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April 11, 2017

Ms. Barcy F. McNeal, Secretary
Public Utilities Commission of Ohio
180 E. Broad St., 11th Floor
Columbus, OH 43215-3793

Re: OPSB Case No. 17-0925-EL-BGA
Carroll County Energy LLC
Application for Third Amendment to its Certificate

Dear Ms. McNeal:

Accompanying this letter are hard copies of an Application for a Third Amendment to the Certificate of Environmental Compatibility and Public Need for an electric generation facility granted to Carroll County Energy LLC ("CCE"). The original Application for a Third Amendment was electronically filed.

CCE was granted a certificate of environmental compatibility and public need to construct a natural gas-fired combined-cycle electric generation facility in Washington Township, Carroll County, Ohio on April 28, 2014 in Case No. 13-1752-EL-BGN.

In this Application for a Third Amendment to its Certificate, CCE is proposing to install four Caterpillar 3.9-MW Blackstart emergency generators in a small building to be located on the facility property.

In accordance with former Rule 4906-2-04 of the Ohio Administrative Code, I would like to make the following declarations:

Name of the applicant:
Carroll County Energy LLC
c/o Advanced Power Services (NA) Inc.
31 Milk Street, Suite 1001 Boston, MA 02109

Name of the facility and location:
Carroll County Energy
Washington Township
Carroll County, Ohio

VORYS

Legal Counsel
Ms. Barcy F. McNeal
April 11, 2017
Page 2

Name of the authorized representative:

Michael J. Settineri
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Notarized Statement:

See attached Affidavit of Chuck Davis, President

Thank you for your consideration.

Very truly yours,



Michael J. Settineri

MJS/jaw
Enclosure

BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of
Carroll County Energy LLC for an
Amendment to its Certificate of
Environmental Compatibility and
Public Need Issued in
Case No. 17-0925-EL-BGA

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Case No. 17-0925-EL-BGA

PRESIDENT'S AFFIDAVIT

COMMONWEALTH OF MASSACHUSETTS)


) SS:

COUNTY OF SUFFOLK)

Now comes Chuck Davis, President of Carroll County Energy LLC, having been first duly sworn, declares and states as follows:

1. He is the highest ranking executive officer in charge of the Carroll County Energy natural gas-fired combined-cycle generating facility located in Washington Township, Carroll County, Ohio.
2. He has reviewed the Application of Carroll County Energy LLC for a Third Amendment to its Certificate Issued in Case No. 13-1752-EL-BGN, the "Application for a Third Amendment."
3. To the best of his knowledge, the information and statements contained in the Application for a Third Amendment are true and correct.
4. To the best of his knowledge, the Application for a Third Amendment is complete.

Signature: _____


Chuck Davis, President
Carroll County Energy LLC

Sworn to before me and signed in my presence this 10th day of April 2017.



Notary Public

My Commission Expires 2/5/2021

Commonwealth of Massachusetts
Arnold R. Wastenstein
Notary Public

BEFORE THE OHIO POWER SITING BOARD

**In the Matter of the Application of)
Carroll County Energy, LLC for an)
Amendment to Its Certificate of)
Environmental Compatibility and Public)
Need to Construct an Electric Generation)
Facility.)**

Case No. 17-0925-EL-BGA

**Application to Amend the
Carroll County Energy Certificate
Granted April 28, 2014 in
Case No. 13-1752-EL-BGN**

April 2017

BEFORE THE OHIO POWER SITING BOARD
Third Amendment Application of Carroll County Energy LLC
Carroll County Energy
Table of Contents

	<u>Page No.</u>
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF APPENDICES	ix
ACRONYMS AND ABBREVIATIONS	x
4906-13-01 Project Summary and Facility Overview	1
(A) PROJECT SUMMARY AND OVERVIEW	1
(1) General Purpose of the Facility	1
(2) Description of the Facility	1
(3) Site Selection Process	4
(4) Principal Environmental and Socioeconomic Considerations	4
(a) Potential Construction Impacts	4
(b) Potential Operational Impacts	5
(5) Project Schedule	6
4906-13-02 Project Description and Schedule	7
(A) DETAILED DESCRIPTION OF PROPOSED GENERATION AND ASSOCIATED FACILITIES	7
(1) Project Details	7
(a) Generating Units	7
(b) Land Area Requirements	7
(c) Fuel Quantity and Quality	7
(d) Plant Emissions	7
(e) Water Requirements	8
(f) Water Discharge Requirements	8
(g) Stormwater Management	8

	(2)	Description of Major Equipment	9
	(3)	Transmission Line Interconnect.....	9
	(4)	New Natural Gas Transmission Line	10
	(B)	DETAILED PROJECT SCHEDULE	10
	(1)	Schedule.....	10
	(2)	Necessity to Maintain Schedule.....	10
4906-13-03		Site Alternatives Analysis.....	11
	(A)	SITE SELECTION STUDY	11
	(1)	Site Selection Process	11
	(a)	Description of Study Area	11
	(b)	Study Area and Site Map	11
	(c)	Siting Criteria.....	11
	(d)	Process for Identifying the Proposed Site.....	11
	(e)	Factors in Selecting the Proposed Site.....	11
	(2)	Constraint Map.....	11
	(B)	SUMMARY TABLE OF EVALUATED SITES	11
	(C)	ADDITIONAL SITE SELECTION STUDIES	11
4906-13-04		Technical Data	12
	(A)	SITE	12
	(1)	Geography and Topography	12
	(2)	Aerial Photograph	12
	(3)	Site Mapping	12
	(4)	Geology and Seismology	12
	(a)	Geological Issues	12
	(b)	Soils and Soil Suitability.....	12
	(5)	Hydrology and Wind.....	12
	(a)	Characteristics of Directly Affected Waterbodies	12
	(b)	Potential for Flooding or High Wind Conditions	12
	(c)	Aquifer Mapping.....	13

(B)	LAYOUT AND CONSTRUCTION.....	13
(1)	Site Activities.....	13
(a)	Test Borings.....	13
(b)	Removal of Vegetation	13
(c)	Grading and Drainage	13
(d)	Access Roads	14
(e)	Removal and Disposal of Debris	14
(f)	Post-Construction Reclamation	14
(2)	Layout	14
(3)	Structures	14
(a)	Dimensions	14
(b)	Construction Materials.....	15
(c)	Color and Texture	15
(d)	Pictorial Sketches.....	15
(e)	Unusual Features.....	15
(4)	Plans for Construction.....	15
(5)	Future Plans	15
(C)	EQUIPMENT	16
(1)	Description of Major Generating Equipment	16
(a)	Combustion Turbine Generators.....	16
(b)	Steam Turbine Generator	16
(c)	Heat Recovery Steam Generators	16
(d)	Natural Gas System.....	16
(e)	Steam System.....	16
(f)	Condensate System	16
(g)	Feedwater System	16
(h)	Air Cooled Condenser.....	16
(i)	Closed Loop Auxiliary/Cooling Water System	16
(j)	Fire Protection System.....	17
(k)	Water System	17
(l)	Demineralizer.....	17

	(m) Wastewater System	17
	(n) Backup Generator	17
	(o) Transformers and Switchyard	18
(2)	Emissions Control and Safety Equipment	18
	(a) Flue Gas Emissions Control.....	18
	(b) Equipment Reliability and Efficiency Reduction	18
	(c) Effluent Control Equipment.....	18
	(d) Public Safety Equipment.....	18
(3)	Other Major Equipment	18
	(a) Combustion Turbine Air Inlet Coolers	18
	(b) Auxiliary Boiler	19
	(c) Natural Gas Heaters	19
	(d) Oil/Water Separator	19
(D)	REGIONAL ELECTRIC POWER SYSTEM	19
4906-13-05	Financial Data	20
(A)	OWNERSHIP	20
(B)	CAPITAL AND INTANGIBLE COSTS	20
	(1) Estimated Capital and Intangible Costs	20
	(2) Capital Cost Comparison	20
	(3) Present Worth and Annualized Capital Costs of Alternatives	20
(C)	OPERATION AND MAINTENANCE EXPENSES	20
	(1) Estimated Annual Operation and Maintenance Expenses	20
	(a) Fixed Operation and Maintenance	20
	(b) Variable Operation and Maintenance	20
	(c) Fuel Operating Expense	20
	(2) Operation and Maintenance Expenses Comparison	20
	(3) Present Worth and Annualized Operation and Maintenance Expenses for Alternatives	21
(D)	DELAYS	21

4906-13-06	Environmental Data	22
(A)	GENERAL.....	22
(B)	AIR.....	22
(1)	Preconstruction	22
(a)	Description of Ambient Air Quality	22
(b)	Description of Pollution Control Equipment	22
(c)	Description of Regulatory Applicability.....	22
(d)	Required Permits to Install and Operate Air Pollution Sources	25
(e)	Air Monitoring Stations and Major Source Mapping	26
(f)	Demonstration of Regulatory Compliance	26
(2)	Construction.....	26
(3)	Operation.....	27
(a)	Description of Air Quality Monitoring Plans	27
(b)	Estimated Air Concentration Isopleths	27
(c)	Potential Failure of Air Pollution Control Equipment.....	28
(C)	WATER	28
(1)	Preconstruction	28
(a)	List of Permits.....	28
(b)	Location of Survey Data Sources	28
(c)	Description of Data Sampling Stations.....	28
(d)	Water Quality of Receiving Stream.....	28
(e)	Water Discharge Permit Information.....	29
(2)	Construction.....	29
(a)	Description of Water Monitoring and Gauging Stations	29
(b)	Quality and Quantity of Aquatic Discharges from the Site ..	29
(c)	Plans to Mitigate Effects	29
(d)	Changes in Flow Patterns and Erosion	29

	(3) Operation.....	30
	(a) Description of Water Monitoring and Gauging Stations	30
	(b) Water Pollutant Control Equipment and Treatment Processes	30
	(c) NPDES Requirements and Schedule	30
	(d) Quantitative Flow Diagram.....	30
	(e) Water Conservation Practices.....	30
	(D) SOLID WASTE	31
	(1) Preconstruction	31
	(2) Construction.....	31
	(3) Operation.....	31
	(4) Licenses and Permits.....	31
4906-13-07	Social and Ecological Data	32
	(A) HEALTH AND SAFETY	32
	(1) Demographic Characteristics	32
	(2) Atmospheric Emissions	32
	(3) Noise	32
	(a) Construction Noise Levels.....	32
	(b) Operational Noise Levels.....	32
	(c) Identification of Noise-Sensitive Areas	35
	(d) Description of Equipment and Noise Mitigation Measures.	35
	(4) Water.....	35
	(a) Construction and Operation Impact to Public and Private Water Supplies	35
	(b) Impact of Pollution Control Equipment Failures on Public and Private Water Supplies	35
	(B) ECOLOGICAL IMPACT.....	35
	(1) Site Information	35
	(a) Mapping	35
	(b) Vegetation Survey.....	36
	(c) Species Survey	36
	(d) Ecological Study	36

	(e) List of Major Species	36
(2)	Construction.....	36
	(a) Impact of Construction on Undeveloped Areas.....	36
	(b) Impact of Construction on Major Species	36
	(c) Mitigation for Short-Term and Long-Term Construction Impacts	36
(3)	Operation.....	37
	(a) Impact of Operation on Undeveloped Areas	37
	(b) Impact of Operation on Major Species	37
(C)	Economics, Land Use and Community Development.....	37
(1)	Land Uses.....	37
	(a) Land Use Mapping.....	37
	(b) Residential Structures	37
	(c) Land Use Impact.....	37
	(d) Structures to be Removed or Relocated.....	37
	(e) Formally Adopted Plans for Future Use of the Site and Surrounding Lands.....	37
	(f) Applicant Plans for Concurrent or Secondary Uses of the Site	38
(2)	Economics.....	38
	(a) Annual Total and Present Worth of Construction and Operation Payroll	38
	(b) Construction and Operation Employment	38
	(c) Increase in Local Revenue	38
	(d) Economic Impact on Local Commercial and Industrial Activities	38
(3)	Public Services and Facilities	38
(4)	Impact on Regional Development	38
	(a) Impact on Regional Development	38
	(b) Compatibility with Regional Plans	38

(D)	Cultural Impact	38
(1)	Cultural Resource Mapping	39
(2)	Cultural Resource Impacts	39
(3)	Cultural Resource Landmarks.....	39
(4)	Land and Water Recreation Area Mapping	39
(5)	Land and Water Recreation Areas	39
(6)	Recreational Areas and Potential Impacts	39
(7)	Measures to Minimize Visual Impacts	39
(E)	Public Responsibility	39
(1)	Public Interaction Program	39
(2)	Liability Compensation Plans	39
(F)	AGRICULTURAL DISTRICT IMPACT	40
(1)	Agricultural Land Mapping	40
(2)	Potential Impact to Agricultural Lands.....	40
(a)	Potential Construction, Operation and Maintenance Impacts	40
(b)	Agricultural Mitigation Practices.....	40
(3)	Potential Impact on Agricultural Viability	40

LIST OF TABLES

Table 06-1	Black Start Emergency Generator Potential Emissions Compared to PSD SER Thresholds	24
Table 06-4	Maximum Calculated Facility Impacts for Criteria Pollutants	28
Table 07-6a	Predicted Residential Noise Levels During Monthly Black Start Emergency Generator Testing	33
Table 07-6b	Predicted Residential Noise Levels During Emergency Black Start and Annual Testing.....	34

LIST OF FIGURES

Section 13-01 – Project Summary and Facility Overview

- No updated Figures

Section 13-02 – Project Description and Schedule

- Figure 02-2 – Proposed Facility and Vicinity
- Figure 02-3d through 3e – Proposed Black Start Generators Plot Plan
- Figure 02-6a – Preliminary One-Line Diagram Including Black Start Generation
- Figure 02-7a – Black Start Emergency Generators’ Project Schedule

Section 13-03 – Site Alternatives Analysis

- No updated Figures

Section 13-04 – Technical Data

- No updated Figures

Section 13-05 – Financial Data

- No figures

Section 13-06 – Environmental Data

- No updated Figures

Section 13-07 – Social and Ecological Data

- Figures 07-3a – Predicted Noise Impact Contours During Monthly Testing Scenario
- Figure 07-3b – Predicted Noise Impact Contours During Black Start Emergency Scenario

LIST OF APPENDICES

No change to appendices.

LIST OF ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
Advanced Power	Advanced Power AG
AEP	American Electric Power
AERMOD	a USEPA steady-state air quality dispersion plume model
the Application	the Application provided to the Ohio Power Siting Board to support a request for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility
Black Start Amendment	the current filing, Case No. 17-0925-EL-BGA
BMP	Best Management Practice
CCE	Carroll County Energy LLC
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalents
CTG	combustion turbine generator
dBA	A-weighted decibel, corresponding to the sensitivity range for human hearing
the Facility	Carroll County Energy project
the Facility Site	the 77-acre property proposed as the location of Carroll County Energy
g/kWhr	grams per kilowatt-hour
GE	General Electric
GHG	greenhouse gases
H ₂ SO ₄	sulfuric acid
hp	horsepower
kV	kilovolt
kWm	mechanical kilowatts
lb/hp-hr	pounds per horsepower-hour
lb/MMBtu	pounds per million British thermal units
MW	megawatt
NMHC	non-methane hydrocarbons
NAAQS	National Ambient Air Quality Standards
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System

OAC	Ohio Administrative Code
Ohio EPA	Ohio Environmental Protection Agency
OPSB	Ohio Power Siting Board
Pb	lead
PBR	Permit-by-Rule
PJM	the regional electric transmission independent system operator
PM	particulate matter
PM ₁₀	particulate matter with a diameter less than 10 microns
PM _{2.5}	particulate matter with a diameter less than 2.5 microns
PSD	Prevention of Significant Deterioration
SER	Significant Emission Rate
SO ₂	sulfur dioxide
ULSD	ultra-low sulfur distillate
USEPA	United States Environmental Protection Agency
VOC	volatile organic compounds

4906-13-01 Project Summary and Facility Overview

As discussed in Section 4906-13-01 of the original Application for Certificate of Environmental Compatibility and Public Need (the Application), Carroll County Energy LLC (CCE) has developed, is currently constructing and plans to own and operate Carroll County Energy (the Facility). As also discussed, CCE is within the corporate organizational structure of Advanced Power AG (Advanced Power), an international developer of independent power generation projects. The Applicant is aware that new rules are in effect, but inasmuch as the Application to which this Amendment refers was filed under the rules in existence before December 11, 2015, this Amendment application tracks the designations of the older rules. The Applicant believes that it has addressed anything that is substantively necessary in the new rules.

(A) PROJECT SUMMARY AND OVERVIEW

No change to introductory language.

(1) General Purpose of the Facility

No change from prior filings.

(2) Description of the Facility

The original filing addressed Carroll County Energy, a nominal 742 megawatt (MW) natural gas-fired combined cycle electric generating facility to be developed, built, owned, and operated by CCE. The Facility is located on a 77-acre property accessible via State Route 9 (Kensington Road NE) within Washington Township, Carroll County, Ohio (the Facility Site). Amendments reflecting minor changes to the Facility have been filed (Case No. 14-2085-EL-BGA and Case No. 16-0841-EL-BGA). No changes to major

components of the Facility have occurred since the original filing and subsequent amendments.

This amendment submitted to the Ohio Power Siting Board (OPSB) addresses the addition of black start capabilities to the Facility (Black Start Amendment). The Facility has been selected by PJM¹ to provide additional reliability to the electrical grid. Under emergency conditions, if a blackout were to occur, it would be necessary to have a means to support bringing the electrical grid back up to operation. The deployment of emergency generators in strategic locations throughout Ohio will allow for a rapid response to blackout conditions, facilitating the safe re-energizing of the electrical grid.

The Black Start Amendment addresses the proposed installation of four Caterpillar 3.9-MW black start emergency generators in a small building to be located within the boundaries of the Facility Site and within the existing Facility developed footprint. Under normal conditions, the black start emergency generators would not operate other than for routine testing. Routine testing would involve monthly operation of each unit individually, and annual operation of the four units simultaneously to demonstrate readiness to PJM. Each time, the units would only operate for a period of 30 to 60 minutes and then be shut down until the next test period. When the Facility is in operation, the energy generated during testing of the black start emergency generators will be used to offset the parasitic load of the Facility. If the black start emergency generators need to be tested and the Facility is not operating, loads at the Facility can be turned on to create an electrical

¹ PJM is a regional transmission organization that coordinates the movement of wholesale electricity in all of parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. PJM operates a competitive wholesale electricity market and manages the high-voltage electricity grid to ensure reliability for more than 61 million people.

demand. In the infrequent case where the entire Facility is down, and sufficient load can not be created, some power may be exported to the grid.

In a black out situation, PJM would call upon CCE to initiate use of the four proposed black start emergency generators. Under this circumstance, their operation would function to provide the energy required to “jump start” one of the Facility’s two General Electric (GE) 7FA.05 combustion turbines (CTGs). Once one CTG is operating and the black start emergency generators are no longer required, the first CTG can provide the energy required to start the second CTG unit. The CTG would then be capable of delivering the generated electricity to the electrical grid to repower the grid from black out conditions.

Addition of black start capability to the Facility will allow PJM to improve the reliability and responsiveness of the regional electric grid should a black out occur.

The proposed black start emergency generators will be situated within the Facility’s developed footprint in a new pre-engineered metal building (shown on Figures 02-3d through 02-3e). The building will incorporate a main generator hall, electrical room, and control room. The black start emergency generators will be fueled with ultra-low sulfur distillate (ULSD), which will be supplied to the Facility via truck delivery. Fuel will be stored in new approximately 6,600-gallon “belly” storage tanks incorporated into the design of each engine unit (one associated with each unit). The addition of the black start emergency generators will require review by the Ohio Environmental Protection Agency (Ohio EPA) under the Permit-by-Rule (PBR) program, supplemented by additional modeling analysis (as further discussed in Section 4906-13-06 (B)(3)(b)). The proposed black start emergency generators are located within areas already developed for the Facility, are compatible with the existing Facility’s operations, result in a minor change to

existing environmental impacts, and provide a considerable benefit to the electrical grid, the surrounding community, and the State of Ohio.

(3) Site Selection Process

No change from prior filings.

(4) Principal Environmental and Socioeconomic Considerations

No change from prior filings.

(a) Potential Construction Impacts

Addition of the proposed four black start emergency generators will result in no meaningful change to the Facility's area of disturbance. As shown in an updated Figure 02-2, the black start emergency generators will be located to the southwest of the Facility's footprint in an area already developed and graded for construction of the Facility. Individual foundations will be poured for the columns of the pre-engineered black start emergency generator building. The column foundations will be connected by grade beams. Each of the black start emergency generators will sit on an independent, isolated concrete foundation pad. The footprint of the pre-engineered building will sit on a concrete slab, and the building will have a poured concrete slab floor. A fill station that will be installed for oil deliveries will be designed to catch and contain any potential small spills from disconnecting the fill hose. The Facility fenceline will be extended along the Facility property line in order to restrict public access.

Construction impacts of the installation of the proposed black start emergency generators will be minimal, similar to construction-related impacts for the Facility, but at a much smaller scale. During installation, air quality impacts

will be limited to relatively minor emissions from the construction equipment required to prepare the area and from fugitive dust emissions. CCE will continue to implement Best Management Practices (BMPs) to maintain water quality standards and minimize erosion and sediment control.

(b) Potential Operational Impacts

With the addition of the proposed black start emergency generators, operational impacts will be minimal as they would operate infrequently under typical conditions. There are three scenarios under which the black start emergency generators will be operated, as described below.

- *Periodic Testing:*
 - Monthly Testing: Every month, each black start emergency generator will be operated individually for approximately 30 to 60 minutes at 50 percent load during daytime hours to confirm the generators are functioning properly.
 - Annual Testing: Once a year CCE will be required to demonstrate black start capabilities to PJM. During this annual testing, all four black start generators will be operated at 100 percent capacity for 30 to 60 minutes during daytime hours
- *Emergency/Standby Mode:* In the event that Facility power is lost due to localized grid failure, the black start emergency generators can be used to restore Facility power along with the Facility's existing emergency diesel generator. Depending on the Facility load, one or multiple black start

emergency generators can be operated as needed to provide Facility power until stable grid power can be restored.

- *Black Start Mode:* Should there be widespread failure of the electric grid, CCE may be contacted by PJM as a component of the electrical grid restoration plan. Under that circumstance, the black start emergency generators would restore power to the Facility as part of the emergency/standby mode described above. All four black start emergency generators will be required at 100 percent capacity during the starting cycle of one CTG; once one CTG is operational and the electric grid is stable, the black start emergency generators would no longer be required. If the grid is unstable once one CTG is running, the black start emergency generators may continue to operate until a stable grid has been confirmed.

(5) Project Schedule

Construction of the Facility is underway, with commencement of commercial operations now planned to occur by December 2017. Black start capabilities are planned to be available by November 2018. A schedule for the black start emergency generators is provided as Figure 02-7a.

(A) DETAILED DESCRIPTION OF PROPOSED GENERATION AND ASSOCIATED FACILITIES

An updated Figure 02-2 shows the Facility and vicinity on an aerial photograph overlay, showing surrounding road names and major features of the proposed Facility. Additional detail is provided in Figures 02-3d through 3e, plot plans that depict the proposed black start emergency generators in relation to the Facility footprint.

(1) Project Details

(a) Generating Units

No change from prior filings.

(b) Land Area Requirements

No additional land will be required for the proposed black start emergency generators. The black start emergency generators will be located within the original Facility Site and the existing limit of disturbance.

(c) Fuel Quantity and Quality

No changes will be made the fuel quantity or quality used to power the Facility's CTGs. The proposed black start emergency generators will be fueled by ULSD.

(d) Plant Emissions

The impacts on air quality during construction of the proposed black start emergency generators will be consistent with the air quality impacts of Facility construction, but at a much smaller scale.

Emissions from construction of the proposed black start emergency generators will consist mainly of relatively minor emissions from the construction equipment. General construction vehicles (both gasoline- and diesel-powered) and other diesel-powered engines will emit insignificant amounts of volatile organic compounds (VOC), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM) and greenhouse gases (GHG). These emissions are not expected to cause any significant adverse impacts on the Facility Site or surrounding area.

Emissions during operation of the proposed black start emergency generators will include NO_x, VOC, CO, PM, SO₂, sulfuric acid (H₂SO₄), lead (Pb), and GHGs. The black start emergency generators will meet all applicable emission regulations; with their operation, the Facility will continue to comply with National Ambient Air Quality Standards (NAAQS), as further discussed in Section 4906-13-06 (B)(3)(b).

(e) Water Requirements

No change from prior filings. The black start emergency generators will not require any additional water use.

(f) Water Discharge Requirements

No change from prior filings.

(g) Stormwater Management

The black start emergency generators will be included in the developed Facility area; therefore, stormwater flows will be controlled using the design and BMPs implemented for the Facility. A fill station will be installed to catch and

contain small spills that could have the potential to occur during fueling of the black start emergency generators through a common fill line. No additional curbing or unloading facilities will be installed as the proposed black start emergency generators will operate and be refueled infrequently.

(2) Description of Major Equipment

No changes have occurred to the major equipment described in prior filings. The proposed black start emergency generators will be four Caterpillar C175-20 engines with a maximum 5,647 horsepower (hp), each capable of producing 3.9 MW of electricity. The black start emergency generators will be fueled with ULSD. Each unit will utilize an approximately 6,600 gallon double-walled, fire resistant belly tank for fuel storage. Each of the tanks will be incorporated into the design of the engine unit and refueled through a common fill line. The fill station will be designed to catch and contain small spills from refueling activities. The fuel storage tanks will contain enough ULSD for approximately 24 hours of full load emergency operation.

(3) Transmission Line Interconnect

No changes have occurred to the Facility's interconnection with the American Electric Power (AEP) 345 kilovolt (kV) lines. The proposed black start emergency generators will deliver power to the Facility's CTG units and will be exclusively used to provide power to start the CTGs during a black start situation. During testing of the black start emergency generators, energy generated will be used to offset the parasitic load of Facility operations. If the Facility is not operating during testing of the black start emergency generators, loads at the Facility can be turned on to create an electrical demand. In the infrequent situation where the entire Facility is down and sufficient load cannot be

created, some power may be exported to the grid. An updated Preliminary One-Line Diagram is provided as Figure 02-6.

(4) New Natural Gas Transmission Line

No change from prior filings.

(B) DETAILED PROJECT SCHEDULE

(1) Schedule

The Facility is currently under construction, with commencement of commercial operations expected to occur by December 2017. Black start capabilities are planned to be available by November 2018. A schedule for the installation of the black start emergency generators is provided as Figure 02-7a.

(2) Necessity to Maintain Schedule

A timely review of this Amendment by the OPSB is requested to enable CCE to meet PJM's timing requirements for installation and availability of the proposed black start capability.

(A) SITE SELECTION STUDY

No change from prior filings.

(1) Site Selection Process

(a) Description of Study Area

No change from prior filings.

(b) Study Area and Site Map

No change from prior filings.

(c) Siting Criteria

No change from prior filings.

(d) Process for Identifying the Proposed Site

No change from prior filings.

(e) Factors in Selecting the Proposed Site

No change from prior filings.

(2) Constraint Map

No change from prior filings.

(B) SUMMARY TABLE OF EVALUATED SITES

No change from prior filings.

(C) ADDITIONAL SITE SELECTION STUDIES

No change from prior filings.

(A) SITE

(1) Geography and Topography

No change from prior filings.

(2) Aerial Photograph

An updated Figure 02-2 provides an aerial photograph showing the location of the Facility and proposed black start emergency generators in relation to surface features. As stated previously, the proposed black start emergency generators will be located entirely within the Facility Site, within the the prior limits of disturbance.

(3) Site Mapping

No change from prior filings.

(4) Geology and Seismology

(a) Geological Issues

No change from prior filings.

(b) Soils and Soil Suitability

No change from prior filings.

(5) Hydrology and Wind

(a) Characteristics of Directly Affected Waterbodies

No change from prior filings.

(b) Potential for Flooding or High Wind Conditions

No change from prior filings.

(c) Aquifer Mapping

No change from prior filings.

(B) LAYOUT AND CONSTRUCTION

No change from prior filings. Erosion and sediment control measures will continue to be utilized, as applicable, during installation of the proposed black start emergency generators.

(1) Site Activities

(a) Test Borings

No change from prior filings.

(b) Removal of Vegetation

As previously described, the proposed black start emergency generators will be entirely located in an area previously cleared and disturbed for construction of the Facility. No currently existing vegetation will be removed as a result of installation of the black start emergency generators. Installation of the extended fenceline will require only minimal disturbance.

(c) Grading and Drainage

The proposed black start emergency generators will be located on an area of the Facility Site that has been graded and properly sloped for construction of the Facility's major components and structures. Ditches, swales, and drainage structures on the Facility Site will be used to capture stormwater from the location of the black start emergency generators and direct it to the existing stormwater management system for the Facility. The black start emergency generators will be

fueled through a common fill line, and the fill station will be designed to catch and contain small spills that may occur during refueling activities.

(d) Access Roads

No change from prior filings.

(e) Removal and Disposal of Debris

No change from prior filings.

(f) Post-Construction Reclamation

No change from prior filings.

(2) Layout

The overall layout of the Facility with the black start emergency generators and extended Facility fence line is provided on the updated Figure 02-2 (Proposed Facility and Vicinity) and the proposed Black Start Emergency Generator Plot Plans (Figures 02-3d through 3e). Note that the Facility fenceline is being extended along the Facility Site boundary in order to restrict public access to this area. An updated Figure 02-6 (Preliminary Electrical One-Line Diagram) is also provided.

(3) Structures

(a) Dimensions

Dimensions of the Facility's major structures have not meaningfully changed since the prior filings. The four black start emergency generators will be enclosed in a single approximately 5,168-square foot building, with a maximum height of 29 feet. The four black start emergency generator stacks will be

approximately 30 feet high, and will extend through the roof of the enclosure building.

(b) Construction Materials

The black start emergency generators will be enclosed in a pre-engineered building consisting of weatherproof metal. All materials and construction practices used will meet or exceed safe and reliable power plant engineering and design standards.

(c) Color and Texture

Ribbed siding materials will be used for the black start emergency generator metal enclosure. Design colors for the enclosure will be selected to match those of the Facility's major components and structures.

(d) Pictorial Sketches

No significant changes from prior filings. The additional black start emergency generators will represent an insignificant change to the original rendering of the Facility.

(e) Unusual Features

No change from prior filings.

(4) Plans for Construction

No change from prior filings.

(5) Future Plans

No change from prior filings.

(C) EQUIPMENT

(1) Description of Major Generating Equipment

No change from prior filings.

(a) Combustion Turbine Generators

No change from prior filings.

(b) Steam Turbine Generator

No change from prior filings.

(c) Heat Recovery Steam Generators

No change from prior filings.

(d) Natural Gas System

No change from prior filings.

(e) Steam System

No change from prior filings.

(f) Condensate System

No change from prior filings.

(g) Feedwater System

No change from prior filings.

(h) Air Cooled Condenser

No change from prior filings.

(i) Closed Loop Auxiliary/Cooling Water System

No change from prior filings.

(j) Fire Protection System

No change from prior filings.

(k) Water System

No change from prior filings.

(l) Demineralizer

No change from prior filings.

(m) Wastewater System

No change from prior filings.

(n) Backup Generator

The prior filings described a generator utilizing ULSD designed to safely shut the Facility down in the event of a disruption to power delivery. No changes have been made to the back up generator described in prior filings.

The proposed black start emergency generators will function to restore Facility power in the event the Facility power is lost. The black start emergency generators will improve grid reliability and responsiveness during a black out situation in which operation of the electric grid must be restarted.

As previously discussed, the black start emergency generators will be 5,647 hp engines each capable of producing 3.9 MW of electricity. The black start emergency generators will be fueled by ULSD stored in integrated double-walled tanks. Each generator will hold approximately 6,600 gallons of ULSD. The black start emergency generator fuel tanks will be fueled via a common fill line, and the fill station will be designed to catch and contain small spills from refueling

activities. Note that ULSD will be refreshed annually to prevent fuel from going stale.

(o) Transformers and Switchyard

No change from prior filings.

(2) Emissions Control and Safety Equipment

(a) Flue Gas Emissions Control

The proposed black start emergency generators will operate as emergency generators and will comply with the emission requirements for emergency generators, as discussed in Section 4906-13-06 (B)(1)(c). No additional emissions controls will be included into the design of the engines.

(b) Equipment Reliability and Efficiency Reduction

No change from prior filings.

(c) Effluent Control Equipment

No change from prior filings.

(d) Public Safety Equipment

No change from prior filings.

(3) Other Major Equipment

No change from prior filings.

(a) Combustion Turbine Air Inlet Coolers

No change from prior filings.

(b) Auxiliary Boiler

No change from prior filings.

(c) Natural Gas Heaters

No change from prior filings.

(d) Oil/Water Separator

No change from prior filings.

(D) REGIONAL ELECTRIC POWER SYSTEM

No change from prior filings.

(A) OWNERSHIP

No change from prior filings.

(B) CAPITAL AND INTANGIBLE COSTS

(1) Estimated Capital and Intangible Costs

No change from prior filings.

(2) Capital Cost Comparison

No change from prior filings.

(3) Present Worth and Annualized Capital Costs of Alternatives

No change from prior filings.

(C) OPERATION AND MAINTENANCE EXPENSES

(1) Estimated Annual Operation and Maintenance Expenses

(a) Fixed Operation and Maintenance

No change from prior filings.

(b) Variable Operation and Maintenance

No change from prior filings.

(c) Fuel Operating Expense

No change from prior filings.

(2) Operation and Maintenance Expenses Comparison

No change from prior filings.

(3) Present Worth and Annualized Operation and Maintenance Expenses for Alternatives

No change from prior filings.

(D) DELAYS

No change from prior filings.

(A) GENERAL

No change to introductory language from prior filings.

(B) AIR

(1) Preconstruction

(a) Description of Ambient Air Quality

No change from prior filings.

(b) Description of Pollution Control Equipment

No changes have occurred to the pollution control equipment for the Facility. The proposed Caterpillar black start emergency generators are manufacturer-tested and certified to comply with appropriate regulations for emergency generators, as discussed in Section 4906-13-06 (B)(1)(c). No additional pollution control equipment is required to be installed on the black start emergency generators.

(c) Description of Regulatory Applicability

Regulatory applicable for the Facility has not changed; additional requirements associated with the black start emergency generators are discussed below.

The four black start emergency generators will be required to meet United States Environmental Protection Agency (USEPA) emissions certification criteria as defined in 40 Code of Federal Regulation (CFR) 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

Subpart IIII specifies that new emergency diesel generators must satisfy size-specific non-road engine emission limits in accordance with 40 CFR 89.112. New non-road and stationary emergency diesel engines greater than 560 mechanical kilowatts (kWm) must satisfy emission limits known as “Tier 2” limits. Tier 2 emission limits are defined as:

- 6.4 grams per kilowatt-hour (g/kWhr) of NO_x and non-methane hydrocarbons (NMHC), which correspond to VOC;
- 3.5 g/kWhr CO; and
- 0.2 g/kWhr of PM.

Engines are tested using a USEPA-defined load cycle test to establish compliance with these Tier 2 emission limits, and manufacturers certify compliance with the required non-road emission limits for specific engine families. In addition, Subpart IIII also requires that new emergency diesel engines operate using ULSD.

No restrictions are defined in 40 Subpart IIII on the numbers of hours a new emergency generator can operate during an emergency. However, Subpart IIII does restrict non-emergency operation of new emergency generators. The total amount of non-emergency operation allowed in any calendar year is 100 hours. Non-emergency operation is defined as routine testing or operation of emergency units during construction or maintenance activities in order to supply power. Subpart IIII additionally limits non-emergency and periodic testing operation to 50 hours per calendar year. CCE will limit non-emergency operation of the proposed black start emergency generators to meet Subpart IIII requirements.

CCE is proposing to restrict the total potential emissions of the four black start emergency generators to less than the Prevention of Significant Deterioration (PSD) Significant Emission Rate (SER) thresholds to ensure that the requirements of the PSD regulatory program are met. CCE is proposing to limit the total operation, including emergency and non-emergency operations, to 300 total hours on a rolling 12-month basis, and potential air emissions have been calculated based on this operational limit. Table 06-1 compares the potential emissions of the black start emergency generators to the PSD SER thresholds; as shown, the potential emission for all PSD pollutants are less than the PDS SER thresholds.

Table 06-1 Black Start Emergency Generator Potential Emissions Compared to PSD SER Thresholds

Pollutant	Emission Rate	Annual Potential Emissions (tons per year)	PSD SER (tons per year)
NO _x	6.4 (g/kWhr)	35.6	40
VOC	0.79 (g/kWhr)	4.4	40
CO	3.5 (g/kWhr)	19.5	100
PM ₁₀ /PM _{2.5} ^a	0.20 (g/kWhr)	1.1	15/10
SO ₂	0.0015 (lb/MMBtu) ^b	0.034	40
H ₂ SO ₄	0.000132 (g/kWhr)	0.00074	7
Lead (Pb)	0.000014 (lb/MMBtu)	0.00032	0.6
CO ₂ ^c (GHG)	1.164 (lb/hp-hr) ^d	3,945	75,000

a) PM₁₀ = particulate matter with a diameter of 10 microns or less; PM_{2.5} = particulate matter with a diameter of 2.5 microns or less

b) pounds per million British thermal units

c) carbon dioxide equivalents

d) pounds per horsepower-hour

The emissions are based on the maximum engine rating of 4,211 kWm per unit and the Tier 2 standards, as specified above, for NO_x, CO and PM. It is conservatively assumed that all 6.4 g/kWhr of NO_x and NMHC will be NO_x, and NMHC will

constitute a smaller fraction of 6.4 g/kWhr. For potential emission calculation purposes, the fraction of the 6.4 g/kWhr that is VOC is calculated to be 0.79 g/kWhr, consistent with the derivation for the existing Facility emergency generator reflected in the CCE Final Air Pollution Permit-to-Install, issued November 5, 2013. Potential emissions of H₂SO₄, Pb, and GHG are also based on the same factor used for the existing Facility emergency generator. Emissions of SO₂ are based on the use of ULSD.

(d) Required Permits to Install and Operate Air Pollution Sources

The proposed black start emergency generators will be subject to Ohio EPA's PBR program, as the generators qualify as emergency generators under Ohio Administrative Code (OAC) Chapter 3745-31-03 (C)(2)(a). OAC Chapter 3745-31-30 requires that an applicant installing an emergency generator regulated under the PBR program submit a notice to Ohio EPA with information on the planned installation, and comply with all requirements of the PBR provisions for emergency generators.

The PBR requirements specify that generators may not be operated for more than 500 hours in any 12-month time period. The 500 hour limit applies to total operation (both emergency and non-emergency situations). As noted above, CCE is proposing a limit on total operation of each black start emergency generator of no more than 300 hours in any 12-month period, which is well below this operational restriction.

Ohio PBR requirements also specify that emergency generators covered under the PBR program must satisfy USEPA requirements under 40 CFR 60

Subpart IIII, as well as 40 CFR 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. For new emergency generators, the Subpart ZZZZ requirements are satisfied if the units comply with 40 CFR 60 Subpart IIII. The four Caterpillar Model C175-20 black start emergency generators proposed for installation at the Facility will be certified for compliance with 40 CFR 60 Subpart IIII and will, therefore, also comply with 40 CFR 63 Subpart ZZZZ requirements.

Once the Facility receives its Title V operational permit, the black start emergency generators will be incorporated with all other Facility emissions sources and regulated under that permit.

(e) Air Monitoring Stations and Major Source Mapping

No change from prior filings.

(f) Demonstration of Regulatory Compliance

The PBR forms for the black start emergency generators were submitted in April 2017. As requested by Ohio EPA, air dispersion modeling was also conducted for the proposed black start emergency generators. A summary memorandum was submitted to Ohio EPA for review of the air dispersion modeling results.

(2) Construction

Construction impacts on air quality during installation of the proposed black start emergency generators will be similar to those resulting from construction of the Facility; however, impacts will be at a significantly smaller scale. General construction impacts will

consist of relatively minor emissions from the construction equipment and from fugitive dust emissions.

(3) Operation

(a) Description of Air Quality Monitoring Plans

No change from prior filings.

(b) Estimated Air Concentration Isopleths

During discussions with Ohio EPA regarding the proposed black start emergency generators, Ohio EPA indicated that CCE should conduct air dispersion modeling for annual averaging period pollutants for the proposed engines in combination with the original CCE Facility.

The ambient air quality impacts of the proposed black start emergency generators were assessed by dispersion modeling, using the USEPA model AERMOD, in accordance with Ohio EPA guidance as summarized in *Engineering Guide #69, Air Dispersion Modeling Guidance*. Modeling was performed using five years of hourly meteorological data (2010 through 2014) consisting of surface data and mixing heights from the National Weather Service Station at the Pittsburgh International Airport. Table 06-4 provides the modeling results for both the black start emergency generators and the original CCE Facility (modeled previously). The results show that maximum predicted total impacts are below the corresponding Significant Impact Levels for all pollutants. Therefore, compliance with the NAAQS and PSD Increments is demonstrated.

TABLE 06-4
Maximum Calculated Facility Impacts for Criteria Pollutants

Pollutant	Averaging Time	Maximum Impact for Black Start Emergency Generators ($\mu\text{g}/\text{m}^3$)^a	Maximum Impact for Original Facility ($\mu\text{g}/\text{m}^3$)	Total CCE Facility Impact with Black Start Emergency Generators ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ($\mu\text{g}/\text{m}^3$)
PM _{2.5}	Annual	0.0074	0.07	0.08	0.2
NO ₂	Annual	0.76	0.08	0.84	1

^amicrograms per cubic meter

(c) Potential Failure of Air Pollution Control Equipment

No changes have been made to the Facility's air pollution control equipment or the reliability, safety, and effectiveness of the equipment. As previously discussed, the proposed black start emergency generators will meet the emissions requirements for emergency generators and will not require additional air pollution control equipment.

(C) WATER

No change from prior filings.

(1) Preconstruction

(a) List of Permits

No change from prior filings.

(b) Location of Survey Data Sources

No change from prior filings.

(c) Description of Data Sampling Stations

No change from prior filings.

(d) Water Quality of Receiving Stream

No change from prior filings.

(e) Water Discharge Permit Information

Construction and operation of the proposed black start emergency generators will not change the Facility's discharge of wastewater and will not materially change the Facility's discharge of stormwater. Stormwater collected from the vicinity of the black start emergency generator building will flow into the Facility's stormwater collection system, and be managed under the Facility's existing stormwater and National Pollutant Discharge Elimination System (NPDES) requirements. The fill station, where ULSD will be delivered to refuel the black start emergency generators, will be designed to catch and contain small spills that may occur during refueling activities.

(2) Construction

(a) Description of Water Monitoring and Gauging Stations

No change from prior filings.

(b) Quality and Quantity of Aquatic Discharges from the Site

There will be no direct discharge to surface water during construction of the proposed black start emergency generators.

(c) Plans to Mitigate Effects

During installation of the proposed black start emergency generators, BMPs will be used in accordance with federal and state requirements to ensure that the potential for erosion and sedimentation will be minimized during construction.

(d) Changes in Flow Patterns and Erosion

No change from prior filings.

(3) Operation

(a) Description of Water Monitoring and Gauging Stations

No change from prior filings.

(b) Water Pollutant Control Equipment and Treatment Processes

No changes to the Facility's water pollution control equipment have occurred since the prior filings. No wastewater will be generated during operation of the proposed black start emergency generators; therefore, no water pollution control equipment will be required.

(c) NPDES Requirements and Schedule

No NPDES operational stormwater permit will be required for the proposed black start emergency generators. Stormwater flows from the location of the black start emergency generators will be directed to the Facility's stormwater management system. BMPs will be incorporated as an element of the stormwater management procedures. ULSD will be delivered via truck to the Facility, where the black start emergency generators will be refueled through common fill line at a fill station. The fill station will be designed to catch and contain small spills that may occur during the refueling process.

(d) Quantitative Flow Diagram

No change from prior filings.

(e) Water Conservation Practices

No change from prior filings.

(D) SOLID WASTE

(1) Preconstruction

No change from prior filings.

(2) Construction

During installation of the black start emergency generators, solid waste will be generated that is typical of normal construction efforts. Anticipated solid wastes include packing materials, office waste, scrap lumber, metals, cables, glass, and cardboard containers (in small quantities). All waste will be removed from the Facility Site by licensed contractors in accordance with applicable regulatory requirements and managed in licensed facilities.

(3) Operation

No change from prior filings.

(4) Licenses and Permits

No change from prior filings.

No change from prior filings.

(A) HEALTH AND SAFETY

(1) Demographic Characteristics

No change from prior filings.

(2) Atmospheric Emissions

No impact to the population is anticipated as a result of atmospheric emissions from the proposed black start emergency generators. The black start emergency generators will operate infrequently and will be in full compliance with all applicable ambient air quality standards and permit requirements.

(3) Noise

No change in introductory language from prior filings.

(a) Construction Noise Levels

No change since original filing; installation will be a part of overall Facility construction efforts.

(b) Operational Noise Levels

The proposed black start emergency generators are anticipated to operate infrequently. If operating under emergency conditions, their operation will be a necessity in order to restore electrical service to the grid in the event of a black out. This type of event, that may never occur but that provides an “insurance policy” for electrical service, could occur at any time day or night, and would not be likely to result in significant impact within the context of the accompanying emergency conditions. Therefore, assessment of

sound level impacts has focused on the potential impacts associated with routine operations and testing.

As previously noted, monthly testing of each unit (one at a time) will be required and annual testing of the units operating together will be required. Testing will only be conducted during daytime hours, and will be over a short time duration (30 to 60 minutes for each test). Each of these scenarios has been evaluated.

Predicted sound levels at each of the residential receptors assessed in the original Application are provided in Table 07-6a and Table 07-6b, reflecting the proposed operation of the black start emergency generators with full Facility operation. Figures 07-3a and Figure 07-3b present sound level contours for each of the operating scenarios assessed.

TABLE 07-6a
Predicted Residential Noise Levels During Monthly Black Start Emergency Generator Testing

Receiver	Sound Level from Facility^a (dBA^c)	Sound Level from Black Start Generators^b (dBA)	Combined Sound Level from Facility and Black Start Generators (dBA)
R1	39	44	45
R2	44	43	47
R3	45	50	51
R4	45	64	64
R5	43	65	65
R6	39	53	53
R7	41	46	47

a) Facility is fully operational, estimated sound levels from Appendix K of original Application.

b) One black start emergency generator operating at 50 percent load.

c) A-weighted decibel, corresponding to the sensitivity range for human hearing.

TABLE 07-6b
Predicted Residential Noise Levels During Emergency Black Start and Annual Testing

Receiver	Sound Level from Facility^a (dBA)	Sound Level from Black Start Generators^b (dBA)	Combined Sound Level from Facility and Black Start Generators (dBA)
R1	38	52	52
R2	43	51	52
R3	44	58	58
R4	44	70	70
R5	42	72	72
R6	38	60	60
R7	40	54	54

- a) One CTG and ancillary equipment of the Facility is in operation, estimated sound levels from Appendix K of original Application.
b) Four black start emergency generators operating at 100 percent load.

Although operation of the black start emergency generators during monthly and annual testing will exceed the 45 dBA sound level goal at nearby residential receivers discussed in the original filing, these impacts will be limited, as testing will be infrequent and short in duration. In addition, testing will only occur during daytime hours, when ambient sound levels are higher.

The sound level with the Project operating would be within the subjective category of a quiet setting (as reflected in the original filing). During the extremely limited periods of testing, sound levels will increase in the most proximate locations but to a subjective category of a moderate sound level setting. With daytime ambient conditions higher than the nighttime standards and given the very limited operation that will occur (unless an emergency condition warrants full operation), this sound level is considered to be acceptable. In addition, CCE has good neighbor agreements in place for several of the Facility's closest neighbors.

(c) Identification of Noise-Sensitive Areas

No change from prior filings.

(d) Description of Equipment and Noise Mitigation Measures

No change from prior filings.

(4) Water

No significant impact to water bodies is anticipated as a result of the proposed black start emergency generators. The black start emergency generators have no water needs and will not generate wastewater. Stormwater flows will be directed to the Facility's stormwater management system where they will be treated on-site through settling in stormwater collection ponds prior to being released to groundwater. The black start emergency generators will be refueled at a fill station equipped to catch and contain small spills that may occur during refueling activities.

(a) Construction and Operation Impact to Public and Private Water Supplies

No change from prior filings.

(b) Impact of Pollution Control Equipment Failures on Public and Private Water Supplies

No change from prior filings.

(B) ECOLOGICAL IMPACT

(1) Site Information

(a) Mapping

No change from prior filings.

(b) Vegetation Survey

No change from prior filings.

(c) Species Survey

No change from prior filings.

(d) Ecological Study

No change from prior filings.

(e) List of Major Species

No change from prior filings.

(2) Construction

(a) Impact of Construction on Undeveloped Areas

The proposed black start emergency generators will be located within the Facility Site in an area previously disturbed during construction of the Facility's major structures; therefore, the only currently undeveloped area that will be disturbed during installation of the black start emergency generators is a very small impact associated with fence installation.

(b) Impact of Construction on Major Species

No change from prior filings.

(c) Mitigation for Short-Term and Long-Term Construction Impacts

The same mitigation measures described in the prior filings will be utilized to mitigate short-term and long-term construction impacts from the installation of the four proposed black start emergency generators. Mitigation measures will include sediment and erosion control, dust and particle control, and revegetation where appropriate.

(3) Operation

(a) Impact of Operation on Undeveloped Areas

Operation of the black start emergency generators is expected to result in a localized increase in noise in the immediate vicinity. As previously stated, the proposed black start emergency generators will operate infrequently, and noise impacts will not be a regular occurrence.

(b) Impact of Operation on Major Species

No change from prior filings.

(C) Economics, Land Use and Community Development

(1) Land Uses

(a) Land Use Mapping

No change from prior filings.

(b) Residential Structures

No change from prior filings.

(c) Land Use Impact

No change from prior filings.

(d) Structures to be Removed or Relocated

No change from prior filings.

(e) Formally Adopted Plans for Future Use of the Site and Surrounding Lands

No change from prior filings.

(f) Applicant Plans for Concurrent or Secondary Uses of the Site

No change from prior filings.

(2) Economics

(a) Annual Total and Present Worth of Construction and Operation Payroll

No change from prior filings.

(b) Construction and Operation Employment

No change from prior filings.

(c) Increase in Local Revenue

No change from prior filings.

(d) Economic Impact on Local Commercial and Industrial Activities

No change from prior filings.

(3) Public Services and Facilities

No change from prior filings.

(4) Impact on Regional Development

(a) Impact on Regional Development

No change from prior filings.

(b) Compatibility with Regional Plans

No change from prior filings.

(D) Cultural Impact

No change from prior filings.

(1) Cultural Resource Mapping

No change from prior filings.

(2) Cultural Resource Impacts

No change from prior filings.

(3) Cultural Resource Landmarks

No change from prior filings.

(4) Land and Water Recreation Area Mapping

No change from prior filings.

(5) Land and Water Recreation Areas

No change from prior filings.

(6) Recreational Areas and Potential Impacts

No change from prior filings.

(7) Measures to Minimize Visual Impacts

No change from prior filings. The additional black start emergency generators will represent an insignificant change to the Facility's visual impacts.

(E) Public Responsibility

(1) Public Interaction Program

No change from prior filings.

(2) Liability Compensation Plans

No change from prior filings.

(F) AGRICULTURAL DISTRICT IMPACT

No change from prior filings.

(1) Agricultural Land Mapping

No change from prior filings.

(2) Potential Impact to Agricultural Lands

(a) Potential Construction, Operation and Maintenance Impacts

No change from prior filings.

(b) Agricultural Mitigation Practices

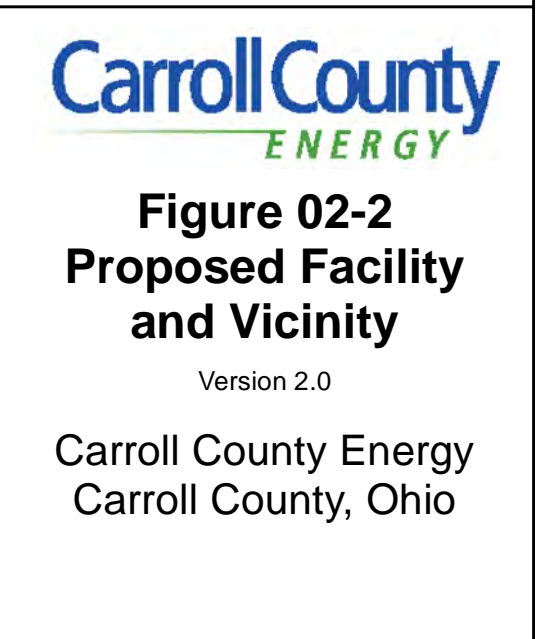
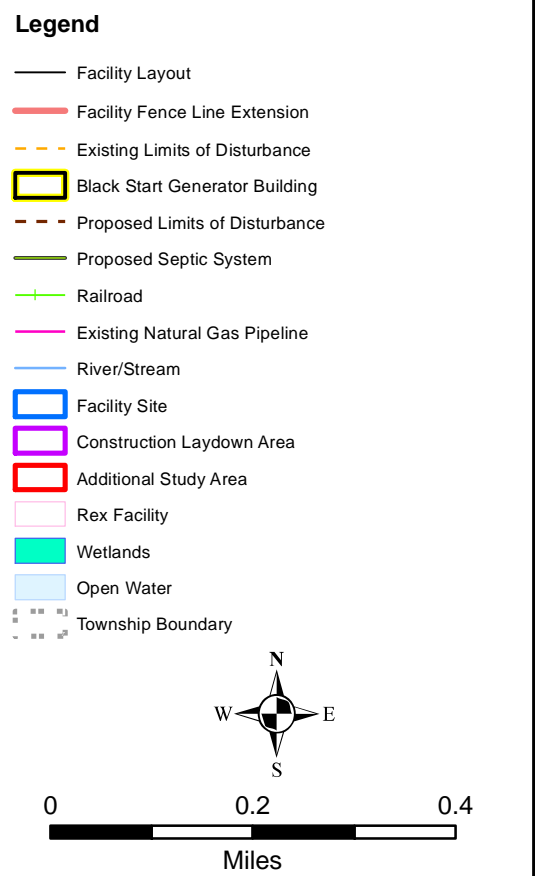
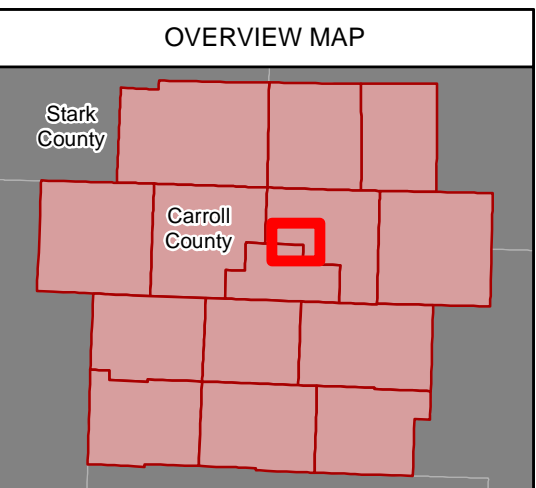
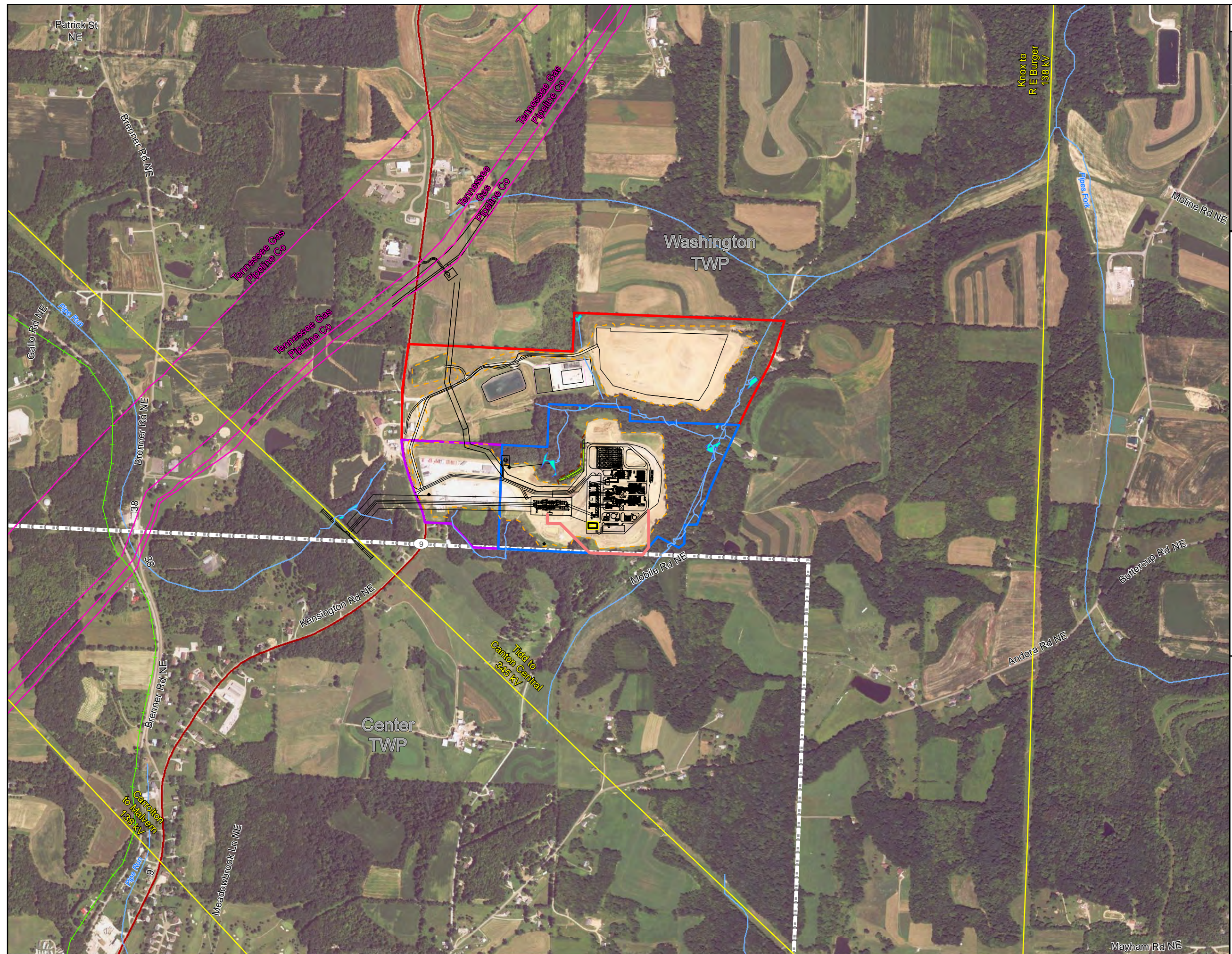
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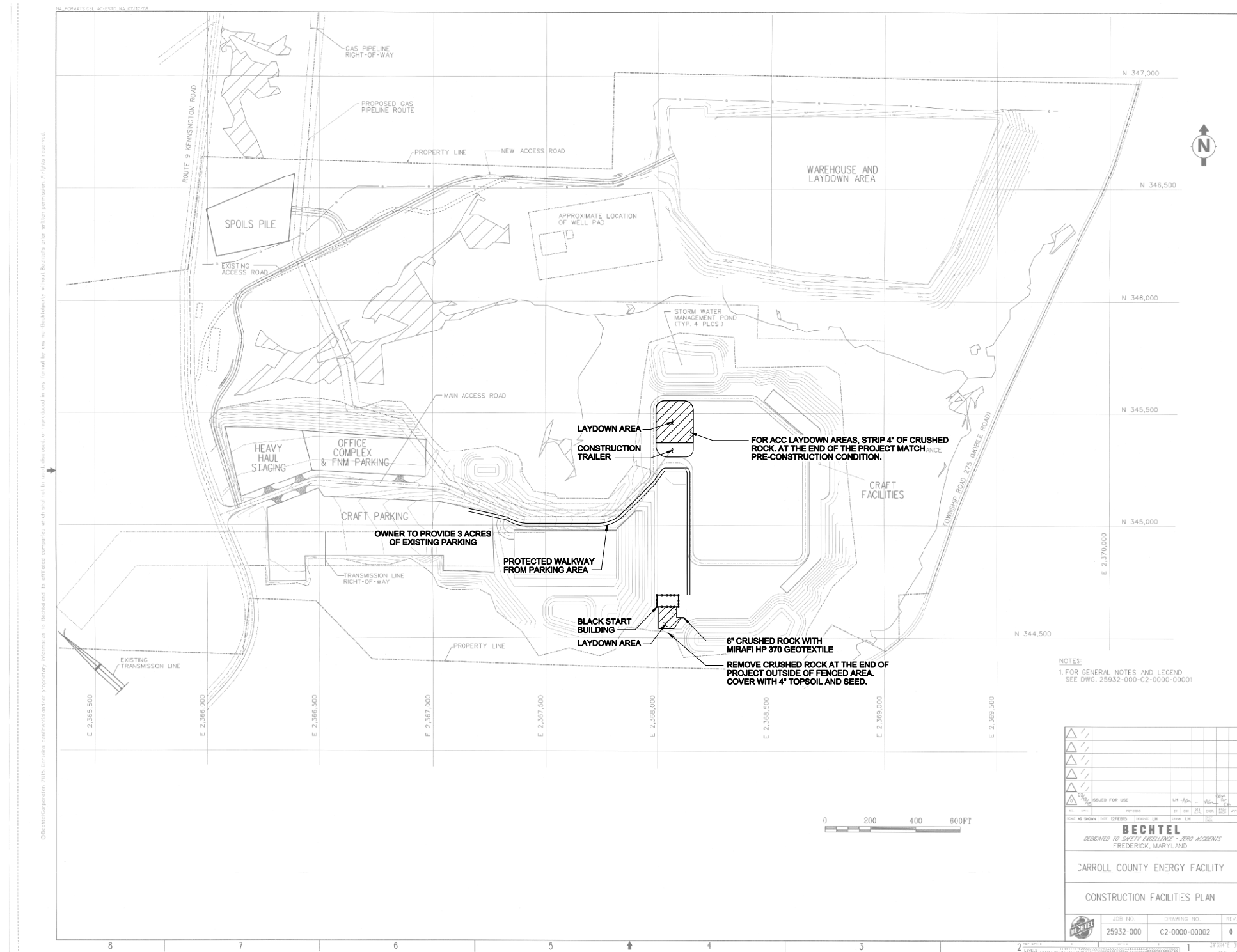
(3) Potential Impact on Agricultural Viability

No change from prior filings.

Section 13-02: Updated Figures

- **Figure 02-2: Proposed Facility and Vicinity**
- **Figure 2-3d through 2-3e: Proposed Black Start Generators Plot Plan**
- **Figure 02-6a: Preliminary One-Line Diagram Including Black Start Generation**
- **Figure 02-7a: Black Start Emergency Generator's Project Schedule**



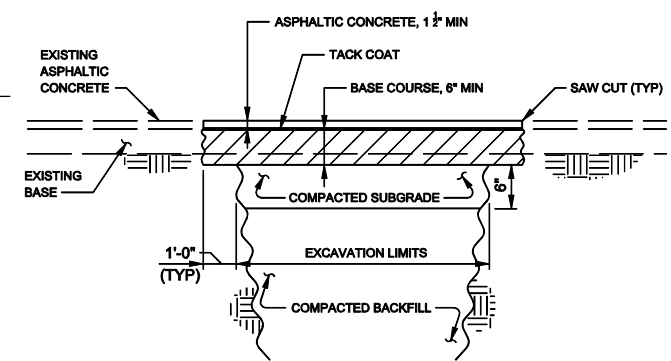
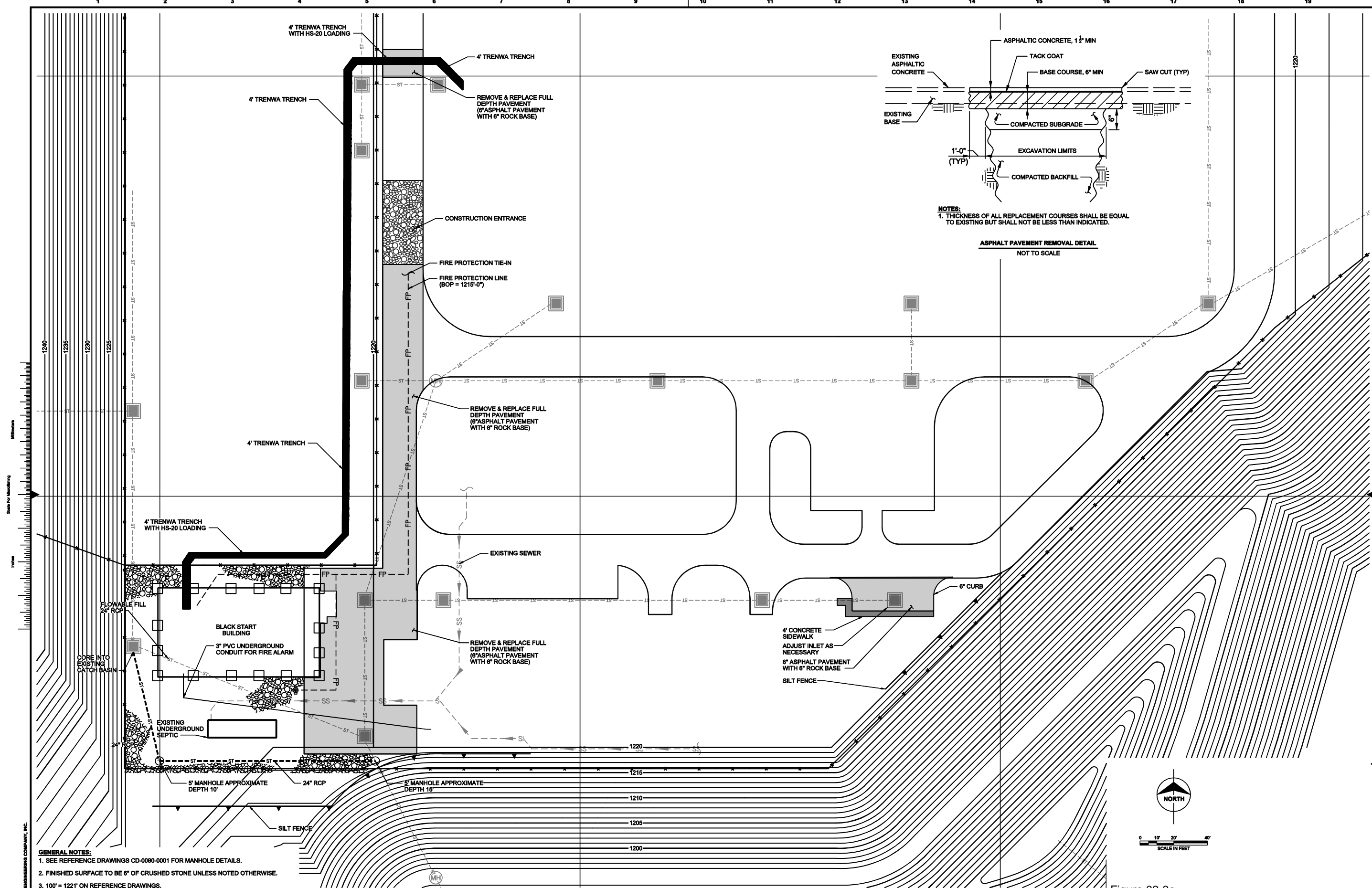
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**9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
FIRM LICENSE NO. 1557**

designed M. BLEYTHING	detailed N. LUTZ
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Figure 02-3d
Proposed Black Start Emergency Generators Plot
Plan

Carroll County Energy
Carroll County, Ohio



NOTES:
1. THICKNESS OF ALL REPLACEMENT COURSES SHALL BE EQUAL TO EXISTING BUT SHALL NOT BE LESS THAN INDICATED.

ASPHALT PAVEMENT REMOVAL DETAIL
NOT TO SCALE

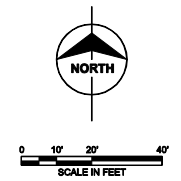


Figure 02-3e
Proposed Black Start Emergency Generators Plot
Plan Cont.

Carroll County Energy
Carroll County, Ohio

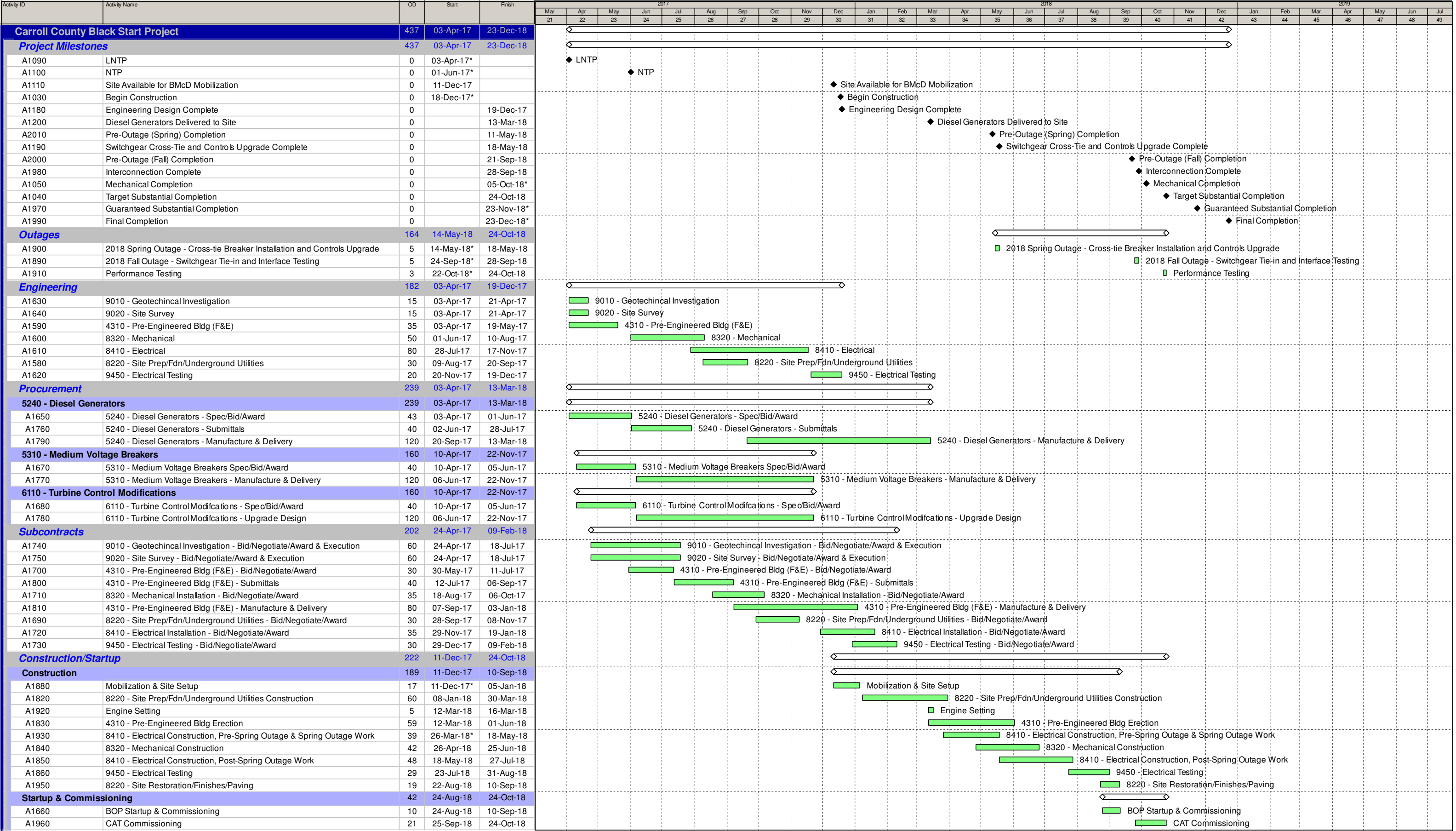
- GENERAL NOTES:**
1. SEE REFERENCE DRAWINGS CD-0090-0001 FOR MANHOLE DETAILS.
 2. FINISHED SURFACE TO BE 6\"/>
 3. 100' = 1221' ON REFERENCE DRAWINGS.

0	10/31/16	MDB	ISSUED FOR BID												
no.	date	by	ckd	description				no.	date	by	ckd	description			



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FIRM LICENSE NO. 1557

designed M. BLEYTHING	detailed N. LUTZ
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Section 13-07: Updated Figures

- **Figure 07-3a: Predicted Noise Impact Contours During Monthly Testing Scenario**
- **Figure 07-3b: Predicted Noise Impact Contours During Black Start Emergency Scenario**

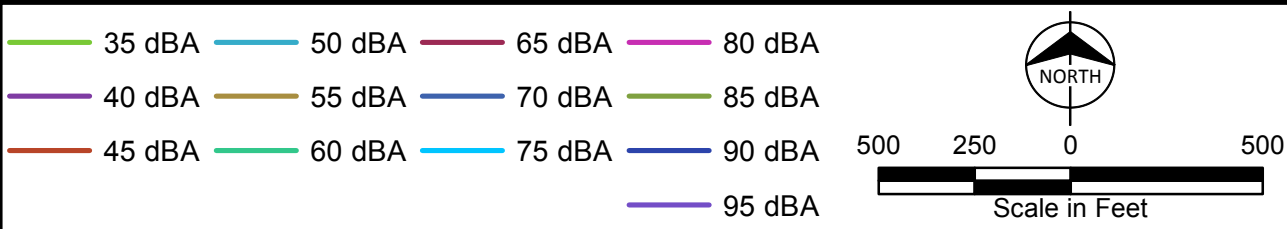
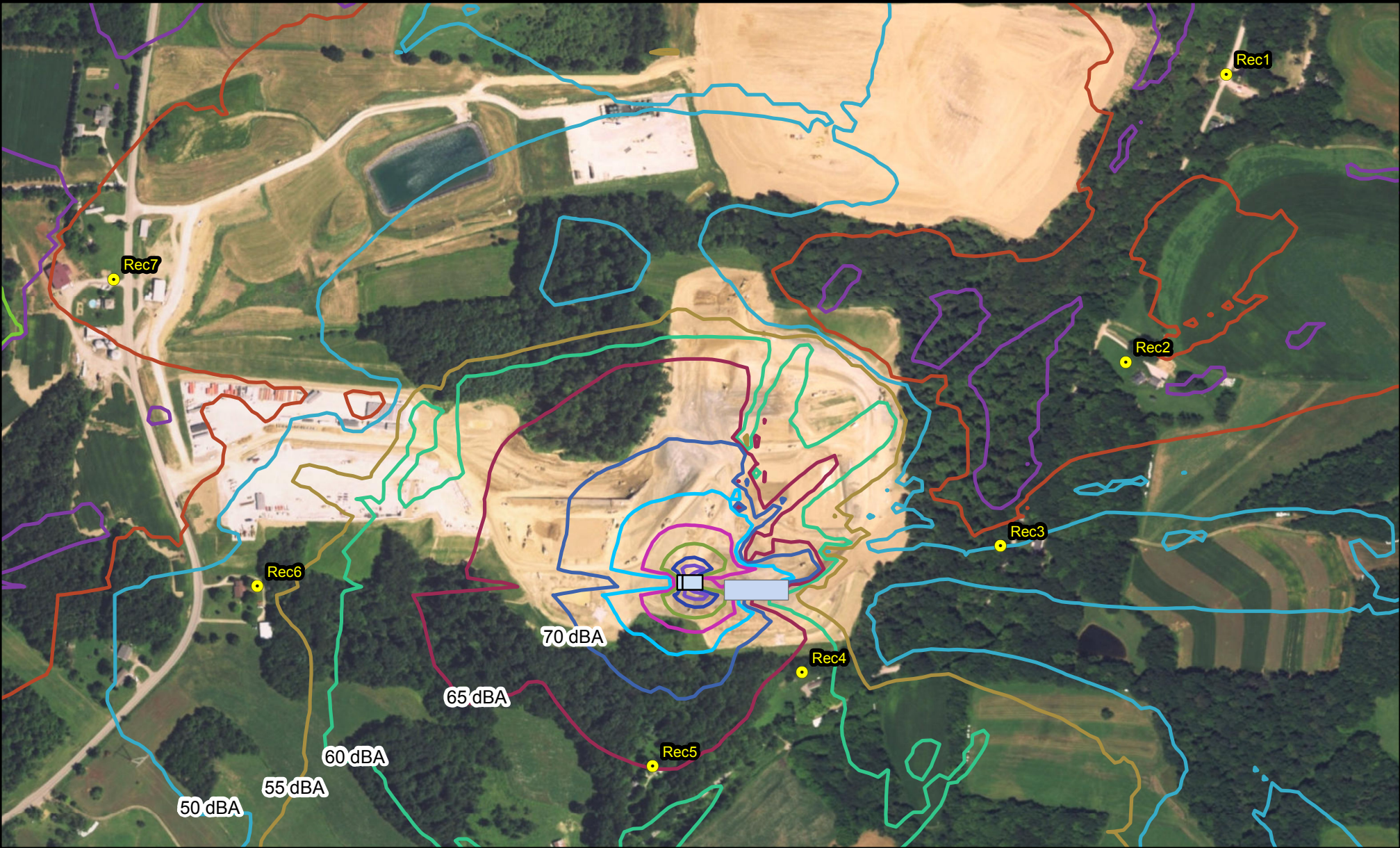


Figure 07-3a
Predicted Noise Impact Contours During Monthly Testing Scenario

Carroll County Energy
Carroll County, Ohio

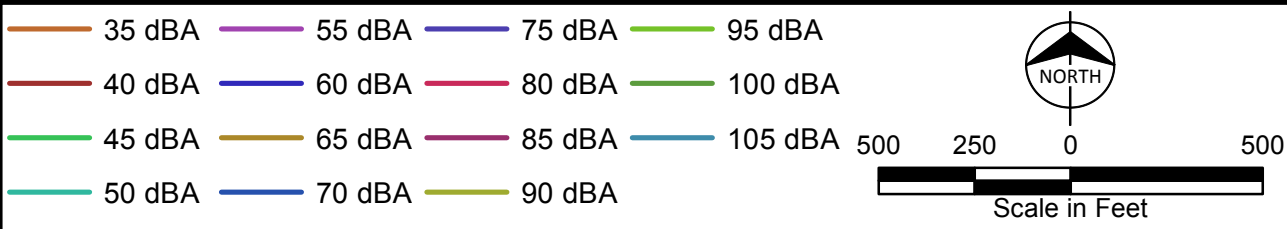
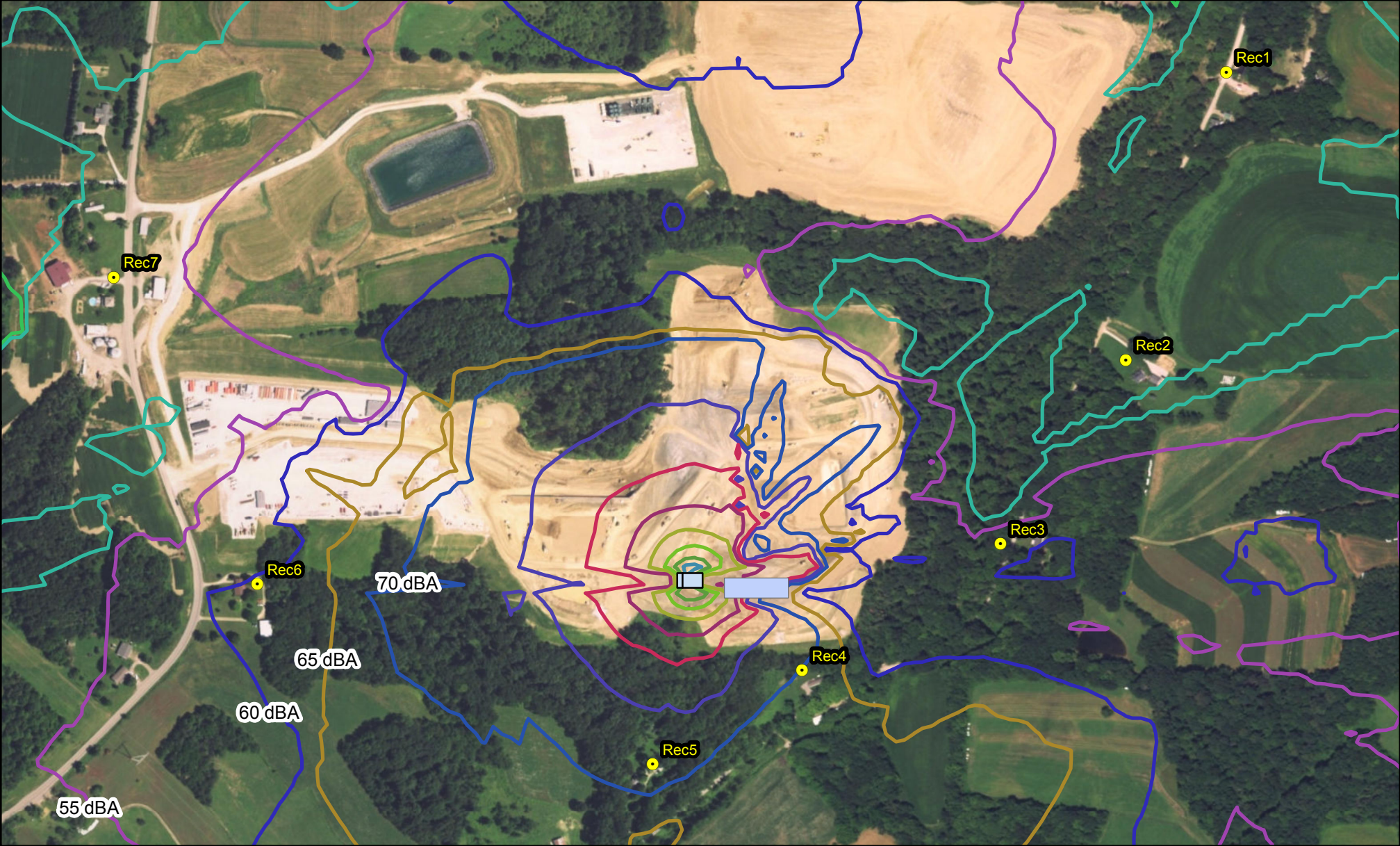


Figure 07-3b
Predicted Noise Impact Contours During Black Start Emergency Scenario

Carroll County Energy
Carroll County, Ohio

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Case No(s). 17-0925-EL-BGA

Summary: Application for Third Amendment to Certificate electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC