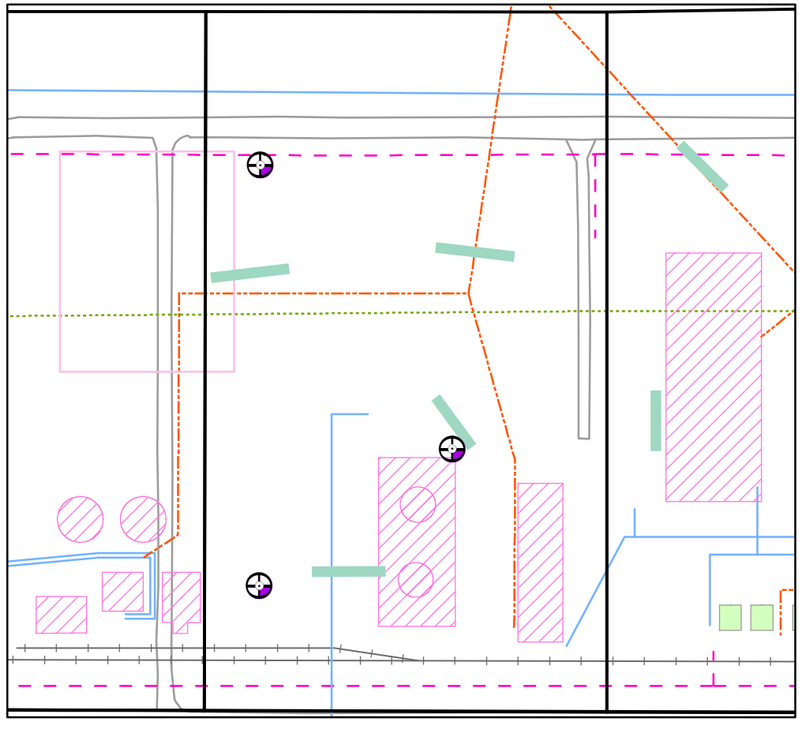
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

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- PCB
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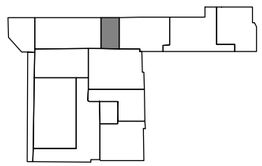
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



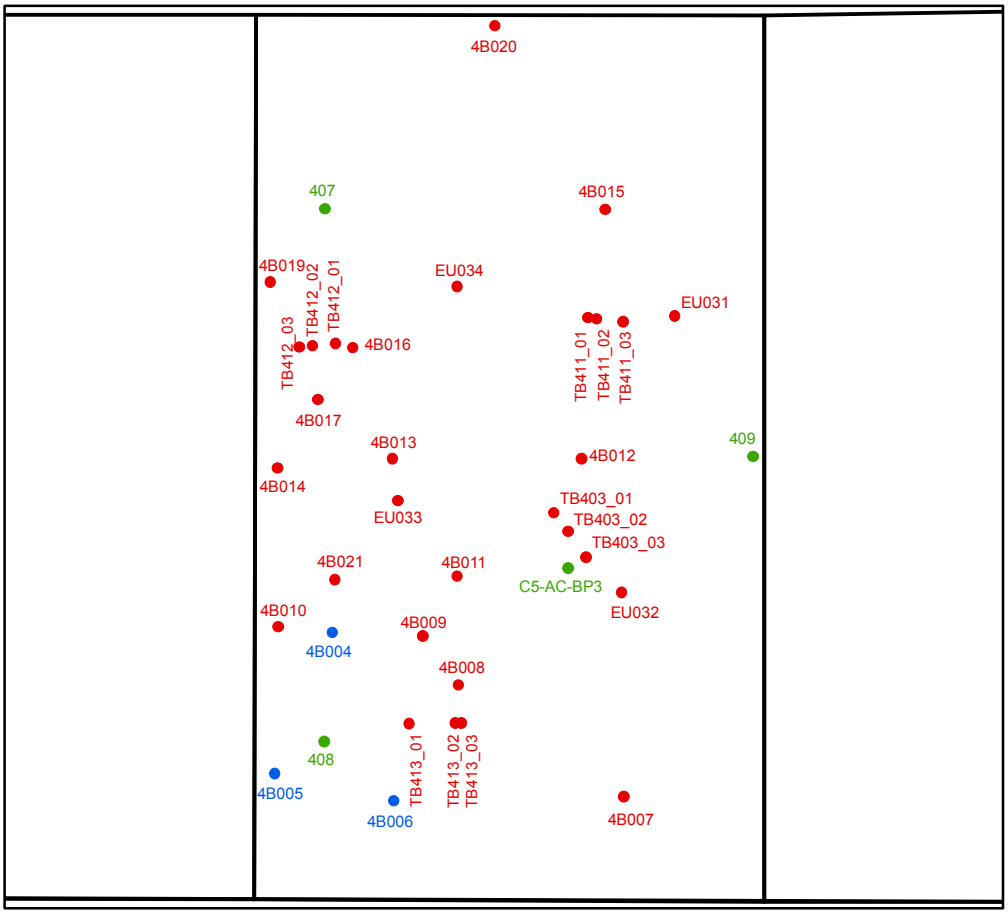
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 3

Science Applications International Corporation
Columbus, Ohio

Figure 4-4a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4B019
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TB412_01
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EU031
TB412_03
4B016
TB411_01
TB411_02
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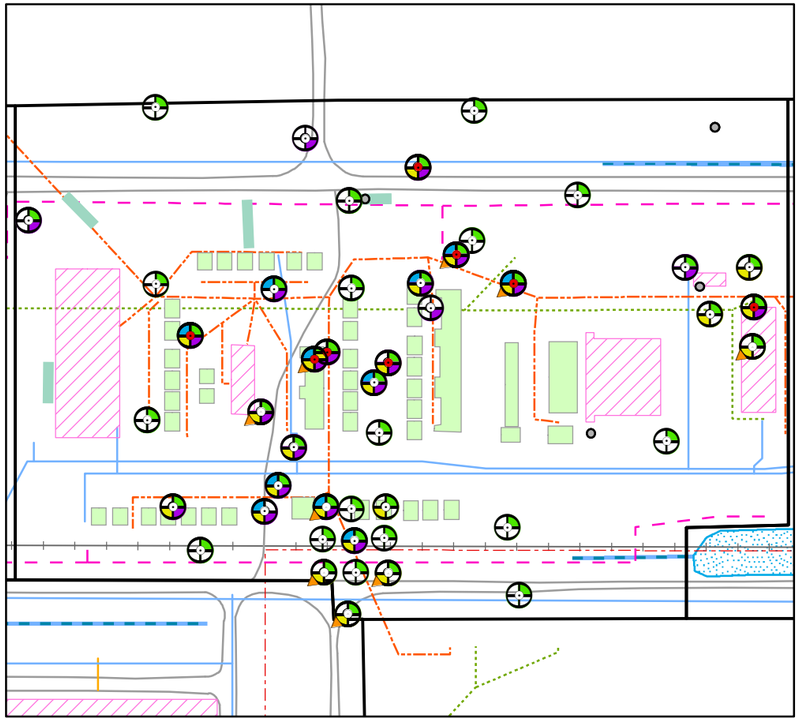
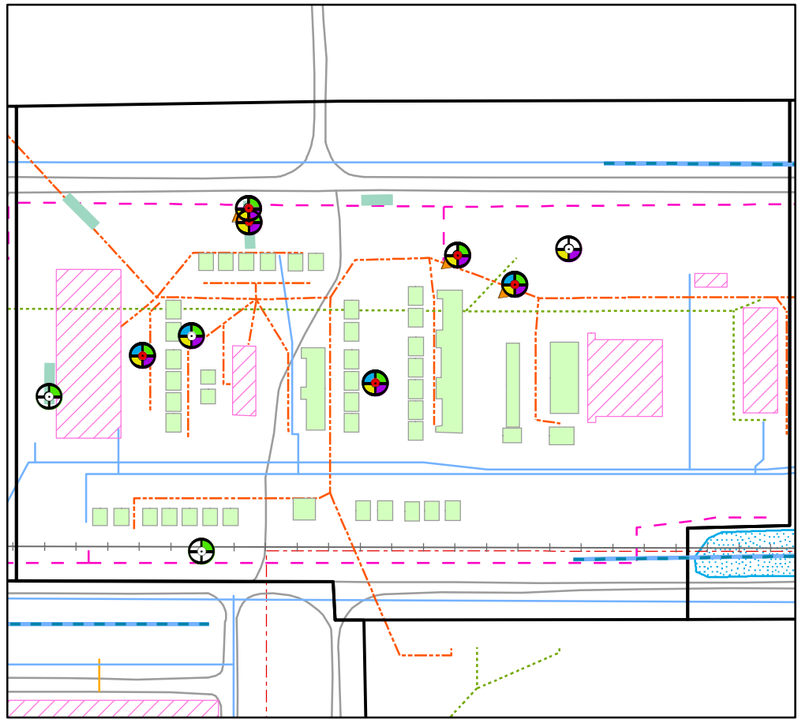
4B017
4B013
409
4B012
4B014
TB403_01
EU033
TB403_02
TB403_03
4B021
4B011
C5-AC-BP3
EU032
4B010
4B009
4B004
4B008
408
TB413_01
TB413_02
TB413_03
4B005
4B006
4B007
Phase 1
Phase 2
Phase 3
0
120
Feet
N
US Army Corps of Engineers
Buffalo Distirict
Sample Locations
EU 3
Science Applications
International Corporation
Columbus, Ohio
Figure 4-4b

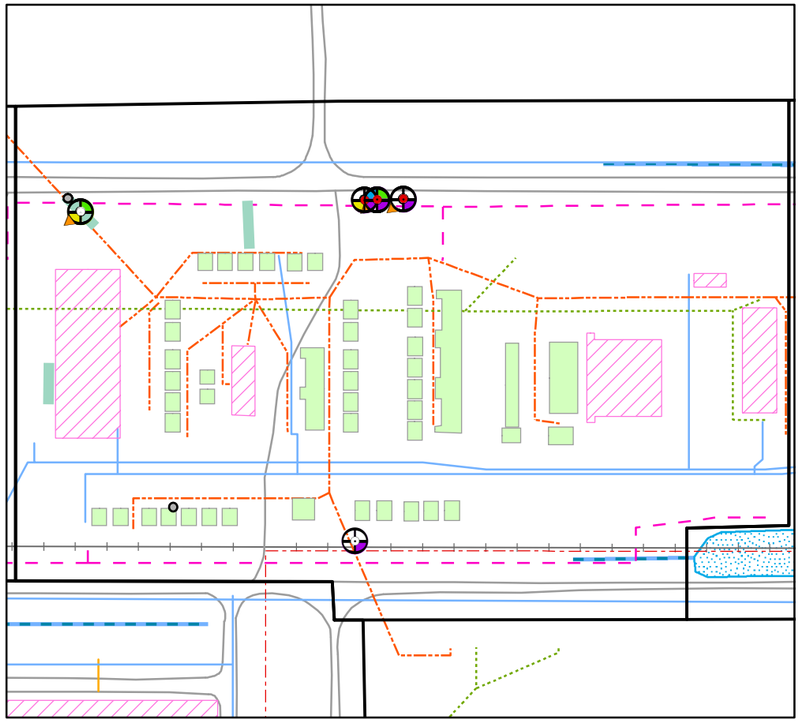
Surface Soil 0-0.5'



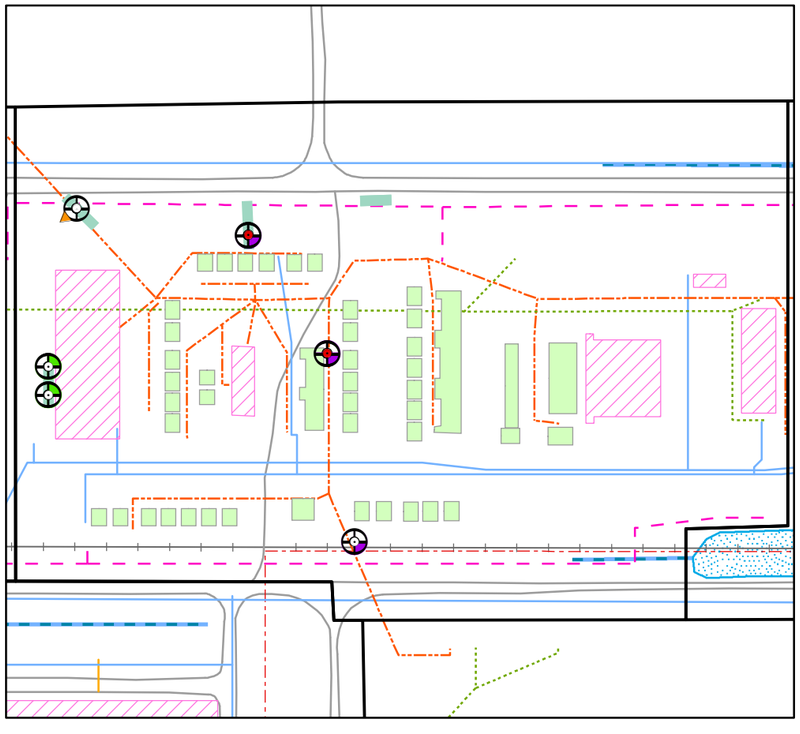
Subsurface Soil 0.5-2'



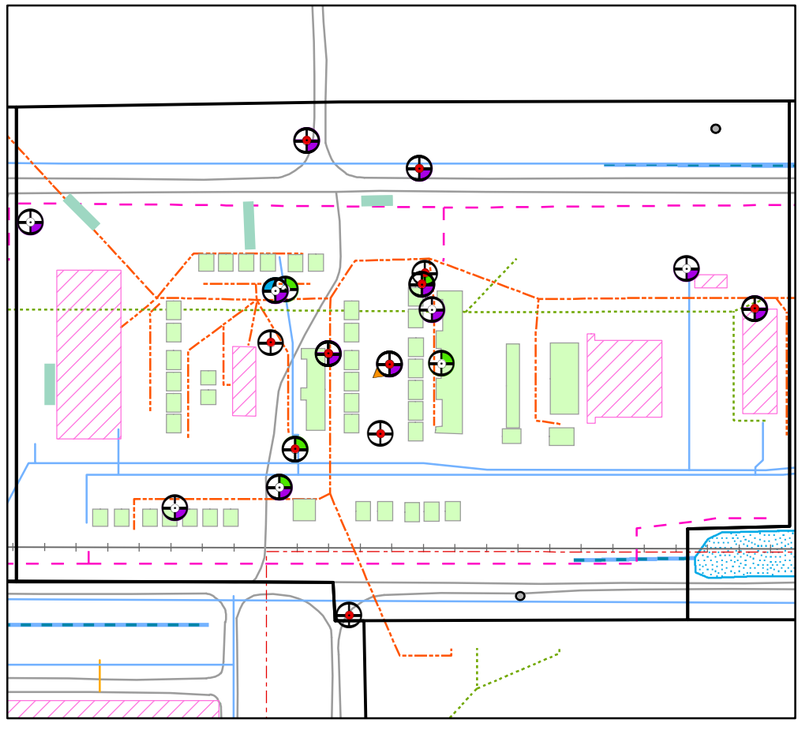
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

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- PCB
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- VOC
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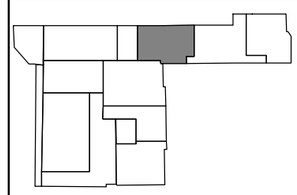
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



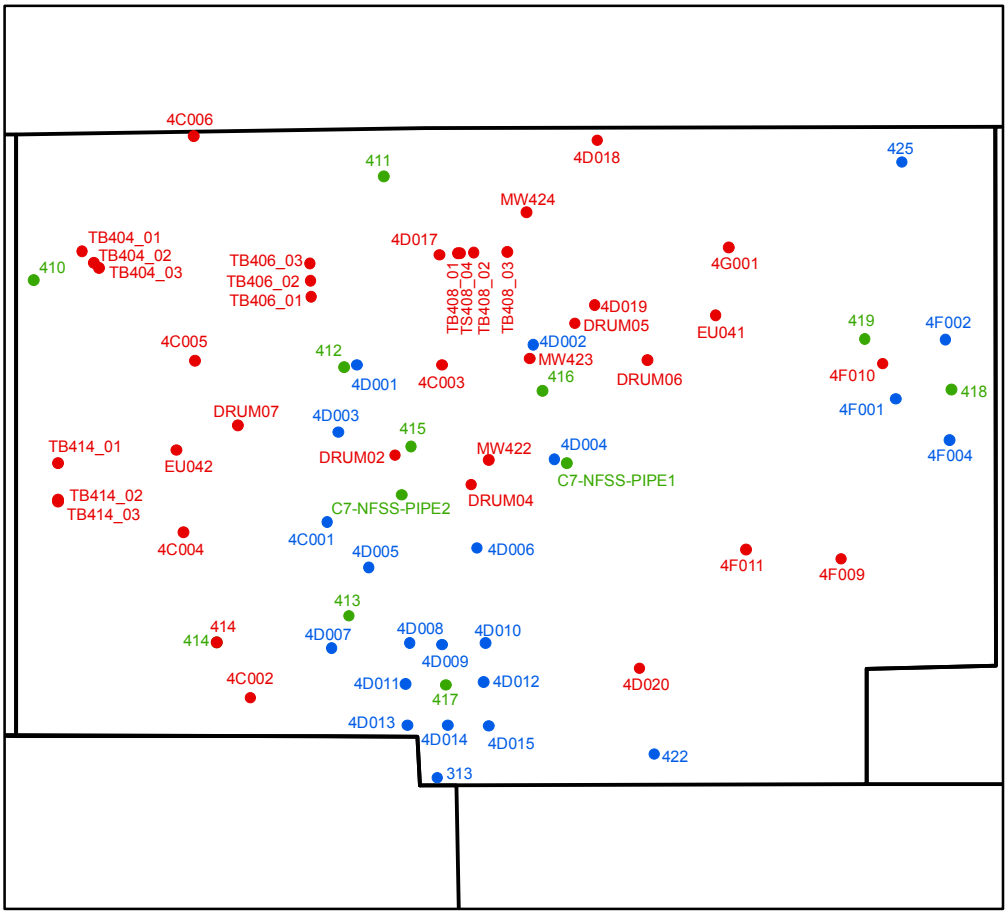
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 4

Science Applications International Corporation
Columbus, Ohio

Figure 4-5a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TB408_01
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TB408_03
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4D019
DRUM05
EU041
419
4F002
4C005
412
4D001
4C003
4D002
MW423
416
DRUM06
4F010
4F001
418
DRUM07
4D003
415
TB414_01
EU042
DRUM02
MW422
4D004
C7-NFSS-PIPE1
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TB414_03
DRUM04
C7-NFSS-PIPE2
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4D005
4D006
4F011
4F009
413
414
414
4D007
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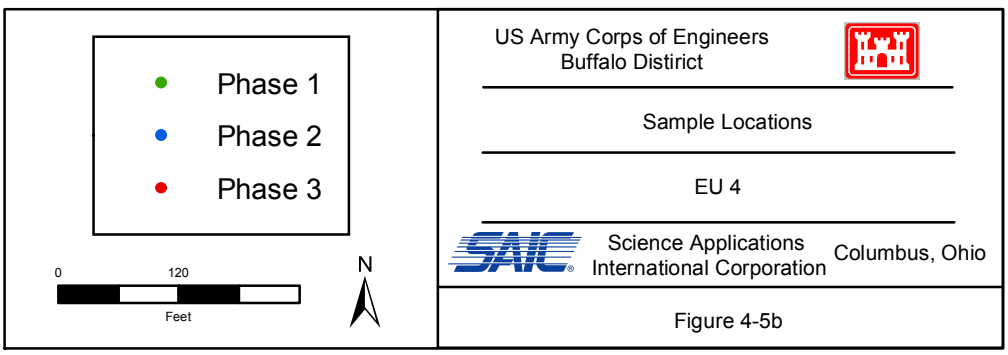
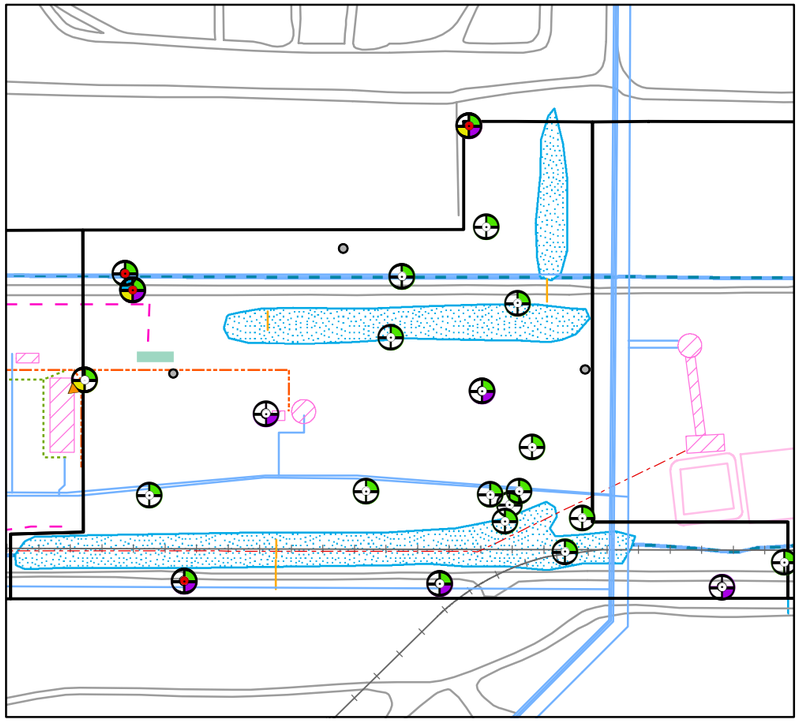
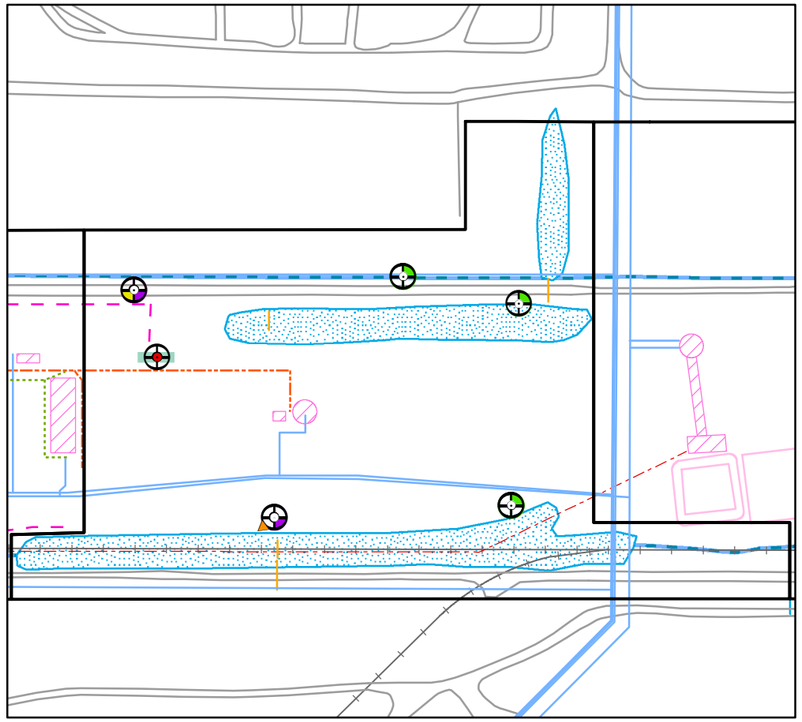

Phase 1
Phase 2
Phase 3
0
120
Feet
N
US Army Corps of Engineers
Buffalo Distirict
Sample Locations
EU 4
Science Applications
International Corporation
Columbus, Ohio
Figure 4-5b

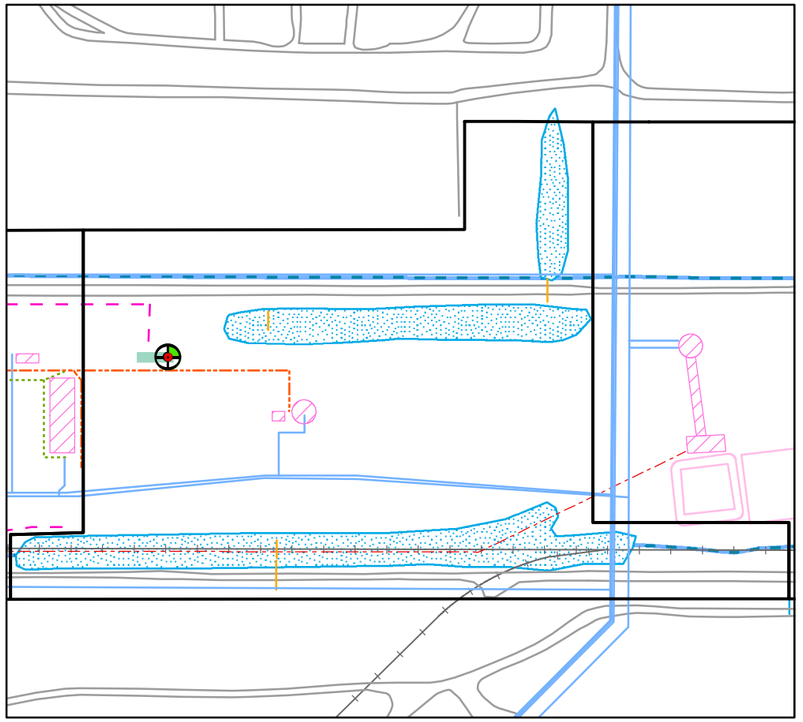
Surface Soil 0-0.5'



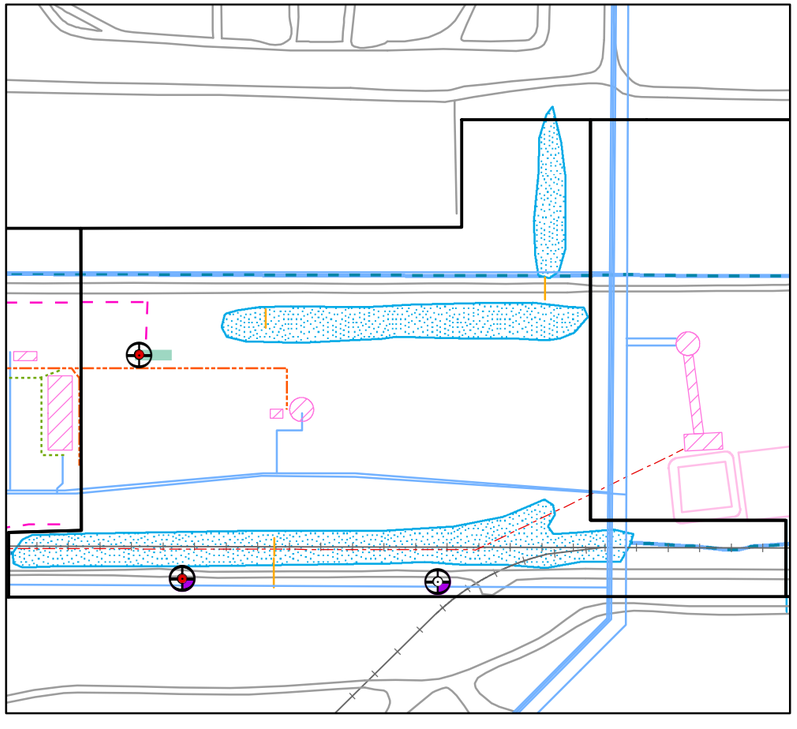
Subsurface Soil 0.5-2'



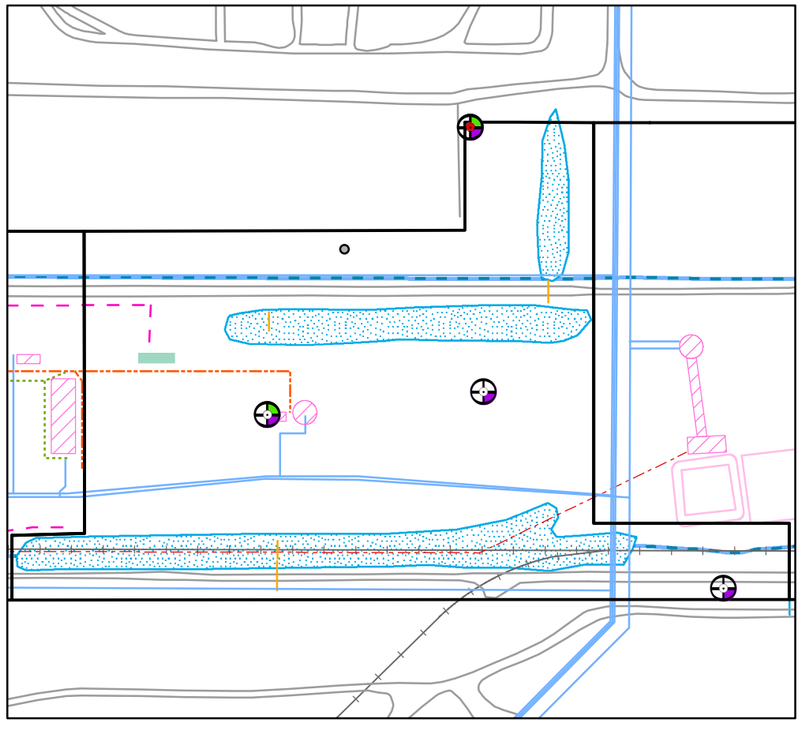
Subsurface Soil 2-5'



Subsurface Soil 5-10'

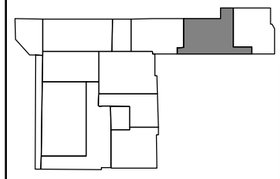


Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No Exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- IWCS cutoff wall
- Test trenches
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



N

0 60 120 240

Feet

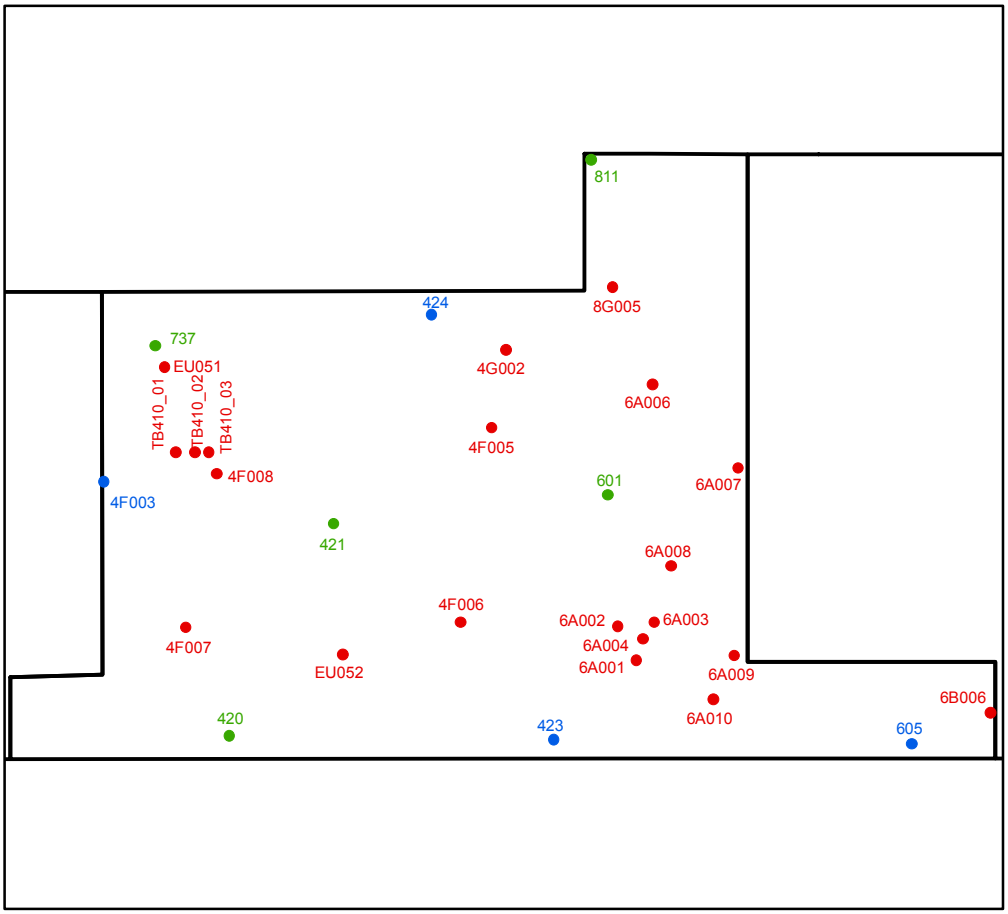
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 5

Science Applications International Corporation Columbus, Ohio

Figure 4-6a



Phase 1
Phase 2
Phase 3

0 120
Feet

N

US Army Corps of Engineers
Buffalo Distirict

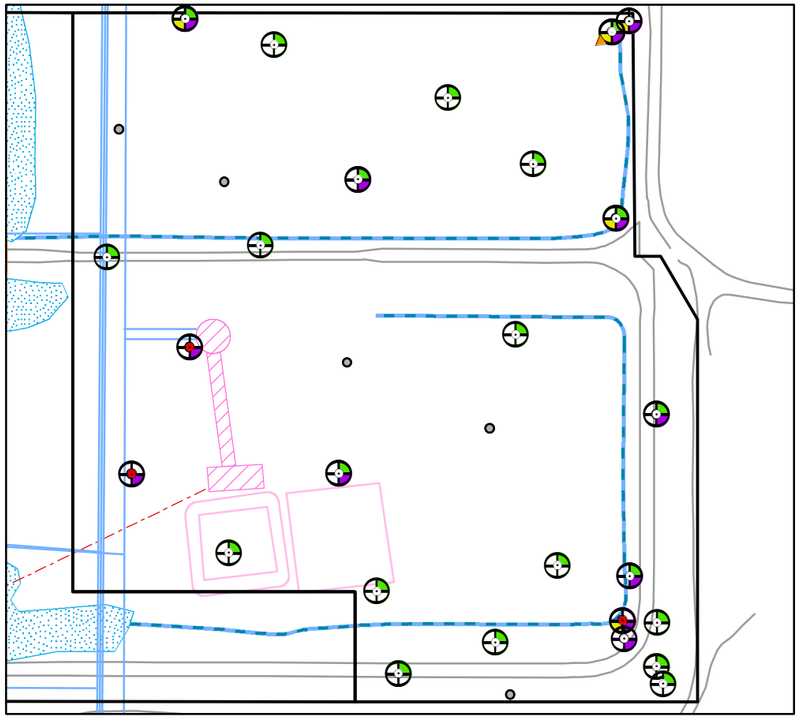
Sample Locations

EU 5

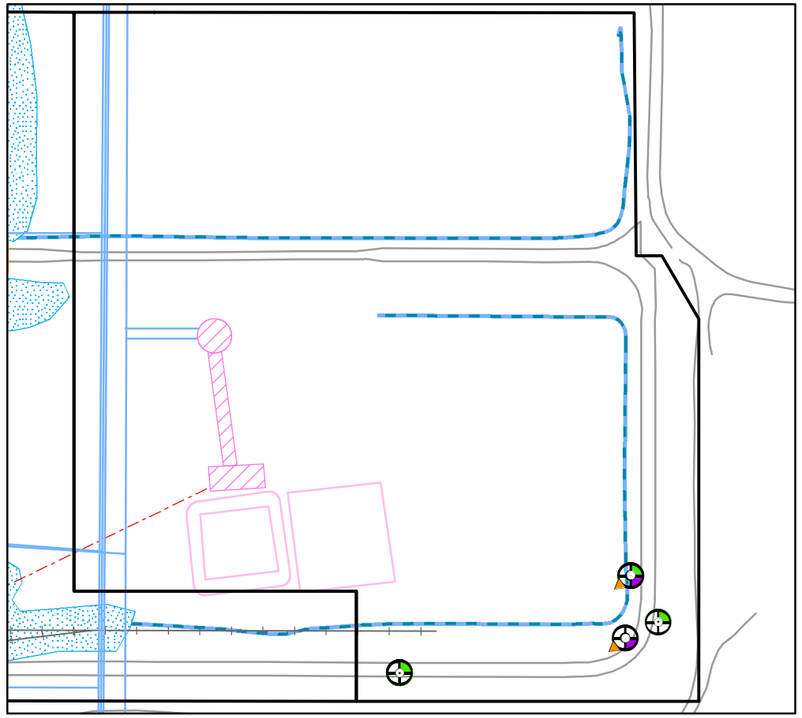
Science Applications International Corporation
Columbus, Ohio

Figure 4-6b

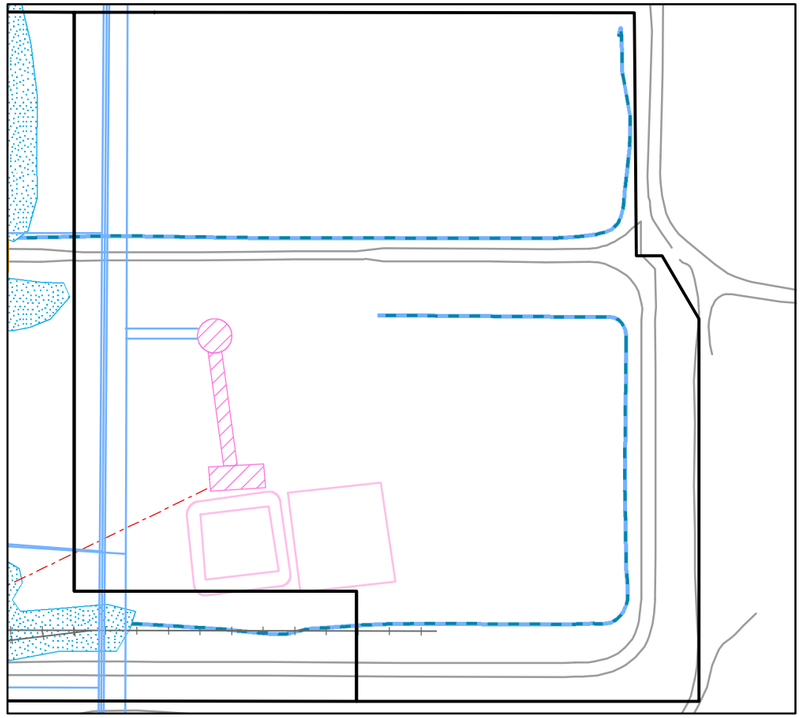
Surface Soil 0-0.5'



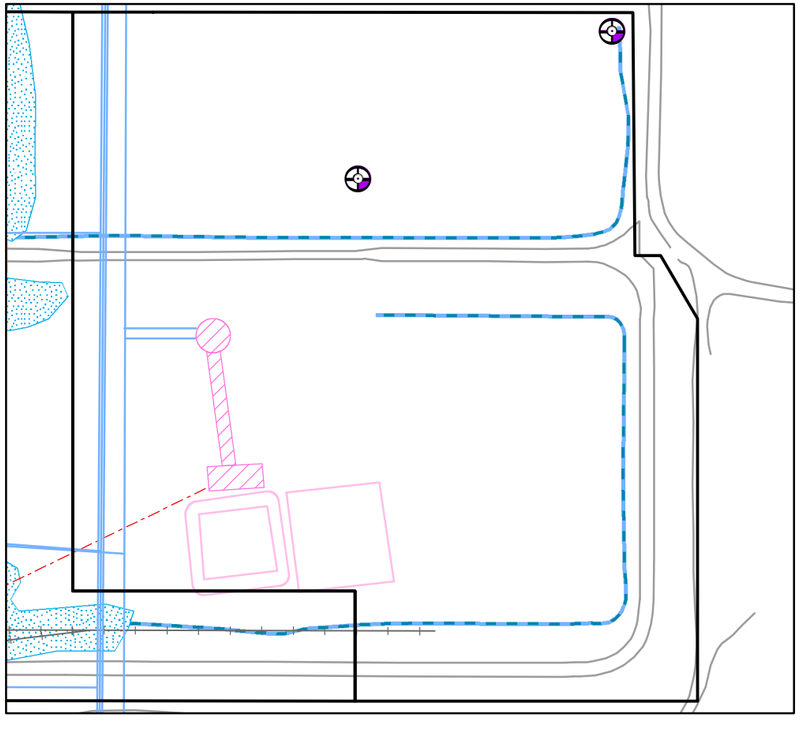
Subsurface Soil 0.5-2'



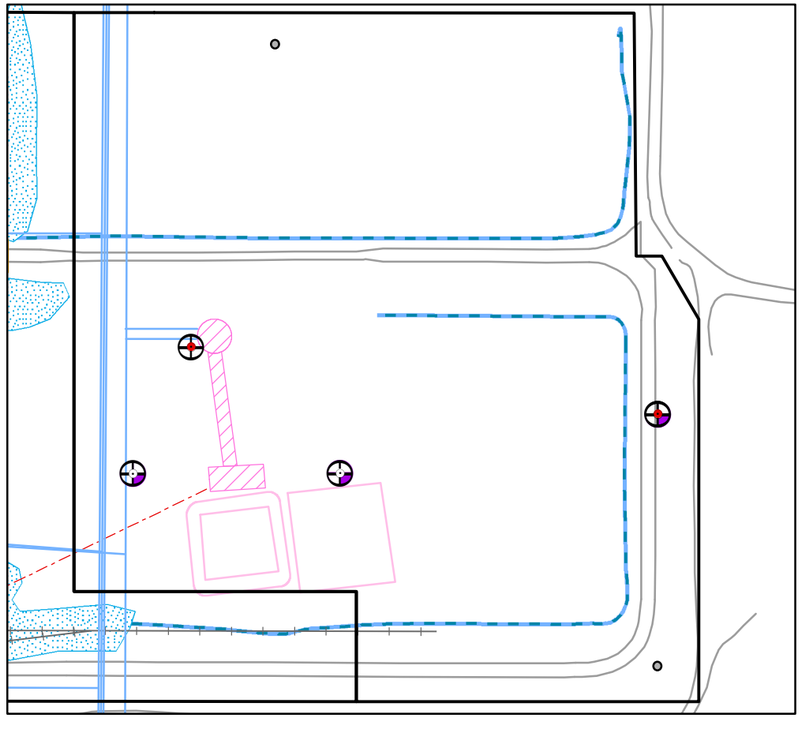
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

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- PCB
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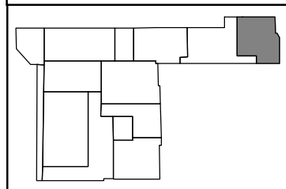
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



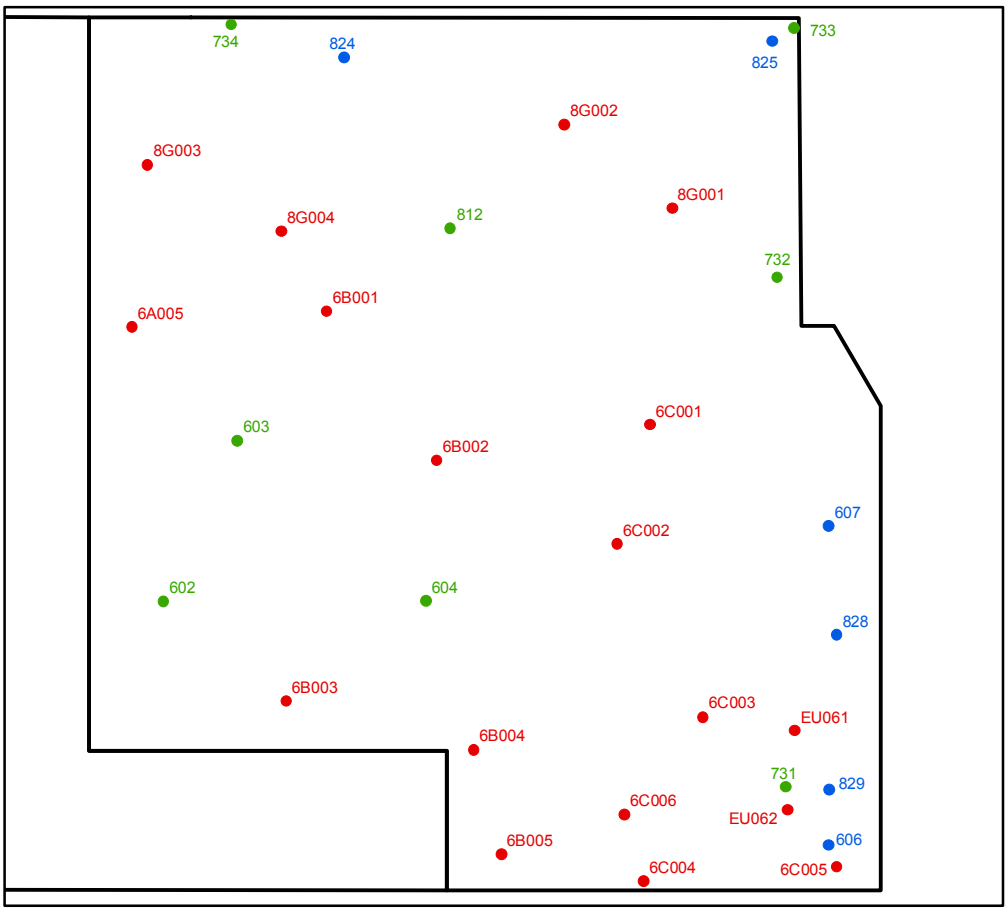
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 6

Science Applications International Corporation — Columbus, Ohio

Figure 4-7a



Phase 1
Phase 2
Phase 3

0 120 240
Feet

N

US Army Corps of Engineers
Buffalo Distirict

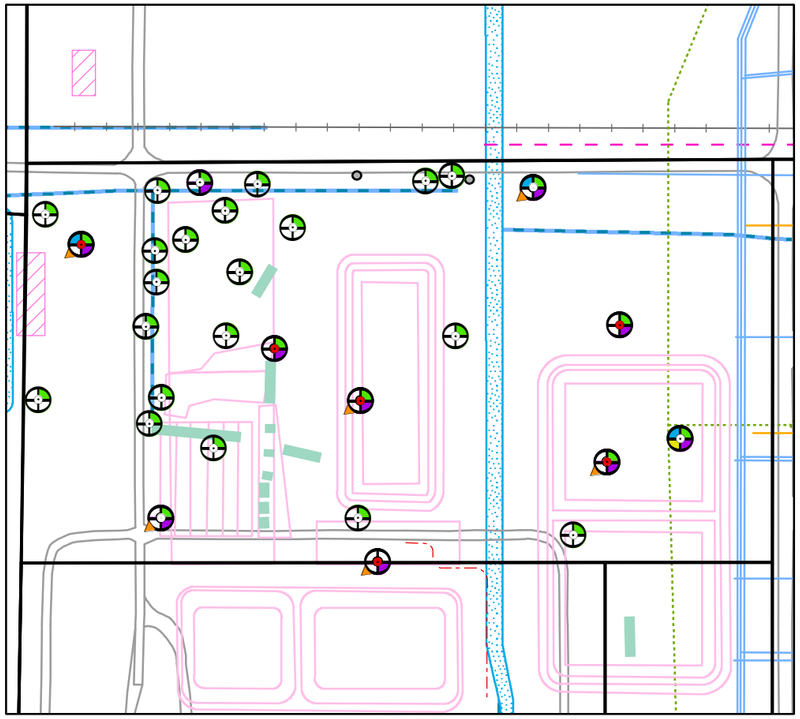
Sample Locations

EU 6

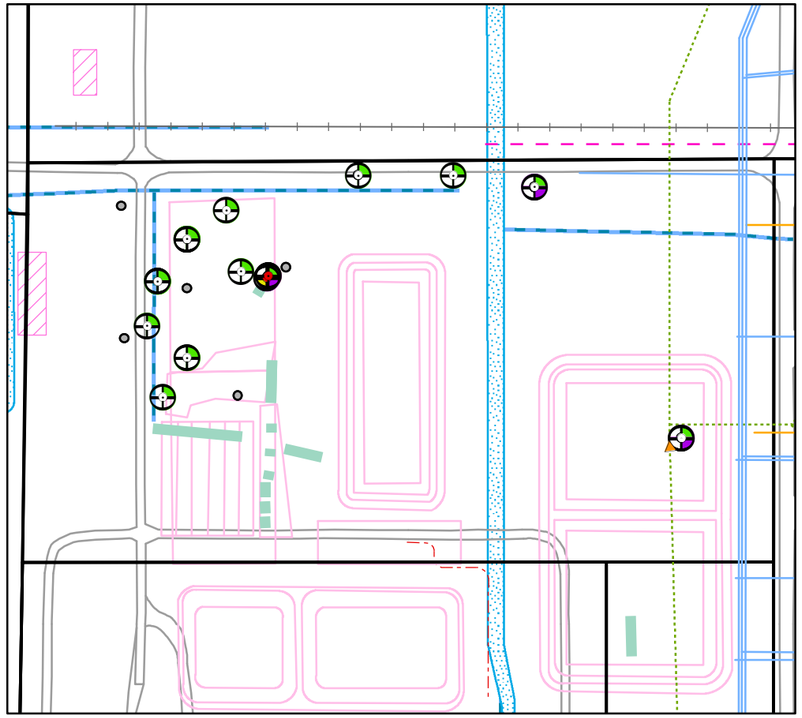
Science Applications International Corporation
Columbus, Ohio

Figure 4-7b

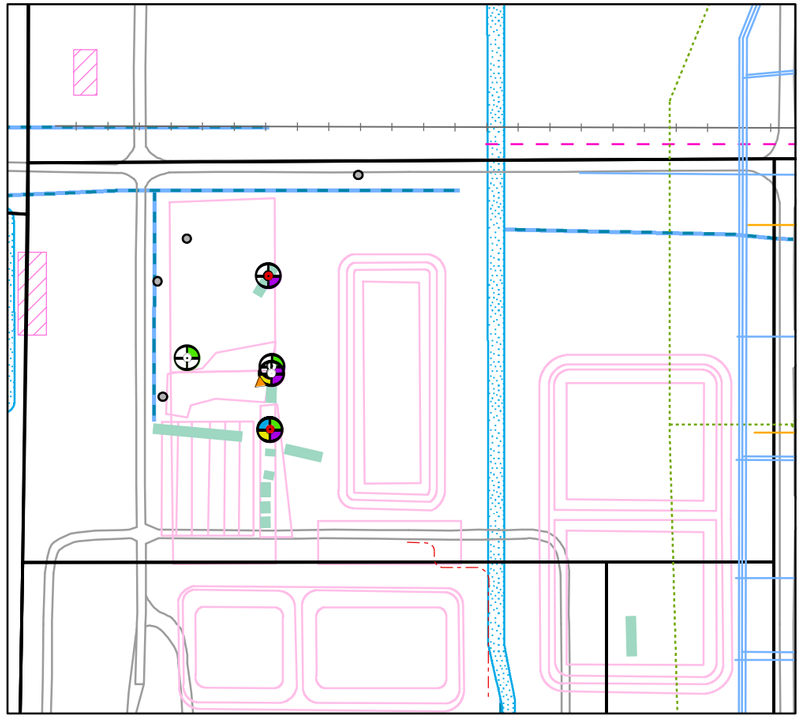
Surface Soil 0-0.5'



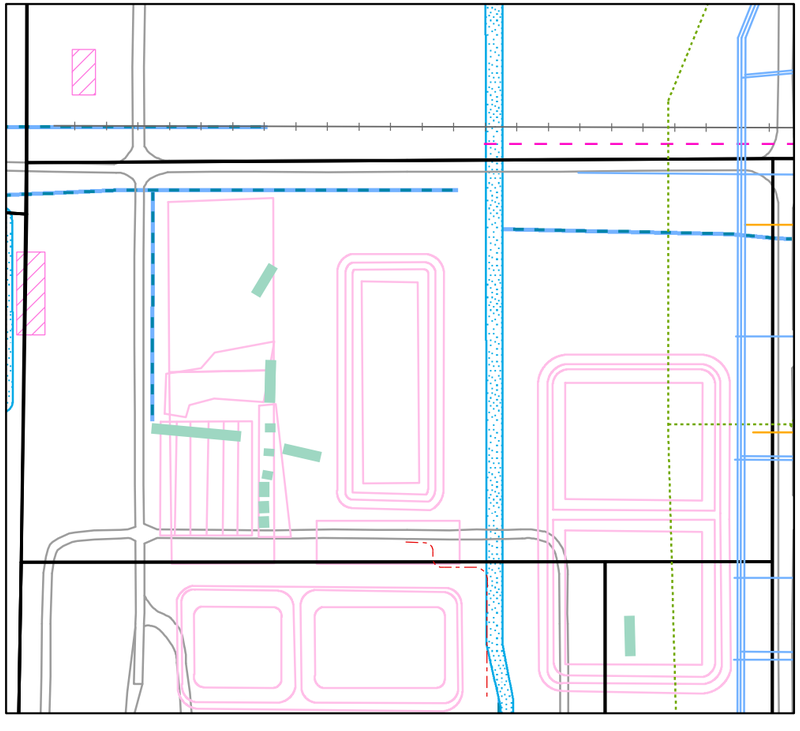
Subsurface Soil 0.5-2'



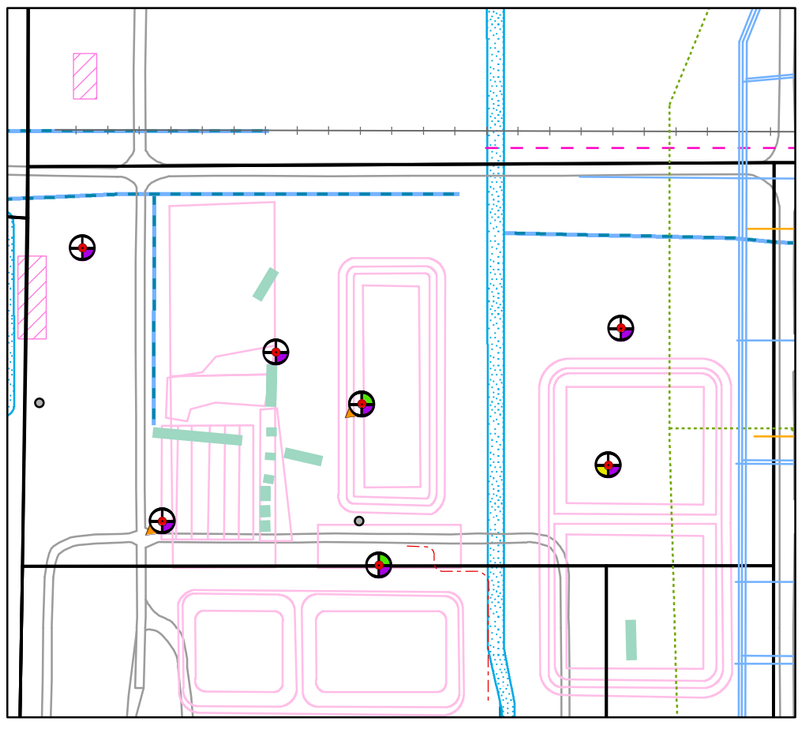
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
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- VOC
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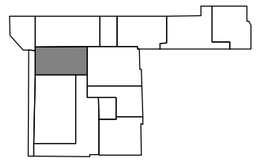
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



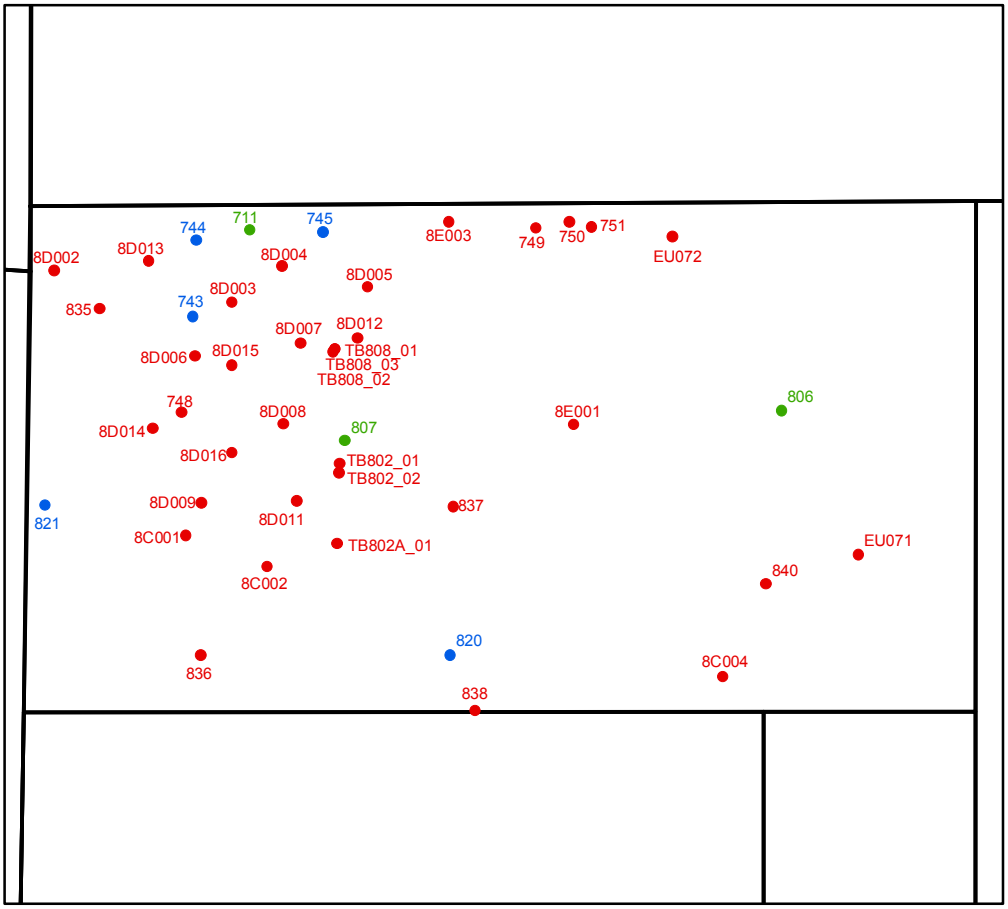
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 7

Science Applications International Corporation
Columbus, Ohio

Figure 4-8a



US Army Corps of Engineers
Buffalo Distirict

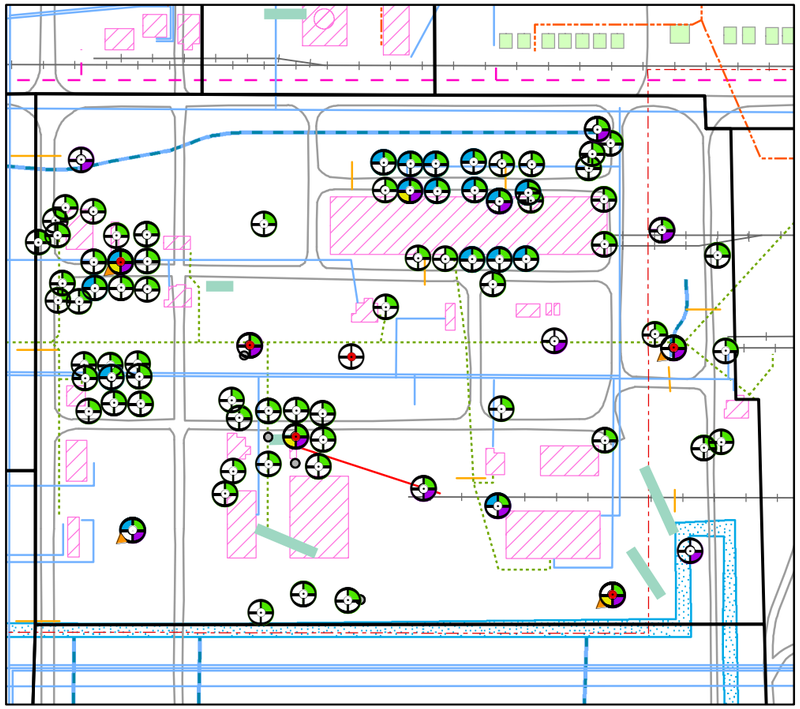
Sample Locations

EU 7

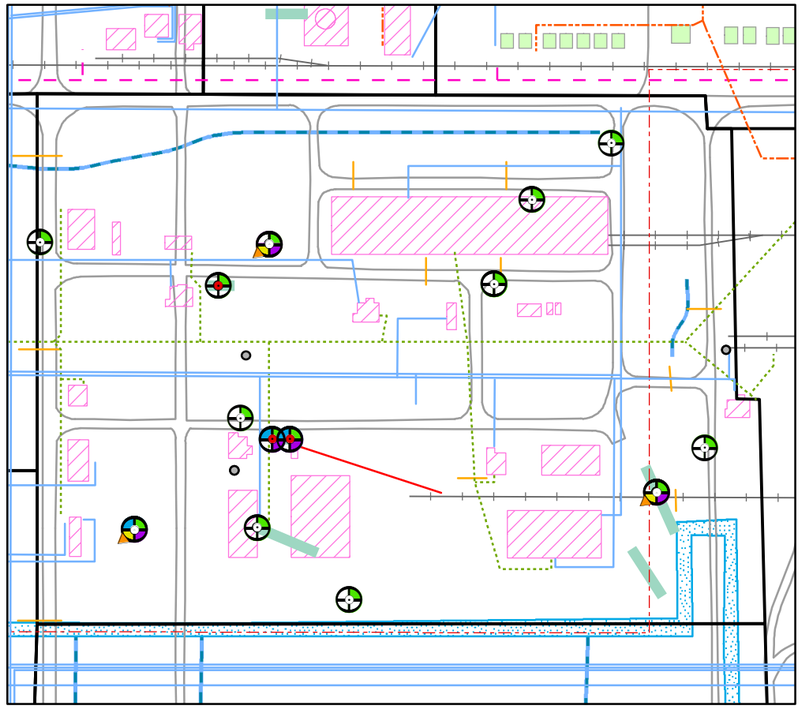
Science Applications International Corporation
Columbus, Ohio

Figure 4-8b

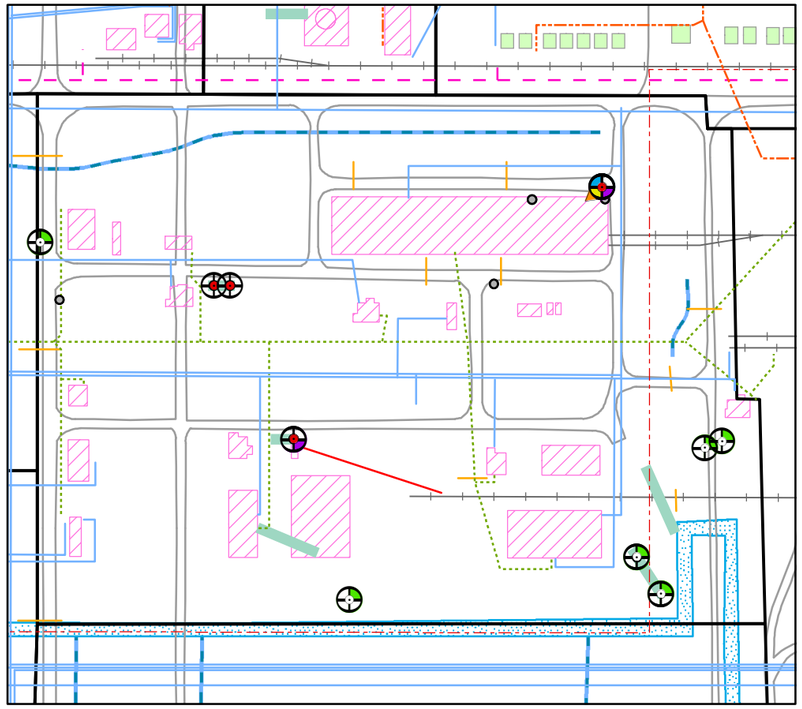
Surface Soil 0-0.5'



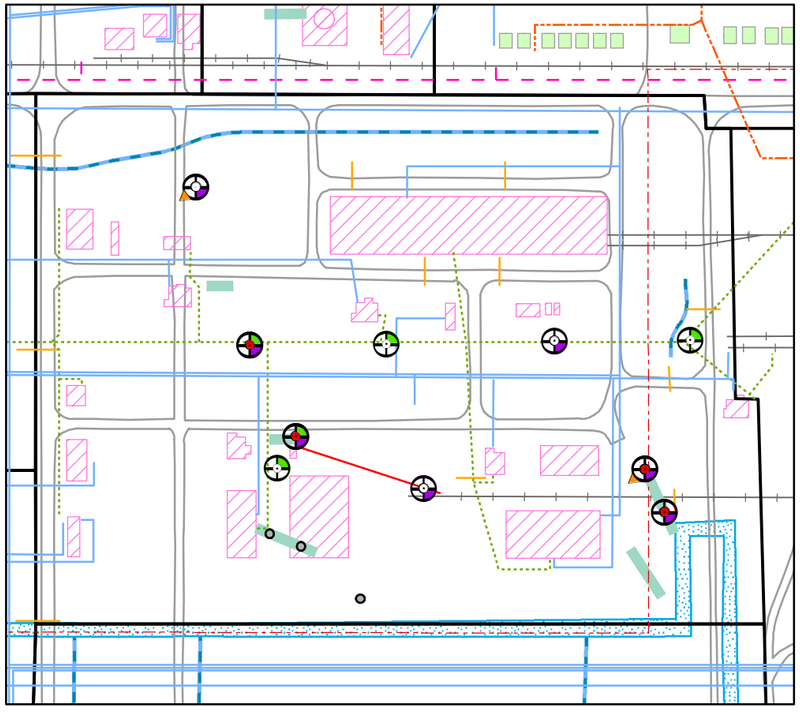
Subsurface Soil 0.5-2'



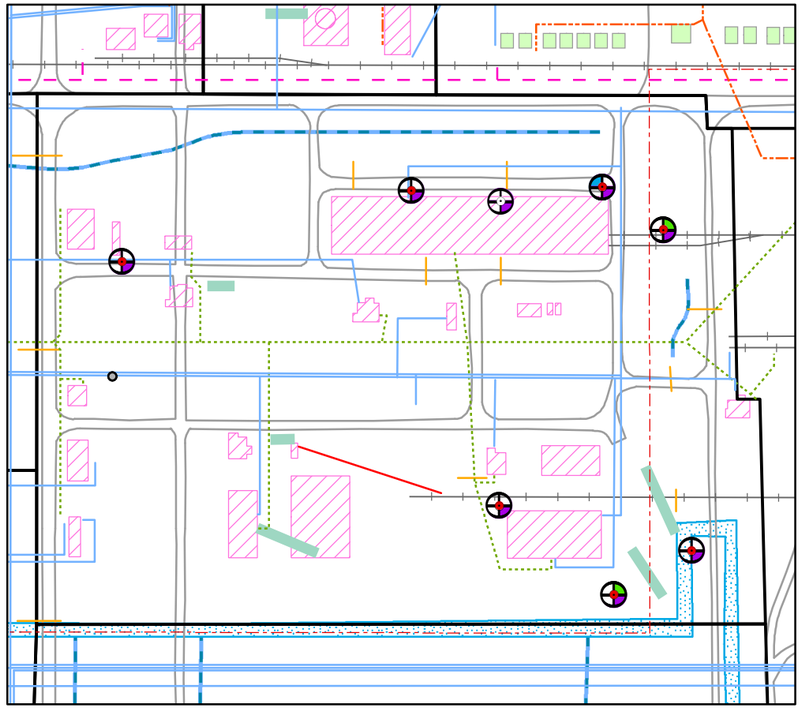
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
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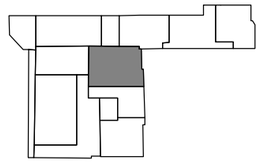
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



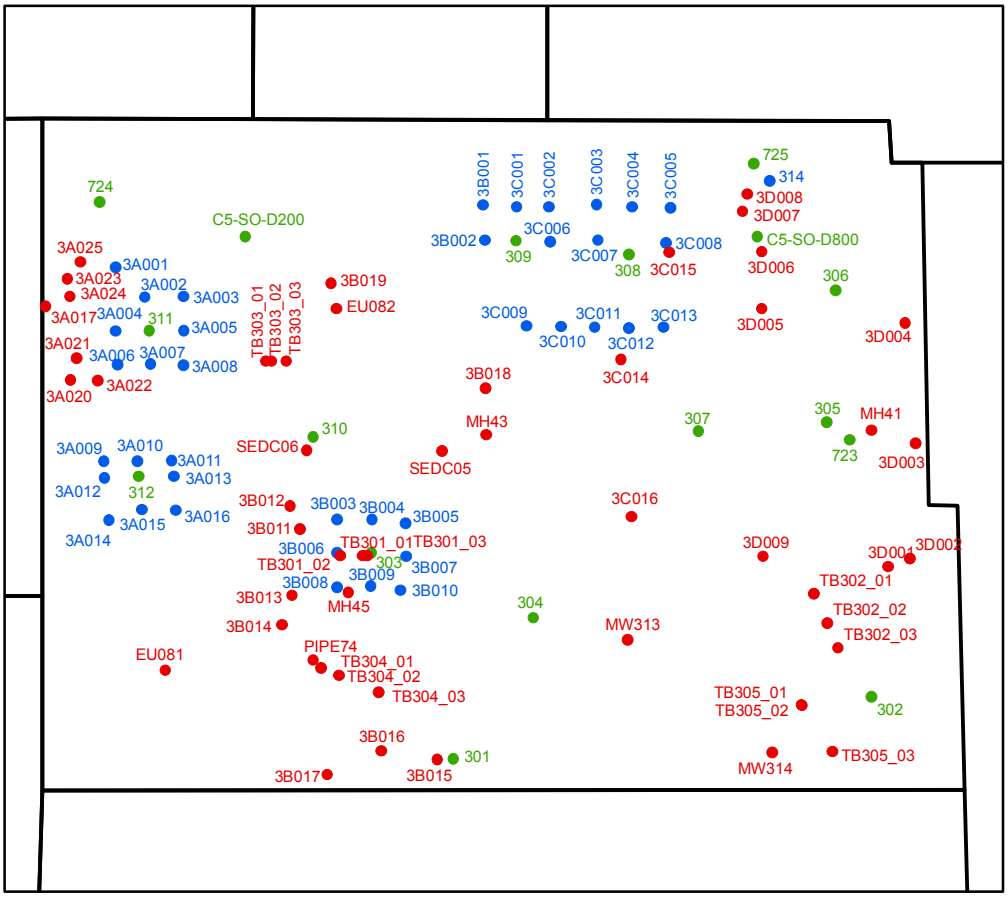
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 8

Science Applications International Corporation Columbus, Ohio

Figure 4-9a



Phase 1
Phase 2
Phase 3

0 120
Feet

N

US Army Corps of Engineers
Buffalo Distirict

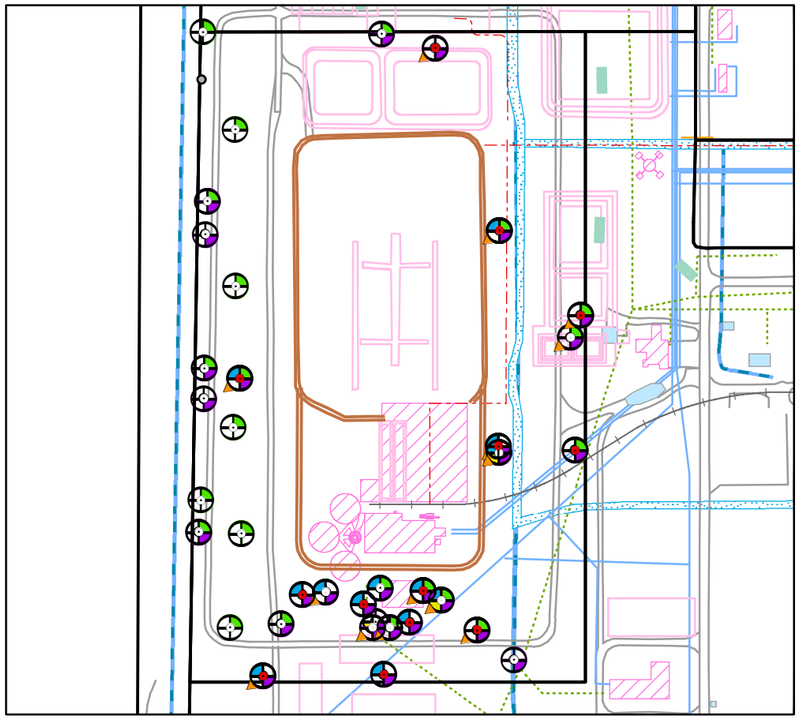
Sample Locations

EU 8

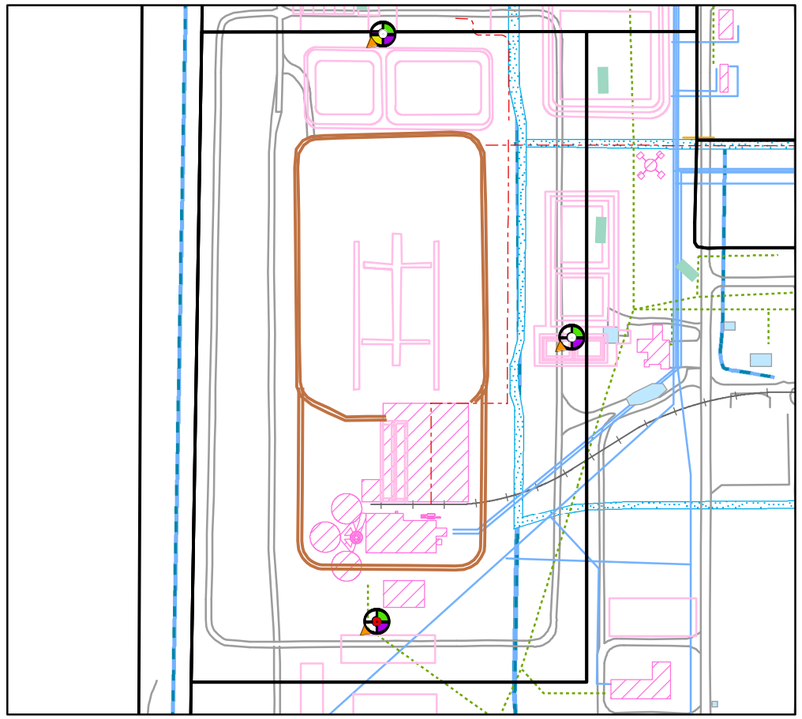
Science Applications International Corporation
Columbus, Ohio

Figure 4-9b

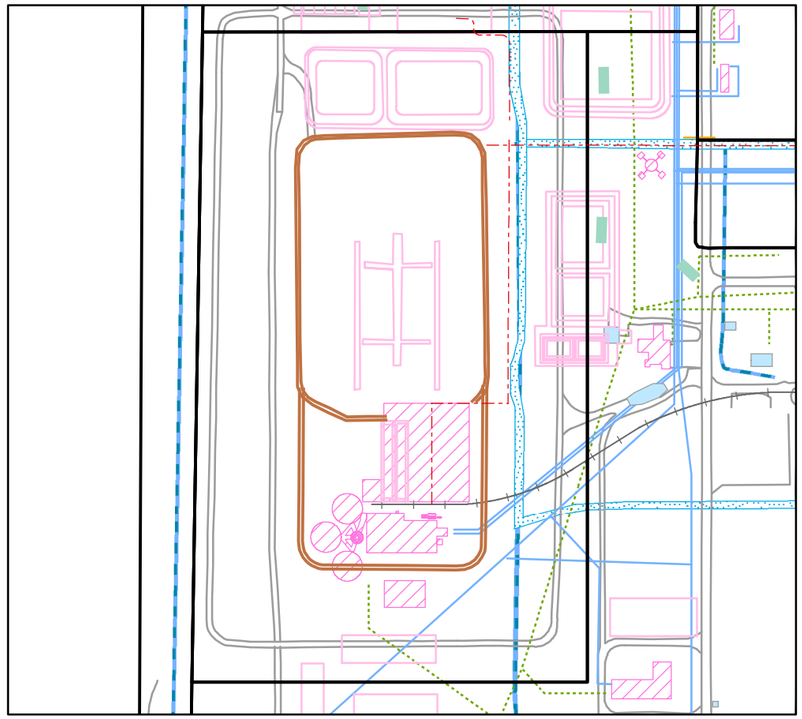
Surface Soil 0-0.5'



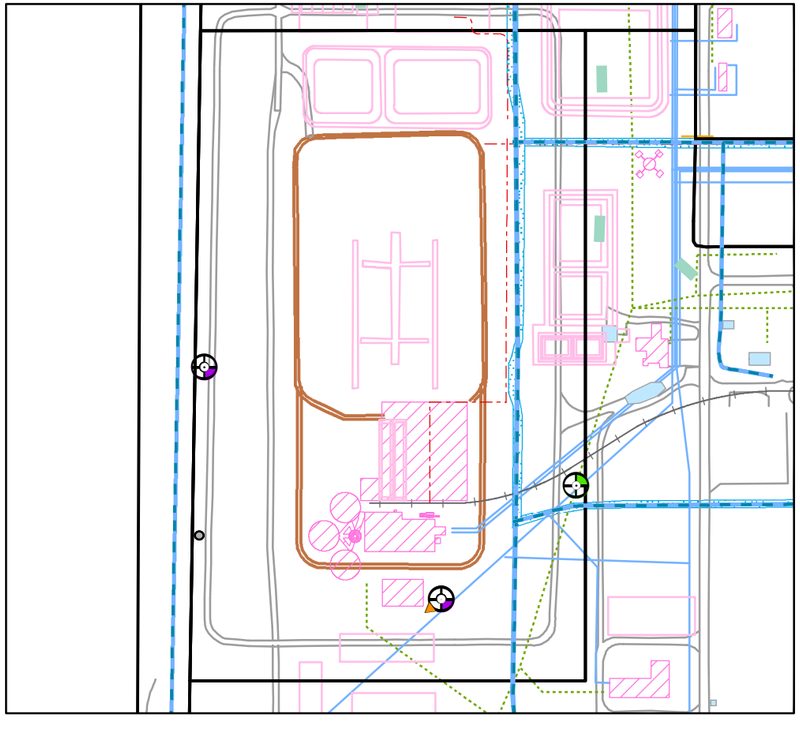
Subsurface Soil 0.5-2'



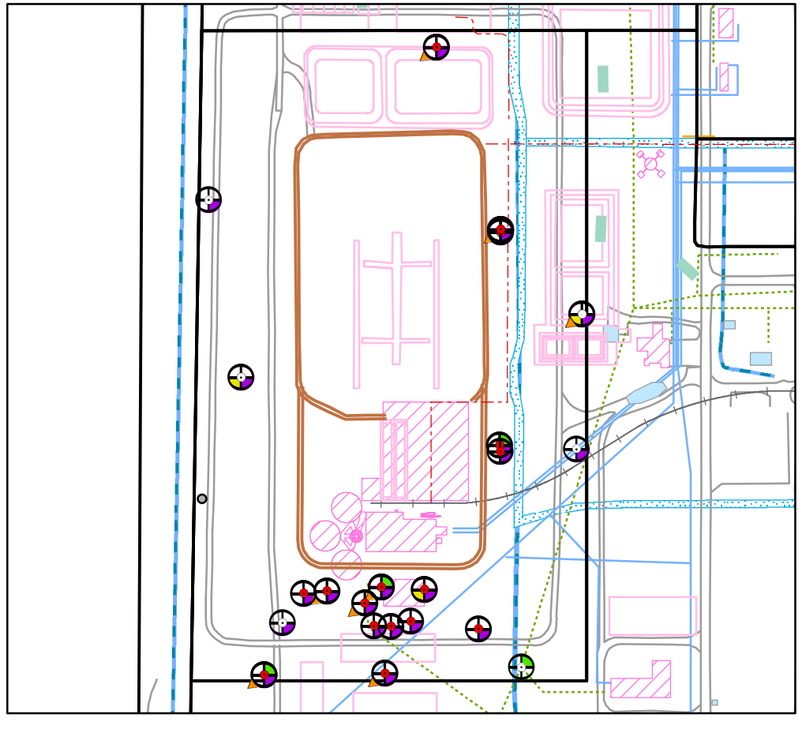
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
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- Former structure
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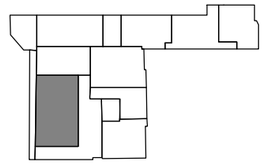
- Test trenches
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



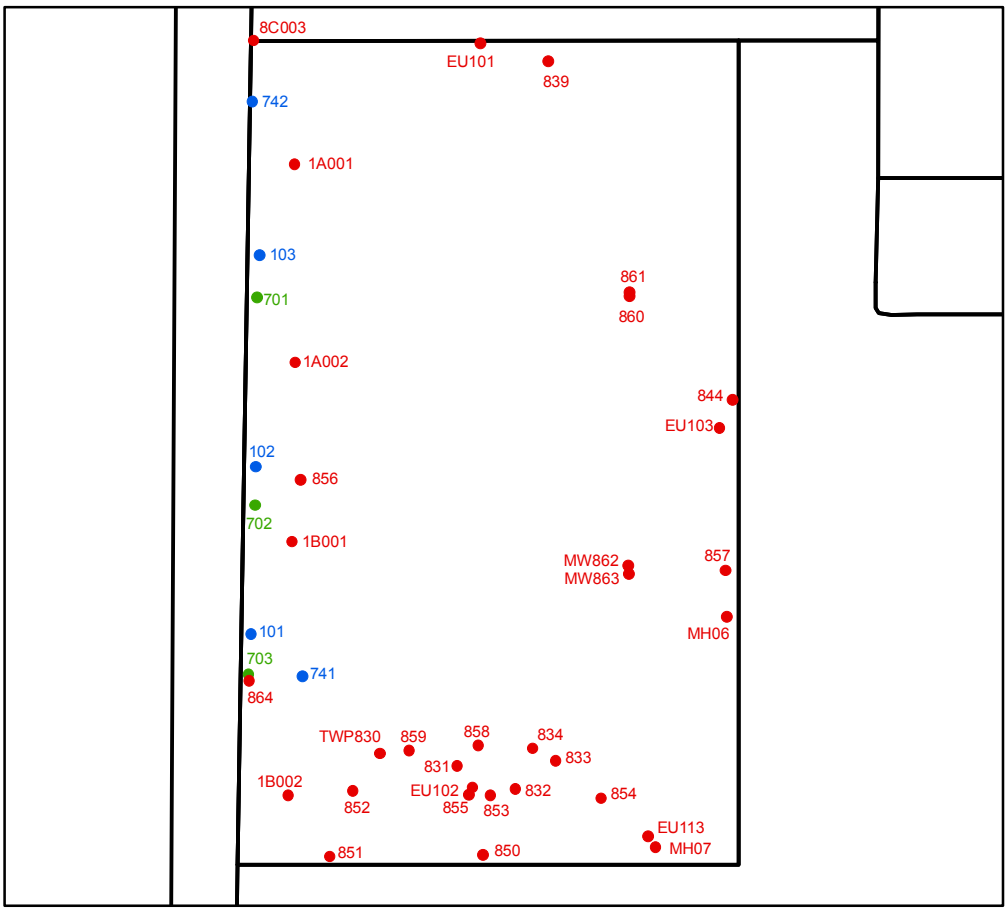
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 10

Science Applications International Corporation
Columbus, Ohio

Figure 4-10a



Phase 1
Phase 2
Phase 3

0 120
Feet

N

US Army Corps of Engineers
Buffalo Distirict

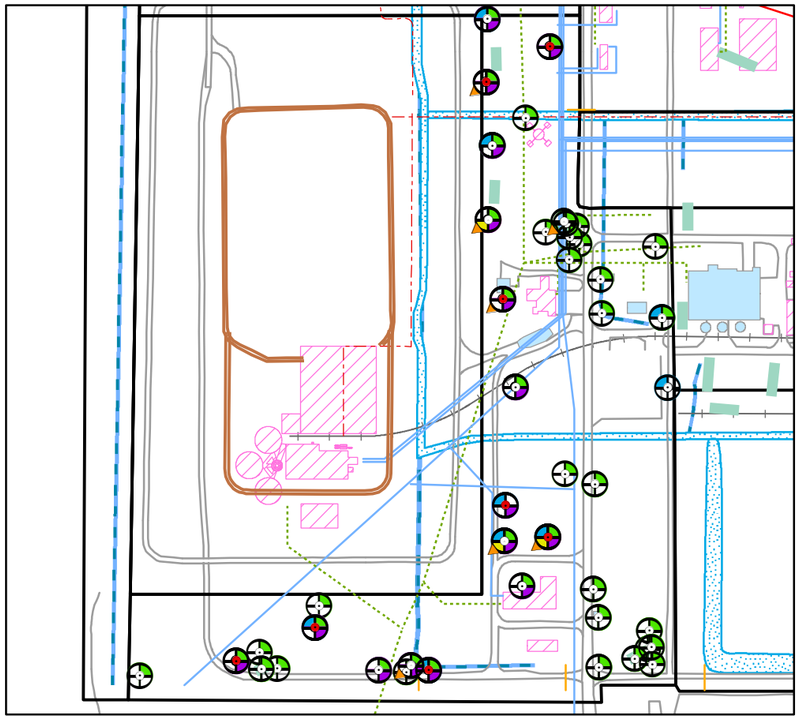
Sample Locations

EU 10

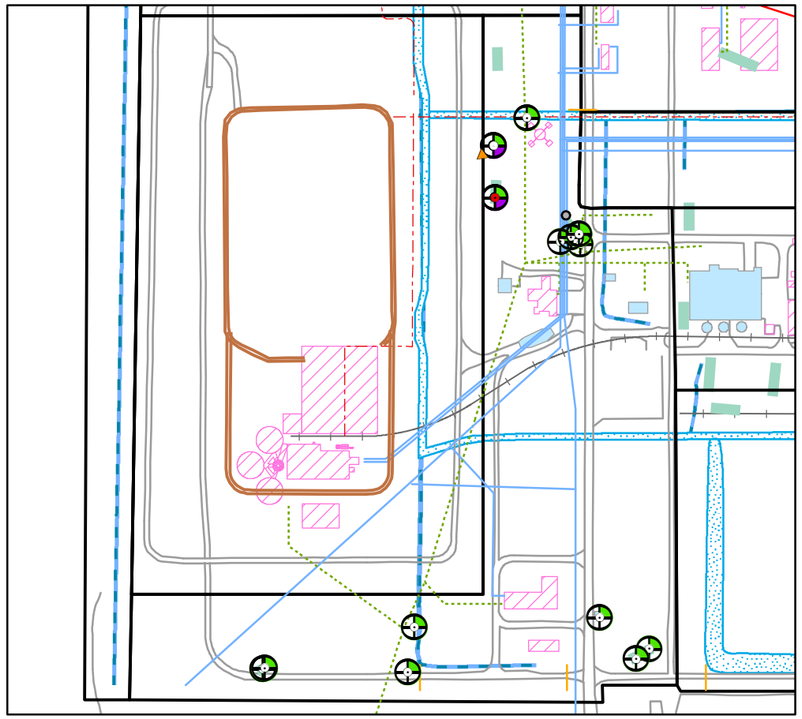
Science Applications International Corporation
Columbus, Ohio

Figure 4-10b

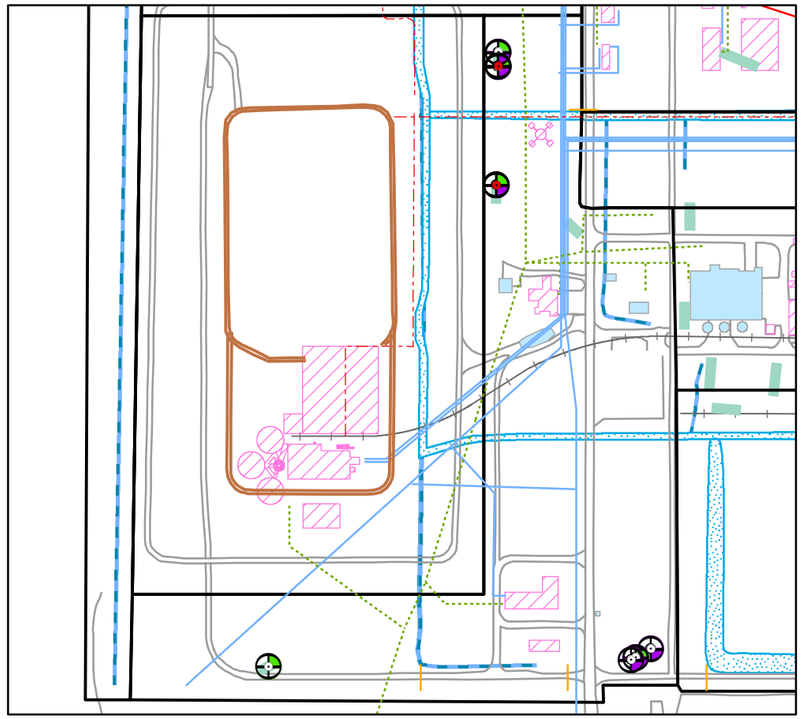
Surface Soil 0-0.5'



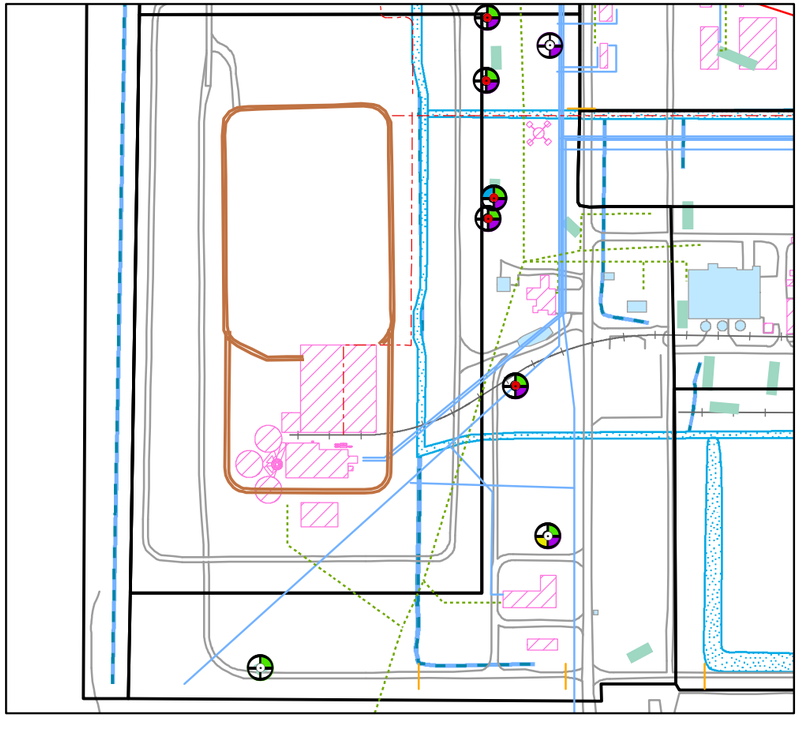
Subsurface Soil 0.5-2'



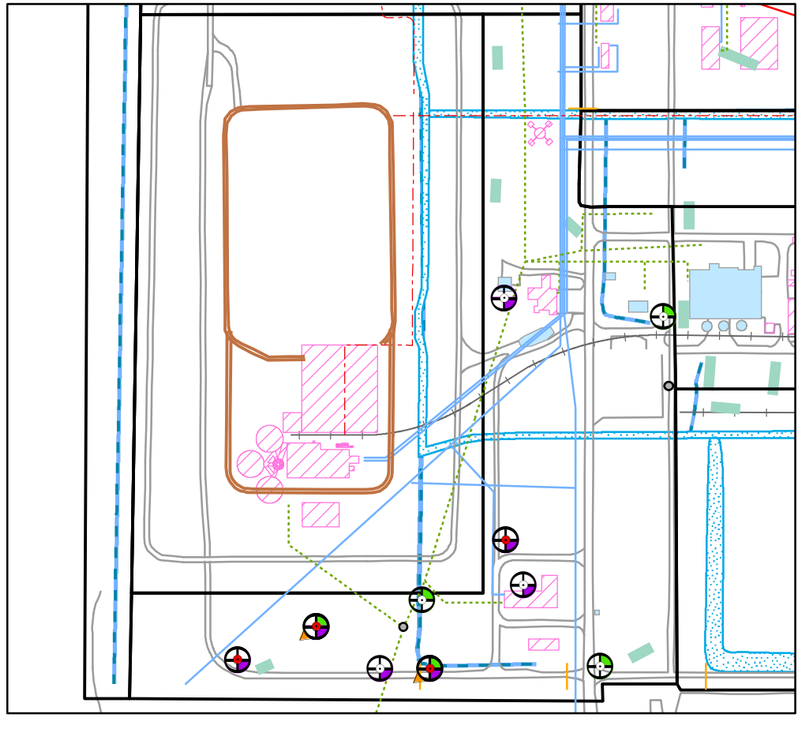
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

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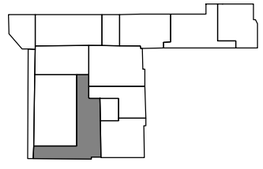
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



N

0 100 200 400

Feet

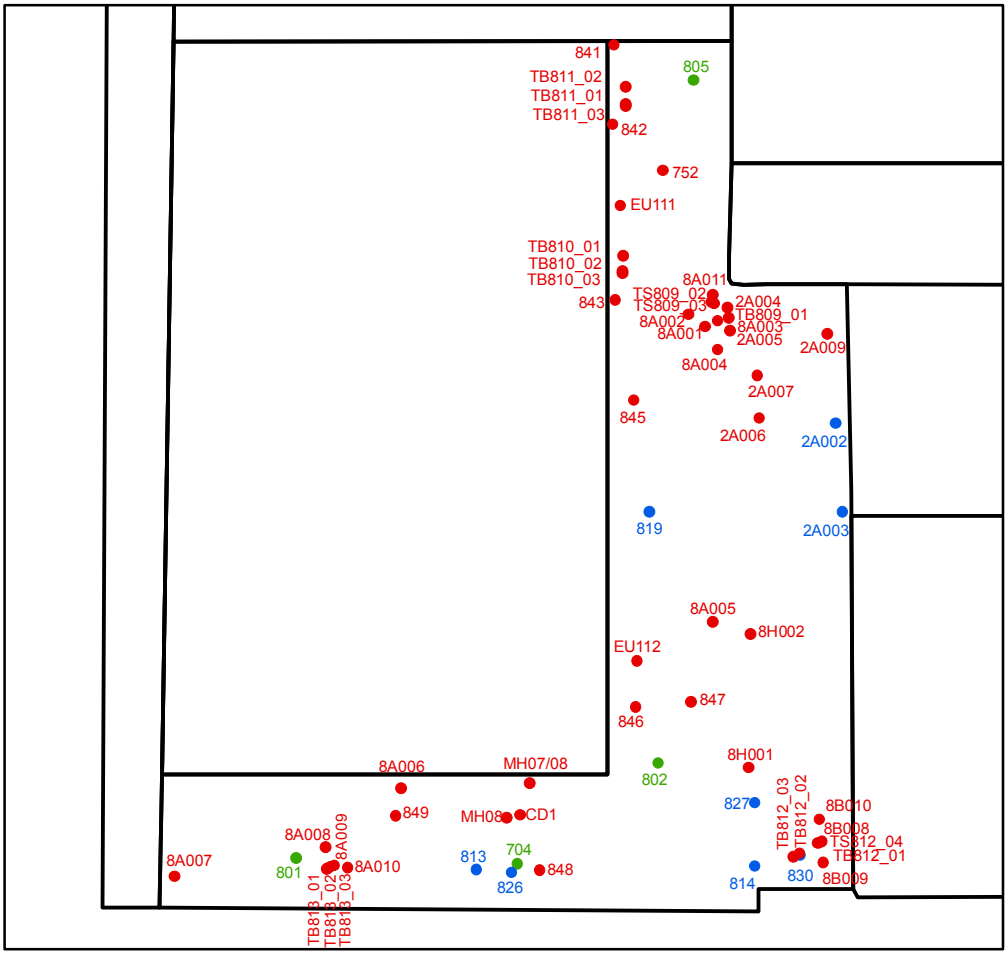
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

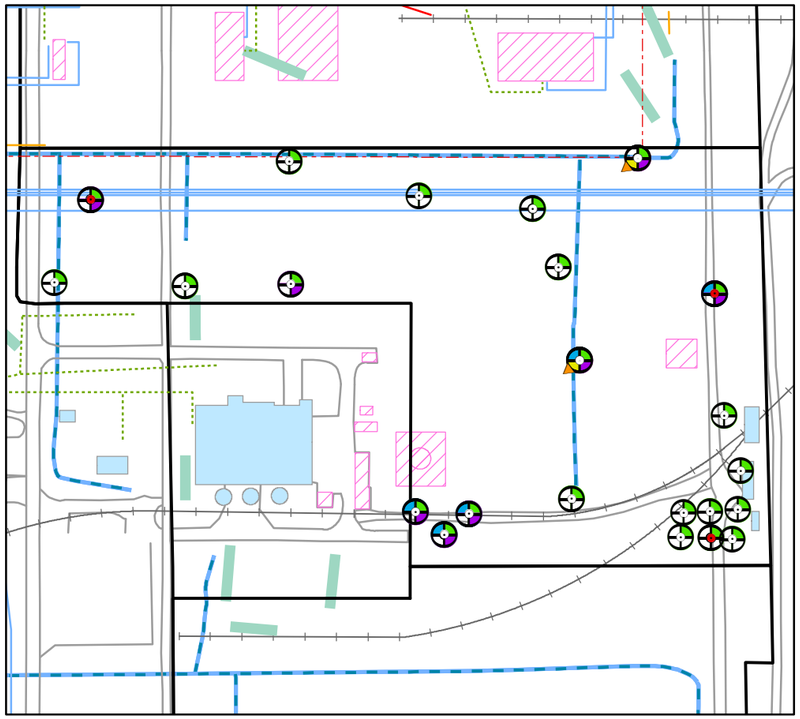
EU 11

Science Applications International Corporation Columbus, Ohio

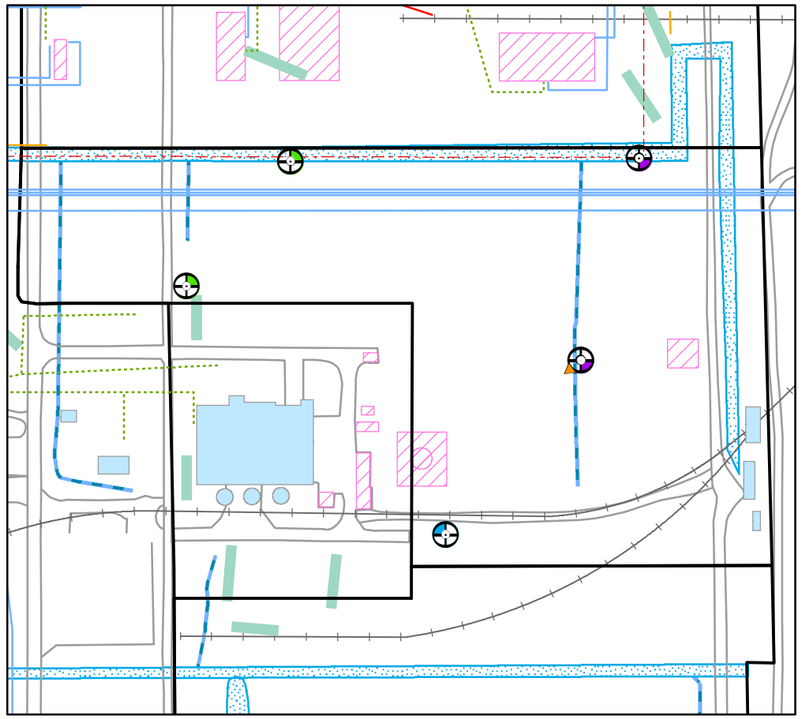
Figure 4-11a


841
805
TB811_02
TB811_01
TB811_03
842
752
EU111
TB810_01
TB810_02
TB810_03
843
8A011
TS809_02
TS809_03
2A004
TB809_01
8A002
8A001
8A003
2A005
2A009
8A004
2A007
845
2A006
2A002
819
2A003
8A005
8H002
EU112
847
846
8H001
802
8A006
MH07/08
827
8B010
849
MH08
CD1
8B008
TB812_03
TB812_02
TS812_04
8A008
8A009
704
TB812_01
8A007
801
8A010
813
848
830
8B009
826
814
TB813_01
TB813_02
TB813_03
Phase 1
Phase 2
Phase 3
0
120
Feet
N
US Army Corps of Engineers
Buffalo Distirict
Sample Locations
EU 11
Science Applications
International Corporation
Columbus, Ohio
Figure 4-11b

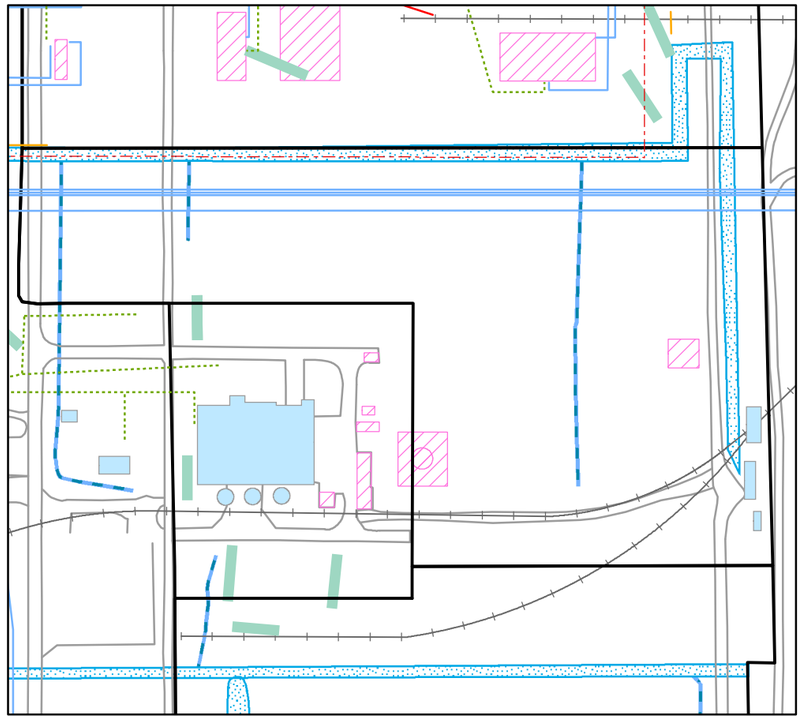
Surface Soil 0-0.5'



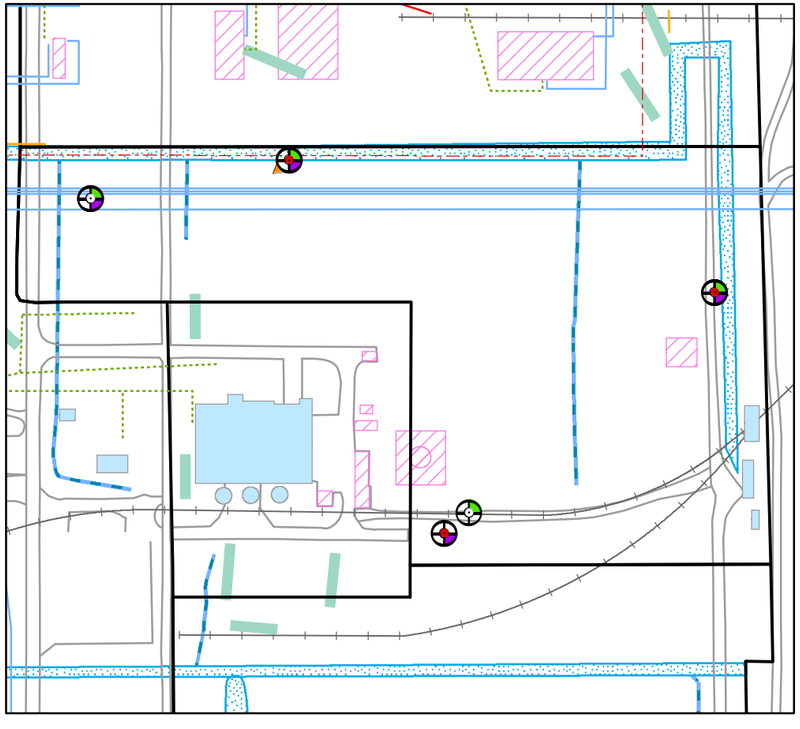
Subsurface Soil 0.5-2'



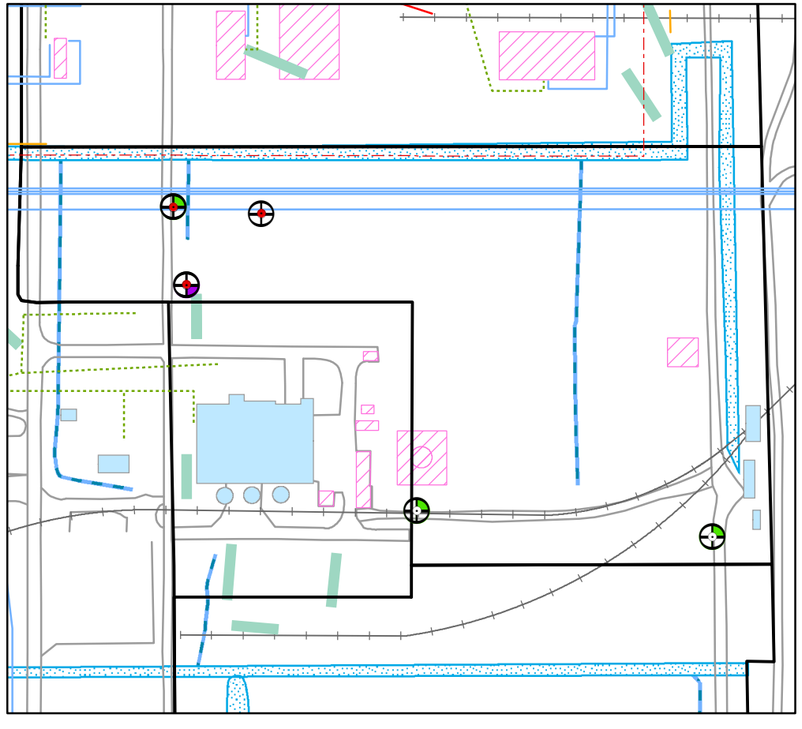
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No Exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- IWCS cutoff wall
- Test trenches
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary

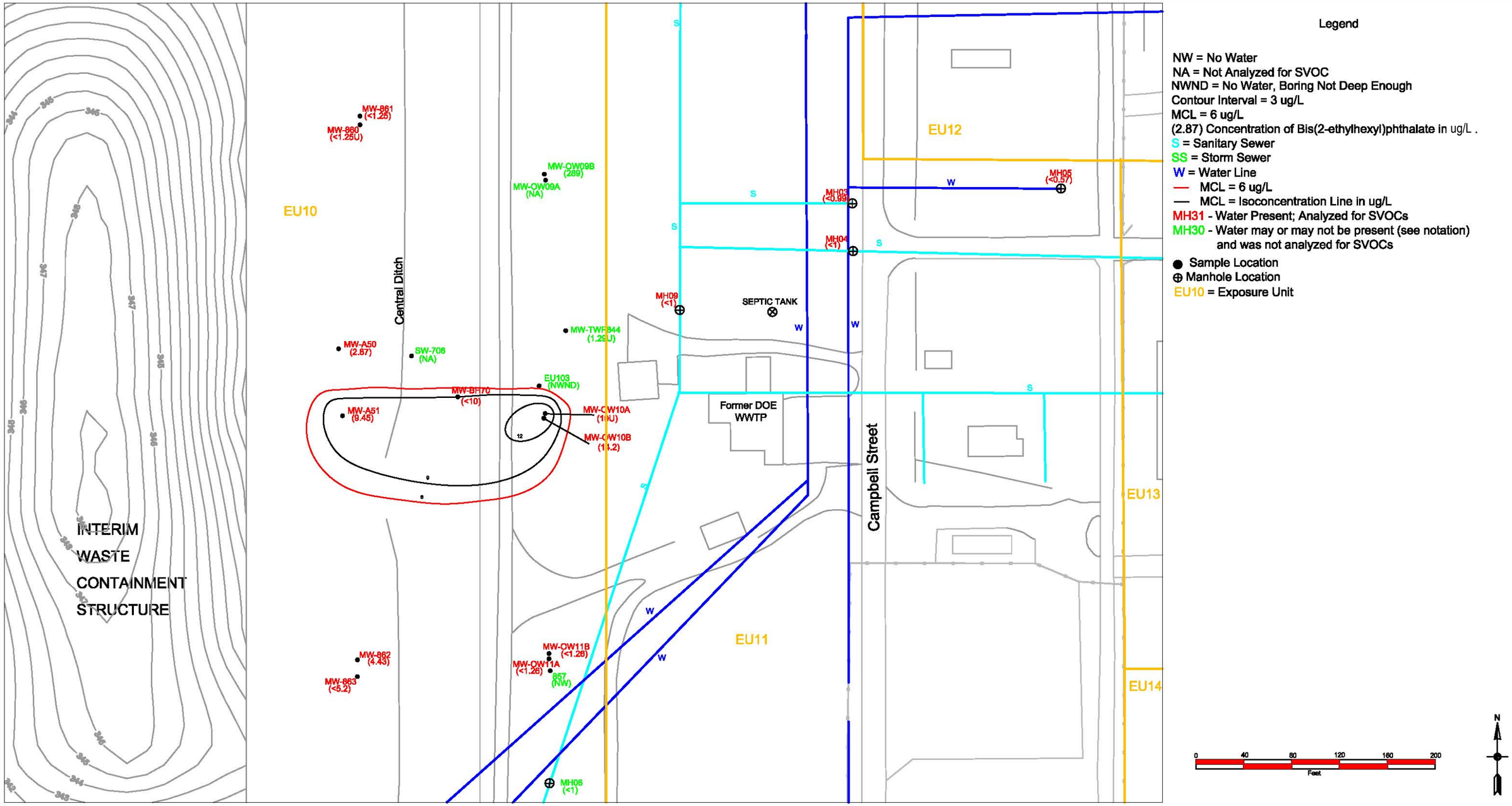
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 12

Science Applications International Corporation Columbus, Ohio

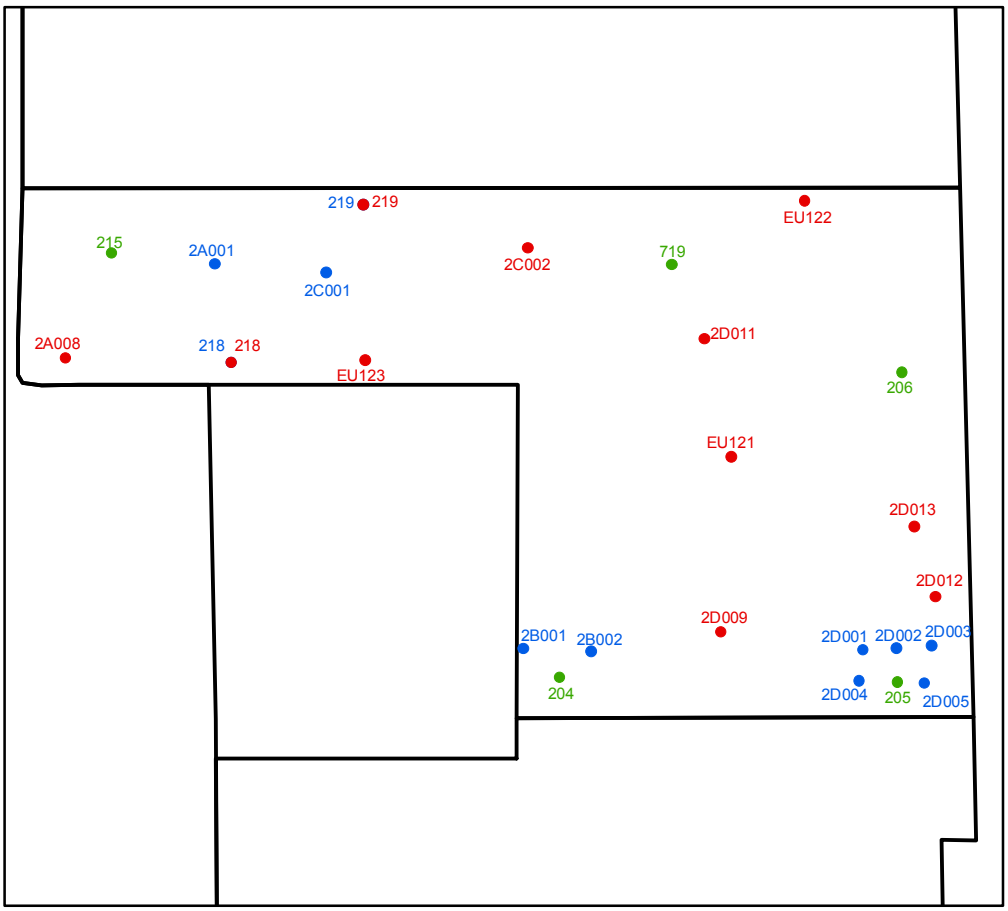
Figure 4-12a



Distribution of Bis(2-ethylhexyl)phthalate in EU10

TETRA TECH, INC.

PROJECT NO.	5450057	FIGURE NO.	5-13
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



Phase 1
Phase 2
Phase 3

0 120
Feet

N

US Army Corps of Engineers
Buffalo Distirict

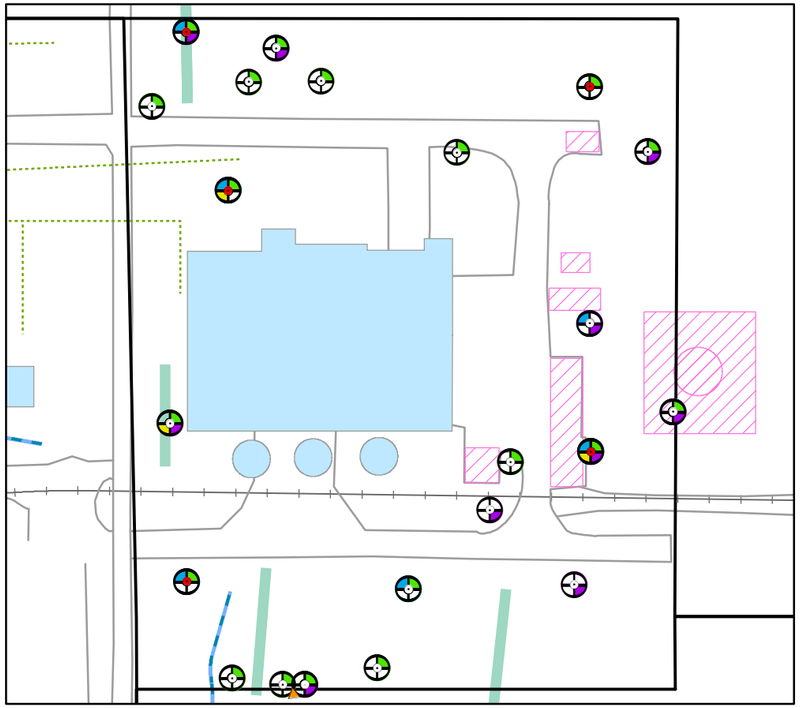
Sample Locations

EU 12

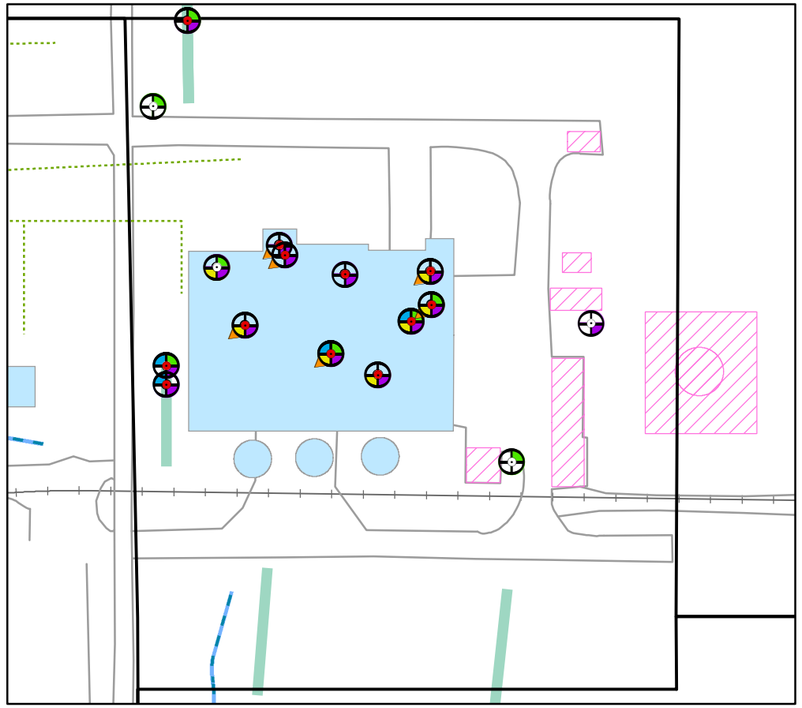
Science Applications International Corporation
Columbus, Ohio

Figure 4-12b

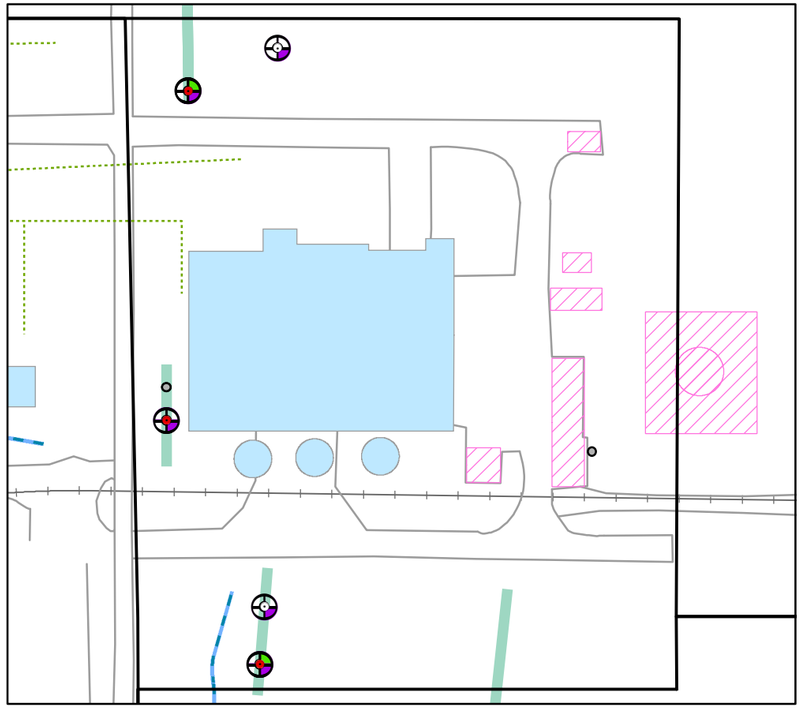
Surface Soil 0-0.5'



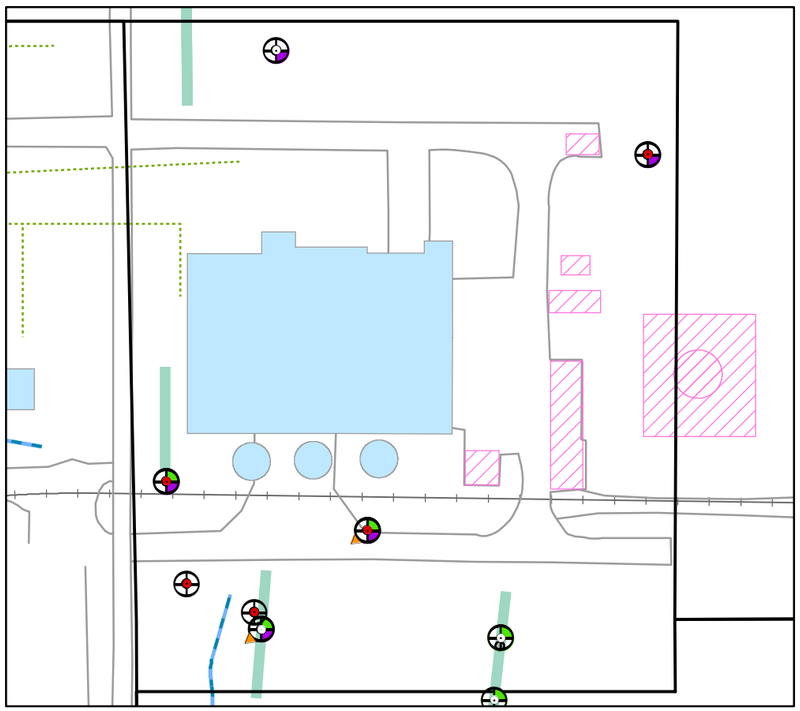
Subsurface Soil 0.5-2'



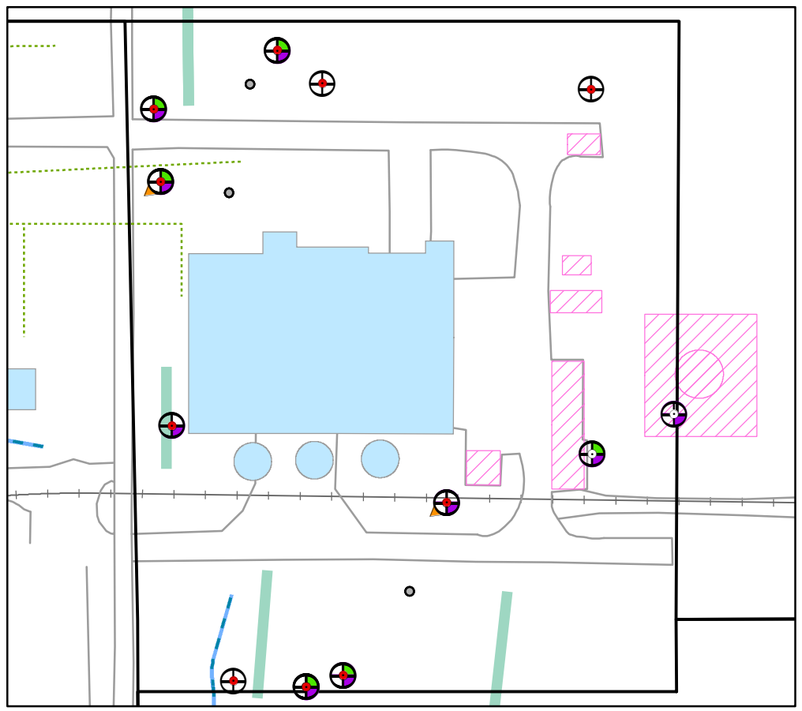
Subsurface Soil 2-5'



Subsurface Soil 5-10'

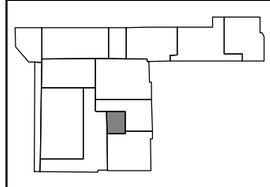


Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No Exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- IWCS cutoff wall
- Test trenches
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



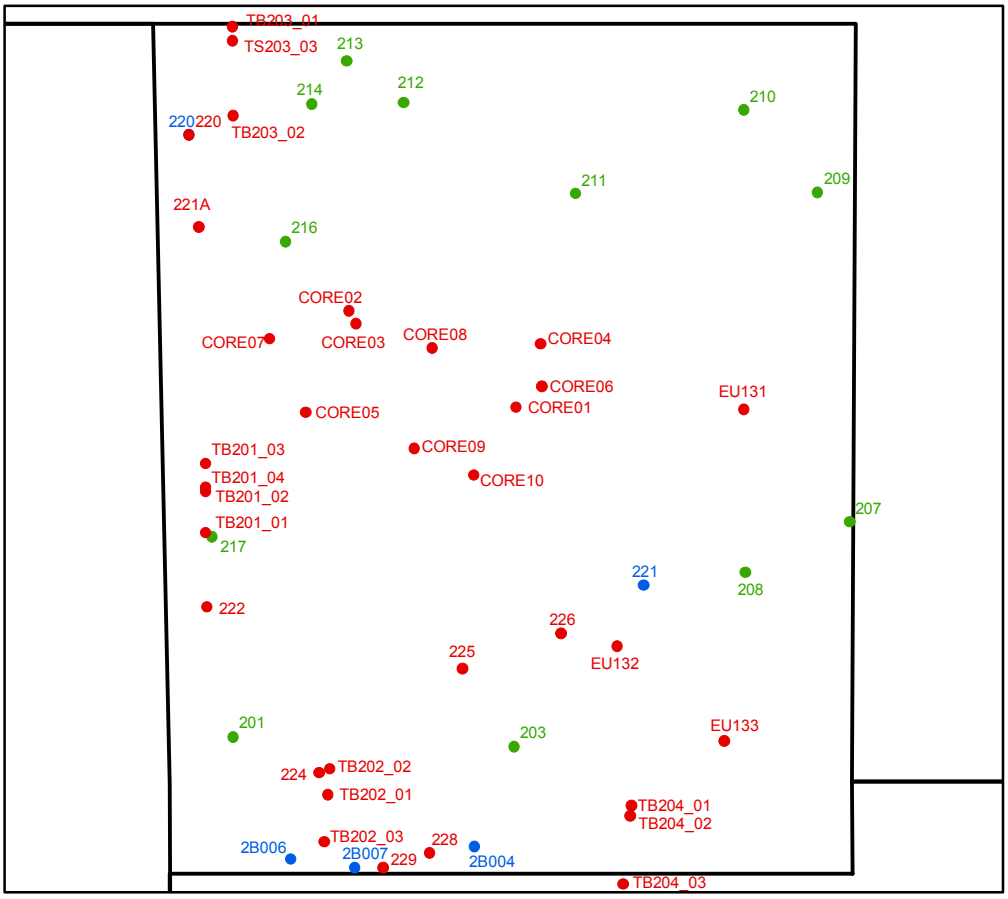
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 13

Science Applications International Corporation Columbus, Ohio

Figure 4-13a



Phase 1
Phase 2
Phase 3

0 60
Feet

N

US Army Corps of Engineers
Buffalo Distirict

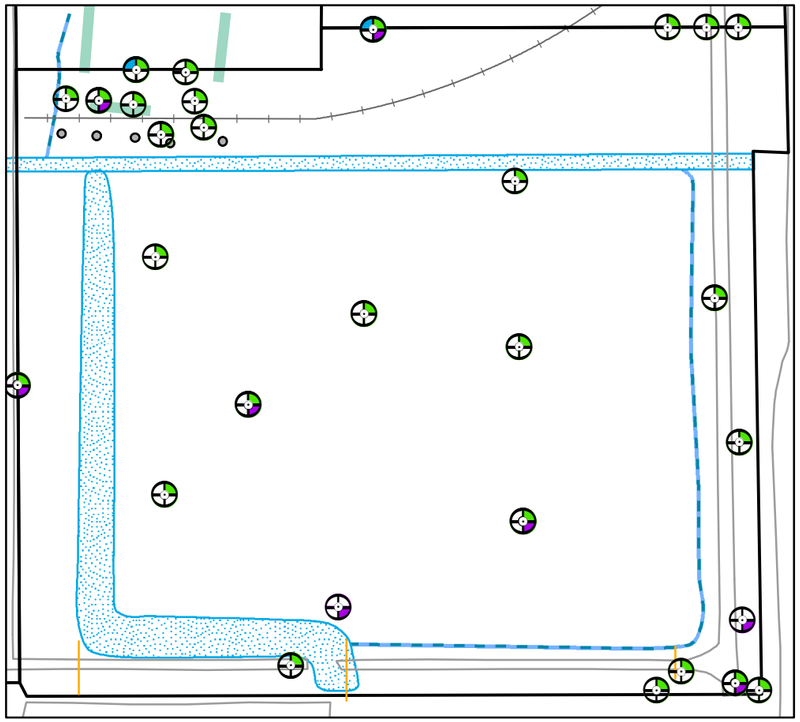
Sample Locations

EU 13

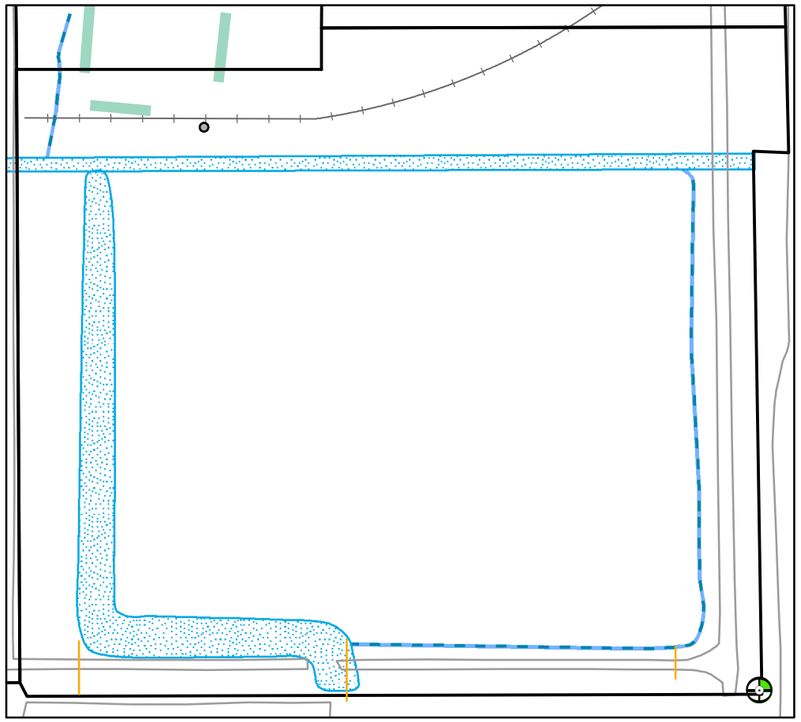
Science Applications International Corporation
Columbus, Ohio

Figure 4-13b

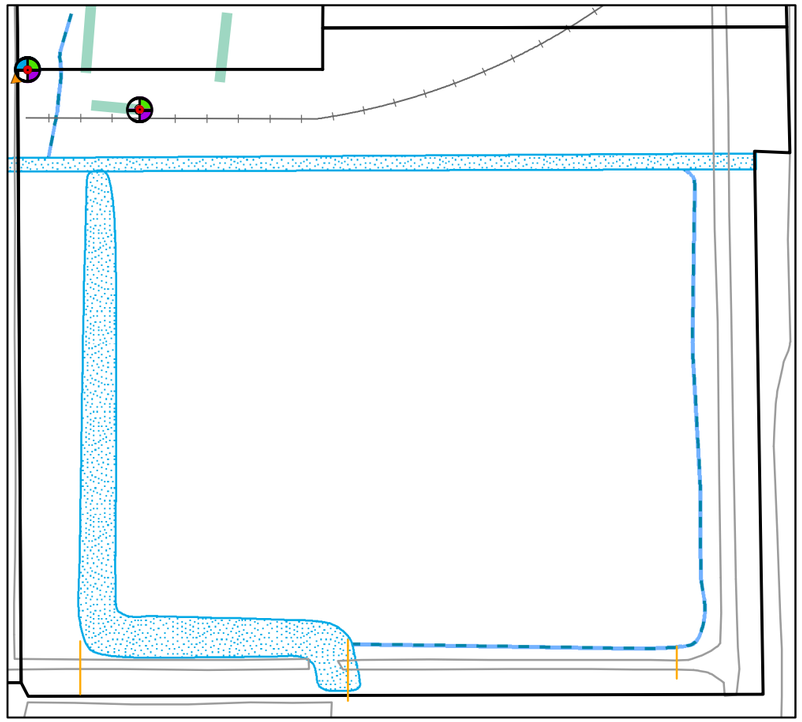
Surface Soil 0-0.5'



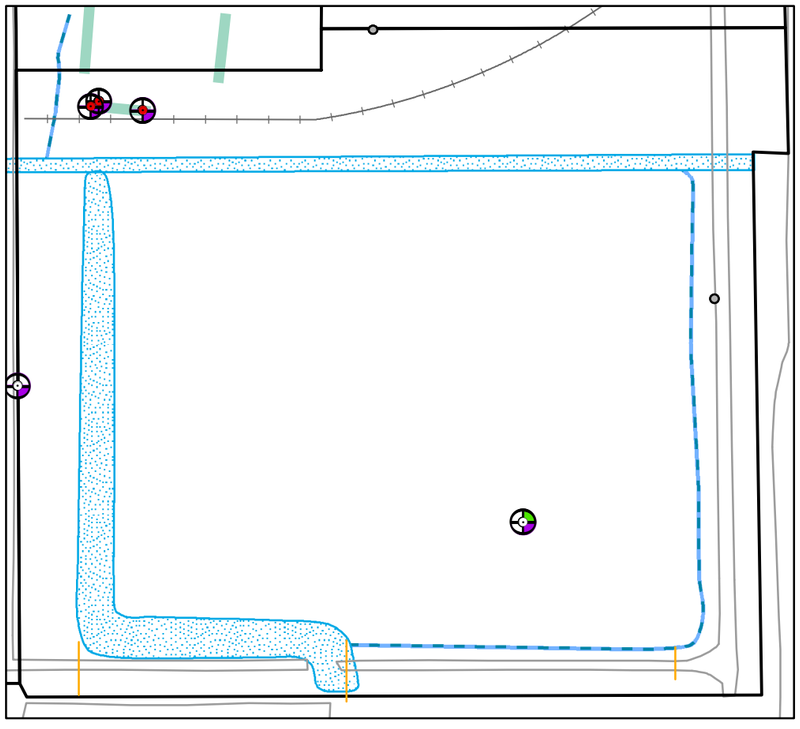
Subsurface Soil 0.5-2'



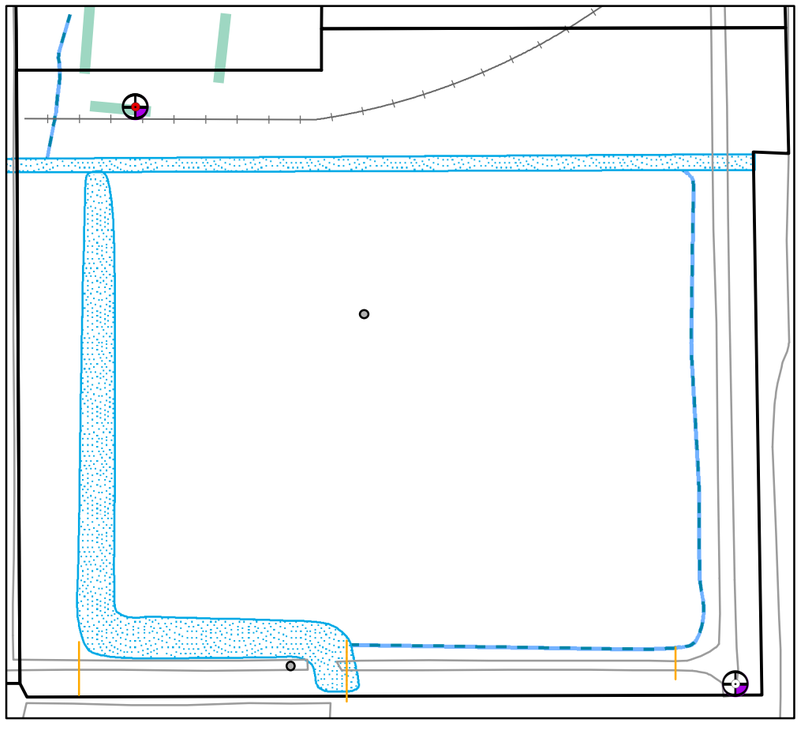
Subsurface Soil 2-5'



Subsurface Soil 5-10'



Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No Exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- IWCS cutoff wall
- Test trenches
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary

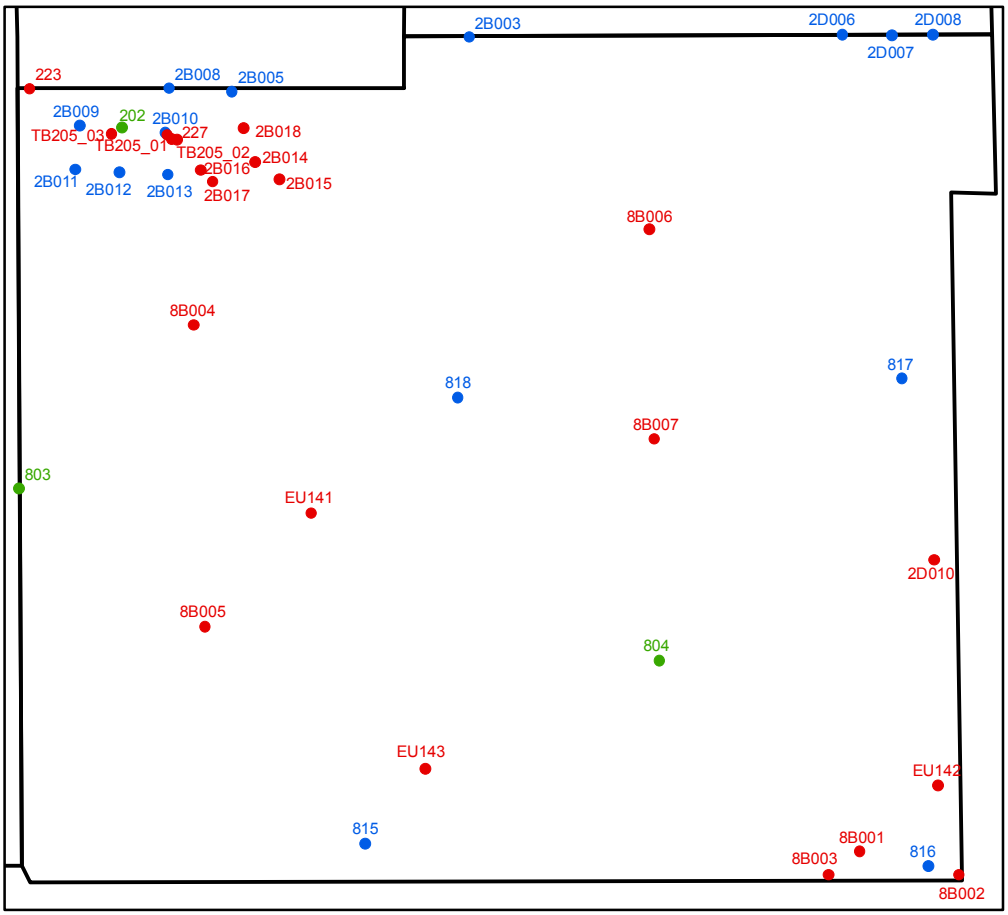
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 14

Science Applications International Corporation
Columbus, Ohio

Figure 4-14a



Phase 1
Phase 2
Phase 3

0 120
Feet

N

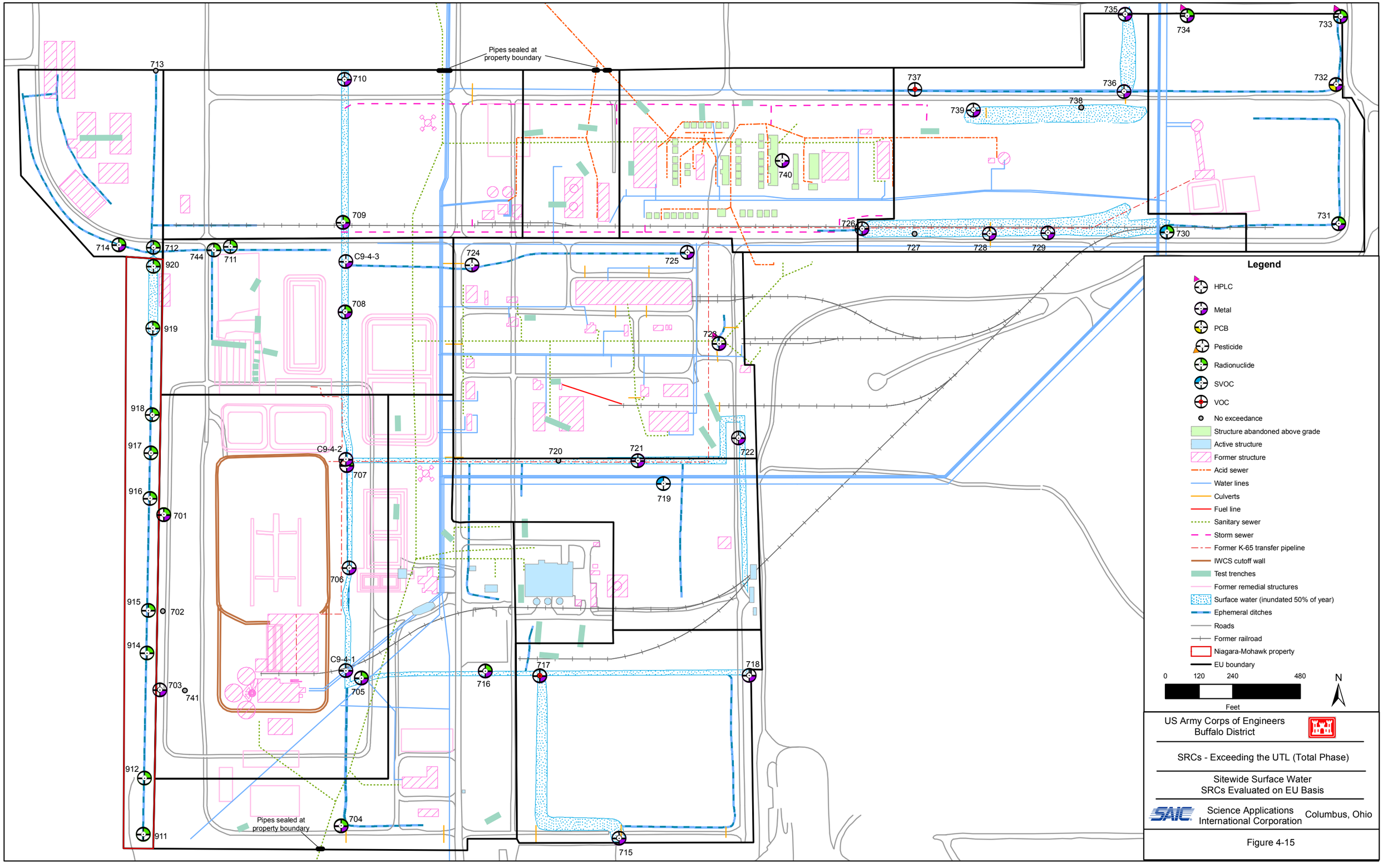
US Army Corps of Engineers
Buffalo Distirict

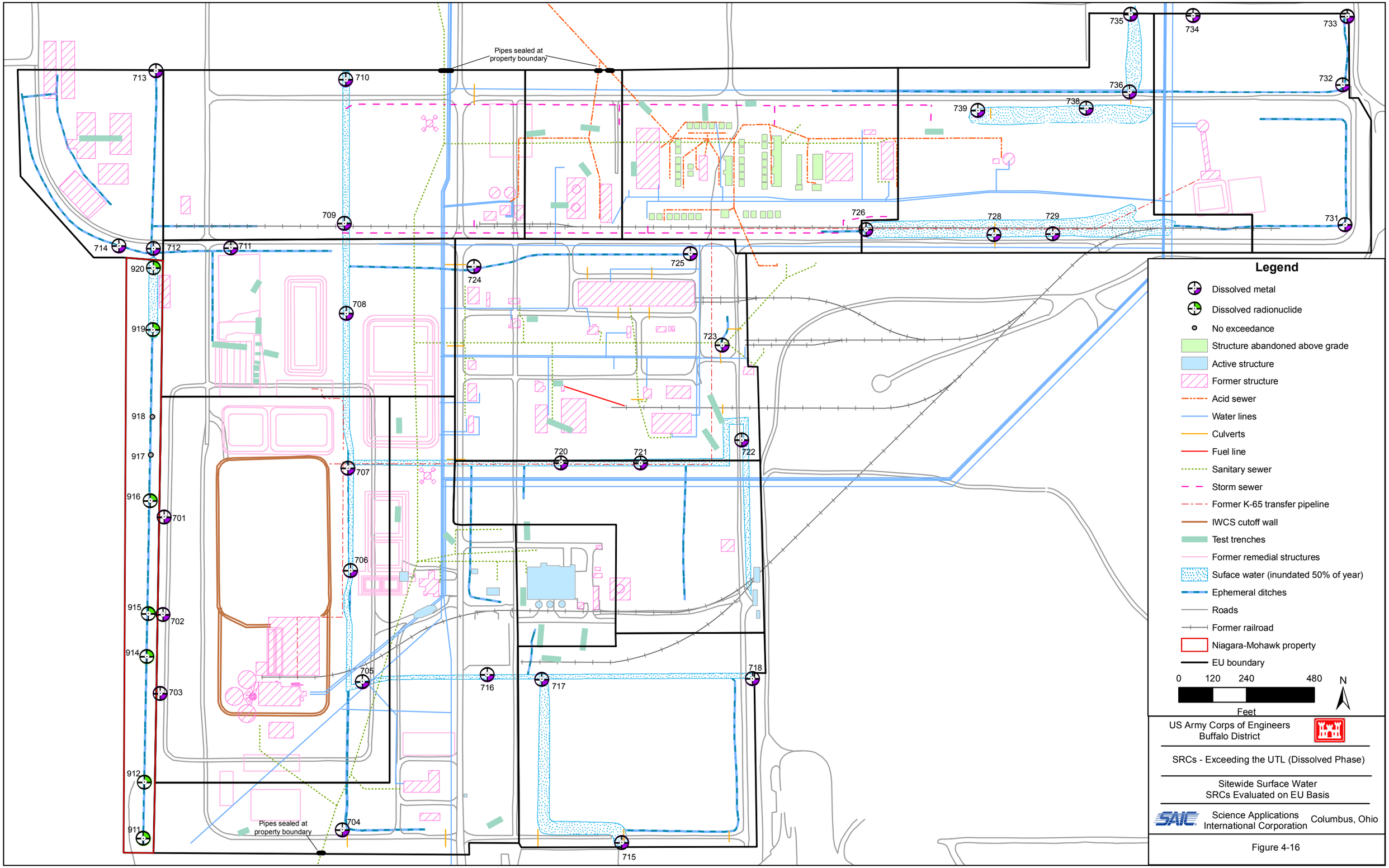
Sample Locations

EU 14

Science Applications International Corporation
Columbus, Ohio

Figure 4-14b


Pipes sealed at property boundary
713
710
737
735
734
733
736
732
738
739
740
709
726
731
730
714
712
744
711
C9-4-3
724
725
727
728
729
920
708
919
728
918
917
C9-4-2
707
720
721
722
719
916
701
706
915
702
914
C9-4-1
717
718
716
703
741
705
912
704
911
715
Pipes sealed at property boundary
Legend
HPLC
Metal
PCB
Pesticide
Radionuclide
SVOC
VOC
No exceedance
Structure abandoned above grade
Active structure
Former structure
Acid sewer
Water lines
Culverts
Fuel line
Sanitary sewer
Storm sewer
Former K-65 transfer pipeline
IWCS cutoff wall
Test trenches
Former remedial structures
Surface water (inundated 50% of year)
Ephemeral ditches
Roads
Former railroad
Niagara-Mohawk property
EU boundary
0
120
240
480
Feet
N
US Army Corps of Engineers
Buffalo District
SRCs - Exceeding the UTL (Total Phase)
Sitewide Surface Water
SRCs Evaluated on EU Basis
SAIC
Science Applications International Corporation
Columbus, Ohio
Figure 4-15


Pipes sealed at property boundary
713
710
709
714
712
711
920
919
918
917
916
701
915
702
914
703
912
911
708
707
706
705
704
724
725
726
723
720
721
722
716
717
718
715
735
734
733
732
736
739
738
728
729
731
Pipes sealed at property boundary
Legend
Dissolved metal
Dissolved radionuclide
No exceedance
Structure abandoned above grade
Active structure
Former structure
Acid sewer
Water lines
Culverts
Fuel line
Sanitary sewer
Storm sewer
Former K-65 transfer pipeline
IWCS cutoff wall
Test trenches
Former remedial structures
Suface water (inundated 50% of year)
Ephemeral ditches
Roads
Former railroad
Niagara-Mohawk property
EU boundary
0
120
240
480
Feet
N
US Army Corps of Engineers
Buffalo District
SRCs - Exceeding the UTL (Dissolved Phase)
Sitewide Surface Water
SRCs Evaluated on EU Basis
Science Applications International Corporation
Columbus, Ohio
Figure 4-16

Pipes sealed at property boundary

710 CD4

OTFL2

709

C9-4-3

920

919

708

CD3

CD2
C9-4-2

707

706

C9-4-1

705

CD5

716

720

721

722

717

718

715

735

736

739

SEDC01

738

SEDC02

726

SEDC03

727

728

729

SEDC04

730

Pipes sealed at property boundary

Legend

- HPLC
- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel Line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Test trenches
- Former remedial structures
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- EU boundary

0 120 240 480

Feet

N

US Army Corps of Engineers
Buffalo District

SRCs - Exceeding the UTL

Sitewide Sediment
SRCs Evaluated on EU Basis

SAIC Science Applications International Corporation Columbus, Ohio

Figure 4-17

Pipes sealed at property boundary

BH61
BH62
BH50
BH51
BH63
BH57
OW20D
BH60
BH15
BH05
OW19D
OW05A
BH49
OW03A
OW04A
OW08A
OW02A
MW861
OW09A
OW01A
BH70
OW10A
OW16A
A54
OW11A
OW17A
MW863
MW229
A55
OW18A
A56
A57
OW06A
A23A
OW07A
OW13A
BH12
BH59
Pipes sealed at property boundary
BH48

Legend

- HPLC
- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Test trenches
- Former remedial structures
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- Niagara-Mohawk property
- EU boundary

0 120 240 480

Feet

N

US Army Corps of Engineers
Buffalo District

EU Specific SRCs (Total Phase)
Exceeding the UTL

Groundwater LWBZ (MW)

SAIC Science Applications International Corporation Columbus, Ohio

Figure 4-18

Pipes sealed at property boundary

BH62
BH50
BH51
BH57
OW20D
BH15
BH05
OW04A
OW03A
OW19D
OW08A
OW02A
MW861
OW09A
OW01A
OW16A
OW10A
OW17A
MW229
A55
A57
A56
OW06A
A23A
OW13A
OW07A
BH12
BH59

Pipes sealed at property boundary

Legend

- Dissolved metal
- Dissolved radionuclide
- No exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Test trenches
- Former remedial structures
- Suface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- Niagara-Mohawk property
- EU boundary

0 120 240 480

Feet

N

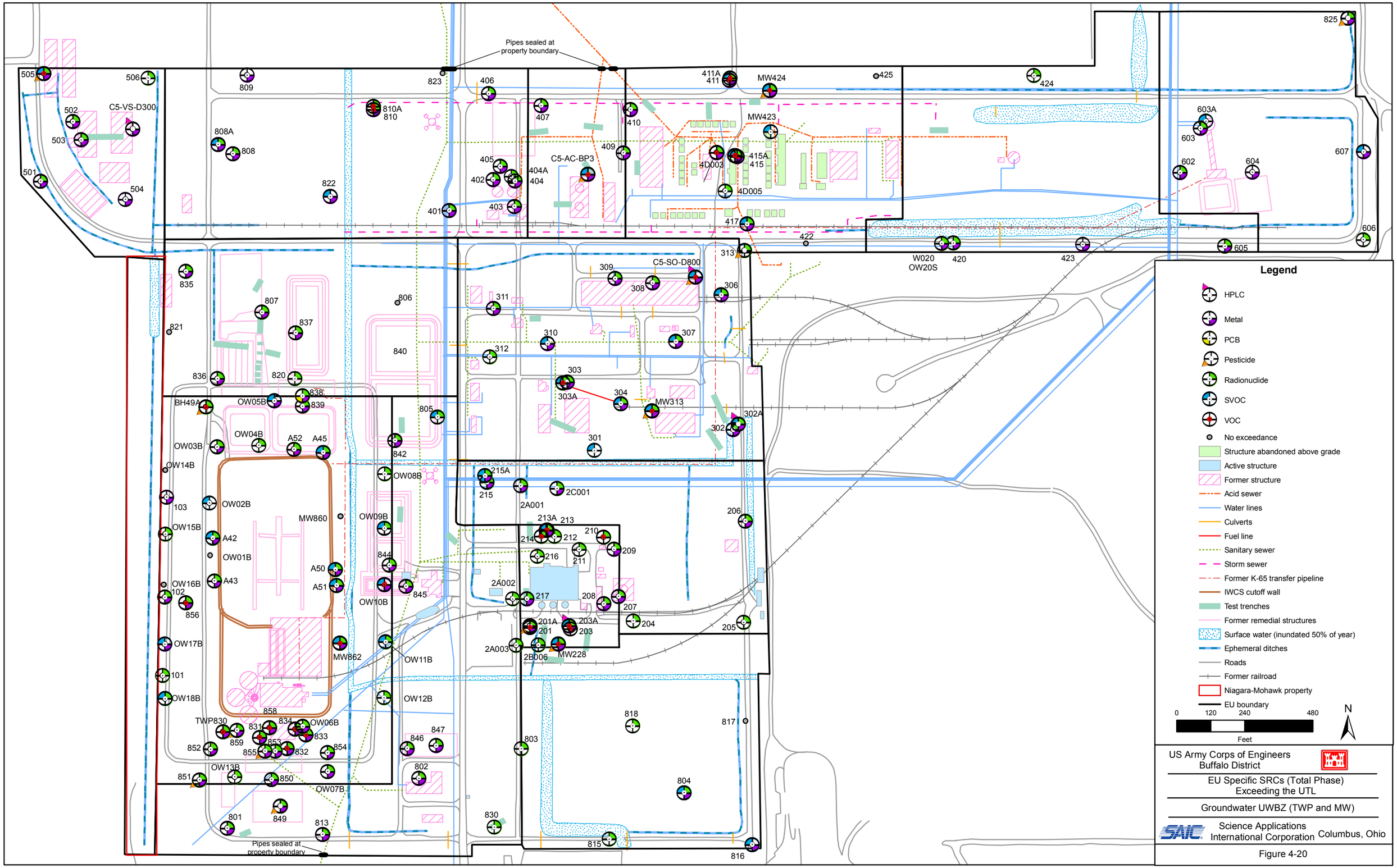
US Army Corps of Engineers
Buffalo District

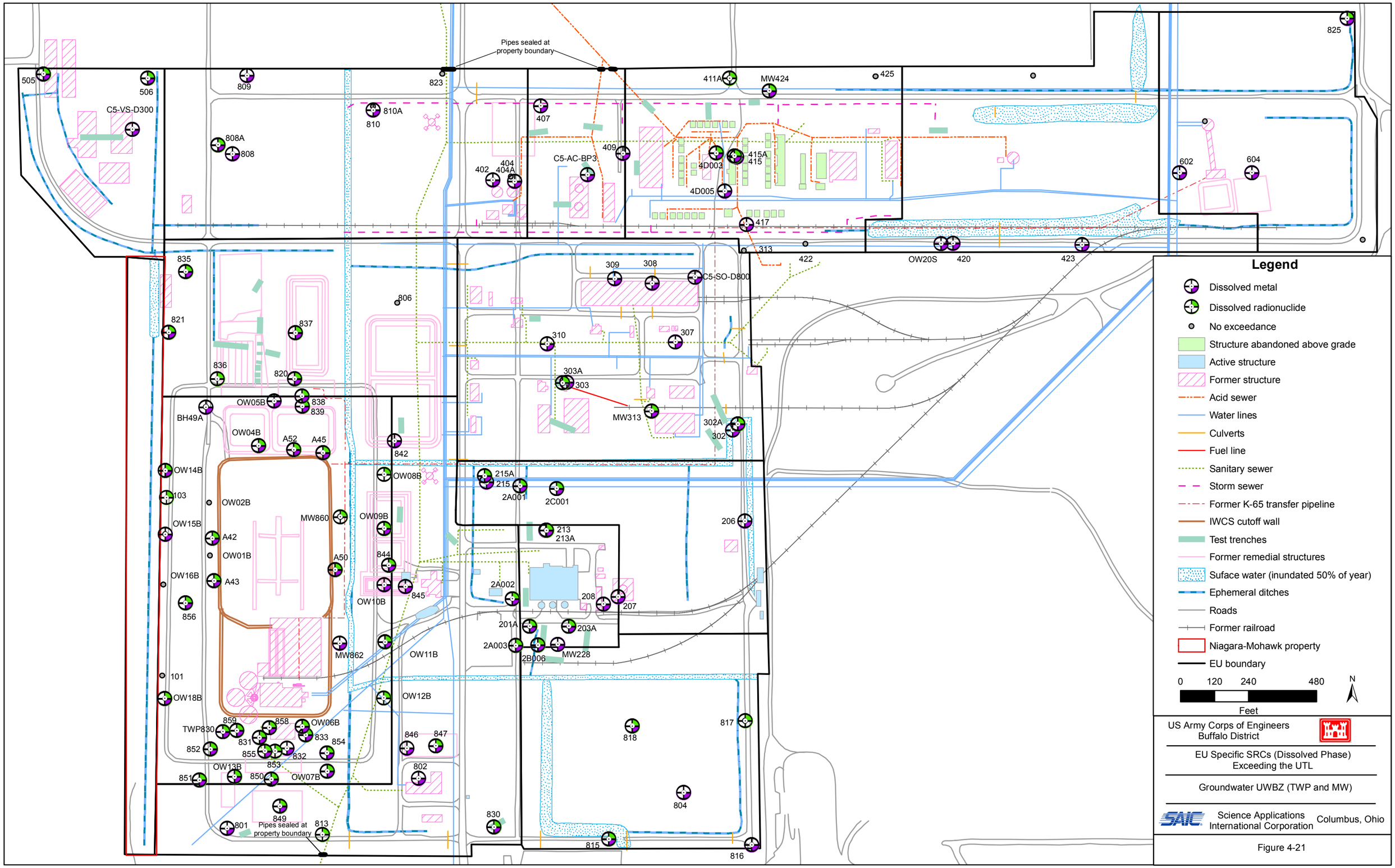
EU Specific SRCs (Dissolved Phase)
Exceeding the UTL

Groundwater LWBZ (MW)

SAIC Science Applications International Corporation Columbus, Ohio

Figure 4-19


Pipes sealed at property boundary
C5-VS-D300
C5-AC-BP3
C5-SO-D800
MW424
MW423
4D003
4D005
415A
415
411A
411
404A
404
MW313
MW860
MW862
MW228
OW01B
OW02B
OW03B
OW04B
OW05B
OW06B
OW07B
OW08B
OW09B
OW10B
OW11B
OW12B
OW13B
OW14B
OW15B
OW16B
OW17B
OW18B
BH49A
TWP830
W020
OW20S
A42
A43
A45
A50
A51
A52
2A001
2A002
2A003
2B006
2C001
215A
201A
203A
213A
303A
302A
603A
840
Pipes sealed at property boundary
Legend
HPLC
Metal
PCB
Pesticide
Radionuclide
SVOC
VOC
No exceedance
Structure abandoned above grade
Active structure
Former structure
Acid sewer
Water lines
Culverts
Fuel line
Sanitary sewer
Storm sewer
Former K-65 transfer pipeline
IWCS cutoff wall
Test trenches
Former remedial structures
Surface water (inundated 50% of year)
Ephemeral ditches
Roads
Former railroad
Niagara-Mohawk property
EU boundary
0
120
240
480
Feet
N
US Army Corps of Engineers
Buffalo District
EU Specific SRCs (Total Phase)
Exceeding the UTL
Groundwater UWBZ (TWP and MW)
Science Applications
International Corporation
Columbus, Ohio
Figure 4-20


Pipes sealed at property boundary
505
506
809
823
825
C5-VS-D300
810A
810
808A
808
407
411A
MW424
425
409
C5-AC-BP3
402
404
404A
4D003
415A
415
4D005
602
604
417
313
422
OW20S
420
423
835
309
308
C5-SO-D800
806
821
837
310
307
836
820
303A
303
838
839
OW05B
BH49A
MW313
302A
302
OW04B
A52
A45
842
OW14B
OW08B
215A
215
2A001
2C001
103
OW02B
MW860
OW09B
213
213A
206
OW15B
A42
OW01B
A50
844
OW16B
A43
2A002
208
207
OW10B
845
856
201A
203A
MW862
OW11B
2A003
2B006
MW228
101
OW18B
OW12B
859
858
OW06B
TWP830
833
854
831
846
847
852
855
832
853
OW13B
OW07B
850
851
802
817
818
804
849
801
Pipes sealed at property boundary
813
830
815
816
Legend
Dissolved metal
Dissolved radionuclide
No exceedance
Structure abandoned above grade
Active structure
Former structure
Acid sewer
Water lines
Culverts
Fuel line
Sanitary sewer
Storm sewer
Former K-65 transfer pipeline
IWCS cutoff wall
Test trenches
Former remedial structures
Suface water (inundated 50% of year)
Ephemeral ditches
Roads
Former railroad
Niagara-Mohawk property
EU boundary
0
120
240
480
Feet
N
US Army Corps of Engineers
Buffalo District
EU Specific SRCs (Dissolved Phase)
Exceeding the UTL
Groundwater UWBZ (TWP and MW)
SAIC
Science Applications International Corporation
Columbus, Ohio
Figure 4-21

Pipes sealed at property boundary

MH15
C7-NFSS-ST9
MH16
MH31
MH32
MH35
PIPE28W
C7-NFSS-ST6
MH26
MH41
C7-NFSS-SS8
MH43
C7-NFSS-SS10
MH44
MH12
MH42
C7-NFSS-SS9
MH45
PIP474
SUMP35W
MH46
MH10
MH05
MH03
MH01
MH09
MH04
MH02
MH06
MH07
MH08
Pipes sealed at property boundary

Drain02
Drain01
Drain03
Drain06
Drain05
Drain04

Legend

- HPLC
- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Test trenches
- Former remedial structures
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- Niagara-Mohawk property
- EU boundary

0 120 240 480
Feet

N

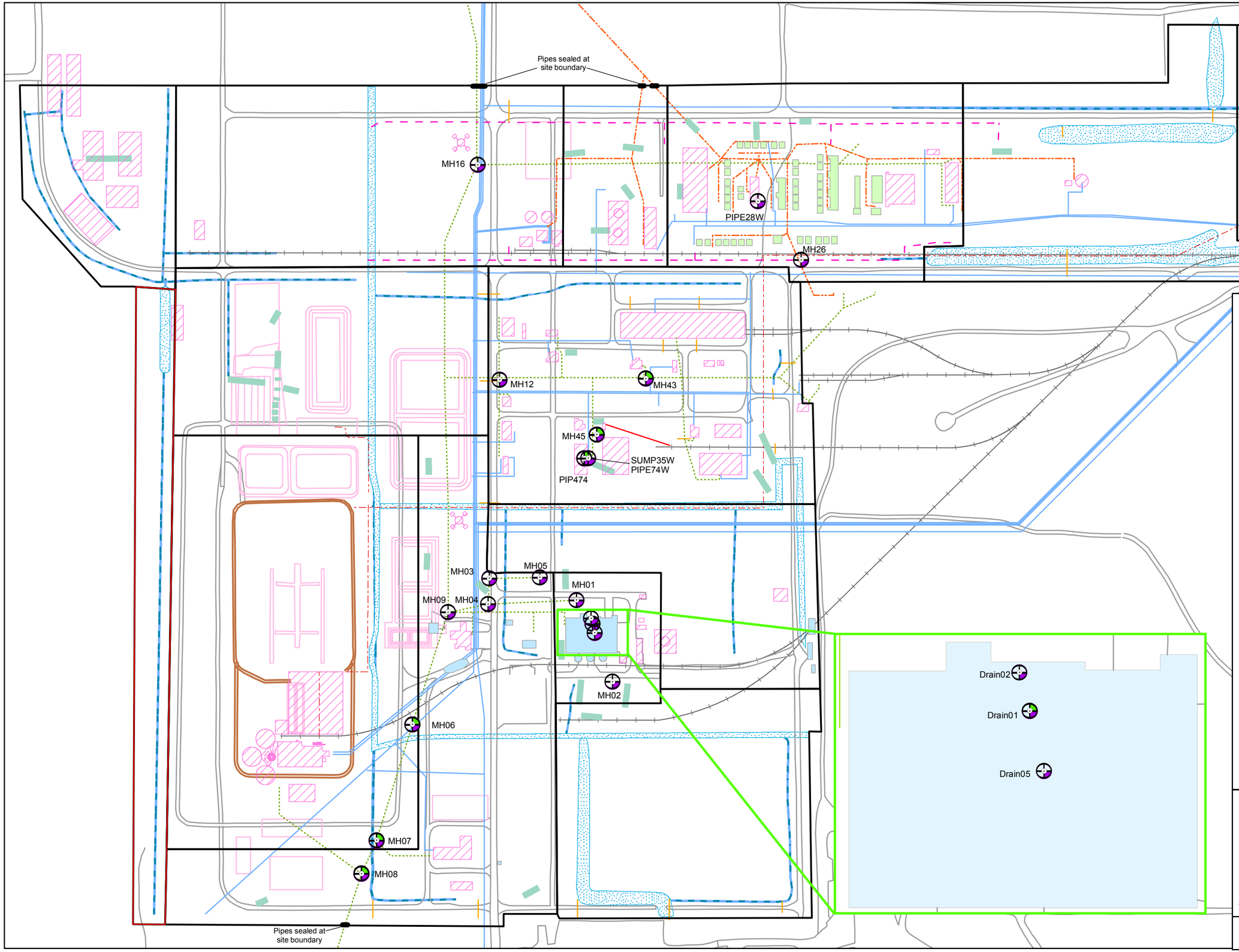
US Army Corps of Engineers
Buffalo District

SRCs - Exceeding the UTL (Total Phase)

EU 16
Pipeline Water

SAIC Science Applications International Corporation Columbus, Ohio

Figure 4-22



Legend

- Dissolved metal
- Dissolved radionuclide
- No exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Test trenches
- Former remedial structures
- Suface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- Niagara-Mohawk property
- EU boundary

0 120 240 480

Feet

N

US Army Corps of Engineers
Buffalo District

SRCs - Exceeding the UTL (Dissolved Phase)

EU 16
Pipeline Water

Science Applications International Corporation Columbus, Ohio

Figure 4-23

Pipes sealed at property boundary

C7-NFSS-ST9

MH16

MH19

PIPE72S

SUMP14

SUMP32

MH13

MH29

MH24

MH37

MH12

C7-NFSS-SS10

MH43

MH44

MH42

MH41

MH45

MH46

PIPE74

SUMP35

PIPE74S

SUMP07

PIPE15S

MH22

MH30

MH33

PIPE47S

PIPE63S

C7-NFSS-SUMP1

SUMP25

SUMP13

C7-NFSS-SUMP2

C7-NFSS-PIPE1

C7-NFSS-PIPE2

PIPE42S

PIPE28S

SUMP02

PIPE23S

PIPE57S

SUMP19

PIPE41S

SUMP14

PIPE33S

C7-NFSS-ST6

MH03

MH09

MH04

MH02

Drain02

Drain07

Drain11

Drain01

Drain03

Drain06

Drain14

Drain12

Drain05

Drain04

Drain08

Drain09

Drain13

Drain10

MH07

MH08

Pipes sealed at property boundary

Legend

- HPLC
- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Test trenches
- Former remedial structures
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- Niagara-Mohawk property
- EU boundary

0 120 240 480

Feet

N

US Army Corps of Engineers
Buffalo District

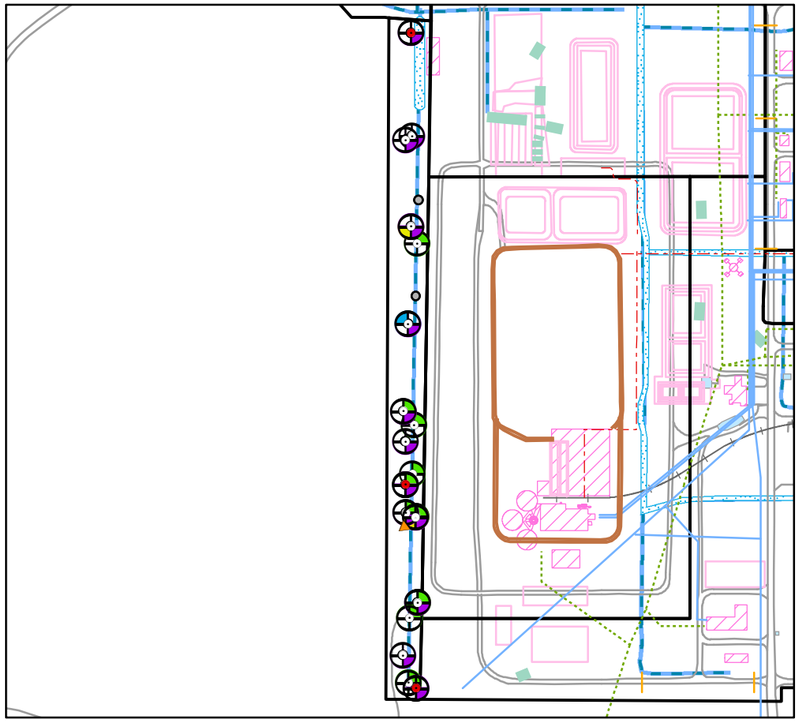
SRCs - Exceeding the UTL

EU 16
Pipeline Sediment

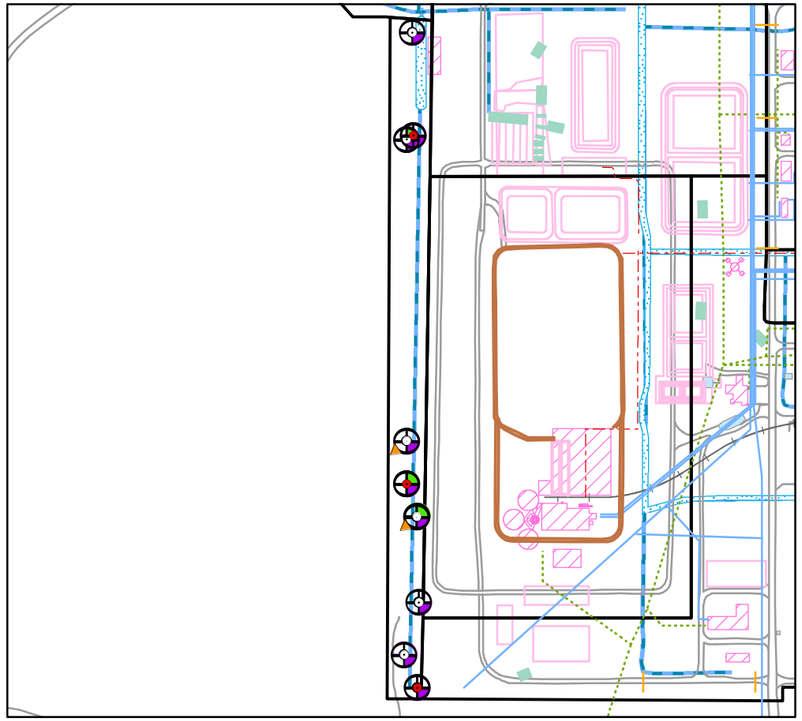
Science Applications International Corporation
Columbus, Ohio

Figure 4-24

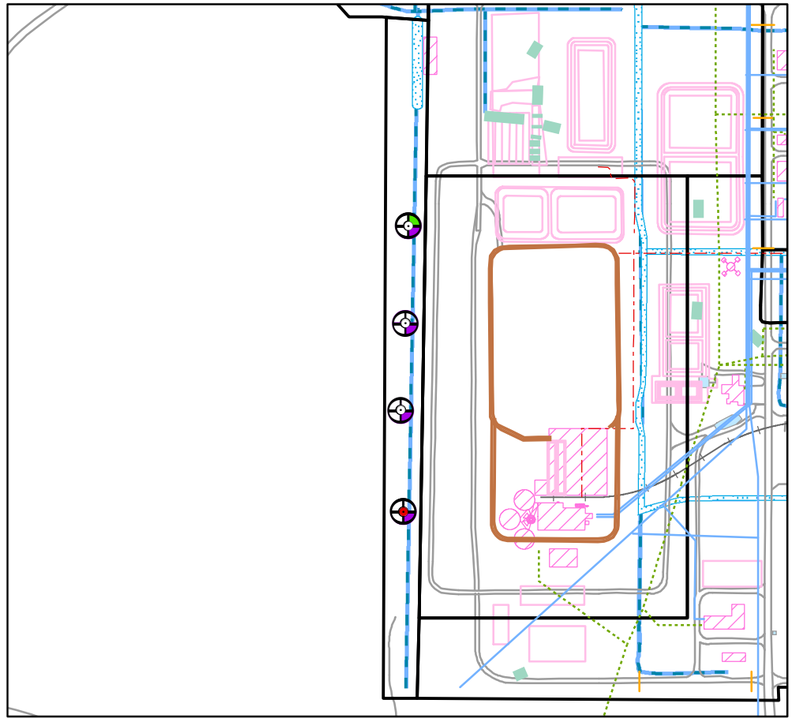
Surface Soil 0-0.5'



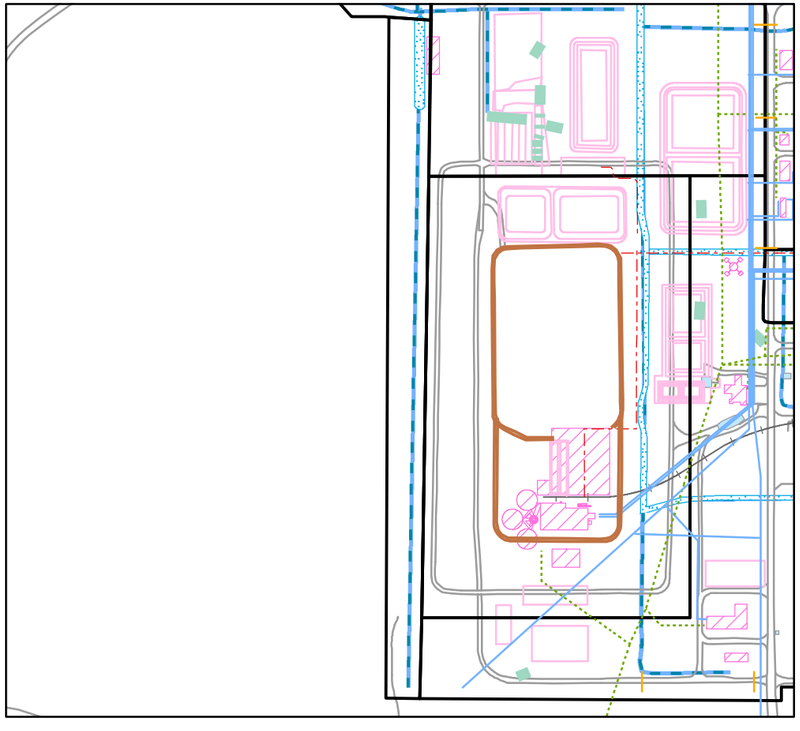
Subsurface Soil 0.5-2'



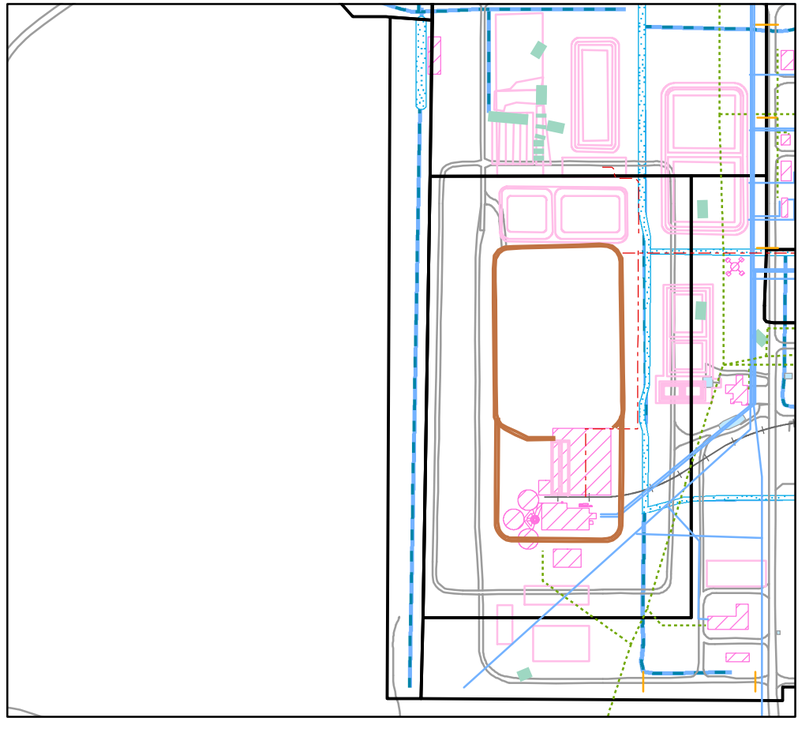
Subsurface Soil 2-5'



Subsurface Soil 5-10'

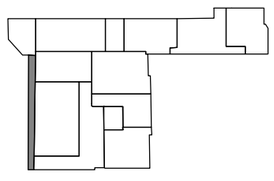


Subsurface Soil > 10'



Sitewide Legend

- Metal
- PCB
- Pesticide
- Radionuclide
- SVOC
- VOC
- No Exceedance
- Structure abandoned above grade
- Active structure
- Former structure
- IWCS cutoff wall
- Test trenches
- Former K-65 transfer pipeline
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former remedial structures
- Former railroad
- Roads
- Surface water (inundated 50% of year)
- Ephemeral ditches
- EU boundary



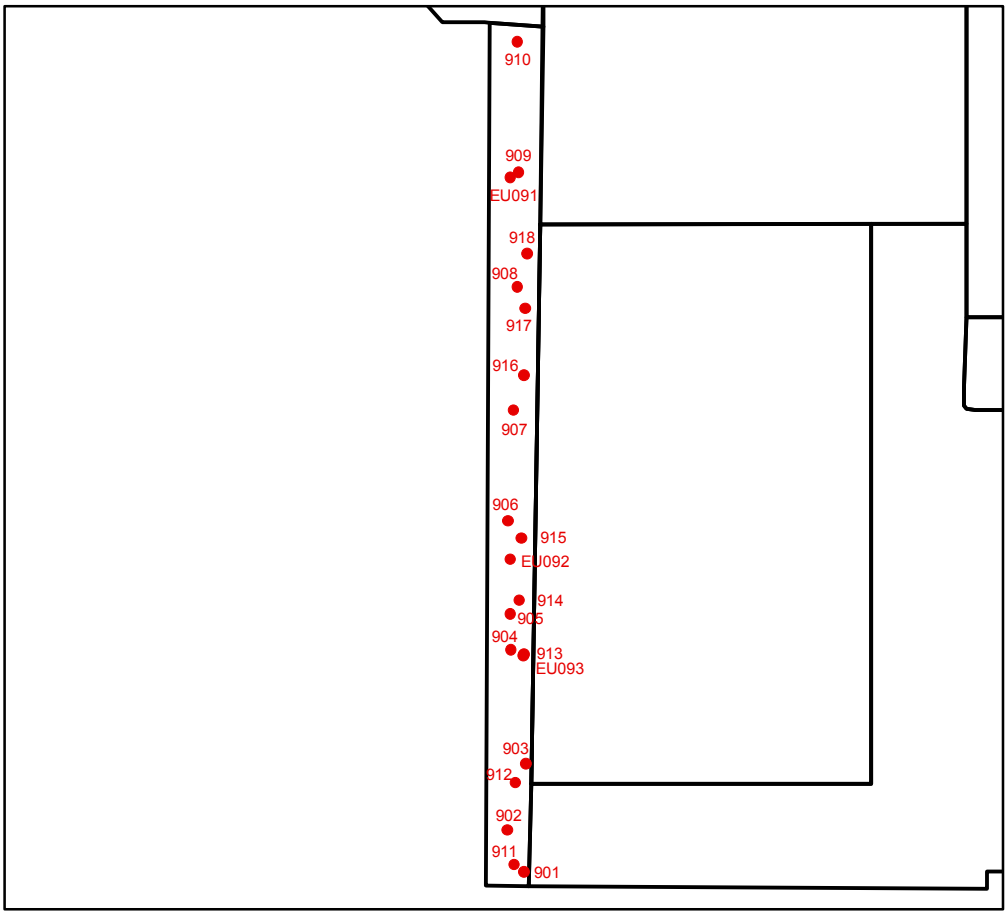
US Army Corps of Engineers
Buffalo Distirict

SRCs - Exceeding the UTL

EU 9

Science Applications International Corporation — Columbus, Ohio

Figure 4-25a



Phase 1
Phase 2
Phase 3

0 120
Feet

N

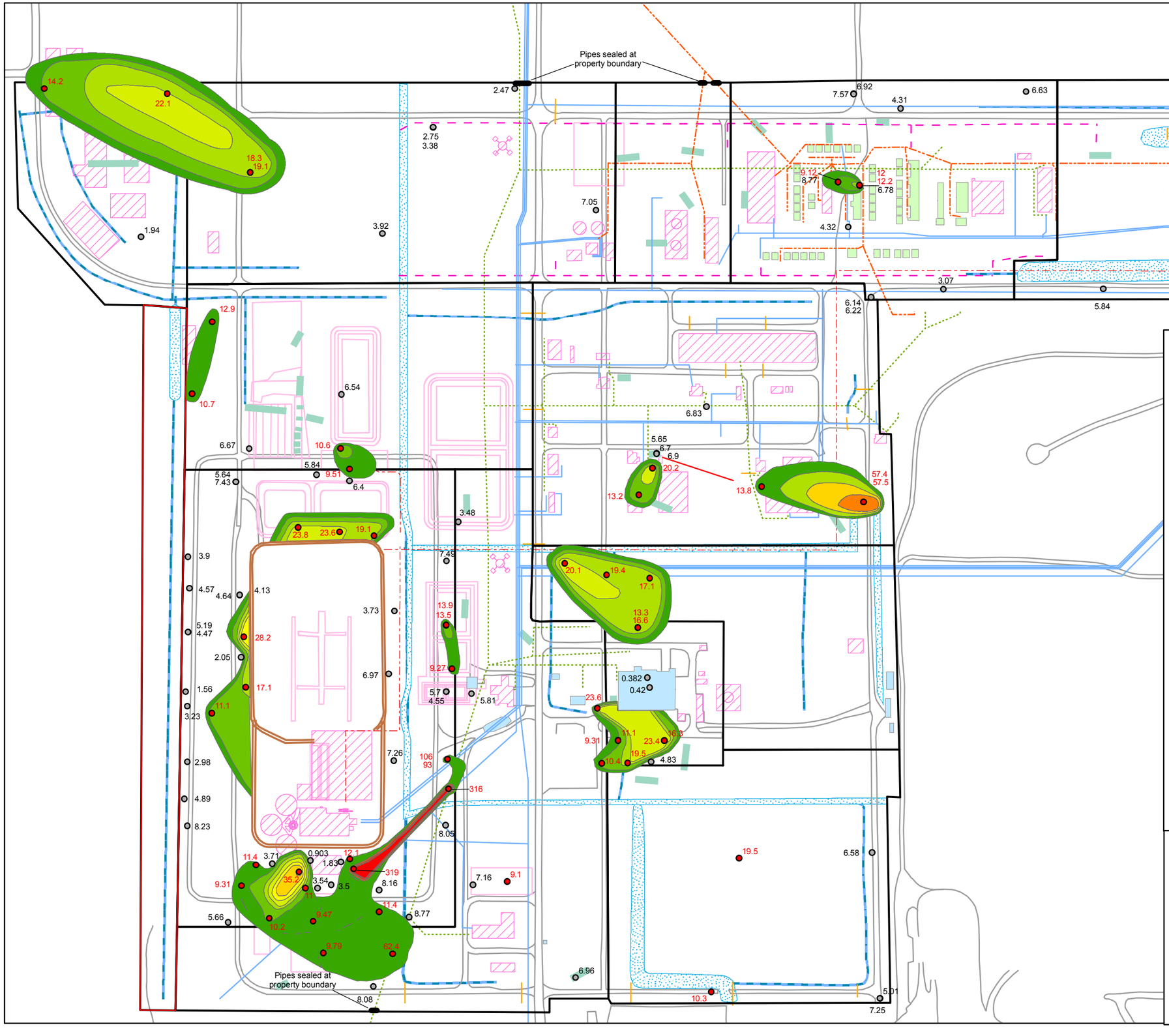
US Army Corps of Engineers
Buffalo Distirict

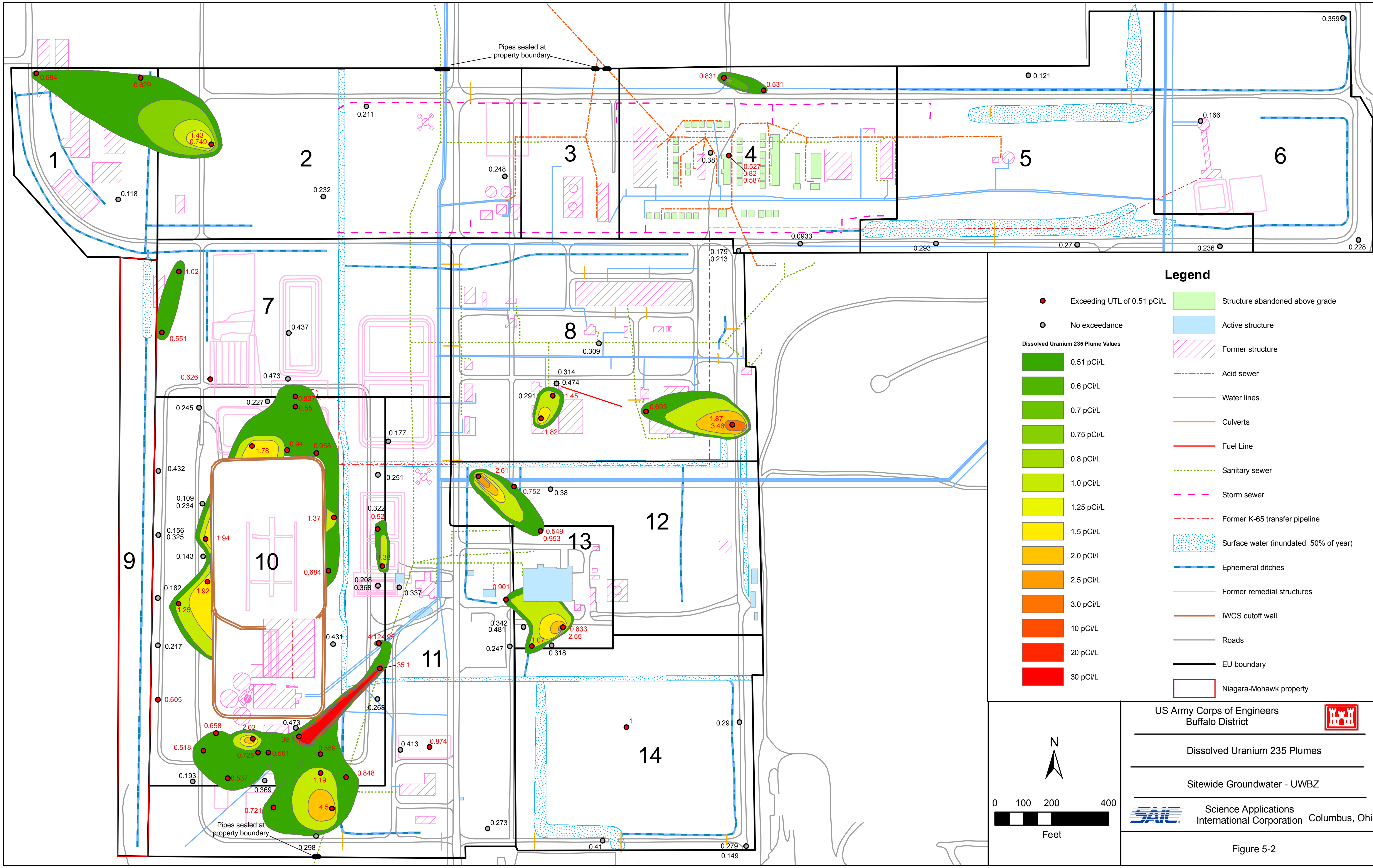
Sample Locations

EU 9

Science Applications International Corporation
Columbus, Ohio

Figure 4-25b


Pipes sealed at property boundary
Pipes sealed at property boundary
Legend
Exceeding UTL of 8.94 pCi/L
No exceedance
Dissolved Uranium 234 Plume Values
8.94 pCi/L
9 pCi/L
10 pCi/L
12 pCi/L
15 pCi/L
20 pCi/L
25 pCi/L
30 pCi/L
35 pCi/L
45 pCi/L
100 pCi/L
200 pCi/L
300 pCi/L
EU boundary
Structure abandoned above grade
Active structure
Former structure
Acid sewer
Water lines
Culverts
Fuel Line
Sanitary sewer
Storm sewer
Former K-65 transfer pipeline
Surface water (inundated 50% of year)
Ephemeral ditches
IWCS cutoff wall
Test trenches
Former remedial structures
Roads
Niagara-Mohawk property
N
0 100 200 400
Feet
US Army Corps of Engineers
Buffalo District
Dissolved Uranium 234 Plumes
Sitewide Groundwater - UWBZ
Science Applications International Corporation
Columbus, Ohio
Figure 5-1


Pipes sealed at property boundary
Legend
Exceeding UTL of 0.51 pCi/L
No exceedance
Dissolved Uranium 235 Plume Values
0.51 pCi/L
0.6 pCi/L
0.7 pCi/L
0.75 pCi/L
0.8 pCi/L
1.0 pCi/L
1.25 pCi/L
1.5 pCi/L
2.0 pCi/L
2.5 pCi/L
3.0 pCi/L
10 pCi/L
20 pCi/L
30 pCi/L
Structure abandoned above grade
Active structure
Former structure
Acid sewer
Water lines
Culverts
Fuel Line
Sanitary sewer
Storm sewer
Former K-65 transfer pipeline
Surface water (inundated 50% of year)
Ephemeral ditches
Former remedial structures
IWCS cutoff wall
Roads
EU boundary
Niagara-Mohawk property
N
0 100 200 400
Feet

US Army Corps of Engineers
Buffalo District

Dissolved Uranium 235 Plumes

Sitewide Groundwater - UWBZ

Science Applications International Corporation Columbus, Ohio

Figure 5-2

Pipes sealed at property boundary

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Legend

- Exceeding UTL of 6.32
- No exceedance

Dissolved Uranium 238 Plume Values

- 6.32 pCi/L
- 8 pCi/L
- 9 pCi/L
- 10 pCi/L
- 12 pCi/L
- 15 pCi/L
- 20 pCi/L
- 30 pCi/L
- 100 pCi/L
- 200 pCi/L
- 300 pCi/L
- Niagara-Mohawk property
- EU boundary

- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel Line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- Surface water (inundated 50% of year)
- IWCS cutoff wall
- Ephemeral ditches
- Former remedial structures
- Roads

N

0 100 200 400

Feet

US Army Corps of Engineers
Buffalo District

Dissolved Uranium 238 Plumes

Sitewide Groundwater - UWBZ

Science Applications International Corporation Columbus, Ohio

Figure 5-3

Pipes Sealed at Property Boundary

Pipes Sealed at Property Boundary

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Legend

- Exceeding UTL of 16.7 µg/L
- No excedance

Total Uranium Plume Values

- 16.7 µg/L
- 20 µg/L
- 25 µg/L
- 30 µg/L
- 35 µg/L
- 45 µg/L
- 50 µg/L
- 60 µg/L
- 100 µg/L
- 500 µg/L
- 1000 µg/L
- 5000 µg/L
- EU boundary
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel Line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- Surface water (inundated 50% of year)
- Ephemeral ditches
- WCS cutoff wall
- Former remedial structures
- Roads
- Niagara-Mohawk property

N

0 100 200 400

Feet

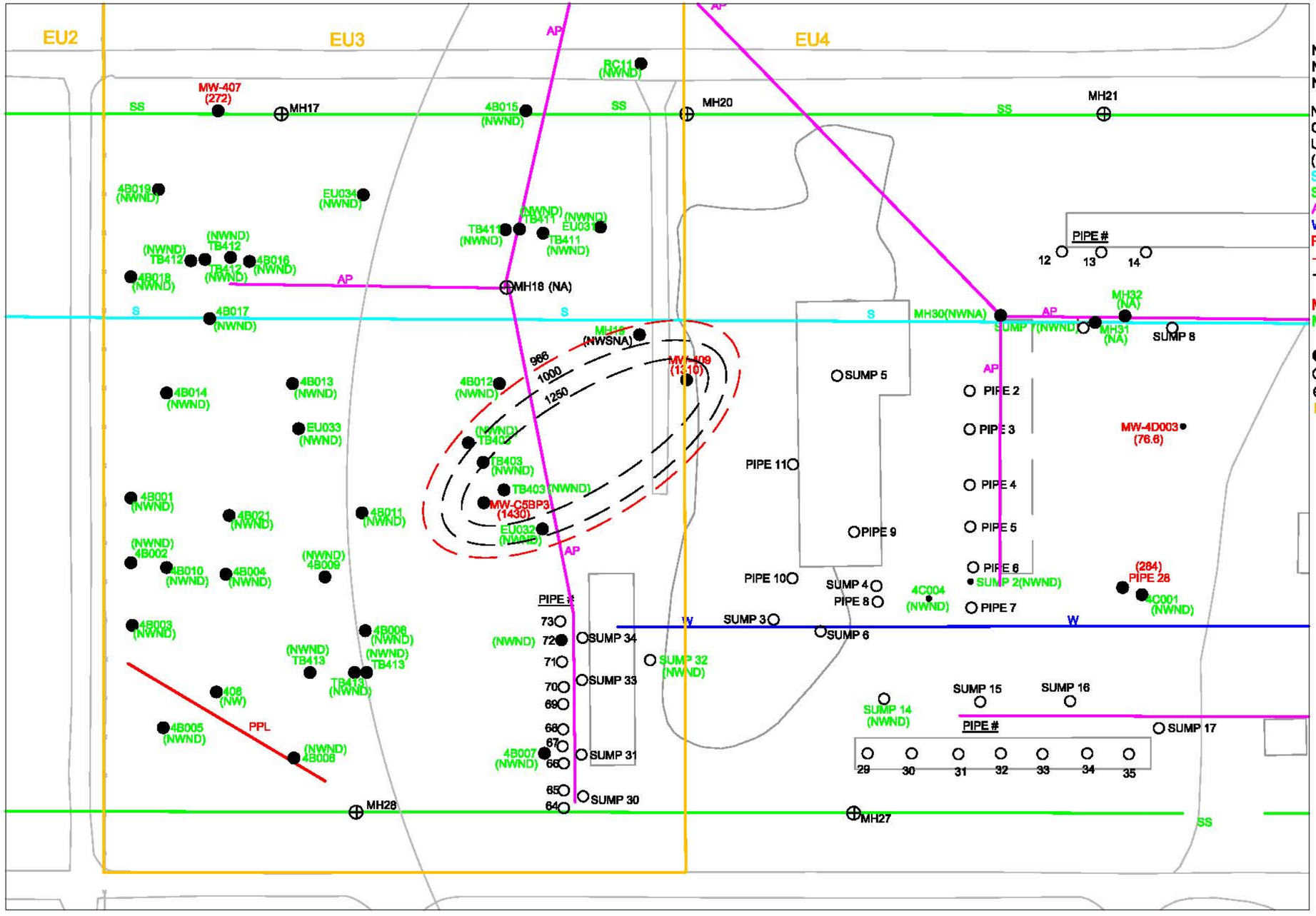
US Army Corps of Engineers
Buffalo District

Dissolved Total Uranium Plumes

Sitewide Groundwater - UWBZ

Science Applications International Corporation Columbus, Ohio

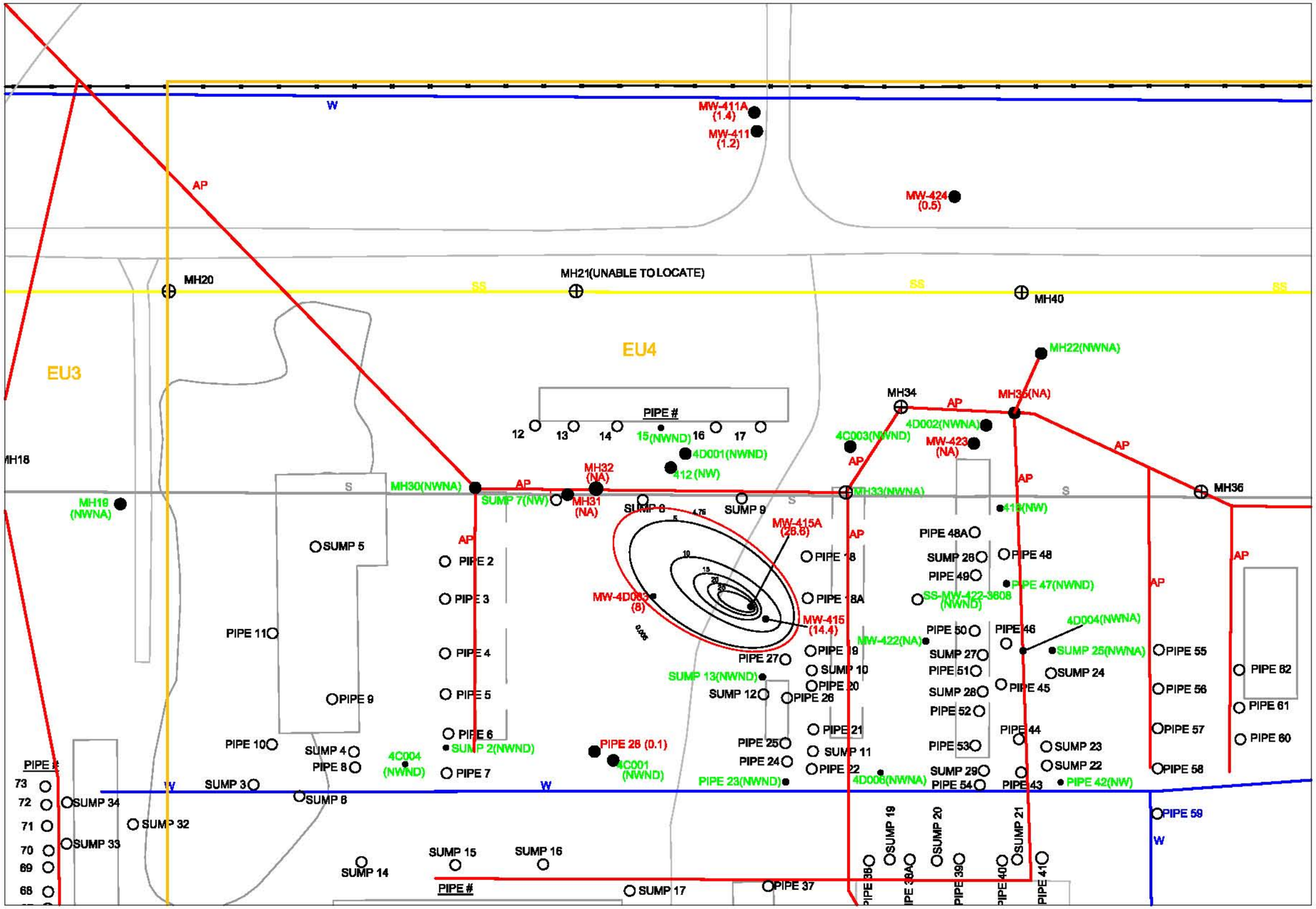
Figure 5-4



Distribution of Dissolved Manganese in the Groundwater in EU3

TETRA TECH, INC.

PROJECT NO.	15892	FIGURE NO.	5-5
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



Legend

NW = No Water
NA = Not Analyzed for Dissolved Metals
NWNA = No Water and Soil Not Analyzed for Dissolved Metals
NWND = No Water, Boring Not Deep Enough
Contour Interval = 5 mg/L
UTL = 4.75 mg/L
(3.7) Concentration of Dissolved Boron in mg/L
S = Sanitary Sewer
SS = Storm Sewer
AP = Acid Process Sewer Lines
W = Water Line
— UTL (4.75 mg/L)
—Isoconcentration Line in mg/L
MH31 - Water Present; Analyzed for Dissolved Metals
MH30 - Water may or may not be present (see notation) and was not analyzed for Dissolved Metals

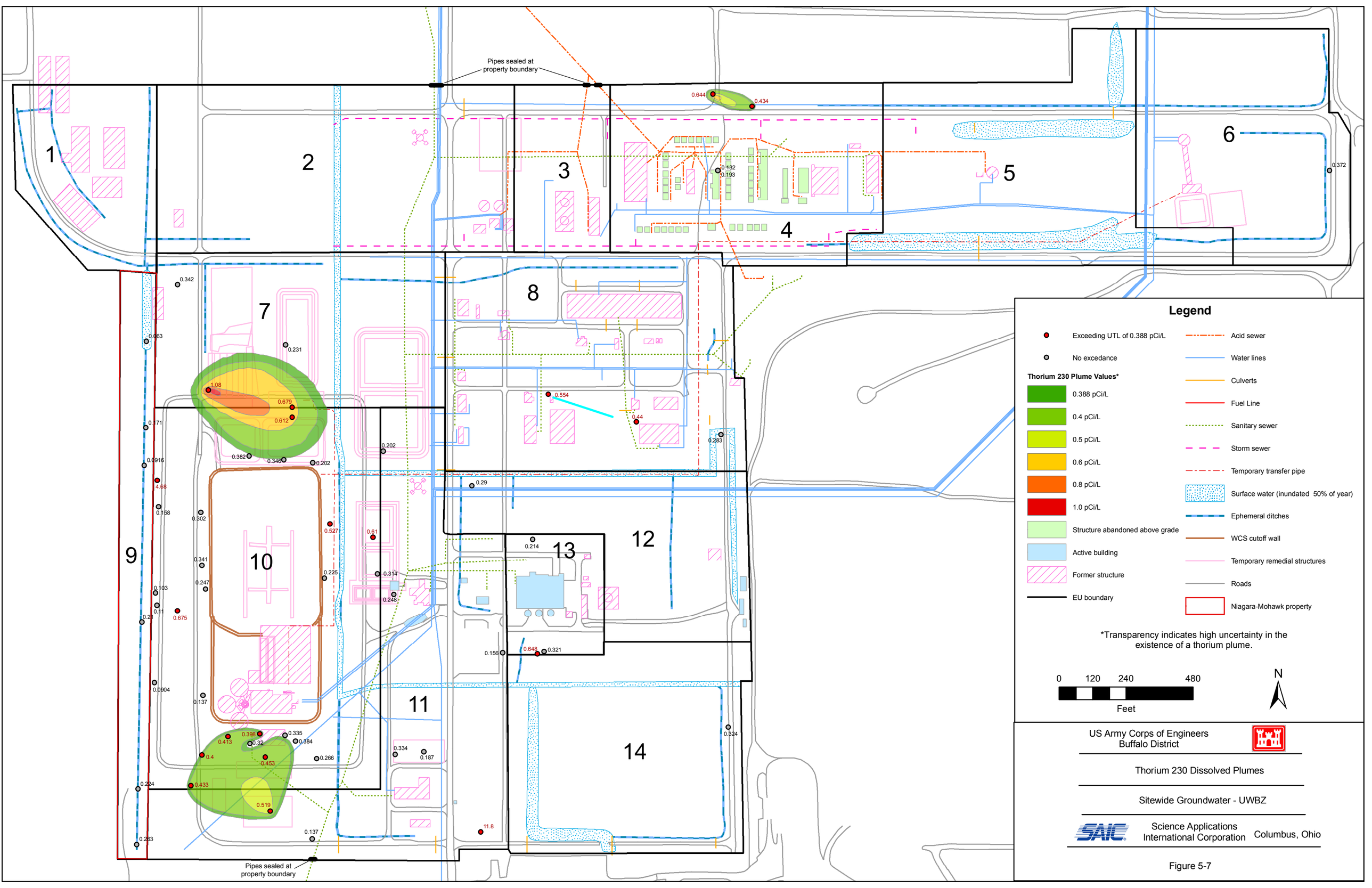
- Sample Location
- Sump/Pipe Location, Not Sampled
- Manhole Location, Not Sampled

EU4 = Exposure Unit

Distribution of Dissolved Boron in the Groundwater in EU4

TETRA TECH, INC.

PROJECT NO.	15892	FIGURE NO.	5-6
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



Legend

- Exceeding UTL of 0.388 pCi/L
- No excedance

Thorium 230 Plume Values*

- 0.388 pCi/L
- 0.4 pCi/L
- 0.5 pCi/L
- 0.6 pCi/L
- 0.8 pCi/L
- 1.0 pCi/L
- Structure abandoned above grade
- Active building
- Former structure
- EU boundary
- Acid sewer
- Water lines
- Culverts
- Fuel Line
- Sanitary sewer
- Storm sewer
- Temporary transfer pipe
- Surface water (inundated 50% of year)
- Ephemeral ditches
- WCS cutoff wall
- Temporary remedial structures
- Roads
- Niagara-Mohawk property

*Transparency indicates high uncertainty in the existence of a thorium plume.

0 120 240 480
Feet

N

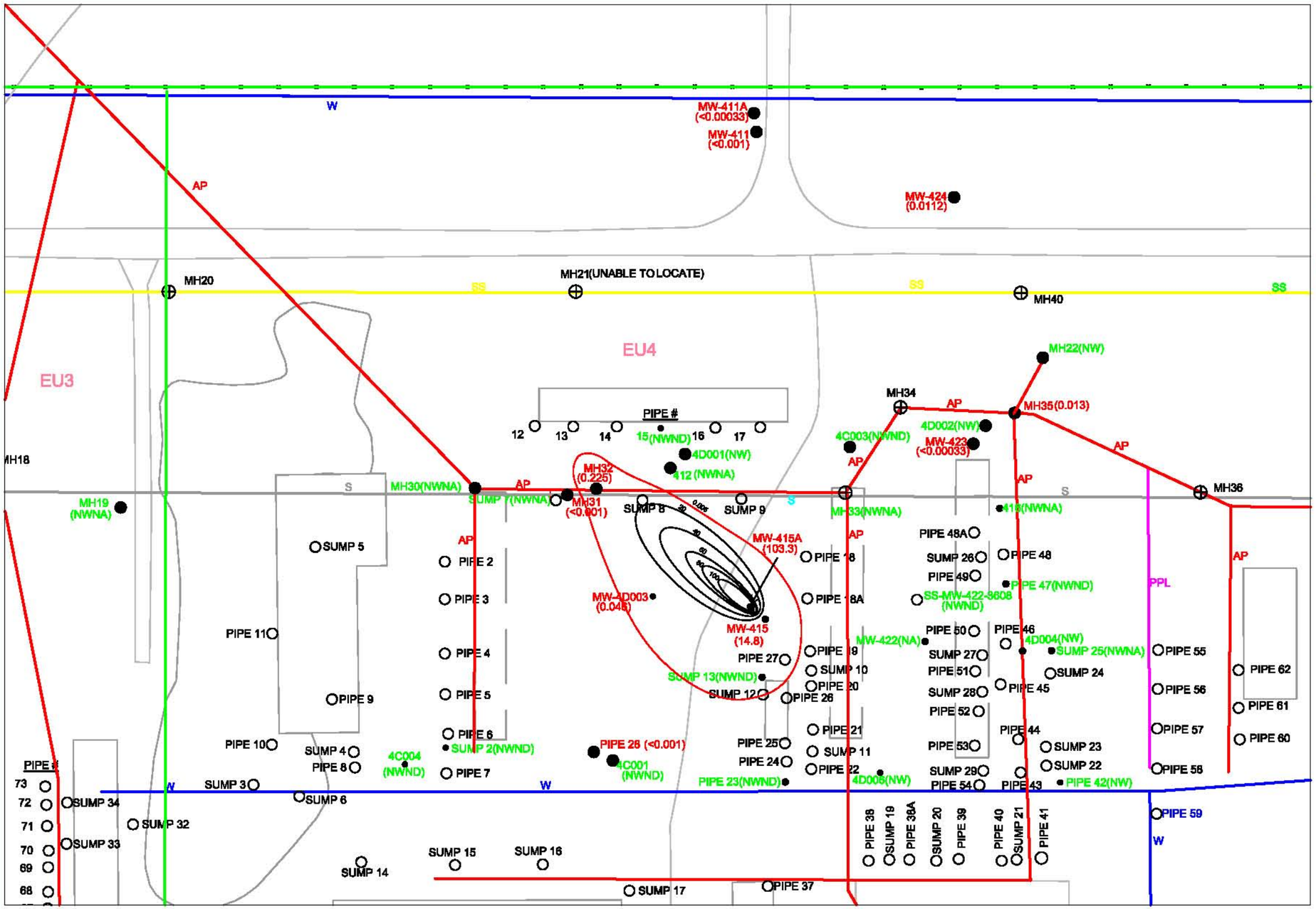
US Army Corps of Engineers
Buffalo District

Thorium 230 Dissolved Plumes

Sitewide Groundwater - UWBZ

Science Applications International Corporation Columbus, Ohio

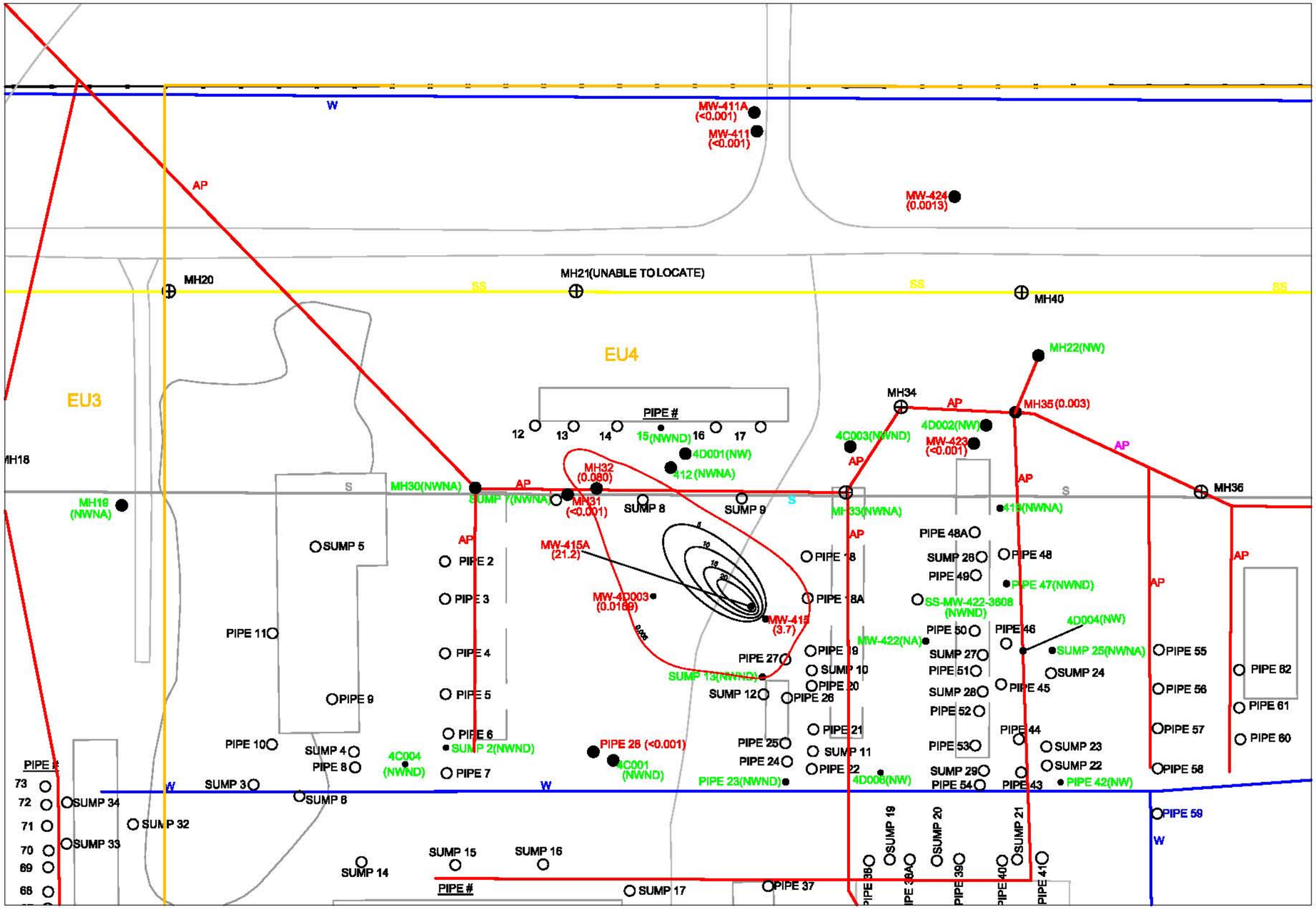
Figure 5-7



Distribution of Tetrachloroethene (PCE) in the Groundwater in EU4

TETRA TECH, INC.

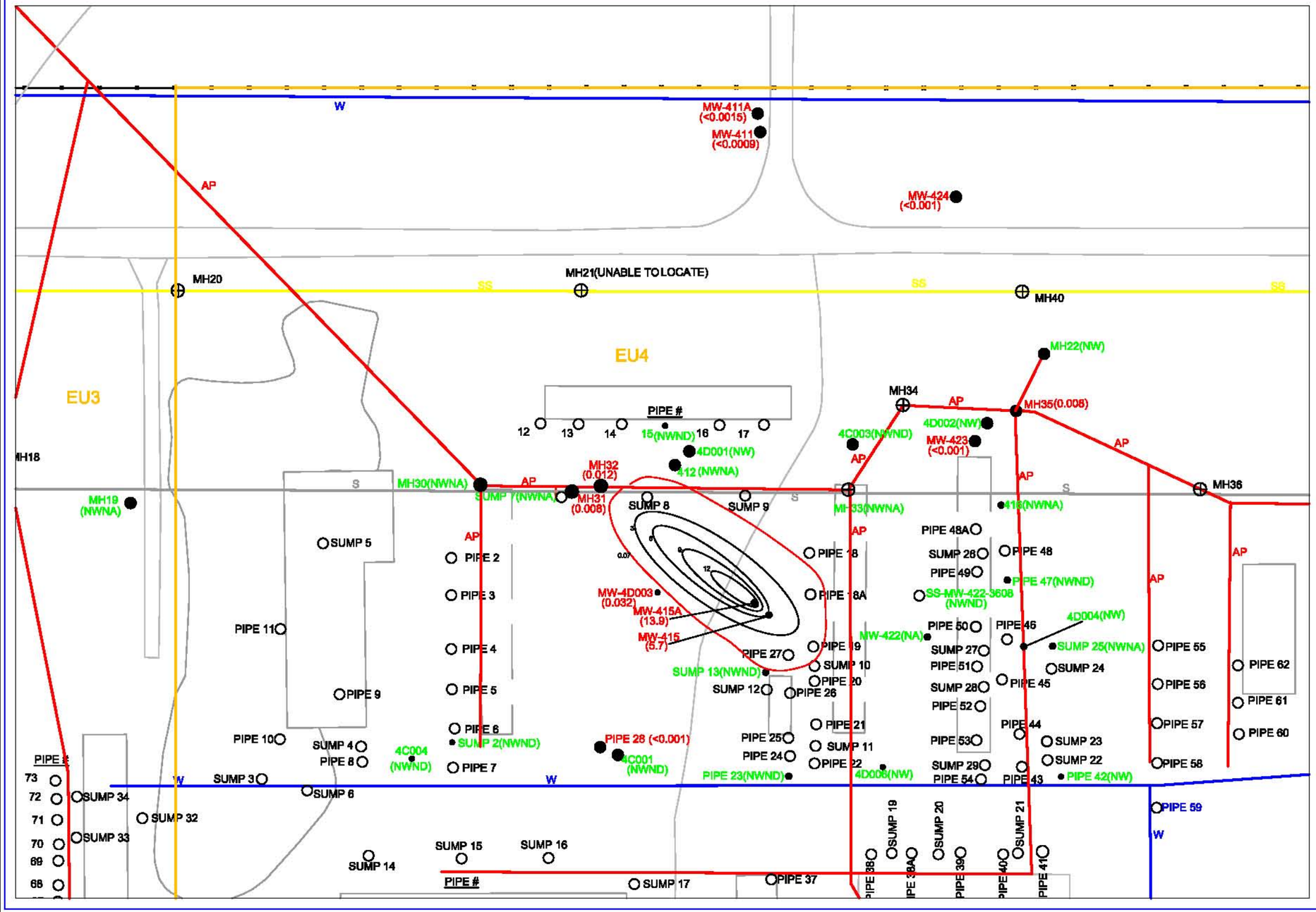
PROJECT NO.	15892	FIGURE NO.	5-8
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



Distribution of Trichloroethene in the Groundwater in EU4

TETRA TECH, INC.

PROJECT NO.	15892	FIGURE NO.	5-9
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



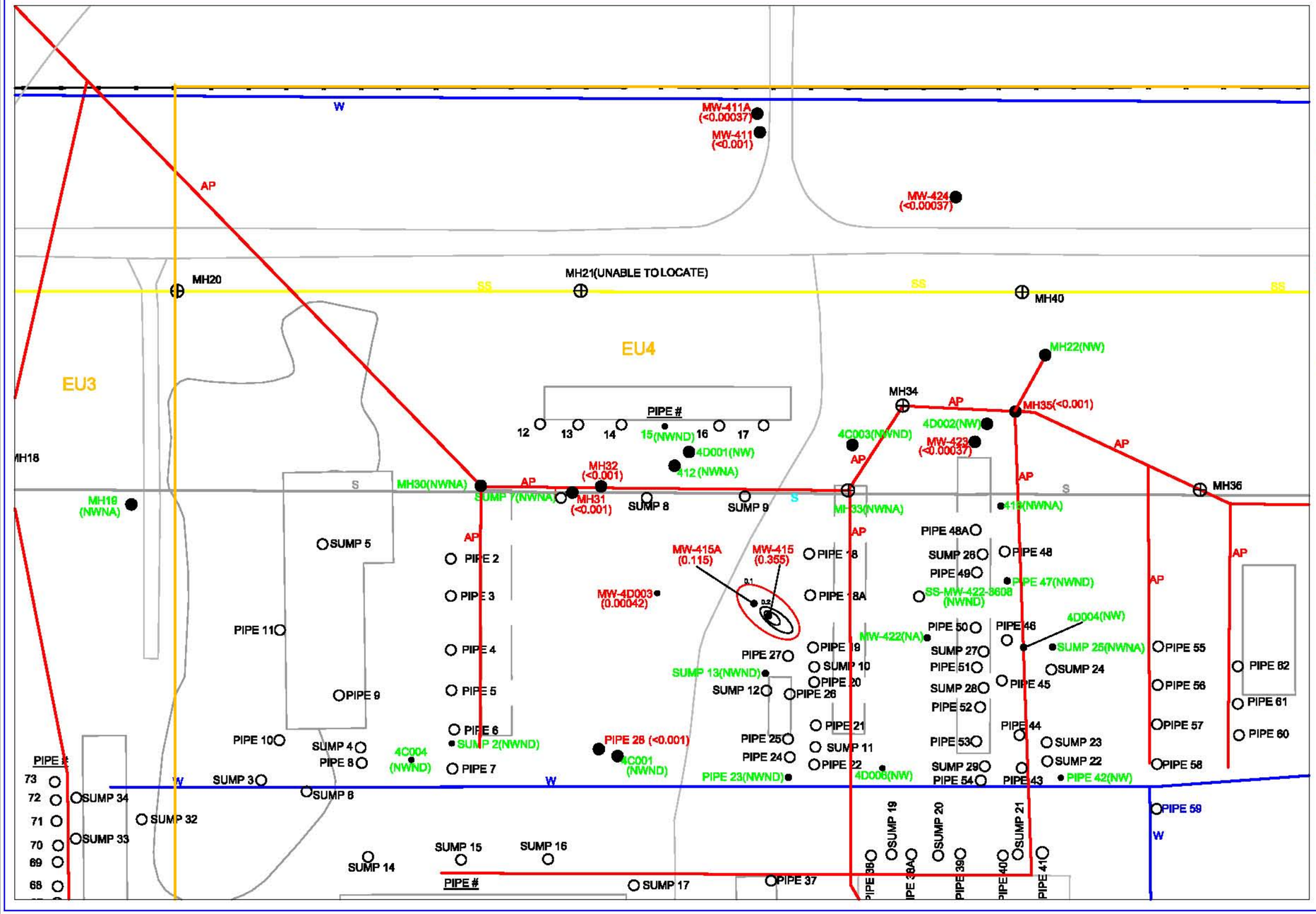
Legend

NW = No Water
NA = Not Analyzed for VOC
NWNA = No Water and Soil Not Analyzed for VOCs
NWND = No Water, Boring Not Deep Enough
Contour Interval = 3 mg/L
MCL = 0.07 mg/L
(0.008) Concentration of Cis-1,2-Dichloroethene in mg/L
S = Sanitary Sewer
SS = Storm Sewer
AP = Acid Process Sewer Lines
W = Water Line
— MCL (0.07 mg/L)
—Isoconcentration Line in mg/L
MH31 - Water Present; Analyzed for VOCs
MH30 - Water may or may not be present (see notation) and was not analyzed for VOCs
● Sample Location
○ Sump/Pipe Location, Not Sampled
⊕ Manhole Location, Not Sampled
EU4 = Exposure Unit

Distribution of Cis-1,2-Dichloroethene in the Groundwater in EU4

TETRA TECH, INC.

PROJECT NO.	15892	FIGURE NO.	5-10
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



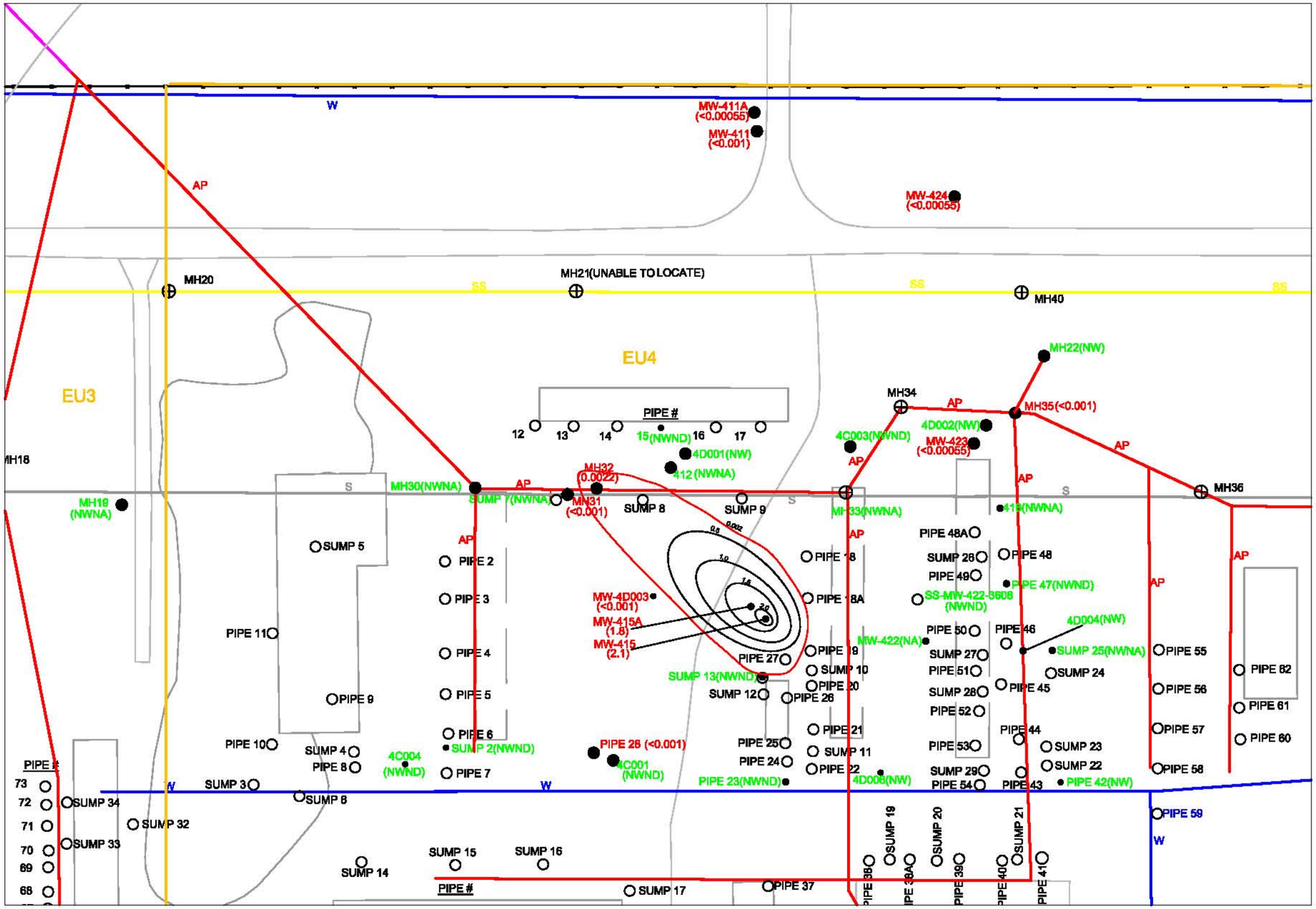
Legend

NW = No Water
NA = Not Analyzed for VOC
NWNA = No Water and Soil Not Analyzed for VOCs
NWND = No Water, Boring Not Deep Enough
Contour Interval = 0.1 mg/L
MCL = 0.1 mg/L
(0.115) Concentration of Trans-1,2-Dichloroethene in mg/L
S = Sanitary Sewer
SS = Storm Sewer
AP = Acid Process Sewer Lines
W = Water Line
— MCL (0.1 mg/L)
— Isoconcentration Line in mg/L
MH31 - Water Present; Analyzed for VOCs
MH30 - Water may or may not be present (see notation) and was not analyzed for VOCs
● Sample Location
○ Sump/Pipe Location, Not Sampled
⊕ Manhole Location, Not Sampled
EU4 = Exposure Unit

Distribution of Trans-1,2-Dichloroethene in the Groundwater in EU4

TETRA TECH, INC.

PROJECT NO.	15892	FIGURE NO.	5-11
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



Legend

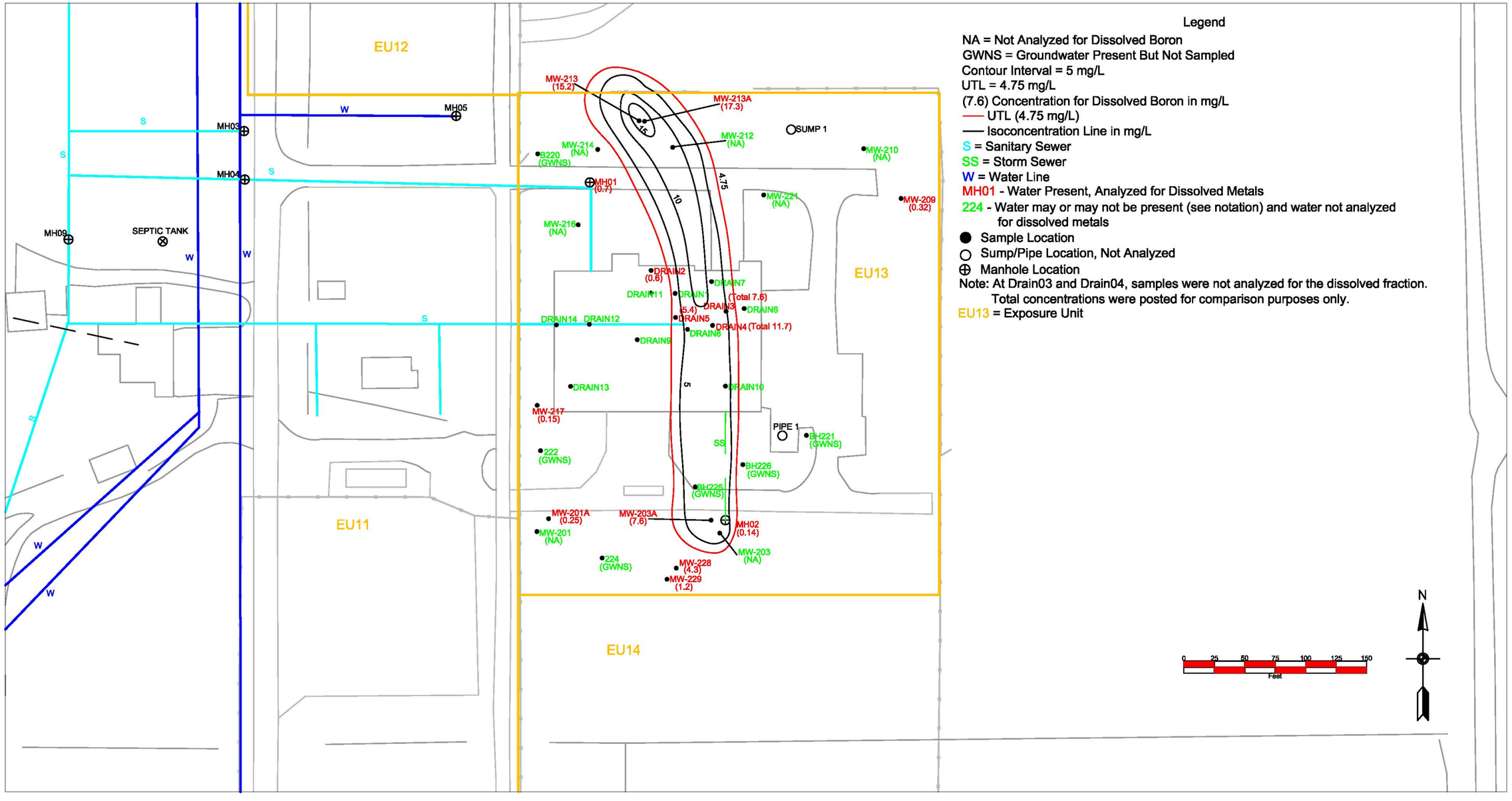
NW = No Water
NA = Not Analyzed for VOC
NWNA = No Water and Soil Not Analyzed for VOCs
NWND = No Water, Boring Not Deep Enough
Contour Interval = 0.5 mg/L
MCL = 0.002 mg/L
(1.8) Concentration of Vinyl Chloride in mg/L
S = Sanitary Sewer
SS = Storm Sewer
AP = Acid Process Sewer Lines
W = Water Line
— MCL (0.002 mg/L)
—Isoconcentration Line in mg/L
MH31 - Water Present; Analyzed for VOCs
MH30 - Water may or may not be present (see notation) and was not analyzed for VOCs

● Sample Location
○ Sump/Pipe Location, Not Sampled
⊕ Manhole Location, Not Sampled
EU4 = Exposure Unit

Distribution of Vinyl Chloride in the Groundwater in EU4

TETRA TECH, INC.

PROJECT NO.	15892	FIGURE NO.	5-12
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD



Legend

NA = Not Analyzed for Dissolved Boron
GWNS = Groundwater Present But Not Sampled
Contour Interval = 5 mg/L
UTL = 4.75 mg/L
(7.6) Concentration for Dissolved Boron in mg/L
—— UTL (4.75 mg/L)
—— Isoconcentration Line in mg/L
S = Sanitary Sewer
SS = Storm Sewer
W = Water Line
MH01 - Water Present, Analyzed for Dissolved Metals
224 - Water may or may not be present (see notation) and water not analyzed for dissolved metals
● Sample Location
○ Sump/Pipe Location, Not Analyzed
⊕ Manhole Location
Note: At Drain03 and Drain04, samples were not analyzed for the dissolved fraction. Total concentrations were posted for comparison purposes only.
EU13 = Exposure Unit

Distribution of Dissolved Boron in EU13

MAXIM Technologies
A DIVISION OF TETRA TECH, INC.

PROJECT NO.	15892	FIGURE NO.	5-14
SCALE:	AS SHOWN	DATE:	11-14-2006
DRAWN BY:	DWC	CHECKED BY:	NMD

Pipes sealed at property boundary

1.13 (5A001)
1.07 (5A004)
0.864 (504)
0.817 (4A007)
1.02 (DRUM02)
1.92 (414)
1.29 (422)
0.848 (829)
1.07 (8D003)
1.16 (8D003)
5.15 (8D016)
0.842 (3A021)
0.852 (3A007)
0.903 (3C007)
1.22 (314)
1.08 (3B011)
0.894 (3B003)
4.88 (TB301_03)
3 (3D002)
0.866 (3D001)
2.23 (3D001)
1.27 (817)

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Pipes sealed at property boundary

Legend

- Cesium-137 detects exceeding the UTL
- Cesium-137 potential outliers
- Structure abandoned above grade
- Active structure
- Former structure
- Acid sewer
- Water lines
- Culverts
- Fuel line
- Sanitary sewer
- Storm sewer
- Former K-65 transfer pipeline
- IWCS cutoff wall
- Former remedial structures
- Test trenches
- Surface water (inundated 50% of year)
- Ephemeral ditches
- Roads
- Former railroad
- Niagara-Mohawk property boundary
- EU boundary

UTL is 0.34 pCi/g in soil, 0.39 pCi/g in sediment

0 120 240 480 Feet

N

US Army Corps of Engineers
Buffalo District

Cesium-137 Locations Exceeding the UTL (with Potential Outliers) in Surface Soil, Subsurface Soil, and Sediment

Sitewide

SAIC Science Applications International Corporation Columbus, Ohio

Figure 5-15

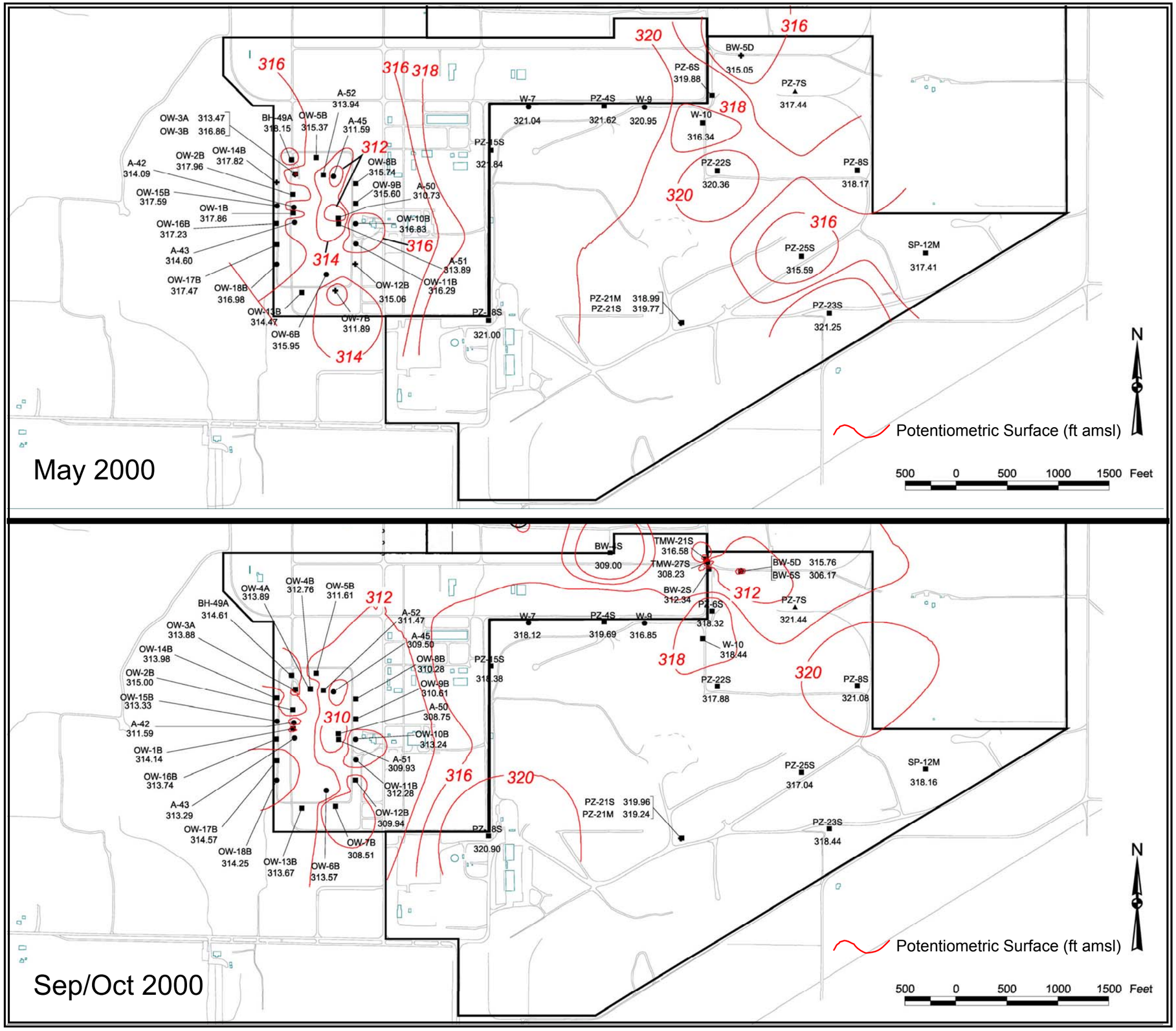


Figure 5-16 Generalized Potentiometric Surface of the Upper Water Bearing Zone