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February 25, 2022

Via Electronic Filing

Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: South Branch Solar, LLC, Case No. 21-669-EL-BGN

Dear Ms. Troupe:

On July 22, 2021, South Branch Solar, LLC (“South Branch”) filed an application for authority to construct an up to a 205 megawatt (“MW”) solar-powered electric generating facility in Washington Township, Hancock County, Ohio. On September 20, 2021, the Ohio Power Siting Board Staff requested South Branch to provide specific information as part of its Engineering Constructability Report.

As requested, attached for filing in the above-referenced case is a copy of the Constructability Report and Unanticipated Discovery Plan.

Please contact me if you have any questions.

Sincerely,

Dylan F. Borchers

Attachment



south branch solar

Engineering Constructability Report Pertaining to Potential Oil and Gas Wells

South Branch Solar
Hancock County, Ohio

February 2022

Table of Contents

1. Introduction	1
2. Mapping and Agency Consultation	2
3. Field Efforts to Date	4
4. Next Steps	6
5. Planned Approach.....	7
6. Conclusion.....	8

Attachments

- Attachment A – UAVEX Anomaly Report
- Attachment B – Summary of ODNR’s Risk Classification System
- Attachment C – Gibson Field Report
- Attachment D – Updated OPSB Figures
- Attachment E – Representative Well Plugging Estimate
- Attachment F – Unanticipated Discoveries Plan

1. Introduction

Correspondence from the Ohio Power Siting Board dated September 20, 2021, requested specific information as a part of an Engineering Constructability Report. The following narrative responds to this request for the South Branch Solar project (the Project).

Technical experts involved in the preparation of this information include: Haley & Aldrich, Inc.; UAV Exploration (UAVEX); Boes Quality Drainage; Westwood; Kleinfelder; and R.A. Gibson & Associates, Inc. Technical experts at Leeward Renewable Energy also contributed.

2. Mapping and Agency Consultation

Oil/gas well records are maintained by the Ohio Department of Natural Resources (ODNR) and may reflect the location of planned or actual wells. Some of the planned wells may not have been drilled, even if they were planned at one time; even those that may have been drilled may not have produced significant volumes of petroleum. ODNR maps well locations and has an established “orphan” well program to address potential concerns that could arise from aging or lack of integrity of well structures. Of greatest concern would be the potential for a surface release of oils, particularly if the release could travel downstream and cause more widespread cleanup needs. For this reason, ODNR’s orphan well program uses state revenues to plug idle and orphaned wells where such issues are identified. Care has been taken by the Project to understand where such potential structures may be located so appropriate measures can be taken, even though installation of a solar energy facility involves limited ground disturbance, and thus, potential for damage or interference with historic wells.

The Project area is located in Sections 17, 18, 19, and 20 of Washington Township, Hancock County, Ohio. A review of the ODNR well spot map indicates this area lies roughly 2.5 miles east of the easternmost edge of the densely drilled area in neighboring Cass Township. The lack of well spots in the Project area indicates the few wells drilled around the Project area were likely “wildcat” exploration wells that provided poor oil and gas production results and failed to justify additional drilling.

Hydrogeological conditions within the Project area have been examined through geotechnical investigations, stormwater analysis, and observations during excavation of the three anomaly areas. In soil borings completed at the site in May 2021, approximately 6 inches to 3 feet of topsoil was observed, consisting of silt with various amounts of sand-and-clay and gravel. Subsurface conditions were observed to consist of medium-stiff to hard lean clay with various amounts of sand to a maximum observed depth of 20 feet. Groundwater was not observed during the subsurface exploration. Seepage was encountered at a depth of 14 feet below ground surface (bgs), although seasonal fluctuation would be expected to occur. Underlying bedrock geology is reportedly Lockport Dolomite from the Upper and Lower Silurian age overlain by more than 20 feet of glacial drift and/or alluvium. No karst features are mapped by ODNR in the area, nor were karst features observed during the geotechnical investigations. Drain tiles extend throughout the property.

In the original Application, Figure 08-5 illustrated the five oil and gas well locations mapped by ODNR in proximity to the Project. Three of these wells were listed as “inactive,” and the remaining two were listed with a status of “not drilled.” When the Project area was modified, two of the well locations previously identified were within a parcel no longer a part of the Project (one “inactive” and one “not drilled”). Therefore, three ODNR-mapped wells remain in or near the Project:

- No. 70930000 – shown within a treed area in the northern portion of the Project Area, and indicated by ODNR as “inactive”
- No. 71490000 – shown in the fields in the southern portion of the Project Area, and indicated by ODNR as “not drilled”
- No. 671320000 – shown as just outside the small parcel extending to the west, and indicated by ODNR as “inactive”

South Branch reached out to the ODNR, consulting with Eugene Chini and Rob Lowe of the ODNR’s orphan well program. These conversations included requesting additional mapping information for

confirmation that the best available mapped information had been obtained and reviewing appropriate next steps for completing due diligence on potential well locations. ODNR reviewed the Ohio Fuel Gas Map for Washington Township and recommended that South Branch reach out to the Ohio Geological Survey. This additional outreach resulted in review of the 1914 Ohio Oil Company mapping. Through this additional mapping review, no additional potential well locations were identified.

During these conversations, ODNR indicated that conducting a magnetometer survey using drones would be the most appropriate means to confirm whether wells are likely present. Mr. Chini indicated that this is the technology used by ODNR and that UAVEX tends to implement those surveys.

3. Field Efforts to Date

South Branch contracted with UAVEX to conduct an unmanned aerial vehicle (UAV)-borne magnetic survey to assess the potential for previously unidentified oil and gas wells to occur within the Project Area. Three magnetic anomalies were detected and selected for further diligence (as shown on the map provided in Attachment A). As shown, the anomalies are not in the specific locations of the ODNR-mapped well locations. This is consistent with ODNR feedback, which noted that mapping accuracy can be variable.

In each of the locations identified, UAVEX conducted ground-truthing. This included the use of handheld devices to more precisely locate the anomaly and determine whether the magnetic field is monopolar (well-like) or dipolar (not well-like). Minimally invasive probing was completed, where possible. Of the three identified anomalies within the Project area, the results were as follows:

- GL-0: Strong well-like detection from both aerial and ground methods.
- GL1: Strong well-like detection from both aerial and ground methods. Excavation was attempted; however, the casing likely lies greater than 20 inches bgs.
- GL-Amb-0: Strong well-like ground detection. Excavation was undertaken to a depth of 26 inches until the water table was reached. Unknown vertical steel pipe encountered with the shovel, but not visible. Water slowly upwelled from the pipe. No smell of petroleum. It is unknown whether this is a water well, drainage pipe, etc.

UAVEX classified all three locations as Class 4 (Lowest Risk) in accordance with the ODNR's "Process for Assigning Risk to Orphan Wells in Ohio" document (provided as Attachment B). None of the target locations appeared to be leaking contaminants, and no surface contamination was noted. The UAVEX report is provided as Attachment A.

Throughout this effort, South Branch has been in contact with the property owners, tenant farmer, and the Project's drain tile consultant (Boes Quality Drainage) to determine their knowledge of infrastructure, including potential oil and gas wells. No further specific knowledge was obtained.

To further investigate the potential for oil and gas wells in these locations, South Branch contracted with R.A. Gibson & Associates, Inc. (Gibson) to excavate and visually inspect the subsurface conditions for indications of historical oil and gas activity. Gibson is listed on the roster of qualified experts by ODNR, and frequently is engaged to plug wells on its behalf. Gibson has substantial experience with identification and assessment of oil and gas wells, understanding likely oil reserves, and determining the need for actions if warranted. Although preliminary investigations at GL-Amb-0 appeared to indicate this location did not reflect an oil and gas well, all three locations were investigated by Gibson for further confirmation and to determine information about conditions on February 8, 2022 (as detailed in Attachment C).

Of the anomalies investigated, none were conclusively determined to be oil and gas wells, and only one (GL-0) was conservatively classified in that manner. The other locations excavated identified either a former water well (as verified by observations in addition to the landowner's report that he had abandoned a livestock water well in that approximate location) or various metallic debris.

GL-0 could not definitively be evaluated during the field efforts. The casing and tubing sizes observed were more representative of water wells, and no oil or gas leakage was observed. However, the well casing in this location was bent over at a 90-degree angle (i.e., horizontal) at a depth of 5 feet bgs. For this reason, access to the well was blocked and could not be further explored.

4. Next Steps

An ODNR representative, Ben Harpster, Northwest Region Manager of the ODNR Orphan Well Program, observed conditions at GL-0 in the field on February 8, 2022. Evaluation is underway at ODNR to determine whether a new American Petroleum Institute (API) number should be assigned to this location or if this location should be classified as one of the previously mapped wells.

Based on discussions with Mr. Harpster, ODNR intends to utilize its unit price contractor to further investigate the properties of this well, due to the likelihood that this was a water well and not an oil and gas well. Mr. Harpster noted that this portion of Hancock County appeared generally to be passed over for oil and gas well drilling, but that the need for water for such historic drilling oftentimes reflected the presence of water wells.

The unit price contractor will cut the GL-0 well casing below the bend and evaluate the characteristics of the remaining casing. This evaluation will result in a formal determination as to whether the location reflects a water well or an oil and gas well. Mr. Harpster indicated that, even if it is determined to be an oil and gas well, he would expect it to be classified as a low priority orphan well.

Mr. Harpster indicated that this field effort is expected to be completed relatively quickly, with results possibly available in early March 2022. Expediting the field effort to avoid additional ground thaw will be a priority, if possible.

If the location is determined to be a water well, the orphan well program would remove the well location from its records. If it is determined to be an oil and gas well, plans for future plugging by ODNR would be made, although it would not be a high priority due to the low risk anticipated. Until a definitive determination is made, South Branch intends to treat the location as if it were an oil and gas well.

5. Planned Approach

South Branch will retain an open area surrounding the GL-0 well location of 50 feet in all directions to accommodate future plugging (presuming it is an oil and gas well), as shown in the Updated Figure 03-3 provided in Attachment D. This results in the removal of two panel strings. As also shown in Updated Figure 03-3, the existing access planned for the Project will accommodate access to this location by well plugging equipment. During construction, the location of the well will be marked to prevent inadvertent encroachment. This approach will be more protective of this well location than current agricultural practices, which have not avoided work in this area.

Under the ODNR program, appropriate plugging will occur by ODNR at a time appropriate for a low risk well and in coordination with South Branch. Until conditions warrant, the Project's layout adjustment will protect the well location.

As requested, revised versions of Figures 03-3 (Project Site Layout Map) and 04-2 (Project Constraints Map) are provided as Attachment D (figure numbers have been corrected to reflect the requested map name for this Project). These figures reflect accommodation of a 50-foot buffer around the location where the GL-0 historic well (presumed to be a potential oil and gas well) is present, and a 10-foot buffer around the location of the GL-1 water well, which will be plugged. Review by Gibson has confirmed that adequate access and area for future well plugging will be accommodated by this change.

Oil and gas well plugging costs could vary greatly depending upon many factors, including whether extensive materials exist that would need to be cleared out of the well prior to plugging. It is envisioned that, were a well to be plugged, it would be implemented and funded under the ODNR orphan well program, which allows for and reflects a range of contingencies. A permit to plug would be obtained from the Ohio Division of Oil & Gas Resources prior to the plugging effort, with a plugging completion report filed once the task is done. Costs can range from \$30,000 to well over \$100,000; at this site, costs are estimated to be no more than \$50,000 per site. A representative estimate for well plugging is provided as Attachment E.

6. Conclusion

Based upon the limited resource characteristics of the area, as reflected in the extremely limited historic oil and gas well activity evidenced in ODNR mapping and as further limited through field evaluation, risk to public health or the environment in association with oil and gas wells is extremely unlikely. The one remaining potential oil and gas well identified on the site continues to be reasonably considered to meet the ODNR Class 4 criteria as a “Low Risk” well. Plans that meet ODNR recommendations have been developed for both the contingency of whether only two water wells need to be addressed at the site, or if one water well and one oil and gas well is present.

It is not expected that other historic orphan wells exist within the property. In addition to the lack of resource potential and mapped well presence, the aerial magnetometer survey would have detected any such features that would have a metal casing within 60 feet of the ground surface. Any well material at lower depths would be covered by a substantial layer of soil that would essentially act as a cap. Trenches for collection lines at the site (the only underground utility anticipated) are not expected to exceed 4 feet in depth, while the arrays will be supported by piles. Other components are anticipated to be supported by slabs-on-grade, although additional pile support could be necessary for the substation and switchyard. Pile depth is anticipated to be generally between 7 and 10 feet. Therefore, subsurface disturbance will be limited, and local groundwater conditions would unlikely be impacted. However, an Unanticipated Discoveries Plan will be implemented as a safeguard against such additional resources being encountered.

The Unanticipated Discoveries Plan has been prepared (provided as Attachment F) that outlines planned measures to be taken during construction in the event a well feature is encountered. The Unanticipated Discoveries Plan, as requested by OPSB staff, also reflects measures that will be taken should materials be discovered when working within 300 feet of the property within which the off-site historic landfill was located.

**Attachment A –
Summary of ODNR's Risk Classification System**

**Attachment B –
UAVEX Anomaly Report**

**Attachment C –
Gibson Field Report**

**Attachment D –
Updated OPSB Figures**

**Attachment E –
Representative Well Plugging Estimate**

**Attachment F –
Unanticipated Discoveries Plan**

**Attachment A –
UAVEX Anomaly Report**



South Branch Solar
Orphaned Well Survey
Final Report

December 2021

TABLE OF CONTENTS

Introduction	3
Flight operations	3
Data Processing and Interpretation	4
Ground Truthing	4
Anomaly Categories	5
Project Magnetic Map	6
Summary	7

INTRODUCTION

This report describes a Legacy/ Orphaned Well Survey carried out by UAV Exploration (UAVEX) in December 2021. The project goal was to identify and locate legacy, plugged and abandoned (P&A) and potential unknown steel-cased gas and oil wells in an area under consideration for development of the South Branch Solar Project in Hancock County, OH.

The survey called for a multi-phase approach to collect, process, interpret, and confirm magnetic data to locate wells in the project area of operations (AOI). These primary phases were Flight Operations, Data Processing and Interpretation, and Ground Truthing.

The principal geophysical sensors used included an Ex-Mag atomic magnetometer system mounted on an Unmanned Aerial Vehicle (UAV) platform, a Gem Systems GSM-19 Overhauser Proton Precession magnetometer base station and multiple Schondstedt handheld magnetic locators.

FLIGHT OPERATIONS

The daily survey procedures first consisted of a safety and survey plan meeting. The GSM-19W Overhauser Base Station was set up and initiated at the start of each survey.

UAV-based magnetic data collection was conducted at a nominal altitude of 29 meters above ground level which was the calculated maximum tree height plus a safety margin in each survey grid. Flight-line spacing was 28 meters.

The position and altitude of the aircraft and magnetometer payload was achieved using a combination of Barometric Pressure Measurement, GPS, Compass, Inertial Measurement Unit (IMU) and RADAR altimeter. AGL altitude was maintained using a combination of RADAR altitude measurement and barometric pressure readings.

The magnetometer was suspended from the UAV in a fixed orientation by a vibration isolated mounting system at a sensor distance of approximately 1.3 meters to reduce UAV noise and magnetic interference. Nominal survey speed was maintained at 7-9 meters per second ground speed. Scan rates for data acquisition was 1000 hertz (Hz) for the magnetometer and 1 Hz for GPS positioning which translates to an effective downline sampling of <1cm.

Navigation of the UAV was maintained by the onboard GPS-Compass system. Pre-programmed flight plans were uploaded to the UAV prior to takeoff, and the aircraft flew the flight lines autonomously, returning to its takeoff location, or a pre-programmed landing location once the lines were completed. Landing and takeoff were conducted manually by the UAV pilot and ground crew. Raw survey data was downloaded at the completion of each flight and quality checked. The total combined survey distance for the site was ~110-line km.

DATA PROCESSING AND INTERPRETATION

For each mission, raw data files were initially batch processed into a single comma-delimited file using custom software. The concatenated files from each mission were imported into Oasis Montaj for all remaining processing. The following corrections were applied:

- Instrument Lag
- Magnetic Heading
- Major attitude noise due to wind
- Diurnal variation
- 1D filtering
- Combining sorties into one dataset
- Trend removal filter
- Analytic signal grid filter
- Other 2D smoothing filters

At the completion of each survey grid sub-section data was analyzed and anomalies determined to be possible sub-surface steel-cased wells were identified along with their respective lat/long positions.

GROUND TRUTHING

The field crew traversed on foot to each anomaly location individually for ground identification and magnetic verification. The process was as follows:

- (1) The peak aerial detection location was first flagged using the GNSS system.
- (2) Using the magnetic locator, a serpentine path was walked within an approximate 15 meter diameter radius, starting at the center.
- (3) Once the potential target was detected, a circular survey was conducted around the target to determine if the magnetic field is monopolar (well-like) or dipolar (not well-like).
- (4) If determined to be monopolar, the exact position was located where the magnetic gradient was the highest and flagged and its respective location collected with survey grade precision using the GNSS system.
- (5) A wider 30+ meter circle was surveyed to rule out any additional weaker anomalous signatures in proximity to the well.

Based on the results of the aerial survey and ground truthing effort, 5 total anomalies of interest were identified which are classified into 3 categories:

Category 1 - Ground Located Well-Like Anomaly:

This category covers detections that indicate a clear monopolar well-like detection from both the aerial data and ground surveys which indicate the presence of a well-like object likely less than 20' below the surface.

GL-0: Strong well-like detection from both aerial and ground methods

GL1: Strong well-like ground detection from both aerial and ground methods. Excavation was attempted but the casing likely lies greater than 20" below the surface.

Category 2 - Weak or Ambiguous Ground Detection:

This category covers detections that appear well-like in the aerial data but displayed some ambiguity during the ground survey. The ambiguity in the ground detection primarily refers to the uncertainty in the true position of the well. This can be caused by two primary factors. Either the well casing lies at significant depth near or beyond the detection limits of the ground magnetic locators or other sub-surface ferrous infrastructure or debris causes multiple detections. These factors make it difficult to pin-point the true center position (X,Y) of the anomaly peak. The aerial data strongly suggests the presence of a well in most cases regardless of the ground ambiguity.

GL-Amb-0: Strong well-like ground detection. Excavated to a depth of 26" until water table was reached. Unknown vertical steel pipe encountered with the shovel, but not visible. Water slowly upwelled from the pipe. No smell of petroleum. Unknown whether this is a water well, drainage pipe, etc.

Category 3 - Well-like Aerial Detection. No Ground Point Collected:

The survey area contained two aerial well-like detections that were not ground truthed due to the point being located outside the project area.

AO-0: Strong well-like aerial detection. No GNSS point collected. Outside the survey boundary.

AO-1: Steel casing exposed above the surface. The well was spotted from a distance. No ground GNSS point collected due to the location lying outside the survey boundary.

Leeward Renewable Energy

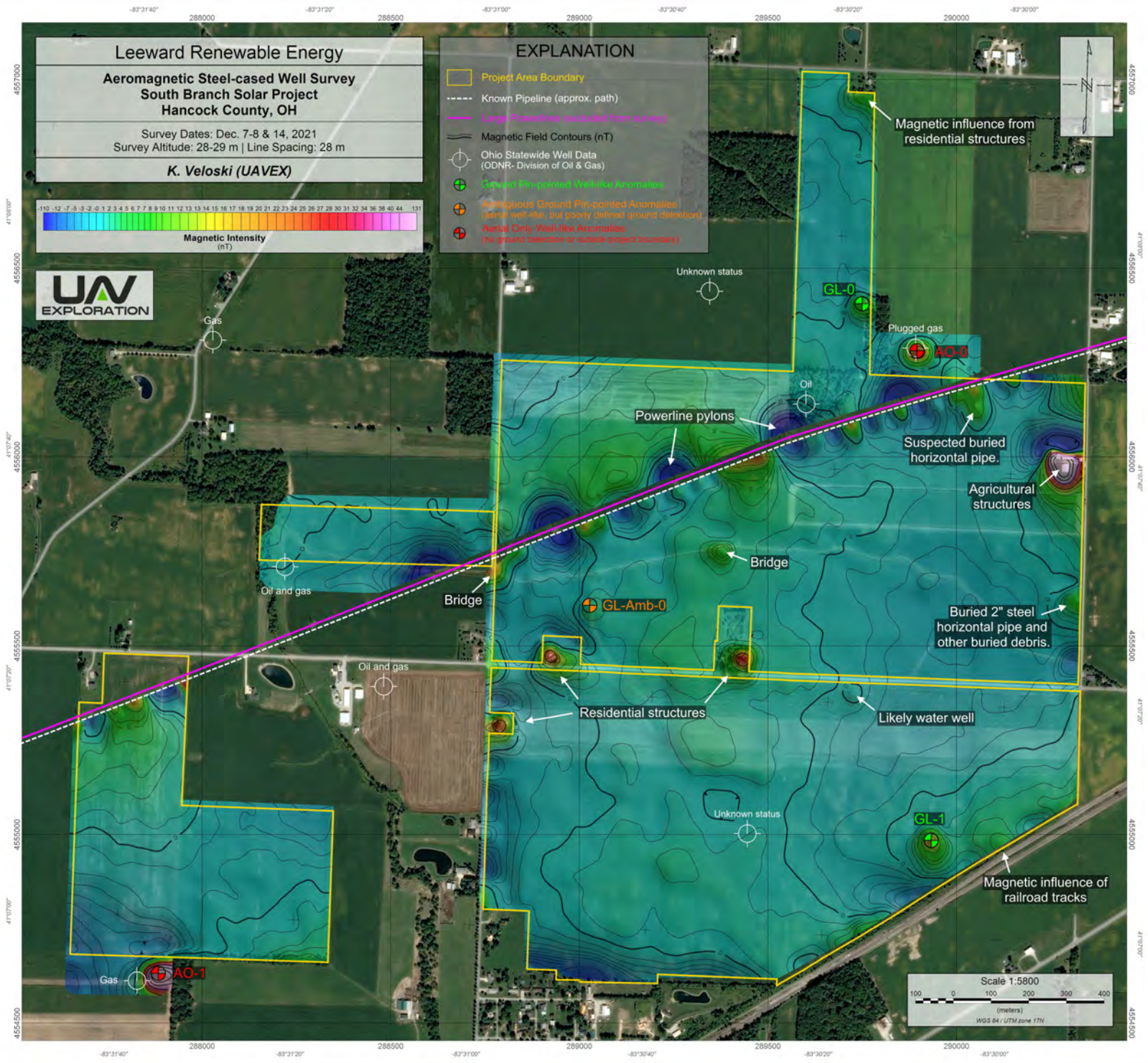
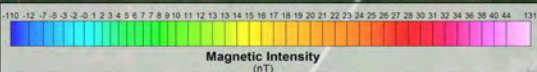
Aeromagnetic Steel-cased Well Survey South Branch Solar Project Hancock County, OH

Survey Dates: Dec. 7-8 & 14, 2021
Survey Altitude: 28-29 m | Line Spacing: 28 m

K. Veloski (UAVEX)

EXPLANATION

- Project Area Boundary
- Known Pipeline (approx. path)
- Large Powerlines (excluded from survey)
- Magnetic Field Contours (nT)
- Ohio Statewide Well Data (ODNR- Division of Oil & Gas)
- Ground Pin-pointed Anomalous
- Subsurface Ground Pin-pointed Anomalous (poorly defined ground detection)
- Aerial Photo Well-log Anomalous (no ground detection or outside project boundary)



SUMMARY

UAVEX is very pleased with the quality of data collected throughout this survey and the results of the ground truthing effort.

Unmanned aeromagnetic survey data and results are highly dependent on the quality of flight operations. The flight crews at UAVEX go to great lengths to ensure only the best data is produced by operating custom tailored UAV platforms, conducting flight operations only when weather conditions are ideal and flying at the lowest feasible altitudes. Ideal results are further ensured by in-field data processing and methodical ground truthing procedures.

Regarding depth calculations of located wells, there is not a well-defined limit to the depth of exploration of wells and well-like structures due to the varied nature of the sources. However, based on experience, assuming sufficient production or surface casing remains then most steel-cased wells are detectable at survey altitudes up to 50+ meters above the source. Factors that affect the strength and width of well-like anomalies include the length and diameter of casing, the magnetic susceptibility of the steel, permanent magnetization of the steel, and the influence of other proximal magnetic sources.

This survey identified 5 well-like targets within or proximal to the project area which are identified in the Anomaly Reference Sheet. A description and location data can be found for each target.

According to the Ohio Department of Natural Resource's "Process for Assigning Risk to Orphan Wells in Ohio" document, all 5 identified targets can be classified as Class 4 (Lowest Risk). No targets in the project area appeared to be leaking contaminants and no surface contamination was noted.

END OF REPORT

Please contact us with questions:

UAV Exploration Inc.

Renfrew, PA

724-432-2999

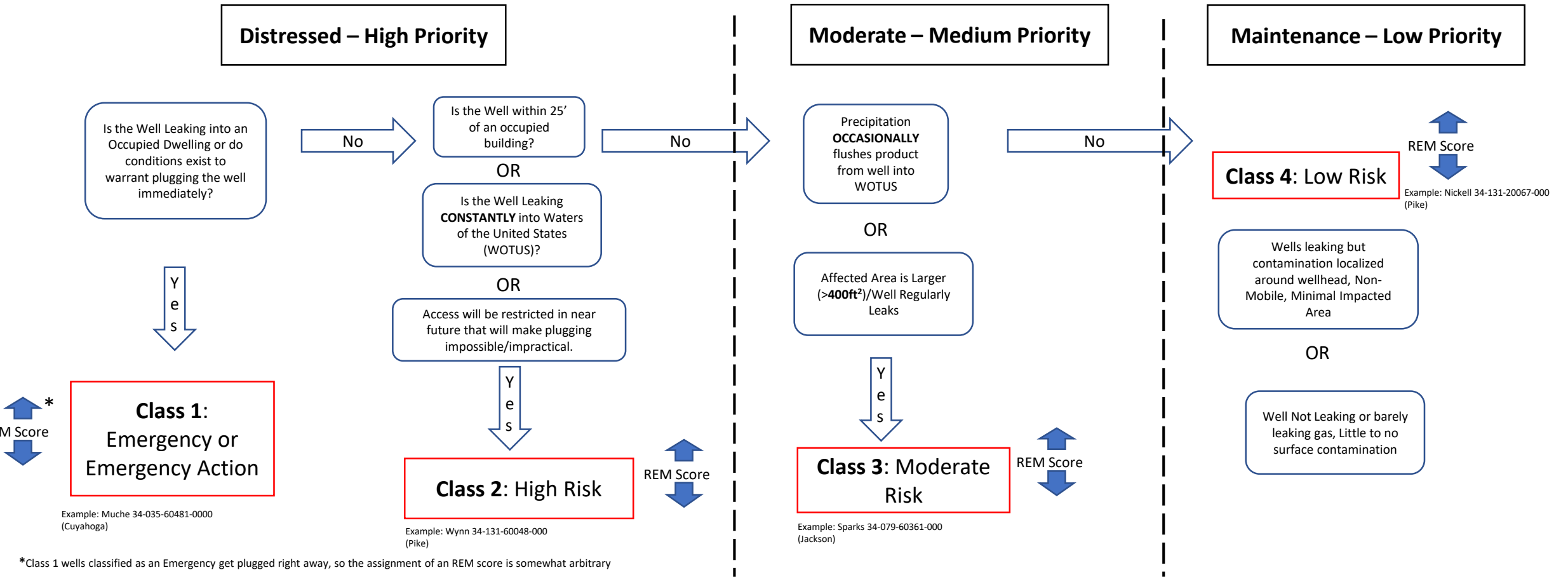
www.uavex.com

DISCLAIMER

The geophysical service provider individually, the client and/or the client's contractor collectively, will not be liable for any damages that occur from excavations based on the results of this survey. Although sound technical procedures and prudent application of oversight are exercised by the geophysical service provider, to the extent possible, due caution should be used when performing any subsurface excavation based on results of this survey. The users of this data agree to release liabilities, perceived or otherwise, toward the geophysical service provider and its client, caused by actions or recommendations or lack thereof related to the discovery, deliberate or accidental of any hazardous objects within the surveyed area.

**Attachment B –
Summary of ODNR's Risk Classification System**

Process for Assigning Risk to Orphan Wells in Ohio



- Step #1 – Categorize wells and place them into appropriate Risk Class
- Step #2 – Once in a class, the wells are prioritized **WITHIN** that class by a Risk Evaluation Matrix (REM) score

- Notes:
- Sorting into risk classes first and **THEN** prioritizing within class allows for a more “apples to apples” comparison. (i.e. wells leaking into a creek are only compared to other wells leaking in a creek).
 - Workload – Wells will be plugged by class first within an inspectors area. If there are no Class 1 (Emergency) wells, then focus on Class 2 (High Risk) wells. If there are no Class 2 wells, then focus on Class 3 (Moderate Risk) wells and so on.
 - Grouping/Packaging - The inspector’s workload could include some from each category. If we move into an area to plug a Class 2 (High Risk) well, then it makes sense to include any orphan wells on the same property or from the surrounding area in the package even if their class is lower.
 - Senate Bill 225 comes into effect 9/28/2018. With it, wells will now be included into three groups: Distressed – High Priority (Class 1 and 2); Moderate – Medium Priority (Class 3); and Maintenance – Low Priority (Class 4).

**Attachment C –
Gibson Field Report**

Ronald A. Gibson & Associates, Inc.
Gibson Energy Services

32254 Country Club Drive
Avon Lake, Ohio 44012
Telephone: (440) 396-6157
Email: ragibsonpe@gmail.com

February 21 2022

Ms. Lynn Gresock
Haley & Aldrich, Inc.
3 Bedford Farms Drive, Suite 301
Bedford, New Hampshire 03110

Re: South Branch Solar Project
Washington Twp, Hancock Co, Ohio
Oil and Gas Well Presence/Absence
Investigation

Dear Ms. Gresock:

As requested, Ronald A. Gibson & Associates, Inc. (R.A. Gibson) has conducted a subsurface inspection of certain sites on the 711 acres encompassing the Leeward Renewable Energy (Leeward) South Branch Solar Project in Washington Township, Hancock County, Ohio.

The inspection sites were identified based on the results of a magnetometer survey conducted over the project area by UAV Exploration (UAVEX) in December 2021. UAVEX identified three (3) sites exhibiting anomalous magnetic behavior with the potential for identification as an oil and gas well. One additional anomaly area was classified as a "suspected buried horizontal pipe." Our excavation and inspection took place on Tuesday, February 8, 2022.

The purpose of our inspection was to 1) excavate and expose the magnetic sources identified by the UAVEX survey, 2) assess any exposed magnetic sources, 3) determine whether any identified anomaly was likely to be an oil and gas well, and 4) assist Leeward in determining how to deal with any identified likely oil and gas wells.

Method of Inspection

Excavation sites of the magnetic anomalies were located using the UAVEX survey GPS coordinates and a Schonstedt Maggie magnetic locator. Excavation was performed by Boes Quality Drainage, Inc. of Fostoria, Ohio, with oversight by R.A. Gibson. Once excavated and exposed, located casing strings were inspected and measured by R.A. Gibson and another GPS location was recorded over the wells.

Findings

Based on our excavation results of the four (4) UAVEX sites, we offer the following findings:

UAVEX Site GL-0 – Potential Oil and Gas Well

Excavation of the UAVEX site GL-0 (N 41.13175, W 083.50480; WGS84 Grid) revealed a buried and unplugged 4.50" outer diameter (OD) steel well casing. A 1.69" OD steel tubing string was inside the 4.50" OD casing. The well casing and tubing had been bent over at an approximate 90-degree angle at 5 feet (ft) below ground level (i.e., GL-5ft). No oil and gas leakage was observed coming from the well. A photograph of the well casing is presented as Exhibit A.

The well casing found at UAVEX Site GL-0 was not in a condition which allowed inspection as to the wellbore content or depth. As stated above, the casing and tubing strings were bent at approximately 5 ft GL to an angle of 90 degrees. Although the well's casing and tubing sizes are not ordinarily used in the NW Ohio oilfield, we recommend that the well be treated with a conservative approach and assume the well to be a Trenton Limestone oil and gas well with a total depth of 1,300 ft until proven otherwise.

UVEX Site GL-1 – Not an Oil and Gas Well

Excavation of the UAVEX site GL-1 (N 41.11901, W 83.50217; WGS84 Grid) revealed a buried and unplugged 6.0" OD steel well casing at 3 ft below ground level. The casing had a wooden plug in the top. During the inspection, the wooden plug broke apart and fell into the casing and to a water level of GL-6 ft. A tape was run to the bottom of the well and measured at GL-25 ft. A photograph of the well casing is presented as Exhibit B.

The well casing found at UAVEX Site GL-1 gives all indications of being a water well. The 6.0" OD casing, the measured depth of GL-25 ft, and the lack of oil and gas in the wellbore are evidence of a water well. Additionally, the landowner farmer reports that he had abandoned a livestock water well in that approximate location by placing a wooden plug in the top of the casing cut below ground level.

UAVEX Site GL-Amb-0 – Not an Oil and Gas Well

Excavation of UAVEX site GL-Amb-0 (N 41.12437, W 83.51316; WGS84 Grid) revealed a buried collection of construction material which included 50-60 pounds of wire fencing, a 3 ft piece of angle iron, a piece of gutter downspout, and several broken cement blocks. The materials were located between 3 and 4 ft below ground level. A photograph of the debris found is presented as Exhibit C.

Suspected Buried Horizontal Pipe – Not an Oil and Gas Well

No buried steel lines were intersected in the two 10-ft long trenches dug to 4.5 ft and perpendicular to the suspected line directions. However, bricks with high iron content were found near the surface, which could have been the source of the anomaly. A mud-filled clay tile was also found.

Conclusions and Recommendations

Of the four locations excavated, only one (GL-0) was identified as having the potential to be an oil and gas well, even though the observed well's casing and tubing sizes are not those ordinarily used in the NW Ohio oilfield. Verification was not possible during this field effort, as the casing and tubing strings were bent at approximately 5 ft GL to an angle of 90 degrees. Although wellbore content or depth could not be evaluated, we recommend that this be conservatively considered to be an oil and gas well until proven otherwise.

Prior to backfilling the soil over the well on February 8, 2022, the ODNR Orphan Program's NW Ohio Region Manager, Ben Harpster, was contacted and conducted an inspection. Mr. Harpster is having an API number (i.e., unique well identification number) assigned to the well. Upon obtaining the API number, Mr. Harpster said ODNR will take actions to re-excavate the well, cut the casing and tubing at approximately GL-6 ft, and inspect the well for depth and content.

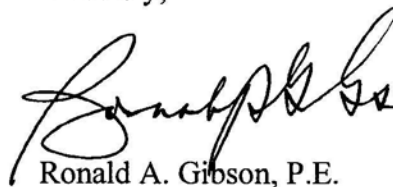
If the GL-0 well is found to be shallow (i.e., 25 ft to 100 ft) and not hydrocarbon bearing, the ODNR contractor will remove the tubing and plug the well as a water well. If the well is found to be deeper, the well casing will be brought to surface and the well will be placed on the Orphan Well Plugging Program.

Plugging a Trenton Limestone oil or gas well in Hancock County, Ohio generally requires a 100 ft by 100 ft work area with an access suitable for plugging equipment. If this is confirmed to be an oil and gas well and verified as low risk, Leeward should maintain an appropriate work area for potential future well plugging. After any future well plugging is successfully concluded, no access to the plugged well would be required, and the surface land should be suitable for construction within 10 to 20 ft from the plugged well. However, Leeward may desire to install a vault with manhole access over the plugged well for future inspection.

Ms. Lynn Gresock
Haley & Aldrich, Inc.
February 21, 2022
Page 4 of 4

We appreciate the opportunity to assist you with this project. Please call me at your convenience to discuss the contents of this report.

Sincerely,



Ronald A. Gibson, P.E.
President



Attachments:

- Exhibit A. Site GL-0 Photo
- Exhibit B. Site GL-1 Photo
- Exhibit C. Site GL-Amb-0 Photo

Exhibit A
Site GL-0 Photo



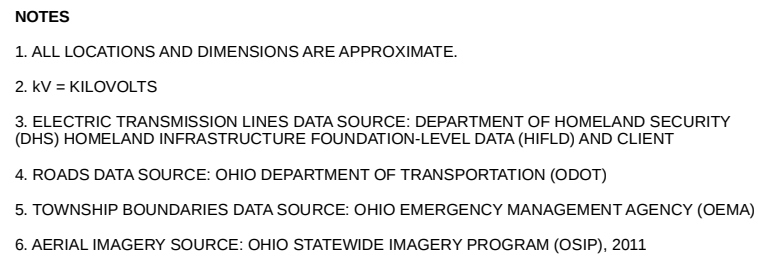
Exhibit B
Site GL-1 Photo



Exhibit C
Site GL-Amb-0 Photo

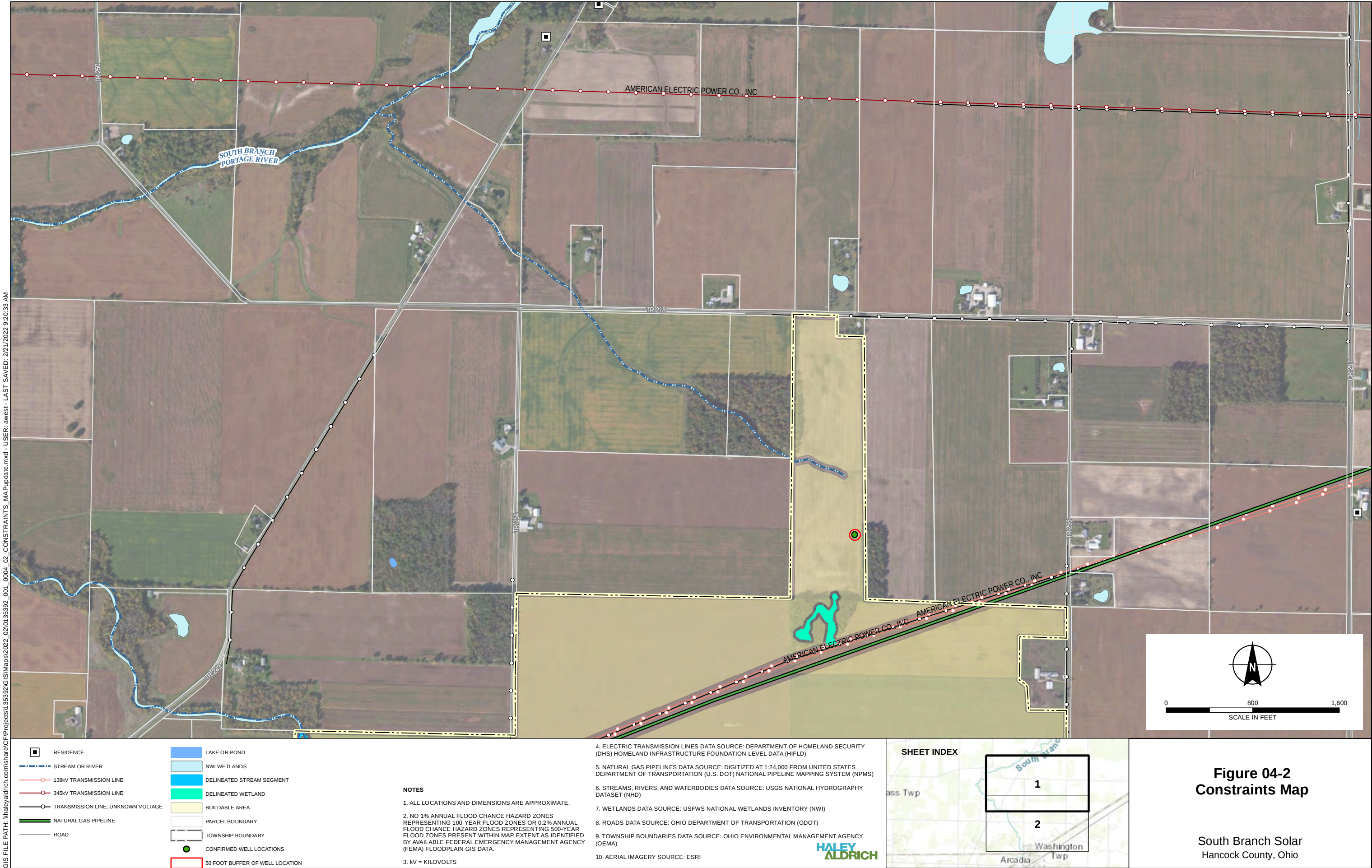


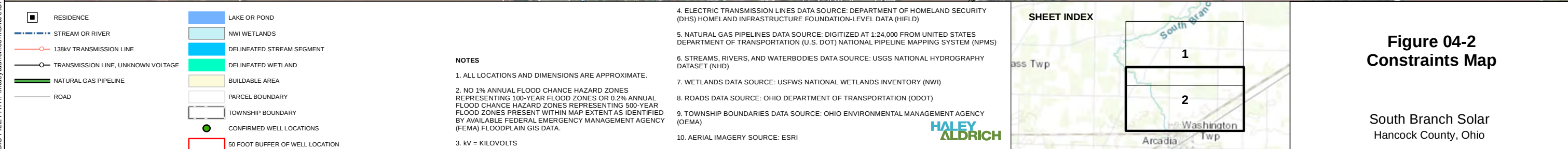
**Attachment D –
Updated OPSB Figures**



South Branch Solar
Hancock County, Ohio

GIS FILE PATH: \\haleyaldrich.com\share\CR\Projects\135392\GIS\Maps\2022_02\0135392_001_0004_02_CONSTRAINTS_MA\Update.mxd - USER: awest - LAST SAVED: 2/21/2022 9:20:33 AM





**Attachment E –
Representative Well Plugging Estimate**

Ronald A. Gibson Associates, Inc.
Gibson Energy Services
Avon Lake, Ohio

Well Plugging Cost Estimate
1300 ft Trenton Limestone Well
Washington Twp, Hancock Co, Ohio

Scope of Work:

Remove existing tubing; Wash down through fireclay/sand plugging materials to a total depth of 1300 ft in partially cased hole; Pull surface casing as required; Set Portland cement plugs as required.

Line Number	Description	Unit Price	Quantity	Units	Item Total
1	Permitting	\$500	1	Lump Sum	\$500
2	Mobilization	\$3,000	1	Lump Sum	\$3,000
3	Site Safety	\$500	1	Lump Sum	\$500
4	Secondary Containment	\$750	1	Lump Sum	\$750
5	Wellhead Control	\$1,000	1	Lump Sum	\$1,000
6	Well Control Fluid	\$6	100	BBL	\$600
7	Logging (GR/CCL/Bond/Caliper)	\$2,850	1	Each	\$2,850
8	Well Preparation & Plugging	\$21,500	1	Lump Sum	\$21,500
9	Tubing	\$1,500	1	Lump Sum	\$1,500
10	Class A Cement	\$18	350	Sack	\$6,300
11	Cement Mixing and Pumping	\$2,500	3	Each	\$7,500
12	Fluid Disposal	\$10	100	BBL	\$1,000
13	Demobilization	\$3,000	1	Lump Sum	\$3,000
Total					\$50,000

**Attachment F –
Unanticipated Discoveries Plan**



Unanticipated Discoveries Plan

South Branch Solar
Hancock County, Ohio

February 2022

Table of Contents

1. Goals and Objectives	1
1.1 PROJECT RESPONSIBILITIES.....	1
1.2 CONTRACTOR RESPONSIBILITIES	1
2. Discovery and Initial Response Procedures	2
3. Agency Notifications, Assessment, and Mitigation Measures	3
3.1 AGENCY NOTIFICATIONS.....	3
3.2 UNANTICIPATED DISCOVERY ASSESSMENT	3
3.3 MITIGATION MEASURES	4
4. Recordkeeping and Reporting	5
4.1 SOUTH BRANCH RESPONSIBILITIES.....	5
4.2 CONTRACTOR RESPONSIBILITIES	6

1. Goals and Objectives

South Branch Solar, LLC (South Branch) is proposing to construct a solar energy facility, South Branch Solar (the Project), on approximately 700 acres within Washington Township, Hancock County, Ohio (the Project Area).

Pre-construction planning has avoided construction constraints to the greatest extent possible; however, this Unanticipated Discoveries Plan (the Plan) is intended for use during construction to appropriately respond to unforeseen conditions associated with the following:

- Oil and gas wells – Thorough records review, analysis of aerial imagery, airborne magnetometric surveying, interviews with current landowners, and ground investigation have been conducted, and these activities appear to indicate that Project construction is not likely to encounter oil and gas wells. However, in the event an unanticipated well is encountered, the Plan addresses measures that would be taken.
- Solid waste debris associated with off-site historic landfill – The historic presence of an off-site landfill results in a permitting requirement from the Ohio Environmental Protection Agency (Ohio EPA) if Project activities will occur within 300 feet of the property line where the historic landfill is located. Although impacts are not expected, the Plan addresses measures that would be taken if debris is encountered during construction activities within that 300-foot area.

An update to the Plan will be prepared and provided to the Ohio Power Siting Board (OPSB) prior to construction when the Construction Contractor (Contractor) and South Branch staff overseeing the construction have been identified. Following the guidance reflected in the Plan will be required as a part of agreements with selected Construction Contractors.

1.1 PROJECT RESPONSIBILITIES

In the event of an unanticipated discovery, South Branch would be responsible for:

- Notifying the appropriate agencies/authorities.
- Providing guidance to the Contractor.
- Ensuring that the area of the unanticipated discovery is not further disturbed with appropriate actions taken.
- Engaging specialists for further actions, as appropriate.

1.2 CONTRACTOR RESPONSIBILITIES

The Contractor shall be responsible for identification of the unanticipated discovery and for implementation of initial response procedures. Other responsibilities may be required, as directed by South Branch.

2. Discovery and Initial Response Procedures

Identifying and recognizing the presence of either oil and gas infrastructure or debris potentially associated with historic landfill operations is the first step to initiate the proper response action. While the Plan's measures are intended to be implemented only within 300 feet of the historic landfill property in terms of encountering debris, the potential for encountering unanticipated oil and gas infrastructure will warrant use of the Plan throughout the Project Area.

Because excavation requirements of the Project are limited, subsurface indicators are unlikely to be encountered. However, if such activities or other observations provide indicators such as the following, response procedures would be initiated:

- Household trash covered by earth;
- Stained or discolored earth;
- Rusted barrels or containers;
- Gasoline smells or other hydrocarbon odors that emanate when the earth is disturbed;
- Oily residue intermixed with earth;
- Sheen on groundwater;
- Cinders or other combustion products like ash; or
- Physical indications of an oil and gas well or associated infrastructure.

Immediately following discovery of potential issues, the Contractor will:

- Cease work in the immediate vicinity of the unanticipated discovery.
- Cordon off or otherwise restrict access to the suspected area to prevent inadvertent disturbance.
- Notify South Branch's Lead Construction Supervisor.
- Notify the landowner of the affected parcel, if applicable.
- Await further instructions from South Branch and/or applicable agencies.

3. Agency Notifications, Assessment, and Mitigation Measures

The following procedures would be used to determine the nature of the unanticipated discovery, and to identify appropriate further actions. These actions would be undertaken by a specialist in either oil and gas wells or waste materials. In the case of waste materials, trained Occupational Safety and Health Administration (OSHA), Hazardous Waste Operations and Emergency Response (HAZWOPER) technicians with specialized personal protective equipment (PPE) will implement sampling and decontamination protocols approved by South Branch.

The actions following discovery and discovery area protection would include:

- Characterizing the unanticipated discovery.
- Determining if worker safety and/or public exposure concerns exist.
- Notifying the proper authorities, as required.
- Identifying the location and/or extent of the unanticipated discovery, as required.
- Developing and implementing these actions from discovery and through final disposition documentation.

3.1 AGENCY NOTIFICATIONS

In the event of an unanticipated discovery of an oil and gas well, the Ohio Department of Natural Resources (ODNR) will be notified of the location of the identified well for its records. Depending upon the selected approach (i.e., well removal, well closure, or avoidance), additional coordination with ODNR may be required.

In the event of an unanticipated discovery of waste materials potentially associated with the historic landfill, the Ohio EPA will be notified and will be engaged in approval of subsequent characterization and extent testing for the determination of appropriate actions. Ohio EPA will inform South Branch as to additional notifications and/or stipulations that may be required depending on the nature of the unanticipated discovery.

Records will be maintained that will be supplied to OPSB staff on a quarterly basis, included with the regular Complaint Resolution documentation. If no unanticipated discoveries have occurred during a quarterly period, this information will be so noted.

3.2 UNANTICIPATED DISCOVERY ASSESSMENT

South Branch would engage a specialized contractor to evaluate the unanticipated discovery in accordance with relevant requirements, guidelines, and practices. The objective of this investigation, in consultation with the landowner, would include:

- Devising a plan for additional site-specific investigations, as necessary.
- Determining whether the risk of soil, groundwater, or vapor impacts exists and determining their extent.

- Determining the approach for addressing the unanticipated discovery (avoidance versus directly addressing through closure, removal, etc.).
- Identifying permitting needs associated with planned actions.
- Recommending a preventative action plan, as appropriate, to ensure that the unanticipated discovery and work occurring in its vicinity minimizes the potential for impact and liability.
- Determining the requirements necessary for the Contractor to resume work in the immediate vicinity of the discovery.

3.3 MITIGATION MEASURES

The final actions associated with the unanticipated discovery would be determined through discussions with applicable regulatory bodies, affected landowners, and specialty contractors. Mitigating actions will be selected that are intended to avoid the potential for impact or risk associated with Project construction in the vicinity of the unanticipated discovery.

4. Recordkeeping and Reporting

Documentation of the unanticipated discovery would start with the details associated with the initial discovery and end with the final disposition of waste materials or disposition of the oil and gas well, in accordance with appropriate agency guidance. If the remedy includes well closure, this will include appropriate photo documentation and records that include geolocation of the feature. If the remedy involves material disposal, records would also be kept in accordance with the Project's waste management practices to assure appropriate disposal.

4.1 SOUTH BRANCH RESPONSIBILITIES

South Branch would document steps involved from initial discovery through final disposition, and written feedback from agencies, including:

- Detailed description of initial discovery.
- Initial response actions.
- Establishment of no-work areas.
- Agency contacts.
- Consultant engagement.
- Site investigation activities.
- Sampling, chain of custody, and laboratory results, as appropriate.
- Agreed-upon activities to resume Project construction or to avoid the location of the unanticipated discovery.

The level of associated documentation from initial discovery through final resolution would depend on the nature and extent of the discovery, the potential need for formal agency approvals, and the degree of further disturbance of the area by construction activities.

At a minimum, South Branch would record the following information when an unanticipated discovery is made:

- The time and place of discovery.
- Actions taken to prevent inappropriate disturbance or contact.
- The extent of disturbance by construction activities.
- A description of the discovered item(s) or substance(s).
- Additional actions taken in response to the discovery.
- Sampling performed and analytical testing results.
- Actions taken to redirect or complete construction.

4.2 CONTRACTOR RESPONSIBILITIES

The Contractor would cooperate with South Branch by providing all pertinent and detailed information regarding the initial discovery.

If directed by South Branch, the Contractor may be required to develop specific documentation regarding procedures for cleaning equipment that directly comes into contact with unanticipated materials.

**This foregoing document was electronically filed with the Public Utilities
Commission of Ohio Docketing Information System on**

2/25/2022 10:23:14 AM

in

Case No(s). 21-0669-EL-BGN

Summary: Correspondence of South Branch Solar, LLC Submitting its
Constructability Report and Unanticipated Discovery Plan electronically filed by
Teresa Orahod on behalf of Dylan F. Borchers