Photo 101

Photo 102

Feature F-48: Multiple sinkholes in wooded area on southern portion of property. with open throat.

Photo 103

Photo 104

Feature F-49: Surface water drainage and rill erosion draining to wooded area.

Terracon GeoReport

Preliminary Karst Assessment

Proposed Hoffman Solar Project – Summers Parcel
Franklin, Simpson County, Kentucky

November 30, 2020
Terracon Project No. 57195114

Prepared for:
OPDE Energy C/O
Jupiter, Florida

Prepared by:
Terracon Consultants, Inc.
Louisville, Kentucky

November 30, 2020

OPDE Energy C/O
Horus Renewables Corporation
110 Front Street, Ste # 300
Jupiter, Florida 33477

Attn: Mr. Arnaldo Rivera / E&C Project Manager
P: (704) 941 5717
E: arivera@opdenergy.com

Re: Preliminary Karst Assessment
Proposed Hoffman Solar Project – Summers Parcel
Tyree Chapel Road
Franklin, Simpson County, Kentucky
Terracon Project No. 57195114

Dear Mr. Rivera:

We have completed the karst assessment for the above referenced project. The objective of these services was to identify and delineate existing karst features at the site and provide recommendations for development avoidance areas. Our services were completed in general accordance with our MSA Task Order dated February 13, 2020 for the project and supplemental Task Order dated September 18, 2020 for the Summer Parcel.

Terracon performed a karst assessment for the original parcel in our report for Terracon project number 57195114 dated August 4, 2020. This report summarizes our karst assessment at the proposed Hoffman Solar Facility on the Summer's parcel in Franklin, Simpson County, Kentucky. Project mapping information can be accessed through this web page: https://geodata.terracon.com/HorusRenewables/57195114/

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Sadra Javadi, Ph.D.
Geotechnical Engineer

Benjamin W. Taylor, P.E.
Senior Associate, Regional Manager

REPORT TOPICS

Note: This report was originally delivered in a web-based format. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

SCOPE OF SERVICES

The site was identified by the project boundary in ***Franklin_KY_550Acres.kmz*** received from OPDE Energy via email on August 28, 2020. The focus of this report is to discuss the karst site assessment for the Summers parcel. Our karst assessment was performed as a phased approach, consisting of:

- Desktop review,
- Field reconnaissance,
- Geophysical Electrical Resistivity Imaging (ERI), and
- Drilling using an air-track drill rig

Desktop Review

We performed a desktop data review of readily available resources (listed below) to identify documented karst features (e.g., sinkholes, closed depressions, caves, and sinking and losing streams). The review of the existing feature locations within the site boundaries was accomplished by examining data from the following sources:

- Maps of selected karst features (sinkholes and springs) available from the Kentucky Geological Survey (KGS),
- Remote sensing data provided by KGS (LiDAR imaging),
- Division of Mines and Mineral Resources and the United State Geological Survey,
- Kentucky Oil and Gas Well map provided by KGS,
- Spring and water well map, provided by the Kentucky Division of Water (KDOW),
- Aerial photographs using Google Earth Pro™ (1998 – 2018), and
- USGS Topographic 7.5-minute topographic quadrangles.
- National Wetland Inventory (NWI) map developed by US Fish & Wildlife Service, 2020.

Field Reconnaissance

Upon completion of the desktop review, Terracon initiated the field reconnaissance activities. The field reconnaissance entailed walking the site in a systematic manner to locate and delineate visible surface karst features (e.g., sinkholes and subsidence, closed depressions, soil piping, caves, and sinking and losing streams). Particular emphasis was on features inferred to have direct communication with the phreatic zone such as open-throat sinkholes, karst windows, cave entrances, and sinking streams. Specifically, the field reconnaissance consisted of:

- Verification and delineation of suspect surface features identified by desktop review, and
- Identification and delineation of uncatalogued or previously unidentified surface features, specifically sinkholes, cave entrances, dry runs, sinking streams, etc.

Features were located and delineated using a hand-held, recreational-grade, GPS device with an estimated horizontal accuracy of +/-20 feet. Delineations were made with the outline of the closed depression defined as the last closed descending contour at a 2-foot mapping interval. Each feature was assigned a unique identifier (F52 – F76) as presented by the **Karst Feature Inventory** in the Appendix of this report and the **Karst Feature** tab of the project map viewer.

As requested, we also revisited the wooded area located at the south end of the original Hoffman parcel during this field reconnaissance. During our previous field reconnaissance of the Hoffman parcel, we identified features F48 and F-51. During the more recent reconnaissance of this area, no additional features were identified within the wooded area, however, we did delineate the outline of the previously identified features F-77 through F-79.

Subsurface Exploration

Terracon conducted subsurface exploration using Geophysical and air-track probe (ATP) drilling methods. Geophysical exploration using Electrical Resistivity Imaging (ERI) was performed across the site with an emphasis on karst features identified during the desktop review and field reconnaissance.

Geophysical ERI: 3 ERI arrays were performed with lengths ranging from 2,240 to 2,790 feet. The purpose of the ERI was to identify anomalies in the subsurface that may be indicative of karst features along the array (i.e. fluctuations in soil moisture-density, air-filled voids, soil filled voids, weathered zones, solution features, pinnacled bedrock, etc.).

ATP Drilling: 37 ATP borings were advanced to depths of approximately 17 to 70 feet below existing grade at locations of karst features identified from the desktop review, field reconnaissance, and at ERI anomaly locations identified. Bedrock was encountered at depth of about 3 to 28 feet below existing ground surface. The number and locations of ATP drilling were discussed with and approved by client representatives Arnaldo Rivera and Braden Houston during a call on October 28, 2020 where we presented preliminary findings of our desktop review, field reconnaissance, and ERI findings. The purpose of the ATP drilling was to explore for depth to bedrock, and presence of voids within the soil or bedrock. Borings were terminated upon encountering 10 feet of bedrock with no voids or soil-filled zones.

In general, the ATP borings and geophysical ERI results correlated well. Anomalies indicated by the ERI profiles were generally of limited linear extent along the array length except 2 anomalies identified along ERI-14 that were about 1,015 and 419 feet long.

Apparent air-voids and soil-filled voids within the underlying bedrock were encountered by the ATP drilling at all locations except ATP-5, -13, -16 through -24, -33, and -36. Voids were encountered at depths ranging about 15 to 51 feet below the ground surface and the encountered void thickness were in the range of 2 to 6 feet thick. However, there were several significant cavernous voids intercepted by the ATP borings, ranging from about 9 to 23 feet in height, at locations ATP-7, 12, and 37.

Maps of the site and exploration locations are presented by the **Site Location** and **Exploration Plan**, respectively. Conditions encountered at each exploration location are indicated on the ERI profiles in the **Exploration Results**.

GEOLOGY AND TERRAIN

Physiography

The site is located within the Mississippian Plateau Physiographic Region of Kentucky, specifically within the Western Pennyroyal subsection. The Pennyroyal is largely farmland where underlain by limestone bedrock, particularly the St. Louis Limestone or Ste. Genevieve Limestone. In some areas of the Pennyroyal, the limestone is capped with an overlying sandstone stratum. Where the capping sandstone is intact the land surface is usually forested, with rugged hills. In many places the sandstone has collapsed into the underlying karst-forming carbonate bedrock.

The Pennyroyal region, consists of a limestone plain characterized by karst terrain, including sinkholes, sinking streams, streamless valleys, springs, and caverns. Sinkholes or closed depressions on the ground surface are usually circular and often funnel-shaped and range in size from a few feet to hundreds of feet in diameter. There are relatively few surface streams in the region, and the sinkholes are often the principal surface drains. The karst terrain occurs in the eastern and southern parts of the region due to the presence of thick deposits of Mississippian-age limestones.

Topography

Referencing the USGS 7.5-minute topographic quadrangles for Frankfort, KY-TN (5/24/2019), the parcels comprising the survey area are in a broad, gently rolling lowland with numerous depressions. The ground surface within the survey area ranges from about elevation 700 feet to 755 feet. Refer to the **Topographic Overview**, **Elevation Contours**, and **Kentucky Elevation** tab of project map viewer. The site drains externally off the project boundary toward northeast, north, northwest, and at closed depression locations is internally drained by the sinkholes. The NWI identified 7 freshwater ponds on the Summer parcel, however, during site reconnaissance, no perennial surface water bodies were observed at the site.

Geology

The site is mapped as underlain by bedrock of the Ste. Genevieve Limestone (Msg) and St. Louis Limestone (Msl) formations, both dated to the Upper Mississippian Sub-Period of the Carboniferous Geologic Period. These limestones are ranked by the Kentucky Geological Survey (KGS) as having a very high karst potential. The Ste. Genevieve is a thick-bedded oolitic limestone overlying the St Louis limestone formation characterized by scattered chert beds. Refer to **USGS Geology**, **Kentucky Geology**, and **Karst Hazards** tabs of project map viewer. The below rock unit descriptions are referenced from KGS.

Ste. Genevieve Limestone (Msg): Predominantly oolitic; some crystalline, argillaceous, and fossiliferous, detrital interbeds. Light-gray to almost white, oolitic, medium crystalline, massive to thin-bedded or slightly cross bedded; contains thin shale partings. Gray to white, weathers slightly

darker; where exposed to much direct sunlight, weathered rock may be white, commonly speckled red-brown by iron oxide stain; mostly thick bedded and massive but ranges to thin bedded. Upper limestone layers weather to a thick deep-red or maroon clay containing abundant residual chert. Much of residual chert weathers to chalky fragments. Ste. Genevieve grades imperceptibly into underlying St. Louis Limestone.

St. Louis Limestone (Msl): Limestone, light- to dark-gray, fine- to medium -crystalline; contains blue gray chert nodules, particularly abundant in uppermost part; several light- to medium-gray, oolitic limestone beds in upper part of unit; scattered colonies of corals in middle and lower part; scattered gypsum and anhydrite seams in lower part. Formation weathers to dark-reddish -brown chert residuum. Grades upward into Ste. Genevieve.

KARST SURVEY RESULTS AND DISCUSSION

Desktop Review

The parcels appear to be primarily used for agricultural purposes. From our desktop review Terracon identified 22 suspect features across the Summers parcel. The freshwater ponds mapped by the NWI on the Summer parcel. In karst areas ponds can form when the throat of a closed depression is clogged with soil, slowing the infiltration of surface water.

Aerial imagery does/does not indicate flooding or dead vegetation in areas around the mapped NWI features. Ponding water in the depressions (see feature F-76) could indicate an estavelle, which is a sinkhole or closed depression that acts as an insurgence for surface water during dry periods, and floods or acts as an ephemeral spring during times of water table elevation.

Field Reconnaissance

The field survey was performed on September 22 and 23, 2020 by Terracon representatives, Sean Vanderhoff and Sadra Javadi. A summary of the karst features delineated during the field reconnaissance is presented by the **Karst Feature Inventory** and discussed below.

During our field reconnaissance, 9 of the suspect features identified during desktop review were confirmed and 16 other features were identified and delineated. Additionally, surface water drainage with erosion rills and soil piping features were observed throughout the site. Most of the features included cover-subsidence sinkholes, broad areas where multiple cover-collapse sinkholes have coalesced, and apparently more recently active cover-collapse sinkholes. The sinkholes can be organized into cover-subsidence and cover-collapse with relative activity further described by presence of open-throat and/or irregular shape with raveling at sides refer to Table 1.

	Cover collapse		Cover subsidence		
	Open Throat	No Open Throat (man-placed fill)[1]	No Open Throat (man placed fill)[1]	Open Throat	No Open Throat
Feature ID	F-56, F-60, F-61, F-65, F-72, F-73, F-74, F-75, F-77, F-78, F-79, and F- 80	F-55, F-67, F-70	F-54, F-58, and F-64	F-57, F-63, and F-76	F-53, F-59, and F-62

1. Observed indications of apparent modification or fill placement by farmer or property owner.

Table 1 Karst Feature Observations

Cover Collapse Features

Cover collapse sinkholes F-56, F-60, F-61, F-65, F-72, F-73, F-74, F-75 and F-80 were observed with open throats, at F-55, F-67 and F-70 we observed indications of man-placed fill which we suspect was placed to backfill cover collapse sinkholes.

Feature F-56 is noted as in the vicinity of a freshwater pond mapped by the USFWS NWI. At time of reconnaissance the feature's open throat appeared to have been modified with soil apparently dug out and staged next to it. Multiple open throats were observed within the feature along the side walls and floor. In addition to exposed bedrock, debris was observed within the feature. The irregular shaped feature was approximately 20ft by 40 ft and approximately 15 to 20 ft deep. Our geophysical exploration ERI-16 indicated an anomaly located at approximate depth of 20 ft and extending to 40 ft below the ground surface at feature F-56 perimeter.

Figure 1: View of feature F-56, apparent modified sink with multiple open throats.

Figure 2: View of small cover collapse features F-80 (foreground) and F-56 (background).

Features F-73, F-74, and F-75 appear to have been previously filled with rock and soil, however, soil piping or throats have since reopened with these features. Features F-73 are in the proximity of NWI map freshwater ponds on the northern portion of the parcel. Our geophysical exploration ERI-14 indicated a 224-foot long anomaly on the east side of the feature F-74 located approximately at depths ranging between of 15 to 30 ft below the ground surface. ATP-34 and ATP-35 located at east side of feature F-74 indicated approximately similar bedrock depths, no voids were encountered by these ATP borings.

Feature F-80 located on the north side of feature F-57 and appear to be approximately 3-foot cover collapse feature. The result of ATP-5 located in the south-west side of feature F-80 did not indicate any sign of voids in the underlying bedrock at the vicinity of feature F-80.

Figure 3: View of feature F-73, reopened throat that was one filled with soil and rock.

Figure 4: View of feature F-75, reopened throat that was one filled with soil and rock.

Feature F-72 is a small collapse approximately two feet in diameter with exposed bedrock close to the surface and a visible open throat. The ERI-14 indicated about 1,015-foot long anomaly located on the west side of the feature F-72. ATP-29 through -32 drilled in the vicinity of the feature and anomaly encountered multiple soil-filled voids and weathered rock zones within the bedrock.

Figure 5: View of feature F-72, cover-collapse sinkhole.

Feature F-67 appeared to be a filled-in cover-collapse sinkhole in the vicinity of a NWI mapped freshwater pond.

Multiple incidents of cover collapse features with soil piping were observed throughout the site located inside the depression areas (features F-60, F-61, and F-65). Exposed bedrock was not observed with the throats of features. These features are usually connected to a drop in the water table and form with a lowering of the water table. The features appeared to be relatively small in diameter (one to three feet) and ranged in depth from one to four feet deep.

Clusters of open throats in one area was observed at features F-61 and F-65. The cluster of open throats were observed to be inside the depression area. ERI-16 results indicated two anomalies on the west side of feature F-60 and F-61. ATP-9 located at the vicinity of feature F-60 indicated two soil-filled and weathered rock zones at the depth of 16 ft and 21 ft, and two void zones within the underlying bedrock from a depth of about 15 ft to 16 ft, and 24 ft to 29 ft. ATP-10 located at the vicinity of feature F-61 indicated one soil-filled zone at the depth of 27 ft and 28 ft, and two void zones within the underlying bedrock from a depths of about 15 ft to 16 ft, and 19 ft to 20 ft.

Figure 6: View of feature F-60, soil piping on central portion of parcel.

Figure 7: View of feature F-61, soil piping on central portion of parcel.

Figure 8: View of feature F-67: Filled-in cover-collapse sinkhole in the vicinity of a NWI freshwater pond.

At feature F-55 we observed an apparent filled-in cover-collapse sinkhole.

Figure 9: View of feature F-55, area of apparent fresh disturbed soil.

Feature F-70 is located on the west side of ATP-26 and ATP-27 in the proximity of mapped wetland area by Terracon on the northern portion of the parcel. It appears that F-70 is a cover collapse feature filled with soil and rock, but no open throat was observed at the time of our site reconnaissance.

Figure 10: View of feature F-70, reopened throat that was one filled with soil and rock.

Cover Subsidence Features

Broad, cover subsidence features F-57, F-63, and F-76 were observed with open throats, and while open throats were not observed at F-54, F-58, and F-64 we did observe indications of man-placed fill which we suspect was placed to backfill areas within the sinkholes. Indications of open throats were not observed at features F-53, F-59, F-62, and F-75.

Feature F-57 is a broad cover subsidence feature that encompasses cover collapse features F-56 and F-80 is located on the northeast edge of the feature F-57 perimeter. ERI-16 results indicated an anomaly on the south side of features F-56, F-80, and center-south side of feature F-57 at depth ranging between about 25 to 50 feet below the ground surface. ATP boring ATP-4 located at south side of features F-56, F-80, and center-south side of feature F-57 indicated one 5-foot void within the underlying bedrock at depths of about 28 to 33 feet, and 1-foot weathered rock zones at depths of about 24 and 41 ft below the ground surface.

Figure 11: View of feature F-57, cover collapse feature F-80 (foreground) upgradient from F-56 (background).

Feature F-63 is approximately 225 by 330 feet and about 15 feet deep. The reopened throat appeared to have been covered in soil and gravel. ATP-23 located at about the center of feature F-63 did not encounter voids in the underlying bedrock.

Figure 12: View of feature F-63, reopened throat that was filled with soil and gravel.

Feature F-76 is in the proximity of NWI map freshwater pond. The feature appears to have been filled with soil and rock where a throat has reopened. Observations of vegetation and ground surface indicate potential estavelle, closed depression that acts as an insurgence for surface water during dry periods, and floods or acts as an ephemeral spring during times of water table elevation.

Figure 13: View of feature F-76, reopened throat that was one filled with soil and rock.

Feature F-54 is approximately 390 by 350 feet and about 30 feet deep. The filled in open throat appeared to be covered with fresh soil and gravel. The ERI-15 results indicated two anomalies on the center-north side of feature F-54 at depth ranging between about 15 to 20 feet below the ground surface. ATP boring ATP-37 located at center of feature F-54 indicated two 5-foot thick voids within the underlying bedrock at depths of about 28 to 33 feet, and two 7, and 17-foot thick void zones at depths of about 16 ft to 33 ft and 34 ft to 41 ft below the ground surface. Features F-58 and F-64 were small, gently sloped cover subsidence with an apparent fresh soil and gravel filled open throat.

Figure 14: View of feature F-54, large cover subsidence with apparent backfilled filled-in open throat. Multiple surface drainage pathways and soil piping on interior walls.

Figure 15: View of feature F-58, small, gently sloped cover subsidence with an apparent fresh soil and gravel filled open throat.

Figure 16: View of feature F-64, small, gently sloped cover subsidence with an apparent fresh soil and gravel filled open throat.

Feature F-53 is located on the southeastern portion of the parcel adjoining to feature F-54.

Figure 17: Feature F-53: Small, gentle sloped cover subsidence with no open throat observed.

Features F-59 and F-62 was identified to be on the northeastern portion of the parcel Feature F-59 was located due east of the existing billboards. ATP boring ATP-7 located at center of feature F-59 indicated one 23-foot thick voids within the underlying bedrock at depths of about 15 to 38 feet, and two 1 to 2-foot thick weathered rock zones at depths of about 41 ft to 42 ft and 46 ft to 48 ft below the ground surface.

Feature F-62 was located close to the northeast corner of the site close to the intersection of Tyree Chapel Road and old country farm road. ERI-14 results indicated an anomaly located on the north-west side of the feature F-62 at the depth about 10 ft to 28 ft below the ground surface, and ATP-11 result indicated a 1-foot think soil-filled pocket within the bedrock at the depth of 7 to 8 ft below the ground surface.

Figure 18: View of feature F-59, small, gentle sloped cover subsidence sinkhole with no open throat observed.

Figure 19: View of feature F-62, small, gentle sloped cover subsidence sinkhole with no open throat observed.

Erosion Rill Features

While not a karst features themselves, surface drainage channels of concentrated surface water flow in karst areas may development of soil-piping features and sinking streams which provide direct pathways to the subsurface. This study noted 3 continuous surface drainage channels on the Summers parcel forming erosion rills (features F-52, 66, 68,69, and 71). Some of these areas were highly vegetated. The features all have an east to west trend with one in the middle of the parcel forking to the south. Based on the review of the historical imagery database in Google Earth Pro ™ for the years between 1998 to 2017, it appears that feature F-52 is located in the footprint of a possible historic farmer pond or filled-in sinkhole with holding water. At the time of our site reconnaissance, we did not observe any evidence of the pond or surface water at vicinity of feature F-52.

Figure 20: View of feature F-52, erosion rill and surface drainage pathway on southern portion of the parcel.

Figure 21: View of feature F-66, erosion rill and surface drainage pathway on north-central of the parcel drainage leading to vegetated area. No open throats or soil piping was observed.

Figure 22: View of feature F-68, erosion Rill and surface drainage pathway on central of the parcel. No open throats or soil piping was observed.

Figure 23: View of feature F-71, erosion Rill and surface drainage pathway on central of the parcel. No open throats or soil piping was observed.

Wooded Area at Hoffman Parcel

In addition to the Summer parcel, Terracon representatives conducted a field survey in the wooded area on the southern portion of the original parcel. The area is noted as having surface drainage pathways running north – south throughout the parcel. Features F-77, F-78, and F-79 were observed in this area. The three features observed in this area are soil piping and collapse features, which are typical in areas that receive water. Open throat was observed at feature F-79.

Figure 24: View of feature F-77, cover-collapse filled in with debris refilling the collapse.

Figure 25: View of feature F-78, multiple soil piping features in one area.

Figure 26: View of feature F-79, cover-collapse feature, open throat observed.

SITE DEVELOPMENT RISK AND RECOMMENDATIONS

Site grading and tree clearing are anticipated to be minimal and the loads associated with the proposed solar development are expected to be relatively light. Karst features are not expected to be reactivated by fill or structural loading. Reactivation of karst features will be sensitive to changes in surface water drainage and concentrated water flow. The parcels have historically been used for agricultural purposes and have been stripped and grubbed. If there will not be significant tree-clearing for development and root removal is expected to be minimal, interruptions to site drainage and infiltration should be expected to be minimal. In areas where grading or tree-removal will be more significant, interruptions to drainage and resulting activation of karst features should be expected.

Based on the review of the LIDAR generated 2-foot contour map, it appears that the site is generally drains surface water externally off the site toward north and northeast side of the parcels with some closed depression locations within the parcels that drain surface water internally. As site development proceeds, it will be important to determine whether the site will be internally or externally drained. While it is possible for karst features to be used for drainage the effects of redirecting or concentrating surface water drainage will need to be considered as it relates to subsidence and sinkhole development. If karst features are considered for internal site drainage, the feature will be considered an improved sinkhole subject to regulation as a Class IV injection well requiring permitting. Development plans should consider guidance for sinkhole surface drainage analysis in the ***KGS Ordinance for the Control of Urban Development in Sinkhole Areas in the Blue Grass Karst Region, Lexington, Kentucky***. as well as regulatory permits.

GENERAL COMMENTS

The information presented herein has been based on the review of both proprietary and publicly available geologic information. It should be noted that karst is a dynamic landform and significant changes can occur over time. As indicated in this report, the bedrock and overlying soil below the site are susceptible to sinkhole development, there can be extensive areas of shallow bedrock, and shallow groundwater, all of which can pose a risk to the site development process. Risk associated with these factors can be minimized during development with proper planning, and design. Nevertheless, the client must recognize that risk of sinkhole and hydrologic-related damage to site development does exist.

Our opinions are based upon our understanding of the project, the results of our karst assessment, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction.

This report has been prepared for the application discussed and in accordance with generally accepted geologic and geophysical practices. No warranties, either expressed or implied, are made as to the professional services and recommendations presented herein. The findings presented in this report are based upon the data obtained from the geophysical surveys and from other information discussed in this report. This report does not reflect variations that may occur in areas not tested or inaccessible to the geophysical equipment, across the site, or due to the modifying effects of construction or weather.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

ATTACHMENTS

SITE LOCATION AND EXPLORATION PLANS

Contents:

Note: All attachments are one page unless noted above.

Feature ID	Latitude	Longitude	Desktop Note / Source	Field Recon Notes	ERI	ATP	Avoidance and Minimization Measures
Desktop Identified Suspect Feature - Not Confirmed by Field Reconaissance							
N/A[1]	36.67371	-86.548457	Closed depression - Historic Topographic map	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.67314	-86.546075	Closed depression - Historic Topographic map	N/A[1]	N/A[3]	ATP-13	monitor during construction
N/A[1]	36.6708	-86.548135	Closed depression - Historic Topographic map	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.67255	-86.542664	Closed depression - Historic Topographic map	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.66727	-86.543431	Closed depression - LiDAR contours	N/A[1]	ERI - 15	N/A[4]	monitor during construction
N/A[1]	36.66408	-86.547143	Closed depression - LiDAR contours	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.66369	-86.546606	Closed depression - LiDAR contours	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.66646	-86.548763	Closed depression - LiDAR contours	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.66289	-86.541363	Drainage channel/erosion rill - LiDAR contours / aerial imagery	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.66269	-86.542736	Drainage channel/erosion rill - LiDAR contours / aerial imagery	N/A[1]	N/A[3]	N/A[4]	monitor during construction
N/A[1]	36.66524	-86.546765	Closed depression - LiDAR contours	N/A[1]	N/A[3]	N/A[4]	monitor during construction
Cover Collapse - Open Throat							
F-56	36.67312	-86.543582	NWI mapped location of freshwater pond	Cover collapse sinkhole with open throat. Irregular shaped, approximately 20ft by 40 ft and approximately 15 to 20 ft deep. Multiple open throats and exposed bedrock were observed. Sinkhole appeared to have been partially excavated for agricultural activities.	ERI - 16	N/A[4]	avoid and buffer 50-feet, install SEC during construction
F-80	36.67293	-86.543908	N/A[2]	Small, subordinate, cover collapse sinkhole, approximately 3 feet deep within cover subsidence feature F-57.	ERI - 16	ATP - 5	avoid and buffer 50-feet, install SEC during construction
F-72	36.67121	-86.547865	N/A[2]	Small cover collapse sinkhole with open throat	N/A[3]	N/A[4]	avoid and buffer 50-feet, install SEC during construction
F-73	36.67186	-86.549187	Closed depression - LiDAR contours / NWI mapped location of freshwater pond	Cover collapse sinkhole with open throat. Appears to have been previously filled with rock and soil; has since re-opened.	N/A[3]	N/A[4]	avoid and buffer 50-feet, install SEC during construction
F-74	36.67008	-86.549103	N/A[2]	Cover collapse sinkhole with open throat. Appears to have been previously filled with rock and soil; has since re-opened.	ERI - 14	ATP - 35	avoid and buffer 50-feet, install SEC during construction
F-60	36.67511	-86.545088	N/A[2]	Soil piping features within the closed depression.	N/A[3]	ATP - 9	avoid and buffer 50-feet, install SEC during construction
F-61	36.67572	-86.545346	Closed depression - Historic Topographic map	Soil piping features within the closed depression. Suspect depression from historic topographic maps may indicate that the area was previously filled-in for agricultural activities.	ERI - 16	ATP - 10	avoid and buffer 50-feet, install SEC during construction
F-65	36.67354	-86.545391	N/A[2]	Soil piping features within the closed depression.	N/A[3]	ATP - 12	investigate further during design (ERI, drilling, test pits) and construction, buffer
F-75	36.66764	-86.549794	N/A[2]	Cover collapse sinkhole with open throat. Appears to have been previously filled with rock and soil; has since re-opened.	N/A[3]	N/A[4]	avoid and buffer 50-feet, install SEC during construction
Cover Collapse - No Open Throat (man-placed fill)							
F-55	36.66914	-86.540643	N/A[2]	Suspected cover collapse feature. However, area was apparently filled-in for agricultural activities.	N/A[3]	N/A[4]	avoid and buffer 50-feet, install SEC during construction
F-67	36.67059	-86.543613	Closed depression - LiDAR contours / NWI mapped location of freshwater pond	Suspected cover collapse feature. However, area was apparently filled-in for agricultural activities.	N/A[3]	N/A[4]	avoid and buffer 50-feet, install SEC during construction
F-70	36.67404	-86.547387	Closed depression - LiDAR contours / NWI mapped location of freshwater pond	Cover collapse sinkhole with open throat. Appears to have been previously filled with rock and soil; has since re-opened.	N/A[3]	N/A[4]	avoid and buffer 50-feet, install SEC during construction
Cover Subsidence - Open Throat							
F-57	36.67308	-86.543431	Closed depression - Historic Topographic map	Broad cover subsidence sinkhole subordinate cover collapse sinkholes (F-56 and F-80) .	ERI - 16	ATP - 4	avoid and buffer 50-feet around throat and subordinate cover collapse sinkholes F-56
F-63	36.67522	-86.546402	N/A[2]	Broad cover subsidence sinkhole with open throat.	ERI - 14	ATP - 23	avoid and buffer 50-feet throat only
F-76	36.6639	-86.549535	Suspect pond - LiDAR contours	Cover subsidence sinkhole with open throat. Observations of vegetation and ground surface indicate potential estavelle, closed depression that acts as an insurgence for surface water during dry periods, and floods or acts as an ephemeral spring during times of water table elevation.	N/A[3]	N/A[4]	avoid and buffer 50-feet
Cover Subsidence - No Open Throat (man-placed fill)							
F-54	36.66813	-86.543329	Closed depression - Historic Topographic map	Broad cover subsidence sinkhole. Area within the feature had been apparently filled-in for agricultural activities. May indicate filled in subordinate collapse or throats within feature.	ERI - 15	ATP - 21 & 37	avoid and buffer 50-feet, investigate further during design (ERI, drilling, test pits) and monitor during construction for reactivation
F-58	36.67379	-86.544055	N/A[2]	Broad cover subsidence sinkhole. Area within the feature had been apparently filled-in for agricultural activities. May indicate filled in subordinate collapse or throats within feature.	ERI - 16	ATP - 6	investigate further during design (ERI, drilling, test pits) and monitor during construction for reactivation
F-64	36.67457	-86.546161	Closed depression - Historic Topographic map	Broad cover subsidence sinkhole. Area within the feature had been apparently filled-in for agricultural activities. May indicate filled in subordinate collapse or throats within feature.	ERI - 14	ATP - 24 & 25	investigate further during design (ERI, drilling, test pits) and monitor during construction for reactivation
Cover Subsidence - No Open Throat							
F-53	36.66773	-86.542513	Closed depression - LiDAR contours	Broad cover subsidence sinkhole, gently sloping, with no open throat.	N/A[3]	N/A[4]	monitor during construction for reactivation
F-59	36.67434	-86.544134	N/A[2]	Broad cover subsidence sinkhole, gently sloping, with no open throat.	ERI - 16	ATP - 7	monitor during construction for reactivation
F-62	36.67535	-86.545763	N/A[2]	Broad cover subsidence sinkhole, gently sloping, with no open throat.	ERI - 14	ATP - 11	monitor during construction for reactivation
Surface Drainage Channel							
F-52	36.66597	-86.542082	Closed depression - LiDAR contours	Surface drainage channel with incised erosion, potential blind swale	N/A[3]	N/A[4]	install channel SEC during construction
F-66	36.67212	-86.544935	N/A[2]	Surface drainage channel with incised erosion, potential blind swale	ERI - 15	ATP - 15	install channel SEC during construction
F-68	36.6684	-86.544682	N/A[2]	Surface drainage channel with incised erosion, potential blind swale	N/A[3]	N/A[4]	install channel SEC during construction
F-69	36.66941	-86.544909	Drainage channel/erosion rill - LiDAR contours / aerial imagery	Surface drainage channel with incised erosion, potential blind swale	N/A[3]	N/A[4]	install channel SEC during construction
F-71	36.66911	-86.545455	N/A[2]	Surface drainage channel with incised erosion, potential blind swale	N/A[3]	N/A[4]	install channel SEC during construction
Hoffman Parcel - Wooded Area							
F-77	36.65695	-86.533073	N/A[2]	Cover collapse sinkhole with open throat	N/A[3]	N/A[4]	avoid and buffer 100-feet
F-78	36.65686	-86.533164	N/A[2]	Cover collapse sinkhole with open throat	N/A[3]	N/A[4]	avoid and buffer 50-feet
F-79	36.65759	-86.532874	N/A[2]	Cover collapse sinkhole with open throat	N/A[3]	N/A[4]	avoid and buffer 100-feet

1. Suspect feature identified from desktop review was not confirmed during field reconaissance.
2. Feature not identified during desktop review.
3. Geophysical ERI exploration not performed within vicinity of feature.
4. Drilling ATP exploration not performed within vicinity of feature.

SITE LOCATION PLAN

Hoffman Solar Projects – Summer Parcel ■ Franklin, Simpson County, Kentucky
November 30, 2020 ■ Terracon Project No. 57195114

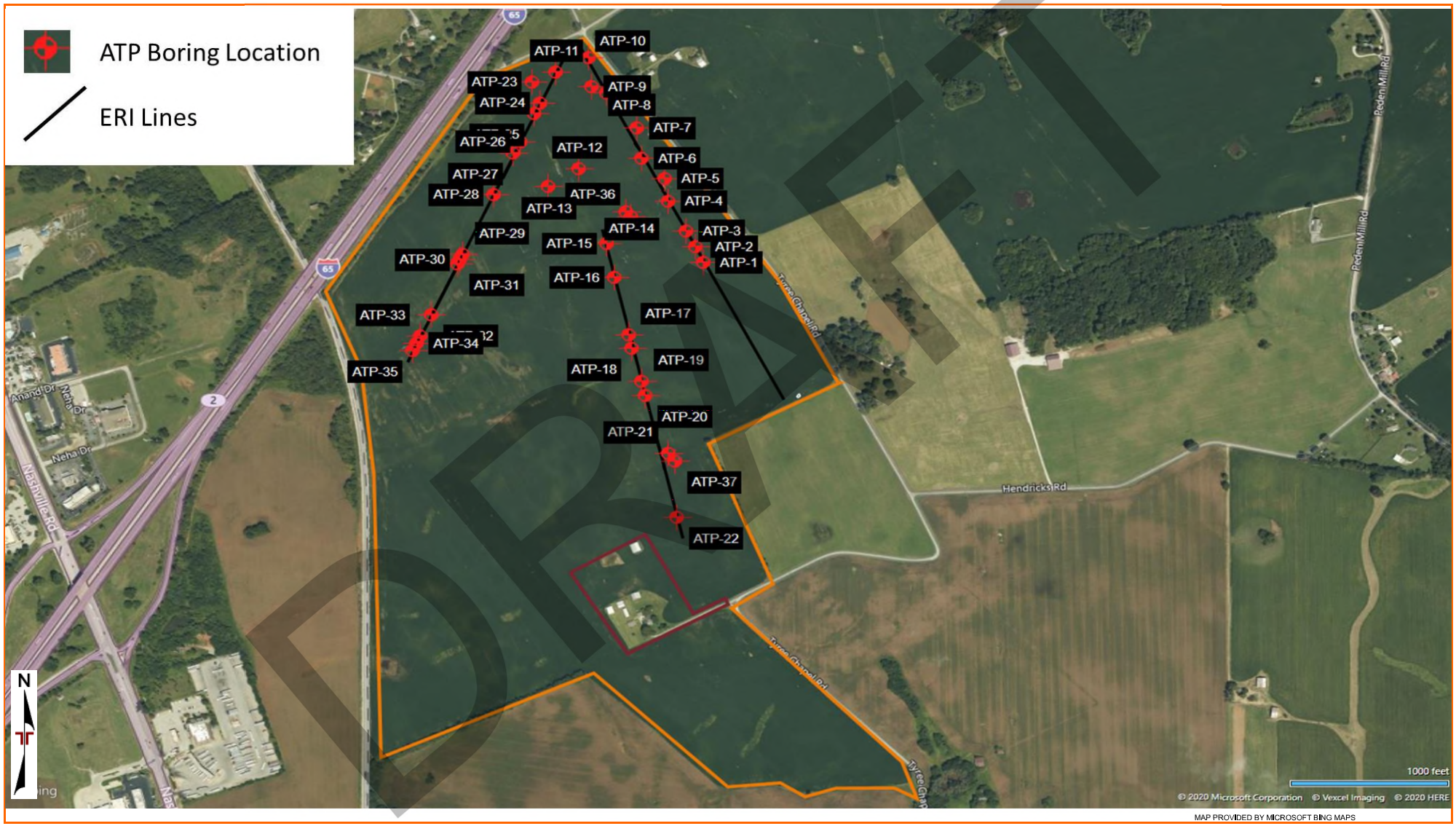
Terracon GeoReport

DRAFT

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN – GEOPHYSICAL ELECTRICAL RESISTIVITY IMAGING (ERI) & AIR-TRACK PROBE (ATP) DRILLING LOCATIONS
Hoffman Solar Projects – Summer Parcel ■ Franklin, Simpson County, Kentucky
November 30, 2020 ■ Terracon Project No. 57195114



KARST FEATURE INVENTORY MAP

Hoffman Solar Projects – Summer Parcel ■ Franklin, Simpson County, Kentucky

November 30, 2020 ■ Terracon Project No. 57195114

KARST FEATURE INVENTORY MAP

Hoffman Solar Projects – Summer Parcel ■ Franklin, Simpson County, Kentucky

November 30, 2020 ■ Terracon Project No. 57195114

EXPLORATION RESULTS

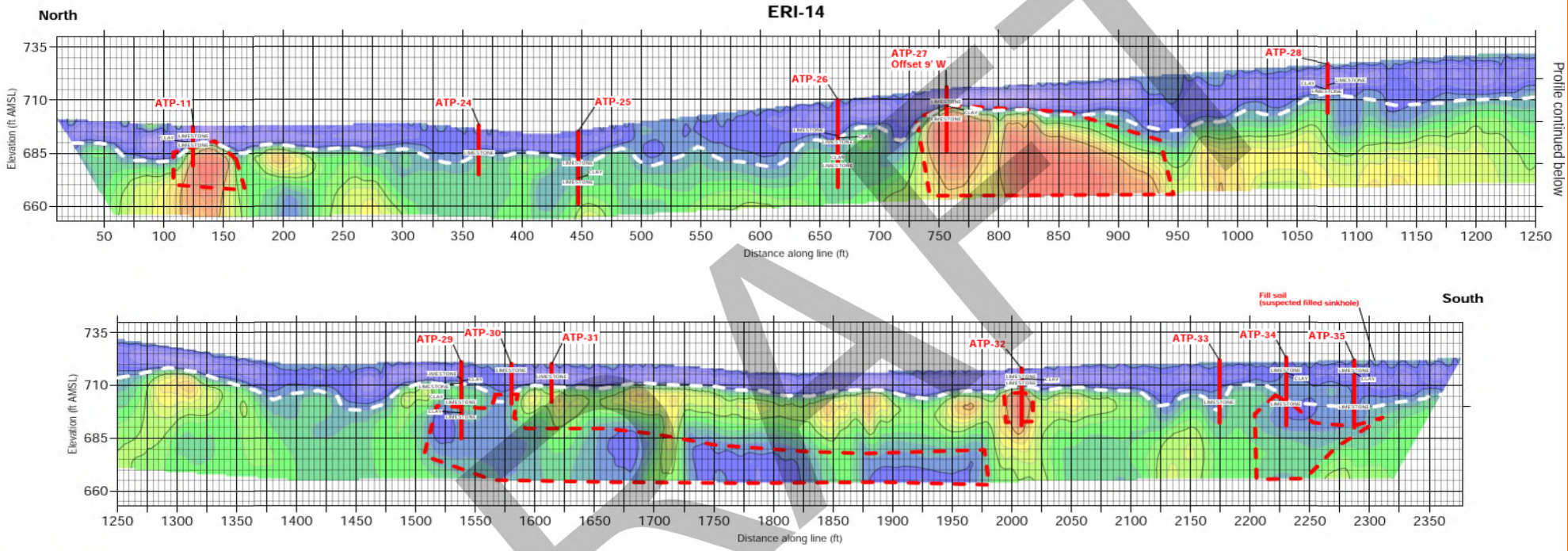
Contents:

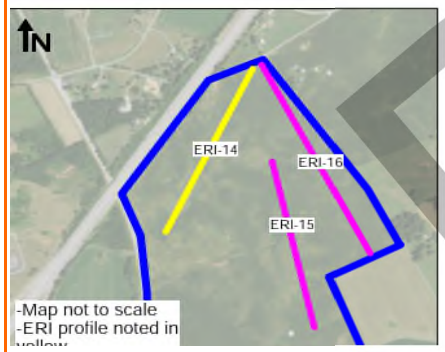
Geophysical Electrical Resistivity Imaging Profiles (3)
ATP Boring Logs

Note: All attachments are one page unless noted above.

GEOPHYSICAL ELECTRICAL RESISTIVITY IMAGING PROFILES
Hoffman Solar Projects – Summer Parcel ■ Franklin, Simpson County, Kentucky
November 30, 2020 ■ Terracon Project No. 57195114

Terracon GeoReport





Resistivity (10^n Ohm-meters)

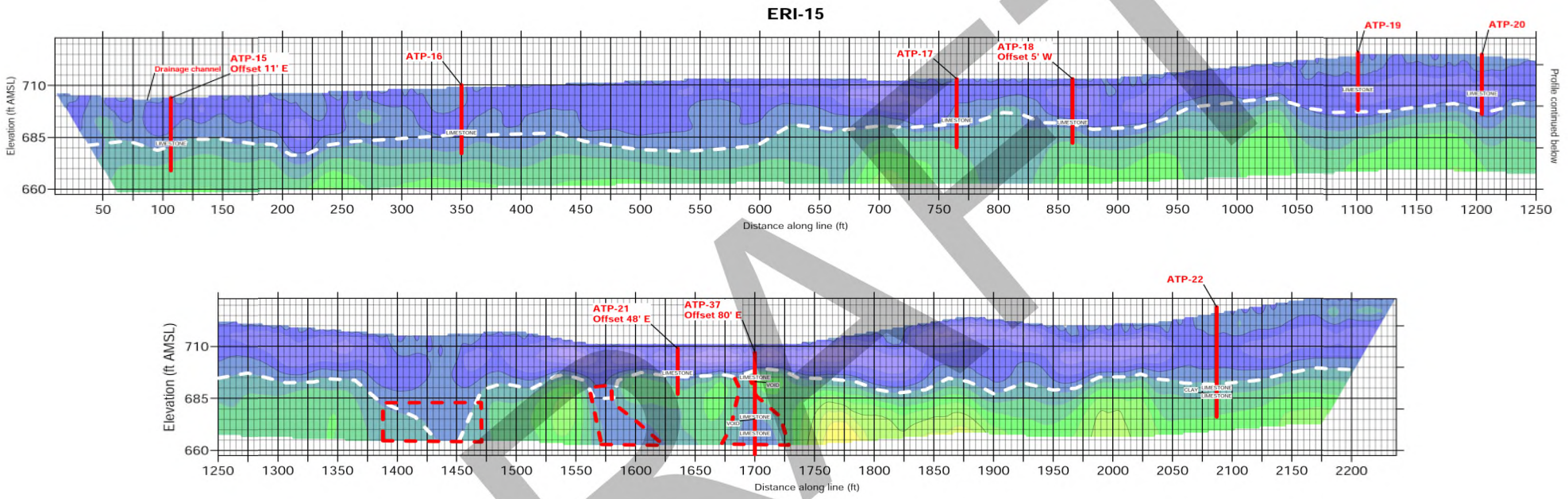
1.2 1.6 2 2.4 2.8 3.2 3.6 4 4.4 4.8 5.2 n

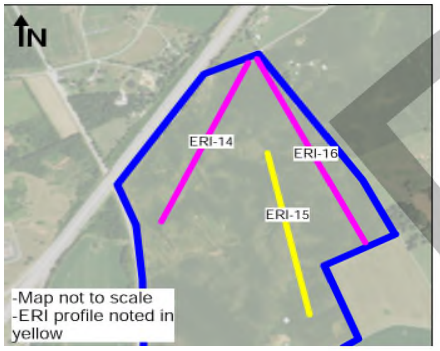
Legend	Notes	ERI Profile 14 - Summers Parcel
Estimated top of weathered zone	1. Elevation information estimated using LIDAR terrain data from KyFromAbove.gov.	Project: Hoffman Solar Facility
High potential for karst development (based on geophysical data)	2. Profile Scales: Horizontal 1" = 80' Vertical 1" = 40'	Client: Horus Renewables Corp.
	3. AMSL = Above Mean Sea Level	Location: Franklin, KY
	4. Subsurface soil/rock information from Nov. 2020 Terracon ATP investigation	Project No.: 57195114
		Date: November 24, 2020

Terracon

GEOPHYSICAL ELECTRICAL RESISTIVITY IMAGING PROFILES
Hoffman Solar Projects – Summer Parcel ■ Franklin, Simpson County, Kentucky
November 30, 2020 ■ Terracon Project No. 57195114

Terracon GeoReport





Resistivity (10^n Ohm-meters)

1.2 1.6 2 2.4 2.8 3.2 3.6 4 4.4 4.8 5.2 n

Legend	Notes	ERI Profile 14 - Summers Parcel
Estimated top of weathered zone High potential for karst development (based on geophysical data)	1. Elevation information estimated using LIDAR terrain data from KyFromAbove.gov. 2. Profile Scales: Horizontal 1" = 80' Vertical 1" = 40' 3. AMSL = Above Mean Sea Level 4. Subsurface soil/rock information from Nov. 2020 Terracon ATP investigation	Project: Hoffman Solar Facility Client: Horus Renewables Corp. Location: Franklin, KY Project No.: 57195114 Date: November 24, 2020

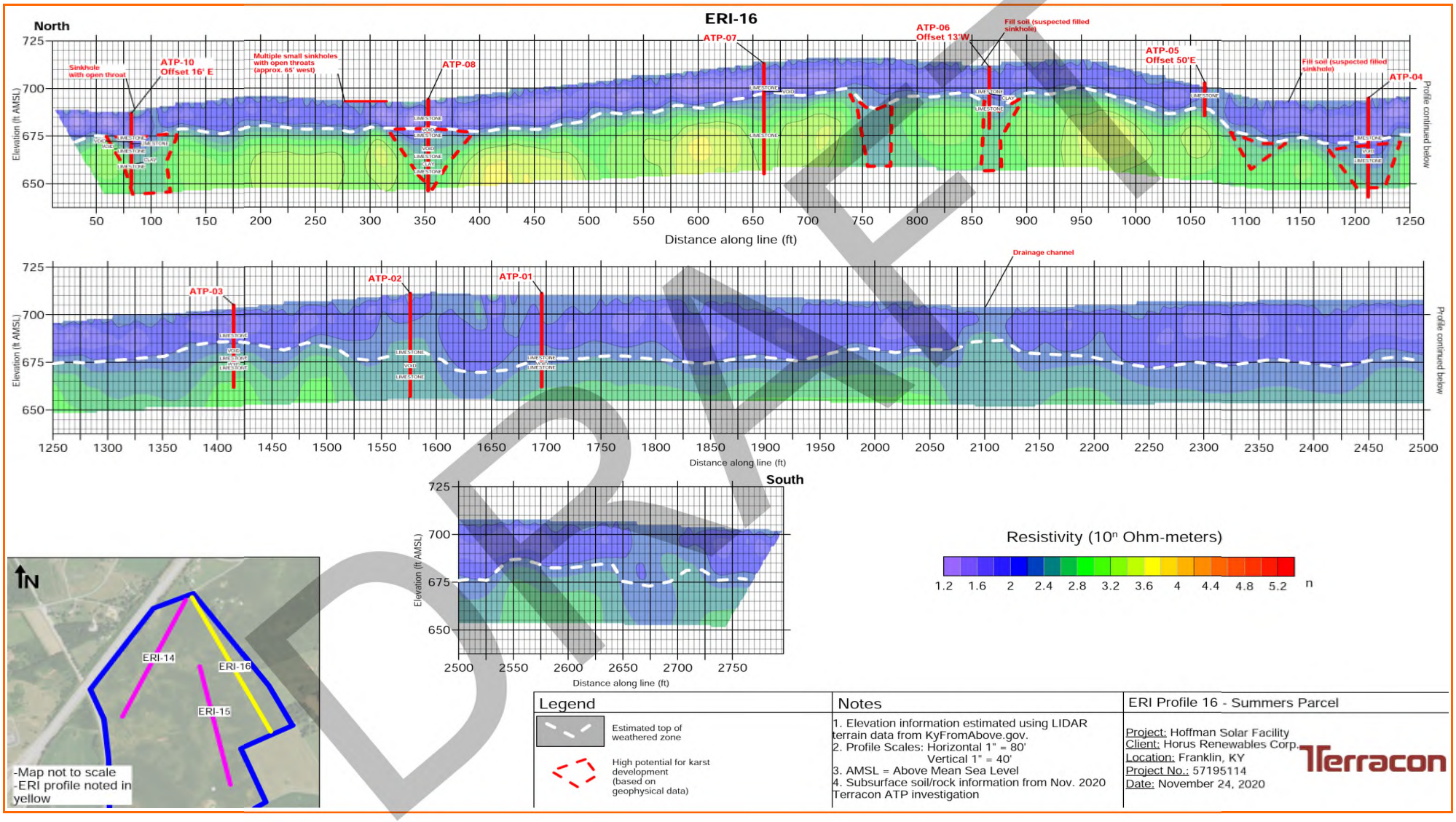
Terracon

GEOPHYSICAL ELECTRICAL RESISTIVITY IMAGING PROFILES

Hoffman Solar Projects – Summer Parcel ■ Franklin, Simpson County, Kentucky

November 30, 2020 ■ Terracon Project No. 57195114

Terracon GeoReport



BORING LOG NO. ATP-01

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6717° Longitude: -86.5427°

Approximate Surface Elev.: 711 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	LEAN CLAY/FAT CLAY (CL/CH)				
	28.0	683+/-			
	LIMESTONE				
	31.0	680+/-			
	VOID				
	33.0	678+/-			
	LIMESTONE				
	43.0	668+/-			
	Boring Terminated at 43 Feet				

10
20
30
40

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-02

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.672° Longitude: -86.5429°

Approximate Surface Elev.: 711 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	LEAN CLAY/FAT CLAY (CL/CH)				
	25.0	686+/-			
	LIMESTONE				
	32.0	679+/-			
	VOID				
	38.0	673+/-			
	LIMESTONE				
	48.0	663+/-			
	Boring Terminated at 48 Feet				

10 20 30 40

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-03

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6723° Longitude: -86.5431°

Approximate Surface Elev.: 705 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	LEAN CLAY/FAT CLAY (CL/CH)				
	16.0	689+/-			
	LIMESTONE				
	22.0	683+/-			
	23.0 **WEATHERED LIMESTONE**	682+/-			
	24.0 **LIMESTONE**	681+/-			
	VOID				
	28.0	677+/-			
	LIMESTONE				
	31.0	674+/-			
	VOID				
	33.0	672+/-			
	LIMESTONE				
	43.0	662+/-			
	Boring Terminated at 43 Feet				

10 20 30 40

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-04

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6729° Longitude: -86.5434°

Approximate Surface Elev.: 696 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	LEAN CLAY/FAT CLAY (CL/CH)				
	21.0	675+/-			
	LIMESTONE				
	24.0	672+/-			
	25.0 **WEATHERED LIMESTONE**	671+/-			
	LIMESTONE				
	28.0	668+/-			
	VOID				
	33.0	663+/-			
	LIMESTONE				
	41.0	655+/-			
	42.0 **WEATHERED LIMESTONE**	654+/-			
	LIMESTONE				
	52.0	644+/-			
	Boring Terminated at 52 Feet				

10 20 30 40 50

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-05

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

GRAPHIC LOG	DEPTH	LOCATION See Exploration Plan Latitude: 36.6734° Longitude: -86.5435° Approximate Surface Elev.: 706 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
		LEAN CLAY/FAT CLAY (CL/CH)			
	7.0	699+/-			
		LIMESTONE	10		
	17.0	689+/-			
		Boring Terminated at 17 Feet			

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-06

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6738° Longitude: -86.544°

Approximate Surface Elev.: 712 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	
		LEAN CLAY/FAT CLAY (CL/CH)
13.0	699+/-	
14.0	698+/-	**LIMESTONE**
		LEAN CLAY/FAT CLAY (CL/CH)
22.0	690+/-	
		LIMESTONE
32.0	680+/-	
		Boring Terminated at 32 Feet

GRAPHIC LOG | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE

10 20 30

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-07

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6743° Longitude: -86.5441°

Approximate Surface Elev.: 707 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	
		LEAN CLAY/FAT CLAY (CL/CH)
13.0	694+/-	
15.0	692+/-	**LIMESTONE**
		VOID
38.0	669+/-	
41.0	666+/-	**LIMESTONE**
42.0	665+/-	**WEATHERED LIMESTONE**
		LIMESTONE
46.0	661+/-	
48.0	659+/-	**WEATHERED LIMESTONE**
		LIMESTONE
58.0	649+/-	
		Boring Terminated at 58 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

GRAPHIC LOG | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE

10 20 30 40 50

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-08

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.675° Longitude: -86.5448°

Approximate Surface Elev.: 694 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	LEAN CLAY/FAT CLAY (CL/CH)				
	10.0	684+/-	10		
	LIMESTONE				
	16.0	678+/-			
	VOID				
	19.0	675+/-			
	WEATHERED LIMESTONE		20		
	26.0	668+/-			
	VOID				
	30.0	664+/-	30		
	LIMESTONE				
	34.0	660+/-			
	LEAN CLAY/FAT CLAY (CL/CH)				
	38.0	656+/-			
	LIMESTONE		40		
	48.0	646+/-			
	Boring Terminated at 48 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-09

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6751° Longitude: -86.5451°

Approximate Surface Elev.: 690 (Ft.) +/-

DEPTH		ELEVATION (Ft.)
	LEAN CLAY/FAT CLAY (CL/CH)	
13.0		677+/-
15.0	**LIMESTONE**	675+/-
16.0	**VOID**	674+/-
18.0	**LEAN CLAY/FAT CLAY (CL/CH)**	672+/-
	LIMESTONE	
21.0		669+/-
22.0	**WEATHERED LIMESTONE**	668+/-
24.0	**LIMESTONE**	666+/-
	VOID	
29.0		661+/-
	LIMESTONE	
39.0		651+/-
	Boring Terminated at 39 Feet	

GRAPHIC LOG | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-10

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6757° Longitude: -86.5452°

Approximate Surface Elev.: 689 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	
		LEAN CLAY/FAT CLAY (CL/CH)
13.0	676+/-	
15.0	674+/-	**LIMESTONE**
16.0	673+/-	**VOID**
		LIMESTONE
19.0	670+/-	
20.0	669+/-	**VOID**
		LIMESTONE
27.0	662+/-	
28.0	661+/-	**LEAN CLAY/FAT CLAY (CL/CH)**
		LIMESTONE
38.0	651+/-	
		Boring Terminated at 38 Feet

GRAPHIC LOG | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114

BORING LOG NO. ATP-11

PROJECT: Hoffman Solar Facility

CLIENT: Horus Renewables Corp
West Sacramento, CA

SITE: Tyree Chapel Road
Franklin, KY

LOCATION See Exploration Plan

Latitude: 36.6754° Longitude: -86.5459°

Approximate Surface Elev.: 697 (Ft.) +/-

GRAPHIC LOG	DEPTH		ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
		LEAN CLAY/FAT CLAY (CL/CH)				
	4.0		693+/-			
		LIMESTONE				
	7.0		690+/-			
	8.0	**LEAN CLAY/FAT CLAY (CL/CH)**	689+/-			
		LIMESTONE		10		
	18.0		679+/-			
		Boring Terminated at 18 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Rotary drilling with compressed air.

Abandonment Method:

Elevations measured in the field using Leica Zeno 20 GIS unit.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater levels were not observed due to drillign method.

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 11-10-2020 | Boring Completed: 11-10-2020

Drill Rig: T-450 | Driller: Johnnie Farmer

Project No.: 57195114