

LCID Landfill Permit
Wetlands and Environmental Siting Criteria Report

Town of Catawba, Catawba County, North Carolina

PIN 379002894055 (Partial Review)

Prepared for

Mr. Recil Wright
Wright and Associates

209 1st Ave South
Conover, NC 28613

March 3, 2021

Prepared By



Wetlands & Waters, Inc.

328 East Broad Street
Statesville, NC

Scope

Wetlands & Waters, Inc. (W&W) has conducted an evaluation of an approximately 5-acre portion of parcel 379002894055 (the "Review Area") in Catawba County, NC, as depicted on the attached Figures, for the purpose of identifying the presence of limiting environmental siting constraints as required for the permitting of a Land Clearing and Inert Debris (LCID) Landfill subject to Solid Waste Management Rules and Catawba County Zoning. The Review Area includes a 50-foot wide perimeter extending from the proposed LCID Landfill area.

This report includes an assessment of surface waters, wetlands, floodplains, federal threatened and endangered species, and known historical sites within the review area. Additionally, this report addresses, to a lower degree of precision, wetlands, historical resources, and public spaces within a one quarter mile radius of the site per State statute.

Executive Summary

The review area contains no environmental siting constraints, as covered in this report, that preclude it from being permitted as an LCID Landfill. These findings are based on a thorough evaluation of the field conditions as well as a review of publicly-accessible state and federal databases as described herein.

Wetlands and Streams

The site was field evaluated to determine if wetlands or other waters subject to federal or state jurisdiction and permitting requirements under Sections 404 and 401 of the Clean Water Act (collectively referred to as "Waters of the U.S.," or WOTUS) and the Navigable Waters Protection Rule (2020), which revised former definitions of WOTUS and is currently in effect. Section 404 of the Clean Water Act regulates the discharge of dredge and fill materials into "waters of the U.S." and is jointly administered by the U.S. Army Corps of Engineers and the Environmental Protection Agency (EPA). Section 401 of the Clean Water Act grants each state the authority to approve, condition, or deny any Federal permits that could result in a discharge to waters of the State.

Unless stated otherwise, this report is limited in scope to evaluation of potential Waters of the United States subject to Federal and/or State jurisdiction under sections 404 and 401 of the Clean Water Act, as amended. Findings and assessments made by consultants regarding jurisdictional limits and permitting requirements are preliminary and subject to verification and modification by the U.S. Army Corps of Engineers (Corps) and, in some cases, the State agencies charged with protection of water resource, including the N.C. Division of Water Resources (DWR).

Clean Water Act field evaluations were conducted using methods consistent with those outlined in the applicable regional supplement¹ of the 1987 U.S. Army Corps Wetland Delineation Manual². Under normal circumstances, an area is classified as a wetland when indicators of hydrology, hydrophytic vegetation, and hydric soils are present. Surface waters were evaluated for indicators of an Ordinary High-Water Mark (OHWM) and continuous bed and bank formation. OHWM assessments are based on regulatory guidance³ issued by the Corps to assist in OHWM identification. Stream flow regime determinations are made using the standardized Methodology for Identification of Intermittent and Perennial Streams and Their Origins, version 4.11, developed by DWR.

¹ U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0, ed. J. F. Berkowitz, J. S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

² Environmental Laboratory. (1987). "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

³ U.S. Army Corps of Engineers. Regulatory Guidance Letter No. 05-05 Dec. 7, 2005

Findings

The Corps currently exerts jurisdiction over the territorial seas, waters used in interstate or foreign commerce, tributaries with intermittent (seasonal) and perennial flow regimes, certain categories of wetlands, and lakes, ponds and impoundments of jurisdictional waters. Based on our assessment of existing site conditions, aerial photography, natural resource maps, and best professional judgement, jurisdictional Waters of the U.S. are not present within the review area. Findings are approximated on Figure 1, *Approximate Delineation of Wetlands and Environmental Constraints*.

The review area lacks soil and hydrology indicators that are required to meet wetland criteria. Additionally, the review area lacks confined conveyances that contain bed and bank formation and indicators of an Ordinary High Water Mark, elements which are required for stream categorization. The proposed LCID Landfill site and surrounding 50-foot perimeter contains no wetlands, streams, ponds, impoundments, or other surface waters that are regulated under the Clean Water Act or by the State of North Carolina.

Natural Resource Data

The review area is approximated on the attached public-sourced natural resource maps and figures. Various natural resource data was used to supplement field verification of findings. This information is used by stakeholder agencies as baseline data when assessing the jurisdictional status of aquatic features that may be present on-site. W&W makes no representations relating to the completeness or accuracy of baseline data and layers depicted on these maps and figures.

Catawba County GIS (Figure 2)

Relevant natural resource layers and hydrologic layers have been activated for this figure. Water resources depicted on this figure are typically generated at the County's direction and are most likely based on other publicly available maps or by GIS staff's photointerpretation. Often these features have not been field verified. When jurisdictional streams are identified on a property by on-site inspection but are absent on County GIS mapping, local authorities will typically apply applicable local buffer ordinances or rules to those features (unless the buffers are applied based on drainage area or parameter(s) other than DWR stream classification). Conversely, if a stream channel is depicted on the local GIS but is determined to be non-regulated by the Corps and DWR, local governments may have the option to remove local buffer protections for those drainages if the property owner or a project proponent can produce concurrence from the Corps and DWR.

Catawba County GIS depicts no surface waters within the proposed LCID Landfill location or within the 50-foot perimeter. The GIS inventory indicates numerous stream systems within a quarter-mile radius of the proposed LCID Landfill location. This data is comparable to the Catawba County Soils Survey and depicts more streams than the National Wetlands Inventory or the USGS Topographic Quadrangle.

USGS Topographic Quadrangle (Figure 3)

Topographic quadrangles are commonly used by state and local authorities to assist in applying riparian buffer regulations. Generally, a feature that is depicted in blue or magenta is a water resource, although some features may not be subject to Federal or State jurisdiction due to complex nuances within State and Federal regulations. Additional jurisdictional water resources may be present in addition to what is represented on these maps.

The topographic quadrangle depicts no surface waters within the review area boundary. An unnamed tributaries to Balls Creek is present within a quarter mile east of the proposed LCID Landfill location.

NRCS Soil Survey (Figure 4)

Soil surveys depict large scale soils characteristics within the evaluated area. Typically, soil surveys do not show specific soils units that are less than two acres in size, but are useful in supplementing field evaluations

by identifying potential problematic soils, hydric soils, historic surface drainage features, and other relevant soil characteristics.

No mapped tributaries are shown within the review area boundary. An unnamed tributary to Balls Creek is present within a quarter mile east of the proposed LCID Landfill location.

National Wetland Inventory (Figure 5)

These maps depict wetlands based on U.S. Fish and Wildlife Service criteria and are produced by GIS image analysts who identify and classify wetlands and deep-water habitats from aerial imagery. They are not a substitute for a field evaluation, as there are often discrepancies between existing features and those that are mapped by GIS.

No NWI mapped features are present within the review area boundary. A riverine system is shown within a quarter mile east of the proposed LCID Landfill location.

FEMA Flood Mapping (Figure 6)

Federal Emergency Management Act flood maps are utilized by the Army Corps to determine if regulated floodplains are present. The President's Executive Order 11990, Protection of Wetlands, requires federal agencies to consider the need to mitigate flood and storm hazards in consideration of all actions. The Corps, as stated in general condition 10 and 27 of the Nationwide Permits, requires completion of a PCN form for identification of projects that require coordination involving work in FEMA designated 100-Year Floodplains. If a Section 404 permit is required, the proposed activity must comply with applicable FEMA approved state or local floodplain management requirements. Additional notification requirements, conditions, restrictions, or prohibitions may be imposed depending on the type of proposed activity or permit.

The review area boundary does not lie within a flood hazard zone, nor are flood hazard zones present within a quarter-mile radius of the proposed LCID Landfill location.

Threatened and Endangered Species

W&W performed a cursory evaluation of the review area for the purposes of determining the likely presence or absence of federally protected threatened and endangered species and the presence of suitable habitat for those species. Evaluation of the review area included a desktop review for species with known occurrences in Catawba County and critical habitat occurrences within or in close proximity to the review area, as well as a pedestrian field survey designed to evaluate potentially suitable habitat and occurrences of species known to exist in Catawba County. Table 1 lists Endangered and Threatened species known to occur in Catawba County (U.S. Fish & Wildlife Service, 2020).

Table 1

Endangered(E) and Threatened (T) Species in Catawba County, North Carolina

Species		Federal Status	Record Status
Common Name	Scientific Name		
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGPA ⁴	Current ⁵
Bog Turtle	<i>Glyptemys muhlenbergii</i>	T (S/A) ⁶	Current
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	T	Probable/Potential
Dwarf-Flowered Heartleaf	<i>Hexastylis naniflora</i>	T	Current
Schweinitz's Sunflower	<i>Helianthus schweinitzii</i>	E	Current

⁴ Bald and Golden Eagle Protection Act (BGPA).

⁵ Current record status indicates the species has been observed in the county within the last 50 years.

⁶Threatened due to similarity of appearance (T(S/A)).

W&W submitted an inquiry to the North Carolina Natural Heritage Program (NCNHP) to determine if there are records for known occurrences of federally protected species, important natural communities, natural areas, or conservation/managed areas within the review area or within close proximity to the site. This information is also used to correlate known occurrences with regional habitat nuances that might be useful in determining the presence of federally protected species on the site.

W&W reviewed the best available morphological characteristics and habitat metrics, provided by USFWS, for each Endangered and Threatened species with known occurrences in Catawba County. This information was reviewed to determine the likelihood of federally protected species occurring within the review area, and to identify locations that would require more intensive survey analysis based upon the presence of suitable habitat metrics.

Findings

In the *Classification of the Natural Communities of North Carolina*, M.P. Schafale and A.S. Weakley define natural communities as areas “whose characteristics and functioning are shaped by the process of evolution and ecological interactions of long periods of time, without the overriding influence of modern human activities” (Schafale & Weakley, 1990). The entirety of the review area displays some degree of influence by human activity, including soil disturbance, development, and herbaceous management, therefore cannot be precisely classified as a natural community by this definition.

The review area could be classified as a mixed mesic forest as it is comprised of hardwoods and pines that are typical for the region.

The NCNHP report used to determine nearby or on-site known occurrences of species with federal protections indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the review area. Within a one-mile radius of the review area there are no documented occurrences of rare species, important natural communities, natural areas, or conservation areas. Several managed areas, listed as North American Land Trust Easement and Catawba County Open Space, are within a one-mile radius of the review area.

Based on the results of the targeted species investigations summarized in the following section, it is W&W’s assessment that no federally protected species are present within the evaluation area.

Bald Eagle (*Haliaeetus leucocephalus*)

In the July 9, 2007 Federal Register, the Bald Eagle was declared recovered, and removed (delisted) from the Federal List of Threatened and Endangered wildlife, effective August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (BGPA) became the primary law protecting Bald Eagles. The BGPA prohibits take of Bald and Golden Eagles and provides statutory definition of “take” that includes “disturb” (16 U.S.C. §§668-668d). Bald Eagles require consistent food sources, perching areas, and nesting sites to survive. Their habitat includes estuaries, large lakes, reservoirs, rivers, and some coastal areas. Nests are typically located in larger trees of a wooded area where open views of the surrounding area are ample (Service U. F., 2018).

W&W did not observe evidence of the species being present within the review area. Because the review area is distant from typical foraging and nesting habitat, the species’ presence within the review area is unlikely.

Bog Turtle (*Glyptemys muhlenbergii*)

In the November 4, 1997 Federal Register (55822-55825), the southern population of the Bog Turtle (from Virginia to Georgia) was listed as T(S/A); the designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T (S/A) designation has no effect on land management activities by private landowners in North Carolina. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation (U.S. Fish & Wildlife Service, 2020).

Bog Turtle habitat consists of mud, grass and sphagnum moss of bogs, swamps, and marshy meadows (U.S. Fish & Wildlife Service, 2011), with microhabitats that include dry, saturated, and periodically flooded areas (Service U. F., 2020).

No wetlands are present in the review area, therefore no suitable habitat for the Bog Turtle exists in the review area. W&W did not observe evidence of the species during the field review.

Northern Long-Eared Bat (*Myotis septentrionalis*)

Endangered Species Act protections for the Northern Long-eared Bat (NLEB) prohibit incidental “take” (harming, harassing, or killing) of the species within hibernation sites, within ¼ mile of a known hibernation site, and within a 150-foot radius of a known, occupied maternity roost from June 1-July 31. Confirmed hibernation and maternity sites for this species currently exclude Catawba County and are limited to a selection of western counties of North Carolina; however, Catawba County lies within the NLEB range and White-Nose Syndrome Zone per the final 4(d) Rule. No mature trees exist in the review area. Additionally, the consistent ambient noise level of man-made structures proximate to the review area likely preclude establishment of or use by the species. Given these site characteristics, no suitable habitat for the NLEB is present in the review area.

No evidence of the species was observed during the field evaluation.

Dwarf-flowered Heartleaf (*Hexastylis naniflora*)

The Dwarf-flowered Heartleaf is typically associated with *Kalmia latifolia* or *Asimina triloba* and the soil types Pacolet, Madison, or Musella. Flowering occurs from mid-March to early June and are jug-shaped, typically ranging from 0.23-5” long and 0.15-0.27” in diameter. The species grows in acidic soils along bluffs and adjacent slopes, in boggy areas next to streams and creek heads, and along the slopes of nearby hillsides and ravines (U.S. Fish & Wildlife Service, 2011).

Mechanical and chemical management of the vegetation within the review area limit the diversity of vegetation and facilitate growth of hardy, pioneer species. Additionally, slopes and moist areas potentially suitable to support the Dwarf-Flowered Heartleaf are absent from the review area. W&W did not observe evidence of the species during the field review.

Schweinitz’s Sunflower (*Helianthus schweinitzii*)

Schweinitz’s Sunflower occurs in open areas that provide full to partial sun and that typically host poor soils. The species is typically associated with areas that have experienced land disturbance that facilitates a canopy opening or disruption to competing vegetation. The species is most abundant in unforested, permanently maintained openings with soils that often are shallow with exposed boulders and bedrock (U.S. Fish & Wildlife Service, Asheville Field Office, 2011).

The forested condition of the review area precludes the establishment and propagation of the species. W&W did not observe evidence of Schweinitz’s Sunflower during the field review.

Known Cultural and Archeological Resources

The North Carolina State Historic Preservation Office (SHPO) database was consulted to identify historic and cultural resources that may be present on-site. No historic or cultural resources were identified within the review area. The enclosed site-specific report lists documented occurrences of these resources within a one-mile radius of the review area (Attachment B).

The review area contains no known occurrences of historic or archeological resources. The review area is not located within a Historic District nor are elements listed on the National Register of Historic Places present.

Should any previously unknown artifacts be discovered during the development of the site, the proper authorities will be contacted.

This concludes our field assessment of aquatic resources and environmental constraints within the review area. Please do not hesitate to contact us should you have questions or concerns.

Sincerely,

Chris Huysman
336.406.0906

Attachments: Site Vicinity Map
Figure 1: Approximate Delineation of Wetlands and Environmental Constraints
Figure 2. Catawba County GIS
Figure 3. USGS Topographic Quadrangle
Figure 4. NRCS Soil Survey
Figure 5. National Wetland Inventory Map
Figure 6. FEMA Floodplain Panel
Attachment A: North Carolina Natural Heritage Program Report
Attachment B: North Carolina State Historic Preservation Office Query

The National Map Advanced Viewer

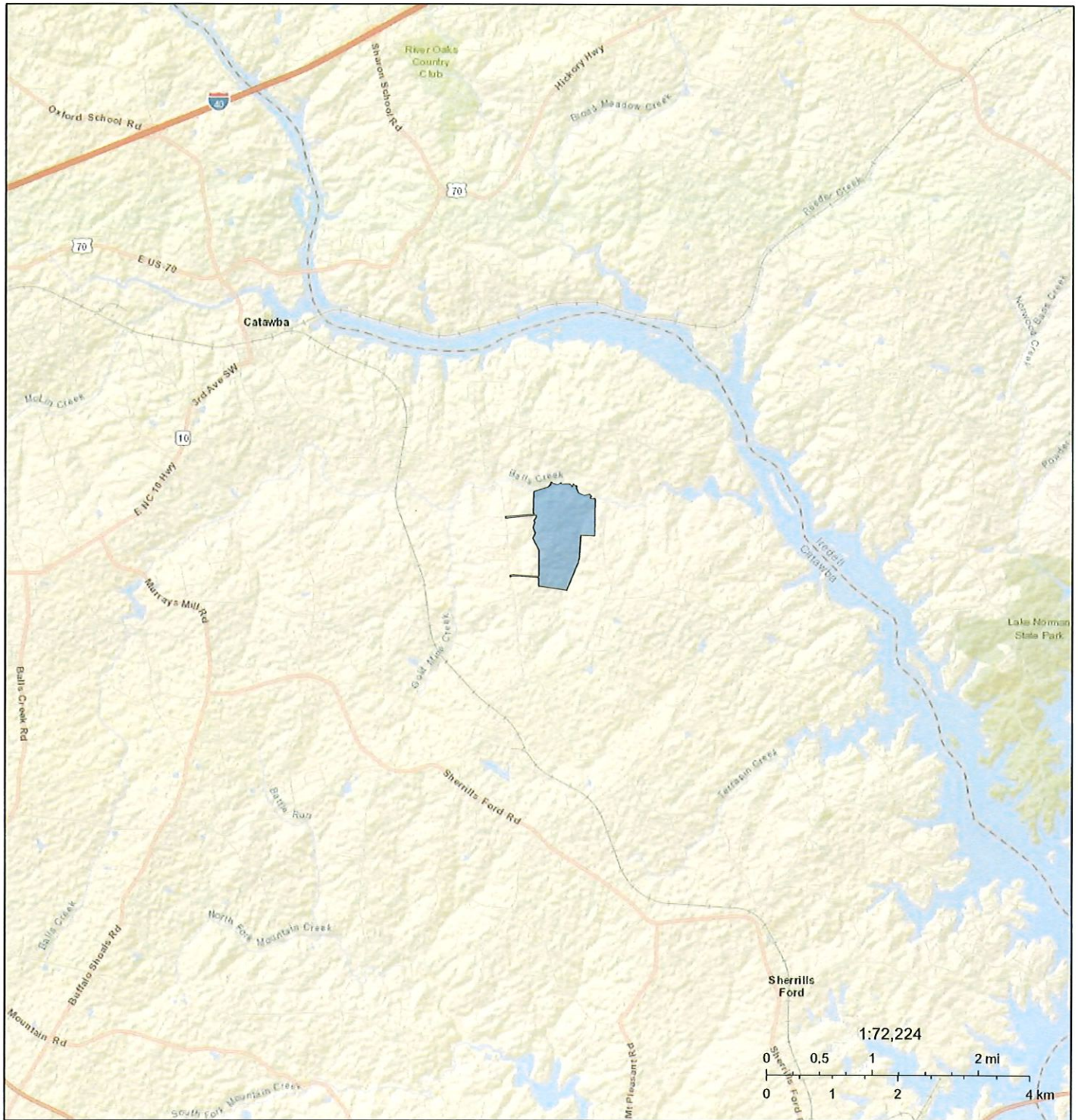


Figure 1: Vicinity Map

Project Name:			Catawba County Stump Dump
Owner / Developer:			Hunter Harvey
City / County:			Catawba / Catawba
Tax PIN(s):			379002894055
Coordinates:		Scale:	Date:
Lat: 35.67931 Long: -81.02153		graphic	03/03/2021

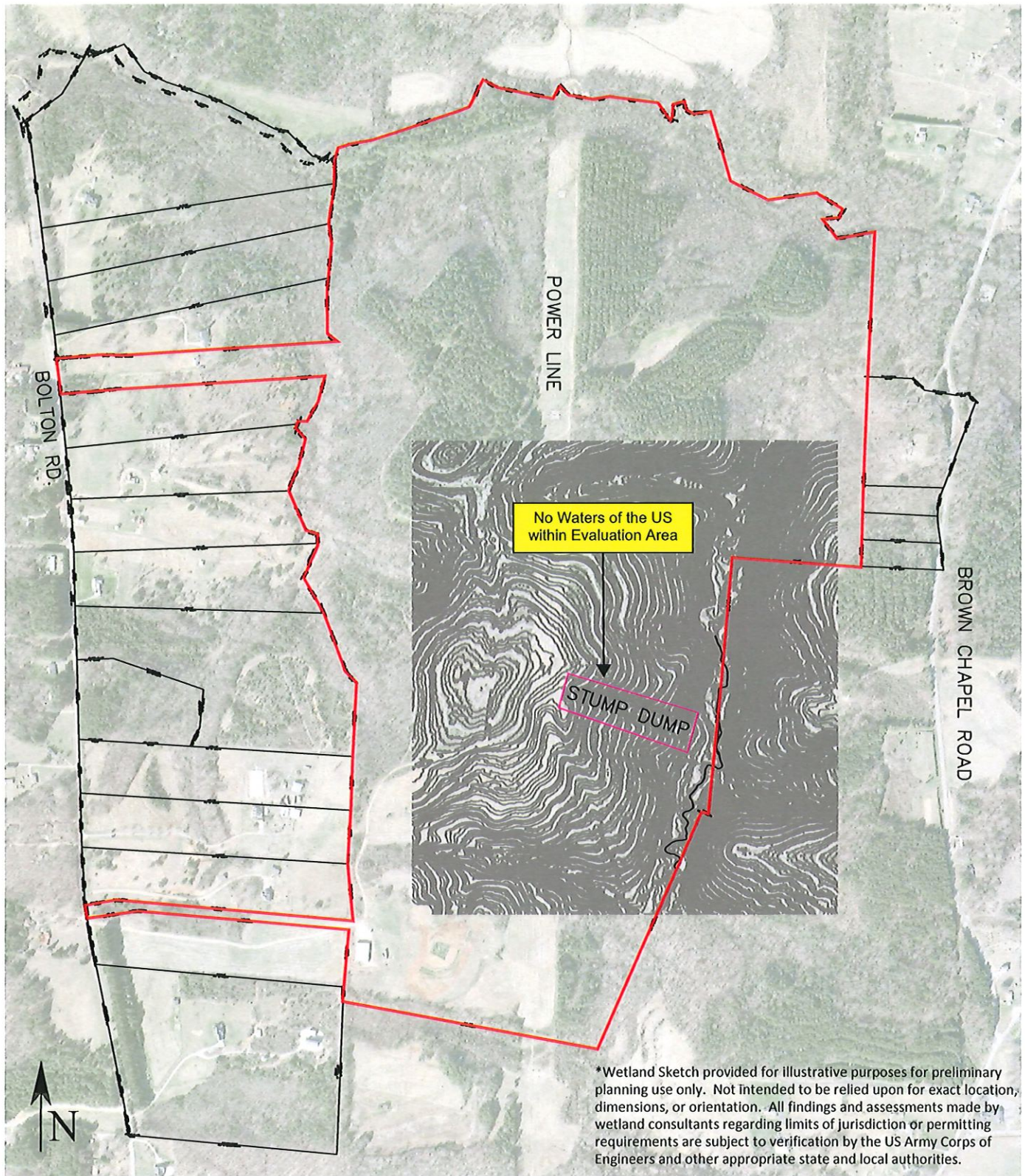


Figure 2: Approximate Depiction
of Waters and Wetlands

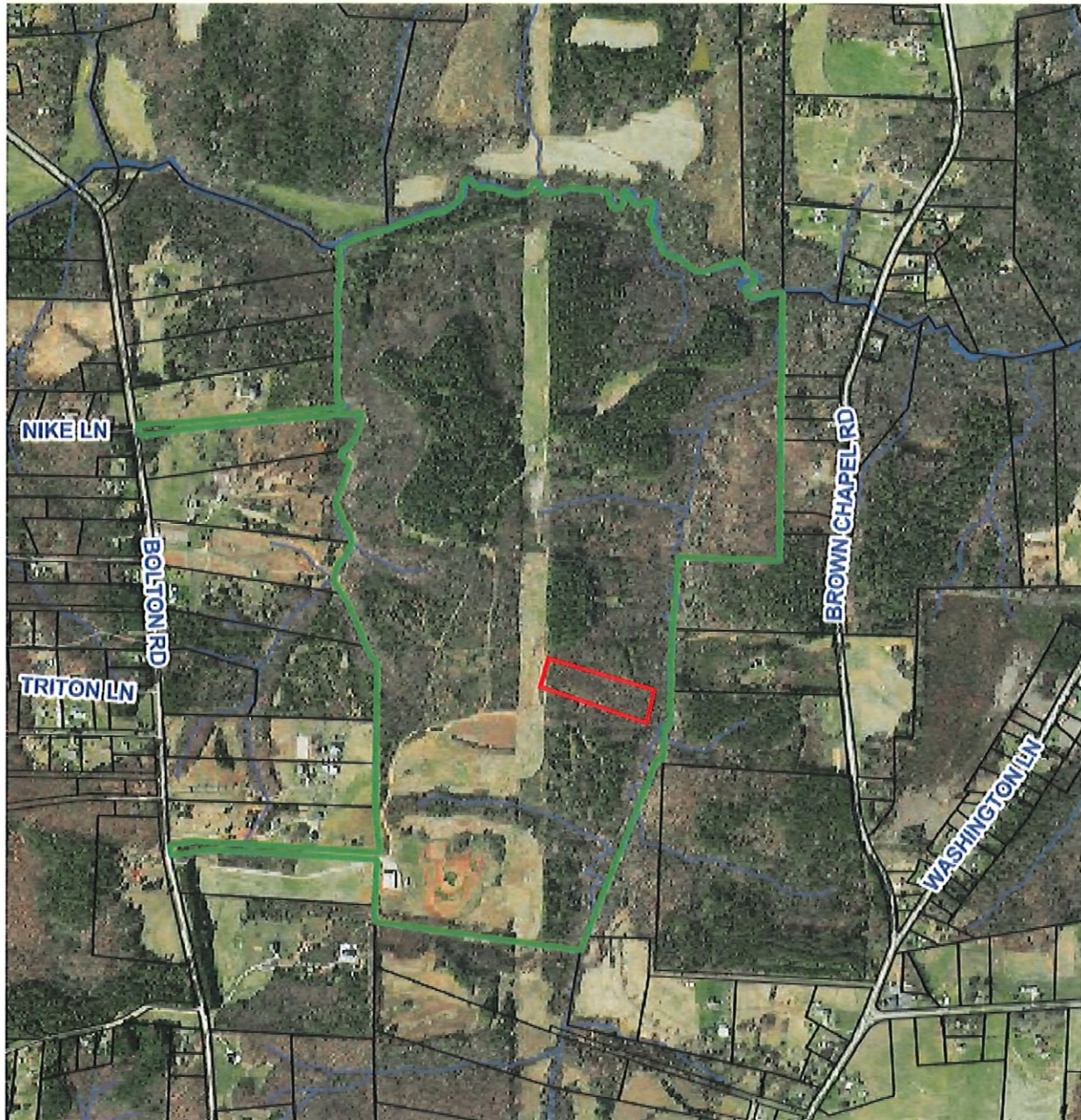
Project Name:			Catawba County Stump Dump
Owner / Developer:			Hunter Harvey
City / County:			Catawba / Catawba
Tax PIN(s):			379002894055
Coordinates:		Scale:	Date:
Lat:	35.67931	Long:	-81.02153
		nts	03/03/2021



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1in=1200ft



Figure 3: County GIS

Project Name:			Catawba County Stump Dump
Owner / Developer:			Hunter Harvey
City / County:			Catawba / Catawba
Tax PIN(s):			379002894055
Coordinates:		Scale:	Date:
Lat: 35.67931	Long: -81.02153	1" = 1200'	03/03/2021

The National Map Advanced Viewer

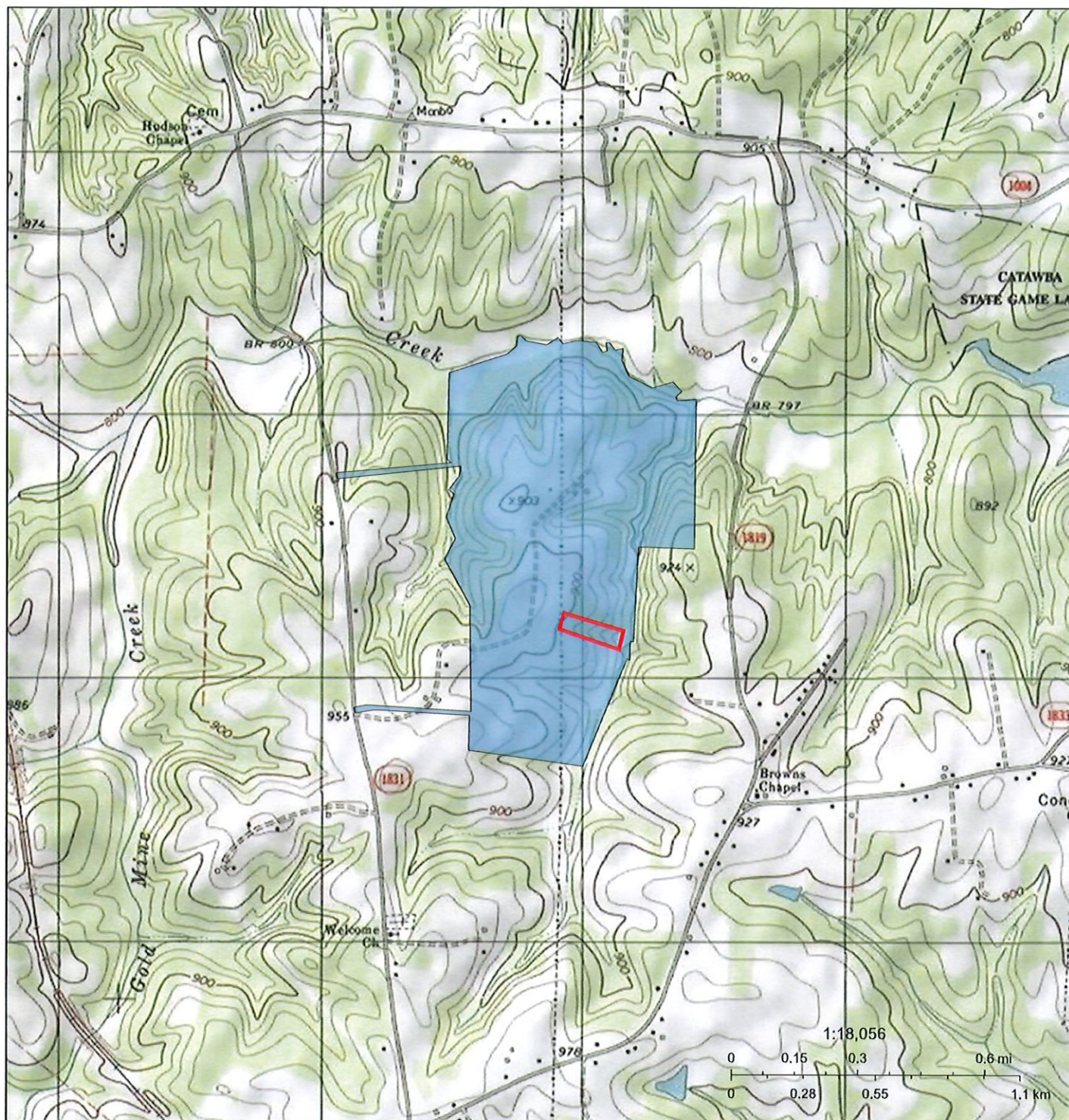


Figure 4: USGS Topo Quad

Project Name:		Catawba County Stump Dump	
Owner / Developer:		Hunter Harvey	
City / County:		Catawba / Catawba	
Tax PIN(s):		379002894055	
Coordinates:		Scale:	Date:
Lat: 35.67931	Long: -81.02153	graphic	03/03/2021

Soil Map—Catawba County, North Carolina

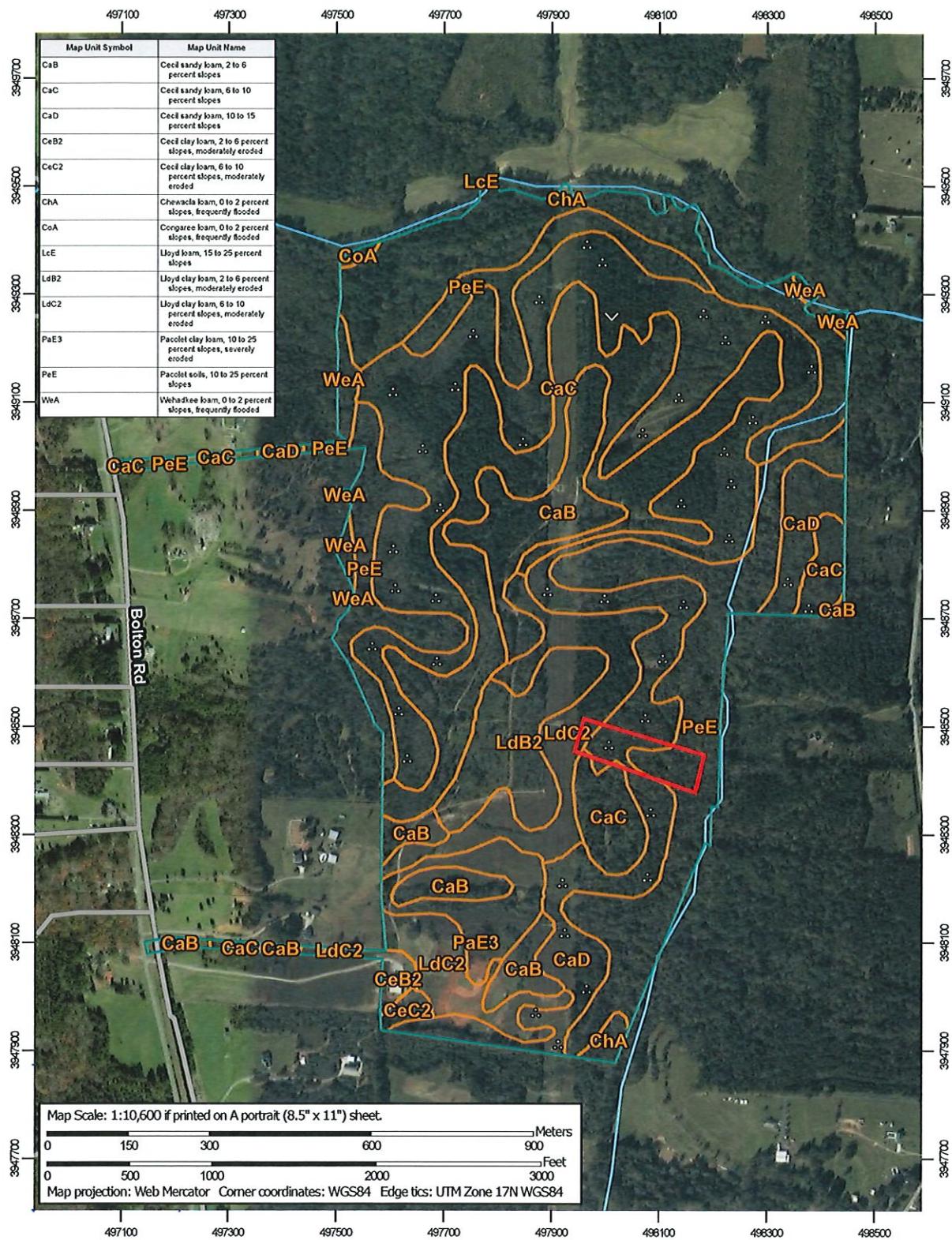


Figure 5: Soil Survey

Project Name: Catawba County Stump Dump

Owner / Developer: Hunter Harvey

City / County: Catawba / Catawba

Tax PIN(s): 379002894055

Coordinates:
Lat: 35.67931 Long: -81.02153

Scale:
graphic

Date:
03/03/2021

The National Map Advanced Viewer

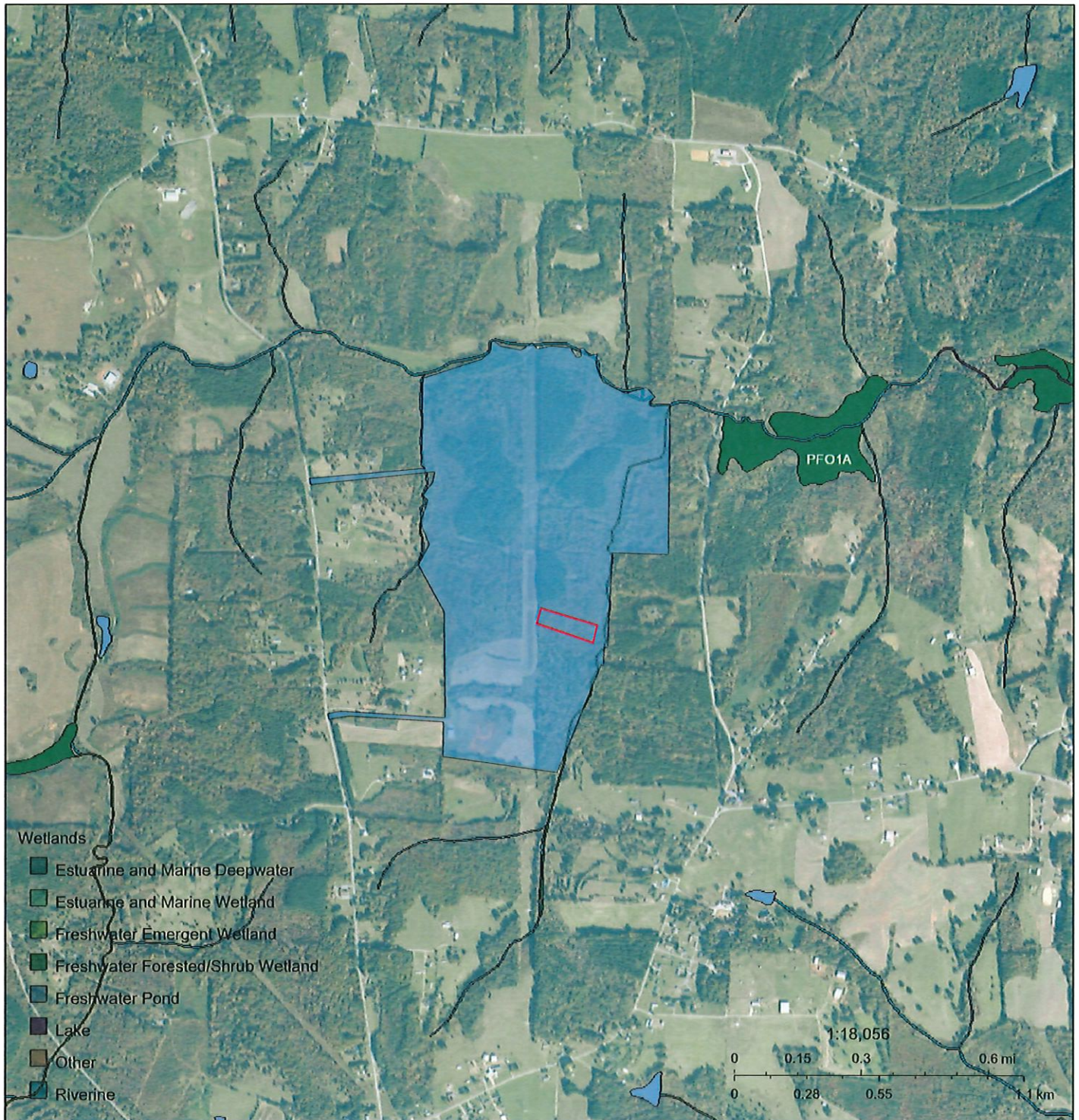


Figure 6: National Wetland
Inventory Map

Project Name:			Catawba County Stump Dump
Owner / Developer:			Hunter Harvey
City / County:			Catawba / Catawba
Tax PIN(s):			379002894055
Coordinates:		Scale:	Date:
Lat: 35.67931	Long: -81.02153	graphic	03/03/2021

The National Map Advanced Viewer

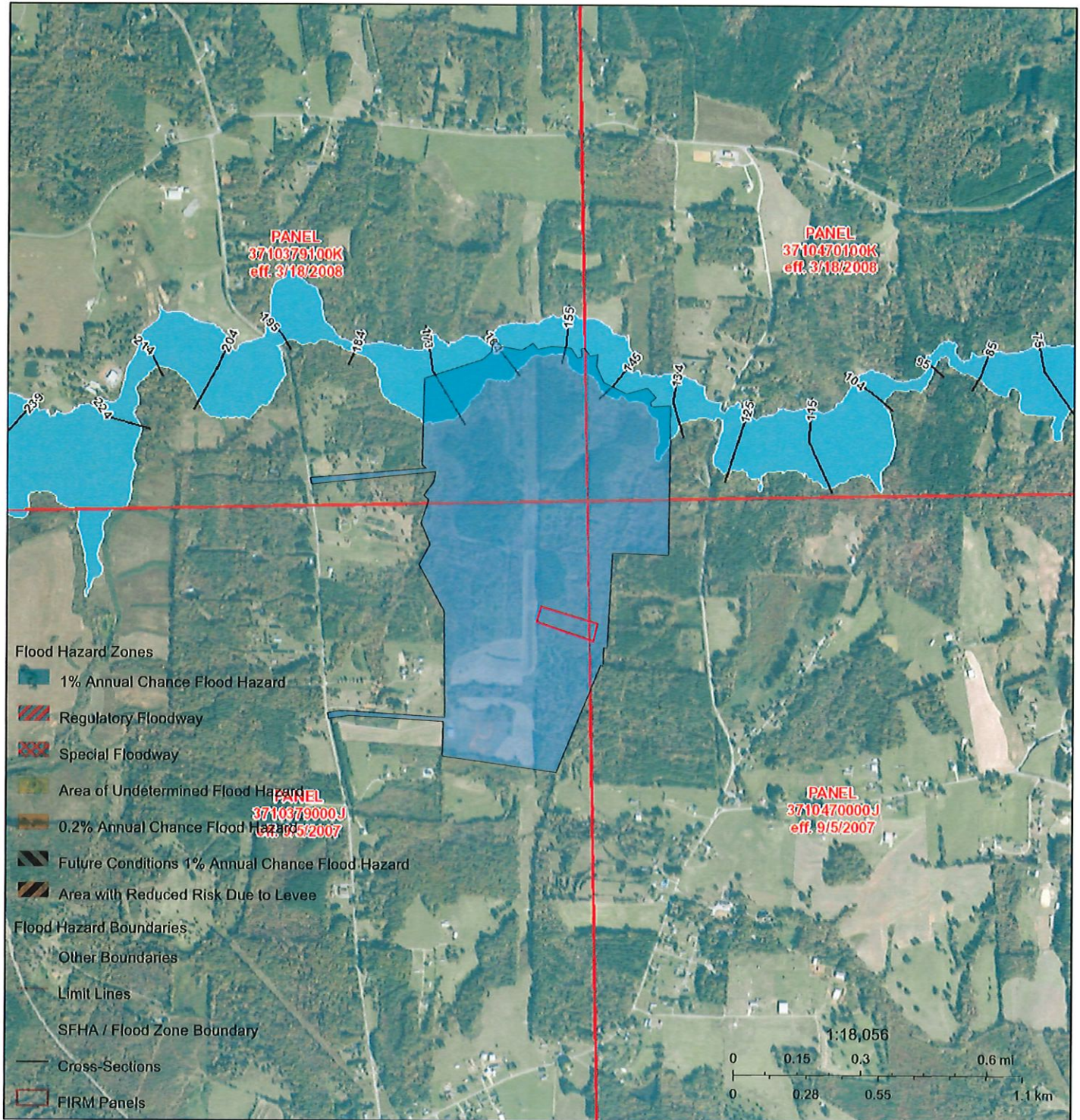


Figure 7: FEMA Floodplain

Project Name:			Catawba County Stump Dump
Owner / Developer:			Hunter Harvey
City / County:			Catawba / Catawba
Tax PIN(s):			379002894055
Coordinates:		Scale:	Date:
Lat: 35.67931 Long: -81.02153		graphic	03/03/2021



**CATAWBA VALLEY
ENGINEERING & TESTING**

PO Box 747
Hickory, NC 28603

161 Lenoir Rhyne Blvd
Hickory, NC 28602

828 578 9972 O
www.cvet.net

NC Firm No. C-3833
SC Firm No. 5201

February 26, 2021

Mr. Miles Wright, PE
Wright & Associates
209 1st Ave South
Conover, NC 28613
miles@wrightandassociates.com

Re: Geotechnical Engineering Evaluation
LCID Landfill
Brown Chapel Road
Sherrills Ford, North Carolina
Project Number: 21-512

Dear Mr. Wright:

Per your request, Catawba Valley Engineering and Testing (CVET) is providing this letter summarizing our services performed for the LCID Landfill Project located in Sherrills Ford, North Carolina. The purpose of our exploration was to evaluate the subsurface soil conditions and prepare conclusions and recommendations for the proposed LCID Landfill Project.

PROJECT DESCRIPTION

This project consists of a subsurface investigation to aid in the permitting process of the proposed LCID Landfill located in Sherrills Ford, North Carolina.

FIELD EXPLORATION

The subsurface conditions at the site were explored by drilling two (2) soil test borings. Boring B-1 was completed at the top of the existing slope and boring B-2 was completed at the bottom of the slope. Soil test borings B-1 and B-2 were performed on February 5, 2021 and extended to depths of 8.6 and 60.0 feet below existing site grades, respectively. The borings were located in the field by Wright & Associates personnel. Boring elevation and locations were marked using a Trimble Geo 7x handheld unit; therefore boring locations and elevations on the attached figures should be considered approximate. Temporary piezometers were installed at the completion of each bore hole to document stabilized groundwater elevations.

The drilling was performed with a Geoprobe 7822DT atv-mounted drill rig using continuous-flight hollow stem augers (HSA). Soil samples were

Geotechnical Engineering

Environmental Services

CMT/Special Inspections

obtained by means of the split-barrel sampling procedures in accordance with ASTM Specification D-1586. A 2-inch O.D., split-barrel sampler was driven into the soil a distance of 18 inches by means of an automatic hammer. The number of blows required to drive the sampler through the final 12-inch interval is termed the Standard Penetration Test (SPT) "N" value and is indicated for each sample on the boring logs. This value can be used to provide an indication of the in-place relative density of cohesionless soils, but is a less reliable indicator of the consistency of cohesive soils. For cohesive soils, the measurement of unconfined compressive strength Q_u is a better indicator of consistency; this value is also listed on the boring logs. Rock coring was beyond the scope of this project. The SPT Boring Logs are appended to this report.

LABORATORY TESTING

Representative samples of soil obtained during the field exploration were transported to CVET's laboratory in Hickory, North Carolina, where they were examined and classified by a geotechnical engineer. The soil samples were visually classified in general accordance with the Unified Soil Classification System (USCS), per ASTM D2487. Mottling and discoloration of the soil samples were specifically examined to aid in the determination of the seasonal high water table (SHWT) elevations.

FINDINGS

The soil test borings encountered surficial fill soils underlain by residual soils or partially weathered bedrock (PWR).

Fill soils were encountered in both soil test borings, B-1 and B-2 to depths of 6.0 and 5.5 feet below existing site grades, respectively. The fill soils mainly consist of brown to red brown, moist, sandy silt (ML) and sandy elastic silt (MH) with traces of rock and root fragments. The SPT N-values of the existing fill soils were measured to range from 4 to 9 blows per foot (bpf) indicating soft to stiff cohesive soil consistencies.

Soil test boring B-2 encountered residual soils underlying the existing fill soils. The residual soils mainly consists of orange-brown, dry to moist, silty sand (SM). SPT N-values within the cohesionless residual soils ranges from 10 to 50+ bpf, indicating loose to very dense soil consistencies.

Partially weathered rock (PWR) was encountered in soil test borings B-1 underlying the existing fill soils at a depth of 6.0 feet below existing site grades. Auger refusal conditions indicative of unweathered bedrock were encountered at a depth of 8.6 feet below existing site grades.

Groundwater was encountered at the time of drilling (ATD) in soil test boring B-2 at a depth of approximately 35.0 feet below existing site grades. The temporary piezometers were measured for groundwater on February 24, 2021. The piezometer placed in boring B-1 did not have any groundwater at the time of measurement, while the piezometer in boring B-2 encountered groundwater at a depth of approximately 22.5 feet below existing site grades. Although groundwater was not encountered in soil test boring B-1, groundwater tends to run along the interface between residual soils and partially weathered rock and in seams of partially weathered rock and unweathered bedrock.

SEASONAL HIGH WATER TABLE (SHWT)

SHWT analysis consists of the combination of subsurface exploration as well as using the information gathered from the installation of the temporary piezometers. Our interpretation of SHWT is the upper limit of soil saturated with water for periods long enough for anaerobic conditions to affect soil color. Such periods result in iron (Fe) reduction within soils causing mottling or soil leaching to occur, typically resulting in a greyish color.

Based upon the encountered subsurface conditions and the stabilized groundwater elevations, we conclude that the SHWT is approximately 12.0 to 15.0 feet below existing site grades.

This report has been prepared for the exclusive use Wright & Associates and agents for specific application to the referenced property, in accordance with generally accepted soils and foundation engineering practices. No warranties, expressed or implied, are intended or made. The conclusions and recommendations presented in this report are based on the specific laboratory testing, visual observations, and testing performed as part of our scope of work and do not reflect variations in subsurface conditions that may exist between test locations or in unexplored portions of the site. Site safety, excavation support related to OSHA requirements, and construction dewatering requirements are the responsibility of others, not CVET. In the event changes are made to the proposed construction plans, design or location of the project as described within this report, the conclusions and recommendations provided in this report shall not be considered valid unless CVET is given the opportunity to review the changes, and either verifies or modifies the conclusions and recommendations contained in this report in writing.

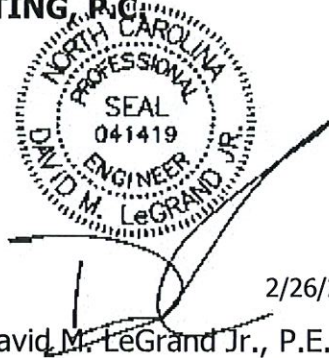
CVET appreciates the opportunity to provide our geotechnical engineering services for this project. If you have any questions regarding the contents of this report, or if we can provide additional services for the project, please do not hesitate to contact us.

Sincerely,

CATAWBA VALLEY ENGINEERING AND TESTING, P.C.



Cody B. Dobbins, EI
Project Manager



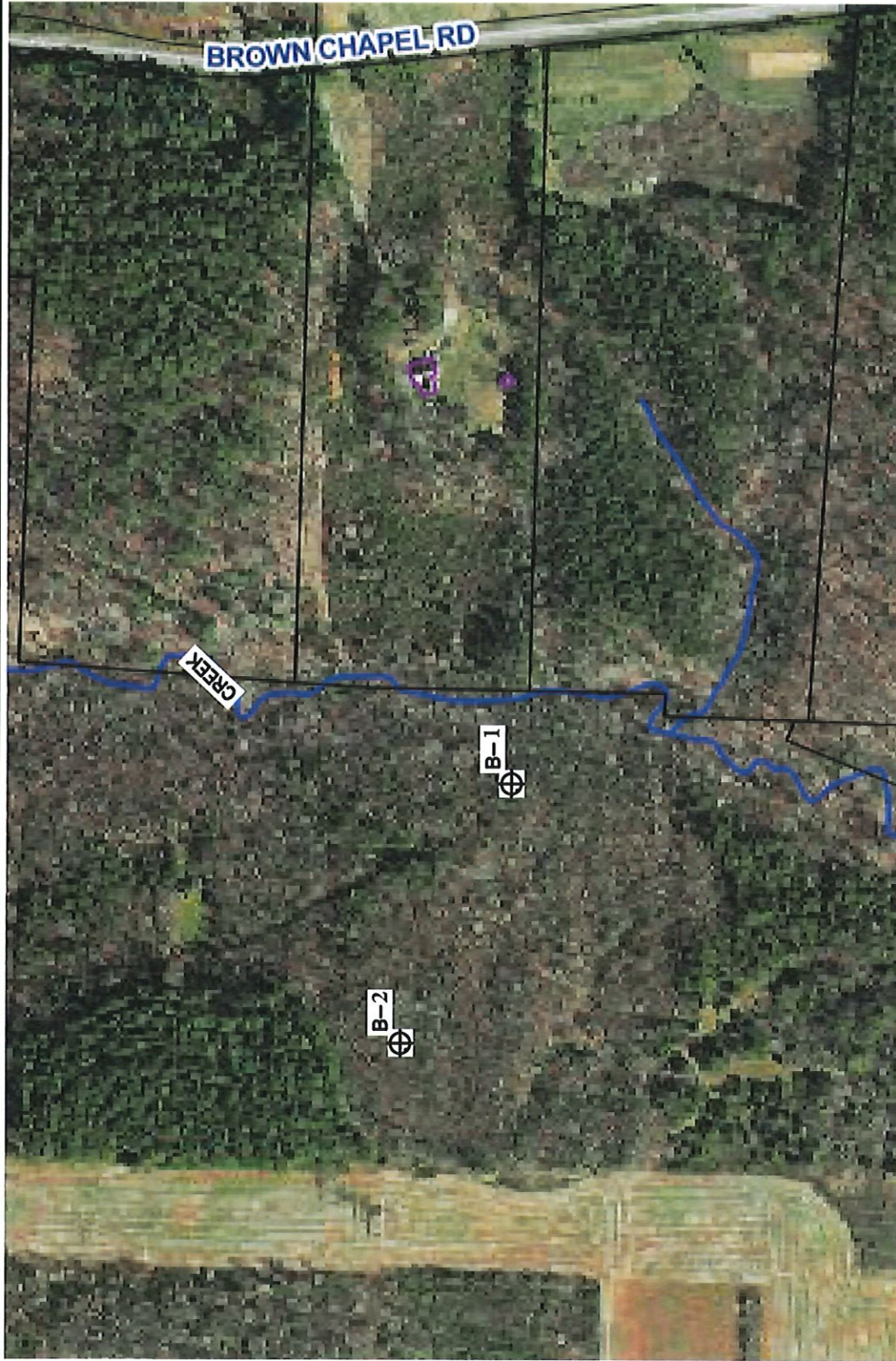
2/26/2021

David M. LeGrand Jr., P.E.
Principal Engineer
NC #041419

Attachments: Figure
 Soil Boring Logs



 CATAWBA VALLEY ENGINEERING & TESTING P.O.B. 747 HICKORY, NORTH CAROLINA 28603 TELE 828-578-9972	LCID LANDFILL 1577 BROWN CHAPEL RD, CATAWBA CATAWBA COUNTY, NORTH CAROLINA		DRAWN BY EMB	PROJECT NO. 21-512
			DATE 02-26-21	SHEET NO. FIG. 1



BORING LOCATIONS

SCHEMATIC

<div>  <p> CATAWBA VALLEY ENGINEERING & TESTING <small>P.O.B. 747 HICKORY, NORTH CAROLINA 28603 TELE: 828-578-5972</small> </p> </div>	<div> <p>LCID LANDFILL 1577 BROWN CHAPEL RD, CATAWBA CATAWBA COUNTY, NORTH CAROLINA</p> </div>		<div> <p>DRAWN BY EMB</p> </div>	<div> <p>PROJECT NO. 21-512</p> </div>
			<div> <p>DATE 02-28-21</p> </div>	<div> <p>SHEET NO. FIG. 2</p> </div>



Catawba Valley Engineering & Testing
161 Lenoir-Rhyne Blvd. SE
Hickory NC 28602
Telephone: 828 578 9972

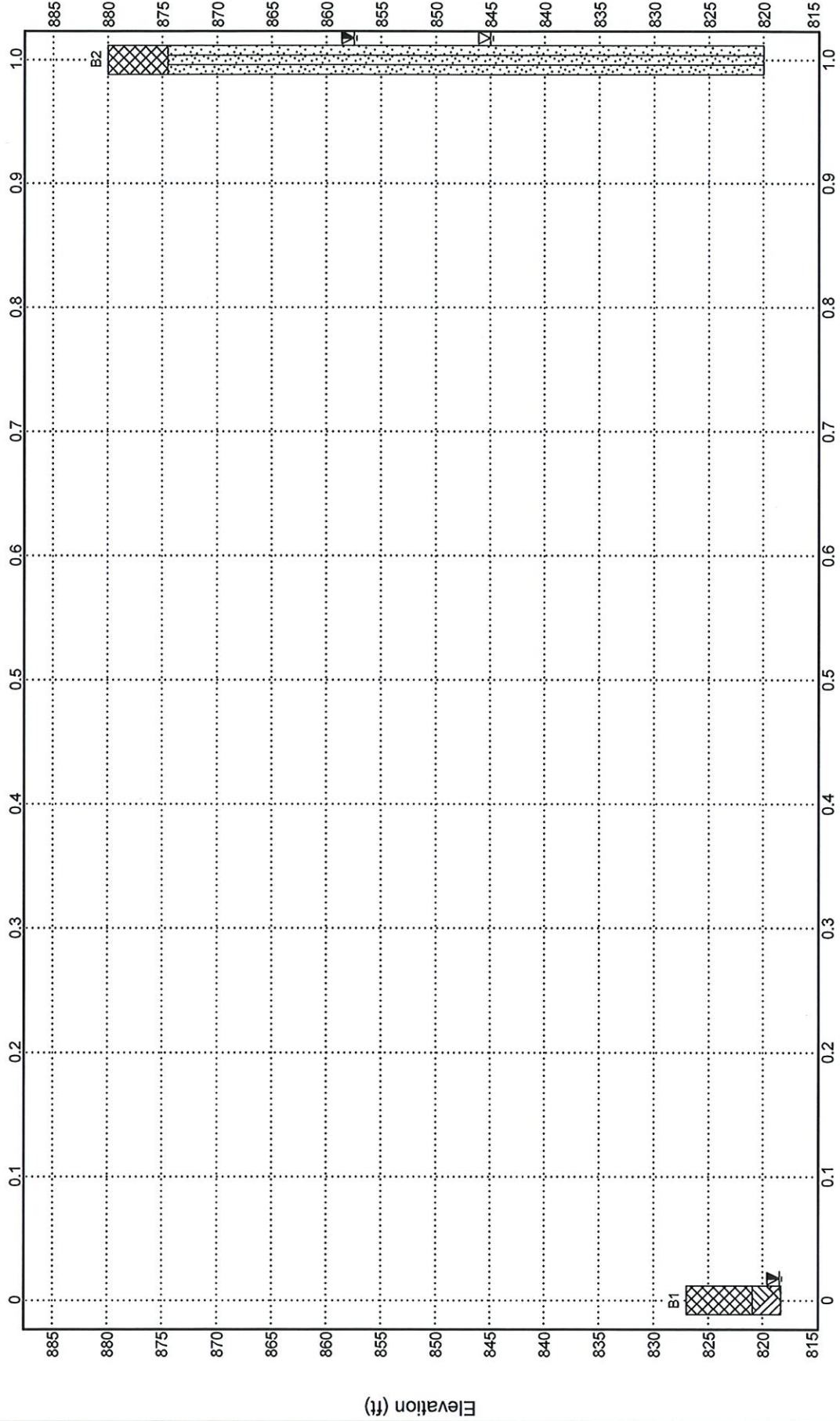
SUBSURFACE DIAGRAM

CLIENT Wright & Associates

PROJECT NAME LCID Landfill

PROJECT NUMBER 21-512

PROJECT LOCATION Sherrills Ford





Catawba Valley Engineering & Testing
161 Lenoir-Rhyne Blvd. SE
Hickory NC 28602
Telephone: 828 578 9972

KEY TO SYMBOLS

CLIENT Wright & Associates

PROJECT NAME LCID Landfill

PROJECT NUMBER 21-512

PROJECT LOCATION Sherrills Ford

LITHOLOGIC SYMBOLS (Unified Soil Classification System)



BEDROCK: Bedrock



FILL: Fill (made ground)



SM: USCS Silty Sand

SAMPLER SYMBOLS



Split Spoon

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)

TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION
▽ Water Level at Time
Drilling, or as Shown
▼ Water Level at End of
Drilling, or as Shown
▽ Water Level After 24
Hours, or as Shown



Catawba Valley Engineering & Testing
161 Lenoir-Rhyne Blvd. SE
Hickory NC 28602
Telephone: 828 578 9972

BORING NUMBER B1

PAGE 1 OF 1

CLIENT Wright & Associates

PROJECT NAME LCID Landfill

PROJECT NUMBER 21-512

PROJECT LOCATION Sherrills Ford

DATE STARTED 2/5/21 COMPLETED 2/5/21

GROUND ELEVATION _____ HOLE SIZE 2.25 inches

DRILLING CONTRACTOR CVET

GROUND WATER LEVELS:

DRILLING METHOD 2.25 Hollow Stem Auger

AT TIME OF DRILLING --- Cave at 7.9 ft.

LOGGED BY TV CHECKED BY JHC

AT END OF DRILLING ---

NOTES _____

▼ AFTER DRILLING 8.50 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
0.0								20	40	60	80
		(ML) FILL: Sandy SILT with Trace Root Fragments, Fine Mica, Red-Brown, Moist, Stiff									
2.5			SS 1	89	6-4-5 (9)						
5.0			SS 2	100	2-4-5 (9)						
7.5		(SM) PARTIALLY WEATHERED BEDROCK: Silty SAND with Rock Fragments, Grey, Dry	SS 3	100	50/3"						
			SS 4	100	50/1"						
		Refusal at 8.6 feet. Bottom of borehole at 8.6 feet.									

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 2/26/21 10:50 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\21-512 LCID LANDFILL.GPJ



Catawba Valley Engineering & Testing
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Hickory NC 28602
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BORING NUMBER B2

PAGE 1 OF 2

CLIENT Wright & Associates

PROJECT NAME LCID Landfill

PROJECT NUMBER 21-512

PROJECT LOCATION Sherrills Ford

DATE STARTED 2/5/21 COMPLETED 2/5/21

GROUND ELEVATION _____ HOLE SIZE 2.25 inches

DRILLING CONTRACTOR CVET

GROUND WATER LEVELS:

DRILLING METHOD 2.25 Hollow Stem Auger

▽ AT TIME OF DRILLING 35.00 ft Cave at 28.5 ft.

LOGGED BY TV CHECKED BY JHC

AT END OF DRILLING ---

NOTES _____

▽ AFTER DRILLING 22.50 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
0								20	40	60	80
		(ML) FILL: Sandy SILT with Trace Rock Fragments, Fine Mica, Red-Brown, Moist, Soft to Medium	SS 1	100	1-1-3 (4)						
5			SS 2	100	3-3-4 (7)						
		(SM) RESIDUAL: Silty SAND, Orange-Brown, Brown, Grey, Black, Dry to Moist, Loose to Very Dense	SS 3	100	4-5-5 (10)						
10			SS 4	100	4-4-6 (10)						
15			SS 5	100	5-6-7 (13)						
20			SS 6	100	4-5-8 (13)						
25			SS 7	100	4-5-6 (11)						
30			SS 8	100	5-6-8 (14)						

(Continued Next Page)



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BORING NUMBER B2


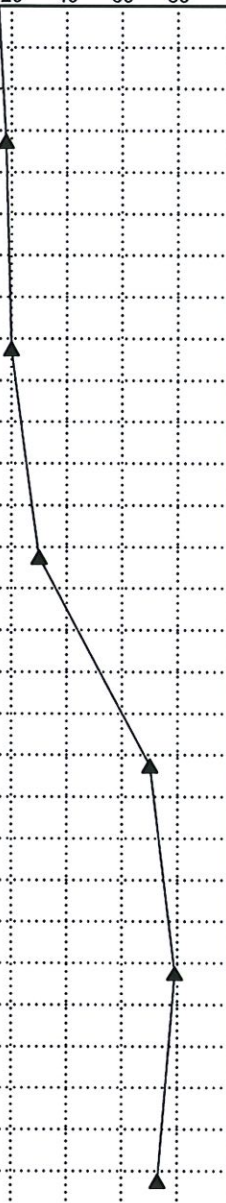
PAGE 2 OF 2

CLIENT Wright & Associates

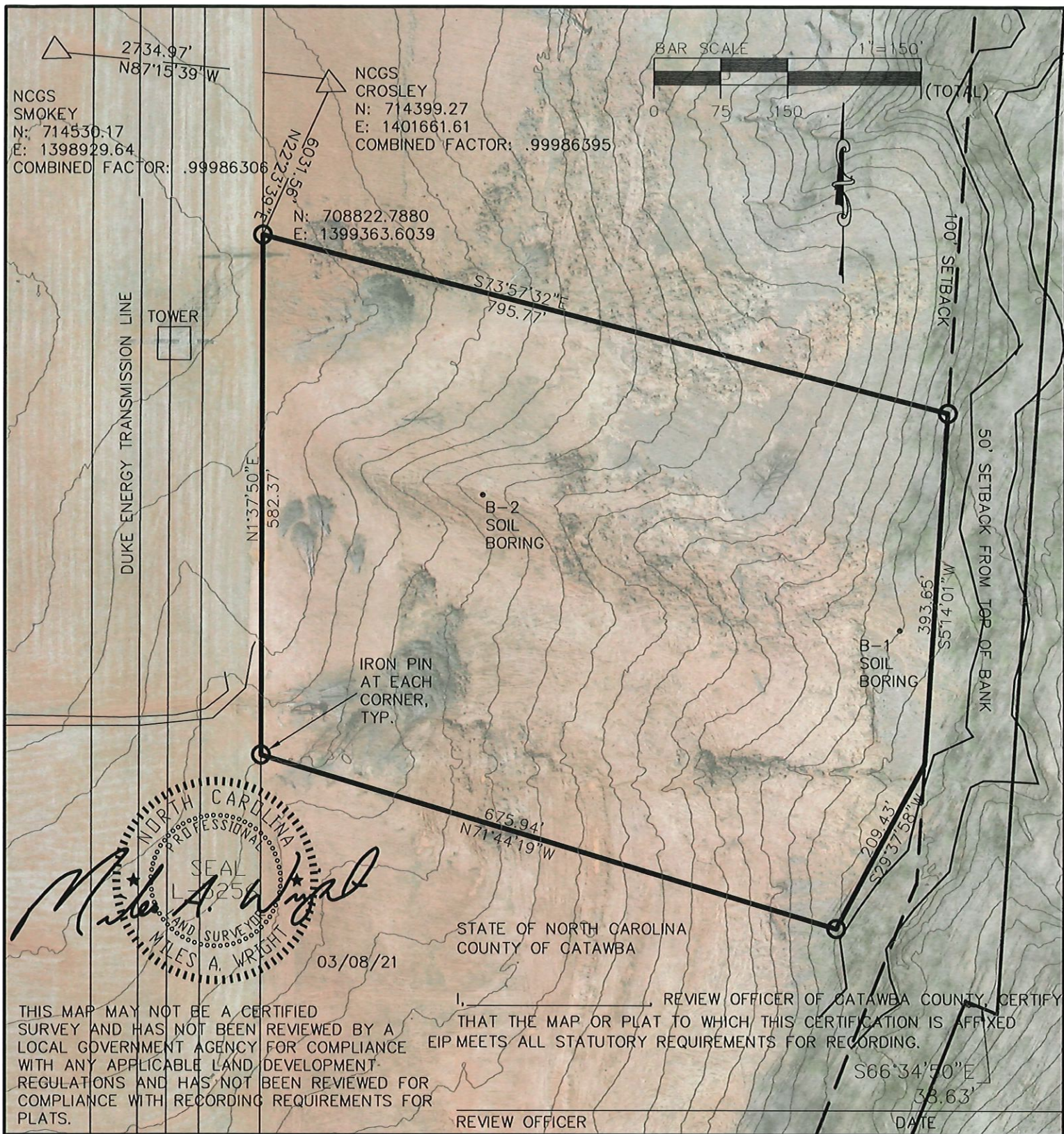
PROJECT NAME LCID Landfill

PROJECT NUMBER 21-512

PROJECT LOCATION Sherrills Ford

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲	
								20 40 60 80	20 40 60 80
								PL MC LL	20 40 60 80
								□ FINES CONTENT (%) □	20 40 60 80
35		(SM) RESIDUAL: Silty SAND, Orange-Brown, Brown, Grey, Black, Dry to Moist, Loose to Very Dense <i>(continued)</i>	X SS 9	100	6-9-9 (18)				
40			X SS 10	100	8-8-12 (20)				
45			X SS 11	100	10-12-18 (30)				
50			X SS 12	100	19-32-38 (70)				
55			X SS 13	100	20-34-45 (79)				
60			X SS 14	100	35-37-36 (73)				

Bottom of borehole at 60.0 feet.



WRIGHT & ASSOCIATES
ENGINEERS & SURVEYORS
LICENSE# C-4053

209 1ST AVE SOUTH
CONOVER, NC 28613

(828) 465-2205 OFFICE

LCID LANDFILL BOUNDARY MAP

OWNERS: HUNTER LUKE HARVEY

ADDRESS: 152 WINDEMERE ISLE RD
STATESVILLE NC 28677

PIN: 379002894055

ACREAGE: 285.34 AC± (MOTHER PARCEL)

LCID: 10.1 ACRES±

REMAINING ACREAGE IN MOTHER PARCEL: 275.24 AC±

Attachment A

Memorandum of Land Clearing and inert debris landfill

Applicant: Justin Dagenhart
2088 Mathis Church Road
Catawba NC 28609

Contact: Justin Dagenhart
2088 Mathis Church Road
Catawba, NC 28609

Justin Dagenhart has applied for a special use permit to construct and operate a Land Clearing and Insert Debris (LCID) landfill on property located on Bolton Road, in Catawba County.

Dagenhart will apply for a permit both from Catawba County and the State of North Carolina.

This document becomes a part of the recorded plat for the landfill. The operation plan is to use a "gulley" on the 285-acre parcel described in the Special Use Documents. The gulley varies in depth from about 10' to 20'. The debris and waste will be brought to the site and either dumped in the gulley directly from the trailer or partially stockpiled and pushed into it. The bottom of the gulley will be shaped by excavation of the bottom and sides to provide a rectangular cross section to the extent possible. The excavated cross section will provide the cover material for the debris. Regular operating hours are planned to be early morning to later even- five days per week.

It is difficult to predict the response of customers to the landfill and how much this will translate into the volume of material received. The approximate volume of the gulley is about 70,000 cubic yards.

Sediment basins will be installed to contain the sediment generated from the filling operation as required by the County. The final reclamation plan will include grading to allow for continued farming of the land.

Catawba County Application for a Board of Adjustment Decision

Applicant Justin W. Dagenhart Phone # 828-312-7931
Applicant's Fax _____ Applicant's Email waste wood recycling@gmail.com
Applicant's Mailing Address 2088 Mathis Ch Rd City, State, Zip Catawba NC 28609
Property Owner Hunter Luke Harvey Phone # _____
Property Owner's Mailing Address 152 Windemere Isle Rd City, State, Zip Statesville NC 28677-2090
Parcel 911 Address 1884 Bolton Rd PIN # 379002894055
Subdivision Name and Lot # Not Applicable

Type of Application:

☒ **Special Use Permit**

- A detailed site plan and the general information listed below shall be submitted with the application.
- Special Use requested including Unified Development Ordinance Section Reference _____
- Documentation must be submitted addressing all standards found in UDO Section 44-332(f)(2) and the specific criteria for the special use.

☐ **Variance**

- Documentation must be submitted supporting all criteria found in UDO Section 44-333 (f)(1).
- A plot plan sealed by a licensed professional and the general information listed below must be included with the application.

☐ **Extension or Change of a Nonconforming Use**

- A detailed site plan and the general information listed below shall be submitted with the application.
- Documentation must be submitted addressing all standards found in UDO Section 44-704(b)(4).

☐ **Appeal**

- An appeal must be submitted in writing and filed with the recording secretary of the board of adjustment within 30 days of the date of the Planning Director's decision. Sec. Ref. _____

General Information to be attached:

- ☒ 12 copies of plan at a scale no smaller than 1 inch equals 200 feet, on either a 18 x 24 or 24 x 36 inch map and either one 8.5 x 11 or 11 x 17 inch map (including digital copies in .pdf or .jpg format); complete application and any attachments.
- ☒ If applicable, a legal description of the property
- ☒ If applicable, a detailed statement of all other circumstances, factors, and reasons, which applicant offers in support of the appeal.
- ☒ Appropriate completed checklist (special use permit, variance, extension or change of a nonconforming use) found in Procedures Manual.
- ☒ Filing Fee: Per Catawba County Fee Schedule \$425⁰⁰ Wright Check

Applicant's Signature _____ Date _____

Property Owner's Signature _____ Date _____

CATAWBA COUNTY SPECIAL USE PERMIT-DEVELOPMENT CHART
(Quasi-Judicial Hearing - Board of Adjustment)

Detailed Site Plan: used for:

- All special use applications which must meet the requirements of Section 44-328, Article VI, Division 3, and Article V of the Unified Development Ordinance.

Legend

R - Required to be shown on plan, if applicable to the development project.

PM - Procedures Manual

*Applicant to check box in Column B if information has been submitted on site plan.

		A	B	C	D
		Detailed Site Plan	Check if included on site plan	(Staff only)	Code Reference
1.	Access management	R	✓		44-515
2.	Access – waterfront	R			PM
3.	Accessory structures	R			PM
4.	Airstrips (if existing or proposed) on site & surrounding properties	R			
5.	Date of plan	R	✓		PM
6.	Easements, reservations & right-of-ways (existing and proposed)	R			44-519
7.	Floodplain denoted & delineation of area	R	✓		44-429
8.	Floor Area Ratio	R			44-404(d)
9.	Historic sites (location of existing, if applicable)	R	NONE EXISTS		
10.	Landscaping – driveways	R			44-523(c)
11.	Landscaping - foundation plantings	R			44-523(g)
12.	Landscaping - internal parking area	R			44-523(e)
13.	Landscaping - perimeter buffer of parcel	R			44-523(f)
14.	Landscaping - perimeter for parking facilities	R			44-523(d)
15.	Landscaping - street trees	R			44-523(h)
16.	Landscaping - trees & shrubs, berms- location of existing/proposed-preservation	R			44-503
17.	Lighting standards - type & location (free - standing & on buildings)	R			44-522
18.	Loading & service areas (screening & location)	R			44-526 44-537
19.	Mechanical equipment – ground/rooftop (screened)	R			44-524
20.	Name of development	R	✓		PM
21.	Name(s) of developer	R	✓		PM
22.	Natural areas – if existing (wetlands, etc.)	R	NONE FOUND		PM
23.	North arrow	R	✓		PM
24.	Open storage with required screening	R	No storage areas		44-527
25.	Parcel, includes metes & bounds description, acreage and parcel ID.	R	✓		PM
26.	Parking - off street	R			44-534

		A	B	C	D
		Detailed Site Plan	Check if included on site plan	(Staff only)	Code Reference
27.	Parking facilities – access to adjacent street, aisle dimension, spaces (numbered and dimension), and location.	R			44-535 44-536
28.	Roadway classification	R			PM
29.	Scale, 1"=200' or less preferred	R	✓		PM
30.	Setbacks	R	✓		44-404-1
31.	Sign – wall signs - location & size of	R			Art. V, Div. 7 44-563
32.	Sign - design drawing	R			PM
33.	Sign - location of existing signs on lot & building(s)	R			PM
34.	Sign – freestanding - new sign location, size, height, surface and landscaping	R			44-562
35.	Sign – Off-premise directional	R			44-565
36.	Slopes in excess of 20% (if existing)	R	None in LEIS Area		
37.	Solid waste storage area (location & screening)	R	✓		44-525
38.	Storm water management facilities locations (retention basins, etc.)	R			
39.	Street designation, internal (public or private)	R	✓		PM
40.	NCDOT driveway permit approval				PM
41.	Street trees	R			44-523(h)
42.	Structures, existing/proposed - location, height	R	✓		
43.	Topographical features – 5 ft. or less contours	R	✓		PM
44.	Traffic improvements-off site (turn lanes, etc.)	R	None proposed		
45.	Traffic patterns – existing & proposed - circulation/channelization, access, visibility,	R	✓		44-515
46.	Utilities provider (water & sewer or well and septic tank) - confirmation in writing from provider	R	✓		44-521
47.	Vicinity Map	R	✓		PM
48.	Watershed designation and percentage of imperviousness	R	✓		44-434
49.	Zoning district and land use of adjoining sites	R	✓		PM
50.	Zoning district of site, existing	R	✓		PM