Office of Energy Projects

October 2024

**Mississippi Hub, LLC** **Docket No. CP24-80-000**

# MS Hub Capacity Expansion Project

## Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 4
Mississippi Hub, LLC
MS Hub Capacity Expansion Project
Docket No. CP24-80-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the MS Hub Capacity Expansion Project, proposed by Mississippi Hub, LLC (MS Hub) in the above-referenced docket. MS Hub requests authorization to add up to 0.7 billion cubic feet (Bcf) per day of injection capacity[1] and up to 1.0 Bcf per day of delivery capacity[2] to MS Hub's existing MS Hub Storage Facility infrastructure, as well as perform related modifications within Simpson, Covington, and Jefferson Davis Counties, Mississippi.

The EA assesses the potential environmental effects of the construction and operation of the MS Hub Capacity Expansion Project in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

The proposed MS Hub Capacity Expansion Project includes the following modifications to the existing MS Hub Storage Facility in Simpson County, Mississippi:

- increase the certificated capacity[3] of Gas Storage Caverns No. 1 and No. 2 by a total of 3.87 Bcf;
- construct three new gas storage caverns Nos. 4, 5, and 6 totaling approximately 30.0 Bcf of working gas capacity;[4]
- increase the certificated working gas capacity[5] at the MS Hub Storage Facility by approximately 33.9 Bcf per day;

[1] The volumetric rate at which gas can be injected into a storage cavern.
[2] The volumetric rate at which gas can be withdrawn from a storage cavern.
[3] The total gas capacity of a storage cavern including the working gas capacity plus the base gas capacity. Base gas capacity is defined as the capacity of the cavern that is used to provide pressure support for integrity and/or deliverability requirements.
[4] The capacity of the gas storage caverns used for jurisdictional service.
[5] The fraction of certificated capacity that is working gas capacity.

- construct two electric motor-driven compressor units each rated at 7,000 horsepower (hp) and three Caterpillar model G3616 A4 reciprocating internal combustion engine natural gas-fired compressor units each rated at 5,500 hp, and dehydration and ancillary equipment at the existing Gas Handling Facility; and
- expand the existing Leaching Facility for the solution mining of each cavern by installing additional pumps, water tanks and separators.

In addition, the MS Hub Capacity Expansion Project includes construction and operation of the following facilities:

Simpson County, Mississippi

- one meter skid and one filter separator on the existing Southern Natural Gas (SONAT) Metering and Regulation (M&R) Station site;
- four raw water wells Nos. 6 through 9;
- one new saltwater disposal well No. 9; and
- two saltwater disposal wells Nos. 5 and 7 collocated at the existing raw water well No. 3 and saltwater disposal well No. 3 wellpad.

Covington County, Mississippi

- two meter skids, two flow control skids, and one filter separator on the existing Transcontinental Gas Pipeline (Transco) M&R Station site;
- one meter skid and one filter separator on the existing Southeast Supply Header (SESH) M&R Station site; and
- one booster compressor station (MS Hub Booster Station) and associated equipment approximately 18 miles south of the MS Hub Storage Facility and approximately 2 miles northwest of the existing Transco M&R Station consisting of three Solar Mars model 100-16000S natural gas-fired turbine compressor units each rated at 13,486 hp.

Jefferson Davis County, Mississippi

- two saltwater disposal wells Nos. 6 and 8 at the existing raw water well No. 4 and saltwater disposal well No. 4 wellpad.

As the MS Hub Storage Facility is currently operational, the facilities contemplated by the project would be added to complement the current infrastructure. With the additional injection and delivery capacity, the MS Hub Storage Facility would be capable of providing additional high-turn services to the Gulf Coast and Southeast market areas.

The Commission mailed a copy of the *Notice of Availability* to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the project area. The EA is only available in electronic format. It may be viewed and downloaded from the FERC's website (www.ferc.gov), on the natural gas environmental documents page (https://www.ferc.gov/industries-data/natural-gas/environment/environmental-documents). In addition, the EA may be accessed by using the eLibrary link on the FERC's website. Click on the eLibrary link (https://elibrary.ferc.gov/eLibrary/search), select "General Search" and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e., CP24-80). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659.

The EA is not a decision document. It presents Commission staff's independent analysis of the environmental issues for the Commission to consider when addressing the merits of all issues in this proceeding. Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this project, it is important that we receive your comments in Washington, DC **on or before 5:00 pm Eastern Time on November 29, 2024.**

For your convenience, there are three methods you can use to file your comments to the Commission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or FercOnlineSupport@ferc.gov. Please carefully follow these instructions so that your comments are properly recorded.

(1) You can file your comments electronically using the eComment feature on the Commission's website (www.ferc.gov) under the link to FERC Online. This is an easy method for submitting brief, text-only comments on a project;

(2) You can also file your comments electronically using the eFiling feature on the Commission's website (www.ferc.gov) under the link to FERC Online. With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." You must select the type of filing you are making. If you are filing a comment on a particular project, please select "Comment on a Filing"; or

(3) You can file a paper copy of your comments by mailing them to the Commission. Be sure to reference the project docket number (CP24-80-000) on your letter. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Acting Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Acting Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852.

Filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered. Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. At this point in this proceeding, the timeframe for filing timely intervention requests has expired. Any person seeking to become a party to the proceeding must file a motion to intervene out-of-time pursuant to Rule 214(b)(3) and (d) of the Commission's Rules of Practice and Procedures (18 CFR 385.214(b)(3) and (d)) and show good cause why the time limitation should be waived. Motions to intervene are more fully described at https://www.ferc.gov/how-intervene.

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website (www.ferc.gov) using the eLibrary link. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502-6595 or OPP@ferc.gov.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to https://www.ferc.gov/ferc-online/overview to register for eSubscription.

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## Technical Abbreviations and Acronyms

| | |
|---|---|
| AOI | area of significant impact |
| Bcf | billion cubic feet |
| bgs | below ground surface |
| CAA | Clean Air Act |
| CFR | Code of Federal Regulations |
| CEQ | Council on Environmental Quality |
| $CO_2$ | carbon dioxide |
| $CO_2e$ | carbon dioxide equivalent |
| CO | carbon monoxide |
| Commission | Federal Energy Regulatory Commission |
| CWA | Clean Water Act |
| dBA | decibels on the A-weighted scale |
| DOT | U.S. Department of Transportation |
| EI | environmental inspector |
| EA | Environmental Assessment |
| ESA | Endangered Species Act |
| GHG | greenhouse gases |
| FERC | Federal Energy Regulatory Commission |
| GWP | global warming potential |
| HAP | hazardous air pollutant |
| IPaC | U.S. Fish and Wildlife Service's Information for Planning and Consultation tool |
| IRA | Inflation Reduction Act |
| $L_{eq}$ | 24-hour equivalent sound level |
| $L_{dn}$ | day-night sound level |
| M&R | Metering and Regulation |
| MAC | Mississippi Administrative Code |
| MS Hub | Mississippi Hub, LLC |
| MDEQ | Mississippi Department of Environmental Quality |
| MNHP | Mississippi Department of Wildlife, Fisheries, and Parks Natural Heritage Program |
| $N_2O$ | nitrous oxide |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act of 1969 |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| NGA | Natural Gas Act |
| NOx | nitrogen oxides |
| NRCS | Natural Resources Conservation Service |
| NSPS | New Source Performance Standards |
| NSA | noise-sensitive area |
| PHMSA | U.S. Department of Transportation Pipeline Hazardous Materials Safety Administration |
| Plan | FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* |
| Procedures | FERC's *Wetland and Waterbody Construction and Mitigation Procedures* |

## Technical Abbreviations and Acronyms (Contd.)

| | |
|---|---|
| $PM_{10}$ | particulate matter less than or equal to 10 microns in aerodynamic diameter |
| $PM_{2.5}$ | particulate matter less than or equal to 2.5 microns in aerodynamic diameter |
| PSD | Prevention of Significant Deterioration |
| RW | raw water |
| SESH | Southeast Supply Header |
| SHPO | State Historic Preservation Office |
| SIL | significant impact level |
| $SO_2$ | sulfur dioxide |
| SONAT | Southern Natural Gas |
| SPCC Plan | *Spill Prevention, Countermeasure, and Control Plan* |
| SWD | salt water disposal |
| tpy | ton(s) per year |
| Transco | Transcontinental Pipeline Company |
| USACE | U.S. Army Corps of Engineers |
| VOC | volatile organic compound |

# SECTION A – PROPOSED ACTION

## A.1 INTRODUCTION

The staff of the Federal Energy Regulatory Commission (Commission or FERC) prepared this environmental assessment (EA) to analyze the impacts associated with the MS Hub Capacity Expansion Project (Project). On March 5, 2024, Mississippi Hub, LLC (MS Hub) filed an application with the Commission (Docket No. CP24-80-000) pursuant to Section 7(c) of the Natural Gas Act of 1938 (NGA), as amended, and Part 157 of the Commission's regulations. MS Hub is seeking an authorization to construct and operate certain facilities related to natural gas storage and compression within Simpson, Covington, and Jefferson Davis Counties, Mississippi.

We[1] prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA),[2] the Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 of the Code of Federal Regulations Parts 1500-1508 [40 CFR 1500-1508])[3], and the Commission's implementing regulations under 18 CFR 380.

The assessment of environmental impacts is an integral part of the Commission's decision-making process to determine whether to authorize MS Hub's proposal. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that would result from the implementation of the proposed action;
- describe and evaluate reasonable alternatives to avoid or minimize adverse environmental impacts;
- identify and recommend specific mitigation measures, as necessary, to avoid or minimize Project related environmental impacts; and
- facilitate public involvement in the environmental review process.

## A.2 PROJECT PURPOSE AND NEED

According to MS Hub, the purpose of the Project is to add up to 0.7 billion cubic feet (Bcf) per day of injection capacity and up to 1.0 Bcf per day of delivery capacity to MS Hub's existing MS Hub Storage Facility infrastructure. Upon completion, the Project would add up to 0.7 Bcf per day of injection capacity, and up to 1.0 Bcf per day of delivery capacity but would not increase the storage facility's maximum certificated capacity withdrawal and injection levels.

[1] "We," "us," and "our" refers to environmental staff of the Commission's Office of Energy Projects (OEP).

[2] National Environmental Policy Act of 1969, amended (Pub. L. 91-190. 42 U.S.C. §§ 4321–4347, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, Pub. L. 97-258, §4(b), September 13, 1982, Pub. L. 118-5, June 3, 2023).

[3] On May 1, 2024, CEQ issued updated regulations that went into effect for new NEPA processes begun after July 1, 2024. 40 C.F.R. § 1506.12 (2024). This action is subject to CEQ's previous regulations; thus, citations throughout this document will refer to the 2023 regulations.

With the additional injection and delivery capacity, the MS Hub Storage Facility would be capable of providing additional high-turn services to the Gulf Coast and Southeast market areas.

MS Hub states that the Project would continue to support growing demand for natural gas storage in the Gulf Coast and Southeast regions, as well as the needs of various customers including power generators, interstate pipeline companies, local distribution companies, natural gas producers, gas marketers, and liquified natural gas terminals in the Gulf Coast Production Area. MS Hub states that the proposed Project's high deliverability and geographic location would strengthen the capabilities of its existing facilities to mitigate the severe impacts faced by communities in the region during extreme weather events and other outages. According to MS Hub, the Project would further enable its facilities to provide flexible gas transportation options, manage gas supplies, and offer supplementary support during outages and maintenance activities at the region's liquified natural gas terminals and connecting pipelines, as well as provide natural gas baseload reserves in support of the region's "clean energy transition."

## A.3 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

Under section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate of Public Convenience and Necessity (Certificate) to construct and operate them. The Commission bases its decisions on both economic issues, including need, and environmental impacts. This EA will be considered by the Commissioning its decision-making process.

The topics addressed in section B of this EA include geology and soils; surface water, groundwater, and wetlands; vegetation, wildlife, and special status species; land use and visual resources; cultural resources; socioeconomics; environmental justice; air quality and noise; reliability and safety; and cumulative impacts, including climate change. Section C of the EA assesses alternatives to the proposed Project, including the no-action alternative. This EA describes the affected environment as it currently exists, discusses the environmental consequences of the proposed Project, and identifies measures proposed by MS Hub to reduce impacts. Section D of the EA summarizes our conclusions and additional measures that we recommend the Commission adopt as mandatory environmental conditions of any authorization it may issue to MS Hub for the Project.

As the lead federal agency for the Project, FERC is required to comply with Section 7 of the Endangered Species Act, as amended (ESA) and section 106 of the National Historic Preservation Act (NHPA). These statutes have been considered in the preparation of this EA. FERC will use this document to consider the environmental impacts that could result if it authorizes this Project. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing any permits necessary for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.10 of this EA.

The U.S. Environmental Protection Agency (EPA) commented that the EA's assessment of the Project's purpose and need should include evidential data to support the growing demand for natural gas, and cites a study performed by the U.S. Energy Information Administration, which states that the last five years of "high storage levels" and "oversupplied" markets drove gas prices to a record low. Economic analyses are not within the scope of the EA. The

Commission may consider the EPAs comments when making its decision on the Project. The Commission developed a "Certificate Policy Statement"[4] that established criteria for determining whether there is a need for a proposed project and whether the proposed project would serve the public interest. The Commission decision, in its Order, would review the need for the Project.

## A.4 PUBLIC REVIEW AND COMMENT

On March 8, 2024, FERC issued a *Notice of Application and Establishing Intervention Deadline* for the Project in Docket No. CP24-80-000. The notice announced the receipt of MS Hub's application pursuant to Section 7(c) of the NGA, identified ways for the public to provide comments on the Project, and established a deadline for submitting a motion to intervene in the proceeding. In response to the Notice of Application, we received comments from the Mississippi Department of Environmental Quality (MDEQ). The MDEQ stated that it does not expect the Project to adversely impact ambient air quality, contingent upon MS Hub obtaining a required air emissions permit from the MDEQ prior to commencing construction of the Project. In addition, we received four intervention requests. Intervention requests included comments from one landowner expressing general support for the Project and a willingness to "lease land" for the Project's activities. Comments were also filed by Southern Natural Gas Company, L.L.C. (SONAT) and Tennessee Gas Pipeline Company, L.L.C. expressing general support for the Project and citing the Project's natural gas storage capacity's role in meeting market demand, including for existing and new liquefied natural gas facilities, and increased flexibility to account for unexpected disruptions.

On April 10, 2024, FERC issued a *Notice of Scoping Period Requesting Comments on Environmental Issues for the proposed MS Hub Capacity Expansion Project* (Notice of Scoping). The Notice of Scoping was mailed to over 200 stakeholders, including affected landowners (as defined in the Commission's regulations); federal, state, and local officials; Native American tribes; and agency representatives; environmental and public interest groups; and local libraries and newspapers. The Notice of Scoping established a 30-day scoping period and requested comments on specific concerns about the Project or issues that should be considered during the preparation of the environmental document.

In response to the Notice of Scoping, the Mississippi Department of Wildlife, Fisheries, and Parks filed comments providing guidance related to requesting a Natural Heritage Program review for the Project. The Mississippi Department of Archives and History filed comments indicating that it no longer accepts paper or email submissions for Section 106 of the NHPA and provided a weblink for how to submit a project for review. Intervenors Southern Natural Gas Company, L.L.C., Tennessee Gas Pipeline Company, L.L.C., and Rudolph Scott expressed general support for the Project. The EPA filed comments (which have been addressed in the respective sections of this EA) related to air quality (section B.7); noise (section B.8); greenhouse gases (GHG) and climate change (section B.12.9); wetlands and floodplains (sections B.3.4 and B.3.2, respectively); environmental justice (section B.10); site alternatives (section C.3); noise (section B.8); surface water resources (section B.3.3), and pollinator habitat (section B.4.2).

[4] See Certification of New Interstate Natural Gas Pipeline Facilities, 88 FERC ¶ 61,227 (1999), clarified in 90 FERC ¶ 61,128, and further clarified in 92 ¶ 61,094 (2000).

The EPA also filed comments related to the Inflation Reduction Act (IRA) related to "economic impacts and environmental implications" of the IRA, including "stranded assets," as well as other economic data to support the claim of "the growing demand for natural gas" in light of "record low" gas prices and "high storage levels." Economic analyses are not within the scope of the EA. The EPA also provided references to reports published by the U.S. Department of Energy related to the IRA's impacts on "clean energy" and GHG emissions, including future energy consumption patterns and forecasts. The EPA's comments are noted. The EPA also recommended that the EA include a summary matrix with noted sources of alternative energy sources comparing such criteria as "emissions, spills, waste, recycling of materials (if any), additional energy needed to run that type of energy, disposal of materials." The proposed Project includes the modification of an existing gas storage operation and related facilities, including the construction of the new MS Hub Booster Station; therefore, our examination of alternative energy sources is limited to the operation of the proposed new booster station only. Refer to section B.7.5 for a discussion of the alternative use of electric motor-driven compressor units in the booster station and the estimated emissions that would result.

On May 17, 2024, the FERC issued a *Notice of Schedule for the Preparation of an Environmental Assessment for the MS Hub Capacity Expansion Project*. On September 5, 2024, the FERC issued a *Notice of Revised Schedule for the Preparation of an Environmental Assessment for the MS Hub Capacity Expansion Project.* Both notices were mailed to the same list as indicated above.

## A.5 PROPOSED ACTION

The Project would complement the existing MS Hub Storage Facility infrastructure in Simpson, Covington, and Jefferson Davis Counties through the following facilities and activities:

Modifications to the existing MS Hub Storage Facility in Simpson County, Mississippi:

- increasing the certificated capacity[5] of Gas Storage Caverns No. 1 and No. 2 by a total of 3.87 billion cubic feet (Bcf);
- constructing three new gas storage caverns (Cavern Nos. 4, 5, and 6) totaling approximately 30.0 Bcf of working gas capacity;[6]
- increasing the total certificated working gas capacity[7] at the MS Hub Storage Facility by 33.9 Bcf;
- constructing two electric motor-driven compressor units each rated at 7,000 horsepower (hp) and three Caterpillar model G3616 A4 reciprocating internal combustion engine natural gas-fired compressor units each rated at 5,500 hp, and dehydration and ancillary equipment at the existing Gas Handling Facility; and

[5] The total gas capacity of a storage cavern including the working gas capacity plus the base gas capacity. Base gas capacity is defined as the capacity of the cavern that is used to provide pressure support for integrity and/or deliverability requirements.

[6] The capacity of the gas storage caverns used for jurisdictional service.

[7] The fraction of certificated capacity that is working gas capacity.

- expanding the existing Leaching Facility for the solution mining of each cavern by installing additional pumps, water tanks, and separators.

Construction and operation in Simpson County, Mississippi of:

- one meter skid and one filter separator on the existing SONAT Metering and Regulation (M&R) Station site;
- four raw water (RW) Wells Nos. 6 through 9;
- one new saltwater disposal (SWD) Well No. 9; and
- two SWD Wells Nos. 5 and 7 collocated at the existing RW Well No. 3 and SWD Well No. 3 wellpad.

Construction and operation in Covington County, Mississippi of:

- two meter skids, two flow control skids, and one filter separator on the existing Transcontinental Gas Pipeline (Transco) M&R Station site;
- one meter skid and one filter separator on the existing Southeast Supply Header (SESH) M&R Station site; and
- one booster compressor station (MS Hub Booster Station) and associated equipment approximately 18 miles south of the MS Hub Storage Facility and approximately 2 miles northwest of the existing Transco M&R Station consisting of three Solar Mars model 100-16000S natural gas-fired turbine compression units each rated at 13,486 hp.

Construction and operation in Jefferson Davis County, Mississippi of:

- two SWD Wells Nos. 6 and 8 at the existing RW Well No. 4 and SWD Well No. 4 wellpad.

Figure 1 illustrates the general Project location, and appendix B provides topographic maps identifying the proposed Project facilities.

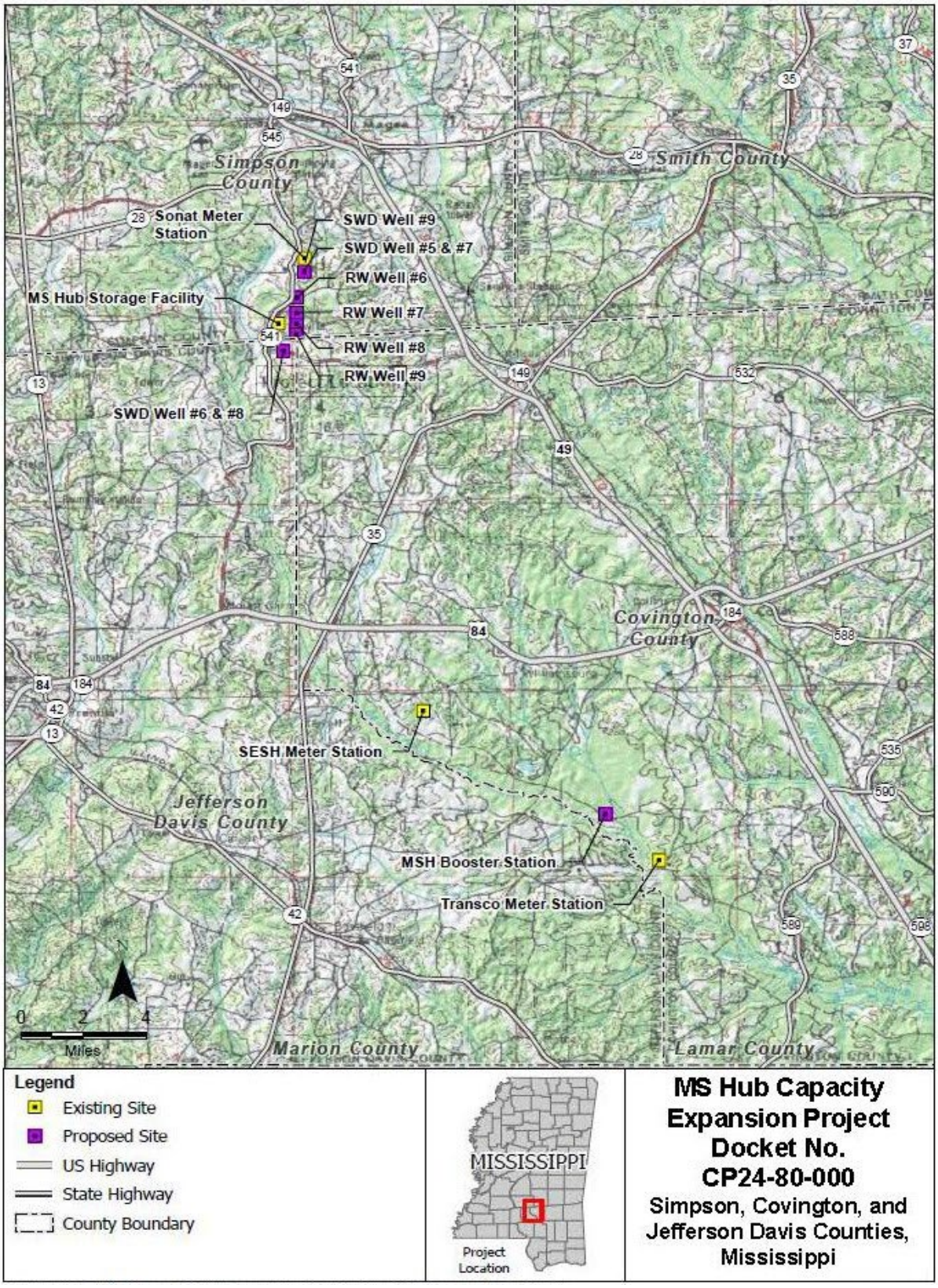


**Figure 1: Project Overview Map**

## A.6 LAND REQUIREMENTS

Construction of the Project facilities would disturb about 107.2 acres. Following construction, MS Hub would maintain about 78.6 acres for permanent operations; the remaining acreage would be restored and revert to former uses. Of this permanent acreage, approximately 50.5 acres are presently being utilized for operation of the existing MS Hub facilities; therefore, the Project facilities would add approximately 28.1 acres to the facility's total operational footprint. A breakdown of land requirements by Project facility is shown in table 1.

**Table 1**
**Project Land Requirements (acres)**

| Project Location | Construction | Operation |
|---|---|---|
| MS Hub Storage Facility | 53.8 | 38.8 |
| SONAT M&R Station | 1.43 | 0.60 |
| SESH M&R Station | 0.90 | 0.72 |
| Transco M&R Station | 1.91 | 1.91 |
| RW Well No. 6 | 2.27 | 1.38 |
| RW Well No. 7 | 2.22 | 1.38 |
| RW Well No. 8 | 2.61 | 1.36 |
| RW Well No. 9 | 2.20 | 1.38 |
| SWD Well Nos. 5 and 7 | 2.61 | 1.96 |
| SWD Well Nos. 6 and 8 | 4.27 | 2.76 |
| SWD Well No. 9 | 1.29 | 0.81 |
| MS Hub Booster Station | 14.03 | 7.87 |
| Staging Area at Cavern No. 1 | 3.57 | 3.57 |
| Staging Area at Cavern No. 2 | 3.23 | 3.23 |
| Staging Area at Cavern No. 3 | 4.30 | 4.30 |
| Staging Area at Cavern No. 4 | 3.40 | 3.40 |
| Contractor Yard | 3.18 | 3.18 |
| **Project Total** | **107.2** | **78.6 a/** |

a/ Of this total, approximately 50.5 acres are included in the permanent operational footprint of existing MS Hub facilities. The Project would increase the facility's existing operational footprint by the remaining 28.1 acres.

A total of 32 permanent access roads would be required for the Project's operation, consisting of the use of 21 existing access roads and the construction of 11 new permanent access roads, listed in table 2.

**Table 2**
**Permanent Access Roads Required for the Project**

| Access Road | Associated Project Facility | Existing or New (Present Condition) | Proposed Improvements (as needed) | Length (feet) |
|---|---|---|---|---|
| PAR-001 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 2,701 |
| PAR-002 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 1,893 |
| PAR-003 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 559 |
| PAR-004 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 210 |
| PAR-005 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 87 |
| PAR-006 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 88 |
| PAR-007 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 134 |
| PAR-008 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 817 |
| PAR-009 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 108 |
| PAR-010 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 700 |
| PAR-011 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 678 |
| PAR-012 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 358 |
| PAR-013 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 188 |
| PAR-014 | MS Hub Storage Facility | Existing (gravel) | widening / tree trimming / graveling | 299 |
| PAR-030 | SWD Well Nos. 5 and 7 | Existing (gravel) | widening / tree trimming / graveling | 2,405 |
| PAR-031 | SWD Well Nos. 6 and 8 | Existing (gravel) | widening / tree trimming / graveling | 46 |
| PAR-060 | Transco M&R Station Interconnect | Existing (gravel) | widening / tree trimming / graveling | 860 |
| PAR-061 | Transco M&R Station Interconnect | Existing (gravel) | widening / tree trimming / graveling | 108 |
| PAR-070 | SONAT M&R Station Interconnect | Existing (gravel) | widening / tree trimming / graveling | 64 |
| Velma Payne Rd | SWD Well Nos. 5 and 7 | Existing (gravel) | widening / tree trimming / graveling | 1,472 |
| PAR-080 | SESH M&R Station Interconnect | Existing (gravel) | widening / tree trimming / graveling | 46 |
| PAR-040 | RW Well No. 6 | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 87 |
| PAR-041 | RW Well No. 7 | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 40 |
| PAR-042 | RW Well No. 8 | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 30 |
| PAR-043 | RW Well No. 9 | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 55 |
| PAR-032 | SWD Well No. 9 | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 73 |
| PAR-020 | MS Hub Storage Facility – Contractor Yard | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 545 |
| PAR-021 | MS Hub Storage Facility – Cavern No. 6 | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 753 |
| PAR-022 | MS Hub Storage Facility – Leaching Area | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 497 |
| PAR-023 | MS Hub Storage Facility – Cavern No. 5 | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 71 |
| PAR-050 | MS Hub Booster Station | New (vegetated) | widening / culvert installation / grading / graveling / tree trimming | 1,285 |
| PAR-051 | MS Hub Booster Station | New (vegetated) | ~~w~~idening / culvert installation / grading / graveling / tree trimming | 1,243 |

## A.7 CONSTRUCTION SCHEDULE AND WORKFORCE

MS Hub anticipates that construction of the Project would begin in March 2025 and continue through March 2031 (approximately 72 months). The Project's facilities would be incrementally placed into service between early 2028 and late 2031. Workforce requirements for the Project would peak at approximately 140 personnel, and average 50 personnel spread over the Project construction workspaces and over all construction shifts. No new permanent personnel would be required for the operation of the Project's facilities. See appendix D for a detailed diagram of construction activities throughout MS Hub's anticipated construction period.

## A.8 CONSTRUCTION, OPERATION, AND MAINTENANCE PROCEDURES

During construction and restoration of the Project, MS Hub would implement the measures contained in the following plans, in addition to other federal, state, and local permit requirements:

- the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures);[8]
- *Spill Prevention, Control, and Countermeasure Plan* (SPCC Plan);
- *Fugitive Dust Control Plan*;
- *Public Engagement Plan*;[9]
- *Emergency Response Plan; and*
- *Unanticipated Discoveries Plan for Cultural Resources and Human Remains*.

MS Hub would employ at least one full-time environmental inspector (EI) to oversee and document environmental compliance and prepare inspection reports for submission to the FERC during the construction phase of the Project. All Project-related construction personnel would be informed of the EI's authority and would receive job-appropriate environmental training prior to commencement of work on the Project. FERC staff would maintain oversight of the Project's compliance with any conditions attached to any Certificate that the Commission may issue.

Construction would begin with staking and flagging to define the boundaries of temporary and permanent workspaces. Clearing of workspaces would then be performed, followed by grading for transport of construction equipment and installation of facilities. A

[8] The FERC Plan and Procedures are a set of baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. They can be viewed on the FERC website at http://www.ferc.gov/industries/gas/enviro/plan.pdf and https://www.ferc.gov/industries/gas/enviro/procedures.pdf.

[9] MS Hub developed a Project-specific *Public Engagement Plan* that includes environmental complaint resolution procedures that MS Hub would actively implement during Project construction. Members of the public may contact MS Hub's Environmental Complaint Resolution Office at (833) 454-6742, or email both Spanish and English speaking representatives at MSHExpansionProject@enstorinc.com.

trench would be excavated for placement of the proposed MS Hub Booster Station's suction and discharge lines. Foundations for aboveground facilities would be constructed, on which the compressor units and other large equipment would be mounted. Construction of the three new caverns (Cavern Nos. 4, 5, and 6), and all facility sites, would involve clearing and grading activities for placement of the compressor unit packages and ancillary equipment, associated piping, and structures, as appropriate. The affected portions of the sites that are currently not cleared would be cleared of vegetation and debris. The sites would be graded and compacted to surveyed elevations. Initial cavern development would be performed utilizing direct circulation solution mining. Raw water would be injected and brine would be produced. Throughout the cavern development process, insoluble material would be deposited on the bottom of the cavern. The permanent facility sites would be graveled and fenced for security and safety, as appropriate, and outside lighting would be installed.

Following construction of all Project facilities and prior to placing the facilities into service, all gas piping components would be hydrostatically tested. Excess materials generated during construction activities would be disposed of in accordance with applicable federal, state, and local laws and ordinances. Drainage ditches, terraces, roads, and fences disturbed by construction would be restored to former condition or better. Contours would be restored to original condition, and project construction areas would be cleaned of any waste or debris. All construction workspaces not otherwise occupied by the Project's permanent facility footprints would be restored in accordance with the FERC Plan and Procedures.

As further discussed in section B.10, MS Hub would operate and maintain the new facilities in accordance with all applicable federal and state requirements, including the U.S. Department of Transportation (DOT) Pipeline Hazardous Materials Safety Administration's (PHMSA) *Minimum Federal Safety Standards* in 49 CFR 192. Operation and maintenance of the facilities would be performed by or at the direction of MS Hub.

### A.8.1 Requested Deviations to the FERC Plan and Procedures

The EPA commented that the MS Hub Booster Station overlaps the Federal Emergency Management Agency 100-year flood zone and would impact most of the identified wetlands. The proposed Project would permanently impact existing wetlands by removing its ecological services, which includes limiting its ability to provide special benefit when 100-year events occur in this flood zone. In its comments, the EPA recommends MS Hub explores additional areas outside of the 100-year flood zone for its Booster Station, while reducing wetland impacts.

MS Hub proposes to locate the MS Hub Booster Station within a wetland complex (includes wetlands WET01, WET02, WET03, and WET04), which is a modification from section VI.A.6 of the Procedures. MS Hub indicated that the proposed site was chosen due to limited available sites for sale within the proximity required for tie-in to the Transco Pipeline. Additionally, the proposed site would avoid as much of the 100-year floodplain as possible while still avoiding a foreign pipeline. We believe that MS Hub provided sufficient justification to locate an aboveground facility within a wetland, and we find this request acceptable.

## A.9 NON-JURISDICTIONAL FACILITIES

Under Section 7 of the NGA, and as part of the decision regarding whether to approve facilities under its jurisdiction, the Commission is required to consider all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of FERC. MS Hub anticipates the need for new electrical connections, consisting of a distribution line from an existing power pole to each of the following Project facilities: the contractor yard; RW Well Nos. 6, 7, 8, and 9; and SWD Well No. 9, and the MS Hub Booster Station site. The distribution line for the MS Hub Booster Station would be approximately 1 mile long, while the lines for each of the remaining facilities would be approximately 250 feet long. Installation of the power lines would be undertaken by the local utility provider Southern Pine Electric Cooperative operating under state and local jurisdictions. MS Hub estimates that construction of the distribution line serving the MS Hub Booster Station would disturb approximately 3.6 acres, and remaining distribution lines would disturb a total of 0.68 acre, all acreage of which would be within the permanent right-of-way.

## A.10 PERMITS, APPROVALS, AND CONSULTATIONS

Table 3 lists the major federal, state, and local permits, approvals, and consultations for construction and operation of the Project and provides the status as of the date of this EA. MS Hub would be responsible for obtaining and abiding by all permits and approvals required for construction and operation of the Project regardless of whether they appear in the table or not.

| Table 3: Permits, Approvals, and Consultations for the Project | | |
|---|---|---|
| **Agency** | **Permit / Approval** | **Status** |
| **Federal** | | |
| Federal Energy Regulatory Commission | Certificate of Public Convenience and Necessity | Application filed 3/5/2024. |
| U.S. Fish and Wildlife Service – Jackson, MS Ecological Services Field Office | Endangered Species Act, Section 7 | Informal consultation initiated 4/2024. Consultation ongoing. |
| | Migratory Bird Treaty Act | Coordination initiated 4/2024. |
| | Bald and Golden Eagle Protection Act | Coordination initiated 4/2024. |
| U.S. Army Corps of Engineers, Mobile District | Clean Water Act, Section 404 Dredge and Fill Permit | Application filed 4/2024. Approval anticipated 12/2024. |
| **State** | | |
| MS Department of Archives and History | National Historic Preservation Act Section 106 | Consultation initiated 3/8/2024. Consultation ongoing. |
| MS Department of Wildlife, Fisheries, and Parks | Fish and Wildlife Coordination Act Environmental Review | Consultation initiated 3/28/2024. Response received 4/26/2024. |
| MS Department of Environmental Quality | Clean Water Act Section 401 Water Quality Certification | Application filed August 30, 2024. Certification pending. |
| | Clean Water Act Section 402 National Pollutant Discharge Elimination System – General Permit to Discharge Wastewater from Temporary Discharges | Application filing anticipated prior to construction. |
| | Raw Water Well Permit | Application filing anticipated October 2024. |
| | Title V Air Permit (proposed modified MS Hub Storage Facility) | Application filed 11/16/2023. Permit pending. |
| | Air Construction Permit (proposed MS Hub Booster Station) | Application filing anticipated 6 months prior to construction. |
| MS State Oil and Gas Board | Application for Permit to Drill Saltwater Disposal and Cavern Wells | Anticipated application filing November 2024. Permit receipt anticipated prior to the commencement of each respective drilling operation. |
| | Protection Cementing Affidavit, Protection Casing Pressure Test Affidavit | Filing would be performed prior to each well completion. |
| | Permit to Develop and Operate Cavern Well (Rule 2 and 2-A) | Filing would be performed prior to each well completion. |
| **Local** | | |
| Covington County Emergency Management | Floodplain Permit | Application filing anticipated prior to construction. |

# SECTION B – ENVIRONMENTAL ANALYSIS

The following sections describe the Project's potential impacts on the natural and human environment. Our description of the affected environment is based on a combination of information sources, including MS Hub's application and its responses to our requests for environmental information, scientific literature, regulatory agency reports, and stakeholder comments.

For the purposes of this analysis, we discuss four impact durations: temporary, short-term, long-term, and permanent. A temporary impact generally occurs during construction with an affected resource returning to a condition similar to that prior to construction almost immediately afterward. A short-term impact could continue for up to 3 years following construction. An impact is considered long-term if the resource would require more than 3 years to recover. A permanent impact would occur if an activity modifies a resource to the extent that it would not be restored during the life of the Project. Permanent impacts may also extend beyond the life of a project. When determining the significance of an impact, we consider the duration of the impact; the geographic, biological, and/or social context in which the impact would occur; and the magnitude and intensity of the impact. The duration, context, and magnitude of impacts vary by resource; therefore, significance would vary accordingly. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

## B.1 GEOLOGY

### B.1.1 Mineral and Non-Mineral Resources

During the expansion of Cavern Nos. 1 and 2 and installation of Cavern Nos. 4, 5, and 6, raw water would be extracted from the Sparta Aquifer and then used to solution mine salt from the Bond Salt Dome of the Louann Salt Formation. Solution mining would be conducted using two mining techniques: direct and reverse. During direct mining, a nitrogen leaching blanket[1] would be used to shape the caverns and mitigate uncontrolled cavern roof development. During reverse mining, brine water from the SWD wells would be injected into the brine-rich groundwater of the Lower Wilcox Group. No other active or historic oil and gas wells, quarries, mines, or mine spoil areas are located within 1 mile of the Project; therefore, no significant impacts on these mineral resources are anticipated as a result of Project construction.

### B.1.2 Geologic Hazards

Geologic hazards occur naturally and can result in damage to land and structures, injury, or death. Potential geologic hazards in the Project area were evaluated through database queries, literary review, and topographic maps. A typical evaluation includes consideration of the following: seismicity/earthquakes; volcanoes; slope stability and landslides; karst conditions;

[1] A nitrogen leaching blanket is a process of injecting a salt cavern with nitrogen (an inert gas) to prevent oxygen from interacting with the salt being purged to prevent chemical bonding and instability.

and soil liquefaction. Our review of available data showed that the proposed Project is not characterized by and would not be affected by these types of hazards.

The presence of evaporite rock onsite has formed salt domes through diapirism[2] and several subsurface faults are present. Research does not support that these growth faults[3] cause earthquakes but contribute to a complex geologic environment.

When salt domes are developed for storage of natural gas, large quantities of salt are removed with no replacement material; therefore, subsidence from cavern collapse could be a potential geologic hazard. Salt dome caverns typically have a "threshold diameter" above which the cavern could fracture and cave in. This can be avoided by not crossing the failure envelope criterion[4] of the salt dome as brine is pumped out and natural gas pumped into Cavern Nos. 1 and 2 during their expansion and into Cavern Nos. 4, 5, and 6 during their installation. MS Hub regularly monitors its caverns and conducts geophysical surveys to ensure cavern diameters do not increase above the applicable threshold. After debrining, successful cavern conversion for gas storage would require confirmation through a suite of casing/cement inspection logs, along with a cavern mechanical integrity test. Any additional pressures needed would be applied to compensate for any added strain accumulated during debrining that may increase salt erosion or fracture within the cavern.

MS Hub's Geotechnical Investigation Report exhibits the modeling for existing and planned caverns over the Project's life. Updates to this model would be conducted after cavern leaching is completed. Current and planned cavern diameters and spacing between caverns are projected towards the lowest modeled values (all under the failure threshold). Current models indicate stabile cavern structure and integrity for entire duration of the Project life. MS Hub has also developed a long-term integrity monitoring plan (*Enstor Storage Integrity Monitoring Plan*) and operating procedures[5] to eliminate over/under pressure events and inventory verification procedures.[6]

Natural gas migration can occur from one cavern to another after development and can also lead to cavern collapse, but this is not expected for the Project. MS Hub's existing caverns have undergone their regularly scheduled mechanical integrity tests as required by the Mississippi Oil and Gas Board as well as the annual pressure testing and inventory program.

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[2] In diapirism a dome of rock moves upward and pierces through, denser, overlying strata and is common as heat and viscosity increase with depth.

[3] Growth faults are faults and fractures that form during deposition of a sedimentary layer. These are predominantly found in the Gulf Coast.

[4] Material failure theory is an interdisciplinary field of materials science and solid mechanics which attempts to predict the conditions under which solid materials fail under the action of external loads. The failure of a material is usually classified into brittle failure (fracture) or ductile failure (yield).

[5] MS Hub Operations Manual 1301, 1302, 1305, and 1311.

[6] MS Hub Operations Manual 1319.

The caverns currently have integrity and with the current cavern spacing (wellhead spacing over 500 feet and pillar distances over 200 feet) no natural gas migration would occur.

MS Hub's geotechnical report confirms that the new cavern shapes and spacing predict no natural gas migration between caverns, ensuring the gas would remain isolated to its assigned cavern. MS Hub monitors pressure within all of its salt domes continuously, and any sudden drops during drilling and nitrogen leaching would be reported and investigated as these drops could indicate gas migration or could be a precursor for cavern collapse. Alarms are set in place to notify operations if any problems occur during the debrining process and to activate safety shutdown protocols. Given these mitigation procedures, cavern significant impacts from collapse and subsequent subsidence or gas migration between caverns would not be anticipated impacts of this Project.

## B.2 SOILS

Limiting soil characteristics were obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2022a). Further information was evaluated from the U.S. Department of Agriculture Official Soil Series Descriptions for an analysis of the mapped soil series that would be crossed by the Project during construction. We identified nine soil map units: the Bassfield, Bude, Myatt, Ora, Pheba, Ruston, Savannah, Smithdale, and Stough Series (NRCS 2022b).

Construction activities such as clearing, grading, excavation, backfilling, heavy equipment traffic, and restoration activities could result in adverse impacts on soil resources in temporary work areas, on access roads, and at aboveground facilities. No Project workspaces have soils with high potential for rutting, are compaction prone, are considered rocky or have shallow bedrock, or poor revegetation potential.

Project workspaces would cross a total of 11.5 acres of hydric soils, with 7.3 acres in areas with proposed permanent facilities (MS Hub Booster Station and the proposed permanent access road). A total of 4.2 acres of these 11.5 acres of hydric soils would be fully restored to pre-construction conditions in these areas. To prevent impacts from hydric soils, MS Hub would follow the FERC Plan and Procedures, which include mitigation measures like dewatering through filter socks into a well-vegetated, upland adjacent area.

Clearing would remove protective vegetation cover and would expose soils to the effects of wind, sun, and precipitation, which could increase soil erosion and transport sediment to sensitive areas like waterbodies or dry washes (also referred to as ephemeral washes). The Project area is considered to have high erodibility along 29.2 acres of Project workspace. To reduce the potential for erosion from water and wind, MS Hub would implement measures from the FERC Plan and Procedures, such as using interceptor diversions and silt fences. Temporary trench breakers would be utilized after trenching. The EI or other construction personnel would inspect all temporary erosion control devices on a regular basis until revegetation is complete.

The U.S. Department of Agriculture defines prime farmland soils as those that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Prime farmland soils can include either actively cultivated land or land that is

potentially available for cultivation. Soils designated as prime farmland comprise about 64.7 acres of the proposed construction workspace (including areas near RW Well Nos. 6, 7, 8, and 9; Cavern Nos. 1, 2, 4, 5, and 6; the contractor yard; the leaching facility; the previously excavated area; SWD well Nos. 6 and 8; the SESH M&R Station, the MS Hub Booster Station, the Transco M&R Station; and along proposed permanent and existing access roads). Project operations would result in 20.6 acres of permanent impacts on prime farmland soils. The majority of the Project would be conducted as an extension of existing facilities and in previously disturbed areas; therefore, it is not likely that the soils are currently used as prime farmland. These lands have already been removed from active agricultural use and would not be utilized for farming in the future.

According to a search of federal and state databases, no reported active sources of known or potential soil contamination were identified within a 0.25-mile vicinity of the Project (MDEQ 2024; EPA 2024). Two former state-designated sites of soil contamination were identified as either inactive or terminated/remediated within this 0.25-mile radius, including Willie Mae's Grocery Store (960 feet from the MS Hub Storage Facility) and Michael Magree Poultry (250 feet from proposed RW Well No. 6). These former contamination sites are believed to be fully remediated; therefore, no impact from contaminated soil is anticipated.

Contamination from equipment spills and/or leakage of fuels, lubricants, and coolants could impact soils. MS Hub has filed its SPCC Plan, which addresses fluid leaks and spills. We reviewed this plan and find it adequate to address the storage and transfer of fuels and hazardous materials, the response to be taken in the event of a spill event, or if contaminated soils are discovered.

Following construction, all temporary workspaces would be restored and revegetated following specifications outlined in the FERC Plan and Procedures. Successful restoration would be determined by visual survey of surface condition, revegetation, drainage, and removal of all construction debris, per section VII.A.2 and VII.A.4 of the FERC Plan.

Given the Project area's soil characteristics and the impact minimization and mitigation measures described, we conclude that soils would not be significantly affected by Project construction and operation.

## B.3 WATER RESOURCES AND WETLANDS

### B.3.1 Groundwater Resources

There are no nearby sole-source aquifers, wellhead or source-water protection areas, public or private wells or springs within 150 feet of Project workspace, and there are no active sources of potential contamination within 1 mile of workspaces. If contamination is discovered or if there would be a spill during construction, MS Hub would utilize its SPCC Plan to minimize impacts on groundwater resources.

Earth-disturbing activities during construction of proposed Cavern Nos. 4, 5, and 6 would include clearing and grading and could temporarily alter overland flow and disturb groundwater recharge, resulting in minor fluctuations in groundwater levels and turbidity. Due to the small

amount of water this contributes to recharge construction would have minor and temporary effects.

Aquifers can become contaminated with surface water or unpotable groundwater as an impact from the installation of any new wells or caverns, but this impact can be mitigated through proper well construction as drilling advances through different aquifers with depth. The total depth has to be assessed to determine which aquifers need to be isolated from contamination. To minimize the potential for water within any geologic layers to mix with and contaminate the potable waters of the Sparta Aquifer, a regionally important drinking source, all casings driven below the conductor casing would be cemented to the surface. This construction method would hydrologically isolate the well from these geologic units. As with all wells, RW well installation has the potential to contaminate aquifer resources. RW wells would be drilled to a maximum depth of about 2,265 feet below ground surface (bgs) (if subsurface conditions permit) into the Sparta Aquifer. To prevent contamination to this aquifer, RW wells would isolate each hydrologic unit by means of multiple cement casings separating different hydrologic units to prevent cross contamination. RW wells would be completed by a licensed water well driller and in accordance with applicable federal, state, and local regulations. Such construction methods would mitigate against any potential of the well drilling to result in any surface or groundwater contamination. Installation of the SWD wells could also contaminate regionally important, freshwater resources. To avoid contamination, SWD wells would be installed with different casings going to different depths to isolate these aquifers. At the total depth (4,968 feet bgs) water has a very high turbidity and is unpotable; therefore, direct impacts on shallower potable groundwater resources are not anticipated, and installation of the wells with multiple casing strings and cementing each casing to the surface would hydrologically isolate each hydrologic unit from one another. Given these impact mitigation measures, SWD wells would not impact groundwater resources through contamination during their construction or during cavern development.

All wells would be drilled meeting or exceeding Mississippi State Oil and Gas Board rules for injection wells in order to protect aquifer resources. During drilling operations, the base of the underground source of drinking water would be logged and the surface casing would be cemented to the surface by circulating cement at the surface and creating a cement bond log, completed along with a pressure test of the casing. The bond log would then be run on the surface casing, confirming isolation from potable drinking sources. After drilling out the surface casing, a formation test would be completed to confirm the cement isolation as well. During the life of the SWD wells mechanical integrity tests would be completed on the wells every five years in accordance with Mississippi State Oil and Gas Board rules.

All drilling or displaced fluids (and solids) would be collected on-site and contained using closed loop solid control systems consisting of the following equipment: centrifuges, roll off bins, tanks, pumps, cutting dryers, shale shakers, shale shaker screens, and plastic ground liners. Drilling fluid is mostly inert bentonite clay and water. MS Hub would follow federal, state, and local requirements for drilling fluid to confirm that the substance is safe for disposal off site or would provide a safe location to dispose of this fluid consistent with applicable regulations.

We have determined that the Project would not result in major or permanent impacts on groundwater resources and would take place on already disturbed land, most of which is in active use by MS Hub. We find that by implementing the measures discussed above, MS Hub's SPCC Plan and our Plan and Procedures, construction activities would not result in significant or permanent impacts on groundwater resources.

### B.3.2 Water Use

MS Hub anticipates using approximately 14.5 billion gallons of water for construction activities: 440,000 gallons for hydrostatic testing, up to 6,000 gallons per week for dust suppression, and 14 billion gallons for gas storage development, concrete mixing, and drilling operations. MS Hub would initially withdraw water for hydrostatic testing, dust suppression, and other construction activities from existing raw water wells. The remaining water would be sourced from the four proposed permanent raw water wells (RW Well Nos. 6, 7, 8, and 9). MS Hub would obtain for each RW well a permit from the MDEQ for water use. Hydrostatic test water would only make contact with new steel pipe that would be free of chemicals or lubricants, with no chemicals added. The used hydrostatic test water would be transferred to a permanent water storage tank within the MS Hub storage facility and recycled to supplement raw water for the cavern solution mining process. No hydrostatic test water would be discharged on site at any Project location. MS Hub would continue to use the proposed raw water wells for facility operations and for local fire management agencies in the event of an emergency.

Given that MS Hub would adhere to the MDEQ's permits and the FERC Procedures, we conclude that water used during Project activities would not result in significant impacts on water resources.

### Floodplains

The MS Hub Booster Station is proposed within the Federal Emergency Management Agency-designated Special Flood Hazard Area – Zone A (i.e., the 100-year floodplain subject to inundation by the 1 percent chance of an annual flood event). Construction of the MS Hub Booster Station would result in approximately 2.6 acres of permanent grade changes and impervious surface installation within the floodplain, which could adversely affect floodplain storage and conveyance, remove wildlife habitat, and degrade water quality. However, the potential increase of 2 to 3 acre-foot in flood height across the floodplain is not expected to significantly impact the existing flood storage capacity. MS Hub would obtain Floodplain Permit(s) from Covington County prior to construction in the 100-year floodplain.

### B.3.3 Surface Water

The Project is within the Upper Lead River watershed and would cross five subwatersheds (hydrologic unit code [HUC] 12) as defined by the U.S. Geological Survey: Skiffer Creek – Bouie Creek (HUC 12: 031700040601), West Bouie Creek – Bouie Creek (HUC 12: 031700040604), Town Creek – Terrible Creek (HUC 12: 031700040605), Goodwater Creek

– Okatoma Creek (HUC 12: 031700040702), and Cooks Branch – Bouie Creek (HUC 12: 031700040606) (U.S. Geological Survey 2024).

Skiffer Creek and West Bouie Creek (and associated subwatersheds) are classified by the MDEQ as Clean Water Act (CWA) Section 303(d) Impaired Waters. Skiffer Creek is impaired for aquatic life due to sedimentation and/or siltation, for which a Total Maximum Daily Load for non-point source sediment runoff was developed and approved in 2005. West Bouie Creek is also impaired for aquatic life, but the source of impairment is unknown and there is no plan in place (EPA n.d.-a; EPA n.d.-b)). The Project would not directly affect either of the identified impaired streams; however, the Project would affect ephemeral waterbodies within the associated subwatersheds that could result in indirect impairment of downstream waters as discussed below.

In its comments, EPA noted a discrepancy in the number of waters of the United States identified within MS Hub's Waters of the United States Delineation Report. The authority for Jurisdictional Determinations of waters of the United States belongs to the U.S. Army Corps of Engineers (USACE). If the USACE issues a CWA Section 404 Dredge and Fill permit (CWA Section 404 permit) for the Project, the USACE would only consider and account for waters of the United States. However, in this analysis we considered the Project's potential impacts on all delineated wetlands and waterbodies, regardless of their status as waters of the United States (see table 4).

MS Hub conducted field surveys to delineate waterbodies within and around the Project area in fall 2023. Five ephemeral streams, five ephemeral ditches, and three manmade ponds were identified within the Project area (table 4).

The Project would result in temporary and permanent impacts on streams STRM-1, STRM-3, STRM-4, and pond WA03 associated with temporary workspaces and permanent facility expansion within the existing MS Hub Storage Facility. The remaining streams, ditches, and ponds would be avoided or crossed via existing culverted access roads. Stream STRM-1 would be affected by temporary workspace and permanently affected by a proposed access road to Cavern No. 6 with a new culvert. Stream STRM-3 would also be affected by temporary workspaces and permanently affected by widening of an existing culverted access road. A portion of stream STRM-4, which drains runoff from the storage facility, would be permanently affected by construction of Cavern No. 6. Pond WA03 is within temporary workspace, therefore, would be affected during construction. MS Hub would install temporary equipment crossings such as, timber mats, board mats, and bridges to facilitate vehicle and equipment access across the streams during construction as needed in accordance with the FERC Plan and Procedures.

Temporary construction-related impacts on waterbodies could include modification of aquatic habitat and water quality impairment due to increased sedimentation and turbidity, decreased dissolved oxygen concentrations, inadvertent release of chemical and nutrient pollutants from sediments, and introduction of chemical contaminants such as fuels or lubricants. Permanent fill would result in the permanent loss of aquatic habitat and flow capacity of STRM-4. MS Hub would install new culverts such that ephemeral flow is maintained. MS Hub would avoid and minimize the Project's impacts by implementing the

FERC Plan and Procedures such as installing appropriate erosion control devices, following the Project SPCC Plan, and avoiding refueling or storing hazardous materials within 100 feet of a wetland or waterbody. In addition, MS Hub has committed to conducting waterbody crossings in accordance with the USACE's CWA Section 404 permit and the MDEQ's Section 401 Water Quality Certification requirements. Following construction, MS Hub would remove temporary equipment crossings and restore temporarily disturbed portions of waterbodies to pre-constructions conditions per the FERC Procedures and the USACE's CWA Section 404 permit.

Based our review of publicly available information provided in MS Hub's application, we determined that the Project would not cross or have an impact on any potable surface water intakes (MDEQ 2021), Section 10 Navigable Waters (USACE 2021), National Wild and Scenic Rivers (National Park Service 2023a), Nationwide Rivers Inventory Rivers (National Park Service 2023a), or Mississippi Scenic Streams (Mississippi Department of Wildlife, Fisheries, and Parks 2023).

Given that all waterbody construction activities would be conducted in accordance with the FERC Procedures, and MS Hub would adhere to the requirements of all applicable federal and state regulations to minimize potential adverse impacts, we conclude that the Project's impacts on waterbodies would not be significant.

**Table 4**
**Waterbodies Impacted by the Project**

| Waterbody ID | Waterbody Type | Waterbody Width (feet) a/ | Project Facility | Impacts | Distance to Nearest Workspace (Feet) |
|---|---|---|---|---|---|
| STRM-1 | Ephemeral Stream | 4 | Existing MS Hub Storage Facility | Install new culverted access road for 40.4 square feet of permanent impacts. | 0 |
| STRM-2 | Ephemeral Stream | 3 | SWD Well Nos. 5 and 7 | None | 154 |
| STRM-3 | Ephemeral Stream | 4 | Existing MS Hub Storage Facility | Widen existing culverted access road for 19.7 square feet of permanent impacts and open cut cross for installation of pipelines. | 0 |
| STRM-4 | Ephemeral Stream | 8 | Existing MS Hub Storage Facility | Install 22.5 square feet of permanent fill for construction of Cavern No. 6 and open cut cross for installation of pipelines. | 0 |
| STRM-5 | Ephemeral Stream | 5 | SWD Well Nos.6 and 8 | None | 140 |
| D0-1 | Ephemeral Ditch | 8 | SWD Well Nos. 6 and 7 | None; existing culvert | 0 |
| D0-2 | Ephemeral Ditch | 8 | Existing MS Hub Storage Facility | None; existing culvert | 0 |
| D0-3 | Ephemeral Ditch | 8 | Existing MS Hub Storage Facility | None; existing culvert | 0 |
| D0-4 | Ephemeral Ditch | 12 | Existing MS Hub Storage Facility | None b/ | 0 |
| D0-5 | Ephemeral Ditch | 8 | Existing MS Hub Storage Facility | None; existing culvert. | 0 |
| WA01 | Pond | n/a | Cavern No. 6 | None | 50 |
| WA02 | Pond | n/a | SWD Well No. 9 | None | 1,290 |
| WA03 | Pond | n/a | Access Road to Cavern Nos. 4 and 5 | Stormwater feature on site. | 0 |

a/ Waterbody width is approximate and based on the ordinary high watermark, as verified by field survey.
b/ Impacts would be avoided within temporary laydown area.

### B.3.4 Wetlands

MS Hub conducted wetland delineations in the Project area in October through December 2023 in accordance with the 1987 *United States Army Corps of Engineers Wetlands Delineation Manual* and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic Gulf Coast Plain Region, Version 2.0.* MS Hub identified nine wetland features within and around the Project area, including five palustrine emergent wetlands, one palustrine scrub shrub wetland, and three palustrine forested wetlands (see table 5).

The Project would involve facility installation activities in seven wetlands, resulting in 6.88 acres of temporary impacts and 4.27 acres of permanent impacts. Two wetlands (WET-05 and WET-04) are outside of, but adjacent to, the Cavern No. 6 site and MS Hub Booster Station site, respectively, and would not be directly affected by the Project. MS Hub proposes to use temporary matting, such as timber mats and board mats, to facilitate vehicle and equipment access across wetlands. Clearing, grading, and equipment crossings could result in temporary modifications of wetland vegetation, water quality, and hydrology through vegetation removal, compaction, erosion, sedimentation, and inadvertent releases of chemical contaminants such as fuel or lubricants. Wetland habitat and floodwater storage would be lost where wetlands are permanently filled for aboveground facility construction or placement of gravel and pavement. Wetland crossings would be conducted in accordance with the FERC Procedures (except as specified in section B.3.3), the requirements of the USACE's CWA Section 404 permit, and the MDEQ's Section 401 Water Quality Certification.

The USACE has a goal of "no net loss" of wetlands in the United States. This means that unavoidable wetland impacts must be offset by the creation, restoration, enhancement, or preservation of at least an equal amount of wetlands, which is referred to as compensatory mitigation. To offset the Project's wetland impacts, MS Hub is developing a compensatory mitigation plan as part of its CWA Section 404 permit application to the USACE; consultation with the USACE to finalize the plan is ongoing.

MS Hub would minimize construction-related impacts on wetlands by implementing the same best management practices for wetlands as discussed in section B.3.3 (Surface Water), including restoring temporarily impacted wetlands to pre-construction contours and vegetation communities to the extent practicable. We anticipate that, if the USACE issues a CWA Section 404 permit for the Project, it would be conditional upon MS Hub effectively offsetting adverse impacts on waters of the United States with wetland mitigation, such that impacts would be reduced to less than significant levels. Therefore, with implementation of these minimization and mitigation measures, and adherence to the requirements of all applicable permits, we conclude that the Project's impacts on wetlands would not be significant.

**Table 5**
**Wetlands Impacted by the Project**

| Feature ID | Location | Wetland Type a/ | Acreage Affected During Construction (Temporary) b/ | Acreage Affected During Operation (Permanent) | Impact Description |
|---|---|---|---|---|---|
| WET-01 | MS Hub Booster Station | PEM | 0.1 | 0.06 | Within Temporary and Permanent Workspace |
| WET-02 | MS Hub Booster Station | PEM | 0.2 | 0.0 | Within Temporary Workspace |
| WET-02A | MS Hub Booster Station | PSS | 0.5 | 0.1 | Within Temporary and Permanent Workspaces |
| WET-03 | MS Hub Booster Station | PFO | 5.1 | 3.6 | Within Temporary and Permanent Workspaces |
| WET-03A | MS Hub Booster Station | PEM | 0.9 | 0.5 | Within Temporary and Permanent Workspaces |
| WET-04 | MS Hub Booster Station | PFO | 0.0 | 0.0 | Adjacent to Cavern No. 6 site and booster station |
| WET-05 | SWD No. 9 | PEM | 0.0 | 0.0 | Adjacent to Cavern No. 6 site and booster station |
| WET-06 | MS Hub Storage Facility | PEM | 0.08 | 0.03 | Temporary and Permanent workspace |
| **Project Total c/** | | | **6.88** | **4.27** | |

a/ Cowardin wetland types: PEM – palustrine emergent; PSS – palustrine scrub-shrub; PFO – palustrine forested
b/ Construction impacts are encompassing of operational impacts.
c/ The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the exact sum of the addends.

## B.4 FISHERIES, VEGETATION, AND WILDLIFE

### B.4.1 Aquatic and Fisheries Resources

The Project would affect ephemeral streams, ephemeral man-made ditches, and man-made ponds. The Mississippi state water use classification for the three ephemeral streams is fish and wildlife support intended for fishing and propagation of fish, aquatic life, and wildlife. These streams are considered "warmwater" with respect to fisheries. However, ephemeral streams are not capable of supporting fisheries, and neither are the man-made ditches or ponds. MS Hub would protect fisheries outside of Project workspaces from sedimentation and hazardous spills as discussed in section B.3.3. Thus, we conclude the Project would have no impact on fisheries.

### B.4.2 Vegetation and Wildlife

#### Vegetation

Vegetation cover types within the Project workspaces consist of open lands (i.e., maintained right-of-way and pasture), wetlands (i.e., palustrine emergent, palustrine scrub-shrub, and palustrine forested), and upland forest (i.e., hardwood, pinewood, and mixed hardwood/pinewood). Construction would affect 28.64 acres of open lands, 6.88 acres of wetlands, and 28.70 acres of upland forest. The remaining 43.20 acres of construction workspace would be within existing developed areas of natural gas infrastructure or open water features. Project operations would permanently convert about 9.79 acres of open lands, 4.27 acres of wetlands, and 20.81 acres of forest to developed land (see table 6).

Federal or state-listed invasive plant species identified during MS Hub's field surveys include broad-leaf cattail, Chinese privet, Chinese tallow tree, Japanese climbing fern, and Japanese honeysuckle. Invasive species often outcompete native vegetation — altering vegetation communities and decreasing community resilience to stressors such as fire (Invasive Species Advisory Committee 2006). MS Hub would implement the following measures to minimize the spread and establishment of noxious and invasive plant species: restore disturbed areas to pre-construction contours and return conserved topsoil, where topsoil was preserved (including in wetlands); seed disturbed areas using a cover crop within 6 days following final grade (weather permitting); inspect and clean equipment prior to bringing it onsite or moving it to a new location within the Project area; prepare/scarify a seedbed to a depth of 3 to 4 inches; use a native seed mix for permanent revegetation that was developed in consultation with the NRCS – Jefferson Davis County; and use a combination of chemical and mechanical treatment if such species are observed following restoration.

During MS Hub's consultation with the Mississippi Department of Wildlife, Fisheries, and Parks Natural Heritage Program (MNHP) on October 26, 2023, the MNHP identified the Carolina crownbeard as a state rare or vulnerable plant species that could occur within a 2-mile radius of the Project. MS Hub did not observe Carolina crownbeard during its field surveys, although a species-specific survey was not conducted. The MNHP provided recommendations to protect state rare or vulnerable species in the Project area, which are discussed in section B.4.3.

**Table 6**
**Vegetation Impacted by the Project**

| Facility | Open Land | | Forest | | Wetlands | | Project Total b/ | |
|---|---|---|---|---|---|---|---|---|
| | Con. a/ | Op. | Con. a/ | Op. | Con. a/ | Op. | Con. a/ | Op. |
| MS Hub Storage Facility | 21.52 | 6.59 | 12.27 | 10.57 | 0.08 | 0.03 | **33.87** | **17.19** |
| Transco M&R Station | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| SESH M&R Station | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| SONAT M&R Station | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| RW Well No. 6 | 0.61 | 0.20 | 1.71 | 1.23 | 0.00 | 0.00 | **2.32** | **1.43** |
| RW Well No. 7 | 0.59 | 0.16 | 1.65 | 1.24 | 0.00 | 0.00 | **2.24** | **1.40** |
| RW Well No. 8 | 0.99 | 0.17 | 1.64 | 1.21 | 0.00 | 0.00 | **2.63** | **1.38** |
| RW Well No. 9 | 0.42 | 0.00 | 1.81 | 1.41 | 0.00 | 0.00 | **2.23** | **1.41** |
| SWD Well Nos. 5 and 7 | 2.09 | 1.96 | 0.52 | 0.00 | 0.00 | 0.00 | **2.61** | **1.96** |
| SWD Well Nos. 6 and 8 | 1.00 | 0.14 | 1.90 | 1.24 | 0.00 | 0.00 | **2.90** | **1.38** |
| SWD Well No. 9 | 0.56 | 0.46 | 0.76 | 0.39 | 0.00 | 0.00 | **1.32** | **0.85** |
| MS Hub Booster Station | 0.86 | 0.11 | 6.44 | 3.52 | 6.80 | 4.24 | **14.10** | **7.87** |
| **Project Total b/** | **28.64** | **9.79** | **28.70** | **20.81** | **6.88** | **4.27** | **64.22** | **34.87** |

a/ Construction impacts are encompassing of operational impacts.
b/ The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the exact sum of the addends.
Con. = Construction; Op. = Operation

The Project would temporarily and permanently affect vegetation communities resulting from clearing and grading of construction workspaces and graveling or paving of permanent facilities. Following construction, MS Hub would reestablish vegetation within temporary workspaces using a native seed mix. We anticipate temporarily disturbed open lands and herbaceous/shrubby wetlands would recover quickly; however, the Project's impacts on forest communities would be long-term as trees grow considerably slower than herbaceous and shrubby species. MS Hub would minimize the Project's impacts on vegetation by co-locating proposed facilities with existing pipeline rights-of-way or aboveground facilities; following the FERC Plan and Procedures; and preventing the introduction/spread of non-native plant species, as described above. The Project's impacts on wetland vegetation would be mitigated in accordance with MS Hub's USACE CWA Section 404 Permit (see section B.3.4). Therefore, we conclude that the Project would not have a significant impact on vegetation.

**Wildlife**

Wildlife species typical to the Project area include coyotes, bobcats, blue herons, leopard frogs, cottonmouths, and a variety of other mammals, birds, reptiles, amphibians, and invertebrates. Local wildlife is presumably acclimated to the ongoing operations at MS Hub's existing facilities. The proposed construction activities may result in increased displacement of wildlife from the Project area due to increased human presence, earth disturbance, noise, and possible nighttime lighting. However, this would be limited mainly to temporary effects lasting only the duration of construction activities, as human activity would return to approximate preconstruction levels and MS Hub would revegetate temporarily disturbed habitats as described in section B.4.2. We expect that more mobile species would relocate to adjacent available habitat if disturbed, while less mobile animals (e.g., small rodents, reptiles, and invertebrates) may be unable to escape the immediate Project area, resulting in direct mortality. Most wildlife would be expected to return to the general Project area once the activities are complete.

Aboveground facilities and other graveled or paved facilities would permanently exclude about 34.87 acres of wildlife habitat, but the lost habitat would be of moderate-to-low quality as it is adjacent to existing natural gas infrastructure. Therefore, impacts on wildlife that are currently acclimated to development would be minor, and more sensitive wildlife would still have access to surrounding, less developed habitat. The MS Hub Booster Station would be relatively secluded from other major development and could introduce new permanent noise and light pollution to the area from facility operations and outdoor light fixtures. Expansion of MS Hub's existing facilities could also result in additional operational noise or nighttime light; however, these effects would be negligible relative to the existing facilities.

The EPA recommended discussing the feasibility of using pollinator promoting plants and/or plant seed mixtures for reclamation of disturbed areas. MS Hub has committed to revegetating temporarily disturbed areas using a native seed mix that was developed in consultation with the NRCS – Jefferson Davis County. This seed mix would include partridge pea — a flowering plant species that could benefit pollinators.

MS Hub would further minimize the effects of Project construction on wildlife by implementing measures such as maximizing its use of existing natural gas facilities, disposing of trash in secured containers, allowing wildlife that enter Project workspaces to leave on their own,

providing environmental awareness training to all construction personnel, checking for wildlife under equipment, complying with posted speed limits, placing breaks in windrowed materials at least every 200 feet, and adhering to the FERC Plan and Procedures. MS Hub would also reduce the effects of light pollution by using down-directed, shielded, and/or motion detecting permanent light fixtures with warm-white or amber lightbulbs on the proposed facilities, where feasible. We expect that the operational noise predicted for the new and expanded facilities, as further discussed in section B.8.4, would have minor impacts on wildlife species in the area. Given these minimization measures, the Project would not have significant impacts on general wildlife.

### B.4.3 Special Status and Protected Species

#### Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act (16 U.S Code [U.S.C.] 703-711); bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). Executive Order 13186 (66 FR 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative impact on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the U.S. Fish and Wildlife Service (FWS). On March 30, 2011, the FWS and the Commission entered a Memorandum of Understanding that focuses on avoiding, minimizing, or mitigating adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the Commission and the FWS.

The Project is within Bird Conservation Region 27 – Southern Coastal Plain Region; and three Birds of Conservation Concern were identified by the FWS' Information for Planning and Consultation (IPaC) tool as having the potential to occur in the Project area: brown-headed nuthatch, chimney swift, and red-headed woodpecker. The brown-headed nuthatch and red-headed woodpecker occur in Mississippi year-round, while the chimney swift is only present during breeding season (Billerman, Keeney, Rodewald, & Schulenberg 2022). The brown-headed nuthatch's preferred habitat is pine forests, where they typically nest in tree snags. Chimney swifts are generally found within and near human development as they nest almost exclusively within chimneys or other suitable cavities within buildings. Red-headed woodpeckers occupy a wide-variety of wooded habitats, including deciduous woodlands, parks, and savanna-like grasslands with scattered trees; and nest in cavities of dead trees or in dead portions of live trees (Billerman, Keeney, Rodewald, & Schulenberg 2022). All three species are likely to occur and nest in the Project area.

The Project's impact on migratory birds would be similar to that of general wildlife and may result in the temporary or permanent displacement of individuals. Loss of forest and wetland habitat and permanent nighttime lighting, in particular, could adversely affect migratory birds. Vegetation clearing activities during the bird nesting season could result in nest abandonment from increased human presence and noise or direct mortality of nesting birds or nestlings and fledglings. Loss of habitat would force migratory birds to seek refuge elsewhere — increasing competition for mates, nest site selection, and food resources. Nighttime lighting would contribute to light pollution that could alter the migratory behavior of birds by drawing them towards developed landscapes and away from high-quality stopover habitat. Excess time

spent searching for stopover sites and selection of low-quality stopover habitat can reduce fitness by limiting food resources, expending extra energy, and increasing the risk of anthropogenic-related mortality (Mclaren, et al. 2018).

In a letter dated March 28, 2024, MS Hub requested comments from the FWS regarding bird species protected under the Migratory Bird Treaty Act. The FWS did not provide comments; however, MS Hub has committed to implementing voluntary minimization measures to protect migratory birds. MS Hub's proposed co-location of facilities with existing developed lands would minimize destruction of preferred migratory bird nesting habitat by limiting additional fragmentation of contiguous forest and resulting edge effects. The use of down-directed, shielded, and/or motion detecting permanent light fixtures with warm-white or amber lightbulbs on aboveground facilities would reduce disturbance by limiting upward light scatter. Furthermore, re-vegetation of temporarily disturbed areas would promote re-establishment of lost migratory bird nesting and foraging habitat. We conclude that although individual birds or bird habitat could be affected by the Project, we do not expect population-level impacts on migratory birds or significant measurable negative impacts on any migratory bird species or their habitat.

To further reduce the Project's impacts on migratory birds, MS Hub would schedule vegetation removal activities outside of nesting season (March 15 – August 1) to the extent practical. If vegetation clearing is required during nesting season, MS Hub has committed to conducting migratory bird nest surveys no more than 5 days prior to scheduled activities and coordinate with the FWS to establish an appropriate species-specific buffer around any active migratory bird nests until nestlings have fledged.

**Eagles**

No eagles or eagle nests were observed during MS Hub's field surveys, and the MNHP database did not reveal records of bald eagles within 2 miles of the Project. However, members of the public have observed bald eagles in the Project vicinity (eBird 2021), and forest habitat within and around the Project could provide suitable nest sites. If a bald eagle nest is found near the Project prior to or during construction, MS Hub would follow the FWS' 2007 *National Bald Eagle Management Guidelines*[7] and/or consult the FWS.

**Federally Listed Species**

Federal agencies are required under Section 7 of the ESA to ensure that any actions authorized, funded, or carried out by the agency would not jeopardize the continued existence of a federally listed endangered or threatened species, or result in the destruction or adverse modification of the designated critical habitat of a federally listed species. As the lead federal agency authorizing the Project, FERC is required to consult with the FWS to determine whether federally listed endangered or threatened species or designated critical habitat are found in the

[7] FWS' 2007 National Bald Eagle Management Guidelines https://www.fws.gov/media/national-bald-eagle-management-guidelines.

vicinity of the Project, and to evaluate the proposed action's potential impacts on those species and/or critical habitats.

MS Hub, acting as our designated non-federal representative for informal ESA consultation, used the FWS' IPaC tool to obtain an official species list and determine the federally listed or protected species that could potentially occur within the Project area. On June 5, 2024, the planning tool identified five federally listed threatened or endangered species, two species proposed for listing, and one candidate species. Species information and a summary of the Project's potential effects are provided in table 7.

There is no suitable habitat present within the Project area for yellow-blotched map turtle, alligator snapping turtle, or Gulf sturgeon; and the Project is outside the consultation area for northern long-eared bat because the Project does not involve wind turbine operations. As such, we determined that the Project would have no effect to or would be unlikely to jeopardize the continued existence of these species, and we do not discuss them further. Suitable habitat is present within the Project area for the tricolored bat, gopher tortoise, black pinesnake, and monarch butterfly; and a more detailed discussion of these species is provided below.

**Table 7**
**Federal and State Listed Species with the Potential to Occur in the Project Area**

| Common Name | Scientific Name | Federal Status | State Status | Suitable Habitat a/ | Effects Determination/Impacts Analysis |
|---|---|---|---|---|---|
| Northern Long-eared Bat **b/** | *Myotis septentrionalis* | Endangered | None | Forests, caves, and mines. | No effect/no impact; Project does not involve wind turbine operations. |
| Tricolored Bat | *Perimyotis subflavus* | Proposed Endangered | Candidate | Forests, caves, mines, and artificial structures. | Not likely to jeopardize/may impact; suitable habitat present |
| Brown-headed nuthatch | *Sitta pusilla* | None | Rare or Uncommon | Pine forests | May impact; habitat present |
| Gopher Tortoise | *Gopherus polyphemus* | Threatened | Endangered | Sunlit areas with well-drained sandy substrates and ample herbaceous vegetation. | Consultation ongoing; suitable habitat present |
| Yellow-blotched Map Turtle | *Graptemys flavimaculata* | Threatened | Endangered | Rivers with moderate current and substrates of sand and clay or rock, oxbow lakes, semi-permanent ponds. | No effect/no impact; no suitable habitat present |
| Alligator Snapping Turtle | *Macrochelys temminckii* | Proposed Threatened | Candidate | Rivers, canals, lakes, oxbows, swamps, bayous, and ponds near running water. | Not likely to jeopardize/no impact; no suitable habitat present |
| Black Pinesnake | *Pituophis melanoleucus lodingi* | Threatened | None | Longleaf pine forests, pine plantations, hardwood forests, riparian areas. | May affect, not likely to adversely affect; suitable habitat present |
| Laura's Clubtail | *Stylurus laurae* | None | Rare or Uncommon | Streams with sand-mud substrate | Not likely to impact; suitable habitat potentially present downstream |
| Gulf Sturgeon | *Acipenser oxyrinchus* | Threatened | None | Marine/estuarine waters and large rivers that connect to the Gulf of Mexico. | No effect/no impact; no suitable habitat present |
| Monarch Butterfly | *Danaus plexippus* | Candidate | None | Vegetated areas containing milkweed and/or a diversity of flowering plants. | No significant impact; suitable habitat present |

a/ Species information was obtained from NatureServe Explorer (NatureServe 2024).
b/ On June 5, 2024, the FWS' IPaC official species list indicated that consideration of the Project's effects to the northern long-eared bat is only necessary if the Project includes wind turbine operations. The Project does not involve wind turbine operations.

***Tricolored Bat***

Tricolored bats can be found within forest habitat roosting among leaf clusters of live or recently dead deciduous hardwood trees; and winters in caves, abandoned mines, and road-associated culverts (FWS n.d.). Road-associated culverts are proposed for modification, and suitable roost trees may be present throughout the forested areas of the Project. The Project would result in removal of 28.70 acres of potentially suitable forest habitat, 20.81 acres of which would be permanently converted to developed land. Cutting or trimming suitable roost trees during the summer season or modifying road-associated culverts during the winter season could result in mortality of tricolored bats. Furthermore, construction noise and nighttime lighting could cause adjacent roosting bats to temporarily or permanently abandon their roosts. Therefore, to ensure potential impacts are minimized for tricolored bats, **we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project:**

- **Prior to construction, MS Hub shall conduct a tricolored bat suitable roosting habitat survey, conducted by qualified biologists using FWS-approved survey methods, of any culverts or bridges that would be impacted by the Project and file with the Secretary the survey report. The report shall include any additional information that may be applicable to the tricolored bat's presence or absence. This report must also be provided to the FWS, Mississippi Ecological Services Field Office for its review and comment. In addition, MS Hub must file with the Secretary any correspondence received from the FWS regarding the report's content and conclusions.**

On May 30, 2024, the FWS recommended MS Hub avoid tree removal activities during the pup season (May 1 – July 15) and during the torpor season (December 15 – February 15) and conduct suitable roosting habitat surveys for any culverts or bridges that would be impacted by the Project. MS Hub did not address the possibility of implementing timing restrictions. Therefore, **we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project:**

- **MS Hub shall not conduct tree removal activities during the tricolored bat pup season from May 1 through July 15 and tricolored bat torpor season from December 15 through February 15, unless specifically approved in writing by the FWS.**

Based on the above analysis and our recommendations, we conclude that the Project *is not likely to jeopardize* the continued existence of the tricolored bat.

***Gopher Tortoise***

Gopher tortoises can be found in open pine systems, sandhills, scrub, xeric hammocks, and other ruderal plant communities with an open canopy, abundant herbaceous vegetation for foraging, and generous sunlight for basking and egg incubation. These tortoises excavate extensive underground burrows in well-drained sandy soils that serve as both daily shelter and nest sites. An individual will often excavate and use more than more burrow throughout the

year. In Mississippi, these tortoises are active during the day from around April through October, during which time they bask, forage, and reproduce. In the winter, they descend into their underground burrows where they enter torpor and rarely emerge again until spring (FWS 2021).

MS Hub documented pine forests, hardwood forests, mixed pine-hardwood forests, and grasslands during its field surveys that could potentially provide suitable habitat for gopher tortoises, but it did not observe any gopher tortoises or their burrows. The MNHP expressed concern for potential effects to the species in the southernmost area of the Project. Based on this information, MS Hub determined the Project *may affect, but is not likely to adversely affect* the gopher tortoise and requested technical assistance from the FWS regarding its determination of effect. On April 9, 2024, the FWS responded but did not concur with MS Hub's determination of effect. We, also, do not have enough information regarding the impacts on the gopher tortoise to make a final effects determination.

The FWS recommended that MS Hub conduct a survey for gopher tortoises prior to Project construction and stated that further coordination with the FWS would be necessary should MS Hub discover gopher tortoises or their burrows in the Project area. MS Hub has committed to conducting gopher tortoise surveys prior to construction of the Project. Given the unknown presence of gopher tortoises in the Project area, and to ensure impacts are properly assessed, **we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project:**

- **<u>Prior to construction</u>, MS Hub shall file with the Secretary a gopher tortoise survey report prepared by qualified biologists using FWS-approved survey methods. The report shall include any additional information that may be applicable to gopher tortoise presence or absence. This report must also be provided to the FWS, Mississippi Ecological Services Field Office for its review and comment. In addition, MS Hub must file with the Secretary any correspondence received from the FWS regarding the report's content and conclusions.**

***Black Pinesnake***

Suitable habitat for black pinesnakes consists of sandy, well-drained soils with an open-canopied overstory of longleaf pine, a fire-suppressed mid-story, and dense herbaceous ground cover. This species has also been observed using riparian areas, hardwood forests, and pine plantations, but use of these other habitats appears to be rare. Black pinesnakes are active during daytime hours, year-round, and spend the majority of their time below ground; usually in the trunks or root channels of rotting pine stumps (FWS 2022). There are no longleaf pine forests within the Project workspaces; however, hardwood forests and pine forests dominated by loblolly pine are present and could provide alternative habitat. Therefore, black pinesnakes may occur in the Project area, but their presence is discountable because their recorded use of the available habitat types is rare. Our effects determination for this species is that the Project *may affect, but is not likely to adversely affect* the black pinesnake.

### *Monarch Butterfly*

The monarch butterfly, a candidate for federal listing, generally inhabits lands where it can feed on nectar producing flowers, but reproduction is dependent on milkweed — the sole source of food for monarch caterpillars. Adults would be present in Mississippi beginning around March through May and September through October during migration between Mexico and the northeastern United States. Monarch eggs and caterpillars would also be present in Mississippi in the spring, as monarchs begin reproducing during their spring migration (Monarch Joint Venture 2024).

MS Hub did not observe any milkweed in the Project area during its field surveys; however, many milkweed species are hardy and known to grow in various landscapes such as short-grass prairies, roadsides, and wetlands (Monarch Joint Venture 2024). Suitable roosting and foraging habitat were documented within Project workspaces, which would be cleared during construction and converted to developed land in some areas. MS Hub would revegetate all disturbed areas that are not graveled or paved by seeding with a native seed mix to promote reestablishment of foraging habitat. Based on MS Hub's commitment to adhere to the FERC Plan and Procedures for construction activities and revegetation, the Project would not have a significant impact on the monarch butterfly.

### *Conclusion on Federally Listed Species*

We have concluded that construction and operation of MS Hub's Project would have no impact on the northern long-eared bat, yellow-blotched map turtle, gulf sturgeon, or pearl darter; is not likely to adversely affect the black pinesnake; and is not likely to jeopardize the continued existence of the tricolored bat, Pascagoula map turtle, or alligator snapping turtle.

At FERC staff's request, MS Hub, acting as FERC's designated non-federal representative for the purposes of complying with Section 7(a)(2) of the ESA, will initiate informal consultation with the FWS and will request concurrence for the conclusions reached by FERC staff that the Project *may affect, but is not likely to adversely affect* the black pinesnake. We are unable to make a final determination of effect for the gopher tortoise at this time, and as discussed above in our recommendation, we are requesting additional information from MS Hub. Because Section 7 ESA consultation is ongoing, and to ensure it is complete prior to any Project construction, **we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project:**

- **MS Hub shall not begin construction activities until:**

  **a. FERC staff receives additional comments from the FWS regarding the proposed action;**

  **b. FERC staff completes any necessary ESA Section 7 consultation and/or conference with the FWS; and**

  **c. MS Hub has received written notification from the Director of OEP, or the Director's designee, that construction or use of mitigation may begin.**

**State-Listed, Rare, and Vulnerable Species**

As requested by the Mississippi Department of Wildlife, Fisheries, and Parks in its comment, MS Hub initiated consultation with the MNHP on October 26, 2023. The MNHP identified brown-headed nuthatch and Laura's clubtail as state rare or vulnerable wildlife species that could occur within a 2-mile radius of the Project,[8] and commented that the introduction of pollutants and sediments into streams, or degradation of streams due to erosion from increased stream flow, could adversely affect these species. To minimize the Project's impacts on state rare and vulnerable species, the MNHP recommended that MS Hub implement, maintain, and monitor proper streamside management zones and best management practices (as defined by the MDEQ) both upstream and downstream of any stream crossings. Furthermore, specific emphasis should be placed on measures that help identify increased erosion and minimize the occurrence of excess sedimentation, suspended particulate matter, and contaminants into nearby streams and waterbodies. If such issues are observed, appropriate actions should be taken to address the issues, cumulative impacts should be considered, and in-kind mitigation should be provided. MS Hub would implement measures to protect streams and other waterbodies from impacts as discussed in section B.3.3, obtain a Section 401 Water Quality Certificate from the MDEQ, and comply with any mitigation measures that may be required by the USACE's CWA Section 404 permit.

Species information and a summary of the Project's potential impacts on other state-listed species that are also federally listed are provided in table 6. We anticipate the Project's impacts on state rare or vulnerable species would be similar to that of general vegetation and wildlife, and MS Hub would minimize these effects by implementing the vegetation and wildlife avoidance and minimization measures described throughout sections B.4.2 through B.4.3. Therefore, we conclude that the Project would not significantly affect state-listed, rare, or vulnerable species.

## B.5 LAND USE, RECREATION, AND VISUAL RESOURCES

### B.5.1 Land Use

There are no planned residential development, public lands, conservation lands, recreational areas or other designated or special use areas within 0.25 mile of the Project. The Project is not located within the Coastal Management Zone as designated by the Mississippi Department of Marine Resources. No impacts to these special land use designations are expected.

Land use within the Project area consists of developed land, forest land, open land and wetlands (table 8). The Project would impact approximately 107.2 acres of land, including approximately 78.9 acres of permanent impacts. One contractor yard is proposed at the

[8] MS Hub initially consulted the MNHP on October 26, 2023, using incomplete spatial data for the Project, which resulted in a list of over 40 state-listed threatened, endangered, and rare or vulnerable species with the potential to occur in the Project area. In a follow-up coordination, MS Hub provided the MNHP more accurate spatial data for the Project, which narrowed the list of potential species to three state rare or vulnerable species.

MS Hub Storage Facility on property owned by MS Hub but is outside and adjacent to the existing fence line. The land is currently forested and would be cleared and leveled for use as a contractor yard. There are no other proposed contractor yards for the Project.

New permanent access roads would be needed to access the new and existing facilities during construction and operation of the Project. No temporary access roads are required. MS Hub would use existing public roads or facility access roads to the extent practical; however, new roads will be required to access Cavern No. 6, RW Well Nos. 6, 7, 8, and 9; SWD Well No. 9; and the MS Hub Booster Station.

Construction and operation of the Project would result in temporary and permanent land use impacts on privately owned lands. All temporary construction work areas that would not be permanently maintained during operation of the Project would be restored in accordance with the FERC Plan and Procedures. Therefore, we conclude that the Project would not have significant impacts on land use.

### B.5.2 Visual Resources

The Project would not have an impact on visually sensitive areas including scenic roads, rivers and trails designated at either the federal, state, or local levels. There is a vegetation buffer between the existing MS Hub Storage Facility and the nearest noise sensitive area (NSA). Clearing to expand the facility would be south and east of the existing facility; however, the NSA is 1,550 feet away. The facility abuts State Highway 541. The only additional visual impacts to this highway would be the temporary contractor yard that would be utilized to the south of the facility.

There is a vegetation buffer between the existing SONAT M&R Station and the closest NSA, which is 1,600 feet away. All construction and operation activities would occur within the existing footprint. Given the distance to the M&R station, we conclude that there would be no construction-related visual impacts.

A vegetation buffer is between the existing SESH M&R Station and Transco M&R Station and NSAs, which are 800 feet and 720 feet away, respectively. All construction and operation activities would occur within the existing footprint of the facilities. Visual impacts on residences could result from the visibility of movement of construction equipment. Given the limited view of the M&R stations, we conclude that construction-related visual impacts would be minor and temporary.

**Table 8**
**Land Use (acres)**

| Facility | Developed Land | | Forest Land | | Open Land | | Wetlands | | Total a/ | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Const. | Op. | Const. | Op. | Const. | Op. | Const. | Op. | Const. | Op. |
| **Existing Facilities** | | | | | | | | | | |
| MS Hub Storage Facility **b/** | 37.5 | 39.3 | 12.3 | 10.6 | 21.5 | 6.6 | 0.1 | 0.0 | 71.4 | 56.5 |
| SONAT M&R Station | 1.4 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 0.6 |
| SESH M&R Station | 0.9 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.7 |
| Transco M&R Station | 2.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| **Proposed New Facilities** | | | | | | | | | | |
| RW Well No. 6 | 0.0 | 0.0 | 1.7 | 1.2 | 0.6 | 0.2 | 0.0 | 0.0 | 2.3 | 1.4 |
| RW Well No. 7 | 0.0 | 0.0 | 1.7 | 1.2 | 0.6 | 0.2 | 0.0 | 0.0 | 2.2 | 1.4 |
| RW Well No. 8 | 0.0 | 0.0 | 1.6 | 1.2 | 1.0 | 0.2 | 0.0 | 0.0 | 2.6 | 1.4 |
| RW Well No. 9 | 0.0 | 0.0 | 1.8 | 1.4 | 0.4 | 0.0 | 0.0 | 0.0 | 2.2 | 1.4 |
| SWD Wells Nos. 5 and 7 | 0.0 | 0.0 | 0.5 | 0.0 | 2.1 | 2.0 | 0.0 | 0.0 | 2.6 | 2.0 |
| SWD Wells Nos. 6 and 8 | 1.4 | 1.4 | 1.9 | 1.2 | 1.0 | 0.1 | 0.0 | 0.0 | 4.3 | 2.8 |
| SWD Well No. 9 | 0.0 | 0.0 | 0.8 | 0.4 | 0.6 | 0.5 | 0.0 | 0.0 | 1.3 | 0.8 |
| MS Hub Booster Station | 0.0 | 0.0 | 6.4 | 3.5 | 0.9 | 0.1 | 6.8 | 4.2 | 14.1 | 7.9 |
| **Total** | **43.2** | **44.0** | **28.7** | **20.7** | **28.7** | **9.9** | **6.9** | **4.2** | **107.2** | **78.9** |

Key: Const. = Construction Op. = Operation

a/ Includes access roads associated with each facility.
b/ Includes staging areas and contractor yard.
Due to rounding differences in the dataset, the totals may not reflect the sum of the addends.

Vegetation buffers are between the new RW Well No. 6, RW Well No. 7, SWD Well No. 5, SWD Well No. 7, and SWD Well No. 9 and the nearby residences, which are over 1 mile away. Given the distance and limited view to the wells, we conclude that construction-related visual impacts would be minor and temporary.

Vegetation buffers are between the new RW Well No. 8 and No. 9 and the nearby residences, which are 1 mile and 0.7 mile away, respectively. However, the surrounding area includes open fields and these facilities would be visible from Scott Harrington Road. Given that construction activities would be visible from Scott Harrington Road, we conclude that construction-related visual impacts would be minor and temporary.

SWD Well Nos. 6 and 8 would require tree clearing; however, the surrounding area is forested. The nearest residence is 0.4 mile away. Mount Olive Road abuts the well sites. However, given the distance of the facilities from the nearby residence, we conclude that construction-related visual impacts would be minor and temporary.

The new MS Hub Booster Station would require tree clearing; however, the surrounding areas are forested. The closest NSA is 2,500 feet away. A portion of the site would require tree clearing along Seminary-Mike Conner Road. Given the distance of the facility from the nearby residence, we conclude that construction-related visual impacts would minor and temporary.

Existing aboveground facilities have vegetation buffers between the facilities and the nearby residence. The proposed modifications and continued operation of the existing facilities following construction would not result in any permanent changes to the visual landscape from current conditions. The new facilities would maintain a vegetation buffer between the facility and nearby residence after construction is completed. For those facilities that are visible from the road, visual impacts would be minimal. Therefore, we conclude that the Project would not have a significant impact on visual resources.

## B.6 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act, as amended, requires the FERC to take into account the effect of its undertakings on properties listed, or eligible for listing, on the National Register of Historic Places, and to afford the Advisory Council on Historic Preservation an opportunity to comment. MS Hub, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 and its implementing regulations at 36 CFR 800.

MS Hub completed a cultural resources survey for the Project and provided the resulting survey report to the FERC and Mississippi State Historic Preservation Office (SHPO). The survey employed surface inspection augmented by the excavation of 650 shovel test units and included both archaeological and architectural resources. Approximately 176 acres were surveyed.

As a result of the survey, two newly recorded archaeological sites (22Si627 and 22Si628 – both historic artifact scatters), a newly recorded isolated find, five previously recorded architectural resources (four residences and a church), and one newly recorded architectural resource (a cemetery associated with the church) were identified. All of these resources were recommended as not eligible for the National Register of Historic Places. In a letter dated April

10, 2024, the Mississippi SHPO requested revisions to the report and the unanticipated discovery plan. MS Hub provided a revised report and unanticipated discovery plan. In a letter dated June 14, 2024, the SHPO did not concur that sites 22Si627 and 22Si628 were ineligible, and indicated the sites should be avoided or subject to Phase II testing. On June 26, 2024, the SHPO concurred with the findings for the architectural resources and concurred with the revised unanticipated discovery plan. MS Hub indicated it would avoid sites 22Si627 and 22Si628 and provided a revised report documenting the avoidance of the two sites but has not yet provided the SHPO's comments on the report. **Therefore, we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project:**

- **MS Hub shall <u>not begin</u> construction of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads <u>until</u>:**

  **a. MS Hub files with the Secretary:**

  **1) the SHPO's comments on the revised survey report; and**

  **2) any further required cultural resources survey report(s) or plan(s), and the SHPO's comments on the report(s) and plan(s).**

  **b. The Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and**

  **c. FERC staff reviews and the Director of OEP, or the Director's designee, approves the cultural resources reports and plans, and notifies MS Hub in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

**All materials filed with the Commission containing <u>location, character, and ownership</u> information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: <u>"CUI//PRIV - DO NOT RELEASE."</u>**

MS Hub contacted the following Native American tribes, providing a Project description and mapping: Alabama Coushatta Tribe of Texas; Chickasaw Nation; Choctaw Nation of Oklahoma; Jena Band of Choctaw Indians; Mississippi Band of Choctaw Indians; Muscogee Nation; Quapaw Nation; and Tunica-Biloxi Tribe of Louisiana. The Muscogee Nation indicated the Project was outside its area of interest. The Quapaw Nation provided updated contact information. The Choctaw Nation of Oklahoma requested GIS shapefiles and a copy of the survey report, which MS Hub provided. No further comments have been received. We sent our Notice of Scoping to these same tribes. No responses to our Notice of Scoping have been received from the tribes.

MS Hub provided a plan to address the unanticipated discovery of cultural resources and human remains during construction. We and the SHPO requested revisions to the plan. MS Hub provided a revised plan which we and the SHPO find acceptable.

## B.7 AIR QUALITY

### B.7.1 Existing Environment

The climate in the Project areas is characterized by temperate winters, long, hot, and humid summers, and generally evenly distributed rainfall throughout the year. Yearly temperatures average in the mid-60s °F. Low temperatures in the winter occasionally drop as low as 16 °F, while summer high temperatures may exceed 90 °F for 100 or more days per year, with many of these days exceeding 100 °F. Annual rainfall generally ranges from 50 to 65 inches (Mississippi State University 2024).

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes National Ambient Air Quality Standards (NAAQS) to protect human health and welfare.[9] NAAQS have been developed for seven "criteria air pollutants" including nitrogen dioxide ($NO_2$), carbon monoxide (CO), ozone, sulfur dioxide ($SO_2$), particulate matter less than or equal to 2.5 microns in aerodynamic diameter ($PM_{2.5}$), particulate matter less than or equal to 10 microns in aerodynamic diameter ($PM_{10}$), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA, 2024a). The state of Mississippi has adopted the NAAQS. Additional pollutants, such as volatile organic compounds (VOC) and hazardous air pollutants (HAP), are emitted during fossil fuel combustion. These pollutants are regulated through various components of the CAA that are discussed further in section B.7.2.

The EPA and state and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the United States. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in "attainment" (i.e., criteria pollutant concentrations are below the NAAQS), "nonattainment" (i.e., criteria pollutant concentrations exceed the NAAQS) or "maintenance" (area was formerly nonattainment and is currently in attainment). Simpson, Covington, and Jefferson Davis Counties are designated as being in attainment for all criteria pollutants (EPA 2024b).

GHGs occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. Carbon dioxide ($CO_2$), methane, and nitrous oxide are GHGs that are emitted during fossil-fuel combustion. GHGs are non-toxic and non-hazardous at normal ambient concentrations; however, they were identified as pollutants by the EPA due to the impacts on the global climate. The primary GHGs that would be emitted by the Project are $CO_2$, methane, and nitrous oxide ($N_2O$). During construction and operation of the Project, these GHGs would be emitted from the majority of construction equipment, the operation of the proposed new reciprocating engines at the MS Hub Storage Facility, new turbines at the MS Hub

[9] The current NAAQS are listed on the EPA's website at https://www.epa.gov/criteria-air-pollutants/naaqs-table.

Booster Station, as well as fugitive methane leaks from all Project equipment storing or handling natural gas.

Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents ($CO_2e$). The $CO_2e$ takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change[10] in comparison to $CO_2$. The value of $CO_2e$ is determined using the GWP weighting values of 1 for $CO_2$, 28 for methane, and 265 for $N_2O$ for equal amounts of each respective GHG potentially emitted (EPA 2024c).[11]

### B.7.2 Regulatory Requirements

The provisions of the CAA that are applicable to the Project are discussed below. See section B.7.5 for estimated potential operational emissions for the Project facilities.

**Prevention of Significant Deterioration**

Proposed new or modified air pollutant emission sources must undergo a state permitting process, known as New Source Review, by the MDEQ prior to construction or operation. Through New Source Review permitting, state and federal regulatory agencies review and approve project emissions increases or changes, emissions controls, and various other details to ensure air quality does not deteriorate as a result of new or modified existing emission sources.

The modified MS Hub Storage Facility and new MS Hub Booster Station would not exceed the Prevention of Significant Deterioration (PSD) major source thresholds for any pollutants. Therefore, the proposed construction and operation of the modified storage facility and new booster station do not trigger PSD Review.

**Class I Areas**

Under the PSD program, 156 mandatory federal Class I areas are currently designated by the EPA to protect certain areas (e.g., wilderness areas, national parks, national forests) to ensure that deterioration of existing air quality-related values, such as visibility, is minimized in these areas. Relative to Class II and III areas, Class I areas have the most restrictive allowable PSD air quality increments. For a new major source or major modification located within 62 miles (100 kilometers) of a Class I area, the facility is required to notify the appropriate federal land manager and assess the impacts of that project on the nearby Class I area.

[10] Climate change is discussed further in section B.12.10.

[11] These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs the EPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements. Note that in a notice issued in the Federal Register on April 25, 2024 (89 FR 31802), the EPA revised its GWPs for methane and $N_2O$, which were previously estimated to be 25 and 298, respectively.

There are no Class I areas within 62 miles (100 kilometers) of any Project site; the nearest Class I area is the Breton National Wildlife Refuge in Louisiana, about 112 miles (180 kilometers) from the MS Hub Booster Station site. Therefore, the construction and operation of the Project would have no impact on Class I areas.

**Title V Permitting**

Title V is an operating air permit program run by each state for each facility that is considered a "major source." The major source threshold for an air emission source within an attainment area, or within a marginal or moderate nonattainment area is 100 tons per year (tpy) for criteria pollutants, 10 tpy for any single HAP, and 25 tpy for total HAPs. The proposed modified MS Hub Storage Facility meets the definition of a major source for $NO_x$ emissions and therefore, would continue to require a Title V permit.

**New Source Performance Standards**

The EPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories as specified in the applicable provisions discussed below. NSPS also establishes fuel, monitoring, notification, reporting, and recordkeeping requirements. The MDEQ would determine final applicability to all NSPS in the final permit that it issues for the modified MS Hub Storage Facility and new MS Hub Booster Station.

NSPS Subpart OOOOa sets emission standards and compliance schedules for VOC and $SO_2$ emissions for new, modified, or reconstructed wet seal centrifugal compressor and reciprocating compressors; limits for bleed rates for natural gas-driven pneumatic controllers; requires work practice standards for compressor rod packing compressor units; and sets fugitive leak monitoring and repair requirements for compressor stations. MS Hub would be required to comply with all applicable requirements of NSPS Subpart OOOOa for operation of the modified MS Hub Storage Facility and new MS Hub Booster Station.

Subpart OOOOb of 40 CFR 60, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After December 6, 2022, applies to emissions of GHG (methane) and VOCs from affected facilities listed in §60.5365b. Certain types of compressors, pumps, and controllers, if included as part of MS Hub facilities design, would be subject to Subpart OOOOb requirements. The effect that the Project's modifications may have on VOCs and methane emissions from the existing wastewater storage tank at the MS Hub Storage Facility would need to be assessed to determine if Subpart OOOOb requirements apply. The MS Hub Booster Station would be subject to Subpart OOOOb and required to conduct monthly audible, visual, or olfactory inspections and quarterly optical gas imaging surveys to reduce fugitive emissions. The potential impact of the new subpart OOOOc emissions guidelines for MS Hub's other existing sources would be determined following the EPA's approval of Mississippi's proposed requirements.

NSPS Subpart KKKK applies to stationary combustion turbines with a heat input at peak load equal to or greater than 10 million British thermal units per hour, based on the higher

heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005. Each of the new natural gas-fired turbines at the MS Hub Booster Station would be subject to the Subpart KKKK emission limits for $NO_x$ for high and low load operation, as well as emission limits for $SO_2$.

Subpart JJJJ applies to owners and operators of stationary spark ignition internal combustion engines that commence construction after June 12, 2006 (depending on engine power and date of manufacture), and to owners and operators of all stationary ignition internal combustion engines that are modified or reconstructed after June 12, 2006. The natural gas-fired engines proposed at the MS Hub Storage Facility will be subject to Subpart JJJJ.

**National Emission Standards for Hazardous Air Pollutants**

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAP). The NESHAP regulate HAP emissions from specific source types at major or area sources of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements.

According to MS Hub, the estimated potential total HAP emissions for the MS Hub Storage Facility as modified by the Project would remain below the major source threshold of 25 tpy. In addition, the annual potential emissions for each individual HAP would be below the major source threshold of 10 tpy. Therefore, the facility would continue to be classified as an area source of HAP emissions.

Subpart ZZZZ of 40 CFR 63, NESHAP for Stationary Reciprocating Internal Combustion Engines, applies to reciprocating engines at both major and area sources of HAPs. The Project's proposed reciprocating compressor engines would be subject to Subpart ZZZZ. Compliance with the applicable requirements of 40 CFR 60 Subpart JJJJ satisfies the compliance requirements of Subpart ZZZZ.

The MDEQ would determine final applicability to all air quality permitting requirements, including the applicable NSPS and NESHAP, in the final permit that it issues for the modified MS Hub Storage Facility and new MS Hub Booster Station.

**General Conformity**

According to Section 176(c)(1) of the CAA (40 CFR 51.853), a federal agency cannot approve or support an activity that does not conform to an approved State Implementation Plan. Therefore, a conformity analysis to determine whether a project would conform to an approved State Implementation Plan is required when a federal action would generate emissions exceeding conformity threshold levels of pollutants for which an air basin is designated as nonattainment or maintenance. A conformity applicability determination requires that direct and indirect emissions of nonattainment or maintenance pollutants (or precursors) resulting from the federal action, and not covered by an air quality permit, be compared with general conformity applicability emissions thresholds. If the thresholds are exceeded, general conformity applies, and a conformity determination is required. Simpson, Covington, and Jefferson Davis Counties

are designated as being in attainment for all criteria pollutants; therefore, general conformity does not apply to the Project's construction emissions.

**Mandatory Greenhouse Gas Reporting Rule**

The EPA's Mandatory Reporting of Greenhouse Gases Rule requires reporting from applicable sources of GHG emissions if these sources, in total, emit greater than or equal to 25,000 metric tons of GHG (as $CO_2e$) in 1 year. The Mandatory Reporting Rule does not require emission control devices and is strictly a reporting requirement for stationary sources based on actual emissions. As shown in table 10, MS Hub would continue to be subject to the EPA's Rule for the modified MS Hub Storage Facility and, as shown in table 11, would also be required to report GHG emissions in accordance with the Rule for the proposed MS Hub Booster Station. Although the rule does not apply to construction emissions, we have provided GHG construction emission estimates, as $CO_2e$, for accounting and disclosure purposes in table 9.

**Methane Challenge Program**

In August 2016, the EPA officially approved the One Future Commitment Option under the Natural Gas STAR Methane Challenge Program. As a member of the ONE Future Coalition, MS Hub utilizes industry best practices, including implementing Audio, Visual, and Olfactory inspections, aerial Tunable Diode Laser Absorption Spectroscopy, and Optical Gas Imagery to identify equipment needing maintenance and repair. As a result of these voluntary efforts, MS Hub has achieved and documented reductions in methane emissions across its facilities.

### B.7.3 State Air Quality Regulations

The Project's new and modified emission sources would be subject to state air quality requirements, codified in MDEQ Title 11, Part 2, including:

- 11 Mississippi Administrative Code (MAC) Part 2, R. 1.3.D(1)(b) – Specific Criteria for Source of Particulate Matter;
- 11 MAC Part 2, R. 1.4.(A)(1) – Specific Criteria for Source of Sulfur Compounds;
- 11 MAC Part 2, R. 1.4.B(2) – Specific Criteria for Source of Hydrogen Sulfide;
- 11 MAC Part 2, R. 1.6 – New Sources;
- 11 MAC Part 2, R. 1.9 – Stack Height Considerations;
- 11 MAC Part 2. R. 1.10 – Provisions for Upsets, Startups, and Shutdowns;
- 11 MAC Part 2, R. 2.1.D – Permitting Requirements;
- 11 MAC Part 2, R. 2.2 – General Standards Applicable to All Permits;
- 11 MAC Part 2, R. 2.3 – Application for Permit to Construct and State Permit to Operate New Stationary Source;
- 11 MAC Part 2, R. 2.5 – Application Review; and
- 11 MAC Part 2, R.10 – Emission Reduction Schedule.

MS Hub would comply with all applicable state requirements for the Project.

### B.7.4 Construction Emissions Impacts and Mitigation

Project construction would result in temporary, localized emissions that would last the duration of construction activities (estimated to occur over a period of approximately 6 years) Exhaust emissions would be generated by the use of heavy equipment and trucks powered by diesel or gasoline engines. Exhaust emissions would also be generated by delivery vehicles and construction workers commuting to and from work areas.

Construction activities would also result in the temporary generation of fugitive dust (large particles as well as $PM_{10}$ and $PM_{2.5}$) due to land clearing and grading, ground excavation, and driving on unpaved roads. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity.

Construction emission estimates are based on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment. Construction emissions were estimated using the EPA MOVES 4.0.1 emissions estimation model, EPA AP-42 emission factors, vendor data, and emission factors found in 40 CFR 98 Subpart C (EPA 2024c; EPA 2024d; EPA 2024e). Table 9 provides the total Project construction emissions, including exhaust emissions and fugitive dust from on-road and off-road construction equipment and vehicles, exhaust emissions from construction worker vehicles for commuting, and vehicles used to deliver equipment and materials to each of the construction sites.

The EPA recommended that MS Hub implement "best management practices" and a "clean diesel policy" to minimize mobile sources of emissions during construction and provided a "Construction Emission Control Checklist" with suggested practices that MS Hub may implement for this purpose.[12] In order to minimize fugitive dust emissions at Project construction sites, MS Hub would apply water to construction work areas as needed. To minimize fugitive dust and combustion emissions from construction equipment, MS Hub would apply water or other approved dust suppressant agent to areas experiencing ground disturbance including access roads, staging and laydown areas, and parking areas; stabilize material stockpiles to reduce wind and water erosion; covering the beds of trucks carrying materials that may generate fugitive dust; post maximum 15 miles per hour speed limit signs within construction sites and otherwise limit speeds along access roads; use gravel pads at construction entrance and exit sites to reduce soil track-out; and idle engines no longer than 5 minutes after active use. In addition, MS Hub would not conduct open burning for the duration of Project construction.

The above measures and requirements that MS Hub would employ during Project construction would ensure that impacts of fugitive dust would be reduced. No residences are within 50 feet of any Project construction workspace. Therefore, we expect that dust and

[12] In its comments, the EPA provided the following weblinks for recommended best management practices: https://www.epa.gov/dera/reducing-diesel-emissions-construction-and-agriculture and https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-emissions-air-pollution-nonroad.

equipment exhaust impacts on these residences, combined with the above-proposed mitigation, would not be significant.

In general, emissions from Project construction would occur over the duration of construction activity and would be emitted at different times throughout the Project areas. Construction emissions would be relatively minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. With the mitigation measures proposed by MS Hub, we conclude that air quality impacts from construction would be temporary and would not result in a significant impact on local or regional air quality.

The EPA recommended that MS Hub consider using "pig ramp technologies, vacuum, and compression technology…and inert gas to purge the pig launcher, among other proven remedies, along the proposed facilities." The EPA's comment appears to refer to proposed natural gas pipeline facilities, rather than the Project's modification and expansion of an existing natural gas storage facility and related facilities. No pig launcher is associated with proposed Project construction or operation. The EPA also recommended that MS Hub consider "the use of switchgears that are sulfur hexafluoride free for the proposed alternatives and system wide as large switchgears become available." We are unaware of any proposed jurisdictional Project components that include the use of switchgears. The EPA's comments appear to refer to its "Electric Power Systems Partnership." We understand that the EPA's partnership engages the electric power transmission industry. Although the Project facilities would require electric power as described in section A.8, these electric transmission facilities are non-jurisdictional to FERC and would be constructed and operated by a third-party electric provider unaffiliated with MS Hub.

| Table 9<br>Project Construction Emissions (tons per construction duration) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Construction Year and Activity** | | **$NO_x$** | **CO** | **VOC** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_2$** | **Total HAP** | **$CO_2e$** |
| **2025** | non-road equipment | 31.61 | 8.62 | 1.98 | 1.46 | 1.42 | 0.06 | 1.22 | 22,494 |
| | on-road equipment | 1.41 | 1.47 | 0.13 | 0.05 | 0.05 | 0.00 | 0.02 | 1,269 |
| | fugitive dust (all sources) | -- | -- | -- | 24.74 | 2.17 | -- | -- | -- |
| | cavern and well drilling | 444.84 | 48.24 | 18.55 | 9.05 | 9.05 | 0.34 | 0.26 | 25,863 |
| **Subtotal** | | **447.86** | **58.32** | **20.67** | **35.32** | **12.69** | **0.41** | **1.51** | **49,626** |
| **2026** | non-road equipment | 0.60 | 0.25 | 0.06 | 0.04 | 0.04 | 0.00 | 0.03 | 593 |
| | on-road equipment | 1.00 | 1.00 | 0.09 | 0.04 | 0.03 | 0.00 | 0.01 | 898 |
| | fugitive dust (all sources) | -- | -- | -- | 3.61 | 0.39 | -- | -- | -- |
| **Subtotal** | | **1.60** | **1.25** | **1.5** | **3.69** | **0.47** | **0.00** | **0.04** | **1,491** |
| **2027** | non-road equipment | 5.58 | 2.50 | 0.62 | 0.44 | 0.43 | 0.01 | 0.31 | 4,263 |
| | on-road equipment | 8.06 | 8.32 | 0.77 | 0.29 | 0.27 | 0.02 | 0.12 | 7,228 |
| | fugitive dust (all sources) | -- | -- | -- | 16.42 | 1.90 | -- | -- | -- |
| **Subtotal** | | **13.64** | **10.82** | **1.39** | **17.15** | **2.59** | **0.03** | **0.43** | **11,491** |
| **2028** | non-road equipment | 14.20 | 3.82 | 0.90 | 0.64 | 0.62 | 0.02 | 0.54 | 8,701 |
| | on-road equipment | 0.49 | 0.62 | 0.05 | 0.02 | 0.02 | 0.00 | 0.01 | 448 |
| | fugitive dust (all sources) | -- | -- | -- | 14.17 | 1.44 | -- | -- | -- |
| | cavern drilling | 107.54 | 14.29 | 4.38 | 1.41 | 1.41 | 0.05 | 0.04 | 4,027 |
| **Subtotal** | | **122.23** | **18.72** | **5.33** | **16.25** | **3.48** | **0.08** | **0.59** | **13,176** |
| **2029** | non-road equipment | 0.75 | 0.32 | 0.08 | 0.06 | 0.05 | 0.00 | 0.04 | 703 |
| | on-road equipment | 0.28 | 0.30 | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 | 248 |
| | fugitive dust (all sources) | -- | -- | -- | 9.55 | 1.06 | -- | -- | -- |
| **Subtotal** | | **1.03** | **0.62** | **0.11** | **9.61** | **1.12** | **0.00** | **0.04** | **951** |
| **2030** | non-road equipment | 3.41 | 1.67 | 0.40 | 0.29 | 0.28 | 0.01 | 0.20 | 2,547 |
| | on-road equipment | 4.73 | 4.89 | 0.45 | 0.17 | 0.16 | 0.01 | 0.07 | 4,249 |
| | fugitive dust (all sources) | -- | -- | -- | 21.30 | 3.94 | -- | -- | -- |
| **Subtotal** | | **8.14** | **6.56** | **0.85** | **21.76** | **4.38** | **0.02** | **0.27** | **6,795** |
| **2031** | non-road equipment | 0.65 | 0.30 | 0.07 | 0.05 | 0.05 | 0.00 | 0.04 | 565 |
| | on-road equipment | 0.19 | 0.21 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 174 |
| | fugitive dust (all sources) | -- | -- | -- | 1.98 | 0.27 | -- | -- | -- |
| **Subtotal** | | **0.85** | **0.51** | **0.09** | **2.04** | **0.33** | **0.00** | **0.04** | **739** |
| **Total for Project** | | **625.4** | **96.80** | **28.59** | **105.8** | **25.07** | **0.55** | **2.93** | **84,269** |
| Over the Project's approximately 6-year-long construction period, the estimated total 84,269 tons of $CO_2e$ would consist of approximately 82,838 tons of $CO_2$, 1.58 tons of methane, and 4.67 tons of $N_2O$. | | | | | | | | | |

### B.7.5 Operational Emissions Impacts and Mitigation

The modified MS Hub Storage Facility would continue to be a source of combustion emissions, and those emissions would potentially increase with the addition of the new natural gas-fired reciprocating engines. The MS Hub Booster Station would be a new source of combustion emissions, primarily from operation of the natural gas-fired turbines. In addition, the new and modified facilities would result in the release of fugitive natural gas emissions, primarily consisting of methane, as well as trace quantities of other pollutants including VOCs and HAPs.

Tables 10 and 11 provide estimates of the potential annual operational emissions from proposed modified MS Hub Storage Facility and new MS Hub Booster Station.[13] These estimated emissions are based on EPA AP-42 emission factors, and manufacturer-provided emissions data.

**Air Quality Modeling**

MS Hub first conducted area of significant impact (AOI) screening analyses to determine whether any modeled pollutants potentially emitted by the proposed modified MS Hub Storage Facility and new MS Hub Booster Station exceeded EPA-defined significant impact levels (SIL). The AOI analysis for the booster station found a SIL exceedance for 1-hour $NO_2$ and a radius of impact of 0.23 kilometer. The AOI analysis for the storage facility found SIL exceedances for 1-hour and annual $NO_2$ and 24-hour and annual $PM_{2.5}$, and a radius of impact for each of these exceedances of 1.32, 0.41, 0.43, and 0.40 kilometer, respectively.

MS Hub performed refined air quality dispersion modeling to determine the impacts of emissions from the proposed modified MS Hub Storage Facility and MS Hub Booster Station on regional air quality for those pollutants that exceeded the SIL as determined by each AOI analysis. The refined air modeling analyses were conducted using the EPA AERMOD model version 23132 and methodology outlined in EPA guidance, and using meteorological datasets obtained from the MDEQ. The analyses assumed that the stations would be running at full capacity (i.e., 8,760 hours per year at maximum emission rates). The models estimate the maximum predicted concentrations of criteria pollutants emitted from the facilities using conservative assumptions. Background concentrations from the nearest air monitors were then added to the maximum predicted concentrations from the model and the total was compared to the NAAQS. The modeling results are provided in tables 12 and 13.

The results for both facilities in tables 12 and 13 indicate that the combined total of existing background and maximum modeled concentrations are less than the applicable NAAQS for modeled pollutants. Therefore, the Project would not cause or significantly contribute to a degradation of ambient air quality. The Project would result in continued compliance with the NAAQS, which are established to be protective of human health, including sensitive populations such as children, the elderly, and asthmatics.

[13] A full breakdown of estimated potential emissions from each existing and proposed Project source is found in attachment 5 to MS Hub's 5/23/2024 response to FERC's 5/3/2024 Environmental Information Request, FERC eLibrary Accession No. 20240524-5075.

**Table 10**
**Potential Operational Emissions – Modified MS Hub Storage Facility (tons per year) a/, b/**

| Emission Source | $NO_x$ | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ | Total HAP | $CO_2e$ c/ |
|---|---|---|---|---|---|---|---|---|
| Emissions from Existing Permitted Sources | 138.6 | 74.09 | 52.06 | 8.45 | 8.45 | 0.55 | 7.08 | 109,922 |
| **Emission changes attributable to Project Mods** | **+11.64** | **-2.81** | **+12.65** | **+1.57** | **+1.57** | **+0.06** | **+8.41** | **+9,957** |
| Total for Modified Facility | 150.24 | 71.28 | 64.71 | 10.02 | 10.02 | 0.61 | 15.49 | 119,879 |

a/ Sum of columns may not add to total due to rounding. Based on MS Hub's maximum anticipated annual operation of the facility based on 5,750 hours of operation per year. MS Hub indicates that the MDEQ air permit will set limits on maximum allowable operational hours. Note that the totals presented are based on information provided by MS Hub (see footnote b/). Final estimated potential emission limits will be set by the MDEQ in its operating permit for the proposed modified facility.
b/ A full breakdown of emissions by source may be found in attachment 5 to MS Hub's 5/23/2024 response to FERC's 5/3/2024 Environmental Information Request, Accession No. 20240524-5075.
c/ The $CO_2e$ emissions are based on speciated emission rates of GHGs and GWPs. The estimated 9,957 tpy of $CO_2e$ attributable to the Project modifications would consist of approximately 10,083 tpy $CO_2$, -5.78 tpy methane (a net decrease), and 0.02 tpy $N_2O$.

**Table 11**
**Potential Operational Emissions for the MS Hub Booster Station (tons per year) a/, b/**

| Emission Source | $NO_x$ | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ | Total HAP | $CO_2e$ c/ |
|---|---|---|---|---|---|---|---|---|
| Compressor turbines | 49.98 | 50.69 | 29.01 | 5.59 | 5.59 | 0.001 | 0.87 | 99,206 |
| Emergency generator | 2.61 | 5.45 | 1.53 | 0.025 | 0.025 | 0.002 | 0.17 | 293 |
| Fugitive releases | -- | -- | 21.70 | -- | -- | -- | 0.10 | 3,714 |
| Venting (blowdown) releases | -- | -- | 0.41 | -- | -- | -- | 0.05 | 1,907 |
| **Total for Station** | **52.59** | **56.14** | **52.65** | **5.62** | **5.62** | **0.003** | **1.19** | **105,120** |

a/ Sum of columns may not add to total due to rounding. MS Hub bases these estimates on an estimated maximum 5,256 hours per year of operation of the compressor turbines, 60 blowdown releases per year, and 100 hours of operation per year for the emergency generator; MS Hub indicates that the MDEQ air permit will set limits on maximum allowable annual operational hours. Note that the totals presented are based on information provided by MS Hub (see footnote b/). Final estimated potential emission limits will be set by the MDEQ in its operating permit for the proposed station.
b/ A full breakdown of emissions by source may be found in attachment 5 to MS Hub's 5/23/2024 response to FERC's 5/3/2024 Environmental Information Request, Accession No. 20240524-5075.
c/ The $CO_2e$ emissions are based on speciated emission rates of GHGs and GWPs. The estimated total 105,120 tpy of $CO_2e$ would consist of approximately 99,406 tpy $CO_2$, 226 tpy methane, and 0.19 tpy $N_2O$.

| Table 12<br>Predicted Air Quality Impacts of the Modified MS Hub Storage Facility ($\mu g/m^3$) | | | | | |
|---|---|---|---|---|---|
| **Pollutant** | **Averaging Period** | **Existing Ambient Background Concentration a/** | **Maximum Modeled Concentration** | **Combined Background and Maximum Modeled** | **NAAQS** |
| $NO_2$ **b/** | 1-hour | 50.7 | 136.2 | 186.9 | 188 |
| | annual | 6.9 | 10.1 | 17.0 | 100 |
| $PM_{2.5}$ | 24-hour | 16.0 | 4.1 | 20.1 | 35 |
| | annual | 6.1 | 0.6 | 6.7 | 9 |
| $\mu g/m^3$ = micrograms per cubic meter<br>a/ Background concentrations for $NO_2$ obtained from Pascagoula, Jackson County, MS monitor Site ID 28-059-0006, average of the 98th percentile measurement recorded from 2021 – 2023.<br>b/ $NO_2$ is converted from total $NO_x$ by multiplying the modeled emission rate by 0.5 in accordance with EPA's Ambient Ratio Method 2. | | | | | |

| Table 13<br>Predicted Air Quality Impacts of the MS Hub Booster Station ($\mu g/m^3$) | | | | | |
|---|---|---|---|---|---|
| **Pollutant** | **Averaging Period** | **Existing Ambient Background Concentration a/** | **Maximum Modeled Concentration** | **Combined Background and Maximum Modeled** | **NAAQS** |
| $NO_2$ **b/** | 1-hour | 50.7 | 14.7 | 65.4 | 188 |
| $\mu g/m^3$ = micrograms per cubic meter<br>a/ Background concentrations for $NO_2$ obtained from Pascagoula, Jackson County, MS monitor Site ID 28-059-0006, average of the 98th percentile measurement recorded from 2021 – 2023.<br>b/ $NO_2$ is converted from total $NO_x$ by multiplying the modeled emission rate by 0.5 in accordance with EPA's Ambient Ratio Method 2. | | | | | |

**Electric Motor-Driven Compressor Comparison**

MS Hub considered the use of electric motor-driven compressors at the proposed MS Hub Booster Station, as an alternative to the proposed gas-fired compressors at the station. MS Hub's study found that electric motor-driven compression sufficient to replace the proposed gas-fired compression would require the construction of approximately 10 miles of electric power line to connect the station to the nearest available substation, requiring an estimated 139 acres of permanent right-of-way and an estimated 182 acres of temporary construction right-of-way impacts, and an additional 0.5-acre expansion of the substation to accommodate the new load. Use of equivalent electric motor-driven compressors would also result greater amounts of criteria and GHG emissions at the point of electric generation, in the net additional amounts of approximately 24.9 tpy $NO_x$, 91.2 tpy $SO_2$, 2.27 tpy VOC, 78.4 $PM_{2.5}$, and over 142,000 tpy $CO_2$ greater than the proposed gas-fired compressors, as estimated using EPA's AVERT software. Therefore, we conclude that use of electric motors at the MS Hub Booster Station, although feasible, would result in considerably greater overall temporary ground disturbance, permanent land use footprint, and operational air emissions impacts compared to the proposed Project. Use of electric motor-driven compressors in place of the Project's new gas compressors at the existing Gas Handling Facility would likely utilize the same regional electricity grid as the booster station and result in similar additional impacts on a proportional basis. For similar reasons, we find that use of electric motor-driven compression at the Gas Handling Facility would not offer any environmental advantages compared to the proposed gas-fired compressors based on the current regional electricity grid makeup.

## B.8 NOISE

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level. Construction and operation of the Project would affect overall noise levels in the Project areas.

The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetation cover. Two measures that relate the time-varying quality of environmental noise to its known impact on people are the 24-hour equivalent sound level ($L_{eq}$) and day-night sound level ($L_{dn}$). The $L_{eq}$ is an A-weighted sound level containing the same energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The $L_{dn}$ takes into account the duration and time the noise is encountered. Specifically, the $L_{dn}$ is the $L_{eq}$ plus a 10 decibel on the A-weighted scale (dBA) penalty added to account for people's greater sensitivity to sound levels during late evening and early morning hours (between the hours of 10:00 pm and 7:00 am). The A-weighted scale is used to assess noise impacts because human hearing is less sensitive to low and high frequencies than mid-range frequencies.

The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise (Bies and Hansen 1988).

### B.8.1 Federal Noise Regulations

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA 1974). This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an $L_{dn}$ of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential project-related noise impacts at NSAs, which are defined as homes, schools, churches, or any location where people reside or gather. FERC requires that the noise attributable to any new or modified compressor station during full load operation not exceed an $L_{dn}$ of 55 dBA at any NSAs. Due to the 10-dB nighttime penalty added prior to the logarithmic calculation of the $L_{dn}$, for a facility to meet the 55 dBA $L_{dn}$ limit, it must be designed such that actual constant noise levels on a 24-hour basis do not exceed 48.6 dBA $L_{eq}$ at any NSA.

### B.8.2 Ambient Noise Conditions

The area surrounding the MS Hub Storage Facility is characterized as a mixture of agrarian and residential use, including farmland and cleared fields, residences, forested areas, houses of worship, and cemeteries. The area surrounding the proposed MS Hub Booster Station site is also mixed use, including drilling rig operations, residences, forested areas, cleared fields, cemeteries, and one house of worship. The areas surrounding each of the M&R Stations are also mixed use of a similar nature to the storage facility and booster station sites and are generally rural in character and sparsely populated. In general, ambient noise conditions vary according to local activities and uses including roadways, and the time of day such activities typically take place.

### B.8.3 Construction Noise Impacts and Mitigation

Noise would be generated during construction of the Project and would vary according to the type of activity. Construction activities in any one area could last from several weeks to several months on an intermittent basis. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. Construction would generally take place from 7:00 am to 7:00 pm Monday to Saturday at the MS Hub Storage Facility, MS Hub Booster Station, and M&R Station sites. Construction of the new gas-driven and electric-driven compressor units at the MS Hub Storage Facility would take approximately 7 months to complete, from November 2025 to May 2026. Construction of the MS Hub Booster Station would take place between November 2026 and March 2028. Construction activities taking place during nighttime hours (7:00 pm to 7:00 am) would be limited to the drilling and completion of the proposed RW Wells Nos. 6, 7, 8, and 9; SWD Wells Nos. 5, 6, 7, 8, and 9; Cavern Nos. 4, 5, and 6; and solution mining of Cavern Nos. 4, 5, and 6; and would immediately follow the daytime-only site preparation activities at each of these locations. The daytime-only site preparation construction activities at these well locations would require approximately 1 to 2 months to complete, and the drilling and completion activities at each of these locations would require approximately 2 to 4 months to complete. For all drilling locations except Cavern No. 6, these activities would take place between April and December 2025; activities at Cavern No. 6 would be completed between September 2027 and March 2028. Solution mining of Cavern Nos. 4, 5, and 6 would immediately follow the completion of drilling

at these well sites and would be conducted over an approximately 2.5-year period at each location. For a full project schedule, please refer to the Gantt Chart diagram provided in appendix D.

The MS Hub predicts that existing daytime ambient noise levels surrounding the MS Hub Storage Facility, proposed MS Hub Booster Station site, and existing M&R Stations vary from a low of about 37 dBA to a high of about 64 dBA. The nearest NSAs in proximity to proposed Project construction sites are 1,550 feet away from the MS Hub Storage Facility, 2,500 feet away from the proposed MS Hub Booster Station site, 720 feet away from the Transco M&R Station, 800 feet away from the SESH M&R Station, and 1,600 feet away from the SONAT M&R Station. Depending on the existing ambient noise level at each NSA, increases in ambient daytime noise levels would increase at nearby NSAs as the result of Project construction activities at these locations. MS Hub predicts that increases over ambient noise levels attributable to the Project's daytime construction would likely not be noticeable at any NSAs in proximity to the MS Hub Storage Facility, would likely be noticeable at two NSAs approximately 0.5 and 1 mile, respectively, from the MS Hub Booster Station site, would likely be noticeable at one NSA approximately 800 feet from the SESH M&R Station site, and would likely not be noticeable at NSAs in proximity to the SONAT and Transco M&R Station sites.

With the placement and dimensions of noise control barriers that MS Hub proposes,[14] noise contributions attributable to nighttime drilling operations described above on all nearby NSAs are predicted to be equal to or less than an $L_{dn}$ of 55 dBA (48.6 dBA $L_{eq}$). Due to the distance of construction sites from the nearest NSAs and the temporary nature of construction activities, we conclude that noise from Project construction would not result in significant noise impacts on NSAs.

### B.8.4 Operation Noise Impacts and Mitigation

The operation of the proposed equipment at the MS Hub Storage Facility would potentially add to noise generated from the existing equipment operated at the facility. The operation of the proposed MS Hub Booster Station would result in noise impacts in the vicinity of the station, including at nearby NSAs. The operation of the modified SESH, SONAT, and Transco M&R Stations would potentially add to existing noise contributions in the vicinity of each station, including at nearby NSAs.

Results of these predicted full-load noise contributions for the MS Hub Storage Facility, MS Hub Booster Station, and Transco, SESH, and SONAT M&R Stations are summarized in tables 14 through 16.

[14] As described and depicted within attachment 6 of MS Hub's 5/23/2024 response to FERC's 5/3/2024 Environmental Information Request. eLibrary Accession No. 20240524-5075.

**Table 14**
**Predictive Noise Analysis for the Operation of the modified MS Hub Storage Facility**

| NSA No. | Distance (feet) and Direction from Station | Ambient Back-ground $L_{dn}$ Noise Levels (dBA) | Estimated Full Load $L_{dn}$ Contrib-ution from Existing Facility a/ (dBA) | Predicted $L_{dn}$ Attributable to Project Modifications (dBA) | Predicted $L_{dn}$ Contrib-ution from modified Facility (dBA) | Total $L_{dn}$ Noise Level (modified facility plus ambient) (dBA) | Predicted Change in $L_{dn}$ from Existing Ambient (dB) |
|---|---|---|---|---|---|---|---|
| 1 | 1,680 N | 61.0 | 43.1 | 48.8 | 49.8 | 61.3 | +0.3 |
| 2 | 1,550 W | 68.2 | 51.2 | 49.2 | 53.3 | 68.4 | +0.1 |
| 3 | 1,680 S | 66.9 | 49.2 | 51.3 | 53.4 | 67.1 | +0.2 |
| 4 | 3,280 E | 59.5 | 38.1 | 40.8 | 42.7 | 59.6 | +0.1 |

a/ Ambient noise sources observed during the survey in proximity to all NSAs included noise from insects, birds, vehicle traffic, and wind (all NSAs), and farm equipment (NSA No. 4).

**Table 15**
**Predictive Noise Analysis for Operation of the proposed MS Hub Booster Station**

| NSA No. | Distance (feet) and Direction from Station | Ambient Background $L_{dn}$ Noise Level a/ (dBA) | Predicted $L_{dn}$ Noise Level Contribution from Station (dBA) | Predicted Total $L_{dn}$ Noise Level (dBA) | Predicted Change in $L_{dn}$ from Existing Ambient (dB) |
|---|---|---|---|---|---|
| 1 | 2,500 NW | 56.4 | 52.9 | 58.0 | +1.6 |
| 2 | 4,600 NE | 51.5 | 44.6 | 52.3 | +0.8 |
| 3 | 5,200 ESE | 41.2 | 46.1 | 47.3 | +6.1 |
| 4 | 4,300 SSW | 42.3 | 41.1 | 44.7 | +2.5 |

a/ Ambient noise sources observed during the survey in proximity to the NSAs included noise from vehicle traffic, machinery noise, wind, and birds.

**Table 16**
**Predictive Noise Analysis for operation of the modified M&R Stations**

| M&R Station | Distance (feet) and Direction of nearest NSA from Station | Ambient Background $L_{dn}$ Noise Level a/ (dBA) | Predicted $L_{dn}$ Noise Level Contribution from modified Station (dBA) | Predicted Total $L_{dn}$ Noise Level (dBA) | Predicted Change in $L_{dn}$ from Existing Ambient (dB) |
|---|---|---|---|---|---|
| SESH | 800 NE | 37.9 | 43.0 | 44.2 | +6.3 |
| SONAT | 1,600 NW | 60.2 | 37.4 | 60.2 | 0.0 |
| Transco | 720 SE | 53.8 | 53.9 | 56.9 | +3.0 |

a/ Ambient noise sources observed during the survey included noise from vehicle traffic, helicopter, distant machinery, and wind (SONAT and Transco M&R Stations), and wind and birds (SESH M&R Station).

MS Hub performed ambient noise surveys to estimate existing noise levels at nearby NSAs to the existing MS Hub Storage Facility, proposed MS Hub Booster Station site, and existing M&R stations. The results of the ambient sound surveys were combined with the predicted noise impacts from the new and modified facilities to determine the operational noise impacts at the NSAs. MS Hub would incorporate noise control treatments for the MS Hub Storage Facility and MS Hub Booster Station, further detailed in MS Hub's Pre-Construction Noise Impact Assessment.[15]

With noise control treatments that MS Hub would incorporate as detailed in the Pre-Construction Noise Impact Assessment, MS Hub predicts that noise contributions of the modified MS Hub Storage Facility and MS Hub Booster Station as summarized in tables 14 through 16 would remain below an $L_{dn}$ of 55 dBA at nearby NSAs.

The predicted post-construction operational noise increase of the modified MS Hub Storage Facility over existing ambient noise levels, including operation of the existing MS Hub Storage Facility equipment at nearby NSAs, would not be perceptible to the human ear. The predicted noise increase from operation of the new MS Hub Booster Station would be perceptible to the human ear at NSA No. 3 and not perceptible at remaining NSAs. The predicted noise increases from operation of the modified M&R stations would be perceptible at an NSA about 800 feet northeast of the SESH M&R Station and would not be perceptible at remaining NSAs.

To ensure that noise levels attributable to the modified MS Hub Storage Facility do not result in significant noise impacts on nearby NSAs, **we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project**:

- **MS Hub shall file noise surveys with the Secretary no later than 60 days after placing the authorized units at the MS Hub Storage Facility in service. If a full load condition noise survey is not possible, MS Hub shall provide an interim survey at the maximum possible horsepower load and provide the full load survey within 6 months. If the noise attributable to the operation of the modified facility under interim or full horsepower load conditions exceeds an $L_{dn}$ of 55 dBA at any nearby NSAs, MS Hub shall file a report on what changes are needed and install additional noise controls to meet that level within 1 year of the in-service date. MS Hub shall confirm compliance with this requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

[15] Mississippi Hub Expansion Pre-Construction Noise Impact Assessment, Resource Report 9 Appendix 9B, March 1, 2024. eLibrary Accession No. 20240305-5039.

To ensure that noise levels from the new MS Hub Booster Station do not result in significant noise impacts on nearby NSAs, **we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project**:

- **MS Hub shall file a noise survey with the Secretary no later than 60 days after placing the MS Hub Booster Station in service. If a full load condition noise survey is not possible, MS Hub shall provide an interim survey at the maximum possible horsepower load and provide the full load survey within 6 months. If the noise attributable to the operation of the equipment at the MS Hub Booster Station under interim or full horsepower load conditions exceeds an $L_{dn}$ of 55 dBA at any nearby NSAs, MS Hub shall file a report on what changes are needed and shall install the additional noise controls to meet the level within 1 year of the in-service date. MS Hub should confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

To ensure that noise levels from the modified M&R stations do not result in significant noise impacts on nearby NSAs, **we recommend that the Commission include the following mandatory condition as part of any Certificate it may issue to MS Hub for the Project**:

- **MS Hub shall file a noise survey with the Secretary no later than 60 days after placing each of the modified SESH, SONAT, and Transco M&R Stations in service. If a full flow rate noise survey is not possible, MS Hub shall provide an interim survey at the maximum possible flow rate and provide the full flow rate survey within 6 months. If the noise attributable to the operation of the SESH, SONAT, or Transco M&R station under interim or full flow rate conditions exceeds an $L_{dn}$ of 55 dBA at any nearby NSAs, MS Hub shall file a report on what changes are needed and should install the additional noise controls to meet the level within 1 year of the in-service date. MS Hub shall confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

The predicted noise increases above existing ambient levels attributable to the modifications at the MS Hub Storage Facility would not be noticeable at nearby NSAs, and would also not be noticeable at nearby NSAs except NSA 3 for the MS Hub Booster Station where the predicted noise increase at this NSA would be clearly noticeable. While existing noise levels would be affected by the operation of the modified MS Hub Storage Facility, new MS Hub Booster Station, and modified SESH and Transco M&R Stations within the vicinity of each facility, based on our analyses, MS Hub's proposed noise mitigation measures, and our recommendation stated above, we conclude that the Project would not result in significant noise impacts on any nearby NSAs.

The EPA recommended that MS Hub install "the best noise control treatment… at the same time as the project" and that MS Hub ensure that its *Public Engagement Plan* be available to the community for at least one year after the Project facilities are placed into service. As we

recommend above, MS Hub would be required to perform either interim or full-load noise surveys on each of the new and modified Project facilities within 60 days of placing each respective facility into service. Therefore, all proposed noise control treatments for the Project facilities must be installed within 60 days of the in-service date, and before the full or interim load noise survey is performed. We understand that MS Hub would maintain its *Public Engagement Plan* at a minimum through its last phase of construction, which according to the Gantt chart provided in appendix D, is the completion of solution mining of Cavern No. 6 in year 2031. The required noise surveys for modified MS Hub Storage Facility, new MS Hub Booster Station, and modified SESH, SONAT, and Transco M&R Stations would likely take place prior to 2031, and therefore the *Public Engagement Plan* would continue to apply to construction and initial operation of those facilities during this time.

## B.9 SOCIOECONOMICS

Socioeconomics is an evaluation of the basic conditions (attributes and resources) associated with the human environment, particularly the population and economic activity within a region. Economic activity generally encompasses regional employment, personal income, and revenues and expenditures. Impacts on these fundamental socioeconomic components can influence other issues such as regional housing availability and provision of community services.

### B.9.1 Population

MS Hub estimates a peak workforce of 140 personnel, of which 90 to 95 percent would be nonlocal (see section A.7). The temporary influx of workers at the estimated peak workforce numbers would represent a temporary increase in the combined populations of Covington, Simpson, and Jefferson Davis Counties. Therefore, the Project would result in a less than significant temporary impact on the local population of 55,761 residents. There would be four temporary contract positions during each cavern's solution mining phase of the Project; therefore, impacts from the temporary construction workforce would be less than significant.

### B.9.2 Employment

MS Hub anticipates an average construction workforce of approximately 50 people with a peak of 140 workers, of which 90 to 95 percent would be nonlocal. Major industries in the area in construction, educational services, health care, social assistance, manufacturing, retail trade, utilities, and transportation. The current unemployment rate in the counties range from 5.8 to 9.2 percent. Given the population of the counties, the size of the civilian labor force, and the duration of construction (approximately 72 months), we anticipate that the Project would have a temporary and negligible positive impact on unemployment rates in the Project area and a temporary impact on industries within the Project area. There would be four temporary contract positions during each cavern's solution mining phase of the Project. Therefore, impacts on employment from the temporary construction workforce would be less than significant.

### B.9.3 Housing

We assume that a peak of 133 nonlocal construction workers (95 percent of the total 140 workers required during construction) would need to find accommodations while they are temporarily residing in the area. The total vacant units for all 3 counties are 4,696 units, with

308 units available for rent and 412 seasonal accommodation units. In addition, approximately 3 recreational vehicle parks/campgrounds and 9 hotels totaling more than 732 rooms are in the area.[16] The overall supply would accommodate the anticipated peak 133 nonlocal workers. Therefore, we conclude that the Project would result in a temporary and minor impact on housing. There would be four temporary contract positions during each cavern's solution mining phase of the Project. Therefore, impacts on housing from the temporary operational workforce would be less than significant.

### B.9.4 Public Service

Nonlocal construction workers are likely to reside at locations distributed throughout the Project area, resulting in a minor increase in the demand for public services during construction of the Project. This may include a minor and temporary increase in the demand for emergency medical and police services associated with increased traffic and worksite related accidents. However, given the peak number of nonlocal construction workers and duration of construction (approximately 72 months), we conclude that the Project would not result in significant impacts on the public services. There would be four temporary contract positions during each cavern's solution mining phase of the Project. Therefore, impacts on public services from the temporary operational workforce would be less than significant.

### B.9.5 Traffic

MS Hub would use existing public roadways, as well as existing and newly constructed access roads to access the facility sites during construction and operation. Table 17 estimates the average daily roundtrips associated with the use of public roads during construction. The construction contractor would also be responsible for developing and implementing a site-specific traffic and transportation management plan.

Commuting construction workers and equipment and material deliveries would generate temporary increased traffic volume in the Project area. Oversize/overweight equipment and materials deliveries would not coincide with peak travel times. Also, construction workers would be encouraged to carpool limiting some of the impact on local commuters. Average daily trips would temporarily increase between 7.2 to 33.1 percent during construction at the various facility locations. Therefore, we conclude that construction of the Project would not result in significant impacts on traffic. Each cavern's solution mining phase of the Project would require four temporary contract positions. Therefore, impacts on traffic from the temporary operational workforce would be less than significant.

[16] See FERC Accession No. 20240703-5002.

**Table 17**
**Primary Roadway Access and Traffic**

| Facility | Roadway | Average Daily Traffic a/ | Estimated Average Daily Round Trips During Construction b/ |
|---|---|---|---|
| MS Hub Storage Facility | State Highway 541 | 640 | 26 |
| Transco M&R Station | Smyrna Road | 360 | 26 |
| SESH M&R Station | Burkhalter Road | - | 26 |
| SONAT M&R Station | State Highway 541 | 830 | 26 |
| RW Well No. 6 | State Highway 541 | 640 | 86 |
| RW Well No. 7 | State Highway 541 | 640 | 86 |
| RW Well No. 8 | State Highway 541 | 640 | 86 |
| SWD Well No. 5 | State Highway 541 | 830 | 86 |
| SWD Well No. 6 | Mount Olive Road | 260 | 86 |
| SWD Well No. 7 | State Highway 541 | 830 | 86 |
| SWD Well No. 8 | Mount Olive Road | 260 | 86 |
| SWD Well No. 9 | State Highway 541 | 830 | 86 |
| MS Hub Booster Station | Seminary-Mike Conner Road | 340 | 86 |

a/ Average daily traffic obtained from Mississippi Department of Transportation.
b/ Includes truck deliveries and worker commuting vehicles.

## B.10 ENVIRONMENTAL JUSTICE

In conducting NEPA reviews of proposed natural gas projects, the Commission follows Executive Order 12898 and Executive Order 14096, which direct federal agencies to identify and address disproportionate and adverse human health or environmental effects of their actions on minority and low-income populations (i.e., environmental justice communities).[17] Executive Order 14008 also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate- related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[18] Environmental justice is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[19] The term "environmental justice community" includes disadvantaged communities that have been historically marginalized and overburdened by pollution.[20]

Commission staff used *Promising Practices for EJ Methodologies in NEPA Reviews* (*Promising Practices*)[21] which provides methodologies for conducting environmental justice analyses throughout the NEPA process for this Project. Additionally, consistent with EPA recommendations, Commission staff used EPA's Environmental Justice Screening and Mapping Tool (EJScreen) as an initial screening tool to better understand locations that require further review or additional information regarding minority and/or low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors.[22]

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[17] Exec. Order No. 12,898, 59 Fed. Reg. 7629, at 7629, 7632 (Feb. 11, 1994); Exec. Order No. 14,096, 88, Fed. Reg. 25251, 25253 (Apr. 21, 2023).

[18] Exec. Order No. 14,008, 86 Fed. Reg. 7619, 7629 (Jan. 27, 2021).

[19] EPA, *EJ 2020 Glossary* (July 31, 2023) https://www.epa.gov/system/files/documents/2024-02/ej-2020-glossary.pdf. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. *Id*. Meaningful involvement of potentially affected environmental justice community residents means: (1) people have an appropriate opportunity to participate in decisions about a proposed activity that may affect their environment and/or health; (2) the public's contributions can influence the regulatory agency's decision; (3) community concerns will be considered in the decision-making process; and (4) decision makers will seek out and facilitate the involvement of those potentially affected. *Id*.

[20] Environmental justice communities include, but may not be limited to minority populations, low-income populations, or indigenous peoples. *See EPA, EJ 2020 Glossary* (July 31, 2023), https://www.epa.gov/system/files/documents/2024-02/ej-2020-glossary.pdf.

[21] Federal Interagency Working Group on Environmental Justice & NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews* (Mar. 2016) (*Promising Practices*), https://www.epa.gov/environmentaljustice/ej-iwg-promising-practices-ej-methodologies-nepa-reviews.

[22] The EPA recommends that screening tools, such as EJScreen, be used for a "screening-level" look and a useful first step in understanding or highlighting locations that may require further review.

### B.10.1 Meaningful Engagement and Public Involvement

The CEQ's *Environmental Justice Guidance Under the National Environmental Policy Act* (*CEQ Environmental Justice Guidance*)[23] and *Promising Practices* recommend that federal agencies provide opportunities for effective community participation in the NEPA decision-making process, including: identifying potential effects and mitigation measures in consultation with affected communities; improving accessibility of public meetings, crucial documents, and notices; and use adaptive approaches to overcome potential barriers to effective participation. In addition, Executive Order 13985 and Executive Order 14096 strongly encourage independent agencies to "consult with members of communities that have been historically underrepresented in the Federal Government and underserved by, or subject to discrimination in, federal policies and programs,"[24] and "provide opportunities for the meaningful engagement of persons and communities with environmental justice concerns who are potentially affected by Federal activities."[25]

There have been opportunities for public involvement during the Commission's environmental review processes.[26] FERC issued a Notice of Application, and a Notice of Scoping, which were published in the Federal Register on March 18, 2024 and April 10, 2024, respectively. The Notice of Scoping was mailed to the parties on FERC's environmental mailing list, which included federal and state resource agencies; elected officials; environmental groups and non-governmental organizations; Native American Tribes; potentially affected landowners; local libraries and newspapers; and other stakeholders who had indicated an interest in the Project. Commission staff has also included various stakeholders on the mailing list, as well as local unions, churches, and local businesses, to engage local communities near the Project. Issuance of the notices opened separate 21-day and 30-day formal scoping periods that expired on April 8, 2024 and May 10, 2024, respectively.

We recognize that not everyone has internet access or is able to file electronic comments. The Notice of Scoping was physically mailed to all parties on the environmental mailing list and made available at Prentiss Public Library, Covington County Library, and Magee Public Library. All documents that form the administrative record for these proceedings are available to the public electronically through the internet on the FERC's website (www.ferc.gov). Anyone may comment to FERC about the Project, either in writing or electronically.[27] All substantive

[23] CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* (Dec. 1997) (CEQ's *Environmental Justice Guidance*), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf.

[24] Exec. Order No. 13,985, 86 Fed. Reg. 7009, 7011 (Jan. 20, 2021).

[25] Exec. Order No. 14,096, 88, Fed. Reg. 25251, 25254 (Apr. 21, 2023).

[26] See FERC's Accession No. 20240305-5039, Resource Report 1 and Accession No. 20240524-5075.

[27] The Office of Public Participation (OPP) provides members of the public, including environmental justice communities, landowners, Tribal citizens, and consumer advocates, with assistance in FERC proceedings—including navigating Commission processes and activities relating to the Project. For assistance with interventions, comments, requests for rehearing, or other filings, and for information about any applicable

environmental comments received prior to issuance of this EA have been addressed within this document.

### B.10.2 Identification of Environmental Justice Communities

According to the CEQ's *Environmental Justice Guidance* and *Promising Practices*, minority populations are those groups that include American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Following the recommendations set forth in Promising Practices, FERC uses the **50 percent** and the **meaningfully greater analysis** methods to identify minority populations. Using this methodology, minority populations are defined in this EA where either: (a) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or (b) the aggregate minority population in the block group affected is 10 percent higher than the aggregate minority population percentage in the county. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices'* **low-income threshold criteria** method, low-income populations are identified as block groups where the percent of low-income population in the identified block group is equal to or greater than that of the parish. Here the Commission staff selected Covington, Jefferson Davis, Simpson, and Smith Counties, Mississippi, as the comparable reference community to ensure that affected environmental justice communities are properly identified. A reference community may vary according to the characteristics of the particular project and the surrounding communities.

Table B-1 in appendix B identifies the minority populations (by race and ethnicity) and low- income populations within Covington, Jefferson Davis, Simpson, and Smith Counties affected by the Project, census block groups[28] within 5 kilometers of the MS Hub Booster Station; 20 kilometers of the MS Hub Storage Facility; 1 mile of the Transco, SESH, and SONAT M&R Stations; and 1 mile of the wells. Figure B-1 in appendix B is a map that illustrates the location of each of these respective census block groups in relation to each Project site. For the purposes of analyzing impacts of the proposed construction on environmental justice communities, this EA considers these distances as the appropriate unit of geographical analysis. We believe that these distances are sufficiently broad considering the likely concentration of air emissions, noise, and traffic impacts proximal to the facilities. To ensure we are using the most recent available data, we use the U.S. Census American Community Survey[29] as the source for race and ethnicity data and poverty data at the census block group level.

deadlines for such filings, members of the public are encouraged to contact OPP directly at 202-502-6595 or OPP@ferc.gov for further information.

[28] Census block groups are statistical divisions of census tracts that generally contain between 600 and 3,000 people. U.S. Census Bureau. 2022. Glossary: Block Group. Available online at: https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_4. Accessed July 2024.

[29] U.S. Census Bureau, American Community Survey 2022 ACS 5-Year Estimates Detailed Tables, File# B17017, Poverty Status in the Past 12 Months by Household Type by Age of Householder, https://data.census.gov/cedsci/table?q=B17017; File #B03002 Hispanic or Latino Origin By Race, https://data.census.gov/cedsci/table?q=b03002.

As presented in table B-1 in appendix B, there are minority and low-income communities within the Project area. The MS Hub Booster Station, Transco M&R Station, and SESH M&R Station are in a block group that is an environmental justice community (Census Tract 9504.01, Block Group 3) based on the low-income threshold. SWD Well No. 6 and SWD Well No. 8 are in a block group that is an environmental justice community (Census Tract 9501.02, Block Group 1) based on the minority threshold. Based on the 20-kilometer radius around the MS Hub Storage Facility, Commission staff has identified 23 environmental justice communities. Within the 23 block groups, 9 block groups are based on minority threshold; 6 block groups are based on the low-income threshold; and 8 block groups are based on both the minority and low-income thresholds.

### B.10.3 Impacts on Environmental Justice Communities

*Promising Practices* provides methodologies for evaluating environmental justice impacts related to human health or environmental hazards; the natural physical environment; and associated social, economic, and cultural factors. Consistent with Promising Practices, Executive Order 12898, and Executive Order 14096, we reviewed the Project to determine if its resulting impacts would be disproportionate and adverse on minority and low-income populations and also whether impacts would be significant.[30] *Promising Practices* provides that agencies can consider any of a number of conditions in this determination and the presence of any of these factors could indicate a potential disproportionate and adverse impact. For this Project, a disproportionate and adverse effect to an environmental justice community means the adverse effect is predominantly borne by such population. Relevant considerations include the location of Project facilities and the Project's human health and environmental impacts on identified environmental justice communities, including direct, indirect, and cumulative impacts.

Proposed Project actions within the identified environmental justice communities includes modifications at the Transco Meter Station and SESH M&R Station, and the construction of the MS Hub Booster Station, SWD Well No. 6, and SWD Well No. 8. Proposed project actions within the geographic scope of identified communities includes modifications at the MS Hub Storage Facility, and the construction of RW Well No. 6, RW Well No. 7, RW Well No. 8 and RW Well No. 9. The SONAT M&R Station, SWD Well No. 5, SWD Well No. 7, SWD Well No. 9 and contractor yards are not within the geographic scope of identified environmental justice communities and will not be discussed further. Impacts on the natural and human environment from construction and operation of Project facilities are identified and discussed throughout this document. Factors that could affect environmental justice communities within the geographic analysis of the Project facilities include visual impacts (see section B.5.2), socioeconomic impacts, including increased demand for temporary housing and

[30] *See Promising Practices* at 33 (stating that an agency may determine that impacts are disproportionate and adverse, but not significant within the meaning of NEPA and in other circumstances an agency may determine that an impact is both disproportionate and adverse and significant within the meaning of NEPA); *see also Promising Practices* at 45-46 (explaining that there are various approaches to determining whether an impact will cause a disproportionate and adverse impact). We recognize that the CEQ and EPA are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

public services (see sections B.9.3 and B.9.4), traffic impacts (see section B.9.5) and air quality and noise impacts from construction and operation (see sections (B.7 and B.8).

Potentially adverse environmental effects to surrounding communities associated with the Project, including environmental justice communities, would be minimized and/or mitigated. In general, the magnitude and intensity of the aforementioned impacts would be greater for individuals and residences closest to the Project's facilities and would diminish with distance. These impacts are addressed in greater detail in the associated sections of this EA.

**Visual Impacts**

A detailed discussion of Project visual impacts may be found in section B.5.2. Project impacts on environmental justice populations may include impacts on visual resources. Temporary visual impacts would occur during construction of the facilities, including vehicle and equipment movement, vegetation clearing and grading, and trenching. The construction timeframe for the overall Project is approximately 72 months.

Clearing to expand the MS Hub Storage Facility would be south and east of the facility. There is a vegetation buffer between the facility and the nearby residence. The nearest residence in the environmental justice community is 0.9 mile southeast of the MS Hub Storage Facility, movement of construction equipment to and from the facility would be visible. However, construction activities would not be visible. Therefore, construction and operational visual impacts on environmental justice communities would be less than significant.

Construction at the SESH M&R Station would take place within the existing footprint. There is a vegetation buffer between the facility and the nearby residence. There nearest residence in the environmental justice community is 0.1 mile north of the M&R station, and movement of construction equipment to and from the facility would be visible. However, construction activities would not be visible. Therefore, construction and operational visual impacts on environmental justice communities would be less than significant.

Construction at the Transco M&R Station would take place within the existing footprint. There is a vegetation buffer between the facility and the nearby residence. The nearest residence in the environmental justice community is 0.1 mile north of the M&R station, and movement of construction equipment to and from the facility would be visible. However, construction activities would not be visible. Therefore, construction and operational visual impacts on environmental justice communities would be less than significant.

Construction of RW Well No. 6 would result in it being viewed from portions of Boykin Road. There would be a small vegetation buffer between the facility and the nearby residence. The nearest residence in the environmental justice community is 1.8 miles from the facility, and movement of construction equipment to and from the facility would be visible. However, construction activities would not be visible. Therefore, construction and operational visual impacts on environmental justice communities would be less than significant.

Construction of RW Well No. 7 and RW Well Nos. 8 and 9 would be visible from Bill Jones Road and/or Scott Harrington Road. There would be plenty of vegetation buffers between the new facilities and the nearby residences. The nearest residences in the environmental justice

community are 1.3 miles, 1 mile, and 0.7 mile, respectively, from the facilities, and movement of construction equipment to and from the facility would be visible. However, the surrounding area includes open fields and an existing transmission line easement. Therefore, construction and operational visual impacts on environmental justice communities would be less than significant.

Construction of SWD Well Nos. 6 and 8 would require tree clearing; however, the surrounding area is forested. A portion of the site is already cleared, but the eastern portion of the site will require additional tree clearing. The nearest residence in the environmental justice community is 0.4 mile northeast of the facility, and movement of construction equipment to and from the facility would be visible. A vegetation buffer would be maintained for the newly cleared portion of the facility. Therefore, construction and operational visual impacts on environmental justice communities would be less than significant.

Construction of the MS Hub Booster Station would require tree clearing; however, the surrounding areas is forested. A portion of the site would require tree clearing along Seminary-Mike Conner Road. There would be some visual impacts along the road; however, a vegetation buffer would be maintained between the road and the facility. However, this is a very rural area and it is not anticipated that the road will be frequented by travelers. The nearest residence in the environmental justice community is 0.44 mile northwest of the facility, and movement of construction equipment to and from the facility would be visible. However, construction activities would not be visible. Therefore, construction and operational visual impacts on environmental justice communities would be less than significant.

**Socioeconomics**

A detailed discussion of Project socioeconomic impacts may be found in section B.9. MS Hub anticipates that it would need to hire during peak construction 133 nonlocal workers. Increased spending on lodging, food, and services would (negligibly) boost local economic activity in the environmental justice communities within the geographic scope of the Project. The 133 nonlocal workers would need to find accommodations while they are temporarily residing in the area. The overall supply in the three counties would accommodate the anticipated 133 nonlocal workers. These workers would likely reside at locations distributed throughout the Project area resulting in a minor increase in the demand for emergency medical and police services associated with increased traffic and worksite related accidents. Therefore, we conclude that construction impacts on environmental justice communities would not be significant.

**Traffic**

A detailed discussion of Project traffic impacts may be found in section B.9.5. MS Hub would use existing public roadways and their access roads to access the facility sites during construction and operation. The Transco M&R Station, SESH M&R Station, and MS Hub Booster Station are in environmental justice community Census Tract 9504.01, Block Group 3. Project construction would generate about 26 road trips per day for each Transco M&R Station, SESH M&R Station and about 86 trips per day for MS Hub Booster Station.

SWD Well Nos. 6 and 8 are in environmental justice community Census Tract 9501.02, Block Group 1, and the Project construction would generate about 86 road trips per day for each facility.

MS Hub Storage Facility is 0.9 mile from the nearest residence in environmental justice community Census Tract 9501.02, Block Group 1, and Project construction would generate about 26 road trips per day.

RW Well Nos. 6, 7, 8, and 9 are 1.8 miles, 1.3 miles, 1 mile, and 0.7 mile, respectively, from the nearest residence in environmental justice community Census Tract 9503, Block Group 3, and the Project construction would generate about 86 road trips per day for each facility. The round trips during construction for the Project facilities and commuting construction workers would generate temporary increased traffic volume in the environmental justice communities during construction. We conclude that traffic impacts during construction within the environmental justice communities would be less than significant.

There would be four temporary contract positions during the mining phase of the Project. Therefore, impacts on traffic within the environmental justice communities from the temporary operational workforce would be less than significant.

**Air Quality**

A detailed discussion of Project air quality impacts may be found in section B.7. Project construction would result in temporary, localized emissions that would last the duration of construction activities (approximately 72 months). Exhaust emissions would be generated by the use of heavy equipment and trucks powered by diesel or gasoline engines. Exhaust emissions would also be generated by delivery vehicles and construction workers commuting to and from work areas. Construction activities would also result in the temporary generation of fugitive dust (large particles as well as $PM_{10}$ and $PM_{2.5}$) due to land clearing and grading, ground excavation, and driving on unpaved roads.

Emissions from Project construction would occur over the duration of construction activity and would be emitted at different times throughout the Project areas. Construction emissions would be relatively minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. With the mitigation measures proposed by MS Hub, we conclude that air quality impacts from construction would be temporary and would not result in a significant impact on local or regional air quality.

MS Hub performed refined air quality dispersion modeling to determine the impacts of emissions from the proposed modified MS Hub Storage Facility and MS Hub Booster Station on regional air quality for those pollutants that exceeded the SIL as determined by each AOI analysis. The results for both facilities indicate that the combined total of existing background and maximum modeled concentrations are less than the applicable NAAQS for modeled pollutants. Therefore, the Project would not cause or significantly contribute to a degradation of ambient air quality in the environmental justice communities.

## Noise

A detailed discussion of Project noise impacts may be found in section B.8. Noise would be generated during construction of the Project and would vary according to the type of activity. Construction activities in any one area could last from several weeks to several months on an intermittent basis. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local.

The nearest residence to MS Hub Storage Facility in the environmental justice community is 0.9 mile southeast of the facility. Construction noise would not be audible at the residence. Construction noise would not have an impact on the environmental justice communities surrounding MS Hub Storage Facility.

The nearest residence to SESH M&R Station in the environmental justice community is 0.1 mile north of the facility. Construction noise would be audible at the residence. Construction noise impacts on the environmental justice community would be less than significant.

The nearest residence to Transco M&R Station in the environmental justice community is 0.1 mile north of the facility. Construction noise would be audible at the residence. Construction noise impacts on the environmental justice community would be less than significant.

The nearest residence to RW Well No. 6 in the environmental justice community is 1.8 miles from the facility. Construction noise would not be audible at the residence. Construction noise would not have an impact on the environmental justice community.

The nearest residences to RW Well Nos. 7, 8, and 9 in the environmental justice community is 1.3 miles, 1 mile, and 0.7 mile, respectively, from the facility. Construction noise would not be audible at the residence. Construction noise would not have an impact on the environmental justice community.

The nearest residence to SWD Well Nos. 6 and 8 in the environmental justice community is 0.4 mile northeast from the facility. Construction noise would be audible at the residence. Construction noise impacts on the environmental justice community would be less than significant.

The nearest residence to MS Hub Booster Station in the environmental justice community is 0.44 mile northwest from the facility. Construction noise would be audible at the residence. Construction noise impacts on the environmental justice community would be less than significant.

Due to the distance of construction sites from the nearest residence in the environmental justice community and the temporary nature of construction activities, we conclude that noise from Project construction would not result in significant noise impacts on the environmental justice community.

While existing noise levels would be affected by the operation of the modified MS Hub Storage Facility and new MS Hub Booster Station within the vicinity of each facility, based on our analyses, MS Hub's proposed noise mitigation measures, and our recommendations, we conclude that the Project would not result in significant noise impacts on the environmental justice community.

### B.10.4 Environmental Justice Impact Mitigation

As described in *Promising Practices*, when an agency identifies potential adverse effects it may wish to evaluate practicable mitigating measures. MS Hub has committed to several minimization and mitigation measures to reduce impacts related to traffic delays, construction-period dust and noise, and visual impacts. Though not specifically targeted at mitigating impacts on environmental justice communities, mitigation measures would be implemented across the Project area, including within the identified environmental justice communities. MS Hub has committed to:

- scheduling oversize/overweight equipment and materials deliveries to occur during non-peak traffic hours and to avoid impacts to school bus routes/schedules;
- using pilot cars for oversize/overweight equipment and material deliveries;
- installing signage and/or using flaggers at roadway turnoffs;
- maintaining access to private driveways;
- repairing roads and appurtenant infrastructure damaged by construction activities;
- applying dust suppressant (e.g., water) to the following areas of the construction sites:
    - access roads;
    - staging and laydown areas; and
    - parking areas.
- stabilizing material stockpiles to minimize wind and water erosion;
- covering beds of open-bodied trucks hauling materials with excessive dust generation;
- implementing a vehicle speed limit of 15 miles per hour (or less) for unsurfaced roads within each construction site, with the posting of speed limit signs on designated access roads;
- using rock construction pads at the junction between unpaved access roads and paved roads to reduce track-out of material at construction site entrances;
- using noise control barriers; and
- incorporating noise barriers.

### B.10.5 Determination of Disproportionate and Adverse Impacts on Environmental Justice Communities

As described throughout this EA, the proposed Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project, including environmental justice populations. As highlighted in table B-1 in appendix B, the Transco M&R Station, SESH M&R Station, MS Hub Booster Station, SWD Well No. 6, and SWD Well No. 8 are located within environmental justice communities. Based on the foregoing analysis, impacts associated with the construction activities associated with the facilities on environmental justice

communities would be disproportionate and adverse as they would be predominately borne by environmental justice communities.

The MS Hub Storage Facility, RW Well No. 6, RW Well No. 7, RW Well No. 8, and RW Well No. 9 are in the geographic scope of an environmental justice community. Impacts associated with the construction activities associated with the facilities on environmental justice communities would not be disproportionate and adverse on these communities. As previously stated, the SONAT M&R Station, SWD Well No. 5, SWD Well No. 7, SWD Well No. 9 and contractor yards are not within the geographic scope of identified environmental justice communities. Construction and operational impacts associated with visual resources, socioeconomics, traffic, air quality, and noise for all Project facilities would be less than significant and mostly temporary.

## B.11 RELIABILITYAND SAFETY

The pressurization of natural gas at a compressor station involves some incremental risk to the public due to the potential for accidental release of natural gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death. Methane has an auto-ignition temperature of 1,000 °F and is flammable at concentrations between 5.0 and 15.0 percent in air. An unconfined mixture of methane and air is not explosive; however, it may ignite and burn if there is an ignition source. A flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

PHMSA is mandated to prescribe minimum safety standards to protect against risks posed by natural gas facilities under Title 49 of the U.S. Code, Chapter 601. PHMSA administers the DOT's national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of natural gas facilities. Many of the regulations are written as performance standards, which set the level of safety to be attained and allow the operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of incidents. This work is shared with state agency partners and others at the federal, state, and local levels.

Section 5(a) of the Natural Gas Pipeline Safety Act provides for a state agency to assume all aspects of the safety program for intrastate facilities by adoption and enforcement of federal standards. A state may also act as PHMSA's agent to inspect interstate facilities within its boundaries; however, PHMSA is responsible for enforcement actions. Mississippi is authorized under Section 5(a) to assume all aspects of the safety program for intrastate, but not interstate facilities (PHMSA 2019).

The new well facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49

CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures.

MS Hub would protect the integrity of its gas storage field and reduce physical location risk in alignment with the PHMSA *Storage Final Rule* (85 Federal Register 8104).

The piping and aboveground facilities associated with the Project would be designed, constructed, operated, and maintained in accordance with the PHMSA *Minimum Federal Safety Standards* in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. PHMSA specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion. Part 192 of 49 CFR establishes safety guidelines for the design and construction of compressor stations in addition to pipeline safety standards. Sections 192.163 – 192.173 of 49 CFR specifically addresses design criteria for compressor stations, including specific design requirements for: location, building design, emergency shut-down, pressure control, ventilation, and alarms. In addition, first aid, and safety equipment would be maintained in accordance with Occupational Safety and Health Administration regulations in 29 CFR 1910. The emergency shutdown systems would comply with PHMSA regulations found in 49 CFR 192.167 and with additional safety systems addressed in sections 192.169 and 192.171. Part 192.163 requires the location of each main compressor building of a compressor station be on a property under the control of the operator. The station must also be far enough away from adjacent property, not under control of the operator, to minimize the possibility of fire spreading to the compressor building from structures on adjacent properties. Part 192.163 also requires each building on a compressor station site be made of specific building materials and to have at least two separate and unobstructed exits. The station must be in an enclosed fenced area and must have at least two gates to provide a safe exit during an emergency.

Parts 192.731 through 192.736 of 49 CFR establish safety guidelines for inspection, testing, and monitoring at compressor stations. MS Hub would inspect the fire detection, gas detection, and emergency shutdown systems quarterly and valves would be inspected annually. Inspections would ensure that the facilities and pipeline systems are in good mechanical condition, set to control or relieve at the correct pressure consistent with the pressure limits in Part 192.201(a), and are properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

PHMSA prescribes the minimum standards for operating and maintaining pipeline and aboveground natural gas facilities, including the requirement to establish a written plan governing these activities. Each operator is required under 49 CFR 192.615 to establish an emergency plan that includes procedures to minimize the hazards of a natural gas emergency. MS Hub would integrate the new facilities into its existing facility *Emergency Response Plan* for the corresponding modified MS Hub Storage Facility and MS Hub Booster Station, in accordance with the regulation, which requires that a plan be prepared prior to commencing operations. MS Hub would make the plan available to emergency responders.

PHMSA requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline or facility emergency, and to coordinate mutual assistance.

Tennessee must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas emergency and report it to the appropriate public officials. Tennessee would provide the appropriate training to local emergency service personnel before the Project is placed in service.

With MS Hub's continued compliance with PHMSA safety standards, operation, and maintenance requirements, the Project would be constructed and operated safely.

## B.12 CUMULATIVE IMPACTS

In accordance with NEPA and with FERC policy, we identified other actions in the vicinity of the proposed Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the CEQ, a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions (CEQ 1997). In this analysis, we consider the impacts of past projects within defined geographic scopes as part of the affected environment (environmental baseline), which were described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered.

To avoid unnecessary discussions of insignificant impacts and projects, and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affects a resource also potentially affected by the Project;
- causes this impact within all, or part of, the Project area defined by the resource-specific geographic scope; and
- causes this impact within all, or part of, the time span of the proposed Project's estimated impacts.

As described in our analysis above within section B of this EA, constructing and operating the Project would temporarily and permanently affect the environment. However, with the exceptions noted below, we concluded that most of the Project-related impacts would be contained within or adjacent to the construction workspaces. For example, erosion control measures included in the FERC Plan would keep disturbed soils within the work areas and would therefore not contribute to cumulative impacts on soil resources. Resources that could be affected outside the immediate Project area and are subject to our cumulative impacts review include watershed-level impacts on vegetation and wildlife; visual resources; traffic; and air quality and construction-related noise. However, for some resources, the contribution to regional cumulative impacts is lessened by the expected recovery of ecosystem function. For example, non-forested vegetation communities and wildlife habitats would be cleared, but restoration would proceed immediately following construction.

The following resources would not be affected by the Project, and therefore would not contribute to cumulative impacts on these resources, and we do not discuss them further:

- cultural resources;
- Coastal Zone Management Areas;
- natural or scenic areas and parks, recreational areas, registered natural landmarks, designated National or State Wild and Scenic Rivers, special use areas, or visually sensitive areas, because none are within the Project area.

Table 18 summarizes the resource-specific geographic scopes considered in this analysis, and the justification for each. Actions outside of these boundaries were not evaluated because their potential to contribute to cumulative impacts diminishes with increasing distance from the Project.

### B.12.1 Other Actions identified within the Geographic Scope

Table C-1 in appendix C summarizes recent past, present, and reasonably foreseeable actions and affected resources potentially falling within one or more geographic scopes identified in table 18. The potential of the Project to result in cumulative impacts when combined with the projects identified in table C-1 in appendix C are discussed below.

We have not identified any other projects within the geographic scope, including those identified in table C-1 in appendix C, that would take place concurrently with Project construction and result in potential air quality impacts when combined with the Project's impacts. Additionally, we have not identified any other projects within the geographic scope that would take place concurrently with Project construction and result in potential noise impacts when combined with the Project's impacts.

### B.12.2 Potential Cumulative Impacts of the Proposed Project

The actions considered in our cumulative impact analysis identified in section B.12.1 may vary from the proposed Project in nature, magnitude, and duration. These actions are included based on the likelihood of their impacts coinciding with the Project's impacts, which means that these other actions have current or ongoing impacts or are "reasonably foreseeable." The actions we considered are those that could affect similar resources within the same geographic scope defined in table 18, and during the same timeframe as the Project. The anticipated cumulative impacts of the Project and these other actions are discussed below.

**Table 18**
**Cumulative Impact Resource-Specific Geographic Scope**

| Resource | Geographic Scope | Justification for Geographic Scope |
|---|---|---|
| Geological Resources and Soils | Areas overlapping or immediately abutting the workspaces of other actions | Impacts on soils and surficial geology would be highly localized and would not be expected to extend beyond the area of direct disturbance associated with the Project. |
| Surface Water Resources and Wetlands | HUC-12 watersheds (see section B.3.3 for HUC-12 watershed associated with the Project) | Watersheds are natural, well-defined boundaries for surface water flow, and commonly contribute to the recharge of groundwater resources. Impacts on groundwater, surface water resources, wetlands, and aquatic resources could reasonably extend throughout a HUC-12 watershed (i.e., a detailed hydrologic unit that can accept surface water directly from upstream drainage areas and indirectly from associated surface areas such as remnant, noncontributing, and diversions to form a drainage area with single or multiple outlet points, as could the related impacts on aquatic resources and fisheries). |
| Groundwater, Vegetation, Wildlife, and Special Status Species | HUC-12 watersheds (see section B.3.3 for HUC-12 watershed associated with the Project) | The watershed level provides a natural boundary and a geographic proxy to accommodate general wildlife habitat and ecological characteristics. |
| Visual Resources | 1-mile radius from Project work areas | Assessing the impact based on the viewshed allows for the impact to be considered with any other feature that could have an effect on visual resources. |
| Socioeconomics | Affected counties and municipalities | Demographic statistics are generally assessed on a county basis. |
| Environmental Justice | Affected Environmental Justice census block groups | The geographic scope covers all environmental justice communities affected by the Project that would be susceptible to potential cumulative impacts from other projects within the geographic scope of the facility. |
| Air Quality (Construction) | Within 0.25 mile of Project workspaces | Air emissions during construction would include vehicle and construction equipment combustion emissions and fugitive dust at all Project sites, and multi-year, sustained (24-hour) drilling rig and solution mining emissions at each well site. |
| Air Quality (Operation) | within 5 kilometers of the MS Hub Booster Station; 20 kilometers of the MS Hub Storage Facility | These distances are baseline evaluation distances for minor sources and Title V facilities. They are sufficiently large and include all areas potentially affected by project emissions as demonstrated the AOI analysis. |
| Noise (Construction) | Within 0.25 mile from the proposed Project's noise-producing equipment work and within 0.5 mile of cavern well drilling and solution mining | Areas in the immediate proximity (within 0.25 mile) of construction activities would have the potential to be affected by construction noise; NSAs within 0.5 mile of cavern well drilling or solution mining could be cumulatively affected if other projects have a concurrent impact on the NSA. |
| Noise (Operation) | Within a 1-mile radius of the modified MS Hub Storage Facility and MS Hub Booster Station | Noise from the Project's permanent aboveground facilities could result in cumulative noise impacts on NSAs within 1 mile. |

### B.12.3 Geology and Soils

As Project impacts on geology and soils would be highly localized and limited primarily to the Project footprint during the period of active construction, cumulative impacts on geology and soils would only occur if other geographically overlapping projects were constructed at the same time (and place) as the Project, and the exposure of soils to erosion and sedimentation occurs.

Construction of the proposed non-jurisdictional power lines associated with the Project would take place adjacent to, and associated with, the proposed contractor yard; RW Well Nos. 6, 7, 8, and 9; SWD Well No. 9; and MS Hub Booster Station. Environmental impacts of these facilities have been considered as part of the Project analysis in the geology section of this EA. Construction and operation of the Project, when considered with other projects in the cumulative impacts area, would not contribute significantly to cumulative impacts on geologic and soil resources.

### B.12.4 Groundwater

Projects in table C-1 in appendix C that are within the geographic scope for cumulative impacts as the proposed Project would have similar impacts on groundwater to those described in section B.3.1. The most likely cumulative impacts on groundwater are turbidity caused by shallow excavations, reduced groundwater recharge caused by the installation of impervious structures, altered localized groundwater flow paths, and the appropriation of groundwater for construction or operational activities.

Many of the projects included in table C-1 in appendix C that are within the defined geographic scope for groundwater would be required to obtain water use and discharge permits, implement erosion and sediment controls, and adhere to various Spill Plans as mandated by federal and state agencies, as appropriate. The impacts from the Project on groundwater would be minimized by implementing measures in the FERC Plan and Procedures that minimize erosion and sedimentation, reduce compaction, and restore preexisting grades and vegetation; as well as by measures in MS Hub's SPCC Plan. We anticipate that any projects where construction has been completed, groundwater impacts would be trending to a restored state, and therefore would have minimal residual impact. When combined with other projects, the minor increase in impervious surface in the considered geographic scope and the minor changes to existing groundwater flow path, the Project would not have significant cumulative impacts on groundwater and aquifer recharge and volume.

### B.12.5 Wetlands and Waterbodies

Projects in table C-1 in appendix C that are within the geographic scope for cumulative impacts on wetlands and waterbodies as the proposed Project would have similar impacts to those described in section B.3.3. Cumulative impacts on wetlands and waterbodies from projects and actions identified in table C-1 in appendix C would dissipate the farther they occur from the Project.

Construction of the Project and other projects in the cumulative impacts area could have direct and indirect impacts on wetland and waterbody quality and function, such as loss of

vegetation, altered hydrology, increased turbidity, and sedimentation. It is possible that in addition to the 6.88 acres of temporary impacts and 4.27 acres of permanent impacts on wetlands as described in section B.3.3, the other projects listed in table C-1 in appendix C could contribute to cumulative wetland impacts. However, we are unaware of the exact acreage of wetlands impacted by those projects. The Project would result in temporary and permanent impacts on five waterbodies. We anticipate other project could also affect waterbodies, but the details of those impacts are unknown.

Projects such as the City of Magee Heating, Ventilation, and Air Conditioning business building expansion and apartment renovations are expected to avoid most direct wetland and waterbody impacts as they are modifications of existing developments. The new restaurant building is relatively small and discrete, meaning it could be flexible in placement (not dependent on connecting to another existing facility) to avoid wetlands and waterbodies. Larger and linear projects, such as roadways and power lines, are more likely to cross wetlands and waterbodies. For example, the three Mississippi Department of Transportation bridge replacement projects could temporarily affect waterbody water quality and water flow if replacement activities involve removal and construction of underwater structures. Similarly, the Southern Pine Electric Cooperative electric power distribution lines could result in fill within wetlands for power pole installation or conversion of forested wetland to herbaceous wetland for right-of-way maintenance. Indirect wetland and waterbody impacts could also result from these projects due to stormwater runoff from disturbed areas and hazardous fluid spills during construction.

Wetlands and waterbodies are broadly regulated under the CWA. MS Hub, and the proponents of other projects, would need to obtain (or have already obtained) permits from the USACE, as applicable. As previously stated in section B.3.3, we anticipate that if the USACE issues a CWA section 404 permit for the Project, it would be conditional upon MS Hub effectively offsetting adverse impacts on waters of the United States with mitigation, such that impacts would be reduced to less than significant levels. Other projects would also be required to prepare mitigation plans and provide mitigation for non-exempt wetland and waterbody impacts as part of the permitting and approval process. Additionally, impacts from the Project on wetlands and waterbodies would be minimized by implementing measures in the FERC Plan and Procedures. Therefore, with implementation of the Project's minimization and mitigation measures, and adherence to the requirements of all applicable permits, we conclude that cumulative impacts on wetlands and waterbodies would not be significant.

### B.12.6 Wildlife, Vegetation, Fisheries, and Special Status Species

Cumulative impacts on vegetation and terrestrial wildlife, including special status species, could occur within the same defined watersheds as the Project due to the combined effects of several other projects (i.e., roadways, bridges, powerlines, commercial development, residential development, and recreational development) from table C-1 in appendix C. Project activities, such as clearing, grading, trenching, and installation of impervious surfaces (e.g., MS Hub Booster Station) would remove vegetation, alter wildlife habitat, fragment habitat, displace wildlife, and result in other potential secondary effects, such as increased population stress, predation, and the establishment or spread of invasive species. These effects would be greatest where the other projects included in this analysis are constructed within the same timeframe and

general location as the Project. However, even construction that does not overlap temporally could have cumulative effects during the time it takes disturbed areas to be restored.

As described in section B.4.2, the Project would disturb 64.22 acres of vegetated habitat (open land, forest, and wetlands), 34.87 acres of which would be permanently affected by operation of the Project. We anticipate that other projects would affect vegetation by temporary removal or permanent conversion in the case of new commercial development, although the exact amount and types of vegetation to be affected are unknown. Most projects, like the proposed Project, would presumably be required to implement certain construction mitigation measures, such as installation of erosion control devices and restoration of temporarily disturbed areas, to reduce vegetation disturbance and avoid spreading invasive species. MS Hub has committed to minimization measures that would reduce the Project's impact on vegetation and its contribution to invasive species infestations as described in section B.4.2. Therefore, we conclude that the cumulative effect of this Project, in combination with other projects, on vegetation would be less than significant.

In addition to the temporary and permanent habitat loss described above, wildlife would experience impacts as a result of short-term project construction activities and long-term anthropogenic stressors (e.g., commercial lighting and noise). Projects could result in the temporary or permanent cumulative loss of food resources, fragmentation of migratory corridors, increased competition, and disruption of wildlife behaviors. We anticipate that cumulative noise, light, and direct mortality effects would only occur where other projects are in proximity to the proposed Project and construction would occur concurrently. Wildlife may be permanently displaced by aboveground structures associated with the Project and other projects within the cumulative impacts area, but the proposed Project's long-term impacts would be minimal as the majority of the proposed facilities would be within or collocated with existing natural gas infrastructure. In addition, MS Hub would implement the measures described in section B.4.2 to minimize the Project's impact on wildlife. Therefore, we conclude that the cumulative impact on wildlife would be minor and not significant.

While general wildlife would be cumulatively affected as described above, the ESA prohibits the take of any threatened and endangered species except under limited federal permit conditions. A federal permit or take statement is issued only if individual and cumulative impacts on a listed species are not significant. As such, any federal projects in the cumulative impacts area would be required to comply with Section 7 of the ESA to ensure construction and operation of the facilities would not jeopardize the continued existence of federally listed species. Non-federal projects are also required to adhere to the ESA (Section 10), through which the FWS has a different mechanism for evaluating and minimizing impacts from non-federal actions.

As discussed in section B.4.3, we have determined that the Project would have no impact on the northern long-eared bat, yellow-blotched map turtle, gulf sturgeon, or pearl darter; is not likely to adversely affect the black pinesnake; and is not likely to jeopardize the continued existence of the tricolored bat, Pascagoula map turtle, or alligator snapping turtle. Consultation with the FWS is ongoing regarding our determination of effect for the gopher tortoise, and we are unable to make a determination of effect for this species at this time. As such, we have

recommended that MS Hub provide a gopher tortoise survey report and ensure that ESA consultation is complete prior to any construction activity.

Protection of state-listed special status species is part of the various state permitting processes or resource reviews for many of the projects identified in table C-1 in appendix C. As such, we anticipate that cumulative impacts on such species would be less than significant because they have been specifically considered and minimized through conservation and mitigation measures identified during those relevant processes and consultations. Therefore, we conclude that the Project, in combination with other projects, would not result in significant cumulative impacts on special status species.

### B.12.7 Socioeconomics

The bridge replacement project in Jefferson Davis County is within the geographic scope of the MS Hub Booster Station, MS Hub Storage Facility, Transco M&R Station, SWD Well Nos. 6 and 8, RW Well Nos. 6, 7, 8, and 9, and staging areas. Construction for the facilities is scheduled to begin in early 2025 and last approximately 72 months. If the bridge replacement project and the Project overlap during construction and nonlocal workers are hired for the bridge replacement project, there could be a temporary cumulative impact to housing, public service, and traffic. However, there may be a temporary beneficial impact to employment for Jefferson Davis County.

The various road projects in Covington County are within the geographic scope of the MS Hub Booster Station, MS Hub Storage Facility, Transco M&R Station, SESH M&R Station, SWD Well Nos. 6 and 8, RW Well Nos. 6, 7, 8, and 9, and staging areas. Construction for the facilities is scheduled to begin in early 2025 and last approximately 72 months. If the various road projects and the Project overlap during construction and nonlocal workers are hired for the bridge replacement project, there could be a temporary cumulative impact to housing, public service, and traffic. However, there may be a temporary beneficial impact to employment for Covington County.

The various road projects, bridge replacement projects, treatment center building expansion project, HVAC business building expansion project, and apartment renovations project in Simpson County are within the geographic scope of the MS Hub Storage Facility, Sonat M&R Station, SWD Well Nos. 6 and 8, RW Well Nos. 6, 7, 8, and 9, staging areas, SWD Well Nos. 5, 7, and 9, and contractor yards. Construction for the facilities is scheduled to begin in early 2025 and last approximately 72 months. If the various road projects and the Project overlap during construction and nonlocal workers are hired for the bridge replacement project, there could be a temporary cumulative impact to housing, public service, and traffic. However, there may be a temporary beneficial impact to employment for Simpson County.

Therefore, we conclude that impacts of the proposed Project on socioeconomics, when added to the identified past, present, and reasonably foreseeable future projects, would not be significant.

### B.12.8 Environmental Justice

The Southern Pine Electric Cooperative Project would occur within the same environmental justice community as the MS Hub Booster Station, which is identified as a low-income community. Also, the Southern Pine Electric Cooperative Project at RW Well Nos. 6, 7, 8, and 9 is within the geographic scope of two environmental justice communities. During construction at the MS Hub Booster Station site, there would be some visual impacts along the road. However, the MS Hub Booster Station site is within a very rural area; therefore, we do not anticipate that the road will be frequented by travelers. Therefore, visual impacts would be minor. If nonlocal workers are hired during construction, there would be a temporary impact to housing and public services. There would be a temporary impact to traffic from the movement of construction equipment, materials, and workers. During construction, air quality and noise impacts would be intermittent and would only occur during times that active construction activities are taking place. Cumulatively, there would be a disproportionate and adverse impact on the environmental justice community during the period when both projects overlap. However, the cumulative impacts would not be significant.

The Southern Pine Electric Cooperative Project at RW Well Nos. 6, 7, 8, and 9 would not be in an environmental justice community. Construction activities would not be visible to residents in the environmental justice community. The socioeconomic impacts would be those that were analyzed in section B.9 above. During construction, air quality impacts would be intermittent and would occur during construction activities. Construction noise would not have an impact on the environmental justice community. Therefore, the Project would not result in a disproportionate and adverse cumulative impact on an environmental justice community.

Therefore, we conclude that impacts of the proposed Project on environmental justice, when added to the identified past, present, and reasonably foreseeable future projects, would not be significant.

### B.12.9 Air Quality and Noise

Construction of the proposed non-jurisdictional power lines identified in table C-1 in appendix C could result in cumulative air quality and noise impacts when combined with Project construction to the extent power line and construction of Project facilities within the geographic scope take place concurrently. We expect that the linear nature of power line construction would limit air quality and noise impacts from that construction to discrete points along each line's respective construction right-of-way as construction of each power line proceeds, and result in minor, temporary cumulative impacts only for those periods when Project construction is actively taking place, and would cease upon the completion of construction of each line.

MS Hub identified no proposed or reasonably foreseeable major operational sources of air emissions within the defined geographic scope, nor did MS Hub's modeling analysis identify any nearby major point sources of emissions having the potential to contribute to elevated ambient concentrations within the Project area; therefore, the ambient concentrations of air pollutants accounted for in the NAAQS compliance analyses presented in tables 12 and 13 in section B.7.5 are reasonably assumed to sufficiently capture existing operational emissions sources within the geographic scope and the regional airshed within which the modified MS Hub

Storage Facility and new MS Hub Booster Station site are located. We conclude that the Project's operational impacts on regional air quality would not exceed the NAAQS for any criteria pollutant when combined with existing ambient background concentrations and therefore would not result in significant cumulative air quality impacts.

### B.12.10 Climate Change

Construction and operation of the Project would increase the atmospheric concentration of GHGs in combination with past, current, and future emissions from all other sources globally and contribute incrementally to future climate change impacts. This EA is not characterizing the Project's GHG emissions as significant or insignificant.[31] However, as we have done in prior NEPA analyses, we disclose the Project's GHG emissions and contextualize those emissions. See Appendix E for a discussion of climate change, Project GHG emissions comparisons to national and state emissions inventories, and social cost estimations.

[31] *See e.g.*, *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 63 (2023) ("…there currently are no accepted tools or methods for the Commission to use to determine significance, therefore the Commission is not herein characterizing these emissions as significant or insignificant.)

# SECTION C – ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative, system alternatives, and site alternatives.

## C.1 NO-ACTION ALTERNATIVE

Under the no-action alternative, MS Hub would not expand its gas storage capacity or satisfy the Project's purpose and need as described in section A.2. Although none of the impacts associated with the Project would occur, the Project objectives would not be met. We have prepared this EA to inform the Commission and stakeholders about the expected impacts that would occur if the Project were constructed and operated. We do not recommend the no-action alternative; however, the Commission will determine if the Project is in the public convenience and necessity, and could choose the no-action alternative.

The evaluation criteria used for developing and reviewing system and site alternatives were:

- ability to meet the Project's stated objective;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison and to normalize the comparison factors, we generally use desktop sources of information (e.g., publicly available data, geographic information system data, aerial imagery) and assume the same general workspace requirements.

We reviewed alternatives against the evaluation criteria in the sequence presented above. The first consideration for including an alternative in our analysis is whether or not it could satisfy the stated purpose of the Project. An alternative that cannot achieve the purpose for the Project cannot be considered as an acceptable replacement for the Project. The second evaluation criteria is feasibility and practicality. Many alternatives are technically and economically feasible. Technically practical alternatives, with exceptions, would generally require the use of common construction methods. An alternative that would require the use of a new, unique, or experimental construction method may not be technically practical because the required technology is not available or is unproven. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical.

Alternatives that would not meet the Project's objective or were not feasible were not brought forward to the next level of review (i.e., the third evaluation criterion). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on each resource as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts to another location, potentially affecting a new set of landowners.

## C.2 SYSTEM ALTERNATIVES

System alternatives are alternatives to the proposed action that would make use of MS Hub's (or other companies') existing, modified, or proposed pipeline systems to meet the stated objective of the Project.

As detailed in table 6 in section B.4.2, the proposed MS Hub Booster Station would permanently convert a total of 4.29 acres of wetlands and require 6.4 acres of tree clearing, of which 3.5 acres would be permanently converted to facility footprint. We evaluated whether constructing a loop line[48] in lieu of the MS Hub Booster Station could avoid these permanent impacts. Our analysis of information provided by MS Hub finds that although a loop line is a feasible option that could eliminate the need for the MS Hub Booster Station, the loop line would result in an additional 347 acres of construction land disturbance impact, and would require approximately 141 acres for permanent right-of-way maintenance. Therefore, in consideration of the additional temporary ground disturbance and permanent footprint of the loop line alternative, we have eliminated this alternative from further consideration.

## C.3 ABOVEGROUND FACILITY SITE ALTERNATIVES

The EPA commented that the EA should perform an alternative siting analysis for the proposed MS Hub Booster Station. As noted above, construction and operation of the MS Hub Booster Station would result in permanent impacts on wetland and forest habitats. Therefore, to investigate the potential for the use of alternative sites to reduce these impacts, we performed an alternative siting analysis using data provided by MS Hub for the proposed MS Hub Booster Station site and three alternate sites. The criteria compared for the proposed booster station site and alternatives are summarized in table 19.

For all criteria compared, the criteria of prime farmland; NSAs within 0.5 mile; length of non-jurisdictional powerline facilities, permanent access road requirements, lateral pipeline length, wetlands; tree clearing requirements; and permanent floodplain impacts were found to have meaningful differences in quantity of impact. For all of these criteria except lateral pipeline length and wetlands, the proposed MS Hub Booster Station site results in substantially less impact compared to the identified alternative sites, including up to: 1.1 fewer acres of permanent impacts on prime farmland; two fewer NSAs within 0.5 mile; 2,240 fewer feet of required

[48] A pipeline loop is a segment of pipe constructed parallel to an existing pipeline to increase capacity, potentially avoiding the need to add compression to an existing facility or system.

permanent access roads (the proposed site does not require any additional permanent access roads); 4.1 fewer acres of tree clearing; and 5.1 fewer acres of permanent floodplain impacts.

**Table 19**
**Site Alternatives Criteria Comparisons – MS Hub Booster Station**

| | Proposed Site | Alternative Site 1 | Alternative Site 2 | Alternative Site 3 |
|---|---|---|---|---|
| Prime farmland temp impact (acres) | 4.2 | 6.1 | 5.9 | 6.0 |
| Prime farmland perm impact (acres) | 6.0 | 7.0 | 6.5 | 7.1 |
| NSAs within 0.5 miles | 1 | 2 | 2 | 3 |
| Distance to closest NSA (approx. feet) | 2,600 | 1,850 | 1,850 | 2,400 |
| Non-jurisdictional powerline facilities (feet) | 5,280 | 6,720 | 6,080 | 8,120 |
| Permanent access road length (feet) | 0 (existing) | 860 | 750 | 2,240 |
| Lateral pipeline length (feet) | 500 | 450 | 250 | 750 |
| Waterbodies temp impact (number) | 0 | 0 | 0 | 1 |
| Waterbodies perm impact (number) | 0 | 0 | 0 | 1 |
| Wetlands temp impact (acres) | 6.8 | 8.5 | 3.2 | 5.8 |
| Wetlands perm impact (acres) | 4.3 | 4.3 | 3.2 | 4.3 |
| Impacts on threatened and endangered species (number) | 0 | 0 | 0 | 2 |
| Tree clearing (acres) | 9.9 a/ | 13.0 | 12.0 | 14.0 |
| Floodplain perm impact (acres) | 2.9 | 7.9 | 7.8 | 8.0 |

a/ To be consistent with estimates for the alternative sites, this figure is derived using desktop methods and differs from the forested cover reported in table 6, obtained from a combination of desktop methods and field survey verification.

For criteria that don't show a clear advantage for the proposed site, the proposed MS Hub Booster Station site requires between 50 and 250 feet more length of pipeline lateral compared to two of the alternative sites, but 250 feet shorter pipeline lateral than the third alternative site identified. Alternative Site 2 would result in approximately 3.6 fewer acres of wetland impacts compared to the preferred site, Alternative Site 3 would result in 1 fewer acre of impact, while Alternative Site 1 would result in 1.7 acres of additional wetland impact compared to the preferred site.

Considering all criteria compared, we conclude that no alternative site offers a significant environmental advantage to the proposed site, and therefore the proposed site for the MS Hub Booster Station is the preferred site that meets the Project's objectives.

## C.4 ALTERNATIVES CONCLUSION

No environmental issues or resource impacts would lead us to recommend an alternative to the Project. Therefore, we conclude that the proposed action, with our recommended environmental conditions listed in section D of this EA, is the preferred alternative to meet the Project objective.

# SECTION D – STAFF'S CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if MS Hub constructs and operates the proposed facilities in accordance with its application and supplements and our recommended mitigation measures, approval of the Project would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission's Order contain a finding of no significant impact and include the mitigation measures listed below as conditions in any authorization the Commission may issue.

1. MS Hub shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. MS Hub must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);

    b. justify each modification relative to site-specific conditions;

    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and

    d. receive approval in writing from the Director of the OEP, or the Director's designee, **before using that modification**.

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Project. This authority shall allow:

    a. the modification of conditions of the Order;

    b. stop-work authority; and

    c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.

3. **Prior to any construction**, MS Hub shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, MS Hub shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all new and modified

facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

MS Hub's exercise of eminent domain authority granted under NGA Section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. MS Hub's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. MS Hub shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP, or the Director's designee, **before construction in or near that area**.

   This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

   Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

   a. implementation of cultural resources mitigation measures;

   b. implementation of endangered, threatened, or special concern species mitigation measures;

   c. recommendations by state regulatory authorities; and

   d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of the authorization and before construction begins**, MS Hub shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP, or the Director's designee. MS Hub must file revisions to the plan as schedules change. The plan shall identify:

a. how MS Hub will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;

b. how MS Hub will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

c. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;

d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;

e. the location and dates of the environmental compliance training and instructions MS Hub will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change);

f. the company personnel (if known) and specific portion of MS Hub's organization having responsibility for compliance;

g. the procedures (including use of contract penalties) MS Hub will follow if noncompliance occurs; and

h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

(1) the completion of all required surveys and reports;

(2) the environmental compliance training of onsite personnel;

(3) the start of construction; and

(4) the start and completion of restoration.

7. MS Hub shall employ at least one EI per construction spread. The EIs shall be:

a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;

b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;

c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

d. a full-time position, separate from all other activity inspectors;

e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and

f. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, MS Hub shall file updated status reports with the Secretary on a ***monthly*** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. an update on MS Hub's efforts to obtain the necessary federal authorizations;

b. the construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;

c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);

d. a description of the corrective actions implemented in response to all instances of noncompliance;

e. the effectiveness of all corrective actions implemented;

f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and

g. copies of any correspondence received by MS Hub from other federal, state, or local permitting agencies concerning instances of noncompliance, and MS Hub's response.

9. MS Hub must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction of any Project facilities.** To obtain such authorization, MS Hub must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

10. MS Hub must receive written authorization from the Director of OEP, or the Director's designee, **before placing each phase of the Project into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.

11. **Within 30 days of placing the authorized facilities in service**, MS Hub shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or

    b. identifying which of the conditions in the Order MS Hub has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

12. **Within 5 days of receipt of a water quality certification issued by the Mississippi Department of Environmental Quality**, MS Hub shall file the complete certification, including all conditions. All conditions attached to the water quality certification constitute mandatory conditions of the Certificate Order. Prior to construction, MS Hub shall file, for review and written approval of the Director of OEP, or the Director's designee, any revisions to its Project design necessary to comply with the water quality certification conditions.

13. **Prior to construction**, MS Hub shall conduct a tricolored bat suitable roosting habitat survey, conducted by qualified biologists using FWS-approved survey methods, of any culverts or bridges that would be impacted by the Project and file with the Secretary the survey report. The report shall include any additional information that may be applicable to the tricolored bat's presence or absence. This report must also be provided to the FWS, Mississippi Ecological Services Field Office for its review and comment. In addition, MS Hub must file with the Secretary any correspondence received from the FWS regarding the report's content and conclusions.

14. MS Hub shall not conduct tree removal activities during the tricolored bat pup season from **May 1 through July 15** and tricolored bat torpor season from **December 15 through February 15**, unless specifically approved in writing by the FWS.

15. **Prior to construction**, MS Hub shall file with the Secretary a gopher tortoise survey report prepared by qualified biologists using FWS-approved survey methods. The report must also include any additional information that may be applicable to gopher tortoise presence or absence. This report shall also be provided to the FWS, Mississippi Ecological Services Field Office for its review and comment. In addition, MS Hub shall file with the Secretary any correspondences received from the FWS regarding the report's content and conclusions.

16. MS Hub **shall not begin** construction activities **until:**

    a. FERC staff receives additional comments from the FWS regarding the proposed action;

    b. FERC staff completes ESA consultation with the FWS; and

c. MS Hub has received written notification from the Director of OEP, or the Director's designee, that construction or use of mitigation may begin.

17. MS Hub **shall not begin** construction of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads **until**:

a. MS Hub files with the Secretary:

1) the SHPO's comments on the revised survey report; and

2) any further required cultural resources survey report(s) or plan(s), and the SHPO's comments on the report(s) and plan(s).

b. The ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and

c. FERC staff reviews and the Director of OEP, or the Director's designee, approves the cultural resources reports and plans, and notifies MS Hub in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

All materials filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CUI//PRIV - DO NOT RELEASE."**

18. MS Hub shall file noise surveys with the Secretary **no later than 60 days** after placing the authorized units at the MS Hub Storage Facility in service. If a full load condition noise survey is not possible, MS Hub shall provide an interim survey at the maximum possible horsepower load and provide the full load survey **within 6 months**. If the noise attributable to the operation of the modified facility under interim or full horsepower load conditions exceeds an $L_{dn}$ of 55 dBA at any nearby NSAs, MS Hub shall file a report on what changes are needed and install additional noise controls to meet that level **within 1 year** of the in-service date. MS Hub shall confirm compliance with this requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

19. MS Hub shall file a noise survey with the Secretary **no later than 60 days** after placing the MS Hub Booster Station in service. If a full load condition noise survey is not possible, MS Hub shall provide an interim survey at the maximum possible horsepower load and provide the full load survey **within 6 months**. If the noise attributable to the operation of the equipment at the MS Hub Booster Station under interim or full horsepower load conditions exceeds an $L_{dn}$ of 55 dBA at any nearby NSAs, MS Hub shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. MS Hub should confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

20. MS Hub shall file a noise survey with the Secretary **no later than 60 days** after placing each of the modified SESH, SONAT, and Transco M&R Stations in service. If a full flow rate noise survey is not possible, MS Hub shall provide an interim survey at the maximum possible flow conditions and provide the full flow rate survey **within 6 months**. If the noise attributable to the operation of the SESH, SONAT, or Transco M&R station under interim or full flow rate conditions exceeds an $L_{dn}$ of 55 dBA at any nearby NSAs, MS Hub shall file a report on what changes are needed and should install the additional noise controls to meet the level **within 1 year** of the in-service date. MS Hub shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

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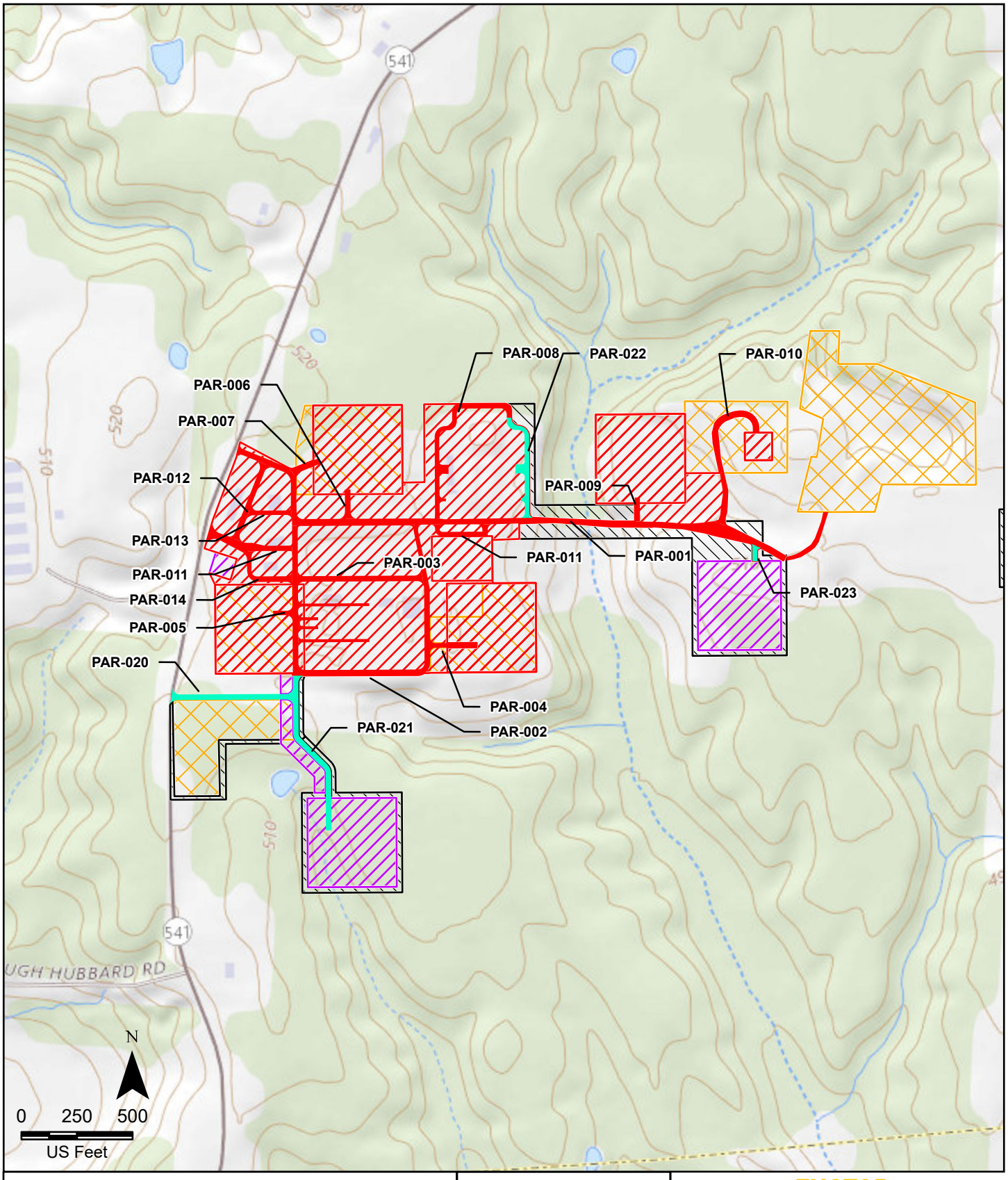
# APPENDIX A

# TOPOGRAPHIC MAPS




**Legend**

- Existing Authorized Road
- New Proposed Road
- Existing Permanent Workspace
- Proposed Permanent Workspace
- Temporary Workspace
- Other Workspace (Staging Areas, Previously Excavated Area)


Project Location

ENGTON MISSISSIPPI HUB

**FIGURE 1.1-3B: MS HUB STORAGE FACILITY**

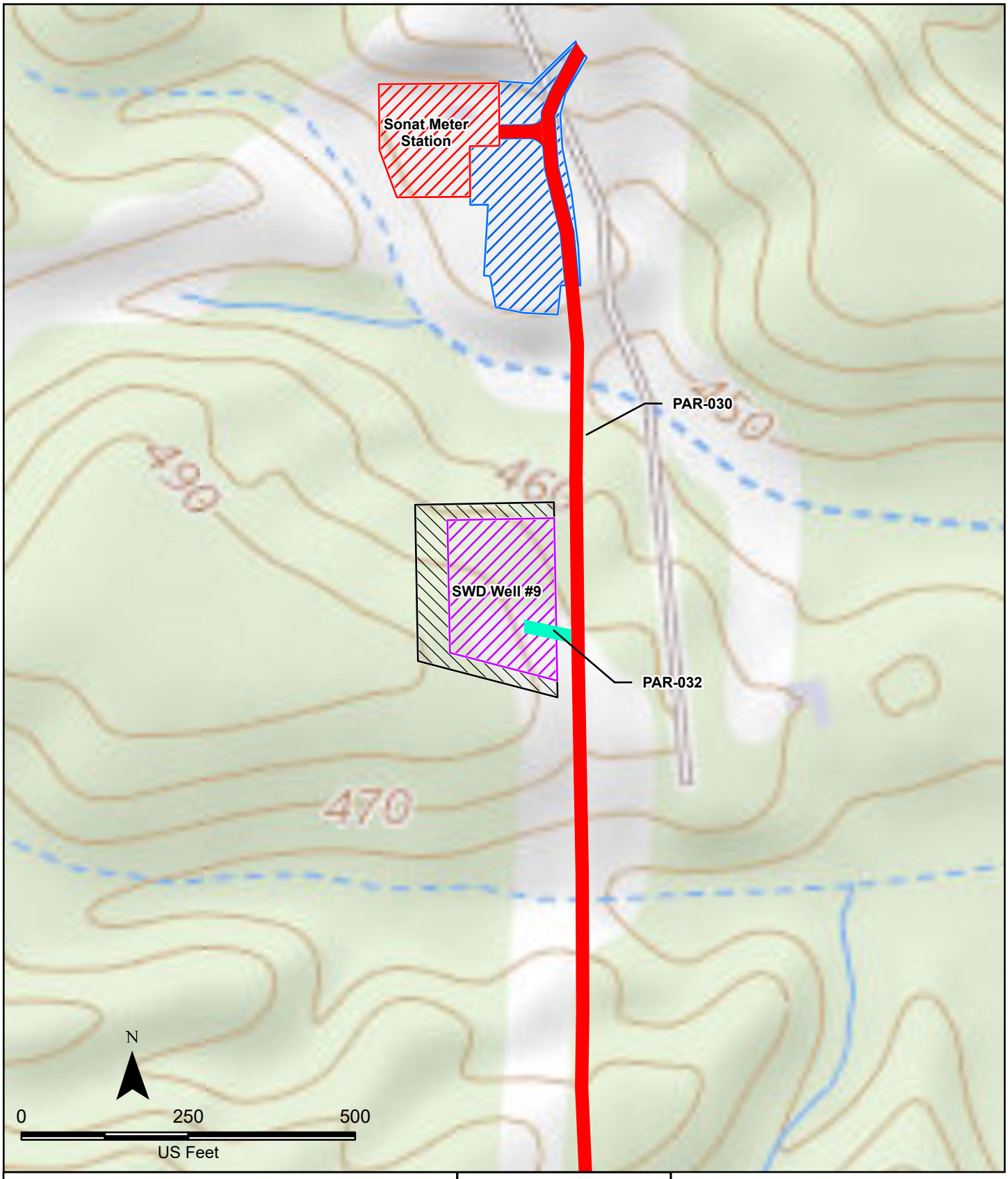
MISSISSIPPI HUB EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- Existing Authorized Road
- New Proposed Road
- Existing Permanent Workspace
- Proposed Permanent Workspace
- Temporary Existing Workspace
- Temporary Workspace


ENTERGY MISSISSIPPI HUB

**FIGURE 1.1-4B: SWD WELL #9**

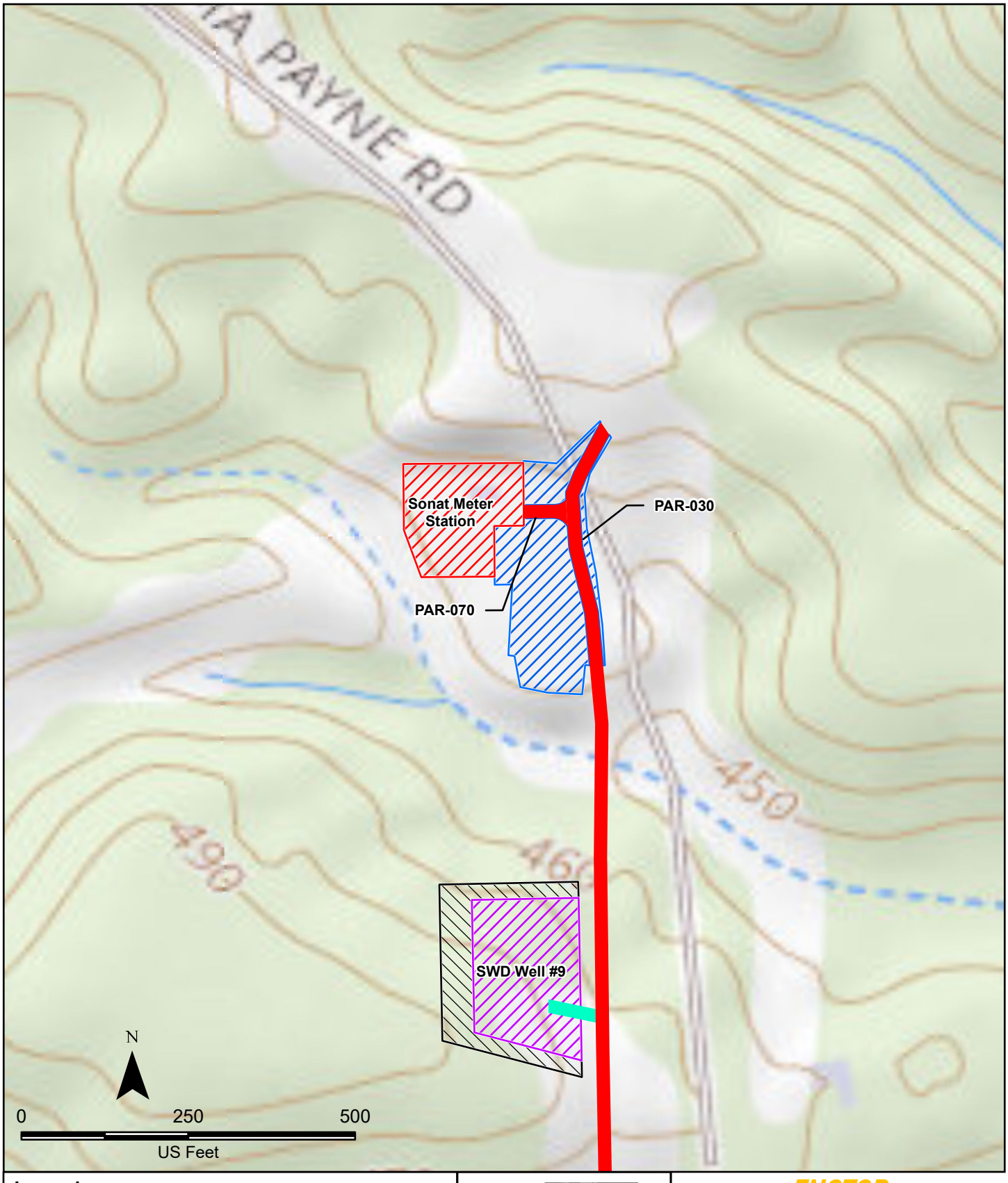
MISSISSIPPI HUB EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- Existing Authorized Road
- New Proposed Road
- Existing Permanent Workspace
- Proposed Permanent Workspace
- Temporary Existing Workspace
- Temporary Workspace


ENSTOR MISSISSIPPI HUB

**FIGURE 1.1-5B: SONAT METER STATION**

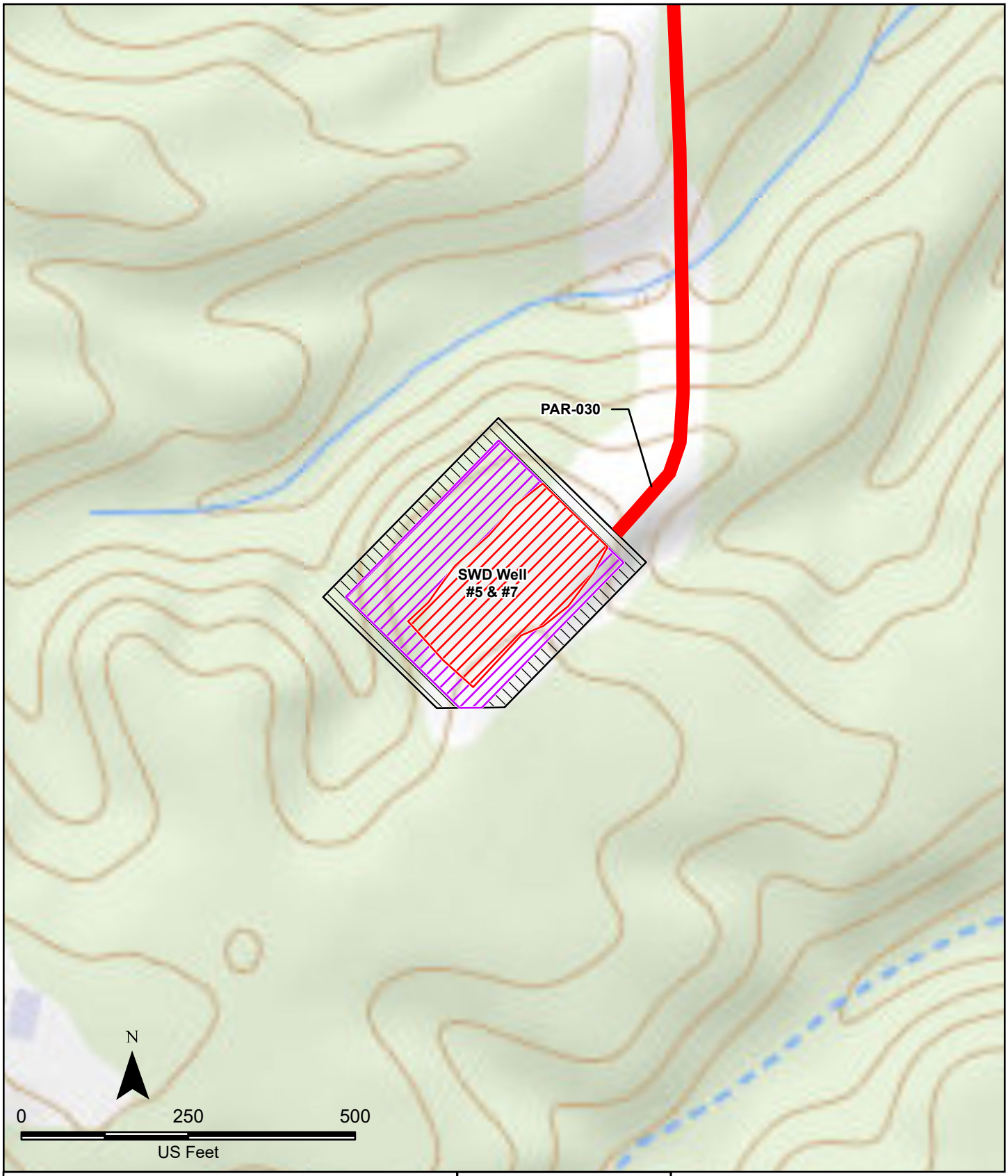
MISSISSIPPI HUB EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- Existing Authorized Road
- Existing Permanent Workspace
- Proposed Permanent Workspace
- Temporary Workspace


ENSTOR MISSISSIPPI HUB

**FIGURE 1.1-6B: SWD WELL #5 & #7**

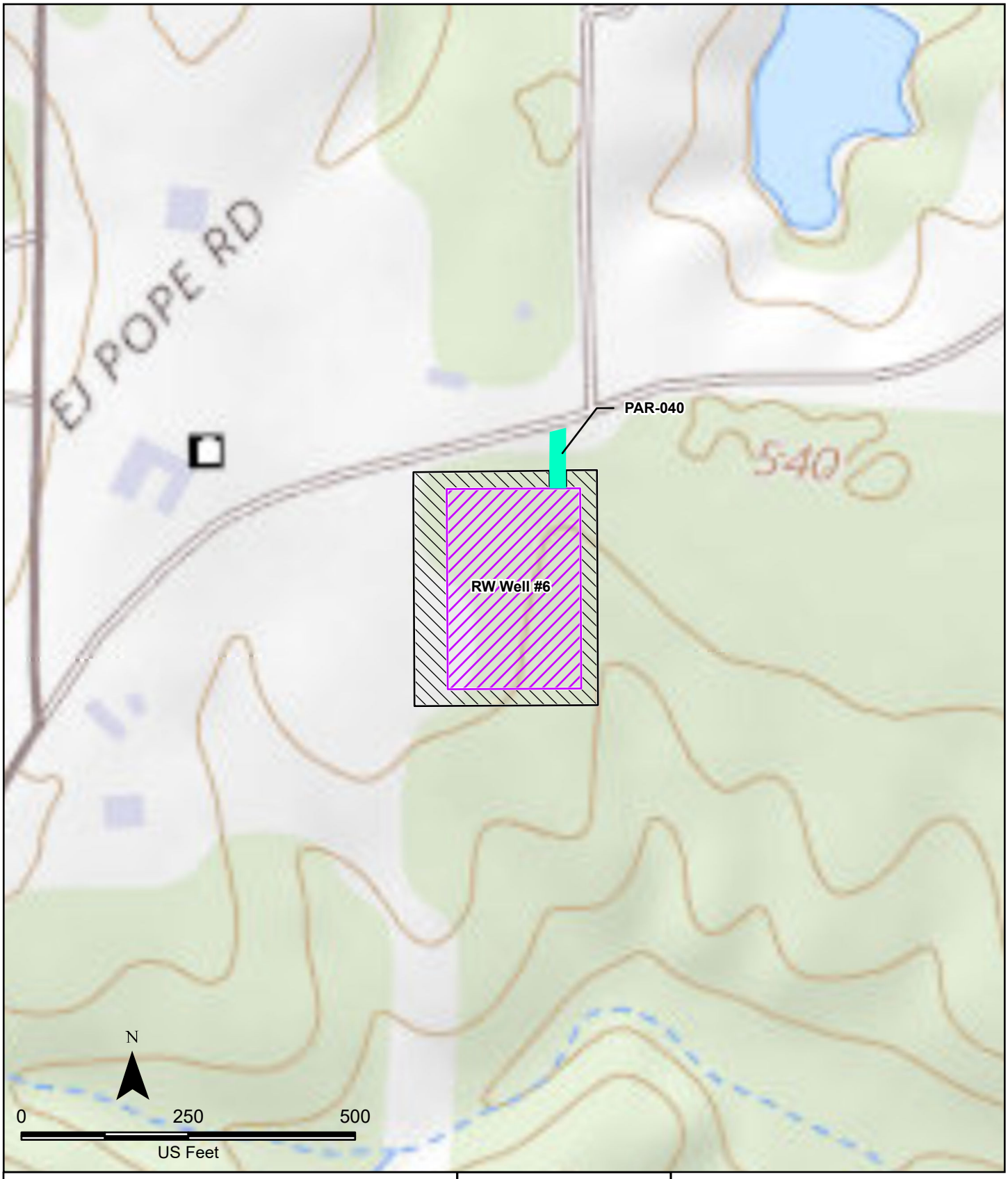
MISSISSIPPI HUB
EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- New Proposed Road
- Proposed Permanent Workspace
- Temporary Workspace


ENSTOR MISSISSIPPI HUB

**FIGURE 1.1-7B: RW WELL #6**

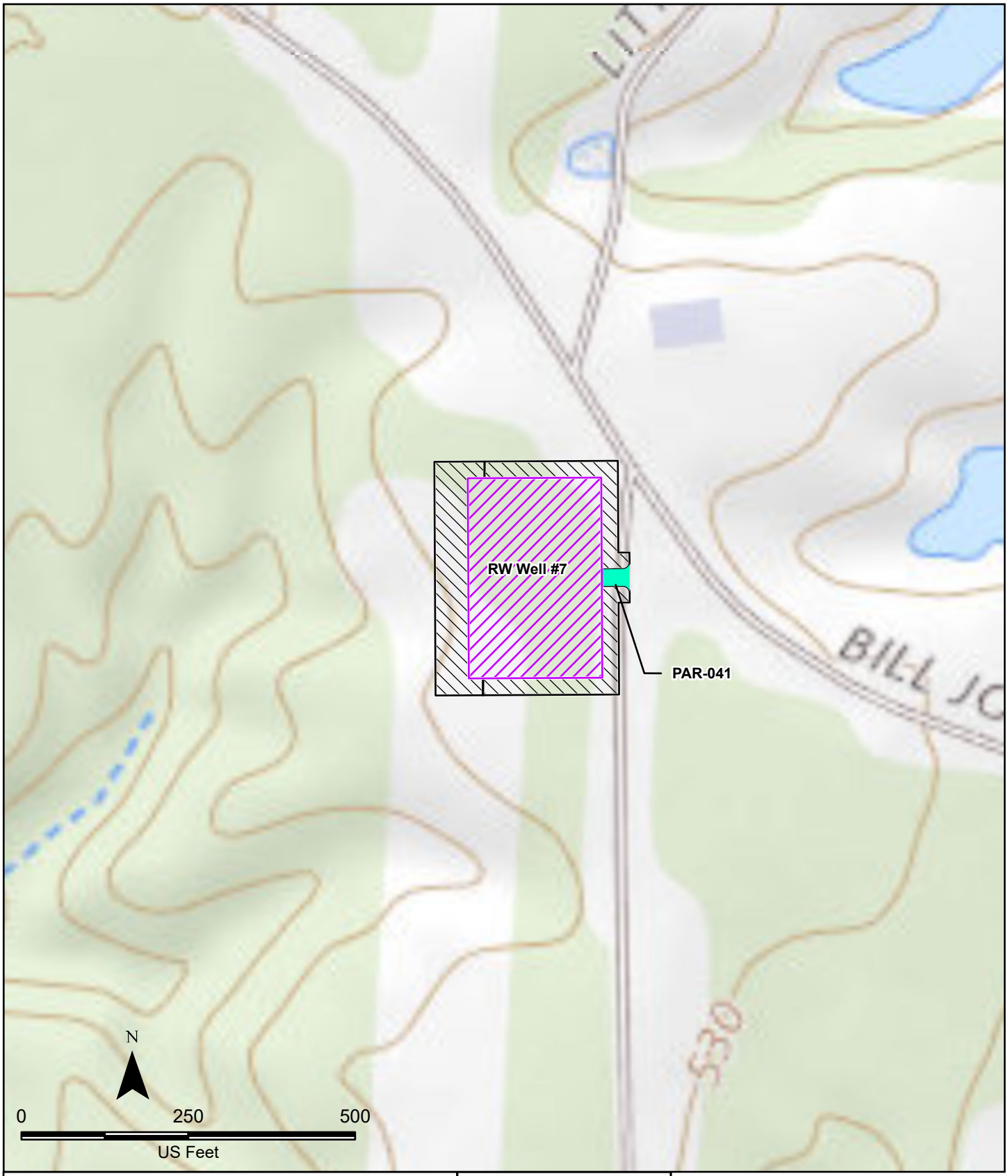
MISSISSIPPI HUB EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- New Proposed Road
- Proposed Permanent Workspace
- Temporary Workspace


ENSTOR MISSISSIPPI HUB

**FIGURE 1.1-8B: RW WELL #7**

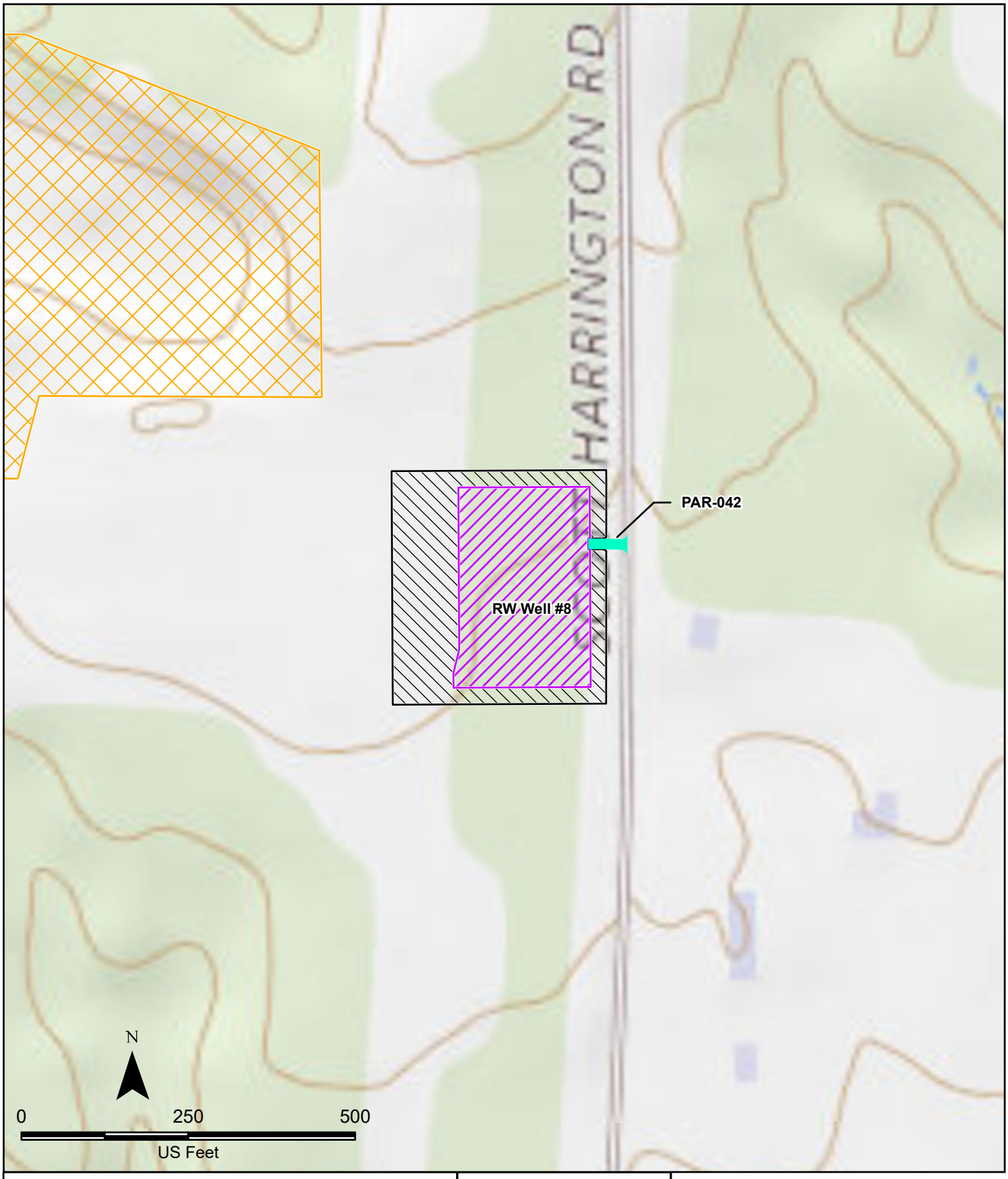
MISSISSIPPI HUB EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- New Proposed Road
- Proposed Permanent Workspace
- Temporary Workspace
- Other Workspace (Staging Areas, Previously Excavated Area)


ENSTOR MISSISSIPPI HUB

**FIGURE 1.1-9B: RW WELL #8**

MISSISSIPPI HUB EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx


**Legend**

- New Proposed Road
- Proposed Permanent Workspace
- Temporary Workspace


ENTERGY MISSISSIPPI HUB

**FIGURE 1.1-10B: RW WELL #9**

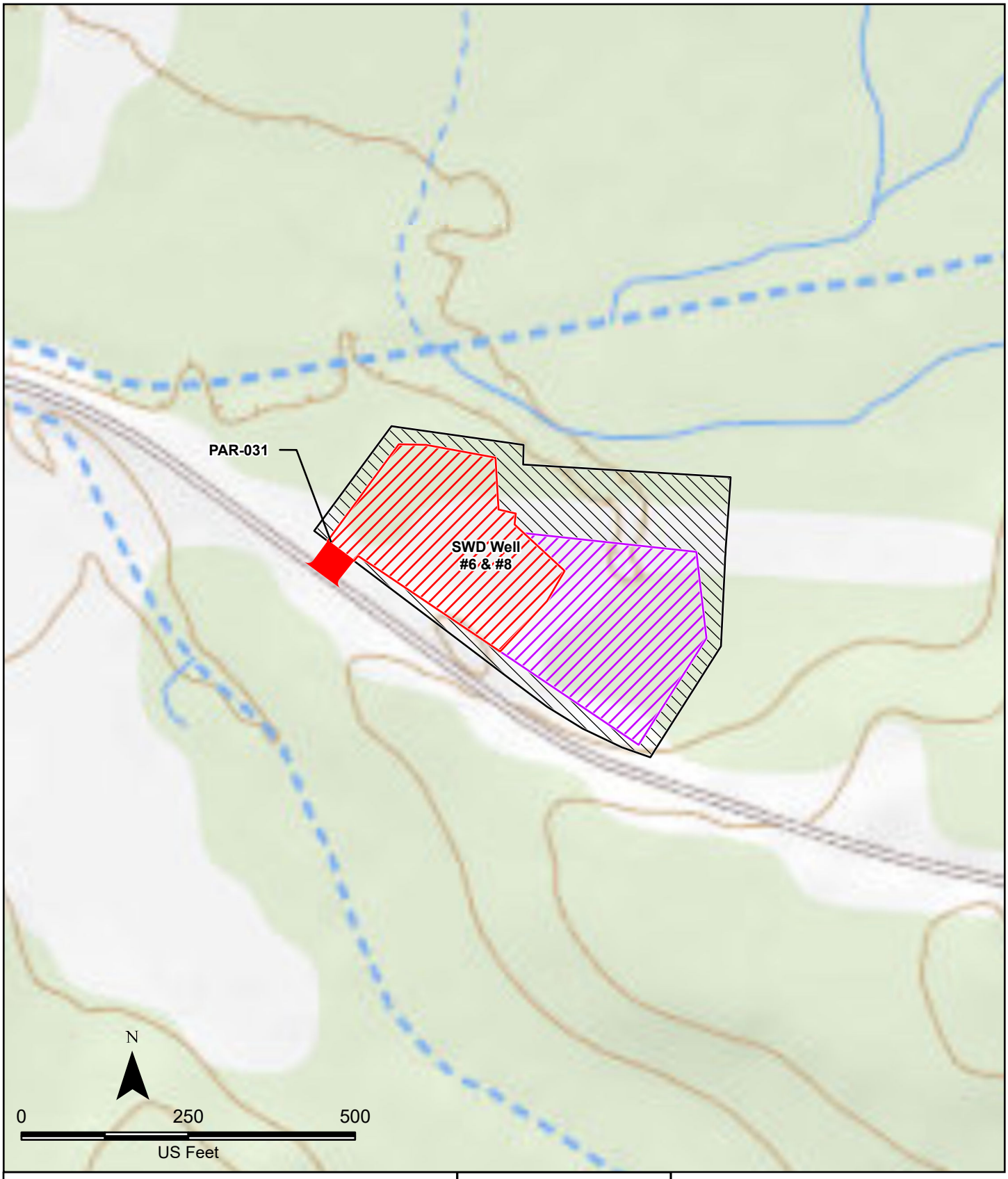
MISSISSIPPI HUB
EXPANSION PROJECT

SIMPSON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- Existing Authorized Road
- Existing Permanent Workspace
- Proposed Permanent Workspace
- Temporary Workspace


ENTERGY MISSISSIPPI HUB

**FIGURE 1.1-11B: SWD WELL #6 & #8**

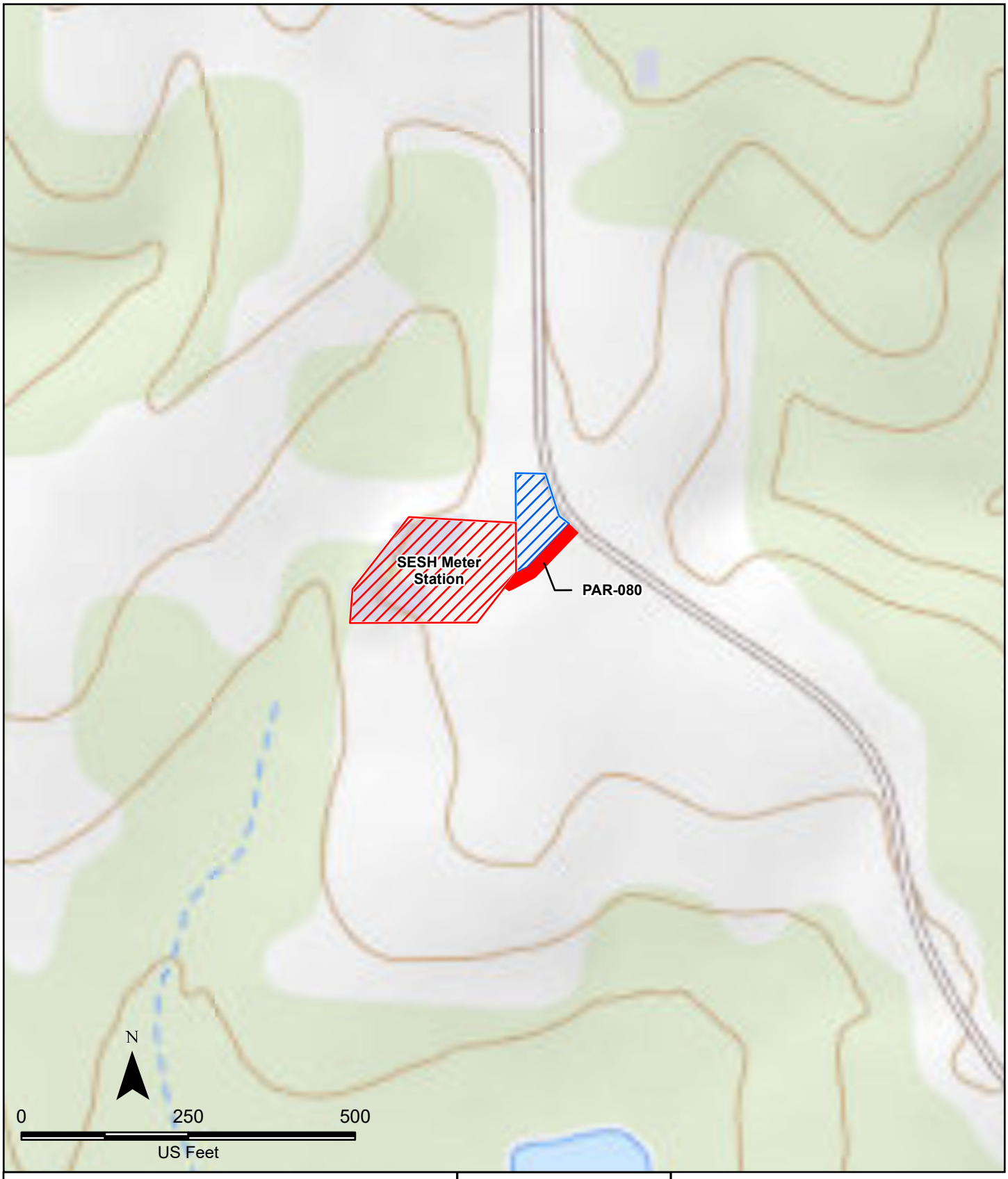
MISSISSIPPI HUB
EXPANSION PROJECT

JEFFERSON DAVIS COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- Existing Authorized Road
- Existing Permanent Workspace
- Temporary Existing Workspace


ENGTON MISSISSIPPI HUB

**FIGURE 1.1-12B: SESH METER STATION**

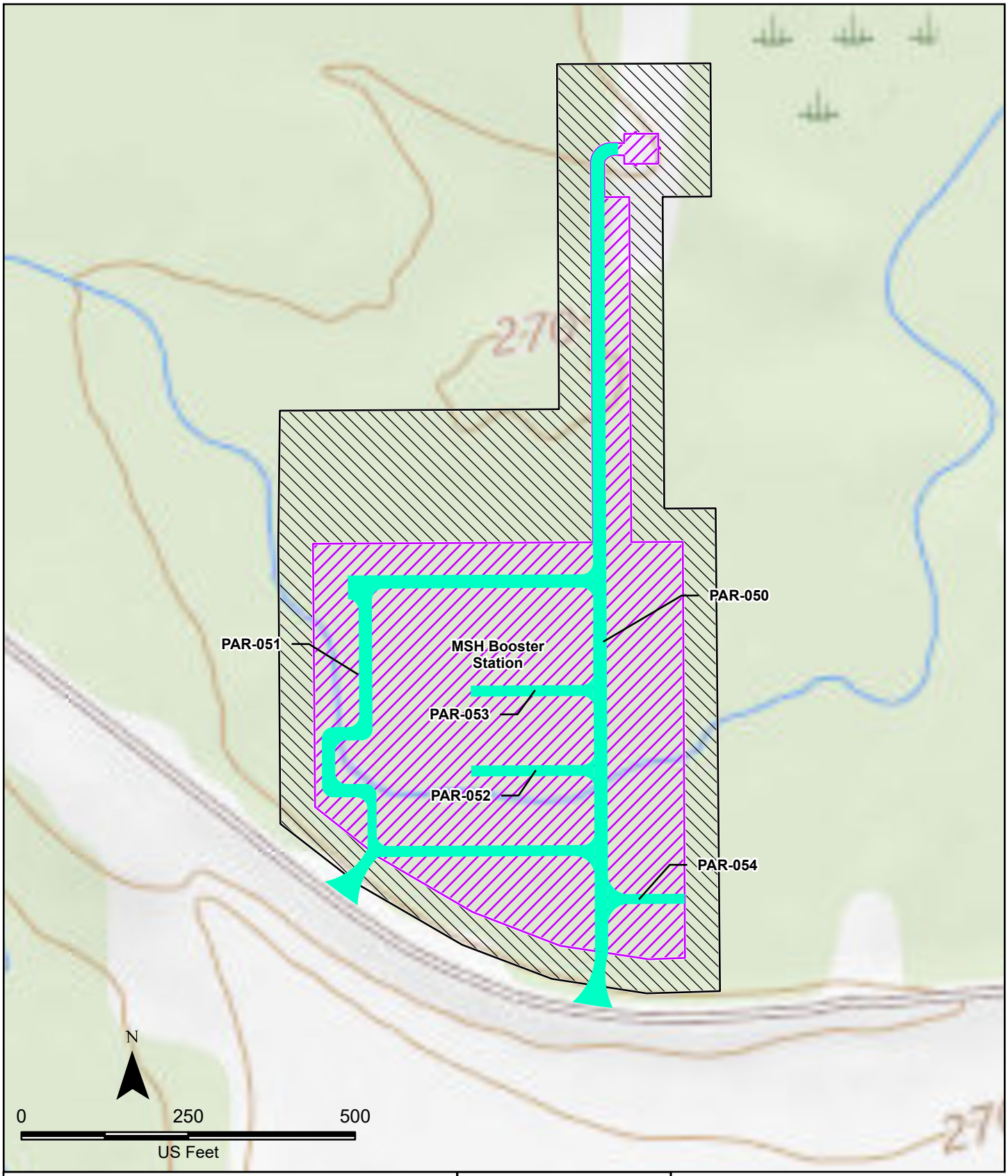
MISSISSIPPI HUB
EXPANSION PROJECT

COVINGTON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx




**Legend**

- New Proposed Road
- Proposed Permanent Workspace
- Temporary Workspace


ENTERGY MISSISSIPPI HUB

**FIGURE 1.1-13B: MSH BOOSTER STATION**

MISSISSIPPI HUB
EXPANSION PROJECT

COVINGTON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx


**Legend**

- Existing Authorized Road
- Existing Permanent Workspace


ENGTON
MISSISSIPPI HUB

**FIGURE 1.1-14B: TRANSCO METER STATION**

MISSISSIPPI HUB
EXPANSION PROJECT

COVINGTON COUNTY, MISSISSIPPI

POWER ENGINEERS

Date: 1/5/2024

Path: G:\Projects\243446_MS_Hub_Bond_Salt_Dome_Storage\Apps\Figure 1 Project Location - DVA.aprx

# APPENDIX B

## TABLE B-1: MINORITY POPULATIONS BY RACE AND ETHNICITY AND LOW-INCOME POPULATIONS IN THE PROJECT AREA

## FIGURE B-1: LOW-INCOME AND MINORITIES CENSUS BLOCK GROUP MAP

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **State/County/ Census Tract/ Block Group** | **Total Population** | **White Alone Not Hispanic (%)** | **African American (%)** | **Native American/ Alaska Native (%)** | **Asian (%)** | **Native Hawaiian & Other Pacific Islander (%)** | **Some Other Race (%)** | **Two or More Races (%)** | **Hispanic or Latino (%)** | **Total Minority [a/] (%)** | | **Below Poverty Level [b/] (%)** |
| **Mississippi** | **2,958,846** | **55.9** | **37.1** | **0.4** | **1.0** | **0.0** | **0.3** | **2.1** | **3.3** | **44.1** | | **19.1** |
| **MS Hub Booster Station - 5-kilometer radius** | | | | | | | | | | | | |
| **Covington County** | **18,323** | **59.5** | **34.9** | **0.0** | **0.1** | **0.2** | **0.1** | **2.7** | **2.5** | **40.5** | | **27.4** |
| Census Tract 9504.01, Block Group 2 | 1,073 | 92.0 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | | 17.3 |
| Census Tract 9504.01, Block Group 3 [c/] | 876 | 74.4 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 25.6 | | **34.7** |
| Census Tract 9504.02, Block Group 1 | 718 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 22.1 |
| **Jefferson Davis County** | **11,291** | **37.5** | **61.0** | **0.0** | **0.1** | **0.0** | **0.0** | **1.2** | **0.2** | **62.5** | | **23.2** |
| Census Tract 9502.01 Block Group 1 | 833 | 32.8 | 64.5 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | **67.2** | | 17.7 |
| Census Tract 9502.01 Block Group 3 | 658 | 28.6 | 71.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **71.4** | | 20.9 |
| **MS Hub Storage Facility – 20-kilometer radius** | | | | | | | | | | | | |
| **Covington County** | **18,323** | **59.5** | **34.9** | **0.0** | **0.1** | **0.2** | **0.1** | **2.7** | **2.5** | **40.5** | | **27.4** |
| Census Tract 9501, Block Group 1 | 990 | 66.3 | 26.4 | 0.0 | 0.5 | 0.0 | 0.0 | 3.8 | 3.0 | 33.7 | | 13.9 |

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **State/County/ Census Tract/ Block Group** | **Total Population** | **White Alone Not Hispanic (%)** | **African American (%)** | **Native American/ Alaska Native (%)** | **Asian (%)** | **Native Hawaiian & Other Pacific Islander (%)** | **Some Other Race (%)** | **Two or More Races (%)** | **Hispanic or Latino (%)** | **Total Minority [a/] (%)** | | **Below Poverty Level [b/] (%)** |
| Census Tract 9503, Block Group 1 | 1,670 | 58.0 | 36.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.7 | **42.0** | | **38.1** |
| Census Tract 9503, Block Group 2 | 1,326 | 24.1 | 74.6 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | **75.9** | | 22.2 |
| Census Tract 9503, Block Group 3 | 1,223 | 25.3 | 69.8 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 0.0 | **74.7** | | 4.1 |
| Census Tract 9503, Block Group 4 | 829 | 65.0 | 35.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.0 | | 0.0 |
| Census Tract 9504.01, Block Group 3 | 876 | 74.4 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 25.6 | | **34.7** |
| **Jefferson Davis County** | **11,291** | **37.5** | **61.0** | **0.0** | **0.1** | **0.0** | **0.0** | **1.2** | **0.2** | **62.5** | | **23.2** |
| Census Tract 9501.01, Block Group 1 | 960 | 21.4 | 78.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **78.6** | | 20.8 |
| Census Tract 9501.02, Block Group 1 | 895 | 33.6 | 65.3 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | **66.4** | | 7.4 |
| Census Tract 9501.02, Block Group 2 | 1,332 | 30.7 | 69.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **69.3** | | 14.6 |
| Census Tract 9501.02, Block Group 3 | 658 | 28.6 | 71.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **71.4** | | 20.9 |
| **Simpson County** | **25,889** | **61.2** | **35.0** | **0.2** | **0.6** | **0.0** | **0.0** | **1.0** | **2.0** | **38.8** | | **16.9** |

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| State/County/ Census Tract/ Block Group | Total Population | White Alone Not Hispanic (%) | African American (%) | Native American/ Alaska Native (%) | Asian (%) | Native Hawaiian & Other Pacific Islander (%) | Some Other Race (%) | Two or More Races (%) | Hispanic or Latino (%) | Total Minority [a/] (%) | | Below Poverty Level [b/] (%) |
| Census Tract 9501.01, Block Group 2 | 892 | 86 | 0.0 | 0.0 | 11.4 | 0.0 | 0.0 | 2.6 | 0.0 | 14 | | 4.3 |
| Census Tract 9501.02, Block Group 1 | 1,068 | 2.0 | 98.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **98.0** | | 14.8 |
| Census Tract 9501.02, Block Group 2 | 1,719 | 69.6 | 23.4 | 0.0 | 0.0 | 0.0 | 0.0 | 7.0 | 0.0 | 30.4 | | **28.0** |
| Census Tract 9501.02, Block Group 3 | 683 | 97.4 | 0.4 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | | 6.1 |
| Census Tract 9502, Block Group 1 | 1,026 | 59.8 | 38.9 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | **40.2** | | **21.4** |
| Census Tract 9502, Block Group 3 | 1,341 | 54.3 | 44.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.4 | **45.7** | | **30.2** |
| Census Tract 9503.01, Block Group 2 | 1,425 | 46.0 | 41.3 | 0.0 | 3.3 | 0.0 | 0.0 | 0.0 | 9.5 | **54.2** | | 7.6 |
| Census Tract 9504.01, Block Group 1 | 528 | 81.8 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.2 | | 9.2 |
| Census Tract 9504.01, Block Group 2 | 584 | 37.5 | 62.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **62.5** | | **17.6** |
| Census Tract 9504.01, Block Group 3 | 1,022 | 43.0 | 54.5 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 0.0 | **57.0** | | 2.3 |
| Census Tract 9504.02, Block Group 1 | 519 | 84.2 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 15.8 | | 8.8 |

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **State/County/ Census Tract/ Block Group** | **Total Population** | **White Alone Not Hispanic (%)** | **African American (%)** | **Native American/ Alaska Native (%)** | **Asian (%)** | **Native Hawaiian & Other Pacific Islander (%)** | **Some Other Race (%)** | **Two or More Races (%)** | **Hispanic or Latino (%)** | **Total Minority [a/] (%)** | | **Below Poverty Level [b/] (%)** |
| Census Tract 9504.02, Block Group 2 [c/] | 1,075 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | | 1.8 |
| Census Tract 9504.03, Block Group 1 | 342 | 90.1 | 9.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.9 | | 0.0 |
| Census Tract 9504.03, Block Group 2 | 1,414 | 80.1 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.9 | | **20.2** |
| Census Tract 9504.03, Block Group 3 | 1,929 | 76.9 | 23.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.1 | | **20.0** |
| Census Tract 9505, Block Group 1 | 1,893 | 55.5 | 26.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 17.6 | **44.5** | | **32.1** |
| Census Tract 9505, Block Group 2 | 765 | 48.5 | 45.7 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 4.8 | **51.5** | | **21.3** |
| Census Tract 9505, Block Group 3 | 766 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | | **21.7** |
| Census Tract 9505, Block Group 4 | 766 | 46.0 | 54.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **54.0** | | **32.5** |
| **Smith County** | **14,310** | **73.5** | **24.3** | **0.0** | **0.4** | **0.4** | **0.1** | **0.8** | **0.5** | **26.5** | | **20.5** |
| Census Tract 9502.01, Block Group 1 | 1,264 | 94.7 | 3.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 | 5.3 | | 6.6 |
| Census Tract 9502.01, Block Group 2 | 1,526 | 69.0 | 27.5 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | **31.0** | | **38.6** |

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **State/County/ Census Tract/ Block Group** | **Total Population** | **White Alone Not Hispanic (%)** | **African American (%)** | **Native American/ Alaska Native (%)** | **Asian (%)** | **Native Hawaiian & Other Pacific Islander (%)** | **Some Other Race (%)** | **Two or More Races (%)** | **Hispanic or Latino (%)** | **Total Minority [a/] (%)** | | **Below Poverty Level [b/] (%)** |
| Census Tract 9502.01, Block Group 3 | 552 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Census Tract 9502.02, Block Group 2 | 364 | 93.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 | 0.0 | 6.6 | | **42.1** |
| **Transco M&R Station – 1-mile radius** | | | | | | | | | | | | |
| **Jefferson Davis County** | **11,291** | **37.5** | **61.0** | **0.0** | **0.1** | **0.0** | **0.0** | **1.2** | **0.2** | **62.5** | | **23.2** |
| Census Tract 9502.01, Block Group 1 | 833 | 32.8 | 64.5 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | **67.2** | | 17.7 |
| **Covington County** | **18,323** | **59.5** | **34.9** | **0.0** | **0.1** | **0.2** | **0.1** | **2.7** | **2.5** | **40.5** | | **27.4** |
| Census Tract 9504.01, Block Group 3 [c/] | 876 | 74.4 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 25.6 | | **34.7** |
| Census Tract 9504.02, Block Group 1 | 718 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 22.1 |
| **SESH M&R Station – 1-mile radius** | | | | | | | | | | | | |
| **Covington County** | **18,323** | **59.5** | **34.9** | **0.0** | **0.1** | **0.2** | **0.1** | **2.7** | **2.5** | **40.5** | | **27.4** |
| Census Tract 9503, Block Group 4 | 829 | 65.0 | 35.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.0 | | 0.0 |
| Census Tract 9504.01, Block Group 3 [c/] | 876 | 74.4 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 25.6 | | **34.7** |

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **State/County/ Census Tract/ Block Group** | **Total Population** | **White Alone Not Hispanic (%)** | **African American (%)** | **Native American/ Alaska Native (%)** | **Asian (%)** | **Native Hawaiian & Other Pacific Islander (%)** | **Some Other Race (%)** | **Two or More Races (%)** | **Hispanic or Latino (%)** | **Total Minority [a/] (%)** | | **Below Poverty Level [b/] (%)** |
| **Sonat Meter Station – 1-mile radius** | | | | | | | | | | | | |
| **Simpson County** | **25,889** | **61.2** | **35.0** | **0.2** | **0.6** | **0.0** | **0.0** | **1.0** | **2.0** | **38.8** | | **16.9** |
| Census Tract 9504.02, Block Group 2 [c/] | 1,075 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | | 1.8 |
| Census Tract 9504.03, Block Group 1 | 342 | 90.1 | 9.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.9 | | 0.0 |
| **SWD Well Nos. 6 and 8 – 1-mile radius** | | | | | | | | | | | | |
| **Jefferson Davis County** | **11,291** | **37.5** | **61.0** | **0.0** | **0.1** | **0.0** | **0.0** | **1.2** | **0.2** | **62.5** | | **23.2** |
| Census Tract 9501.02, Block Group 1 [c/] | 895 | 33.6 | 65.3 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | **66.4** | | 7.4 |
| **Covington County** | **18,323** | **59.5** | **34.9** | **0.0** | **0.1** | **0.2** | **0.1** | **2.7** | **2.5** | **40.5** | | **27.4** |
| Census Tract 9503, Block Group 3 | 1,223 | 25.3 | 69.8 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 0.0 | **74.7** | | 4.1 |
| **Simpson County** | **25,889** | **61.2** | **35.0** | **0.2** | **0.6** | **0.0** | **0.0** | **1.0** | **2.0** | **38.8** | | **16.9** |
| Census Tract 9504.02, Block Group 2 | 1,075 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | | 1.8 |

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **State/County/ Census Tract/ Block Group** | **Total Population** | **White Alone Not Hispanic (%)** | **African American (%)** | **Native American/ Alaska Native (%)** | **Asian (%)** | **Native Hawaiian & Other Pacific Islander (%)** | **Some Other Race (%)** | **Two or More Races (%)** | **Hispanic or Latino (%)** | **Total Minority [a/] (%)** | | **Below Poverty Level [b/] (%)** |
| **RW Well Nos. 6, 7, 8, and 9, and Staging Areas – 1-mile radius** | | | | | | | | | | | | |
| **Jefferson Davis County** | **11,291** | **37.5** | **61.0** | **0.0** | **0.1** | **0.0** | **0.0** | **1.2** | **0.2** | **62.5** | | **23.2** |
| Census Tract 9501.02, Block Group 1 | 895 | 33.6 | 65.3 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | **66.4** | | 7.4 |
| **Covington County** | **18,323** | **59.5** | **34.9** | **0.0** | **0.1** | **0.2** | **0.1** | **2.7** | **2.5** | **40.5** | | **27.4** |
| Census Tract 9503, Block Group 3 | 1,223 | 25.3 | 69.8 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 0.0 | **74.7** | | 4.1 |
| **Simpson County** | **25,889** | **61.2** | **35.0** | **0.2** | **0.6** | **0.0** | **0.0** | **1.0** | **2.0** | **38.8** | | **16.9** |
| Census Tract 9504.02, Block Group 2 [c/] | 1,075 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | | 1.8 |
| **SWD Well Nos. 5, 7, and 9 – 1-mile radius** | | | | | | | | | | | | |
| **Simpson County** | **25,889** | **61.2** | **35.0** | **0.2** | **0.6** | **0.0** | **0.0** | **1.0** | **2.0** | **38.8** | | **16.9** |
| Census Tract 9504.02, Block Group 2 [c/] | 1,075 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | | 1.8 |

**Table B-1**
**Minority Populations by Race and Ethnicity and Low-Income Populations in the Project Area**

| | RACE AND ETHNICITY COLUMNS | | | | | | | | | | | LOW-INCOME COLUMN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **State/County/ Census Tract/ Block Group** | **Total Population** | **White Alone Not Hispanic (%)** | **African American (%)** | **Native American/ Alaska Native (%)** | **Asian (%)** | **Native Hawaiian & Other Pacific Islander (%)** | **Some Other Race (%)** | **Two or More Races (%)** | **Hispanic or Latino (%)** | **Total Minority [a/] (%)** | | **Below Poverty Level [b/] (%)** |
| **Contractor Yards** | | | | | | | | | | | | |
| **Simpson County** | **25,889** | **61.2** | **35.0** | **0.2** | **0.6** | **0.0** | **0.0** | **1.0** | **2.0** | **38.8** | | **16.9** |
| Census Tract 9504.02, Block Group 2 [c/] | 1,075 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | | 1.8 |

Source: American Community Survey, 2022, File No. B17017 and File No. B03002.
a/ "Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.
b/ Low-income or minority populations exceeding the established thresholds are indicated in red, bold, type and blue shading.
c/ Facility is located this block group.
Due to rounding differences in the dataset, the totals may not reflect the sum of the addends.

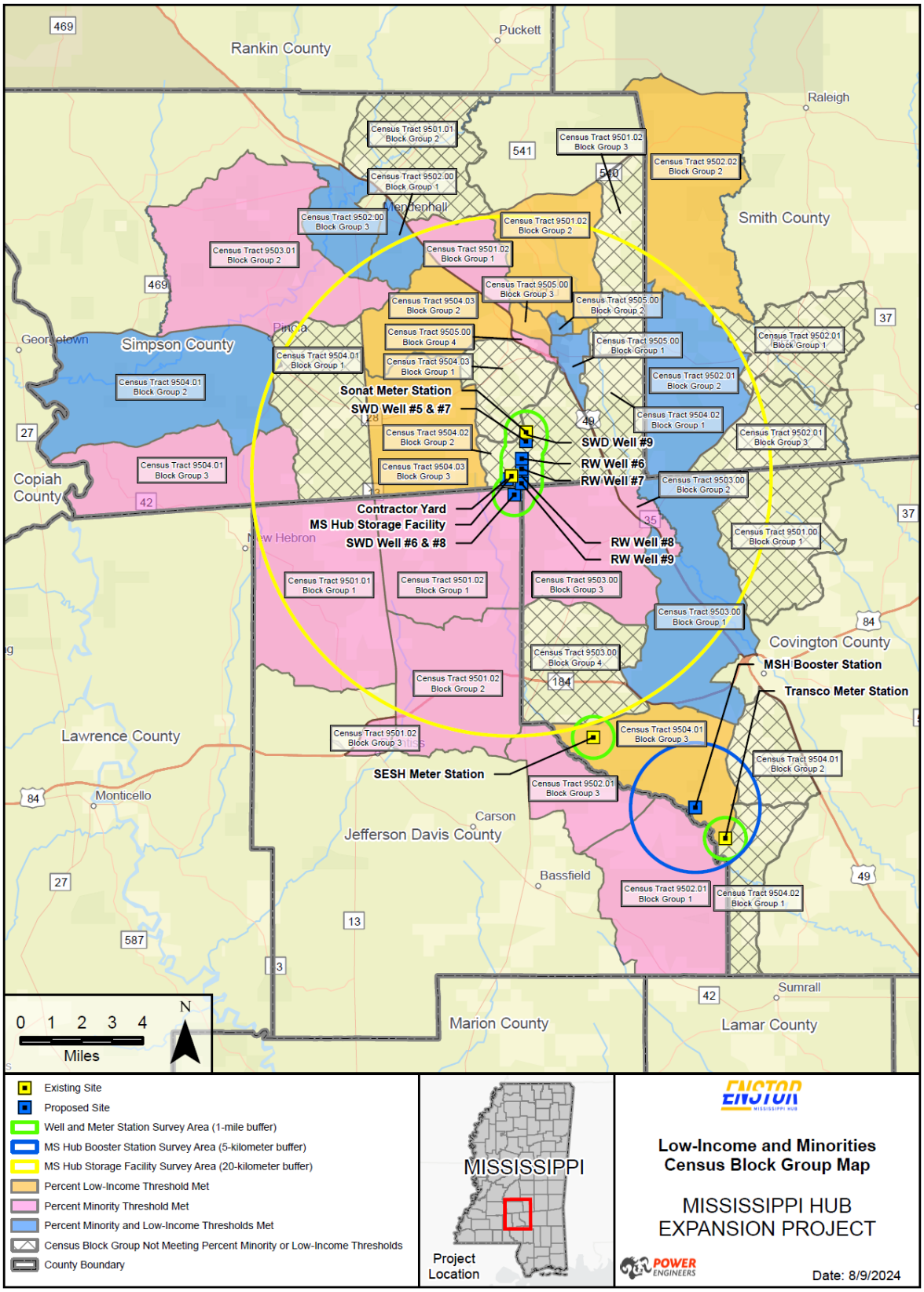



**Figure B-1: Low-Income and Minorities Census Block Group Map**

# APPENDIX C

# PRESENT AND REASONABLY FORESEEABLE ACTIONS CONSIDERED FOR CUMULATIVE IMPACTS WITHIN THE GEOGRAPHIC SCOPE OF THE PROJECT

| Table C-1: Present and Reasonably Foreseeable Actions Considered for Cumulative Impacts within the Geographic Scope of the Project | | | | | |
|---|---|---|---|---|---|
| **Project Sponsor (status as of application filing)** | **Distance from MS Hub Capacity Expansion Project Component** | **Construction Project Description** | **County/ HUC-12 watershed** | **Expected Construction Timeframe** | **Potential Resources Affected** |
| Southern Pine Electric Cooperative (FERC non-jurisdictional Project facility) | 0.0 mile (adjacent) | Electric power distribution lines from proposed contractor yard; RW Wells Nos. 6, 7, 8, and 9, SWD Well No. 9; MS Hub Booster Station | Skiffer Creek-Bouie Creek, Goodwater Creek-Okatoma Creek, Town Creek-Terrible Creek | Concurrent with Project construction | air quality (construction), noise (construction), surface water, wetlands, vegetation, wildlife, geology, soils, socioeconomics, environmental justice |
| Mississippi Department of Transport-ation (MDOT) (active) | 9.3 miles from SESH Meter Station | Bridge Replacement at State Route 184 | Jefferson Davis/ Jaybird Creek-White Sand Creek | 2024 | surface water, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 7.7 miles from MS Hub Booster Station | Overlay at U.S. Route 84 west bound from Jones city limits to Collins, MS | Covington/ Blakely Creek-Okatoma Creek, Rogers Creek-Okatoma Creek, Oakey Woods Creek-Station Creek, Upper Oakey Woods Creek, and Lyon Creek-Leaf River | 2026 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 7.5 miles from MS Hub Booster Station | Mill and Overlay at U.S. Route 49 from Forrest County line to Rich Kendrick Drive | Covington/ Tick Creek-Bouie Creek | 2026 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 4.8 miles from RW No. 8 | Bridge repair on State Route 149 over unnamed stream | Shelby Creek-Okatoma Creek | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 16.3 miles from MS Hub Booster Station | Bank Stabilization at Mississippi Highway 37 over Oakohay Creek - Permanent Repair (Bridge No. 4.3) | Covington/ Hatchapaloo Creek-Oakohay Creek | 2025 | surface water, wetlands, vegetation, wildlife, socioeconomics |

| Table C-1: Present and Reasonably Foreseeable Actions Considered for Cumulative Impacts within the Geographic Scope of the Project | | | | | |
|---|---|---|---|---|---|
| MDOT (planned) | 5 miles from Transco M&R Station | Mill and Overlay at U.S. Route 49 from Richard Kendrick Drive to Seminary, MS | Covington/ Big Swamp Creek-Okatoma Creek | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (active) | 3.3 miles from SONAT M&R Station | Overlay 10 miles of U.S. Route 49 from Magee to Mendenhall, MS and intersection improvements on U.S. Route 49 from Goodwater Road to First Avenue | Simpson/ Goodwater Creek-Okatoma Creek | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 11.7 miles from MS Storage Facility | Bridge Replacement on Mississippi Highway 28 over Tanyard Creek [Bridge No. 77.6] | Simpson/ Dabbs Creek-Strong River | 2026 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 15.1 miles from SONAT M&R Station | Overlay on Mississippi Highway 28 from Copiah County line to Strong River | Simpson/ Limestone Creek-Pearl River and Dabbs Creek-Strong River | 2026 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 7.6 miles from SONAT M&R Station | Seal and Overlay on MS Hwy 28 from Strong River to Mississippi Highway 13 | Simpson/ Dabbs Creek-Strong River, West Prong Silver Creek, and East Prong Silver Creek | 2025 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (active) | 2.9 miles from SONAT M&R Station | Mill and overlay at U.S. Route 49 from Covington County line north to Magee, MS | Simpson/ Goodwater Creek-Okatoma Creek and Shelby Creek-Okatoma Creek | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |

| Table C-1: Present and Reasonably Foreseeable Actions Considered for Cumulative Impacts within the Geographic Scope of the Project | | | | | |
|---|---|---|---|---|---|
| MDOT (planned) | 11.1 miles from SONAT M&R Station | Median Installation on U.S. Route 49 from the crossover past U.S. Route 49 at MS Hwy 13 interchange 1,000 feet past U.S. Route 49 at MS Hwy 149 intersection | Simpson/ Sellers Creek and Crooked Creek-Strong River | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 15.1 miles from SONAT M&R Station | Bridge Replacement on Mississippi Highway 28 between Copiah County line and Pinola, MS [Bridge Nos. 72.7 & 73.6] | Simpson/ Banks Creek-Strong River | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| MDOT (planned) | 13 miles from MS Hub Storage Facility | Thin Lift on State Route 478 from Shivers Road to Mississippi Highway 43 | Simpson/ Vaughns Creek-Pearl River and West Prong Silver Creek | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| City of Magee (completed) | 4 miles from SONAT M&R Station | new restaurant building | Simpson/ Goodwater Creek-Okatoma Creek | Not known | surface water, wetlands, vegetation, wildlife, socioeconomics |
| City of Magee (planned) | 4.9 miles from SONAT M&R Station | treatment center building expansion | Simpson/ Dry Creek-Okatoma Creek | 2024 | surface water, wetlands, vegetation, wildlife, socioeconomics |
| City of Magee (completed) | 0.3 mile from MS Hub Storage Facility | HVAC business building expansion | Simpson/ Skiffer Creek-Bouie Creek | Not known | surface water, wetlands, vegetation, wildlife, socioeconomics |
| City of Magee (active) | 4.3 miles from SONAT M&R Station | apartment renovations | Simpson/ Goodwater Creek-Okatoma Creek | Not known | surface water, wetlands, vegetation, wildlife, socioeconomics |
| Jefferson Davis County (completed) | 7.7 miles from MS Hub Booster Station | athletic complex repairs | Jefferson Davis/ Monroe Creek-Black Creek | Not known | surface water, wetlands, vegetation, wildlife, socioeconomics |

# APPENDIX D

## AERIAL MAPS OF NOISE-SENSITIVE AREAS IN PROXIMITY TO PROJECT

**Figure A-1: Aerial Image Showing Measurement Locations and Noise Sensitive Areas – MS Hub Storage Facility**

**Figure A-2: Aerial Image Showing Measurement Locations and Noise Sensitive Areas – Booster Station**

**Figure A-3: Aerial Image Showing Measurement Locations and Noise Sensitive Areas – SONAT M&R Station**

**Figure A-4: Aerial Image Showing Measurement Locations and Noise Sensitive Areas – SESH M&R Station**

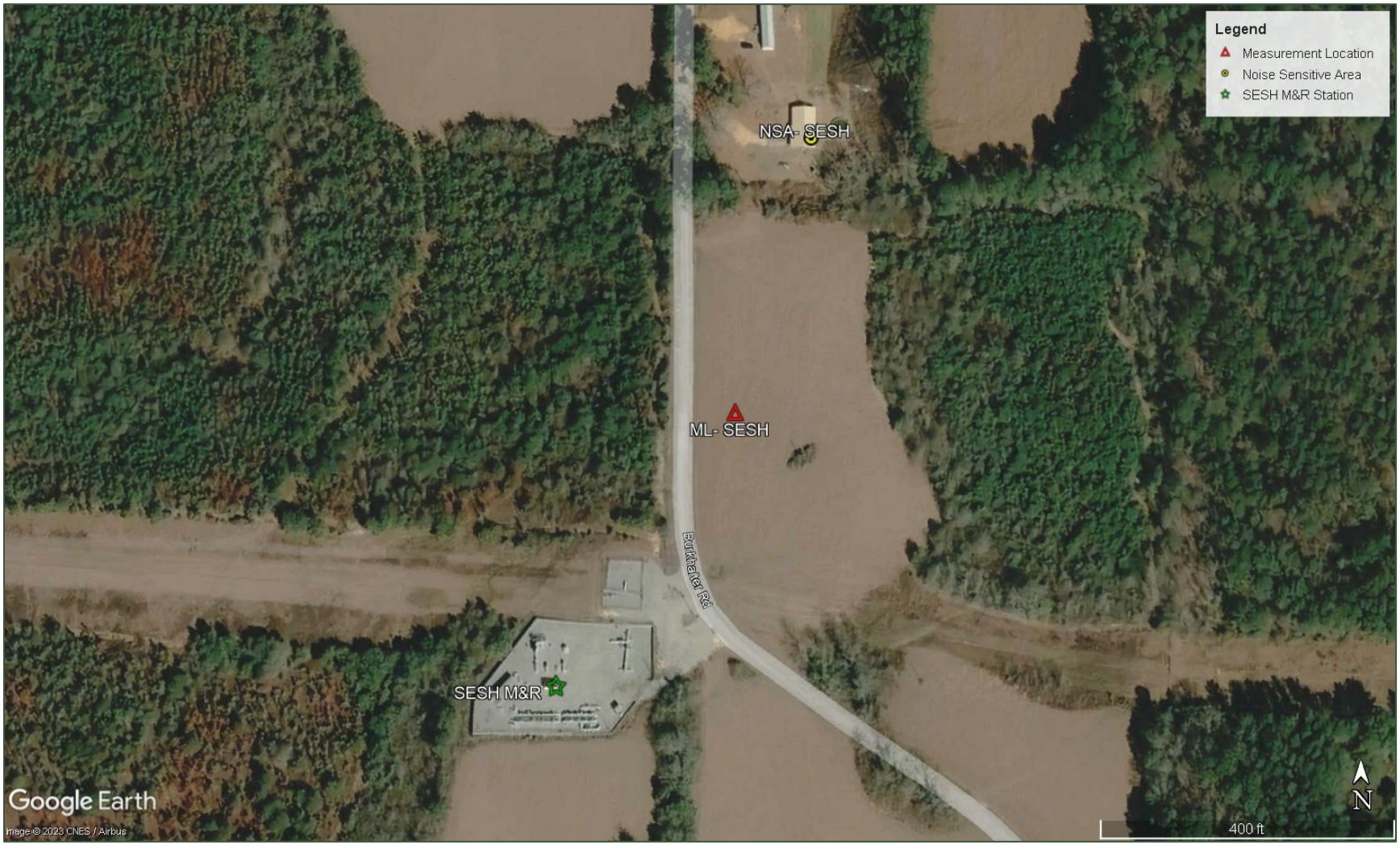


**Figure A-5: Aerial Image Showing Measurement Locations and Noise Sensitive Areas – Transco M&R Station**

**Figure A-6: Aerial Image Showing Drill Sites and Noise Sensitive Areas – 1**

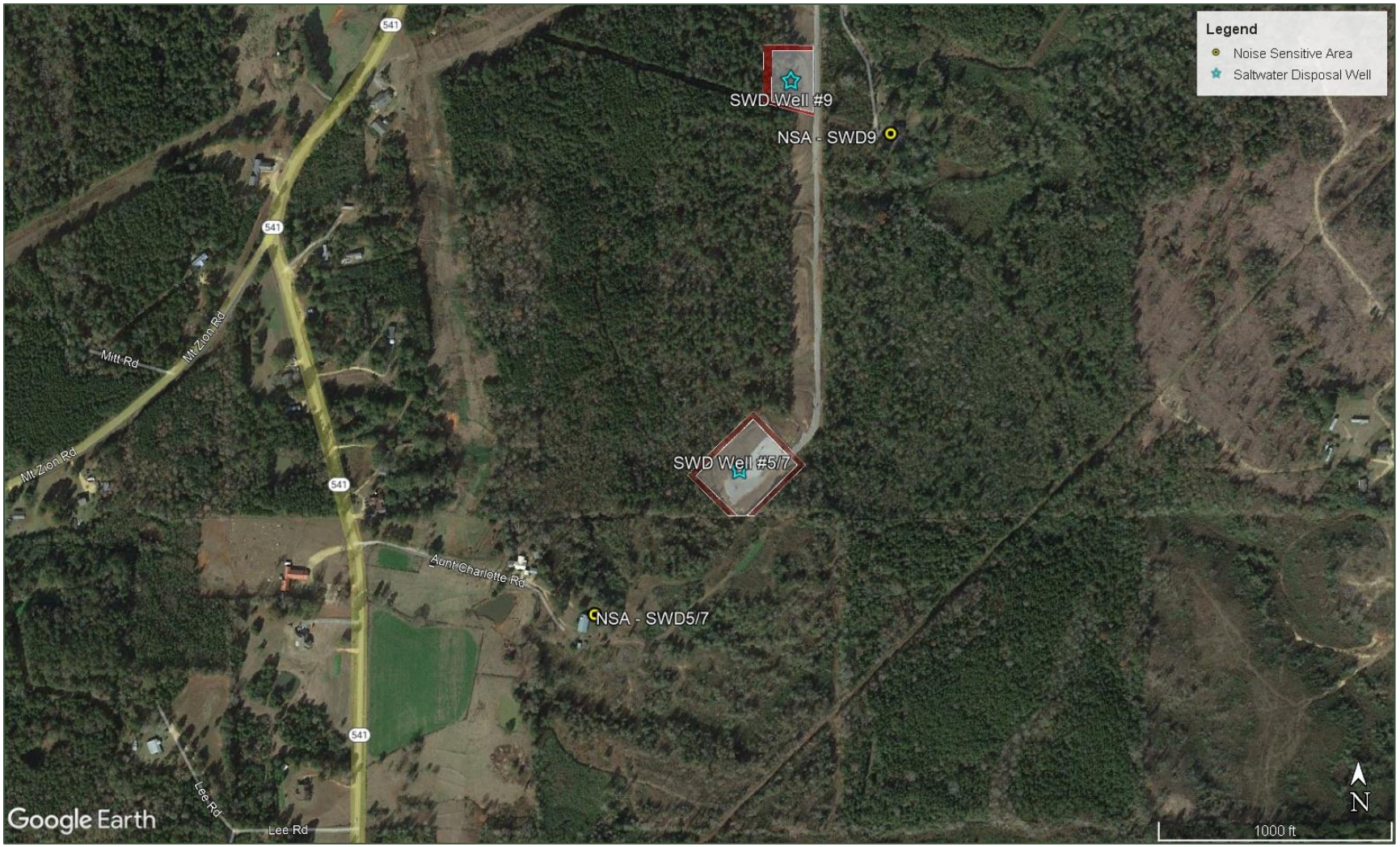


**Figure A-7: Aerial Image Showing Drill Sites and Noise Sensitive Areas – 2**

**Figure A-8: Aerial Image Showing Drill Sites and Noise Sensitive Areas – 3**

**Figure A-9: Aerial Image Showing Drill Sites and Noise Sensitive Areas – 4**

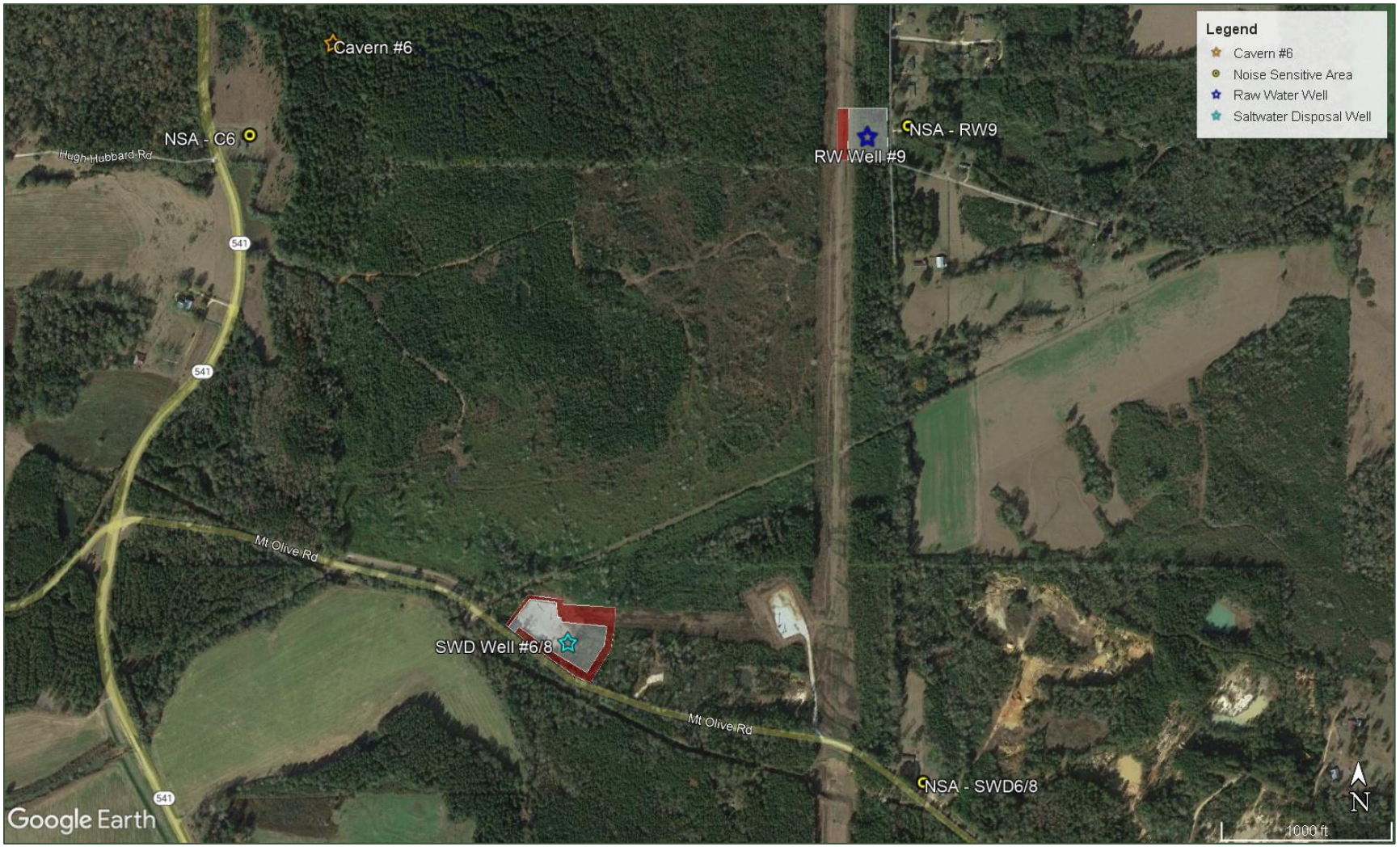
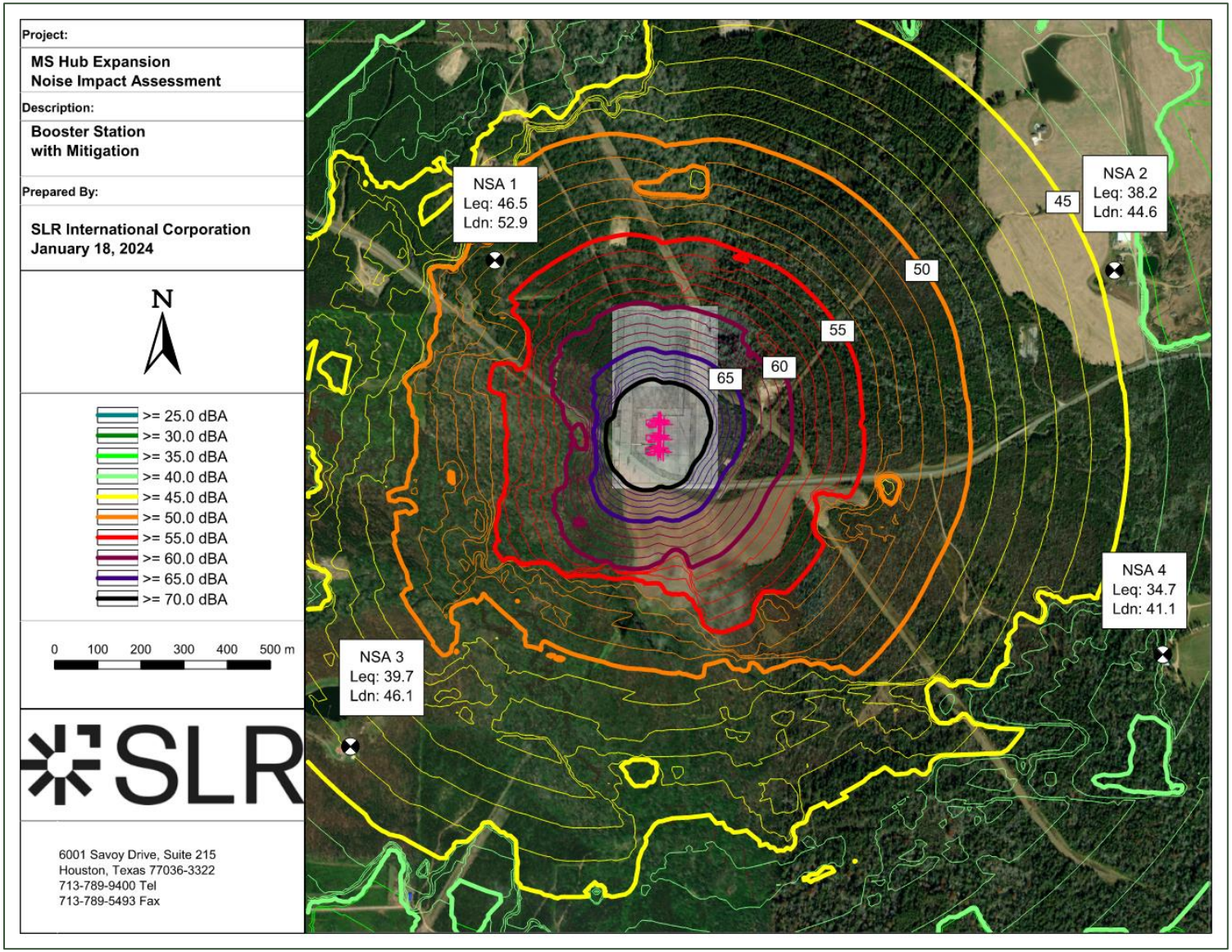


**Figure A-10: Noise Contour Plot – Booster Station - Normal Operation with Noise Control Treatments - dBA $L_{dn}$**



# APPENDIX E

# CLIMATE CHANGE

Climate change is the variation in the Earth's climate (including temperature, precipitation, humidity, wind, and other meteorological variables) over time. Climate change is driven by accumulation of GHGs in the atmosphere due to the increased consumption of fossil fuels (e.g., coal, petroleum, and natural gas) since the early beginnings of the industrial age and accelerating in the mid- to late-20th century.[1] The GHGs produced by fossil-fuel combustion are $CO_2$, methane, and nitrous oxide.

In 2017 and 2018, the U.S. Global Change Research Program (USGCRP)[2] issued its *Climate Science Special Report: Fourth National Climate Assessment*, Volumes I and II.[3] This report and the recently released report by the Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis*, state that climate change has resulted in a wide range of impacts across every region of the country and the globe. Those impacts extend beyond atmospheric climate change alone and include changes to water resources, agriculture, ecosystems, human health, and ocean systems.[4] According to the Fourth Assessment Report, the United States and the world are warming; global sea level is rising and oceans are acidifying; and certain weather events are becoming more frequent and more severe.[5] These impacts have accelerated throughout the end of the 20th and into the 21st century.[6]

GHG emissions do not result in proportional local and immediate impacts; it is the combined concentration in the atmosphere that affects the global climate. These are fundamentally global impacts that feed back to local and regional climate change impacts. Thus, the geographic scope for cumulative analysis of GHG emissions is global rather than local or regional. For example, a project 1 mile away emitting 1 ton of GHGs would contribute to climate change in a similar manner as a project 2,000 miles distant also emitting 1 ton of GHGs.

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[1] Intergovernmental Panel on Climate Change, United Nations, *Summary for Policymakers* of Climate Change 2021: The Physical Science Basis. (Valerie Masson-Delmotte et al., eds.) (2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf (IPCC Report) at SPM-5. Other forces contribute to climate change, such as agriculture, forest clearing, and other anthropogenically driven sources.

[2] The U.S. Global Change Research Program is the leading U.S. scientific body on climate change. It comprises representatives from 13 federal departments and agencies and issues reports every 4 years that describe the state of the science relating to climate change and the effects of climate change on different regions of the United States and on various societal and environmental sectors, such as water resources, agriculture, energy use, and human health.

[3] U.S. Global Change Research Program, Climate Science Special Report, Fourth National Climate Assessment | Volume I (Donald J. Wuebbles et al. eds) (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf (USGCRP Report Volume I); U.S. Global Change Research Program, Fourth National Climate Assessment, Volume II Impacts, Risks, And Adaptation In The United States (David Reidmiller et al. eds.) (2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (USGCRP Report Volume II).

[4] IPCC Report at SPM-5 to SPM-10.

[5] USGCRP Report Volume II at 73-75.

[6] *See, e.g.,* USGCRP Report Volume II at 99 (describing accelerating flooding rates in Atlantic and Gulf Coast cities).

Climate change is a global phenomenon; however, for this analysis, we will focus on the existing and potential cumulative climate change impacts in the Project areas. The USGCRP's Fourth Assessment Report notes that the following observations of environmental impacts are attributed to climate change in the Southeast region (which includes the Project area in Mississippi):[7]

- the near decade of 2010 through 2017 has been warmer than any previous decade since 1920 for average daily maximum and average daily minimum temperatures;

- since 1960, there have been lower numbers of days above 95 °F compared to the pre-1960 period; however, during the 2010s the number of nights above 75 °F has been nearly double the average over the years 1901 through 1960;

- in the 2010s, the length of the freeze-free season was 1.5 weeks longer on average compared to any other historical period on record;

- number of days with three or more inches of rain has been historically high over the past 25 years and the 1990s, 2000s, and 2010s rank first, third and second, respectively, in the number of events; and

- summers have been either increasingly dry or extremely wet, depending on location.

The USGCRP's Fourth Assessment Report notes the following projections of climate change impacts in the Southeast region with a high or very high level of confidence:[8]

- climate models project nighttime temperatures above 75 °F and daytime maximum temperatures above 95 °F as the summer norm; nights above 80 °F and days above 100 °F, which are now relatively rare, would become common;

- lowland coastal areas are expected to receive less rainfall on average, but will experience more frequent intense rainfall events followed by longer drought periods;

- expected sea level rises may cause inundation in certain low-lying areas along the Gulf of Mexico coast;

- drought and sea level rise will create stressful conditions for coastal trees that are not adapted to higher salinity levels;

- other coastal species may also be stressed by sea level rise and warmer temperatures, prompting migration out of the area; and

[7] USGCRP Report Volume I and II.

[8] USGCRP Report Volume II.

- tropical storms and hurricanes may become more intense.

It should be noted that while the impacts described above taken individually may be manageable for certain communities, the impacts of compound events (such as simultaneous heat and drought, wildfires associated with hot and dry conditions, or flooding associated with high precipitation on top of saturated soils) can be greater than the sum of the parts.[9]

The GHG emissions associated with construction and operation of the Project were identified and quantified in sections B.7.4 of the EA. Emissions of GHGs are typically expressed in terms of $CO_2e$.[10] Construction of the Project may result in emissions of about 84,269 tons (76,448 metric tons) of $CO_2e$.[11] Operation of proposed Project equipment would result in emissions of approximately 115,077 tons per year (104,396 metric tons per year) of $CO_2e$.[12] There are no downstream GHG emissions associated with the Project given its function to provide gas service to contracting counterparties through the availability of storage service rather than providing new sources of natural gas to the market. There are no increases in system capacity associated with the Project.

Construction and operation of the Project would increase the atmospheric concentration of GHGs in combination with past, current, and future emissions from all other sources globally and contribute incrementally to future climate change impacts. To assess impacts on climate change associated with the Project, Commission staff considered whether it could identify discrete physical impacts resulting from the Project's GHG emissions or compare the Project's GHG emissions to established targets designed to combat climate change.

To date, Commission staff have not identified a methodology to attribute discrete, quantifiable, physical effects on the environment resulting from the Project's incremental contribution to GHGs. Without the ability to determine discrete resource impacts, Commission staff are unable to assess the Project's contribution to climate change through any objective analysis of physical impact attributable to the Project. Additionally, Commission staff have not been able to find an established threshold for determining the Project's significance when compared to established GHG reduction targets at the state or federal level. Ultimately, this EA

[9] USGCRP Report Volume II.

[10] GHG gases are converted to $CO_2e$ by means of the GWP; the measure of a particular GHG's ability to absorb solar radiation; and its residence time within the atmosphere, consistent with the USEPA's established method for reporting GHG emissions for air permitting requirements that allows a consistent comparison with federal regulatory requirements.

[11] See table 9. Figures presented here are converted from U.S. tons to metric tons. A metric ton is about equal to 1.1 ton.

[12] See tables 10 and 11. Figures presented here are converted from U.S. tons to metric tons. A metric ton is about equal to 1.1 ton.

is not characterizing the Project's GHG emissions as significant or insignificant.[13] However, as we have done in prior NEPA analyses, we disclose the Project's GHG emissions in comparison to national and state GHG emission inventories.

In order to provide context of the Project emissions on a national level, we compare the Project's GHG emissions to the total GHG emissions of the United States as a whole. At a national level, 5,489 million metric tons of $CO_2e$ were emitted in 2022 (inclusive of $CO_2e$ sources and sinks).[14] Construction emissions from the Project could potentially increase $CO_2e$ emissions based on the national 2022 levels by 0.0014 percent; in subsequent years, the operational emissions from the Project could potentially increase emissions nationally by 0.0019 percent.

In order to provide context of the Project emissions on a state level, we compare the Project's GHG emissions to the Mississippi GHG inventories. At the state level, Mississippi energy related $CO_2$ emissions in 2021 were 63.1 million metric tons.[15] Project construction – cumulatively over the Project's planned 6-year construction period – could potentially increase $CO_2e$ emissions based on the Mississippi 2021 levels by 0.12 percent; in subsequent years, the operational emissions from the Project could potentially increase emissions by 0.17 percent.

When states have GHG emissions reduction targets, we compare the project's operational and downstream GHG emissions to those state goals to provide additional context. Mississippi has not set statewide goals for GHG emissions reduction targets.[16]

Below, we include a disclosure of the social cost of GHGs (also referred to as the "social cost of carbon" [SCC]). Calculating the social cost of GHGs does not enable the Commission to determine whether the reasonably foreseeable GHG emissions associated with the project are significant or not significant in terms of their impact on global climate change.[17] In addition,

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[13] *See e.g.*, *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 63 (2023) ("…there currently are no accepted tools or methods for the Commission to use to determine significance, therefore the Commission is not herein characterizing these emissions as significant or insignificant.)

[14] EPA (2024) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022. U.S. Environmental Protection Agency, EPA 430-R-24-004. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-andsinks-1990-2022.

[15] U.S. Energy Information Administration (2024). "State carbon dioxide emissions from fossil fuels tables." https://www.eia.gov/environment/emissions/state/

[16] We reviewed the U.S. State Greenhouse Emission Targets site for individual state requirements at: https://www.c2es.org/document/greenhouse-gas-emissions-targets/.

[17] *See Ala. Mun. Distribs. Grp. v. FERC, 100 F.4th 207, 214 (D.C. Cir. 2024); Cntr. for Bio. Diversity v. FERC 67 F.4th 1176, 1184 (D.C. Cir. 2023)*; *Del. Riverkeeper v. FERC*, 45 F.th 104, 111 (D.C. Cir. 2022); and *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 61 (2023). The Social Cost of GHGs tool merely converts GHG emissions estimates into a range of dollar-denominated figures; it does not, in itself, provide a mechanism or standard for judging "significance."

there are no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria.[18]

As both EPA and CEQ participate in the IWG, Commission staff used the methods and values contained in the IWG's current draft guidance but note that different values will result from the use of other methods.[19] Accordingly, Commission staff calculated the SC-GHG for $CO_2$, nitrous oxide, and methane. For the calculation, staff assumed discount rates of 5 percent, 3 percent, and 2.5 percent.[20] Commission staff assumed that construction emissions would take place between years 2026 through 2031, the Project would be placed into service in 2031, and the Project's emissions would be at a constant rate throughout a 15-year period, based on the primary term of the precedent agreements for the Project. Noting these assumptions, the emissions from construction and operation of this Project are calculated to result in a total social cost of GHGs equal to $21,200,000, $78,700,000, and $118,000,000, respectively (all in 2020 dollars).[21] Using the 95th percentile of the social cost of GHGs using the 3 percent discount rate,[22] the total social cost of GHGs from the Project is calculated to be $239,000,000 (in 2020 dollars).

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[18] *Tenn. Gas Pipeline Co., L.L.C.*, 181 FERC ¶ 61,051 at P 37; *see also Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, *order on reh'g*, 163 FERC ¶ 61,197, at PP 275-297 (2018), *aff'd*, *Appalachian Voices v. FERC*, No. 17-1271, 2019 WL 847199, at 2 (D.C. Cir. Feb. 19, 2019) (unpublished) ("[The Commission] gave several reasons why it believed petitioners' preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act. That is all that is required for NEPA purposes."); *EarthReports*, 828 F.3d 949, 956 (D.C. Cir. 2016) (accepting the Commission's explanation why the social cost of carbon tool would not be appropriate or informative for project-specific review, including because "there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes"); *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205, at P 75 (2022); *See, e.g., LA Storage, LLC*, 182 FERC ¶ 61,026, at P 14 (2023); *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at P 91 (2022); and *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 61 (2023).

[19] *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990*, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, February 2021 (IWG Interim Estimates Technical Support Document).

[20] IWG Interim Estimates Technical Support Document at 24. To quantify the potential damages associated with estimated emissions, the IWG methodology applies consumption discount rates to estimated emissions costs. The IWG's discount rates are a function of the rate of economic growth where higher growth scenarios lead to higher discount rates. For example, IWG's method includes the 2.5 percent discount rate to address the concern that interest rates are highly uncertain over time; the 3 percent value to be consistent with the U.S. Office of Management and Budget circular A-4 (2003) and the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002); and the 5 percent discount rate to represent the possibility that climate-related damages may be positively correlated with market returns. Thus, higher discount rates further discount future impacts based on estimated economic growth. Values based on lower discount rates are consistent with studies of discounting approaches relevant for intergenerational analysis. Id. at 18-19, 23-24.

[21] The IWG draft guidance identifies costs in 2020 dollars. Id. at 5 (Table ES-1).

[22] This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of $CO_2$] distribution." Id. at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

The EPA recommended that the EA disclose the SC-GHG use the "best available estimates" of the social cost of GHGs, and provided a weblink to its "Workbook for Applying SC-GHG Estimates v.1.0.1." EPA also recommended that the estimated SC-GHG for the project be disclosed for "carbon dioxide, methane, and nitrous oxide separately and individually." Above, we present our estimates of SC-GHG for the Project for $CO_2$, methane, and $N_2O$. Generally, FERC staff follows guidance from the CEQ on how federal agencies consider the effects of GHG emissions and climate change under NEPA. FERC's SC-GHG calculation methodology follows CEQ guidance that adopts Interagency Working Group's February, 2021 Technical Support Document on Social Cost of Greenhouse Gases. In December 2023, the EPA finalized a rulemaking for a new set of SC-GHG estimates; these estimates have not been adopted by the CEQ. However, on May 1, 2024, CEQ issued the final rule (2024 Final Rule) for Phase II of the NEPA regulations revisions, in which CEQ clarified that the rule does not require federal agencies to use the SC-GHG tool. The 2024 Final Rule applies to projects beginning environmental review on or after July 1, 2024 and provides agencies more flexibility with the choice of SC-GHG methodology as deemed appropriate, as long as the agency clearly explains the technique used, defines the scope, and discloses the assumptions and limitations in applying the tool.

# APPENDIX F

# PROJECT CONSTRUCTION SCHEDULE (GANTT CHART)

**Project #250: MSH Expansion**

## Summary Project Schedule