



National Park Service
U.S. Department of the Interior

Big Thicket National Preserve
Texas

FINDING OF NO SIGNIFICANT IMPACT
Unit Petroleum Company Proposal to Construct and Operate an 8-
inch Gathering Line across the Menard Creek Corridor Unit

Recommended:




Wayne Prokopetz
Superintendent, Big Thicket National Preserve



Date

Approved:



Sue E. Masica
Regional Director, Intermountain Region, National Park Service



Date

INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), and the National Park Service (NPS) regulations governing the exercise of nonfederal oil and gas rights at 36 CFR Part 9, Subpart B ("9B Regulations"), the NPS prepared an Environmental Assessment (EA) to examine alternative actions and environmental impacts associated with the proposed project to allow Unit Petroleum Company (UPC) to construct and operate an 8-inch gathering line across the Menard Creek Corridor Unit (MCCU or Unit), Big Thicket National Preserve (Preserve), to connect the existing, shut-in, UPC Holly Grove #1 (HG1) gas well located west of MCCU to the existing UPC Segno Gathering System (SGS) located east of MCCU at the existing UPC Allar #1 (A1) gas well, as well as routine maintenance during operation and the one-time decommissioning of the bored section. UPC holds rights to nonfederally-owned oil and gas beneath the Unit.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

SELECTED ALTERNATIVE AND RATIONALE FOR THE DECISION

Based on the analysis presented in the EA, NPS selected Alternative B (the NPS preferred alternative), to grant UPC an Operations Permit pursuant to 36 C.F.R. § 9.104 to construct and operate an 8-inch gathering line across the MCCU, to connect the existing, shut-in, UPC Holly Grove #1 (HG1) gas well located west of MCCU to the existing UPC Segno Gathering System (SGS) located east of MCCU at the existing UPC Allar #1 (A1) gas well, as well as to perform routine maintenance during operation and one-time decommissioning of the bored section.

The proposed gathering line will consist of two sections: the bore from HG1 to the Parker property and the open trench from the entry and exit to the tie-ins on the HG1 and A1 well pads. The bored section is the section that will facilitate crossing the Unit and will be approximately 1,500 feet in total length (165 feet from entry to boundary + 1,277 feet beneath MCCU + 58 feet from boundary to exit = 1,500 feet). The open trench sections will total approximately 1,150 feet including 1,000 feet at the exit and 150 feet at the entrance.

Operations inside the Unit boundaries (in-park operations) will consist of the portion of the directional drilled segment of gathering line that crosses into the plane of the Unit boundary, and will exclude the entry and exit points as those will be located on private lands. The gathering line will be constructed entirely beneath MCCU at depths ranging from 12.5 feet to 60 feet beneath the surface. The directional rig will require only one (1) person needing access (by foot) on the surface of the Preserve to guide the bit underground using a handheld monitor/scanner to insure no surface disturbances while the boring operation is being conducted. No other equipment or cabling would be involved on the surface of the Unit. No cutting of vegetation will be necessary. All other surface activities, including access, entry and exit points for directionally drilled portions of the gathering line and the trenched portion of the gathering line will be located outside of the Unit on private property.

UPC will provide the Superintendent with copies of permits submitted to or issued by the Railroad Commission of Texas (RRC) governing the operation of the Holly Grove #1, and for future wells drilled within the gas units that include acreage within the Menard Creek Corridor Unit, including permits to deepen, shut-in, re-enter, and eventually plug and abandon the

well(s). Such permits must be provided to the Preserve within 30 days of UPC's submittal to RRC, or issuance from RRC. If there is not a reportable production quantity for eighteen (18) months from the gas units that include acreage within the Menard Creek Corridor Unit, the gathering line must be decommissioned and abandoned. UPC holds rights to nonfederally-owned oil and gas beneath the Unit.

Additional details, including those related to operation and eventual decommissioning and reclamation of the gathering line, are provided in Chapter 2 of the EA (pages 21-29).

Rationale

Alternative B was selected because UPC holds valid oil and gas rights within the Preserve, which, as developed under the terms and conditions of the Operations Permit, will meet all applicable operating standards and not result in an impairment of park resources and values. This alternative fulfills the NPS's approval standards under the 9B Regulations at 36 CFR § 9.103(a) and its park protection mandates, while allowing UPC to exercise their property right interests.

MITIGATION MEASURES

In order to reduce impacts on the environment, Unit Petroleum Company has incorporated the mitigation measures listed in Appendix A of this document. While many of the mitigation measures are required by other state and federal requirements, the NPS does not have the regulatory authority under the 9B Regulations to require mitigation for surface activities outside the Preserve boundary.

FINDING OF NO SIGNIFICANT IMPACT

CEQ regulations at 40 CFR Section 1508.27 identify ten criteria for determining whether the selected alternative will have a significant effect on the human environment. The NPS reviewed each of these criteria given the environmental impacts described in the EA and determined there will be no significant direct, indirect, or cumulative impacts under any of the criteria.

The following topics were dismissed from full analysis in Chapter 1 of the EA (pages 6 through 19): environmental justice; lightscape; geology and soils; water resources, floodplains, and wetlands; vegetation; fish and wildlife; special status species; cultural resources; visitor use and experience; Indian trust resources and Indian sacred sites; air quality.

As noted previously, the gathering line will be constructed entirely beneath MCCU at depths ranging from 12.5 feet to 60 feet beneath the surface. This will result in the removal of 931 cubic yards of soil from the space to be occupied by the gathering line. The directional rig will require only one (1) person needing access (by foot) on the surface of the Preserve to guide the bit underground using a handheld monitor/scanner to insure no surface disturbances while the boring operation is being conducted. No other equipment or cabling will be involved on the surface of the Unit. Impacts from the presence of humans on the preserve would be insignificant given the minimal number of persons present and short duration. Machinery noise originating outside the preserve will likely have some negative effect on terrestrial wildlife in close proximity

to the entry and exit sites, however, the short duration (1-3 days drilling, 5 days total project time) and localized nature of the project would make impacts relatively minor.

As described in the EA (pages 32 through 38), the selected alternative has the potential for adverse impacts on natural soundscapes in and outside the Unit; however, no potential for significant adverse impacts on these resources was identified. The area of analysis for natural soundscapes encompasses an area that lies within a radius of 1,920 feet from the entry location and a radius of 1,013 feet from the exit location before noise levels emanating from each location attenuate to the estimated ambient noise level of 41 dBA. The 1,920- foot radius includes an area of 266 acres and the 1,013-foot radius includes 74 acres, while the area of overlap between the areas includes 53 acres.

There are two Noise Sensitive Areas (NSA) within the analysis area. An NSA is a management designation that limits the noise level from long-term and/or continuous noise producing sources because of the area's use by humans or special status wildlife species and the importance of reduced noise levels to such use. The NSAs are two residential homes, both inside the 1,920-foot sound radius, and located 1,500 feet and 1,700 feet north of the entry location. For these two homes, noise levels will range from 41 dBA to 45 dBA, indicating an estimated noise level of 3 dBA above ambient.

Model results indicate any person or persons recreating within the area of analysis (the entry 1,920- foot and the exit 1,013- foot radii) will be subject to varying levels of noise depending on their location that will range from 61 to 65 dBA at each Unit boundary and 49 to 52 dBA in the interior of the Unit along Menard Creek. The overall range of noise is estimated to be between 49 and 65 dBA, respectively, or similar to the noise level produced by conversation and a household vacuum cleaner. These increased noise levels will extend for periods ranging from 1 day to 5 days. UPC will schedule all construction activities during daylight hours to avoid nighttime operations, which will occur only as the result of unavoidable (emergency) conditions.

When the noise effects of the selected alternative are combined with noise from other past, present, and reasonably foreseeable future actions, the total cumulative impact on the Unit will continue to be minimally adverse. The incremental impacts of the selected alternative will contribute slightly to, but will not substantially change, the noise impacts on the natural soundscape that are already occurring.

SECTION 7 - Since the gathering line will cross through the Unit at a sufficient depth to preclude any effect on surface resources (species or habitat) within the Unit, there will be no effect on federally listed threatened and endangered species and/or critical habitat from in-park operations. For both in-park operations and connected actions, the US Fish and Wildlife Service (FWS) websites named Information for Planning and Conservation (IPaC) (USFWS 2016a) and Environmental Conservation Online System (ECOS) (USFWS 2016b) were used to obtain a list of federal endangered, threatened, proposed and candidate species and also designated critical habitat for Polk County, Texas. NPS verified on 5/31/2017 that there are no changes in the listed species. IPaC currently lists 4 birds (the endangered least tern (*Sterna antillarum*), threatened piping plover (*Charadrius melodus*), threatened red knot (*Calidris canutus rufa*), endangered red cockaded woodpecker (*Picoides borealis*)) and 1 plant species (endangered Texas trailing phlox (*Phlox nivalis* ssp. *texensis*)) as threatened or endangered with no designated critical habitat in Polk County. ECOS was reviewed and indicates that on October 6, 2016 FWS published the proposed rule to list the Louisiana pine snake (*Pituophis ruthveni*) as threatened. A field evaluation of habitat conditions was completed within the action area and

included both presence/absence observations for individual species and an evaluation of habitat conditions to determine whether suitable potential habitat is present in the project area that would support listed species identified for Polk County, Texas.

The least tern, piping plover, red knot, red-cockaded woodpecker, and Texas trailing phlox were dismissed from further analysis in the EA, as the habitat for these species does not exist in the action area. Neither red-cockaded woodpeckers nor Louisiana pine snakes were directly observed during field evaluations, nor was any suitable potential habitat observed for these species anywhere in the action area. Based on this rationale, a determination was made that there will be “no effect” to any federally listed or proposed species (listed in Appendix A1 in EA) or critical habitat from the selected alternative.

SECTION 106 – The NPS does not have authority to require UPC to subcontract an archeological survey in the project area on the lands adjacent to the Unit. However, UPC voluntarily contracted with Dr. Victor Galan, President of Deep East Texas Archeological Consultants (DETAC) located in Nacogdoches, Texas. DETAC conducted a desktop analysis querying the Texas Historical Commission’s (THC) online Texas Historic Sites Atlas (<http://atlas.thc.state.tx.us/>). The search area included the area within a 0.5 mile radius from both the entry and exit locations, inclusive of the Unit and the project area. Dr. Galan found one previously recorded historic period homestead not recommended for listing in the National Register of Historic Places roughly 0.5 miles northwest of the entry location and found no sites within the search radii that are eligible for, or recommended for listing in the National Register of Historic Places. DETAC wrote a letter to THC describing the project and the desktop analysis outcome recommending that no pedestrian survey would be necessary to which THC concurred.

There will be no potential for surface or subsurface impacts to cultural resources within the Unit from HDD boring the gathering line. There will be no surface disturbance within the Unit so impacts to surface or near surface cultural resources will not occur. There will be no subsurface impacts to cultural resources within the Unit because the shallowest depth that the bore will cross the Unit is 12.5 feet where the bore intersects the Unit boundary near the exit location. It is highly unlikely that the bore will intersect and impact any cultural resources along its path within the Unit at depths ranging from 12.5 feet to 60 feet. Therefore, in-park operations will have no effect on cultural resources.

Based on the desktop analysis, and because the entry and exit locations and trenched gathering line sections will occur entirely within severely disturbed sites (a hardened well pad and an improved pasture), impacts to cultural resources from operations outside the Unit will be very unlikely and was dismissed from further analysis in the EA.

TRIBAL CONSULTATION – Letters were mailed to the following tribes; Absentee-Shawnee Tribe of Indians of Oklahoma, Alabama-Coushatta Tribe of Texas, Caddo Nation of Oklahoma, Poarch Band of Creeks, The Muscogee (Creek) Nation, Thlopthlocco Tribal Town, on February 13, 2017. One comment was received via e-mail from Emman Spain on behalf of Thlopthlocco Tribal Town. See response to comment in Appendix C.

The project will not result in the loss or destruction of significant scientific, cultural, or historical resources. There will be no significant impacts on public health, public safety, or unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation

of the NPS selected alternative will not violate any federal, state, or local environmental protection law.

CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

APPENDIX A

MITIGATION MEASURES UNDER THE SELECTED ALTERNATIVE, PROPOSED ACTION

Mitigation Measures Selected Alternative	Resource(s) Protected
Project Planning and Site Construction	
To eliminate noise pollution associated with this project during nighttime hours (darkness), all construction activities are planned during daylight hours, unless unforeseen circumstances require otherwise	All natural resources and human health and safety
UPC will also make earnest efforts to conduct work during weekdays to avoid disturbing weekend recreational users of MCCU, again, unless unforeseen circumstances require otherwise	All natural resources and human health and safety
Prepare and comply with a Spill Prevention Control & Countermeasure (SPCC) Plan	All natural resources and human health and safety
Drilling surface locations, access roads, and all above-surface infrastructure is located outside of MCCU	All natural resources and values in BITH
Drilling surface locations, trenching and installation operations need minimal vegetative clearing or surface disturbance on private property and NO vegetative clearing or surface disturbance on MCCU	Soils, water resources, floodplains, wetlands, vegetation
Schedule construction during daylight hours to avoid nighttime operations	Lightscape and all natural resources and human health and safety (nighttime noise pollution / disturbance)
Place silt fencing, hay bales and earthen berms as needed around any construction site of surface disturbance	Water resources, vegetation, soils
Minimize length of gathering line impacting MCCU	All natural resources and values in BITH
Gathering Line Drilling	
The HG1 well pad is already surfaced/stabilized with rock aggregate and will also be enclosed with a ring levee as a secondary containment for any fluids that might inadvertently escape the bore location	All natural resources and values in BITH
A containment levee will also be constructed around the exit location as a secondary precaution against fluid release	All natural resources and values in BITH
Vacuum trucks will be kept onsite to transfer mud from the mud pits to the mud tanks as needed	Water resources, soils, vegetation

Directionally drill gathering line from outside MCCU	All natural resources and values in BITH
Use a closed-loop containerized mud system	Water resources, soils, vegetation
Mitigation Measures Selected Alternative	Resource(s) Protected
Use superior grade, heavy-wall, epoxy coated pipe for improved safety	Groundwater
Use mud system and mud products with minimal environmental hazard	Water resources, soils, vegetation
Follow BITH rules for vegetative trimming for line of sight operations	Vegetation
Reclaim sites of surface disturbance by regrading, reclaiming and reseeding as needed	Soils, vegetation, water resources
Dispose of drilling mud and well cuttings off-site and legally	All natural resources and values in BITH
Product Transport and Pipeline Operation	
To prevent external pipe corrosion, and in addition to the external epoxy coating, UPC will install anodes at each end of this bored section of gathering pipeline to prevent electrolysis	All natural resources and values in BITH
For internal pipe protection, UPC will periodically inject a corrosion inhibitor into the gathering line pipe	All natural resources and values in BITH
Install automated, sensed, check valves and shut off valves on wells and gathering line. Monitor potential pipe corrosion with regular pigging and sensors	All natural resources and values in BITH
Pressure of gas in line is always less than rated pressure	All natural resources and values in BITH
Notify regulatory authorities and BITH Superintendent within 24 hours in the event of a release or spill of hydrocarbon products or other contaminating substance	All natural resources and values in BITH
Abandonment / Reclamation	
Gathering line will be purged, decontaminated, filled with water and abandoned in place according to BITH requirements	All natural resources and values in BITH
If BITH damage occurs, UPC agrees to reclaim / restore affected areas in MCCU to a condition acceptable to the Superintendent	All natural resources and values in BITH

APPENDIX B

NON-IMPAIRMENT DETERMINATION

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of the Interior and the National Park Service (NPS) to manage units "to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 U.S.C. 100101). *NPS Management Policies 2006*, Section 1.4.4, explains the prohibition on impairment of park resources and values:

"While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them."

An action constitutes impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values" (NPS 2006, Section 1.4.5). To determine impairment, the NPS must evaluate the "particular resources and values that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may constitute impairment, but an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance (NPS 2006, Section 1.4.5).

Fundamental resources and values for Big Thicket National Preserve are identified in the enabling legislation for the park, the Foundation Document, the General Management Plan completed in August 2014. Based on a review of these documents, the fundamental resources and values for Big Thicket National Preserve come from visitor experience in a natural setting, free-flowing water and dependent systems, biodiversity, compositional diversity, structural diversity, processes and functional diversity, scientific value, the Thicket, and cultural resources. Resources that were carried forward for detailed analysis in the EA and are considered necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; are key to the natural or cultural integrity of the park; and/or are identified as a goal in relevant NPS planning documents include: natural soundscapes both inside and outside the Unit. Accordingly, a non-impairment determination is made for each of these resources. Non-impairment determinations are not necessary for human health and safety or visitor use and experience because impairment findings relate back to park resources and values, and these

impact topics are not generally considered park resources or values according to the Organic Act.

This non-impairment determination has been prepared for the selected alternative, as described in the Finding of No Significant Impact for Unit Petroleum Company proposal to construct and operate an 8-inch gathering line across the Menard Creek Corridor Unit EA.

NATURAL SOUNDSCAPES IN AND OUTSIDE THE UNIT

The area of analysis includes the entry and exit drilling locations, representing the highest noise-producing activity, and includes the radial distance required for the HDD drilling noise to attenuate to the measured background sound level of 41 dBA (Foch 1999). For the entrance, the total radial distance is 1,920 feet with the entry being 165 feet from the Menard Creek Corridor Unit (MCCU), boundary. For the exit, the total radial distance is 1,013 feet with the exit being 58 feet from the MCCU boundary. Beyond this distance, there is an increased likelihood that noise sources will no longer adversely affect the natural sounds of the Unit.

Model results indicate any person or persons recreating within the area of analysis (the entry 1,920- foot and the exit 1,013- foot radii) will be subject to varying levels of noise depending on their location that will range from 61 to 65 dBA at each Unit boundary and 49 to 52 dBA in the interior of the Unit along Menard Creek. The overall range of noise is estimated to be between 49 and 65 dBA, respectively, or similar to the noise level produced by conversation and a household vacuum cleaner. These increased noise levels will extend for periods ranging from 1 day to 5 days. UPC will schedule all construction activities during daylight hours to avoid nighttime operations, which will occur only as the result of unavoidable (emergency) conditions.

When the noise effects of the selected alternative are combined with noise from other past, present, and reasonably foreseeable future actions, the total cumulative impact on the Unit will continue to be minimally adverse. Given the above, the selected alternative will not result in impairment of natural soundscapes in and outside the Unit.

CONCLUSION

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the selected alternative. The NPS has determined that implementation of the selected alternative will not constitute an impairment of the resources or values of Big Thicket National Preserve. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, comments provided by the public and others, and the professional judgment of the decision maker guided by the direction of NPS *Management Policies 2006*.

APPENDIX C

ERRATA

According to NPS policy, substantive comments are those that 1) question the accuracy of the information in the EA, 2) question the adequacy of the environmental analysis, 3) present reasonable alternatives that were not presented in the EA, or 4) cause changes or revisions in the proposal.

A total of 13 comments from two pieces of correspondence received during public review of the EA was considered substantive or warranted a response, and is addressed in the *Responses to Comments* section.

RESPONSES TO COMMENTS:

#	COMMENT	RESPONSE
1	36 CFR 9B regulations were recently changed and NPS should explain how those changes affect this proposal.	The preamble to final rule describes the updates to the 9B Regulations with regard to evaluation and processing of Operations Permits (See 81 FR 77972 (November 4, 2016)). These changes do not affect the required content of the Operations Permit Application or the NEPA analysis
2	Commenter stated NPS should fully evaluate the potential for Geology, Soils, Water Resources, Floodplains, Wetlands, Vegetation, Fish and Wildlife to be negatively affected by a spill of natural gas and associated fluids.	As explained on pages 7-19 of the EA, the NPS adequately analyzed the potential for negative impacts on these resources from spills and, based on this analysis, determined that more study was not warranted and the topics could be eliminated from further analysis. By eliminating these topics, the NPS is focusing its analysis on issues that are truly relevant. CEQ requires that NEPA documents be "concise, clear, and to the point." They must "emphasize real environmental issues and alternatives" and be useful to the decision-maker and the public (40 CFR §1500.2). "Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR §1500.1(b)).
3	The commenter notes that the proximity of spill control equipment was not described in the EA and, therefore, the NPS cannot state in the EA that "there would be ample time and space to respond to even a major release before	In 2.2 (Alternative B) and Table 1 (Mitigation Measures under Proposed Action (Alternative B)), details are provided about the proximity, type, and capabilities of spill control techniques and equipment. For example, mitigation measures in Table 1 describe how fluids

	there would be impacts on vegetation in the Unit." Further, the commenter noted that the NPS should describe the type of spill control equipment and its capabilities.	inadvertently released at the entry and exit would be contained and how internal and external pipe corrosion would be prevented.
4	The commenter states the NPS is incorrect in concluding there would be no air quality impacts on vegetation, since the commenter believes there would be odors and air pollutants released from a spill.	As explained in the EA, the likelihood of a spill is extremely low and, were one to occur, the unknowns about the type, duration and amount of a spill make analyzing impacts speculative. Therefore, the potential for such impacts was not discussed in this EA.
5	The commenter states that the EA should provide additional details about the use of automatic shutoff valves and sensors, such as information about the correct placement of these valves/sensors and how operations and maintenance will be conducted to ensure proper functioning.	As noted in section 2.2.4 of the EA, a pneumatic high/low Pressure Pilot actuator would be installed on the HG1 well head [upstream of the point where the 8" gathering line crosses into the Preserve] and a one-way safety check valve located downstream of the proposed crossing [outside of the Preserve boundary]. Because the check valves and other means of shut-off associated with this project are located outside the Preserve boundary, the scope of NPS' regulations do not apply to the operation and maintenance of this equipment. State regulations require that check valves on flowlines or other means of shut-off be placed as close to the well head connection as is practicable. Additionally, state regulations require that operators do all things necessary to keep their check valve or other means of shut-off in good working order, and operators, when requested by an agent of the RRC, must test the check valve or other means of shut-off for leakage. A prerequisite of the NPS' Operations Permit approval is that an operator must provide the NPS with an affidavit stating that the operations planned are in compliance with all applicable Federal, State, and local laws and regulations (36 CFR §9.103(b)(3)).
6	The commenter notes that the statement in the EA that, "There would be no impacts on water resources from proposed in-park operations," is not supported by information provided by the NPS.	The NPS believes adequate support is provided for the referenced statement from page 10 of the EA, which is provided here in full: "Because the gathering line would be constructed entirely beneath MCCU at depths from the surface ranging from 12.5 feet (shallowest) at the eastern MCCU boundary to 60 feet (deepest) approximately 490 feet from the eastern boundary, there would be no impacts on the water resources, floodplains, and wetlands within the Unit from the in-park subsurface operations." Following this statement, the EA

		continues with an analysis of potential impacts from project operations that would occur outside the park, and concludes that “impacts from the connected actions would be negligible based on water resources at the sites, mitigation to prevent off-site transport of any released contaminants, and the low chance of catastrophic release.”
7	In 1.4.5 Vegetation, the commenter believes the NPS is stating NPS does not own subsurface under the UNIT.	NPS did not intend to imply that it does not own the subsurface under the UNIT, and taken in context, NPS believes this is clear.
8	Under the section 1.4.6 Fish and Wildlife, the commenter disagrees no impacts would occur on the surface as a result of gyroscopic and GPS-guided drilling and notes noise and presence of humans and equipment are enough to impact wildlife behavior.	The NPS has amended the EA to explain that this work will require only one person on-foot using a handheld monitor/scanner. No other equipment or cabling would be involved on the surface of the Unit. Given this, the NPS has also revised the analysis to state that impacts to wildlife, fish, and aquatic life would be minor considering the short duration of the project and minimal human presence required on the preserve. These changes are noted in Appendix D – Errata Sheet for Text Changes for section 1.4.6.
9	In 1.4.8 Cultural Resources, the commenter noted that the NPS statement regarding no potential for cultural resource impacts due to HDD boring conflicts with statement in 2.2.2 Access where NPS states guiding cables on the surface of the Preserve could damage unknown cultural resources. NPS should clarify.	See Appendix D – Errata Text Changes for Section 2.2.2 Access. No cables will be required.
10	In 1.4.9 Visitor Use and Experience Page 16, the commenter disagrees HDD boring operations would have no impact on visitor use and experience. States noise generated by activities would diminish experience. Notes previous experience with droning noise.	As described in section 1.4.9 “Model results indicate that day use visitors recreating in the part of the Unit that falls within a radius of 1,920 feet from the gathering line entry point or 1,013 feet from the exit point would be subject to project-related noise as described below. Within these radii, noise levels would range from 61 to 65 dBA at each Unit boundary to 49 to 52 dBA in the interior of the Unit along Menard Creek. At 65 dBA, the noise level would be similar to that produced by a household vacuum cleaner; at 49 dBA, the noise level would be similar to that produced by conversation. These increased noise levels would generally last from 1 day (for routine maintenance and decommissioning) to 5 days (for initial construction).

		Based on the above information, the topic of visitor use and experience in the Unit was dismissed from further analysis in this EA."
11	In 1.4.11 Air Quality, the commenter notes HGB is a Non-attainment area for ozone, not Unclassifiable/Attainment. The commenter believes air pollutant concentrations could be significant as they leave private property and enter the Preserve and notes that, given no air pollutant modeling was done, the NPS should analyze a worst-case scenario.	The NPS has corrected this classification (see Appendix D – Errata Sheet for Text Changes). NPS stands by the impact analysis; however, the NPS Air Resources Staff provided additional information about greenhouse gas emissions, which has been added to the EA via errata (see in Appendix D – Errata Sheet for Text Changes) and assumptions for which are described in detail in response to a separate comment below.
12	The commenter notes that the NPS has not provided information actions and impacts related to potential pipeline repair.	Whether the pipeline will need repair in the future is unknown and no meaningful information exists on which to base a prediction; therefore, this potential was not discussed in the EA.
13	In Table 1, the NPS statement that no vegetative clearing or surface disturbance will occur on the Preserve conflicts with NPS statement in 2.2.2 Access that guiding cables on surface could result in damage to vegetation and surface disturbance. NPS should clarify.	Correction made. See Appendix D – Errata Text Changes for Section 2.2.2 Access. No cables will be required.
14	In 2.2.9 Performance Bond, the NPS statement that no reclamation will be needed on the Preserve due to no surface impacts to the Preserve conflicts with statement in 2.2.2 Access that guiding cables on surface could result in damage to vegetation and surface disturbance. NPS should clarify.	See Appendix D – Errata Text Changes for Section 2.2.2 Access. No cables will be required.
15	In 3.1 Impacts on Natural Soundscapes, the NPS should address noise pollution from drilling activities, even if 1500 feet away from Preserve. Persistent droning noise.	See response from Item # 10
16	The commenter states that the NPS should evaluate greenhouse gas emissions associated with line installation and related activities including the production and delivery of product.	Climate change is a subject of concern for the NPS; therefore, an analysis of greenhouse gas emissions associated with line installation has been added to the EA (see below and under Appendix D – Errata Text Changes). However, the NPS does not consider the consumption of the minerals that may be generated due to the installation of this gathering line (including the production and delivery of product), to be a connected action for this project and has not

		<p>analyzed these impacts.</p> <p>Greenhouse gas emissions associated with line installation were estimated by NPS Air Resource Staff by conservatively assuming continuous operation of the drilling and mud pump engines for 10 hours per day for 5 days at 100% work load. Assuming 99% conversion of fuel carbon to CO₂ using 87 weight % carbon diesel, an average brake specific fuel consumption (BSFC) of 7,000 Btu/hp-hr, and a diesel heating value of 19,300Btu/lb, 13 metric tons of CO₂ are estimated to be emitted. In comparison, CO₂ emissions for non-road equipment in Polk County were estimated at 54,000 tons in 2014 (EPA 2014 National Emissions Inventory, https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data, retrieved 6 June 2017). No CH₄ emissions factor for diesel industrial engines was available, but these emissions are assumed to be negligible. The NPS finds greenhouse gas emissions from the line installation activities would not significantly contribute to total annual greenhouse gas emissions for similar projects within the region.</p>
17	Commenter ask what can be done to improve resilient or resistant habitats and ecosystems, reduce CO2, Methane, or other greenhouse gas emissions in Big Thicket National preserve, and what can be done to assist plants/animals with adapting to climate change	This is outside the scope of the EA
18	Commenter states NPS should prepare and include a Climate Change Ecological Resilience Plan	This is outside the scope of this EA.
19	NPS must clarify potential impacts or lack thereof in explicit, unambiguous terms in accordance with Sierra Club v. Mainella. NPS needs to provide quantitative analyses of potential impacts in this EA.	<p>In the opinion on summary judgment in Sierra Club v. Mainella, the Court held that the NPS failed to adequately explain its conclusions. The Court directed the NPS to prepare a new environmental assessment that provides explanations to support its conclusions. The NPS provided explanations for its conclusions in the EA in accordance with the Court's decision. For example, before drawing any conclusions in the Affected Environment and Environmental Consequences section of the EA, the NPS detailed the sources of possible</p>

	<p>impacts for each phase of operations, discussed the likely effects of each impact on the resources and values of the Preserve, and provided reasoning upon which to base its conclusions regarding the context, duration, timing, and intensity of the impacts.</p> <p>In the EA, the NPS took a "hard look" by considering the direct, indirect, and cumulative impacts of the proposed action on the environment, along with connected, cumulative and similar actions. If the intensity of an impact could be described quantitatively, the numerical data were presented; otherwise the impacts were described qualitatively.</p> <p>Whether impacts are significant under NEPA and whether they are unacceptable under the NPS Management Policies are separate questions.</p> <p>The CEQ defines significant environmental impacts using the 10 guidelines listed in this FONSI. In the EA, significant impacts are defined as synonymous with major impacts, which is a typical methodology used in NPS environmental documents. There are no major (significant) effects resulting from this proposal. The 2006 Management Policies state (§8.1.1) "the fact that a park use may have an impact does not necessarily mean it will be unacceptable or impair park resources or values for the enjoyment of future generations. Impacts may affect park resources or values and still be within the limits of the discretionary authority conferred by the Organic Act. In these situations, the Service will ensure that the impacts are unavoidable and cannot be further mitigated."</p> <p>The Preserve Enabling Act specifically lists the extraction of minerals, oil, and gas as an appropriate use if such activities could "be conducted without jeopardizing the natural values for which the area seeks to preserve."</p> <p>The impacts described in the EA are an unavoidable consequence of that activity. They will not jeopardize the resources and values of the Preserve, for the reasons explained in the EA and FONSI. NPS also has made substantial efforts to mitigate impacts and expects that impacts will be mitigated. NPS has identified numerous mitigation measures, but does not have regulatory jurisdiction to make all of them mandatory.</p>
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		<p>To determine whether or not to evaluate impact topics in detail, the NPS applied the criteria listed on page 6 of the EA. These criteria are unambiguous and are written in plain language that the general public can understand, following 40 CFR§1502.8 of the CEQ NEPA regulations. The words and phrases in question are intended to be understandable using standard dictionary definitions. In general, they are not technical terms that need further definition or clarification. The words and phrases in question are intended to be understandable using standard dictionary definitions. An environmental assessment is to be a "concise public document" that "briefly provide[s] sufficient evidence and analysis." 40 CFR § 1508.9. To provide separate technical definitions for all of the dozens of terms identified in the comment, rather than using plain language, would render an already long document even longer, and would run contrary to these goals.</p>
20	NPS needs to explain what would occur if potential archaeological or cultural resources are encountered	<p>As stated in section 1.4.5 Vegetation page 11 of the EA, "Under the Proposed Action, the 8 inch gathering line would be directionally drilled from privately owned entry and exit surface locations outside the Unit and reaching a depth of 37.5 feet below the invert of Menard Creek." The entry and exit locations for the HDD portion of the gathering line will be on privately held lands, where NPS has no jurisdiction. At the point of in-park operations, the gathering line will be installed via HDD boring at a depth ranging from 12.5 feet to 60 feet. Therefore, in-park operations will have no effect on cultural resources (See EA Section 1.4.8 Cultural Resources, page 15, paragraph 3).</p>

APPENDIX D ERRATA

TEXT CHANGES:

The following includes changes that have been made to the EA. Italicized and underlined text indicates the section in the EA that has been altered. Strike-out is used to show text that has been removed; bold text is used to show new text.

i. Summary, Page i, 1st Paragraph

Summary: In accordance with National Park Service (NPS) regulations for nonfederal oil and gas rights, Unit Petroleum Company (UPC) has submitted a Plan of Operations (Plan) to the NPS to construct and operate a gathering line across the Menard Creek Corridor Unit (MCCU or Unit), Big Thicket National Preserve (Preserve), to connect the existing, *producing*, shut-in, UPC Holly Grove #1 (HG1) gas well located west of MCCU to the existing UPC Segno Gathering System (SGS) located east of MCCU at the existing UPC Allar #1 (A1) gas well. The completed shut-in HG1 well is awaiting a means to transport the natural gas to the existing SGS east of MCCU.

1.4.4 Water Resources, Floodplains, and Wetlands, Page 10, 3rd Paragraph:

UPC would implement a number of mitigation measures identified as part of the proposal that would prevent drilling mud, other contaminated fluids and sediments from entering groundwater, streamflow, floodplains, or wetlands. The HDD bore and connecting gathering line has been engineered to avoid streams and wetlands and would be accessed by existing roads without any human or construction activity occurring on MCCU surface, **with the clarification that the directional rig will require only one (1) person needing access (by foot) on the surface of the Preserve to guide the bit underground using a handheld monitor/scanner to ensure no surface disturbances while the boring operation is being conducted**. In addition, UPC's proposed mitigation measures implemented at the HDD entry and exit locations during construction and the mitigation measures and precautions installed for the later operation and maintenance phase are designed to confine impacts to the surface locations, further preventing impacts on water-related resources. These same mitigation measures would also limit the potential for runoff of contaminants to streamflow, floodplains, and wetlands, and subsurface impacts to groundwater for all phases of construction, production, and gathering line abandonment.

1.4.6 Fish and Wildlife, Page 12, 2nd paragraph:

Under the Proposed Action, the gathering line would be directionally drilled from privately owned entry and exit surface locations outside the Unit and reach a depth of 37.5 feet below the invert of Menard Creek. Gyroscopic and GPS technology would guide the bit beneath the Unit, ~~and there would be no human or construction disturbance whatever on the surface of the Unit that would result in impacts to wildlife, fish and aquatic life from the in-park subsurface operations~~ **requiring one (1) person on foot using a handheld monitor/scanner for a period of approximately 20 hours over 2 days to ensure no additional surface disturbance occurs**

while the boring operation is being conducted. No other equipment or cabling would be involved on the surface on MCCU. Impacts from the presence of humans on the preserve would be insignificant given the minimal number of persons present and short duration. Machinery noise originating outside the preserve will likely have some negative effect on terrestrial wildlife in close proximity to the entry and exit sites, however, the short duration (1-3 days drilling, 5 days total project time) and localized nature of the project would make impacts relatively minor.

1.4.6 Fish and Wildlife, Page 13, 3rd paragraph:

Given the above, there would be no Impacts on wildlife, fish and aquatic life from in-park HDD gathering line construction and associated activities would be minor given the short duration of the project and minimal human presence required on the preserve itself, in addition to, and impacts from connected actions would be negligible based on mitigation actions to prevent off-site releases of soil, wet natural gas or chemicals, and the low chance of catastrophic release. For these reasons, the topic of fish and wildlife was dismissed from further analysis.

1.4.11 Air Quality, Page 17, 3rd paragraph:

Polk County, where the MCCU is located, is north of, and contiguous to, two designated TCEQ planning areas. The Houston, Galveston, Brazoria (HGB) area includes Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties. The Beaumont-Port Arthur (BPA) area includes Hardin, Jefferson, and Orange Counties. The southern boundary of Polk County touches northeast Liberty County in the HGB, and northwest Hardin County in the BPA. The current attainment status for all six principal pollutants in both the HGB and Polk County and the BPA planning areas is "Unclassifiable / Attainment" which is defined by the EPA as "meeting the standard or expected to be meeting the standard despite a lack of monitoring data" (TCEQ 2016b). Houston-Galveston-Brazoria (HGB) metropolitan area is in nonattainment status for the 2008 National Ambient Air Quality Standard for Ozone (75 ppb) and has been recommended for nonattainment of the 2015 revised ozone standard (70 ppb). However, as noted, the MCCU is not located within the nonattainment area.

1.4.11 Air Quality, Page 19, 1st paragraph:

Because the gathering line would be constructed entirely beneath MCCU at depths ranging from 12.5 feet to 65 feet with construction lasting only 5 days with up to 12 pieces of machinery located between 165 feet and 58 feet from the Unit boundary, where ambient winds would likely further dissipate emission concentrations before reaching the Unit, and because the best available information indicates that Polk County is 6 ppb below ozone DV, and because periodic maintenance and ultimate decommissioning would require even less equipment, producing lower emissions than construction, there would be negligible and short-term impacts on air quality from the proposed gathering line. NPS Air Resource Staff reviewed the EA and the anticipated emissions of criteria air pollutants from this proposed action are less than a tenth of a ton using conservative assumptions, and are therefore negligible. In addition,

the emissions would be short-term and temporary, with drilling operations lasting only five days. Based on the above information, the topic of air quality was dismissed from further analysis in this EA.

2.2.2 Access, Page 23, 2nd Paragraph

The directional rig would require **only one (1) person needing access (by foot)**~~two cables placed approximately 10 to 15 feet apart~~ on the surface of the Preserve to guide the bit underground **using a handheld monitor/scanner over a period of approximately 20 working hours in two days to insure no surface disturbances while the boring operation is being conducted. No other equipment or cabling would be involved on the surface of the Unit.** Access across the Unit would be by foot only. Cutting of vegetation would not be necessary as the guide path was flagged using plastic ribbon during the alignment plat survey. This was accomplished using GPS and no limbs were cut during the survey.

2.2.5 Directionally Drilled Portion of the Gathering Line, Page 25, 3rd Paragraph

Surface guidance of the bore path would be provided by a gyroscopic guidance system **and handheld scanner operated by 1 personnel on foot.** At completion of the job, UPC would provide the NPS with a digital printout of actual placement of the bored gathering line ("as-Built") which would be provided by Drillguide Steering Tools. See their website at: www.drillguide.com

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