



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT  
1222 SPRUCE STREET  
ST. LOUIS, MISSOURI 63103

CEMVSOD-F

1 December 2023

MEMORANDUM FOR RECORD

SUBJECT: US Army Corps of Engineers (Corps) Pre-2015 Regulatory Regime  
Approved Jurisdictional Determination considering *Sackett v. EPA*, 143 S. Ct. 1322  
(2023),<sup>1</sup> MVS-2023-566<sup>2</sup>

BACKGROUND. An Approved Jurisdictional Determination (AJD) is a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel. AJDs are clearly designated appealable actions and will include a basis of JD with the document.<sup>3</sup> AJDs are case-specific and are typically made in response to a request. AJDs are valid for a period of five years unless new information warrants revision of the determination before the expiration date or a District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.<sup>4</sup> For the purposes of this AJD, we have relied on section 10 of the Rivers and Harbors Act of 1899 (RHA),<sup>5</sup> the Clean Water Act (CWA) implementing regulations published by the Department of the Army in 1986 and amended in 1993 (references 2.a. and 2.b. respectively), the 2008 *Rapanos-Carabell* guidance (reference 2.c.), and other applicable guidance, relevant case law and longstanding practice, (collectively the pre-2015 regulatory regime), and the *Sackett* decision (reference 2.d.) in evaluating jurisdiction.

This Memorandum for Record (MFR) constitutes the basis of jurisdiction for a Corps AJD as defined in 33 CFR §331.2. The features addressed in this AJD were evaluated consistent with the definition of “waters of the United States” found in the pre-2015 regulatory regime and consistent with the Supreme Court’s decision in *Sackett*. This AJD did not rely on the 2023 “Revised Definition of ‘Waters of the United States,’” as

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<sup>1</sup> While the Supreme Court’s decision in *Sackett* had no effect on some categories of waters covered under the CWA, and no effect on any waters covered under RHA, all categories are included in this Memorandum for Record for efficiency.

<sup>2</sup> When documenting aquatic resources within the review area that are jurisdictional under the Clean Water Act (CWA), use an additional MFR and group the aquatic resources on each MFR based on the TNW, interstate water, or territorial seas that they are connected to. Be sure to provide an identifier to indicate when there are multiple MFRs associated with a single AJD request (i.e., number them 1, 2, 3, etc.).

<sup>3</sup> 33 CFR 331.2.

<sup>4</sup> Regulatory Guidance Letter 05-02.

<sup>5</sup> USACE has authority under both Section 9 and Section 10 of the Rivers and Harbors Act of 1899 but for convenience, in this MFR, jurisdiction under RHA will be referred to as Section 10.

amended on 8 September 2023 (Amended 2023 Rule) because, as of the date of this decision, the Amended 2023 Rule is not applicable Missouri due to litigation.

## 1. SUMMARY OF CONCLUSIONS.

- a. Provide a list of each individual feature within the review area and the jurisdictional status of each one (i.e., identify whether each feature is/is not a water of the United States and/or a navigable water of the United States).
  - i. WTL-1 (0.008-acres), non-jurisdictional
  - ii. WTL-2a (0.018-acres), jurisdictional, Section 404
  - iii. WTL-2b (0.003-acres), non-jurisdictional
  - iv. WTL-3a (0.020-acres), non-jurisdictional
  - v. WTL-3b (0.072-acres), non-jurisdictional
  - vi. WTL-4 (0.083-acres), non-jurisdictional
  - vii. WTL-5 (0.081-acres), non-jurisdictional
  - viii. WTL-6 (0.023-acres), non-jurisdictional
  - ix. WTL-7a (0.013-acres), jurisdictional, Section 404
  - x. WTL-7b (0.005-acres), jurisdictional, Section 404
  - xi. WTL-7c (0.006-acres), jurisdictional, Section 404
  - xii. WTL-8a (0.017-acres), non-jurisdictional
  - xiii. WTL-8b (0.017-acres), non-jurisdictional
  - xiv. WTL-8c (0.011-acres), non-jurisdictional
  - xv. WTL-9 (0.143-acres), non-jurisdictional
  - xvi. WTL-10 (0.011-acres), non-jurisdictional
  - xvii. WTL-11 (0.027-acres), jurisdictional, Section 404
  - xviii. WTL-12 (0.007-acres), jurisdictional, Section 404
  - xix. WTL-13 (0.024-acres), jurisdictional, Section 404
  - xx. WTL-14 (0.017-acres), jurisdictional, Section 404
  - xxi. WTL-15 (0.097-acres), non-jurisdictional
  - xxii. WTL-16 (0.005-acres), non-jurisdictional
  - xxiii. WTL-17 (0.060-acres), non-jurisdictional
  - xxiv. WTL-18 (0.012-acres), jurisdictional, Section 404
  - xxv. WTL-19 (0.061-acres), jurisdictional, Section 404
  - xxvi. WTL-20 (0.083-acres), non-jurisdictional
  - xxvii. WTL-21 (0.016-acres), jurisdictional, Section 404
  - xxviii. WTL-22 (0.029-acres), non-jurisdictional
  - xxix. WTL-23 (0.199-acres), non-jurisdictional
  - xxx. WTL-24 (0.025-acres), non-jurisdictional
  - xxxi. WTL-25 (0.041-acres), jurisdictional, Section 404
  - xxxii. WTL-26 (0.008-acres), non-jurisdictional
  - xxxiii. WTL-27 (0.029-acres), non-jurisdictional

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- xxxiv. WTL-28 (0.010-acres), non-jurisdictional
- xxxv. WTL-29 (0.003-acres), non-jurisdictional
- xxxvi. WTL-30 (0.015-acres), non-jurisdictional
- xxxvii. WTL-31 (0.002-acres), non-jurisdictional
- xxxviii. STR-1 (3841 LF), jurisdictional, Section 404
- xxxix. STR-2 (4453 LF), jurisdictional, Section 404
  - xl. STR-3 (1004 LF), non-jurisdictional
  - xli. STR-4 (253 LF), non-jurisdictional
  - xl. STR-5 (206 LF), non-jurisdictional
  - xl. STR-6 (778 LF), non-jurisdictional
  - xliv. STR-7 (76 LF), jurisdictional, Section 404
  - xl. STR-8 (134 LF), non-jurisdictional
  - xlvi. STR-9 (962 LF), non-jurisdictional
  - xl. STR-10 (1649 LF), non-jurisdictional
  - xl. STR-11 (1271 LF), non-jurisdictional
  - xl. STR-12 (981 LF), non-jurisdictional
    - I. STR-13 (55 LF), non-jurisdictional
    - li. STR-14 (103 LF), non-jurisdictional
    - lii. STR-15 (182 LF), non-jurisdictional
    - liii. STR-16 (185 LF), non-jurisdictional
    - liv. STR-17 (398 LF), non-jurisdictional
    - lv. STR-18 (1226 LF), non-jurisdictional
    - lvi. STR-19 (51 LF), jurisdictional, Section 404
    - lvii. STR-20 (211 LF), non-jurisdictional
    - lviii. STR-21 (449 LF), non-jurisdictional
    - lix. STR-22 (598 LF), non-jurisdictional
    - lx. STR-23 (77 LF), non-jurisdictional
    - lxi. STR-24 (95 LF), non-jurisdictional
    - lxii. STR-25 (345 LF), non-jurisdictional
    - lxiii. STR-26 (155 LF), non-jurisdictional
  - lxiv. OWF-1 (2.8-acres), non-jurisdictional
  - lxv. OWF-2 (0.24-acres), non-jurisdictional
  - lxvi. UDF 1-27, non-jurisdictional
  - lxvii. Ditch 1-4, non-jurisdictional

2. REFERENCES.

- a. Final Rule for Regulatory Programs of the Corps of Engineers, 51 FR 41206 (November 13, 1986).
- b. Clean Water Act Regulatory Programs, 58 FR 45008 (August 25, 1993).

- c. U.S. EPA & U.S. Army Corps of Engineers, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* (December 2, 2008)
  - d. *Sackett v. EPA*, 598 U.S. \_\_\_, 143 S. Ct. 1322 (2023)
  - e. Wetland Delineation Report, dated September 2023
  - f. USACE Regulatory GIS Viewer
3. REVIEW AREA. Review area is approximately 585-acres in size, located in Jefferson County, Missouri. Approximate coordinates: 38.1701 latitude, -90.3197 longitude.
4. NEAREST TRADITIONAL NAVIGABLE WATER (TNW), INTERSTATE WATER, OR THE TERRITORIAL SEAS TO WHICH THE AQUATIC RESOURCE IS CONNECTED. The nearest TNW is the Mississippi River, which is a navigable-in fact water.<sup>6</sup>
5. FLOWPATH FROM THE SUBJECT AQUATIC RESOURCES TO A TNW, INTERSTATE WATER, OR THE TERRITORIAL SEAS. Resources flow generally east via unnamed tributaries to the Mississippi River.
6. SECTION 10 JURISDICTIONAL WATERS<sup>7</sup>: Describe aquatic resources or other features within the review area determined to be jurisdictional in accordance with Section 10 of the Rivers and Harbors Act of 1899. Include the size of each aquatic resource or other feature within the review area and how it was determined to be jurisdictional in accordance with Section 10.<sup>8</sup> N/A

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<sup>6</sup> This MFR should not be used to complete a new stand-alone TNW determination. A stand-alone TNW determination for a water that is not subject to Section 9 or 10 of the Rivers and Harbors Act of 1899 (RHA) is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established.

<sup>7</sup> 33 CFR 329.9(a) A waterbody which was navigable in its natural or improved state, or which was susceptible of reasonable improvement (as discussed in § 329.8(b) of this part) retains its character as "navigable in law" even though it is not presently used for commerce, or is presently incapable of such use because of changed conditions or the presence of obstructions.

<sup>8</sup> This MFR is not to be used to make a report of findings to support a determination that the water is a navigable water of the United States. The district must follow the procedures outlined in 33 CFR part 329.14 to make a determination that water is a navigable water of the United States subject to Section 10 of the RHA.



7. SECTION 404 JURISDICTIONAL WATERS: Describe the aquatic resources within the review area that were found to meet the definition of waters of the United States in accordance with the pre-2015 regulatory regime and consistent with the Supreme Court's decision in *Sackett*. List each aquatic resource separately, by name, consistent with the naming convention used in section 1, above. Include a rationale for each aquatic resource, supporting that the aquatic resource meets the relevant category of "waters of the United States" in the pre-2015 regulatory regime. The rationale should also include a written description of, or reference to a map in the administrative record that shows, the lateral limits of jurisdiction for each aquatic resource, including how that limit was determined, and incorporate relevant references used. Include the size of each aquatic resource in acres or linear feet and attach and reference related figures as needed.
  - a. TNWs (a)(1): N/A
  - b. Interstate Waters (a)(2): N/A
  - c. Other Waters (a)(3): N/A
  - d. Impoundments (a)(4): N/A
  - e. Tributaries (a)(5): STR-1, STR-2, & STR-7 are RPWs that exhibit perennial flow as observed on site visits. Site visits were conducted in the dry season, where drier than normal, and were in a time of mild drought. STR-19 is a spring fed, first order stream that exhibits ground-water flow from a spring. This flows through the Non-RPW STR-18 into the RPW STR-1.
  - f. The territorial seas (a)(6): N/A
  - g. Adjacent wetlands (a)(7): WTL-2A is connected to STR-2, and possess a continuous surface connection, via a discrete drainage feature. WTL-7a, WTL-7b, & WTL-7c directly abut STR-2. WTL-11, WTL-12, WTL-13, & WTL-14 are connected to STR-1, and possess a continuous surface connection, via discrete drainage features. WTL-18 is connected to STR-1, and possess a continuous surface connection, via discrete drainage feature. WTL-19, WTL-21, & WTL-25 directly abut STR-1.
8. NON-JURISDICTIONAL AQUATIC RESOURCES AND FEATURES
  - a. Describe aquatic resources and other features within the review area identified as "generally non-jurisdictional" in the preamble to the 1986 regulations (referred

to as “preamble waters”).<sup>9</sup> Include size of the aquatic resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA as a preamble water. OWF 1 & OWF 2 were excavated in uplands as settling basins.

- b. Describe aquatic resources and features within the review area identified as “generally not jurisdictional” in the *Rapanos* guidance. Include size of the aquatic resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA based on the criteria listed in the guidance. N/A
- c. Describe aquatic resources and features identified within the review area as waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA. Include the size of the waste treatment system within the review area and describe how it was determined to be a waste treatment system. N/A
- d. Describe aquatic resources and features within the review area determined to be prior converted cropland in accordance with the 1993 regulations (reference 2.b.). Include the size of the aquatic resource or feature within the review area and describe how it was determined to be prior converted cropland. N/A
- e. Describe aquatic resources (i.e. lakes and ponds) within the review area, which do not have a nexus to interstate or foreign commerce, and prior to the January 2001 Supreme Court decision in “*SWANCC*,” would have been jurisdictional based solely on the “Migratory Bird Rule.” Include the size of the aquatic resource or feature, and how it was determined to be an “isolated water” in accordance with *SWANCC*. N/A
- f. Describe aquatic resources and features within the review area that were determined to be non-jurisdictional because they do not meet one or more categories of waters of the United States under the pre-2015 regulatory regime consistent with the Supreme Court’s decision in *Sackett* (e.g., tributaries that are non-relatively permanent waters; non-tidal wetlands that do not have a continuous surface connection to a jurisdictional water).  
STR-3, STR-4, STR-5, STR-6, STR-8, STR-9, STR-10, STR-11, STR-12, STR-13, STR-14, STR-15, STR-16, STR-17, STR-20, STR-21, STR-22, STR-23, STR-25, & STR-26 are non-relatively permanent tributaries that only flow in response to rainfall events. STR-18 exhibits mixed ephemeral/intermittent flow but as 54% of the stream is ephemeral (lengths transposed in table) it is

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<sup>9</sup> 51 FR 41217, November 13, 1986.

categorized as a non-RPW. STR-24 is likely spring fed but does not possess a known surface outlet so does not flow directly or indirectly to a TNW. WTL-1, WTL-2b, WTL-3a, WTL-3b, WTL-4, WTL-5, WTL-6, WTL-8a, WTL-8b, WTL-8c, WTL-9, WTL-10, WTL-15, WTL-16 do not possess a continuous surface connection to a downstream RPW. WTL-20, WTL-22, WTL-23, WTL-24, & WTL-26 are connected via perched culverts to other wetlands and do not themselves possess a continuous surface connection via a discrete physical feature to a downstream RPW. WTL-27, WTL-28, WTL-29, WTL-30, & WTL-31 do not possess a continuous surface connection to a downstream RPW. WTL-17 is an excavated ditch with wetland characteristics in the bottom. UDF 1-27 & Ditches 1-4 do not possess characteristics of tributaries, lacking indicators of ordinary high-water mark and/or bed/bank features.

9. DATA SOURCES. List sources of data/information used in making determination. Include titles and dates of sources used and ensure that information referenced is available in the administrative record.

- a. Several office evaluations as well as a Webex call with requestor & agent on 27 October 2023.
- b. Delineation Report – dated September 2023.
- c. Online resources such as historic aerials, Regulatory GIS viewer, accessed multiple times.

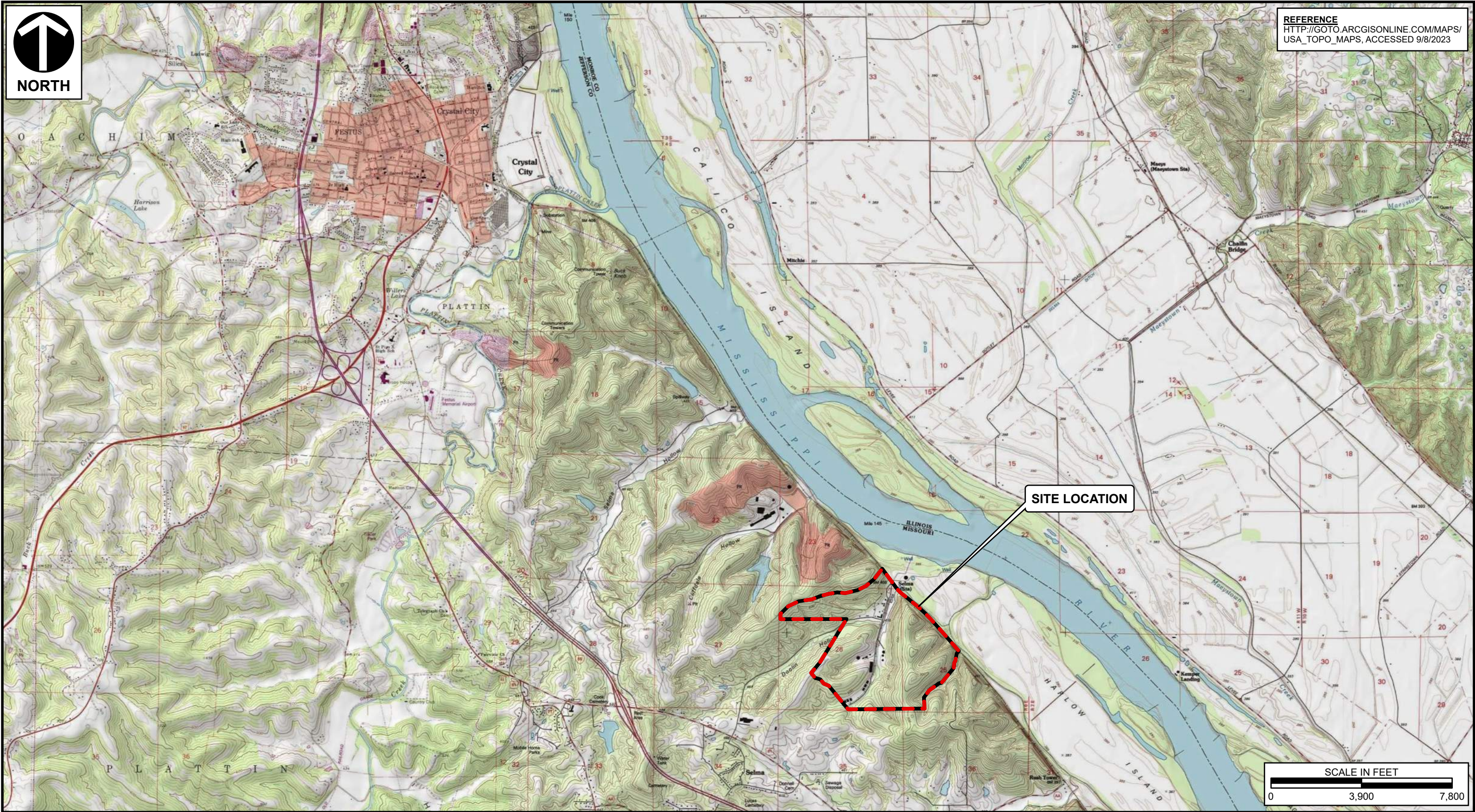
10. OTHER SUPPORTING INFORMATION. Conclusions reached by agent often did not follow pre-2015 regime as it conforms with Sackett decision, but detailed write-ups, photos, and maps allowed for accurate categorization of aquatic resources.

11. NOTE: The structure and format of this MFR were developed in coordination with the EPA and Department of the Army. The MFR's structure and format may be subject to future modification or may be rescinded as needed to implement additional guidance from the agencies; however, the approved jurisdictional determination described herein is a final agency action.






REFERENCE  
HTTP://GOTO.ARCGISONLINE.COM/MAPS/  
USA\_TOPO\_MAPS, ACCESSED 9/8/2023



SITE LOCATION

SCALE IN FEET  
0 3,900 7,800

**LEGEND**

 SURVEY AREA



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BUZZI UNICEM  
BUZZI FESTUS MINE EXPANSION  
JEFFERSON COUNTY, MISSOURI

SITE LOCATION MAP

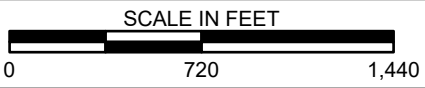
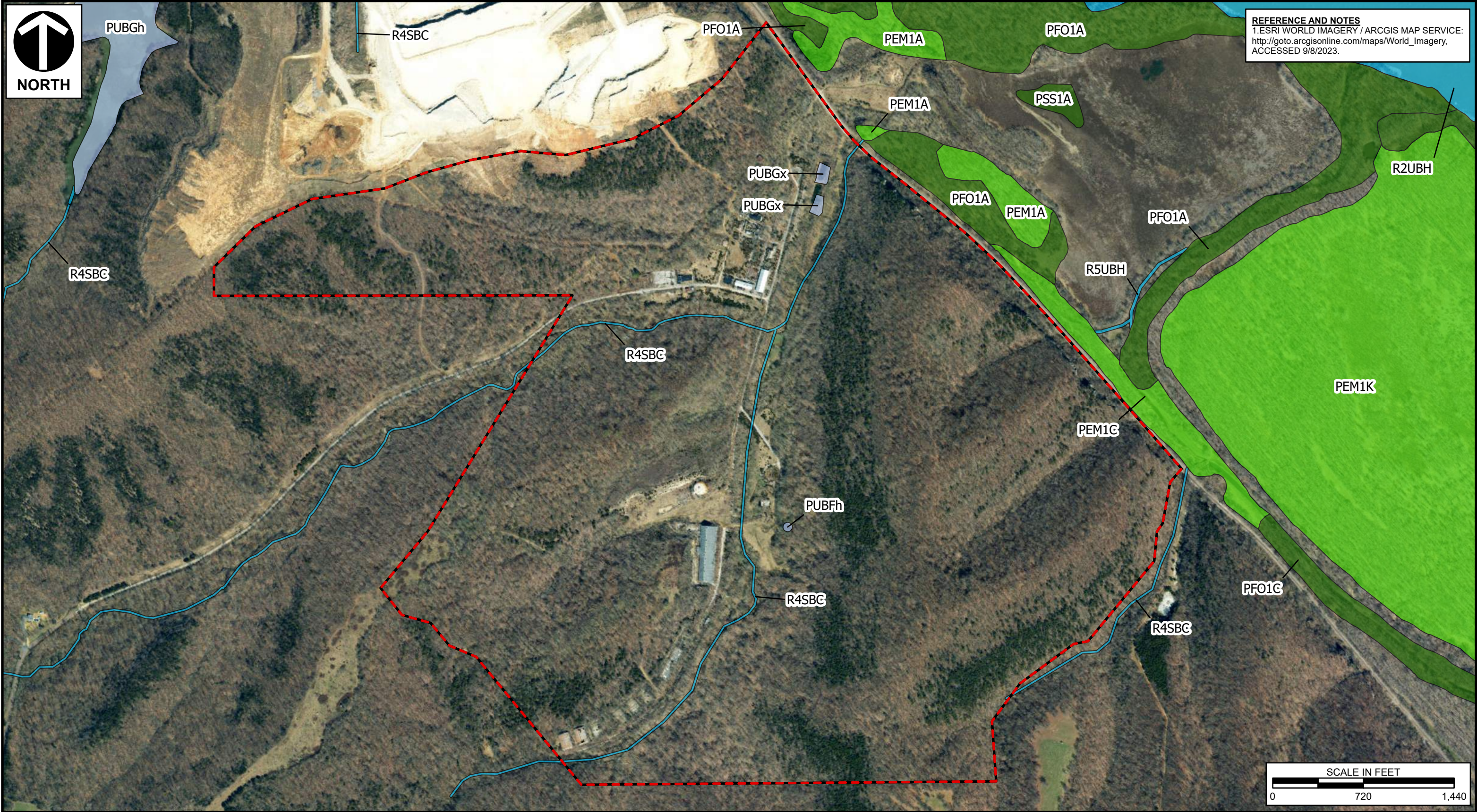
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\*Hand Signature on file





**REFERENCE AND NOTES**  
1.ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:  
[http://goto.arcgisonline.com/maps/World\\_Imagery](http://goto.arcgisonline.com/maps/World_Imagery),  
ACCESSED 9/8/2023.



**LEGEND**

SURVEY AREA

**NWI DATA**

FRESHWATER EMERGENT WETLAND

FRESHWATER FORESTED/SHRUB WETLAND

FRESHWATER POND

RIVERINE



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DATE:	9/8/2023	SCALE:	1" =720'

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JEFFERSON COUNTY, MISSOURI

**NATIONAL WETLANDS INVENTORY MAP**

APPROVED BY:	KLA*	FIGURE NO:	2
PROJECT NO:	330-401.0005		

\*Hand Signature on file





**REFERENCE AND NOTES**  
1.ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:  
[http://goto.arcgisonline.com/maps/World\\_Imagery](http://goto.arcgisonline.com/maps/World_Imagery),  
ACCESSED 9/8/2023.



**LEGEND**  
SOIL MAP UNIT  
NOT HYDRIC  
HYDRIC

**C&E**  
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SOILS MAP

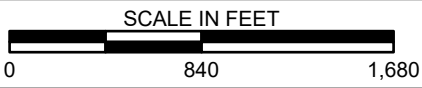
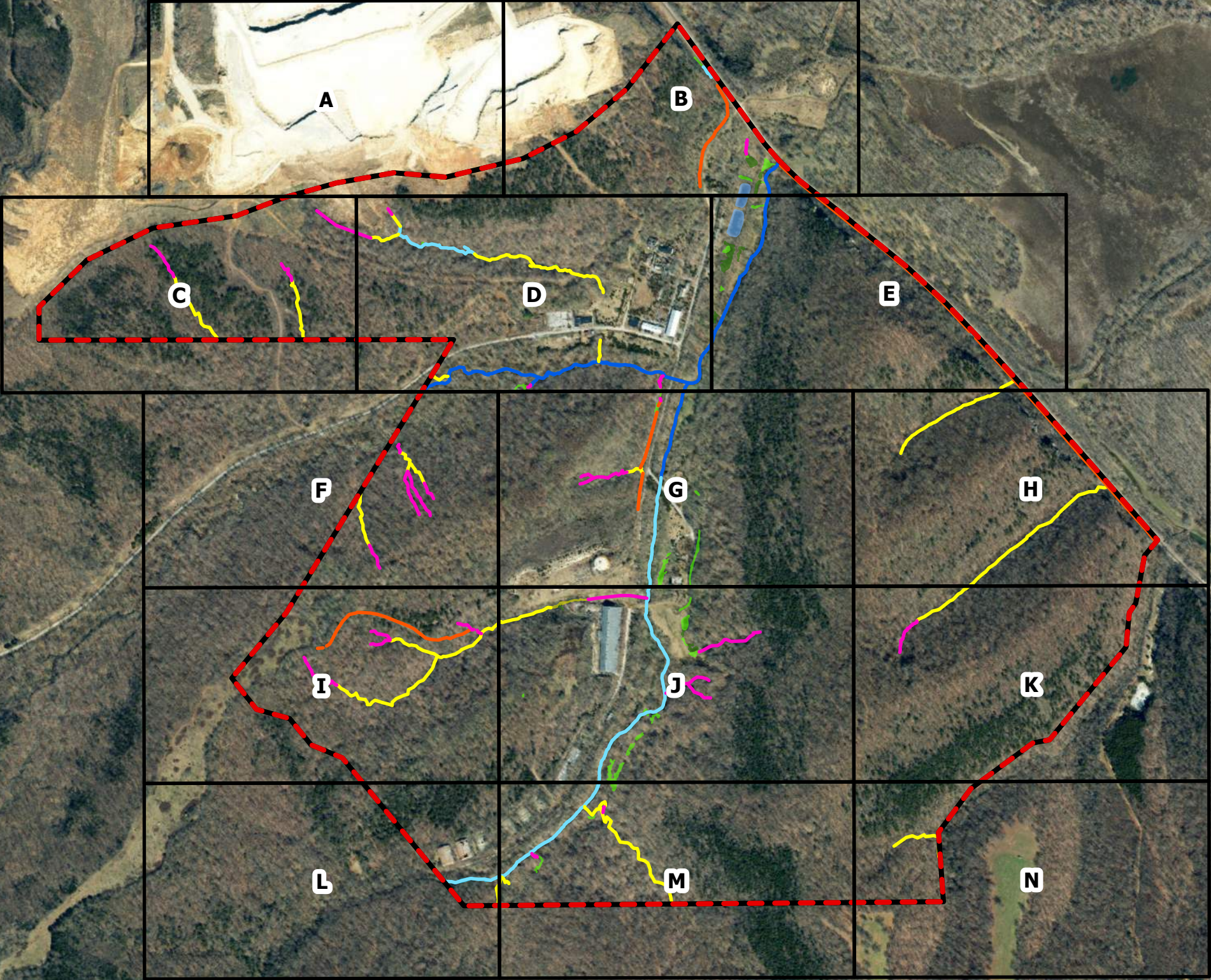
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\*Hand Signature on file





REFERENCE AND NOTES  
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[http://goto.arcgisonline.com/maps/World\\_Imagery](http://goto.arcgisonline.com/maps/World_Imagery),  
ACCESSED 9/8/2023.



LEGEND	
	SURVEY AREA
	GRID INDEX
	EMERGENT WETLAND
	SCRUB SHRUB WETLAND
	FORESTED WETLAND
	OPEN WATER FEATURE
	EPHEMERAL STREAM
	INTERMITTENT STREAM
	PERENNIAL STREAM
	DITCH
	UPLAND DRAINAGE FEATURE



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WETLAND & STREAM DELINEATION MAP






DRAWN BY:	RRT	CHECKED BY:	KLA	APPROVED BY:	KLA*	FIGURE NO:	4 OVERVIEW
DATE:	9/8/2023	SCALE:	1" =840'	PROJECT NO:	330-401.0005		

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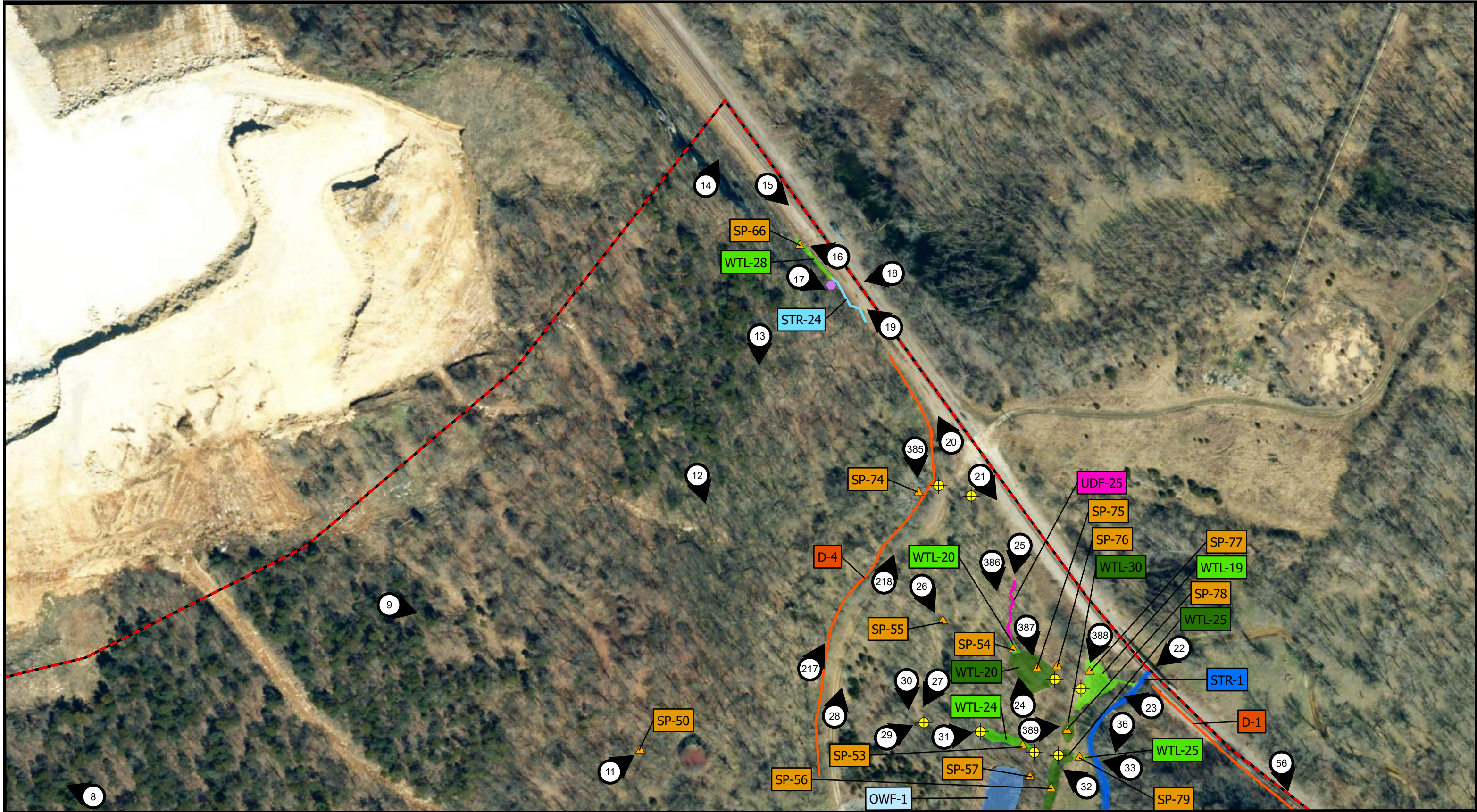


<b>LEGEND</b>  SURVEY AREA  PHOTO LOCATION	<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.	 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>		<b>BUZZI UNICEM</b> <b>BUZZI FESTUS MINE EXPANSION</b> <b>JEFFERSON COUNTY, MISSOURI</b>	
					<b>WETLAND &amp; STREAM DELINEATION MAP</b>	
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\*Hand Signature on file



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LEGEND		REFERENCE AND NOTES		Civil & Environmental Consultants, Inc.		BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI		
	SURVEY AREA		FORESTED WETLAND	 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 www.cecinc.com		WETLAND & STREAM DELINEATION MAP		
	SAMPLE POINT		INTERMITTENT STREAM					
	PHOTO LOCATION		PERENNIAL STREAM					
	EMERGENT WETLAND		DITCH					
	UPLAND DRAINAGE FEATURE		EXISTING CULVERT	DRAWN BY: RRT		CHECKED BY: KLA	APPROVED BY: KLA*	FIGURE NO: <b>4B</b>
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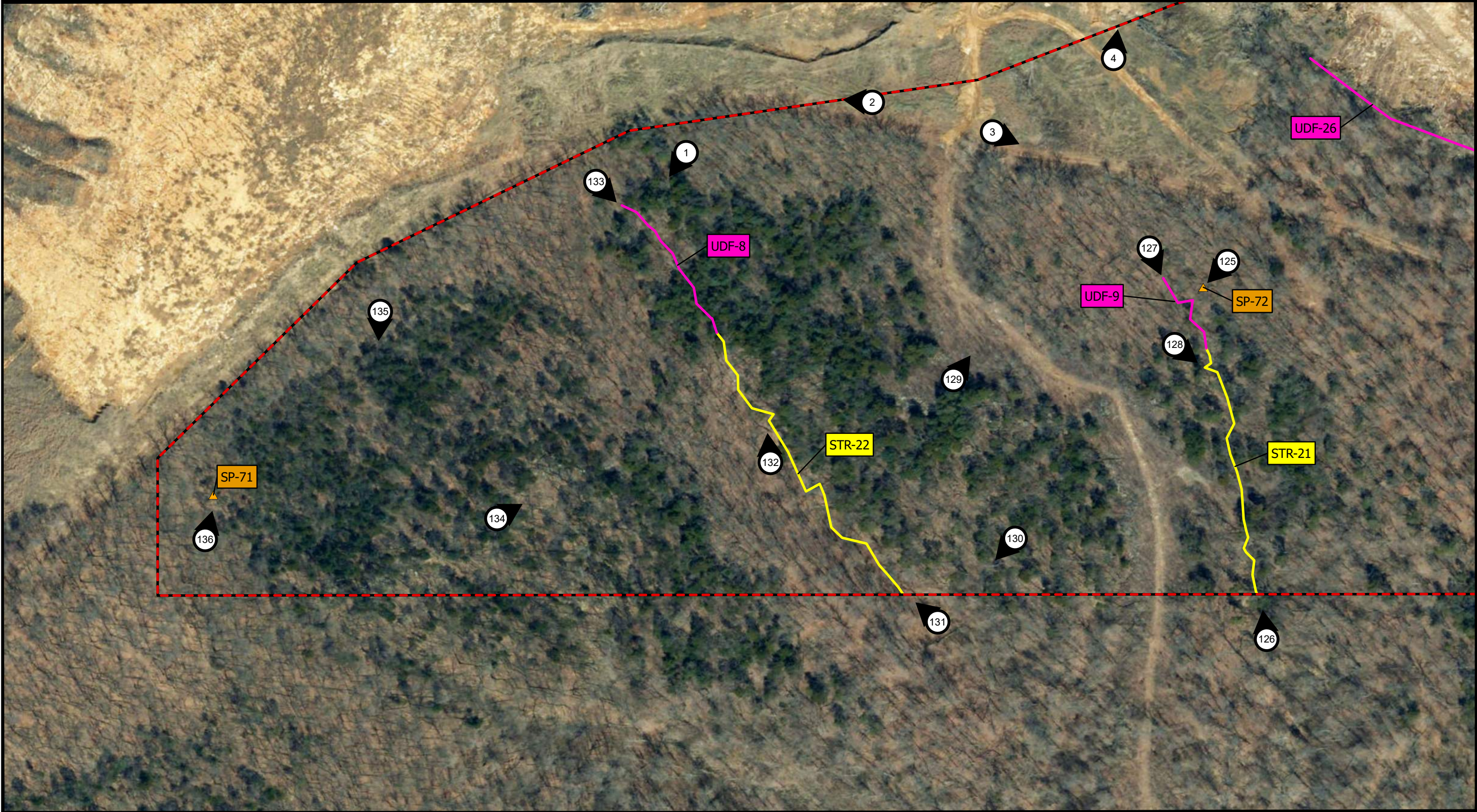
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<b>LEGEND</b>		<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.		 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>	<b>BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI</b>			
SURVEY AREA	EPHEMERAL STREAM	UPLAND DRAINAGE FEATURE	<b>WETLAND &amp; STREAM DELINEATION MAP</b>						
SAMPLE POINT						DRAWN BY: RRT	CHECKED BY: KLA	APPROVED BY: KLA*	FIGURE NO: <b>4C</b>
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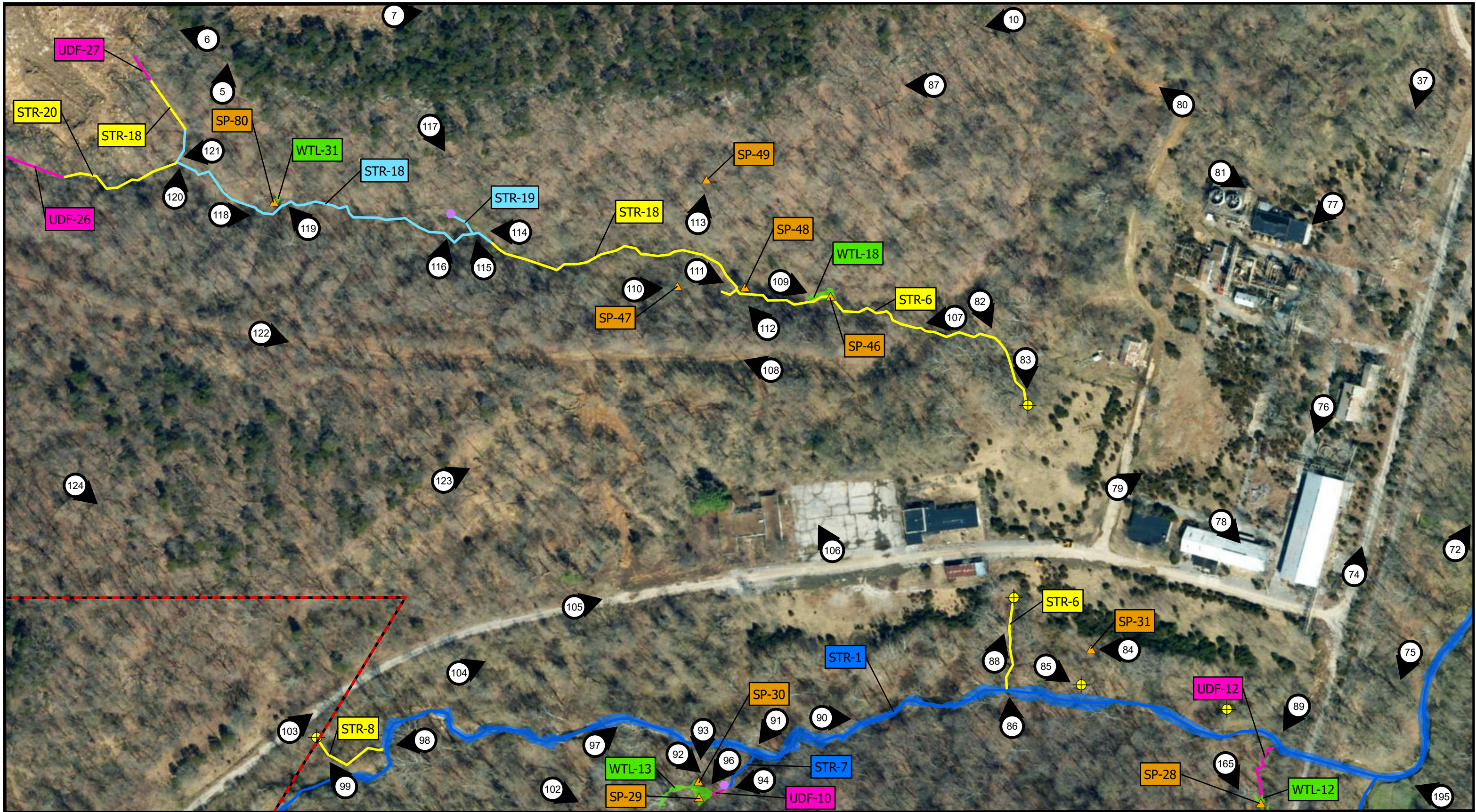
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\*Hand Signature on file



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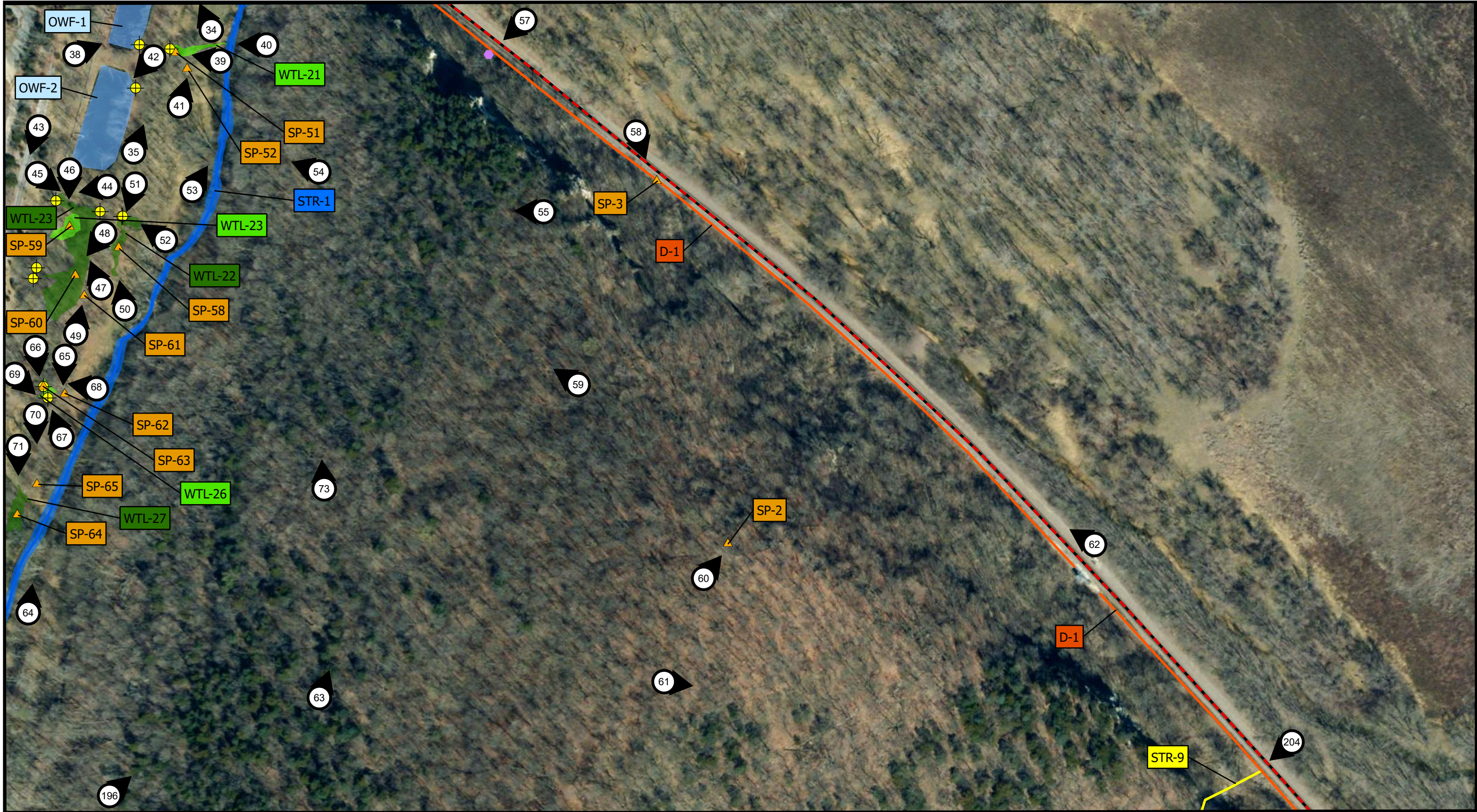














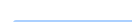

LEGEND		REFERENCE AND NOTES		Civil & Environmental Consultants, Inc.		BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI	
	SURVEY AREA		EMERGENT WETLAND	 Civil & Environmental Consultants, Inc. 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 www.cecinc.com		WETLAND & STREAM DELINEATION MAP	
	SAMPLE POINT		EPHEMERAL STREAM				
	PHOTO LOCATION		PERENNIAL STREAM				
	PERENNIAL STREAM		UPLAND DRAINAGE FEATURE				
	PERENNIAL STREAM		PERENNIAL STREAM			APPROVED BY: KLA* PROJECT NO: 330-401.0005	
	PERENNIAL STREAM		PERENNIAL STREAM				
				DRAWN BY: RRT		CHECKED BY: KLA	
DATE: 9/8/2023				SCALE: 1" = 150'		FIGURE NO: 4D	

\*Hand Signature on file



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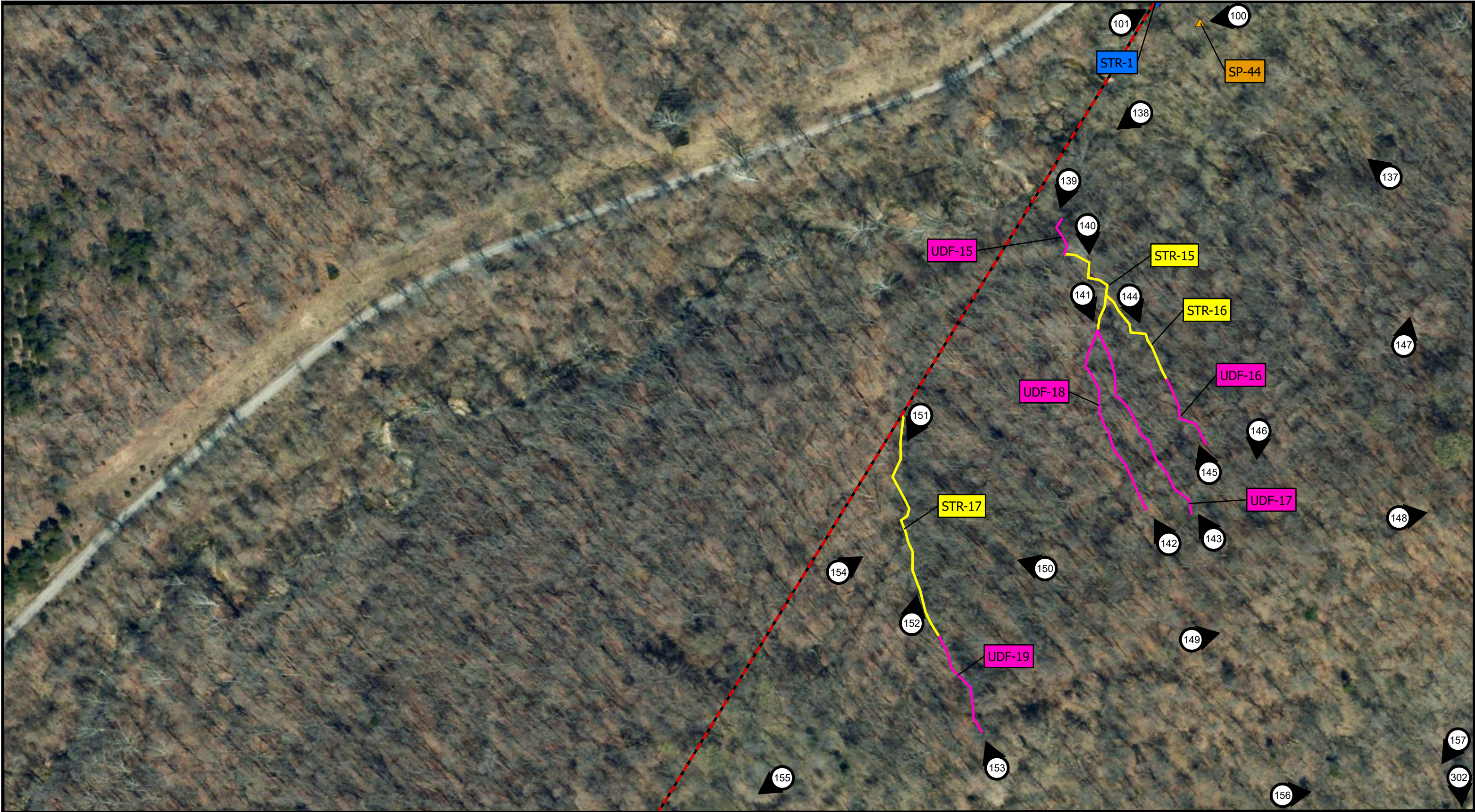


<b>LEGEND</b>		<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.		 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>	<b>BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI</b>	
 SURVEY AREA	 EMERGENT WETLAND	 DITCH	<b>WETLAND &amp; STREAM DELINEATION MAP</b>				
 SAMPLE POINT	 FORESTED WETLAND	 EXISTING CULVERT					
 PHOTO LOCATION	 EPHEMERAL STREAM	 SPRING/SEEP					
	 PERENNIAL STREAM	 OPEN WATER FEATURE					
			<b>SCALE IN FEET</b> 				
			DRAWN BY: RRT		CHECKED BY: KLA	APPROVED BY: KLA*	
			DATE: 9/8/2023		SCALE: 1" = 150'	PROJECT NO: 330-401.0005	
						FIGURE NO: <b>4E</b>	

\*Hand Signature on file



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SURVEY AREA

SAMPLE POINT

PHOTO LOCATION

EPHEMERAL STREAM

PERENNIAL STREAM

UPLAND DRAINAGE FEATURE

REFERENCE AND NOTES

1.ESRI WORLD IMAGERY /  
ARCGIS MAP SERVICE:  
[http://goto.arcgisonline.com/  
maps/World\\_Imagery](http://goto.arcgisonline.com/maps/World_Imagery),  
ACCESSED 9/8/2023, IMAGERY  
DATE: 2015.

NORTH

SCALE IN FEET

0150300

Civil & Environmental Consultants, Inc.

3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301  
(314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595  
[www.cecinc.com](http://www.cecinc.com)

DRAWN BY: RRT

CHECKED BY: KLA

DATE: 9/8/2023

SCALE: 1"=150'

BUZZI UNICEM  
BUZZI FESTUS MINE EXPANSION  
JEFFERSON COUNTY, MISSOURI

WETLAND & STREAM DELINEATION MAP

APPROVED BY: KLA\*

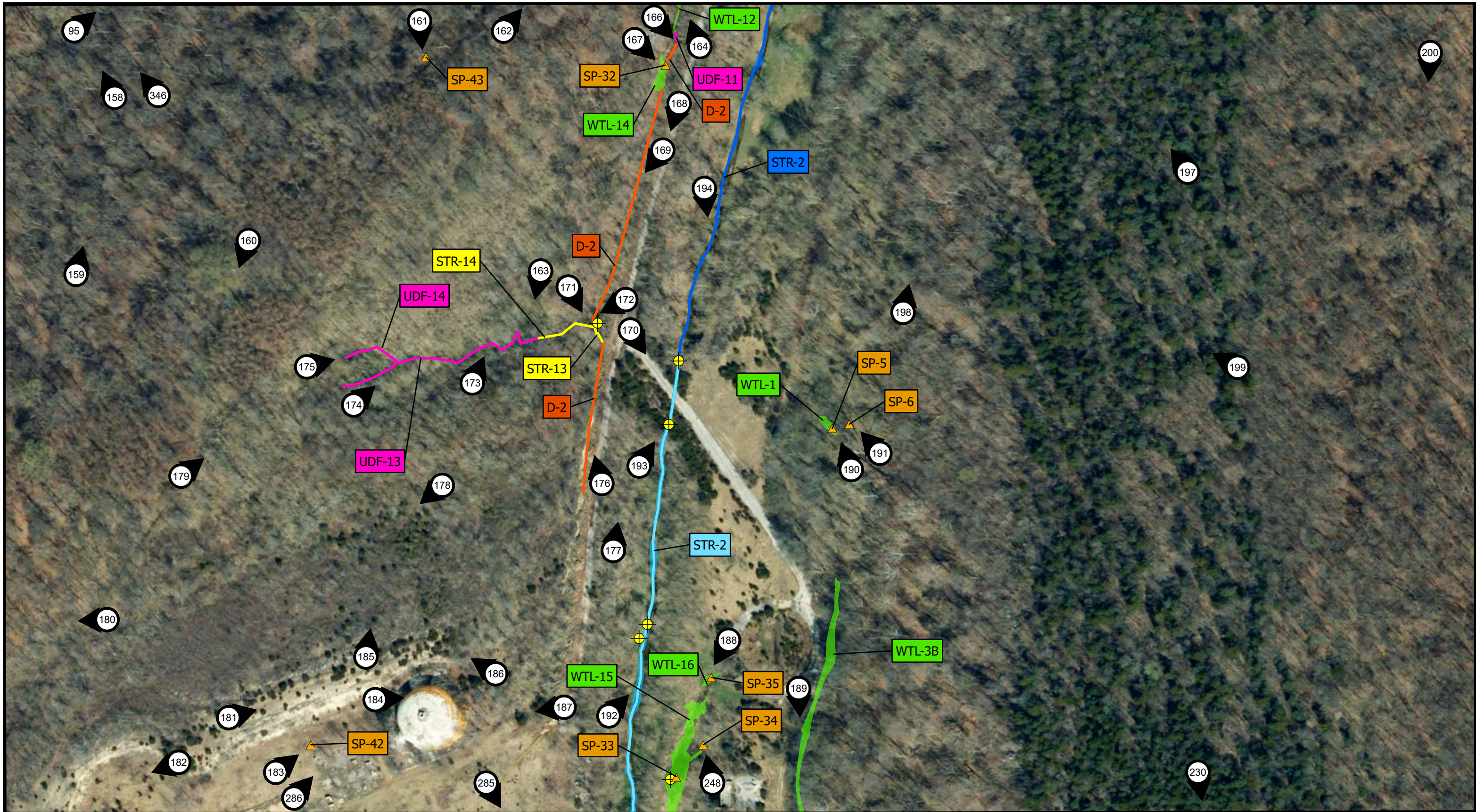
PROJECT NO: 330-401.0005






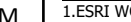








FIGURE NO: 4F

\*Hand Signature on file



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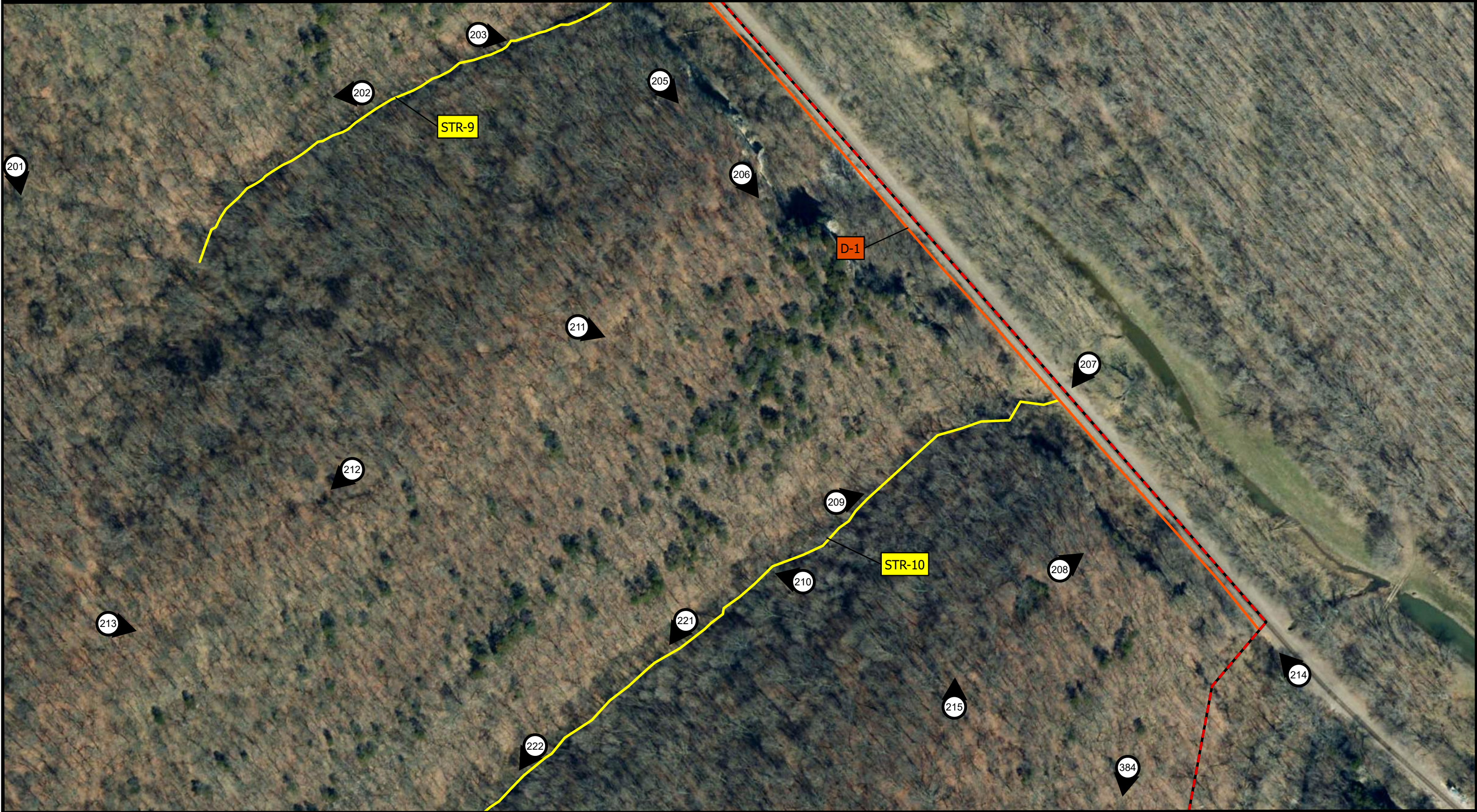






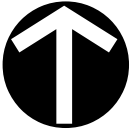


<b>LEGEND</b>		<b>REFERENCE AND NOTES</b>		 <b>NORTH</b>		 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 www.cecinc.com		<b>BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI</b>	
 SURVEY AREA	 EPHEMERAL STREAM	 PERENNIAL STREAM	 DITCH						
 SAMPLE POINT	 INTERMITTENT STREAM	 UPLAND DRAINAGE FEATURE	 EXISTING CULVERT	DRAWN BY: RRT		CHECKED BY: KLA	APPROVED BY: KLA*	FIGURE NO: <b>4G</b>	
 PHOTO LOCATION	 PERENNIAL STREAM			DATE: 9/8/2023	SCALE: 1" = 150'	PROJECT NO: 330-401.0005			
 EMERGENT WETLAND	 INTERMITTENT STREAM			SCALE IN FEET 0 150 300					

\*Hand Signature on file



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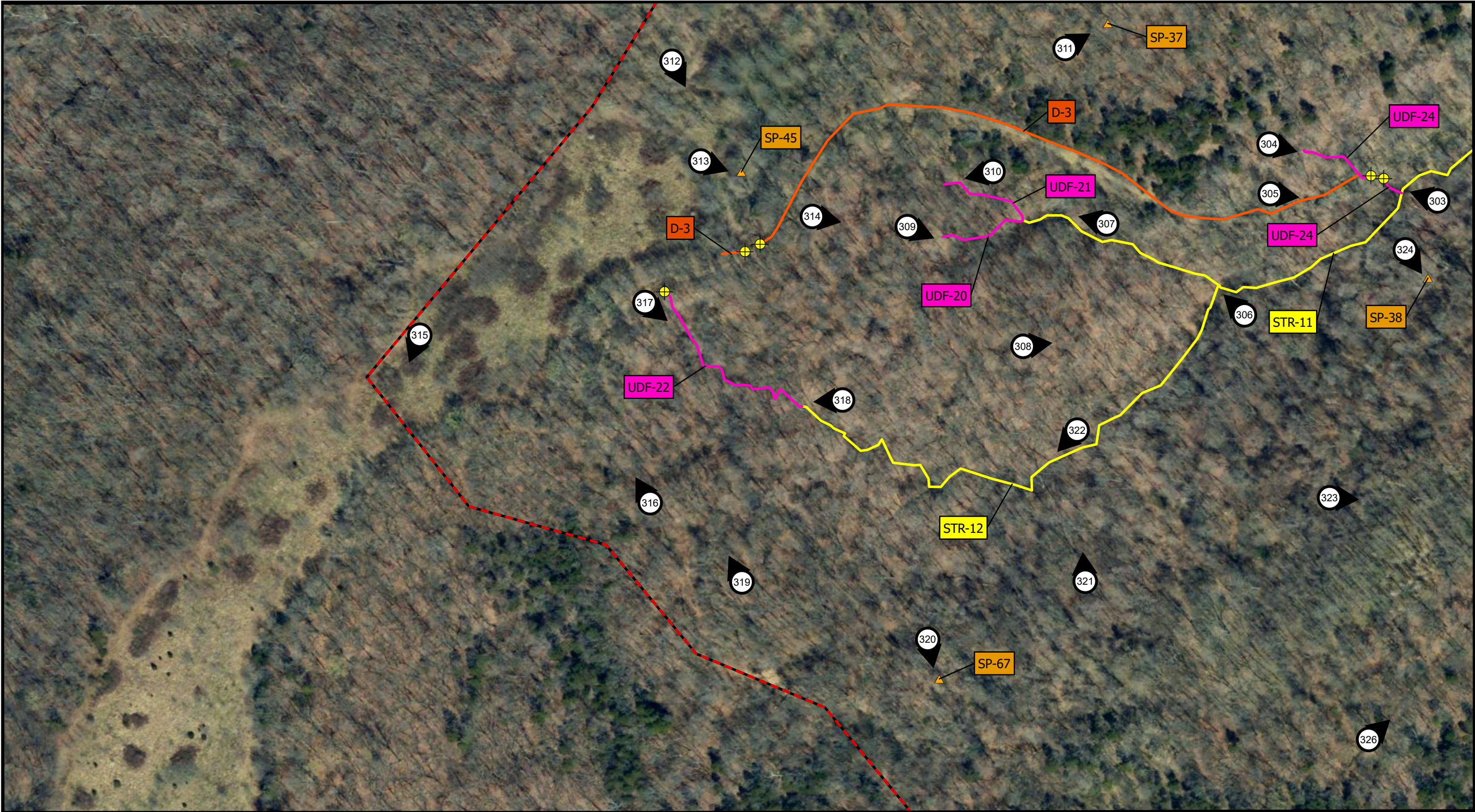











<b>LEGEND</b>  SURVEY AREA  PHOTO LOCATION  EPHEMERAL STREAM  DITCH	<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.	 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>	<b>BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI</b>		
				<b>WETLAND &amp; STREAM DELINEATION MAP</b>		
<b>SCALE IN FEET</b>  0 150 300		DRAWN BY: RRT DATE: 9/8/2023	CHECKED BY: KLA SCALE: 1" = 150'	APPROVED BY: KLA*	PROJECT NO: 330-401.0005	FIGURE NO: <b>4H</b>

\*Hand Signature on file



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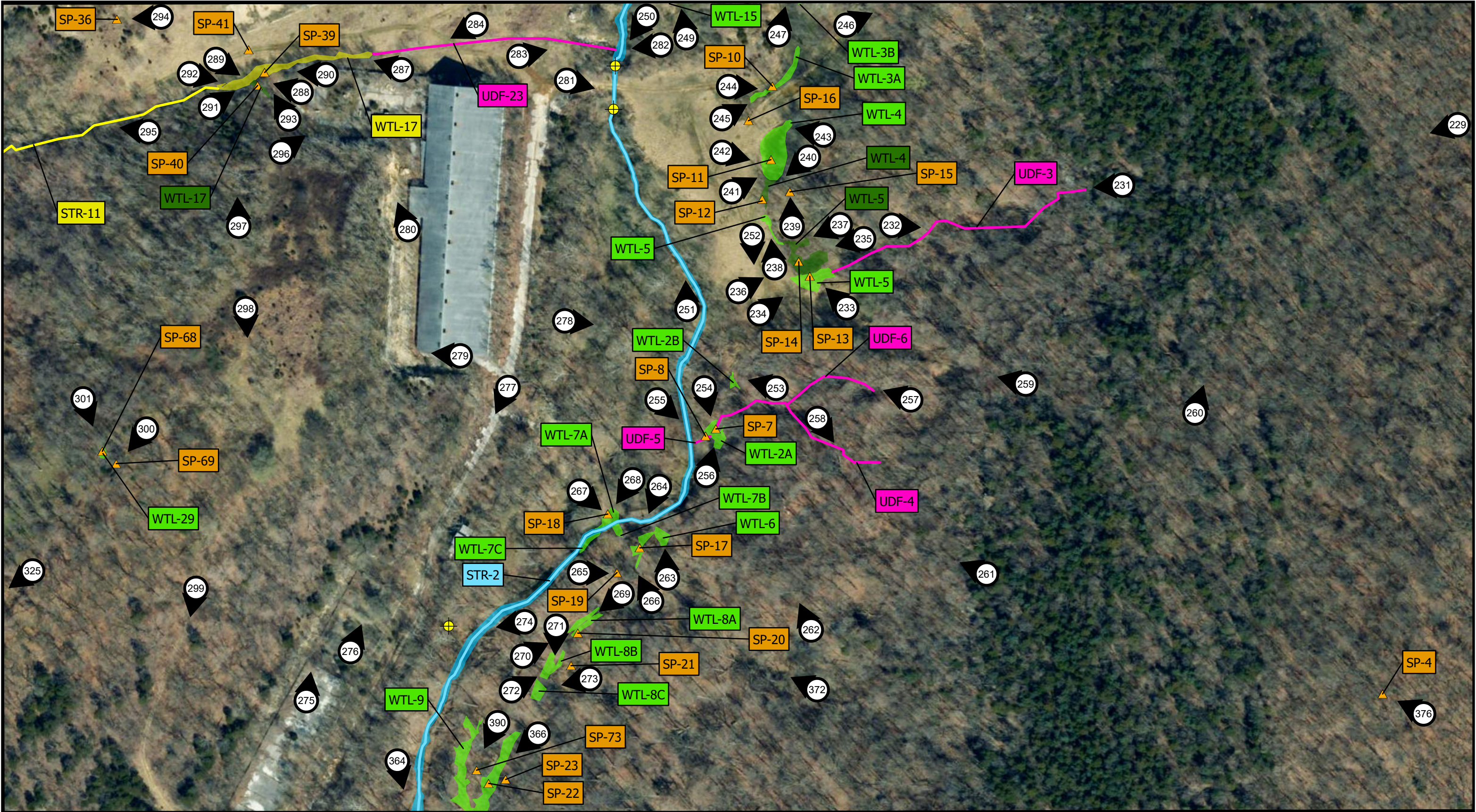











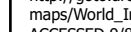



<b>LEGEND</b>		<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.		 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>	<b>BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI</b>		
 SURVEY AREA	 EPHEMERAL STREAM	 DITCH	 UPLAND DRAINAGE FEATURE			 EXISTING CULVERT	<b>WETLAND &amp; STREAM DELINEATION MAP</b>	
 PHOTO LOCATION	 0 150 300				DRAWN BY: RRT	CHECKED BY: KLA	APPROVED BY: KLA*	FIGURE NO: <b>4I</b>
					DATE: 9/8/2023	SCALE: 1" = 150'	PROJECT NO: 330-401.0005	

\*Hand Signature on file



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<b>LEGEND</b>		<b>REFERENCE AND NOTES</b>		 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 www.cecinc.com	<b>BUZZI UNICEM</b> <b>BUZZI FESTUS MINE EXPANSION</b> <b>JEFFERSON COUNTY, MISSOURI</b>	
 SURVEY AREA	 SCRUB SHRUB WETLAND	 INTERMITTENT STREAM	 UPLAND DRAINAGE FEATURE			<b>WETLAND &amp; STREAM DELINEATION MAP</b>	
 SAMPLE POINT	 FORESTED WETLAND	 EPHEMERAL STREAM	 EXISTING CULVERT				
 PHOTO LOCATION	 INTERMITTENT STREAM						
 EMERGENT WETLAND							

SCALE IN FEET

0 150 300

DRAWN BY: RRT

DATE: 9/8/2023

CHECKED BY: KLA

SCALE: 1" = 150'

APPROVED BY: KLA\*

PROJECT NO: 330-401.0005









FIGURE NO: **4J**

\*Hand Signature on file



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<b>LEGEND</b>		<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.		 <b>NORTH</b>		 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>		<b>BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI</b>	
	SURVEY AREA		EPHEMERAL STREAM						
	SAMPLE POINT		UPLAND DRAINAGE FEATURE						
	PHOTO LOCATION								
<b>SCALE IN FEET</b>  0 150 300						DRAWN BY: RRT		CHECKED BY: KLA	
						DATE: 9/8/2023		SCALE: 1" = 150'	
						APPROVED BY: KLA*		FIGURE NO: <b>4K</b>	
						PROJECT NO: 330-401.0005			


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 SURVEY AREA


 SAMPLE POINT

 PHOTO LOCATION

 EPHEMERAL STREAM


 INTERMITTENT STREAM


 INTERMITTENT STREAM


 EXISTING CULVERT

**LEGEND**

**REFERENCE AND NOTES**  
1. ESRI WORLD IMAGERY /  
ARCGIS MAP SERVICE:  
[http://goto.arcgisonline.com/  
maps/World\\_Imagery](http://goto.arcgisonline.com/maps/World_Imagery),  
ACCESSED 9/8/2023, IMAGERY  
DATE: 2015.

  
**NORTH**

**SCALE IN FEET**  
  
0 150 300

  
**Civil & Environmental Consultants, Inc.**  
3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301  
(314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595  
[www.cecinc.com](http://www.cecinc.com)

DRAWN BY: RRT

DATE: 9/8/2023

CHECKED BY: KLA

SCALE: 1" = 150'

BUZZI UNICEM  
BUZZI FESTUS MINE EXPANSION  
JEFFERSON COUNTY, MISSOURI

**WETLAND & STREAM DELINEATION MAP**

APPROVED BY: KLA\*

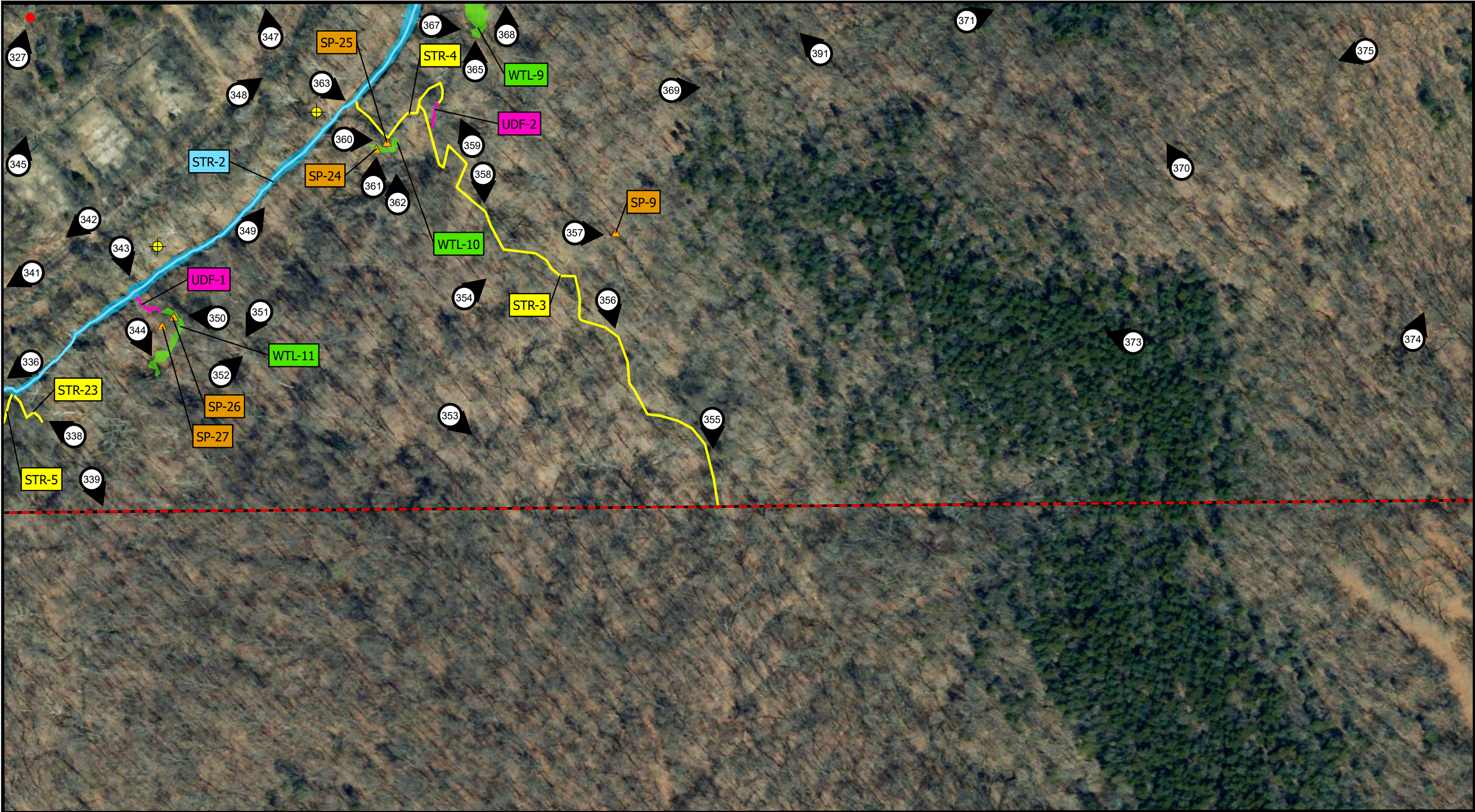
PROJECT NO: 330-401.0005














FIGURE NO: **4L**

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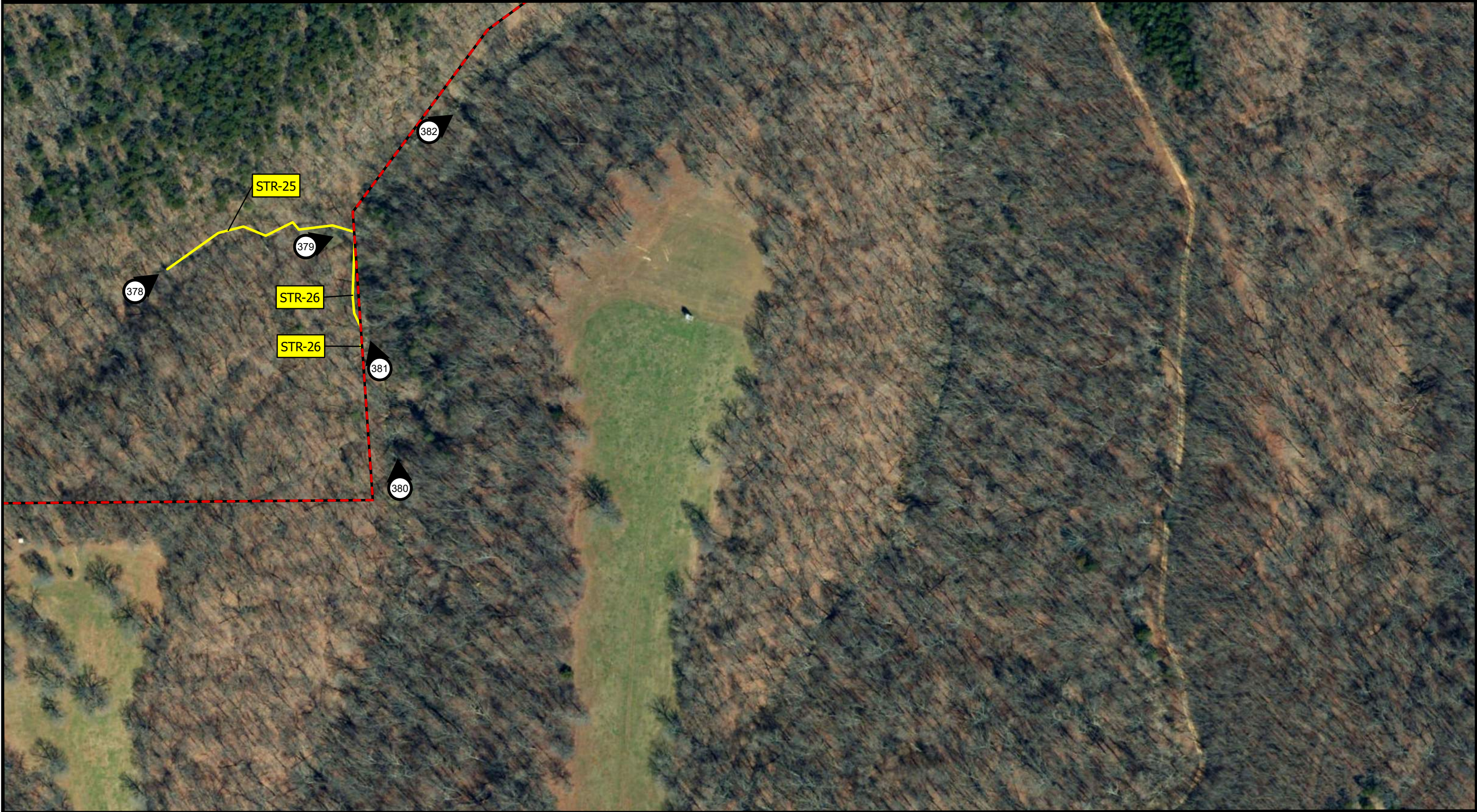
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<b>LEGEND</b>		<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.		 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>	<b>BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI</b>			
 SURVEY AREA	 SAMPLE POINT	 EMERGENT WETLAND	 EPHEMERAL STREAM			 INTERMITTENT STREAM	 INTERMITTENT STREAM	<b>WETLAND &amp; STREAM DELINEATION MAP</b>	
 PHOTO LOCATION		 UPLAND DRAINAGE FEATURE	 EXISTING CULVERT			<b>DRAWN BY:</b> RRT	<b>CHECKED BY:</b> KLA	<b>APPROVED BY:</b> KLA*	<b>FIGURE NO:</b> <b>4M</b>
		 CAVE				<b>DATE:</b> 9/8/2023	<b>SCALE:</b> 1" = 150'	<b>PROJECT NO:</b> 330-401.0005	
<b>SCALE IN FEET</b>  0 150 300									

\*Hand Signature on file





<b>LEGEND</b> SURVEY AREA PHOTO LOCATION EPHEMERAL STREAM	<b>REFERENCE AND NOTES</b> 1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: <a href="http://goto.arcgisonline.com/maps/World_Imagery">http://goto.arcgisonline.com/maps/World_Imagery</a> , ACCESSED 9/8/2023, IMAGERY DATE: 2015.	 <b>NORTH</b>	 <b>Civil &amp; Environmental Consultants, Inc.</b> 3000 Little Hills Expressway · Suite 102 · St. Charles, MO 63301 (314) 656-4566 · (866) 250-3679 · fax: (314) 656-4595 <a href="http://www.cecinc.com">www.cecinc.com</a>	BUZZI UNICEM BUZZI FESTUS MINE EXPANSION JEFFERSON COUNTY, MISSOURI		
				WETLAND & STREAM DELINEATION MAP		
<b>SCALE IN FEET</b> 		DRAWN BY: RRT	CHECKED BY: KLA	APPROVED BY: KLA*	FIGURE NO: <b>4N</b>	
		DATE: 9/8/2023	SCALE: 1" = 150'	PROJECT NO: 330-401.0005		

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