

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 458	Second Sentence: "The corridor extended" change to "The corridor extends"	The suggested edit has been incorporated.	Please correct the typo.	Typo corrected. The second sentence, first paragraph in Section 5.3.1.1.2, Chapter 5, Exhibit E of the License Application is revised to read: The corridor extends 200 feet on either side of the alternative alignments to evaluate an area on both sides of the pipeline that might reasonably be affected during construction or operation.
BLM 463	There is no discussion in this section on biological soil crusts (cryptobiotic soils). This needs to be added since these soils would be disturbed/removed along much of the pipeline corridor.	A discussion of cryptobiotic soils has been added to the text.	While 3 sentences were added, this highly sensitive resource deserves its own separate sub-section – please add one on Biological Soil Crusts.	Information on and discussion of biological soil crusts is added in several locations of the License Application. Please see the response to BLM Comment No. 463 in the attached Extended Narrative document.
BLM 464	Second paragraph, last sentence. "... Sevier fault near the Coral Pink Sand Dunes State Park. "Remove the word "the".	The suggested edit has been incorporated.	Edit was not made.	Edit made. The last sentence, second paragraph in Section 5.3.1.1.1, Chapter 5, Exhibit E of the License Application is revised to read: Active faults in the Colorado Plateau are relatively rare at the surface although they are abundant at depth in older rocks, as exposed in the Grand Canyon part of the Colorado Plateau and specifically at the Cockscomb and the Sevier fault near Coral Pink Sand Dunes State Park.
BLM 465	First paragraph, second sentence. Change "The corridor extended" to "The corridor extends..."	The suggested edit has been incorporated.	Edit was not made.	Edit made. This edit is made in the response to a previous identical BLM Comment No. 458. Please see the response to BLM Comment No. 458.
BLM 466	"The corridor extend 200 feet on either side of each alternative alignment, and 1,000 feet on each side of each alignment for evaluating potential effects on important structures and mineral resources." •It is not clear why there is a difference in the widths of the corridors. •Explain what the important structures are.	The corridor extended 200 feet on either side of the alternative alignments to evaluate an area on either side of the pipeline that might reasonably be affected during construction or operation. A 1,000 foot corridor was evaluated on either side of the alignments for effects on important structures and mineral resources because structures and access to mineral resource extraction facilities could be affected by blasting or excavation, or access could be limited during construction. Important structures are defined in Section 2.4.6 of the Revised Draft Geology and Soils Study Report as features such as wells, utility alignments, and buildings, and excludes common features such as roads and power or telephone poles. An explanation has been added to the text to clarify the intent of the corridors.	Revision is mostly okay ... but all structures are important, so please rewrite to say "... for effects on structures and important mineral resources because ..."	An explanation of the different corridor widths has been added as described below to the License Application which was filed with FERC on May 2, 2016 and which replaced the PLP that BLM reviewed. In addition, the word "important" has been deleted as a qualifier of "structures" as it has been clarified that all structures are important. A definition of "structures" has also been added to the License Application. The third and fourth sentences in the first paragraph of Section 5.3.1.1.2, Chapter 5, Exhibit E of the License Application are revised to read: A 1,000 foot corridor was evaluated on either side of the alignments for effects on structures and important mineral resources because structures and access to mineral resource extraction facilities could be affected by blasting or excavation, or access could be limited during construction. Structures are defined as features such as wells, utility alignments, and buildings, and excludes common features such as roads and power or telephone poles.
BLM 467	Second paragraph, first sentence: What is meant by "would not materially affect geology and soil resources?"	The transmission line alignments were not evaluated for impacts as part of the Geology and Soils Study because the construction and maintenance of transmission lines will involve relatively little disturbance of geology and soil. Best Management Practices will be followed to minimize erosion from maintenance roads. The disturbance would consist of auguring for poles, preparation of tower foundations, and improvement of existing dirt roads or construction of roads on the area disturbed for pipeline construction. This has been clarified in the text. Refer to also the response to BLM Comment 468 below.	Mostly okay – but last sentence in paragraph needs to replace "materially" with "substantially" and all uses of "will" need to be replaced with "would."	Change made. The third paragraph in Section 5.3.1.1.2, Chapter 5, Exhibit E of the License Application is revised to read: Auguring for placement of poles is a localized activity that would disturb and permanently displace a small area at each pole location. Construction of tower foundations would disturb and permanently displace a slightly larger area for each foundation. Existing roads would be used for construction and maintenance access, including public highways, gravel roads, and dirt roads. Some roads, primarily "two-track" dirt roads or gravel roads in poor condition, would be improved by adding crushed rock where needed for stability or by widening to 10 feet where too narrow for safe operation. These represent both construction and operation effects. The Transmission Line Alignments described in Chapter 3 are not included in this section because these alternatives would not substantially affect geology and soil resources.

Comment #	Original Comment	Original UDWRe Response	BLM Comment Disposition	UDWRe Response
BLM 468	<p>Second paragraph, first sentence. "The Transmission Line Alternatives described in Chapter 3 are not included in this section because these alternatives would not materially affect geology and soil resources." This statement is not true – there WOULD be impacts to soils from at least construction of the transmission lines. Need to add this to the impacts analyses for the various LPP alternatives.</p>	<p>For all action alternatives, the Transmission Line Alternatives would include the following activities that would affect geology and soil resources:</p> <ul style="list-style-type: none"> • Auguring for placement of poles • Construction of foundations for towers • Improvement of existing roads for access <p>Auguring for placement of holes is a localized activity that will disturb and permanently displace a small area at each pole location. Construction of tower foundations will disturb and permanently displace a slightly larger area for each foundation. Existing roads will be used for construction and maintenance access, including public highways, gravel roads, and dirt roads. Some roads, primarily "two-track" dirt roads or gravel roads in poor condition, will be improved by widening to 10 feet where too narrow for safe operation. This would widen the road by up to two feet, or 25 percent. These represent both construction impacts and operation impacts. Section 5.3.1.1.2 has been modified to address this.</p>	<p>Mostly okay – but last sentence in paragraph needs to replace "materially" with "substantially" and all uses of "will" need to be replaced with "would."</p>	<p>Please see the response to BLM Comment No. 467, which incorporates the changes requested in BLM Comment No. 468.</p>
BLM 472	<p>Geologic Hazards to Human Health and Safety. Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project from geology/soils. Thus, delete this section.</p>	<p>Refer to the response to BLM Comment 470. Geologic hazards are important to evaluate as part of this study precisely because they can pose a potential danger to human life, health, safety, and property. No change to the text is needed.</p>	<p>Disagree with UDWRe's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project, and not impacts on public health and safety. This edit needs to be incorporated into Exhibit E.</p>	<p>Please see the attached Extended Narrative document for the response to BLM Comment No. 472.</p>
BLM 473	<p>Important Structures and Mineral Resources. Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. Thus, remove the part of this section on "Important Structures."</p>	<p>Refer to the response to BLM Comments 470 and 472. No change to the text is needed.</p>	<p>Disagree with UDWRe's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP.</p>	<p>Please see the Extended Narrative document for the response to BLM Comment No. 473.</p>

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BLM 474	<p>First paragraph: "Thirty-six potential spoil sites were inspected and evaluated along the LPP Project alignments, including existing gravel pits on public and private land. Active commercial gravel pits on private lands were excluded from consideration for spoil disposal because these pits would have insufficient disposal space and spoil disposal would disrupt ongoing operations. Figures 5-16 and 5-17 show gravel pits along and in the vicinity of the LPP alignments suitable for spoil disposal. The Proposed Action would result in an estimated 2,817,165 cubic yards of spoil material requiring disposal outside of the ROW." 3rd line of this section references "thirty-six potential borrow sites" as being evaluated for use in the LPP Project. However, there is no mention of this included in Chapter 3 - it needs to be since this is part of the alternatives. The entire description and specifications discussed in this paragraph on Borrow and Spoil should be included in Chapter 3.</p>	<p>Use of these potential borrow and spoil sites is no longer proposed; the current assumption is that all pipeline and penstock bedding and backfill material will be derived from materials excavated or blasted during pipeline construction, and spoils will be spread within the ROW. The text has been modified to remove this discussion.</p>	<p>Comments on revised text: 1. 1st 3 sentences in the section appear to contradict each other – 1st sentence says excavated material would be reused "to the extent economically feasible," then 2nd/3rd sentences say "All excavated rock and soil would be reused." Which is it? 2. Replace "will" with "would" (2nd and 7th paragraphs of section). 3. Last sentence of 5th paragraph in the section (now on p. 5-61): WHERE would this groundwater be pumped to and "land-applied"? Certainly not on BLM lands? 4. 7th paragraph of section (p. 5-61) – replace "will" with "would."</p>	<p>Please see the attached Extended Narrative document for the response to BLM Comment No. 474.</p>
BLM 477	<p>Fourth through seventh lines on this page discuss: • "Locations for spoil disposal"; and • Existing gravel pits on public land However, there is no mention of this included in Chapter 3 – it needs to be since this is part of the alternatives. Sixth through eleventh lines discuss "Thirty-six potential spoil sites were inspected and evaluated along the LPP Project alignments, including existing gravel pits on public and private land." Then pits on private lands "were excluded from consideration...because these pits... would disrupt ongoing operations." This same would be true for pits on public lands. Please acknowledge that here. Again, the location of sites considered for use (whether it is to acquire material or to dispose of material) must be identified now in Chapter 3.</p>	<p>Refer to the response to BLM Comment 474.</p>	<p>See comments on UDWR response to BLM Comment 474.</p>	<p>The comment is no longer applicable as the sources of borrow and location of disposal of spoil for the LPP alternatives have changed in the License Application which was submitted after BLM reviewed and commented on the PLP. LPP excavations will now be the only source of borrow and location of spoil disposal. Section 5.3.1.1.9, Chapter 5, Exhibit E of the License Application, no longer includes any discussion of obtaining rock or soil from outside of the LPP alignments and no longer includes disposal of any spoil of rock or soil in areas outside of the LPP alignments. Section 3.1.1.2.1, Chapter 3, Exhibit E of the License Application describes borrow and spoil of excavated rock and soil materials from within the proposed Water Conveyance System right-of-way. Section 3.1.1.3.1, Chapter 3, Exhibit E of the License Application describes borrow and disposal of spoil of excavated rock and soil materials from within the proposed Hydro System right-of-way.</p>
BLM 478	<p>First paragraph, last sentence. Where are the identified spoil disposal sites? This must be identified now in Chapter 3.</p>	<p>This was identified in the Geology and Soils Study Report. However, the discussion is no longer relevant; see the response to BLM Comment 474.</p>		<p>No sources of borrow or locations for disposal of spoil outside the LPP alignments are now proposed for the LPP alternatives. Section 5.3.1.1.9, Chapter 5, Exhibit E of the License Application, which replaces the PLP and was filed with FERC on May 2, 2016, is revised from the borrow and spoil discussion previously presented in the PLP. Rock and soil materials excavated for the LPP would be reused for pipeline/penstock bedding, backfill and road construction within the proposed right-of-way. Excess rock and soil materials would be disposed of within the right-of-way, which is described in Sections 3.1.1.2.1 and 3.1.1.3.1, Chapter 3, Exhibit E of the License Application. No spoil disposal sites are proposed on federally-administered public lands, state lands, and private lands along the LPP alignments.</p>
BLM 479	<p>2nd complete paragraph on page, 4th line: "These inflows would likely be collected by a system of drains and sumps..." Would it or wouldn't it? It seems as though this should be known at this point in the PLP process.</p>	<p>This is not the detailed design phase; such processes will be determined during the detailed design phase.</p>	<p>Please delete "likely" from this sentence (the uncertainty expressed by UDWR is addressed in the previous sentence by saying "Groundwater is expected to seep ...").</p>	<p>The inflows "would be collected" and the word "likely" has been deleted. The fourth sentence in the fifth paragraph in Section 5.3.1.1.10, Chapter 5, Exhibit E of the License Application is revised to read: These inflows would be collected by a system of drains and sumps constructed in the bottom of the excavations.</p>

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BLM 480	First paragraph, first sentence: Delete "(HC)" - just use "Hurricane Cliffs" instead.	The suggested edit has been incorporated.		Edit made. Section 5.3.1.1.10, Chapter 5 of the PLP is now Section 5.3.1.1.11 Hurricane Cliffs Area Geologic and Hydrogeologic Conditions, Chapter 5, Exhibit E of the License Application. The first sentence, first paragraph, Section 5.3.1.1.11, Chapter 5, Exhibit E of the License Application is revised to read: The forebay and afterbay reservoir sites in the Hurricane Cliffs area were drilled and tested to investigate subsurface conditions and perform geotechnical evaluations of the bedrock.
BLM 481	Second paragraph, first sentence (occurs in 2 places). Type out Hurricane Cliffs instead of using the acronym "HC".	The suggested edit has been incorporated.		Edit made. All references to "HC" in Section 5.3.1.1.11, Chapter 5, Exhibit E of the License Application are replaced with Hurricane Cliffs as stated in the response to BLM Comment No. 480.
BLM 483	Fifth paragraph, first sentence. Change "several hundreds of feet" to "several hundred feet."	The suggested edit has been incorporated.	Edit not completely incorporated ... please delete "of".	Edit made. The fifth paragraph, first sentence, Section 5.3.1.1.11, Chapter 5, Exhibit E of the License Application is revised to read: The bedrock structure at the cliff face, and up to several hundred feet behind the cliff face, is likely highly to moderately disturbed (i.e. highly fractured, fault gouge, weak and very poor quality rock) along a number of relict fault features due to the "scissor" and "ramp-forming" nature associated with the normal, en-echelon stepping, extensional fault mechanics that were active during the initiation phases of the Hurricane Fault, which is classified as a normal fault with down to the west displacement.
BLM 484	3rd complete paragraph on page, first sentence: Change "nature associated to the normal" to "nature associated with the normal."	The suggested edit has been incorporated.		Edit made. The first sentence of the 5th paragraph of Section 5.3.1.1.11, Chapter 5, Exhibit E of the License Application is revised to read: The bedrock structure at the cliff face, and up to several hundred feet behind the cliff face, is likely highly to moderately disturbed (i.e. highly fractured, fault gouge, weak and very poor quality rock) along a number of relict fault features due to the "scissor" and "ramp-forming" nature associated with the normal, en-echelon stepping, extensional fault mechanics that were active during the initiation phases of the Hurricane Fault, which is classified as a normal fault with down to the west displacement.
BLM 485	4th line on page: Type out "Hurricane Cliffs" instead of using the "HC" acronym.	The suggested edit has been incorporated.		Edit made. Please see response to BLM Comment No. 480.
BLM 486	1st line of 2nd complete paragraph on page: Change "will" to "would".	The suggested edit has been incorporated.		Edit made. The comment refers to the 9th paragraph, Section 5.3.1.1.11, Chapter 5, Exhibit E of the License Application. The paragraph is revised to read: The Navajo Sandstone Formation is expected to be the main rock type that would likely be encountered in the Sand Hollow tunnel, although bedded sandstones and sandy siltstones of the Kayenta formation may be encountered at the west end of the tunnel and portal area.
BLM 487	4th complete paragraph on page: 1) 2nd line: Change semicolon to a comma. 2) 4th line: Change "will" to "would".	The suggested edits have been incorporated.		Edit made. The first sentence, 12th paragraph, Section 5.3.1.1.11, Chapter 5, Exhibit E of the License Application is revised to read: During drilling, the Navajo Sandstone was encountered at approximately 8 to 9 feet below ground surface at the location of the proposed Option 4 Afterbay embankment, and was exposed on the ground surface close to the proposed Sand Hollow tunnel eastern portal. The second sentence in the 12th paragraph, Section 5.3.1.1.11, Chapter 5, Exhibit E of the License Application is revised to read: The Navajo Sandstone is dipping towards the east so it is expected that the Navajo Sandstone would likely be close to the ground surface on the west side of the basalt capped ridge above the Afterbay and along the Sand Hollow tunnel.
BLM 488	3rd line: Change "damage of major human structures" to "damage to human structures." 6th line: "Long-term loss of important wildlife habitat." What is considered "important"?	The suggested edits have been incorporated.	2nd part of comment (regarding defining what is considered "important" wildlife habitat) was not addressed.	Change made regarding "damage to ..." and important wildlife habitat clarified. Section 5.3.1.2.1.3, Chapter 5, Exhibit E of the License Application is revised to read: Slope failure along the pipeline alignments would be considered a significant effect if the slope failure were caused by construction or operation of the pipeline or associated features, and if the slope failure resulted in injury to humans, damage to human structures, or damage to the environment (significant and long-term erosion; discharges to streams, rivers, lakes or reservoirs causing degradation of water quality as defined by Utah or Arizona state law; or long-term loss of important wildlife habitat, including but not limited to riparian areas and sensitive species habitat).
BLM 489	Geologic Hazards to Human Health and Safety. Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project from geology/soils. Thus, delete this section.	Refer to the responses to BLM Comments 470 and 472.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP.	Please refer to the response to BLM comment No. 472.
BLM 490	Important Structures and Mineral Resources. Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. Thus, remove the part of this section on "Important Structures."	Refer to the responses to BLM Comments 470 and 472.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP.	Please refer to the response to BLM Comment No. 473.
BLM 491	First sentence. "Construction or operation effects on important human structures" Please define the word "important."	Refer to the responses to BLM Comments 470 and 472.	Response did not address the comment (regarding defining what is considered an "important" human structure).	The word "important" is deleted as a qualifier on "human structures". Instead, human structures are defined. The first sentence in Section 5.3.1.2.1.6, Chapter 5, Exhibit E of the License Application is revised to read: Construction or operation effects on human structures (such as buildings, pipelines, highways, and wells) would be significant if they would result in major damage or access limitations to the structures.

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BLM 493	First sentence. Remove: "various alignments, including the" and insert "alignment" after "Proposed Action".	The suggested edit has been incorporated.		Edit made. The first sentence, Section 5.3.1.2.2.3, Chapter 5, Exhibit E of the License Application is revised to read: Locations where rockfall and steep slopes occur along the Proposed Action alignment and associated alignment sections are shown in Tables 5-5, 5-7, and 5-8.
BLM 494	Fifth sentence. "Site stabilization measures." Such as? These would be unlikely to stabilize unstable slopes. Construction would only exacerbate the problem.	Site stabilization measures will be developed during the detailed design phase of the project and are not addressed at this stage. The reviewer cannot say with confidence that such measures would be "unlikely to stabilize unstable slopes. Construction would only exacerbate the problem" because such measures are yet to be developed and would occur after detailed design.	Seems like UDWR should have some idea at this point of what kinds of site stabilization measures could be implemented. Disagree with UDWR's response – UDWR cannot state with certainty that these measures would in fact stabilize unstable slopes. Unstable slopes are just that, and new disturbance would likely make them even more unstable. This "possibility" should at least be acknowledged.	The possibility that new disturbance may increase instability is acknowledged and site stabilization measures that could be applied to unstable slopes are identified. The fifth sentence in Section 5.3.1.2.2.3, Chapter 5, Exhibit E of the License Application is revised to read: Individual locations would need to be examined before heavy earthwork, especially blasting, could take place as new disturbance may increase the instability of specific locations. Site stabilization measures (such as retaining walls or reinforced earth applications) or removal of rock and soil at risk of failure may need to occur before proceeding.
BLM 495	1st line on page (last sentence of section): Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Change made. The sentence is now the last line of Section 5.3.1.2.2.3, Chapter 5, Exhibit E of the License Application and is revised to read: If design considerations are implemented where appropriate, no measurable or significant effects would occur.
BLM 496	Last sentence. What are some examples of the design considerations?	As stated in the text, examples of design considerations include overexcavation and placement of additional bedding.	Revision is mostly OK but please add "these" before "design considerations".	Design consideration examples are included. The last sentence in Section 5.3.1.2.2.4, Chapter 5, Exhibit E of the License Application is revised to read: Construction in such materials may require special design considerations, such as over-excavation and placement of additional bedding. If these design considerations are implemented where appropriate, no measurable or significant effects would occur.
BLM 497	Last sentence. Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Change made. The last sentence in Section 5.3.1.2.2.4, Chapter 5, Exhibit E of the License Application is revised to read: If these precautions are followed, no measurable or significant effects would occur.
BLM 498	Geologic Hazards on Human Health and Safety. Remember, this is the "Impacts to Geology and Soils" section (not human health and safety).	Refer to the responses to BLM Comments 470 and 472.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP.	Please refer to the response to BLM Comment No. 472.
BLM 499	Last sentence. Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Change made. The last sentence in Section 5.3.1.2.2.5, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 500	Important Structures and Mineral Resources. Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS, or impacts from the project on other resources. Thus, remove the part of this section on "Important Structures." Last sentence. Change "effects and no" to "or."	Refer to the responses to BLM Comments 470 and 472.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP. Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Please refer to the response to BLM Comment No. 473 for a partial response to BLM Comment No. 500. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS. The heading title of Section 5.3.1.2.2.6, Chapter 5, Exhibit E of the License Application is revised to read: Structures and Important Mineral Resources. Requested edit is made. The eighth sentence in Section 5.3.1.2.2.6, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 502	Fourth sentence. Where are these existing gravel pits on public and private lands? The location of sites considered for borrow and spoil MUST be identified NOW in Chapter 3.	Refer to the response to BLM Comment 478.		The comment refers to Section 5.3.1.2.2.6 Important Structures and Mineral Resources, of the PLP, but should have referred to Section 5.3.1.2.2.7 Borrow and Spoil. Please refer to the response to BLM Comment No. 477 for changes regarding borrow and spoil site requirements between the PLP and License Application.
BLM 503	3rd line on page: Change "will" to "would".	The suggested edit has been incorporated.		Edit made. The fifth sentence Section 5.3.1.2.2.8, Chapter 5, Exhibit E of the License Application is revised to read: The infiltration rates would be relatively high at the beginning of excavation where groundwater is encountered.
BLM 505	Last sentence. Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence of Section 5.3.1.2.3.1, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects associated with fault movement are expected to occur.
BLM 506	First paragraph, last sentence. Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence of Section 5.3.1.2.3, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects are expected to occur.
BLM 508	Second paragraph, last sentence (5th/6th lines on page 5- 73): Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence in the first paragraph of Section 5.3.1.2.3.2, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects are expected to occur. The last sentence in the second paragraph of Section 5.3.1.2.3.2, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects are expected to occur.

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BLM 509	First sentence. Remove “various alignments, including the” and insert “alignment” after “Proposed Action”. Last sentence. Change “effects and no” to “or.”	The suggested edit to the first sentence has been incorporated into the text. UDWR’s view is that the last sentence is appropriate as written.	First sentence edit is fine. Last sentence: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	The first sentence of Section 5.3.1.2.3.3, Chapter 5, Exhibit E of the License Application is revised to read: Locations where rockfall and steep slopes occur along the Proposed Action alignment and associated alignment sections are shown in Tables 5-5 through 5-8. The last sentence in the same paragraph is revised to read: Therefore, no measurable or significant effects would occur.
BLM 510	Last sentence: 1) What are examples of the design considerations? 2) Change “effects and no” to “or.”	Examples of design considerations include overexcavation and the placement of additional bedding. UDWR’s view is that the end of the sentence is appropriate as written.	1st bullet: add (for clarification) – “such as overexcavation and placement of additional bedding” after “design considerations.” 2nd bullet: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	BLM wording is added to the first bullet and the edit changing “effects and no” to “or” is made. The last sentence of Section 5.3.1.2.3.4, Chapter 5, Exhibit E of the License Application is revised to read: If design considerations such as over-excavation and placement of additional bedding are implemented where appropriate, no measurable or significant effects would occur associated with operations and maintenance.
BLM 511	Geologic Hazards on Human Health and Safety. Remember, this is the “Impacts to Geology and Soils” section (not impacts to human health and safety). “Geologic hazards on human health and safety during operations and maintenance would be minimized by following standard design and construction practices. Therefore, no measurable effects and no significant effects would occur.” This needs to be described more... it not an adequate analysis. Last sentence. Change “effects and no” to “or.”	Refer to response to BLM Comments 470 and 472. UDWR’s view is that the last sentence is appropriate as written.	Disagree with UDWR’s response ... text in Sec. 5.3 states that “This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources” (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP. This part of comment was not addressed. Last sentence: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Please refer to that portion of the response to BLM Comment No. 472 which discusses how the documents were prepared based on FERC’s Scoping Document 2. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS. The second sentence in Section 5.3.1.2.3.5, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 512	Important Structures and Mineral Resources. Remember that this section (5.3.1) is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. 1st line: Change “effects and no” to “or.” Explain why there would be “No measurable effects and no significant effects would occur in connection with the Proposed Action operations and maintenance.”	Refer to response to BLM Comments 470 and 472.	Disagree with UDWR’s response ... text in Sec. 5.3 states that “This section describes the alternatives on environmental resources” (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP. Original requested edit is more accurate than the UDWR revision – please make the edit requested. This part of comment was not addressed.	Please refer to the response to BLM Comment No. 473 for a partial response to BLM Comment No. 512. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS. The heading of Section 5.3.1.2.3.6, Chapter 5, Exhibit E of the License Application is revised to read: Structures and Important Mineral Resources. The first and second sentences of Section 5.3.1.2.3.6, Chapter 5, Exhibit E of the License Application are revised to include the requested edits and read: Project operations and maintenance, involving pumping water through the pipeline and penstock, periodically visiting pump stations and hydroelectric generating stations, and inspecting and maintaining the inside of the pipeline and penstock, would have no measurable effects on structures and important mineral resources along the LPP alignments. No measurable or significant effects would occur in connection with the Proposed Action operations and maintenance.
BLM 513	1st line: Change “effects and no” to “or.” Explain why there would be “No measurable effects and no significant effects would occur in connection with the Proposed Action operations and maintenance.”	UDWR’s view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested. This part of comment was not addressed – as is, it’s not an adequate impacts analysis.	Edit made as requested and impact analysis revised as follows. The first, second and third sentences of Section 5.3.1.2.3.7, Chapter 5, Exhibit E of the License Application are revised to read: Borrow and spoil for the LPP would be as described in Sections 3.1.1.2.1 and 3.1.1.3.1 in Chapter 3, Exhibit E of the License Application. LPP operations and maintenance would involve pumping water through the pipeline and penstock, periodically visiting pump stations and hydroelectric generating stations by light truck vehicles, and inspecting and maintaining the inside of the pipeline and penstock using the “pig”, a remote controlled apparatus that periodically is sent through the inside of the pipeline. None of these activities would restrict access to or interfere with borrow and spoil operations along the alignment. LPP operation and maintenance would therefore have no measurable or significant effects on borrow and spoil within the right-of-way along the LPP alignment. No measurable or significant effects would occur in connection with the Proposed Action operations and maintenance.
BLM 514	Much of the second half of this section discusses impacts to groundwater ... remember that this is the “Impacts to Geology and Soils” section, not impacts to groundwater (that is Section 5.3.5). Please revise this analysis accordingly.	The text has been revised to remove the discussion of groundwater impacts.	Thank you for removing the text on groundwater, but the revised text is not an adequate impacts analysis. Is it trying to say “no effect”? If so, clearly say that.	The impact analysis is strengthened and the effects are clarified. The text in Section 5.3.1.2.3.8, Chapter 5, Exhibit E of the License Application is revised to read: The rock and geologic structure of the massive Navajo sandstone at the Intake Pump Station site appears to be suitable for constructing, operating and maintaining the shafts, tunnels, and other underground features. The volume of rock within the Navajo Sandstone affected by the Intake Pump Station is insignificant when compared to the areal extent of the formation. No measurable effects would occur on the rock and geologic structure of the massive Navajo sandstone at the Intake Pump Station site from LPP operations and maintenance. Therefore, no measurable or significant effects would occur.

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 515	Much of the second half of this section discusses impacts to groundwater ... remember that this is the "Impacts to Geology and Soils" section, not impacts to groundwater (that is Section 5.3.5). Please revise this analysis accordingly.	Refer to the response to BLM Comment 514.	Thank you for removing the text on groundwater, but the revised text is not an adequate impacts analysis. Is it trying to say "no effect"? If so, clearly say that.	"No Effects" clarified. The eighth sentence in Section 5.3.1.2.3.9, Chapter 5, Exhibit E of the License Application is revised to read: There would be no measurable or significant effects on the Navajo sandstone and Kayenta formation from LPP operations and maintenance activities in the Hurricane Cliffs forebay and afterbay areas.
BLM 516	Last sentence. Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence of section 5.3.1.2.4.2, Chapter 5, Exhibit E of the License Application is revised to read: Effects associated with seismic activity for the Existing Highway Alternative would be similar to effects for the Proposed Action. No measurable or significant effects are expected to occur.
BLM 517	Last sentence. What are some examples of appropriate precautions?	Appropriate precautions include providing an adequate depth of backfill over the pipe. This would be addressed during the detailed design phase of the	Add "such as providing an adequate depth of backfill over the pipe" after "appropriate precautions."	Change made. The last sentence in Section 5.3.1.2.4.3, Chapter 5, Exhibit E of the License Application is revised to read: These locations are primarily associated with channel crossings or adjacent loose rock outcrops on steep slopes. The slope failure hazards are similar to the hazards for the Proposed Action; therefore no effects would occur if appropriate precautions, such as providing adequate depth of backfill over the pipe, are taken.
BLM 518	• Last sentence. What are some examples of the design considerations? Change "effects and no" to "or."	Design considerations include overexcavation and the placement of additional bedding. UDWR's view is that the text in the last sentence is appropriate as written.	1st bullet: Add "such as overexcavation and the placement of additional bedding" after "design considerations." 2nd bullet: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Please refer to the response to BLM Comment No. 510.
BLM 519	Geologic Hazards on Human Health and Safety. Remember, this is the "Impacts to Geology and Soils" section (not human health and safety).	Refer to the responses to BLM Comments 470 and 472.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP.	Please refer to the response to BLM Comment No. 472 for a partial response to BLM Comment No. 519. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS. Requested edit is incorporated. The third sentence in Section 5.3.1.2.4.5, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 520	1st line on page: Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence in Section 5.3.1.2.4.5, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 521	Important Structures and Mineral Resources. Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources.; Last sentence. Change "effects and no" to "or." *What are examples of the appropriate precautions?	Refer to response to BLM Comments 470 and 472. UDWR's view is that the text in the last sentence is appropriate as written. Appropriate precautions will be addressed as BMPs during detailed design.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into the PLP. 1st bullet: Original requested edit is more accurate than the UDWR revision – please make the edit requested. 2nd bullet: Add examples of "appropriate precautions" to the text (as was done in Secs. 5.3.1.2.4.3 and 5.3.1.2.4.4 (see response on BLM Comments 517 and 518).	Please refer to the response to BLM Comment #472 for an explanation of the content of Section 5.3 and partial response to BLM Comment No. 521. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS. The heading of Section 5.3.1.2.4.6, Chapter 5, Exhibit E of the License Application is revised to read: Structures and Important Mineral Resources. The edit requested is made and reference to a previous discussion of the same effects is included. The second and third sentences in Section 5.3.1.2.4.6, Chapter 5, Exhibit E of the License Application are revised to read: The primary risk of damage and the potential effects would be the same as described for the Proposed Action in Section 5.3.1.2.2.6 and includes the same structures, which are located along pipeline segments common to both alignment alternatives. Therefore, no measurable or significant effects would occur.
BLM 522	1st paragraph: Text states that "Rock excavated along the alignment suitable for crushing would meet 46 percent of the pipeline and penstock bedding requirements, and approximately 1,132,500 cubic yards of bedding material would need to be imported from commercial gravel pits." Please explain where this bedding material will be obtained from. This is a lot of material. BLM agrees with the assessment that "The bedding material requirements and the associated land disturbance under the Existing Highway Alternative would be a significant effect on existing commercial gravel pits and currently undisturbed land areas suitable for producing construction bedding materials."	Refer to the response to BLM Comment 474.	Comment was not addressed ... text in this section still states that additional material would be "imported from commercial gravel pits". Need to identify where these sources/pits would be.	Please see the response to this comment, BLM Comment No. 522, in the attached Extended Narrative document.

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 523	Second paragraph, first sentence. "Existing gravel pits on public and private lands..." Please identify where these locations are. Can't say "the Existing Highway Alternative would have no significant effects resulting from spoil material disposal" until it is known where these locations are.	Refer to the response to BLM Comment 474.	Comment was not addressed ... text in this section still states that additional material would be "imported from commercial gravel pits". Need to identify where these sources/pits would be.	Gravel pit sources are now identified through response to BLM Comment No. 522 in the first paragraph of Section 5.3.1.2.4.7, Chapter 5, Exhibit E of the License Application which has replaced the PLP in the FERC licensing process.. Please see the response to BLM Comment No. 522 which provides that information.
BLM 524	Last sentence. Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence in Section 5.3.1.2.5.1, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects associated with fault movement are expected to occur.
BLM 525	Last sentence. Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence in Section 5.3.1.2.5.3, Chapter 5, Exhibit E of the License Application is revised to read: No measurable or significant effects would occur.
BLM 526	• Last sentence. What are some examples of the design considerations? • Change "effects and no" to "or."	Design considerations include overexcavation and the placement of additional bedding. UDWR's view is that the text in the last sentence is appropriate as written.	1st bullet: Add "such as overexcavation and the placement of additional bedding" after "design considerations." 2nd bullet: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edits made. The last sentence of Section 5.3.1.2.5.4, Chapter 5, Exhibit E of the License Application is revised to read: If design considerations, such as overexcavation and the placement of additional bedding, are implemented where appropriate, no measurable or significant effects would occur associated with operations and maintenance activities.
BLM 527	Geologic Hazards to Human Health and Safety. "No measurable effects and no significant effects would occur." Explain why no effects (can't just say there are none without describing how that conclusion was reached).	As stated in Section 5.3.1.1.7, no geologic hazards were identified that would be caused or exacerbated by the project. Section 5.3.1.1 of the text addresses the Affected Environment, where conditions and analysis are summarized, and Section 5.3.1.2 addresses Environmental Effects, including significance criteria and whether or not conditions meet those criteria. Section 5.3.1.2 does not present analytical methods. UDWR's view is that that no change to the text is needed.	UDWR's response is inaccurate and makes no sense ... this IS the environmental effects section, so an explanation needs to be included HERE to support a statement of effects (or no effects).	An explanation of "No Effects" is provided. The first paragraph in Section 5.3.1.2.5.5, Chapter 5, Exhibit E of the License Application is revised to read: Geologic hazards on human health and safety during operations and maintenance would be minimized by following standard design and construction practices, such as trench shoring or sloping, and slope stabilization. Therefore, no measurable or significant effects would occur.
BLM 528	Important Structures and Mineral Resources. • Explain why no measurable or significant effects (can't just say there are none without describing how that conclusion was reached). • Change "effects and no" to "or."	Refer to the response to BLM Comment 527.	1st bullet: UDWR's response is inaccurate and makes no sense ... this IS the environmental effects section, so an explanation needs to be included HERE to support a statement of effects (or no effects). 2nd bullet: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	An explanation of why there are no measurable effects is provided and the edit is made. Section 5.3.1.2.5.6, Chapter 5, Exhibit E of the License Application is revised to read: Structures and Important Mineral Resources. The primary risk of damage and the potential effects would be the same as described for the Proposed Action in Section 5.3.1.2.6 and includes the same structures, which are located along pipeline segments common to both alignment alternatives. Therefore, no measurable or significant effects would occur.
BLM 529	Borrow and Spoil. • Explain why no measurable or significant effects (can't just say there are none without describing how that conclusion was reached). • Change "effects and no" to "or."	Refer to the response to BLM Comment 527.	1st bullet: UDWR's response is inaccurate and makes no sense ... this IS the environmental effects section, so an explanation needs to be included HERE to support a statement of effects (or no effects). 2nd bullet: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	An explanation of why no measurable or significant effects is provided and the edit is made. The first, second and third sentences of Section 5.3.1.2.7.7, Chapter 5, Exhibit E of the License Application are revised to read: Borrow and spoil for the LPP would be as described in Sections 3.1.1.2.1 and 3.1.1.3.1 in Chapter 3, Exhibit E of the License Application. LPP operations and maintenance would involve pumping water through the pipeline and penstock, periodically visiting pump stations and hydroelectric generating stations by light truck vehicles, and inspecting and maintaining the inside of the pipeline and penstock using the "pig." Such activities would not limit access to or interfere with operations of borrow and spoil operations along the LPP alignment and therefore would have no measurable or significant effects on borrow and spoil in connection with operations and maintenance of the Existing Highway Alternative.

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 530	<p>Southeast Corner Alternative Construction Effects.</p> <ul style="list-style-type: none"> • First paragraph, first sentence. "...on human health and safety, important structures and mineral resources..." Remember, this is the "Impacts to Geology and Soils" section (not impacts on human health and safety). • First paragraph, first sentence. Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to "important structures" FROM GEOLOGY/SOILS, or impacts from the project on other resources. Thus, remove the part of this sentence on "Important Structures." 	Refer to the response to BLM Comments 470 and 472.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project, and not impacts on public health and safety. This edit needs to be incorporated into Exhibit E.	<p>Please refer to the response to BLM Comment No. 472 for an explanation of the content of Section 5.3 and partial response to BLM Comment No. 530.</p> <p>This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS.</p> <p>The word "important" is deleted as a qualifier of "structures". The first sentence in Section 5.3.1.2.6, Chapter 5, Exhibit E of the License Application is revised to read: Construction effects associated with fault movement, seismic activity, rockfall and steep slopes, expandable, collapsible, or subsiding soils or rocks, geologic hazards on human health and safety, structures and important mineral resources, Intake Pump Station, and Hurricane Cliffs forebay and afterbay reservoir areas would be the same as described for the Proposed Action in Section 5.3.1.2.2.</p>
BLM 531	<p>Southeast Corner Alternative Construction Effects.</p> <ul style="list-style-type: none"> • First paragraph, second sentence. "Rock excavated along the alignment suitable for crushing would meet 93 percent of the pipeline and penstock bedding requirements, and approximately 116,500 cubic yards of bedding material would need to be imported from commercial gravel pits." WHERE are these gravel pits located? (Need to identify them now.) • First paragraph, second sentence. "Rock excavated along the alignment suitable for crushing would meet 93 percent of the pipeline and penstock bedding requirements, and approximately 116,500 cubic yards of bedding material would need to be imported from commercial gravel pits. The Southeast Corner Alternative would require expanding additional gravel resources to meet construction demands for the LPP pipeline and penstock alignments. The bedding material requirements and the associated land disturbance under the Southeast Corner Alternative would have a significant effect on existing commercial gravel pits and currently undisturbed land areas suitable for producing construction bedding materials." Would this really be a significant impact? • Second paragraph, first sentence. "Existing gravel pits on public and private lands..." Where are these gravel pits located? Need to identify them NOW. 	Refer to the response to BLM Comments 474, 523 and 527.	<p>1st bullet: Okay</p> <p>2nd bullet: Thank you for the revision. However, the question is now whether this alternative would have "measurable effects on borrow material development" since "rock excavation along the alignment ... would meet all of the pipeline and penstock bedding requirements."</p> <p>3rd bullet: Okay</p>	The first sentence in the first paragraph of Section 5.3.1.2.6.1, Chapter 5, Exhibit E of the License Application is revised to read: The Southeast Corner Alternative would have no measurable effects on borrow material development for pipeline and penstock bedding.

Comment #	Original Comment	Original UDWRe Response	BLM Comment Disposition	UDWRe Response
BLM 533	<p>Southeast Corner Alternative Operation and Maintenance Effects.</p> <ul style="list-style-type: none"> • First paragraph, first sentence. "...on human health and safety, important structures and mineral resources..." <p>Remember that this is the "Impacts to Geology and Soils" section (not "impacts on human health and safety"). It is also not the impacts to "important structures" FROM GEOLOGY/SOILS, or impacts from the project on other resources. Thus, remove the part of this sentence on "Important Structures."</p>	Refer to the response to BLM Comments 470 and 472.	Disagree with UDWRe's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project, and not impacts on public health and safety. This edit needs to be incorporated into Exhibit E.	<p>Please refer to the response to BLM Comment No. 473 for an explanation of the content of Section 5.3.</p> <p>This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS.</p> <p>The first sentence in Section 5.3.1.2.7, Chapter 5, Exhibit E of the License Application is revised to read: Operation and maintenance effects associated with fault movement, seismic activity, rockfall and steep slopes, expandable, collapsible, or subsiding soils or rocks, geologic hazards on human health and safety, structures and important mineral resources, borrow and spoil, Intake Pump Station, and Hurricane Cliffs forebay and afterbay reservoir areas would be the same as described for the Proposed Action in Section 5.3.1.2.3.</p>
BLM 535	Third sentence. What are examples of site stabilization measures? Please provide, to give substance to this analysis. Last Sentence: Change "effects and no" to "or."	Site stabilization measures for the Warner Valley Reservoir could include rock bolts and anchoring, and blasting, excavation, removal, and re-contouring of potential unstable slopes. UDWRe's view is that the last sentence is appropriate as written.	1st Comment: Okay 2nd Comment: Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	Edit made. The third and fourth sentences in Section 5.3.1.2.8.3, Chapter 5, Exhibit E of the License Application are revised to read: Individual locations would need to be examined before heavy earthwork, especially blasting, could take place, and site stabilization measures such as rock bolt installation and blasting, excavation and re-contouring or removal of rock and soil at risk of failure may need to occur before proceeding. If these precautions are followed, no measurable or significant effects would occur.
BLM 536	Last Sentence: Change "effects and no" to "or."	UDWRe's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	Edit made. The last sentence of Section 5.3.1.2.8.4, Chapter 5, Exhibit of the License Application is revised to read: If design considerations are implemented where appropriate, no measurable or significant effects would occur.
BLM 538	Last Sentence: Change "effects and no" to "or."	UDWRe's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	Edit made. The last sentence of Section 5.3.1.2.8.5, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 539	Important Structures and Mineral Resources. Remember that this section (5.3.1) is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. Thus, remove the part of this sub-section that discusses "Important Structures."	Refer to the responses to BLM Comments 470 and 472.	Disagree with UDWRe's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project. This edit needs to be incorporated into Exhibit E.	<p>Please refer to the response to BLM Comment No. 473 for an explanation of the content of Section 5.3 and partial response to BLM Comment No. 539.</p> <p>This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS.</p> <p>Edit requested is incorporated. The fifth sentence in Section 5.3.1.2.8.6, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.</p>
BLM 540	Last Sentence: Change "effects and no" to "or."	UDWRe's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	Edit made. The last sentence of section 5.3.1.2.8.6, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 541	"Borrow materials for the Warner Valley Reservoir embankment dam would be supplied from local gravel pits and other material sources in the St. George metropolitan area." Where are these locations? They need to be identified NOW.	Refer to the responses to BLM Comments 474 and 523.	Comment was not addressed ... need to identify where these sources/pits would be.	The locations of the borrow materials pits are provided. The text in Section 5.3.1.2.8.7, Chapter 5, Exhibit E of the License Application is revised to read: Borrow materials for the Warner Valley Reservoir embankment dam would be supplied from local gravel pits and other material sources in the St. George metropolitan area. Three commercial gravel pits (see B-4, B-5 and B-6 on attached Figure 2-6) would have available rock materials to meet borrow needs for the embankment dam. There would be no measurable effects and no significant effects on borrow materials supplied from St. George area sources.
BLM 542	Last Sentence: Change "effects and no" to "or."	UDWRe's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	Edit made. The last sentence in Section 5.3.1.2.8.7, Chapter 5, Exhibit E of the License Application is revised to read: There would be no measurable or significant effects on borrow materials supplied from St. George area sources.
BLM 543	Last Sentence: Change "effects and no" to "or."	UDWRe's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	Edit made. The last sentence of Section 5.3.1.2.9.1, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or no significant effects associated with fault movement are expected to occur.
BLM 544	First paragraph, last Sentence: Change "effects and no" to "or." Second paragraph, last Sentence: Change "effects and no" to "or."	UDWRe's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	<p>Edits made. The last sentence in the first paragraph, Section 5.3.1.2.9.2, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects are expected to occur.</p> <p>The last sentence in the second paragraph of Section 5.3.1.2.9.2, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur associated with liquefaction.</p>
BLM 545	Last Sentence: Change "effects and no" to "or."	UDWRe's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWRe revision – please make the edit requested.	Edit made. The last sentence in the first paragraph, Section 5.3.1.2.9.3, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects are expected to occur.

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 547	<p>First paragraph, last Sentence: Change “effects and no” to “or.”</p> <p>Second paragraph: This paragraph states there would be adverse effects from soils not being irrigated. This is totally untrue. Irrigation is not a benefit to soils and geology. In fact, irrigation makes soils much more saline in this environment. Soils previously irrigated with potable water would transition to desert plant species and vegetation supported only by precipitation. Thus, allowing soils to return to a natural condition would be a benefit. They would develop biological soil crusts, which would prevent erosion. If this paragraph is kept in at all, it should be rewritten to read: “The No Lake Powell Water Alternative would have long-term beneficial effects on soil resources in the St. George metropolitan area. Only those areas irrigated with secondary water supplies would continue to be irrigated. Soils previously irrigated would transition to endemic plant species, which are adapted to the local climatic conditions. These soils over time would develop biological soil crusts, which would make them resistant to wind erosion. In addition, salt accumulation at the soil surface may be minimized with the elimination of irrigation – salts may build up in the soil when poor soil drainage (due to compacted and/or clayey soils) prevents irrigation water from leaching the salt down through the soil profile. Deep percolation of water down through the soil profile moves salt out of the rooting zone, and surface evaporation concentrates the salts at the soil surface. This would result in long-term benefits to soils in the area.”</p>	<p>UDWR’s view is that the last sentence of the first paragraph is appropriate as written.</p> <p>The BLM reviewer is reminded that the evaluation of impacts is not based on original, pristine natural conditions, but on existing conditions that serve as a baseline for impacts. Removal of irrigation would change those conditions and the impact would be significant. The existing vegetation would change and diminish without being replaced by comparable ground cover, and the potential for erosion by wind and rain would increase until natural conditions could be re-established. The development of cryptobiotic soils is a process that, in southern Utah, can be expected to take decades or even centuries, and erosion can remove soils prior to establishment of soil crusts (Belnap, J. 2013. Cryptobiotic Soils: Holding the Place in Place. http://geochange.er.usgs.gov/sw/impacts/biology/crypto/. UDWR’s view is that that no change to the statement is needed.</p>	<p>1st comment: Original requested edit is more accurate than the UDWR revision – please make the edit requested.</p> <p>2nd comment: Disagree with UDWR’s assertion in their response ... removing irrigation water would be beneficial to soils because they no longer would be saturated. Please note that the BLM reviewer did consider the change from current conditions and is well aware of what constitutes baseline information for an impacts analysis. UDWR’s conclusion on impacts to soils is completely inaccurate and needs to be revised as requested by the BLM.</p> <p>The BLM AZ Strip soil scientist had the following observations on this subject:</p> <p>1) A case can be made that irrigated fields (agronomic crops) or residential lawns can have lower rates of wind and water erosion due to higher levels of overall vegetative cover than a "native" or relatively undisturbed landscape. It's a "chicken or the egg" type argument though, as conversion of native shrub/grass/soil crust lands necessitates things like tillage and grading that, temporarily, are subject to well-documented levels of extreme soil loss. This argument also neglects consideration of xeriscaped residential and commercial development that have levels of soil losses lower than their more irrigated counterparts through the use of highly-erosion resistant rock and native vegetation cover components.</p> <p>2) Some "natural" erosion processes such as floodplain and windblown soil deposition are beneficial in terms of things like nutrient transport. The tone of the document seems to be that there is no downside to having irrigated-vegetation vis-a-vis soil resources and that all that is irrigated is good/superior to native vegetation and soils. As correctly pointed out, our landscapes have evolved to handle soil salt and erosion dynamics by favoring plants and soil flora/fauna that can handle these edaphic factors. The notion that since native vegetation and ecological conditions have been</p>	<p>Please see the attached Extended Narrative document for the response to BLM No. 547.</p>

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 549	Geologic Hazards on Human Health and Safety. Remember, this is the "Impacts to Refer to the responses to BLM Comments Geology and Soils" section (not "impacts 470 and 472. on human health and safety").		Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project, and not impacts on public health and safety. This edit needs to be incorporated into Exhibit E.	Please refer to the response to BLM Comment No. 472 which explains the content of Section 5.3, Chapter 5, Exhibit E of the License Application and which is based on FERC's Scoping Document 2. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS.
BLM 550	Last Sentence: Change "effects and no" to "or."	UDWR's view is that the text is appropriate as written.	Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Edit made. The last sentence in the first paragraph, Section 5.3.1.2.9.5, Chapter 5, Exhibit E of the License Application is revised to read: Therefore, no measurable or significant effects would occur.
BLM 551	Important Structures and Mineral Resources. Remember that this section (5.3.1) is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. Thus, delete "Important Structures" from the sub-section heading. Change "effects and no" to "or."	Refer to the responses to BLM Comments 470 and 472. UDWR's view is that the text regarding measurable and significant effects is appropriate as written.	1st comment: Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project, and not impacts on public health and safety or "important" structures. This edit needs to be incorporated into Exhibit E. 2nd comment: Original requested edit is more accurate than the UDWR revision – please make the edit requested.	Please refer to the response to BLM Comment No. 472, which explains the content of Section 5.3, Chapter 5, Exhibit E of the License Application, for a partial response to BLM Comment No. 551. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS. The word "important" is deleted as a qualifier of "structures" and the requested edit is made. Section 5.3.1.2.9.6, Chapter 5, Exhibit E of the License Application is revised to read: Structures and Important Mineral Resources. There would be no risk of damage to structures from operation and maintenance of the No Lake Powell Water Alternative. The Washington Fields Diversion operation with modifications constructed as part of the alternative would continue to operate as a diversion structure. Therefore, no measurable or significant effects would occur.
BLM 552	NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.	The No Action Alternative was not analyzed under the Geology and Soils Resources section because there would be no impacts (status quo). A subsection has been added for the No Action Alternative, indicating that there would be no impacts.	Thank you for adding the new sub-section. However, can't just say "no effect" without explaining WHY no effect. The No Action alternative needs to have as detailed an analysis as all other alternatives.	No Action Alternative analysis is added for the Geology and Soils Resources Section 5.3.1.2.10, Chapter 5, Exhibit E of the License Application. The text of the Section is revised to read: Under the No Action Alternative, the LPP would not be excavated or otherwise affected by construction or operation. Geology and soil resources in the LPP alignments would remain in their current baseline state. The No Action Alternative would have no effect on geology and soil resources.
BLM 553	Protection, Mitigation and Enhancement Measures. These are part of the Proposed Action, so should be analyzed as part of the alternative effects discussion, rather than be analyzed on their own—i.e., do they mitigate adverse effects of the alternatives?	The Protection, Mitigation and Enhancement Measures are provided in the study reports and environmental documents as part of the license application in a separate section following the environmental analysis to meet FERC's requirements per 18 CFR 5.18 (b)(5)(ii)(C). They are considered additional measures to reduce the intensity of impacts on resources, in some cases to levels below identified significance criteria thresholds. If protection, mitigation and enhancement measures cannot further reduce impacts, then the residual or remaining impacts are documented as unavoidable impacts.	Response did not fully address the comment. The NEPA analysis should take mitigation measures into account when assessing impacts, so please do so.	The Protection, Mitigation and Enhancement (PM&E) Measures described in Section 5.3.1.3 are prepared to meet FERC's requirements for Exhibit E of the License Application. When the NEPA analysis is prepared for the DEIS, the PM&E measures could be incorporated into the description of the Proposed Action and/or the alternatives by the federal agencies. This will need to be decided by FERC and the Cooperating Agencies prior to the start of the NEPA analysis.

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 558	Last sentence. "...covered with topsoil as available, and planted with seeds from endemic plant species to stabilize the surface particles and avoid erosion." Change to "...covered with topsoil as available, and revegetated with an appropriate seed mixture to stabilize the surface particles and avoid erosion"	The sentence has been revised to say "...covered with topsoil as available, and revegetated with an endemic plant seed mixture to stabilize surface particles and avoid erosion."	Revised text is mostly okay, except for the use of the term "endemic". GSENM would want "native" seed only, but that is not a requirement (or necessarily desirable in all cases) on the AZ Strip. Please replace "endemic" with "appropriate" (which will vary from location to location).	Edit made. Section 5.3.1.3.5, Chapter 5, Exhibit E of the License Application is revised to read: Soil and rock materials unsuitable for use as pipeline and penstock trench backfill would be spread and partially compacted, the surface reclaimed to match approximate original topography (surrounding landscapes), covered with topsoil as available, and revegetated with an appropriate plant seed mixture to stabilize surface particles and avoid erosion.
BLM 559	Last sentence. "Blasting would be performed as unobtrusively as possible and managed to avoid damage to nearby structures, facilities and properties." Remember that this is the "Impacts to Geology and Soils," not impacts to other resources.	Refer to the responses to BLM Comments 470 and 472.	Disagree with UDWR's response ... text in Sec. 5.3 states that "This section describes the anticipated effects of the Proposed Action and alternatives on environmental resources" (emphasis added), in this case impacts TO geology/soils, not impacts to the project, and not impacts on structures, facilities and properties. This edit needs to be incorporated into Exhibit E.	Please refer to that portion of the response to BLM Comment No. 473 which explains the content of Section 5.3 and which discusses how the documents were prepared based on FERC's Scoping Document 2. This comment points out the difference between the information required to be submitted by FERC as part of the License Application process, which will be utilized in the preparation of the DEIS, and the actual NEPA analysis that will be performed during preparation of the DEIS.
BLM 560	How does groundwater drawdown affect soils and geology? This seems to be a water impacts discussion.	The text has been revised to remove the discussion of groundwater drawdown.	Mostly okay with revision. However, UDWR should be aware that the first sentence of the 2nd paragraph needs to be corrected: Southern Parkway now extends from I-15 to Sand Hollow and on to Hurricane (not just to the new airport).	Correction made. The second paragraph in Section 5.3.1.4.1, Chapter 5, Exhibit E of the License Application is revised to read: The Southern Parkway is a proposed four-lane highway, part of which has been constructed from I-15 south of St. George to St. George Municipal Airport. The segment from the airport to Sand Hollow Reservoir is a two-lane highway, while the segment on to Hurricane is a chip-sealed road. Construction of the highway has, and will, eliminate soil resources within the footprint of the roadway. Ongoing operation of the highway will permanently remove access to soil resources within the footprint of the roadway. This would be a cumulative effect for both construction and operation. The fourth paragraph in Section 5.3.1.4.1 is removed. Please see the response to BLM No. 547 in the Extended Narrative document for a partial response to BLM No. 561.
BLM 561	Second sentence. Add the word "beneficial" in between "significant" and "effects" in the sentence	Refer to the response to BLM Comment 547.	See BLM response for Comment No. 547.	A revision is made in conformance with the understandings on this issue reached in the March 17, 2017 meeting between BLM and UDWR. The last paragraph in Section 5.3.1.4.4, Chapter 5, Exhibit E of the License Application is revised to read: The No Lake Powell Water Alternative, and in particular that part of the alternative that would require the cessation of residential irrigation with potable water, would be an unprecedented action for a metropolitan area that could have a range of possible effects on soil resources in the St. George metropolitan area. None of the interrelated actions would combine with these effects to cause cumulative effects on soil resources.

Comment #	Original Comment	Original UDWR Response	BLM Comment Disposition	UDWR Response
BLM 562	<p>Second sentence. "The No Lake Powell Water Alternative would have significant effects on soil resources in the St. George metropolitan area; however, none of the interrelated actions would combine with these effects to cause cumulative effects on soil resources." This is not an adequate cumulative impacts analysis.</p>	<p>The cumulative impacts analysis has been modified in the text to include more discussion of cumulative impacts analysis for the No Lake Powell Water Alternative. Interrelated actions include the continued construction and operation of the Southern Corridor Highway, the development of the Jackson Flat Reservoir, and the construction of the Kern River – Hurricane Natural Gas Pipeline.</p> <p>The Southern Corridor Highway is a four-lane highway, part of which has already been constructed from I-15 south of St. George to the St. George Municipal Airport, and part of which will be constructed from the airport to State Route 9 near Hurricane. Construction of the highway has, and will, eliminate the soil resources within the footprint of the roadway. Ongoing operation of the highway will permanently remove access to soil resources within the footprint of the roadway. This would be a cumulative impact for both construction and operation.</p> <p>Jackson Flat Reservoir is under construction near Kanab. It will permanently occupy land and will remove the availability of soil resources underlying the reservoir and dam. This would be a cumulative impact for both construction and operation.</p> <p>The Kern River – Hurricane Natural Gas Pipeline will be constructed along one of two routes. In either case, soil resources will be temporarily removed during construction of the buried pipeline. This would be a cumulative impact during construction. Once constructed, soil will be replaced and the alignment revegetated, so no cumulative impacts would occur during operation.</p>	<p>Mostly okay with revised text except please note the BLM response for Comment No. 547.</p>	<p>Please see the response to BLM No. 561 for the response to BLM No. 562.</p>
BLM 563	<p>Unavoidable Adverse Effects. First paragraph. How does groundwater drawdown affect soils and geology? This seems to be a water impacts discussion.</p>	<p>The discussion of groundwater drawdown has been removed from the text.</p>	<p>Contrary to the UDWR response, groundwater drawdown was not removed from the text ... please do so.</p>	<p>Groundwater drawdown has been removed. The first paragraph in Section 5.3.1.5, Chapter 5, Exhibit E of the License Application is removed from the text. The second paragraph in Section 5.3.1.5 is revised to read: The Existing Highway Alternative would have a significant unavoidable adverse effect on borrow material development from commercial sources of bedding material for pipeline and penstock construction. Up to 1.22 million cubic yards of bedding material would have to be developed and imported to the pipeline and penstock construction alignments, resulting in additional land disturbance on private and/or leased public land in southwest Utah.</p> <p>The third paragraph in Section 5.3.1.5, Chapter 5, Exhibit E of the License Application is removed.</p>

Comment #	Original Comment	Original UDWRe Response	BLM Comment Disposition	UDWRe Response
BLM 564	<p>Last paragraph. "The No Lake Powell Water Alternative would have long-term unavoidable adverse effects on soil resources in the St. George metropolitan area. Soils would no longer be irrigated with potable water and would transition to either unvegetated conditions or support only desert vegetation, and the soil resources would be susceptible to erosion from wind and precipitation events." Change the above sentence to "The No Lake Powell Water Alternative would have no unavoidable adverse effects on soil resources."</p> <p>This paragraph states there would be adverse effects from soils not being irrigated. This is totally untrue. Irrigation is not a benefit to soils and geology. In fact, irrigation makes soils much more saline in this environment. Soils previously irrigated with potable water would transition to desert plant species and vegetation supported only by precipitation. Thus, allowing soils to return to a natural condition would be a benefit. They would also develop biological soil crusts, which would prevent erosion, and accumulation of salts at the soil surface would be minimized from lack of artificial watering.</p>	Refer to the response to BLM Comment 547.	See BLM response for Comment No. 547.	<p>Change made. The fourth paragraph in Section 5.3.1.5, Chapter 5, Exhibit E of the License Application is revised to read: The No Lake Powell Water Alternative could lead to some unavoidable adverse effects on soil resources.</p> <p>Please see the response to BLM Comment 547 for the response to the second part of BLM Comment No. 564.</p>