APPENDIX D

RESPONSE TO COMMENTS

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Comment #	Reviewer	Comment	Response
Comment 1	Fawcett Jensen Family	Given project location the likelihood of impacting significant cultural resources eligible for the National Register of Historic Places is great. Indirect effects such as allowing water to flow from pad sites impacting surrounding cultural resources and cumulative effects arising from fragmentation of the cultural landscape through oil development remain unanalyzed. Such projects should not be permitted within refuges of national importance and owned by all citizens.	The cultural review for the 2015 Environmental review revealed two sites within the Project Area. Both sites were not eligible for inclusion under the National Register of Historic Places. Nevertheless, the project proponent has agreed to a series of mitigation measures in the event that cultural resources are discovered.
Comment 2	Veronica Clarke	This constant attacks on the flora and fauna of our public lands has to stop. You are supposed to be stewards of our public lands, not auctioneers selling to the highest bidder. It is time you stepped up and did the job the public, your employers, hired you to do i.e. protect and maintain our public land for all Americans. We do not expect you to sell off (lease which is virtually the same since it denies access to the public) the land to mining corporations, many of whom are fronts for foreign conglomerations. If you cannot do the job we, the public, expect of you, say so and step down so we can hire people who give a damn about their mandate from the people.	While the Service manages the surface in the Project Area, it does not own the underlying minerals. The underlying minerals are owned by the State of Utah which are under the jurisdiction of the Utah School and Institutional Trust Land Administration (SITLA). The underlying minerals were vested in the state prior to the authorization and formation of the Ouray National Wildlife Refuge (Ouray NWR or Refuge). Therefore, the Service must allow access to the minerals following stipulations outlined in Code of Federal Regulations (CFR) Title 50 Subpart C 29.32 Non-Federal Mineral Rights. These stipulations ensure that the project proponent "must, to the greatest extent practicable, conduct all exploration, development, and production operations in such a manner as to prevent damage, erosion, pollution, or contamination to Service administered lands, waters, facilities, and to wildlife thereon." The purpose of this Draft Supplemental Environmental Assessment (SEA) and the original EA and associated Finding of No Significant Impact (FONSI) released in 2015, was to disclose impacts for the proposal. Potential impacts were discussed in chapter 4 of both the 2015 EA and the Draft SEA. A series of conservation measures to

Comment #	Reviewer	Comment	Response
			mitigate development and production impacts were provided in Appendix B of the Draft SEA.
Comment 3	Tana Hunter	Please do not allow drilling in the refuge. It is a refuge for a reason. The plants and animals and insects that live there need our conservation help. We are rapidly turning to non-carbon-based fuels for energy. Go nuclear!	Please see response to Comment 2.
Comment 4	Jo Smith	"From its start in 1903, the National Wildlife Refuge System has owed its very existence to concerned citizens eager to protect America's natural resources." That is pretty hard to believe. I am against any drilling in a national wildlife refuge. I don't even need to go into my reasons. My biggest question is, why designate national wildlife refuges in the first place? With enough hoops to make energy corporations jump through, it is clear what is most important to you -- it's not the environment, the plants or the animals that live there.	Please see response to Comment 2.
Comment 5	Paula Denissen	Dear Sir. Drilling and oil storage by the refuge is inappropriate. Water via the Green River corridor is also an issue in our dry Western lands. This push for fossil fuel extraction, at all cost, under the current administration is deplorable. We should be moving into the future not sinking into the past. We're handing a raw deal to our children who will have to deal with this mess, or live in it.	Please see response to Comment 2.
Comment 6	Stephen Erickson	Rob, as a Utah Audubon leader, I have visited your wonderful refuge on many occasions and always come away with fond memories for the bird diversity and lovely landscape. I'm hoping to rally support against the proposed drilling project from our chapters. Please let me know how we can have the greatest impact to protect this wildlife treasure.	Thank you for your comment.

Comment #	Reviewer	Comment	Response
Comment 7	Stephen Erickson	New proposed oil and gas development along Utah's Green River in the Ouray National Wildlife Refuge poses destructive threats to the Green River's sensitive riparian areas and endangered fish species. One of the drilling companies, Texas-based Thurston Energy, wants to amend their permit and drill and store oil in tanks adjacent to sensitive wetland areas and the Green River which would impact wildlife, migratory birds and threatened and endangered species.	Please see response to Comment 2. Effects to water resources and riparian habitat were addressed in Chapter 4, section 4.3 and 4.4 in the Draft SEA.
Comment 8	Stephen Erickson	Riparian habitat in areas like the Ouray National Wildlife Refuge is critical for declining fish and migratory bird species that rely upon the Green River corridor in Utah. The proposed development would not only risk contaminating groundwater and surface water critical for endangered species recovery efforts, but does not serve the purpose of the public wildlife refuge. There would be new oil wells, storage tanks and significant tanker truck traffic on the Refuge Road lasting for the next 30-40 years. Fracking could also jeopardize groundwater resources that are essential for the Ouray National Fish Hatchery, which is part of a $400 million program to restore four species of endangered fish in the Green and Colorado Rivers.	Please see response to Comment 2. Thurston voluntarily withdrew construction of two additional wells near the Ouray National Fish Hatchery (NFH) in 2013 due to unique environmental hazards to be considered by that proximity and concerns about possible impacts to the restoration of populations of endangered fish species. Effects of the two remaining wells were addressed in both the 2015 EA and the Draft SEA.
Comment 9	Scott Simpson	I OPPOSE ANY drilling on or near the Ouray NWR.	Please see response to Comment 2.
Comment 10	Herm Hoops	I am writing in regards to the Supplemental Environmental Assessment (SEA) for the Thurston Energy. Five years ago Brian Maffly, Salt Lake Tribune wrote about this proposal, back when it also included a multi-well proposal by Ultra to drill inside the refuge. That happened to Ultra's proposal?	Ultra Resources Inc.'s proposal was approved in July 2015, just after the Thurston 2-well proposal was approved, and a Special Use Permit (SUP) was issued to initiate development. Ultra Resources Inc. chose not to pursue development of the nine wells.

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Comment 11	Patrick Tierney	I would like to submit comments on the Supplemental Environmental Assessment (SEA) for the Thurston Energy 2-Well Proposal on the Ouray National Wildlife Refuge. Refuges are for wildlife, not energy production. These are incompatible uses. Directional drilling can be used to keep surface disturbance outside a refuge. I oppose drilling on the refuge of any kind. Therefore, I do not support the proposed changes to the original Environmental Assessment and oppose the changes that Thurston Energy proposes in the Supplemental Environmental Assessment.	Please see response to Comment 2. Compatibility policy does not apply because property rights that are not vested in the Federal Government, such as reserved rights to explore and develop minerals or oil and gas beneath a refuge, do not require a compatibility determination.
Comment 12	Richard Spotts	Please accept, carefully consider, and include in the appropriate project file/administrative record my following comments on the above-referenced matter.	Comment Noted
Comment 13	Richard Spotts	I am deeply concerned about the new proposed oil and gas development along Utah's Green River in the Ouray National Wildlife Refuge. This development clearly poses destructive threats to the Green River's sensitive riparian areas and endangered fish species. I understand that the Utah Rivers Council reportedly challenged two separate drilling proposals on the Refuge back in 2014. However, because the US Fish & Wildlife Service doesn't own the mineral rights to the Refuge lands, the drilling proposals were approved with minor environmental safeguards. One of the drilling companies, Texas-based Thurston Energy, now reportedly wants to amend their permit and drill and store oil in tanks adjacent to sensitive wetland areas and the Green River. These proposed permit amendments increase the risks of significant adverse impacts on wildlife, migratory birds, and threatened and endangered species.	The Draft SEA was prepared to evaluate the environmental effects of placing tank batteries on the original well pads approved in the 2015 EA and the tanker truck traffic that would be used to remove produced fluids. Additional conservation measures were applied to the actions analyzed in the 2015 EA and Draft SEA to ensure that risks to "wildlife, migratory birds, and threatened and endangered species" would be minimized.

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Comment 14	Richard Spotts	As you know, riparian habitat in areas like the Ouray National Wildlife Refuge is critical for declining fish and migratory bird species that rely upon the Green River corridor in Utah. The proposed permit amendments and development would not only gravely risk contaminating groundwater and surface water critical for endangered species recovery efforts, but also such development is contrary to the conservation purposes of this public wildlife refuge.	Please see response to Comment 2.
Comment 15	Richard Spotts	If the permit amendments are approved, there would be new oil wells, storage tanks, and significant tanker truck traffic on the Refuge Road lasting for the next 30 to 40 years. Fracking would obviously jeopardize groundwater resources that are essential for the Ouray National Fish Hatchery, which is part of a $400 million program to restore four species of endangered fish in the Green and Colorado Rivers.	Development of oil resources on the Project Area was approved and permitted pursuant to the 2015 EA and FONSI; however, storage tanks near Leota Bottom and tanker truck traffic on the Refuge/Hatchery Road were new project elements and the subject of evaluation in this Draft SEA. Thurston Energy's initial project application included an additional two wells adjacent to the Ouray NFH. Due to unique environmental hazards posed by the proximity to the NFH, Thurston modified their proposal in 2013 to withdraw the two wells located adjacent to the NFH.
Comment 16	Richard Spotts	For the preceding and other reasons, please oppose and deny these proposed permit amendments. This denial is necessary and appropriate to ensure the continued protection of the riparian habitats, migratory birds, and threatened and endangered species that this refuge is intended and legally obligated to protect.	Please see response to Comment 2.
Comment 17	Richard Spotts	Please add me to the notification list relating to this matter and inform me of all other opportunities for public review and comment.	Comment Noted. You will be added to the mailing list for future environmental reviews conducted by the Service at Ouray NWR.

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Comment 18	Richard Hofeling	I worked in the oil field in the 80s in Oray and around the bird refugees. There are wells there from the 80s and 60s. I was a pumper gauged, and well tester. I was the safety and fire control supervisors. I was the first responder spill containment leade. Iv never seen any contamination or spills that have did any environmental impact. I don't agree with the fracking, But 2 more wells won't even be noticed, Oil storage may be a issue in the future, Truck traffic is already there. I think your jumping to conclusions and over reacting!	Thank You for your comment. For the sake of clarification, tanker trucks do not currently access pads using the Refuge/Hatchery Road. This would be a new impact to Refuge roads and one subject of evaluation in the Draft SEA.
Comment 19	Joseph Nangle	I have been boating the Green River along Ouray National Wild Life Refuge for 40 years. It has come to my attention Texas based Thurston Energy is amending their drilling permits to include storage for oil. I am admittedly opposed to allowing a Texas based oil company extract minerals and profit from a Wild Life Refuge in Utah. The damage caused by this type of development will be unreasonable and irresponsible to the state of Utah. This type of oil development will put all wildlife and water born life in jeopardy. As a long time river runner, in the state of Utah, seeing oil development along the Green river in a Wild Life Refuge is Very concerning. Will Utah sell its soul to provide profit for an out of state oil company? I certainly hope not!! Please, by all means, stop this project!	Please see response to Comment 2.
Comment 20	Paul Zuckerman	Thank you for inviting public comment. It is disturbing to hear that drilling for oil and gas is being considered for such an ecologically sensitive habitat. I vehemently oppose this proposal. The wildlife that rely on this area must be allowed to flourish in their native natural setting free of the negative impacts of drilling. And humans deserve to know that these areas and wild inhabitants will not be infringed upon. I expect to hear that this will be the decision made. Leave them be.	Please see response to Comment 2.

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Comment 21	Rob Kent de Grey	I'm writing to register my objection to Thurston Energy's proposal to amend their permit to drill and store oil along the Green River within the Ouray National Wildlife Refuge. As an environmental scientist, I have grave concerns regarding the implications for environmental integrity, wildlife, and efforts to protect the endangered humpback chub, bonytail, Colorado pikeminnow, and razorback sucker.	Intra-Service Section 7 Consultation under the Endangered Species Act was conducted pursuant to EA development and a Biological Opinion was issued concurrent with EA release in 2015. That opinion contained Conservation Measures specifically developed to address effects to endangered species known to occur on Ouray NWR. Consultation was re-initiated during development of the Draft SEA and a supplemental opinion will be released with the Final SEA and FONSI. Please also see response to Comment 2.
Comment 22	Evan Johnson	Please deny any new leases or lease amendments that allow oil and gas development in the Ouray National Wildlife Refuge. The refuge was created specifically to help prevent habitat loss and degradation for the plants and animals we consider a natural and important part of life in the West. Oil and gas development - even when well intentioned and carefully done, poses so many risks to natural areas: tank leaks, truck spills, methane leaks, new road development fragmenting habitat, etc. It's much cheaper, easier and obviously better for ecosystem to protect a place than to restore/reclaim it later.	Please see response to Comment 2.
Comment 23	Marjorie McCloy	Thank you for the opportunity to comment on the Ouray National Wildlife Refuge. Although I understand the lease owner has worked hard to mitigate the effects of oil and gas drilling in the area, and I understand that our nation is still very dependent on these fuels, this is the wrong place. Even 4-5 trucks per day is too many to be inside a Refuge. (Note the name: Refuge. It is a refuge for people as well as birds and animals.)	Thank you for your comment. Proposed modifications including increased tanker truck traffic and on-site oil storage are the reasons this SEA was prepared. The Service believes that conservation measures including speed limit, dust mitigation, and timing of truck access are adequate to mitigate the anticipated impacts of increased tanker truck traffic.

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Comment 24	Marjorie McCloy	Riparian habitat in areas such as Ouray NWR is critical for declining fish and migratory bird species that rely upon the Green River corridor in Utah. The proposed development would not only risk contaminating groundwater and surface water critical for endangered species recovery efforts, but does not serve the purpose of the public wildlife refuge. There would be new oil wells, storage tanks and significant tanker truck traffic on the Refuge Road lasting for the next 30-40 years. Fracking could also jeopardize groundwater resources that are essential for the Ouray National Fish Hatchery, which is part of a $400 million program to restore four species of endangered fish in the Green and Colorado Rivers.	The potential effects of oil development on groundwater resources were evaluated and approved in the original 2015 EA with conservation measures applied. During the 2015 evaluation process, Thurston voluntarily withdrew application to construct and produce an additional two wells adjacent to the Ouray NFH to alleviate some of these concerns. Please also see response to Comment 23.
Comment 25	Marjorie McCloy	The US currently has all the oil and gas it needs, and our planet is on a crash course to decimation by our continued dependence on it. Let's not rush to ruin yet another natural area for the sake of greed.	Thank You for your comment.
Comment 26	Steve Erickson, Utah Audubon Council	Utah Audubon Council is very concerned that the new proposed oil and gas development along the Green River in the Ouray National Wildlife Refuge will result in serious threats to sensitive wetland and riparian areas, endangered fish species, and migratory birds and wildlife and important habitat.	Please see response to Comment 2.
Comment 27	Steve Erickson, Utah Audubon Council	These proposed permit amendments, and allowing fracking in particular, will increase substantially the risks of surface and groundwater contamination. Clean water resources are critical for the successful operation of the Ouray National Fish Hatchery, which is part of a $400 million program to restore four species of endangered fish in the Green and Colorado Rivers.	Please see response to Comment 24.

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Comment 28	Steve Erickson, Utah Audubon Council	New wells and significantly more truck traffic will increase noise and light pollution, with adverse impacts on wildlife and birds. Turning this critical Refuge into an industrial zone for the next 3 to 4 decades would be a destructive and unnecessary travesty. Allowing such development would contrary to the conservation purposes of this public wildlife refuge and antithetical to the public trust.	Noise and Light pollution were considered in the Draft SEA. Thurston has agreed to a number of conservation measures to address noise, light and air pollution. Well construction and completion activities will be limited to the fall and winter months (September through February) to eliminate impacts to nesting birds and the offspring rearing periods of burrowing and range animals. The proposed production equipment will have no lights except instrumentation and pumpjack motor noise will be limited to 60 dB at 50 ft. Production trucking will be limited to the period between 1 p.m. and 4 p.m. year round to eliminate light pollution and minimize impacts to nesting birds. Road maintenance is required to minimize fugitive dust and the production trucking speed limit is set at 10 mph.
Comment 29	Steve Erickson, Utah Audubon Council	Utah Audubon Council urges you to protect the riparian habitats, migratory birds, and threatened and endangered species that this refuge is intended and legally obligated to protect, and to deny the proposed permit admendments.	Please see response to Comment 2.
Comment 30	Carla Coates	This concerns a detailed plan of Thurston Oil to use drilling and fracking to create two oil wells inside Ouray National Wildlife Refuge. They expect to produce 400,000 barrels of "waxy crude". Thurston leased oil and minerals underground from. The surface given to U.S. Fish and Wildlife Service in the 1960's is a safe home for wetlands wildlife. The 15,000-acres, partly bordered by the Green River, sounds like a nice place, no?	Please see response to Comment 2.

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Comment 31	Carla Coates	Thurston's plan meets requirements for minimal disruption to wildlife. How minimal would the disruption be to people wanting to get away from noise, dust, pollution. A pipe bundle would be strung along the ground top to carry oil to a place where it could be trucked to a refinery. Brian Maffly's article 6-7-19 in the Tribune indicates less than a third of oil wells drilled on refuges become active. Why has the Fish and Wildlife Service been non-public about this project and the public comment period, ending 6-16?	During public review of the Draft SEA, the document and technical appendices were displayed electronically on the Refuge web site and anyone who provided comments to the original 2015 Draft EA were contacted and informed that a supplement to the 2015 Draft EA was out for review. Additionally, a hard copy was available at the Refuge office and other County, State, and Federal agencies were informed that the document was available. One of the past commenters contacted the Salt Lake Tribune which published the referenced story about mid-way through the comment period. All sources combined encouraged 34 separate contributors to provide comments to the Draft SEA.
Comment 32	Carla Coates	Leave the refuge alone. Are two wells needed? Do you want oil trucks, building, drilling, fracking and pipe affecting your refuge visit? Perhaps the damage and disruption of extracting these minerals were not as apparent when the lease was sold.	Please see response to Comment 2.
Comment 33	Patty Becnel	I am against any mining at or near the Ouray National Wildlife Refuge. I appreciate the strict guidelines implemented, but still any mining in this area will disrupt habitat, wildlife, beauty, and possibly the Green River. I am concerned about many other aspects of this proposal also:	Please see response to Comment 2.
Comment 34	Patty Becnel	There is little information about this proposal and if it weren't for the article in the Salt Lake Tribune by Brian Maffly, it would not have been publicized. WHy is that? How valid is the comment session?	Please see response to Comment 31.
Comment 35	Patty Becnel	The company expects to extract 400, 000 barrels of oil. This does not seem cost effective for the company which makes me suspicious of what other plans they have for this area if this initial proposal is accepted.	Comment Noted.

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Comment 36	Patty Becnel	As a country, we should be moving away from a dependence on oil and gas and though I realize that may take quite a while, we should not exploit and encourage additional drilling.	Comment Noted.
Comment 37	Patty Becnel	I am against any mining, fracking or other extractive work at or near the Ouray National Wildlife Refuge.	Please see response to Comment 2.
Comment 38	Linda Bonar	Dear Mr. Bundy, I am writing to ask that the Ouray National Wildlife Refuge not allow drilling or mining for oil or any other fossil fuels. As you must know, Utah's national parks, state parks and all open spaces are being overwhelmed with visitors. This is because Americans love their parks and open spaces. They are so precious! It is terrible to contemplate drilling in such a beautiful and significant wildlife refuge, as the drilling will be very destructive and the benefits will last only a few decades. Nobody is making more beautiful places, so we need to preserve the ones we have. The short term benefits of drilling do not compensate for the long term destruction to the Ouray National Wildlife Refuge.	Please see response to Comment 2.
Comment 39	Garrett Jones	Do not allow this to happen, please let Utah be the leader in renewable energy, oil is not the future and it harms our land and air and the people that live in this state, do not become blinded by the short term money, let us be leaders not followers.	Please see response to Comment 2.
Comment 40	Lee Ann Smokoff	I am against disturbing this place of beauty and it's Ecosystem.	Please see response to Comment 2.

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Comment 41	Jim Price	I agree with the editorial submitted by Marcus Benoff today in the Salt Lake Tribune. Please do not allow Drilling in the Ouray Wildlife Refuge. Drilling will cause permanent damage for short term gain.	Please see response to Comment 2.
Comment 42	Roberta Jackson	Rob: Please do not allow drilling at or near the Ouray National Wildlife Refuge. When does the Earth, animals and indigenous peoples become more important than money??? You can make that decision.	Please see response to Comment 2.
Comment 43	Marcus Benoff	In response to the June 12 The Salt Lake Tribune article titled "Oil drilling comes to Utah wildlife refuge. Will rules keep birds, plants and fish safe?" I strongly believe that the 400,000 barrels of oil underground, formed from ancient algae and zooplankton, should be left in the ground for nature to take care of.	Please see response to Comment 2.
Comment 44	Marcus Benoff	Drilling it shows an unwillingness to care for others. Short-term economic and societal benefits of extracting oils are significantly outweighed by their long-term impacts. Nature came before mankind. If nature came first, then nature must come first, and we should not cause any disturbances to it.	Comment Noted.
Comment 45	Marcus Benoff	Drilling for economic benefits harms lives and does not increase or save them. Although there is value and potential energy in oil, as basic chemistry studies have proven centuries ago, those potentials are insignificant in our history and future, as well as the earth's history and future. Benefits can come with harm and may not be beneficially pure.	Comment Noted.
Comment 46	Marcus Benoff	The Ouray National Wildlife Refuge is home to an array of endemic species of wildlife and flora, as well as Native tribes, and countless extraordinary landforms and scenery. Disrupting nature will only disrupt ourselves, our Earth and our existence.	Comment Noted.

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Comment 47	Marcus Benoff	Contact Rob_Bundy@fws.gov and tell him: Do not allow drilling in or near the Ouray National Wildlife refuge.	Comment Noted.
Comment 48	Herm Hoops	I am submitting my comments on the Supplemental Environmental Assessment (SEA) for the Thurston Energy 2-Well Proposal on lands managed by the U.S. Fish and Wildlife Service on the Ouray National Wildlife Refuge. I oppose any changes to the original Environmental Assessment and oppose the changes that Thurston Energy proposes in the Supplemental Environmental Assessment.	Comment Noted.
Comment 49	Herm Hoops	Thurston Energy now proposes construction of two well pads, each 2.55 acres in size within an average disturbed area of 3 .2 acres. The original proposal was for two well pads, each 1. 66 acres in size within an average disturbed area of 2.2 acres plus a produced fluid treatment and tank battery pad of 1.38 acres within a disturbed area of 1.81 acres on top of the bluff on lands managed by the Ouray N.W.R. The new proposal includes the increased size of well pads to accommodate tank batteries, fluid treatment equipment, turn around for tanker trucks, construction of approximately 420 feet of new access road (versus 597.6 feet under Approved Alternative), installation of 7,216 feet of 3-inch surface, high-density polyethylene (HDPE) natural gas pipeline laid by hand from the nearest gas gathering trunk line for crude oil on top of the bluff within the Ouray NWR to the well pads, additional pipelines and approximately 1-4 tanker trucks on Refuge roadway daily during 30-40 year production phase generally declining with time. Under the Approved Alternative of the Environmental Assessment there was to be no tanker traffic following construction and development.	These are all factual statements included in the Draft SEA. The Draft SEA was written to address effects that were not analyzed in the original EA including increased well pad size, relocation of the tank batteries adjacent to Leota Bottom, and increased tanker truck traffic to remove produced fluids.

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Comment 50	Herm Hoops	The purpose of National Wildlife Refuges is to provide habitat for primary and secondary species of wildlife and/or plants. They are a part of America's heritage. For any oil, gas and other extractive minerals on the Ouray National Wildlife Refuge there must be a critical demonstrated need AND the effect on climate by the right-holder. Unless there is a documented overwhelming benefit to endangered or threatened wildlife as stated in the National Wildlife Refuge Administrative Act, FWS Policy and codified in various titles of the U.S. Code of Regulations the activity should be terminated. In this case the right-holder, Thurston Energy has not demonstrated those benefits.	Please see response to Comment 2. Code of Federal Regulations (CFR) Title 50 Subpart C 29.32 Non-Federal Mineral Rights defines the requirements for oil and gas development on Service land. The policy requires that the project proponent "must, to the greatest extent practicable, conduct all exploration, development, and production operations in such a manner as to prevent damage, erosion, pollution, or contamination to Service administered lands, waters, facilities, and to wildlife thereon." There is no requirement for the project proponent to benefit wildlife; however, they must ensure that their operations are not detrimental to wildlife and their habitats.
Comment 51	Herm Hoops	That the FWS does not "own" the subsurface minerals requires no right to access for exploration or drilling on FWS controlled surface lands. Indeed, the oil and gas industry touts the low impact of directional drilling within the Arctic National Wildlife Refuge, and the Ouray Refuge is no less environmentally sensitive or less of a valuable wildlife habitat, including the rare yellow-billed cuckoo. Thus, if the U.S.F.&W.S. approves surface disturbance of any kind, it should be the smallest footprint possible as described in the Approved Alternative of the Environmental Assessment.	While the footprint of each well pad adjacent to Leota Bottom was increased from 1.66 to 2.55 acres, the modified proposal evaluated in this Draft SEA eliminates 7,131 ft of 8" surface HDPE 3-phase pipeline, 9,768 ft of overhead power line, and eliminates a 1.38 acre support facility on land the Service leases from the State of Utah. While anticipated short term surface disturbance is similar to the approved action, long term surface disturbance will actually be reduced under the proposed action from an estimated 6.45 surface acres down to 5.88 acres (see Draft SEA page 24).

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Comment 52	Herm Hoops	Ozone and air pollution are critical health and environmental health concerns in the Uintah Basin. Currently, and for the past 30 years, there are over 325 unreclaimed, uncapped wells with the real potential of leaking casings sending methane into the air. They also have the potential to leak to the surface and cause a spill or emitting climate changing gases into the atmosphere. They cause fugitive dust, water quality concerns, erosion, radiant energy that heats the atmosphere, spread of invasive weeds and lost wildlife habitat. While Thurston Energy may be expected to comply with all of the environmental, health, safety and other areas of the agreement with the Ouray Refuge, they will likely only operate the wells until the profit margin begins to drop. Then they will sell to another operator, who will sell to another operator, who will sell to another operator who will disappear into the swamps ofLLC. Thus, the reclamation bond MUST include the increased cost of reclamation over the expected forty-year production of the well. The recovery of the site should include naturalization of the land contours, cleaning up surface spills, planting of native plants and other requirements. The contribution to Climate Change and to localized air pollution must be quantified, and restrictions must be put in place to actually mitigate the cause of those harmful pollutants, especially when the Uintah Basin air quality falls below safe standards. That includes the cessation pump motors, vehicle exhaust in conducting exploration, extraction or transport activities during poor air quality days.	The referenced factors were all analyzed in the 2015 EA and approved through issuance of a FONSI. Because the proposed modifications included increasing tanker truck traffic along the Refuge/Hatchery Road and the use of gas fired instead of electric pumpjacks, the air quality analysis was expanded and presented in this Draft SEA. Additional conservation measures were applied including limiting tanker truck speed, requiring operator to have a water truck available to minimize dust hazard, and to implement noise abatement methods to ensure equipment does not exceed 60 dB at 50 ft. Additionally, all equipment associated with drilling and completion activities, as well as, service equipment used for fracing and cementing, would be equipped with tier 2 or better off-road engines.
Comment 53	Herm Hoops	Thurston Energy must show the impact of their operation to the air quality of the Uintah Basin, and take steps to mitigate that affect. They must demonstrate that their company, or contractor, will be on site quickly in case of a spill or leak, and that they have capability to properly contain the spill. They must demonstrate that they have capability to clean and restore refuge lands, plants and wildlife that may be affected by a spill.	Thurston Energy is required to develop infrastructure capable of containing 110% of the storage capacity in the largest tank associated with each battery and have developed a site-specific spill response plan in case an unintended spill occurs. A model Spill Prevention, Control and Countermeasure (SPCC) Plan was appended in the 2015 Draft EA. Additional air quality analysis for the proposed action was included in

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			Chapter 4, section 4.1.2. Conservation measures to help mitigate effects to air quality were included in Section 4.1.4.
Comment 54	Herm Hoops	That the proposed action is close to the Green River and the recovery effort of endangered fish is of special concern. Thurston Energy must prove that they can protect water sources, spawning beds and the Green River from spills, leaks or accidents.	Please see response to Comment 52.
Comment 55	Herm Hoops	It is well known that exploration and drill pads introduce exotic plants into an area. It is just as well known that oil and gas operators suppress noxious weeds and other plants on their well pads with a mixture of diesel fuel and harmful chemicals. This mixture is hazardous and ANY chemical application or use of hazardous or harmful chemicals should require a list of ingredients and the presence of an FWS employee during application or use. Thurston Energy should be required to reimburse the Ouray Refuge for the time expended to oversee the use of such chemicals, and failure to do so should result in fines and criminal litigation against the managers · who approved such action.	The Service has imposed a series of conservation measures regarding invasive species including that all vehicles and equipment originating from outside the Refuge must be cleaned and decontaminated prior to arriving at the Refuge to prevent the introduction of noxious weeds to the Refuge. Decontamination would include removal of skid plates for inspection and cleaning if necessary. It is recommended that the operator consult with the local weed control agency or other weed control authority if weed infestation occurs. It is the responsibility of the operator to monitor affected and reclaimed lands for noxious weed infestations. The Refuge will require a weed control plan. Any material brought in must be certified "weed free" and the Service must approve any weed control techniques or chemicals used by the operator.

Comment #	Reviewer	Comment	Response
Comment 56	Herm Hoops	The Ouray refuge should not permit the enlargement of pads or vehicle access on refuge roads, or drilling sites on surface-controlled lands. Thurston Energy has had a long time to make their original proposal, work with refuge staff and reply to the original Approved Alternative of the Environmental Assessment. If this company lacks the ability to make an initial proposal, that needs to be revised every few years, it does not say much for the quality that Thurston Energy has put into their proposal.	The Approved Action included installation of 7,131 ft of 8" HDPE 3-phase surface pipeline with a large boiler for the integral heat tracing, 9,768 ft of overhead power line, construction of a 1.38 acre support facility and another access road on land the Service leases from the State of Utah, all of which have been eliminated from the Proposed Action. The 3-phase pipeline and remote treatment, storage and offloading facility were deemed to be an elegant solution to minimize production traffic on Refuge roads. However, further research at the point of ordering the HDPE pipeline system established that the pipe manufacturer's pressure limits for safe, long-term crude oil service eliminated its application due to the elevation difference between the proposed wells and the support facility.
Comment 57	Herm Hoops	Now Thurston Energy chooses to use tank trucks, rather than to pump up hill. It is another example of how Thurston Energy may not be a reputable operator. They have had years to develop their proposal with company and contractor "experts." That Thurston Energy did not make a complete initial proposal is their problem, not an issue for revision.	Please see response to Comment 56.

Comment #	Reviewer	Comment	Response
Comment 58	Herm Hoops	Since the construction of the boat passage at the Tuscher Diversion above Green River, Utah, more and more river runners have chosen to take the "Powell Trip" that takes them through the slow waters of the Uintah Basin. As this is the 150th anniversary of the Powell exploration the trip has drawn much attention. The proposal by Thurston Energy will add another scenic blight on that trip, with lights that can destroy views of the night sky and intrusions of sound.	Numerous conservation measures have been attached to the project to ensure that lighting will be kept to a minimum. First and foremost, flaring will be limited to the early phases of development and Thurston is required to install gas gathering pipelines as soon as possible after initial development. Other conservation measures include: *a) During pad construction, when erecting or disassembling the drilling rig, and during production, outdoor lighting should be kept to a minimum and turned off when not needed.* *b) Whenever possible, each series of lights must be either on a separate switch, timer, or motion sensor to allow the operator to tailor their use to activity in a specific area of the drill pad.* *c) All area lights must be downward pointing and fully shielded, with the exception that upward angled lighting would be used during the operation of the drilling rig in order to provide a safe working environment for drilling personnel. All lighting focused on a particular apparatus must be laterally shielded so that all light falls upon the intended work area and a minimum amount of light is emitted sideways or upward.* *d) Lights that are required by OSHA for emergencies must be linked to alarms so that they are only operational when an emergency situation arises.* *e) No light shall exceed 400 watts.* *f) All lamps must be ≤ 3500 ° Kelvin color temperature to reduce blue-rich light which causes greater sky glow and is typically more attractive to wildlife.*

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			g) A Service designee will observe the facility from critical angles and distances. Excessively glaring lights must be shielded, re-aimed, or otherwise mitigated with an adaptive approach without compromising worker safety requirements. *h) Following well completion, lights at the pumpjack area and tank battery area will be kept off except when needed for emergency maintenance.* *i) Lighting will be minimized where applicable unless safety is an issue." See also response to comment 28 regarding sound conservation measures.*

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Comment 59	Herm Hoops	Noise also disrupts wildlife during their normal activities, during migration, breeding and hatching/ birthing times. Thus, any activities contained in this proposal requires a pre-use baseline noise survey using several sound monitoring stations with recording equipment by Thurston energy and overseen by employees of the U.S. Fish and Wildlife Service. Those records must be available to the public before and activities occur. Any well pad, or other noise associated with exploration or extraction must be limited to less than 50 decibels with severe penalties for exceeding that limit. That includes the use of compression release engine brake, pumps, motors, etc. Those restrictions have been implemented on a field managed by the Price, BLM. The Ouray refuge should limit speeds of vehicles related to the site, and restrict travel as determined by the Refuge Manager.	The Service is requiring Thurston to use "hospital grade" mufflers on their pumpjacks so they do not exceed 60 dB at 50 ft. Trucks are limited to 10 mph to eliminate the need for engine brakes and only allowed to travel between 1 p.m. and 4 p.m. to minimize disturbance during periods when wildlife are most active (e.g., during the morning and around sunset). The Service is requiring Thurston to monitor sound to ensure that they stay within these thresholds. See also response to comment 28.
Comment 60	Herm Hoops	The Uintah Basin is a place where the dark night skies are an attraction that draws people. Dinosaur National Monument was recently declared as a Dark Sky Park. Therefore, the project should have no effects on the dark skies of the Refuge, and ambient light must be contained. Light restrictions and the necessary baffles that direct light to the area of use should be required on any lighting used on the project.	Please see response to Comment 58.
Comment 61	Herm Hoops	In conclusion, the U.S. Fish and Wildlife Service is under no requirement to grant access or use of refuge lands. The Refuge has determined approve the project in the initial Approved Alternative of the Environmental Assessment, and Thurston Energy should abide by that assessment.	Comment Noted. Please also see also response to Comment 2.
Comment 62	Lavonne J. Garrison, SITLA	The Thurston drilling program outlined in the SEA is located on School and Institutional Trust Lands Administration (SITLA) minerals and Refuge surface and is within the outline of the ONWR. This area is already covered by an approved, five year SUP issued in 2015; however due to changes in the drilling plans, a supplemental EA (SEA) is required.	Comment Noted.

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Comment 63	Lavonne J. Garrison, SITLA	SITLA's mandate with its beneficiaries is to develop the trust assets to the highest and best use and as prudently and responsibly as it can. From the Oil & Gas Group, this means looking for all those potential zones that could produce oil and gas revenue for the Schools beneficiary. The revised drilling plans proposed would, in the long term, have less surface disturbance and visual impairment than the original plan. SITLA always encourages its lessees to maintain the lowest profile possible using best available practices. The SEA anticipates co-ordination between the Refuge and the lessee to maintain this low profile and certain standards of operation.	The Approved Action included installation of 7,131 ft of 8" HDPE 3-phase surface pipeline with a large boiler for the integral heat tracing, 9,768 ft of overhead power line, construction of a 1.38 acre support facility and another access road on land the Service leases from the State of Utah, all of which have been eliminated from the Proposed Action. Thurston has coordinated all aspects of its Proposed Action with the Service to minimize impacts while assessing and developing Utah state trust assets in a careful and logical manner.
Comment 64	Lavonne J. Garrison, SITLA	Please be advised that SITLA supports the SEA that has been prepared. This project was originally proposed when the lease was issued in 2011 and has now succeeded in negotiating the hurdles with the Refuge to allow drilling. While it would be wonderful if all wells produced huge volumes of hydrocarbon all production contributes to the whole and will provide income to the trust for decades.	Comment Noted.
Comment 65	Lavonne J. Garrison, SITLA	The SITLA Oil and Gas Group manages 4.3 million acres of trust lands for oil and gas development. The Group works with private business to generate revenue from energy development, and deposits lease and royalty revenue into permanent endowments for K-12 education and 11 other trust land beneficiaries.	Comment Noted.

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Comment 66	Nick Schou, Utah Rivers Council	The Ouray NWR lands within the proposed Thurston Energy Development area are managed by the FWS as part of the National Wildlife Refuge System. As a federal agency, the issuance of a license agreement is a federal action requiring compliance with the National Environmental Policy Act 42 U.S.C. §v4321 et seq. (1969). The proposed action includes the construction of two oil and gas wells that would be drilled within the Ouray NWR, adjacent to Leota Bottom. There would be new infrastructure, including an above ground natural gas pipeline, large crude storage tanks, and constant tanker truck traffic lasting for the next 30-40 years. Our organization has very serious reservations about the scope of the project, which is only one of two recent drilling proposals on the Refuge, and the context and intensity of the likely impacts. We believe it would be more suitable for the applicant and FWS to initiate a higher level of NEPA analysis, most appropriately a full environmental impact statement, in order to address potentially significant impacts.	Note: This Draft SEA was prepared to amend the approved EA for the Thurston 2-Well proposal (2015) based on a change in application. Based on issues and internal scoping discussed at the initial project kick-off meeting held on May 11, 2012, the Service determined that an EA level of analysis was appropriate for the Thurston Draft EA. This decision was confirmed through issuance of a FONSI on February 5th, 2015. The Service analyzed all public comments received and incorporated changes as needed into the 2015 EA. As a result of the environmental analysis and interagency review during the EA process, and because of the project modifications that significantly reduce any potential environmental impacts, the Service has determined that the project has no significant impacts on the quality of the environment. Please also see response to Comment 1 from Draft EA Response to Comments. *"The Service has analyzed all public comments received and incorporated changes as needed into the EA. As a result of the environmental analysis and interagency review during the EA process, and because of the project modifications that significantly reduce any potential environmental impacts, the Service has determined that the project has no significant impacts on the quality of the environment."*

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Comment 67	Nick Schou, Utah Rivers Council	After carefully reviewing the proposed development we believe the project poses unreasonably destructive threats to the Green River's sensitive riparian areas and endangered fishes on and downstream of the refuge, and also poses threats to plant species, wildlife, migratory birds and the State's multi-billion recreation economy. Additionally, the proposed action poses significant threats to the groundwater resources of the Refuge, and therefore the Ouray National Fish Hatchery, which is dependent on groundwater for raising endangered fish species. In addition to NEPA requirements the FWS should provide detailed quantification of the hard costs of the proposed project, and a study of the lost costs to the FWS and State of Utah due to possible impacts including the loss of fisheries and critical habitat in and around the Green River on the refuge. Such studies should include accurate accounting of the use of the Green River and surrounding drainages by fishermen, hunters, recreationists and wildlife viewing enthusiasts.	The Service previously responded to this comment. Please see response to Comment 2, Draft EA Response to Comments. *"Economic analysis was not identified as a potentially significant resource in internal scoping meetings with the Service for the Ouray NWR 2-well project. As described in the EA, the Service has worked with Thurston to incorporate changes to the project that will greatly reduce the chance of threats to sensitive habitats, wildlife, and plants."*
Comment 68	Nick Schou, Utah Rivers Council	Our organization feels the SEA suffers from several fatal NEPA flaws and must be revised, because: 1) the SEA improperly ignores reasonable alternatives; 2) the SEA should have considered the cumulative effects of drilling both on the Refuge and on adjacent BLM and SITLA lands on the wildlife species the Refuge was designed to protect; and 3) the SEA fails to account for the cumulative impacts of the proposed action on fish and wildlife species that rely on the Refuge, and 4) the SEA fails to account for the indirect climate impacts that would result from the proposed action. After extensive review of the SEA for this project, we feel that 5) the FWS should prepare an EIS to evaluate fully the impacts of the proposed project.	The Service previously responded to this comment. Please see response to Comment 5, Draft EA Response to Comments. *"The Thurston EA was prepared in accordance with NEPA requirements, Federal, State, and local laws, and Service regulations. The Service has collaborated with Thurston on modifications to the project that will significantly reduce the environmental effects." These modifications are included as conservation measures and are itemized in Appendix B of the Final SEA.*

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Comment 69	Nick Schou, Utah Rivers Council	The SEA is based on the FWS's understanding that it is obligated to provide maximum protection of the NWR, while providing mineral owners access and exploration rights to their mineral estates. The FWS has apparently made it a priority to accommodate Thurston's interest in drilling in the Refuge as reflected in its formation of the purpose and need for the proposed action: "to provide Thurston access to and allow for the exploration of leased mineral rights and commence construction and operations to ascertain whether sufficient oil and gas resources exist to commence commercial production of those resources; and if so, to proceed with production . . . ." SEA at 2.	The Service previously responded to this comment. Please see response to Comments 6 and 7, Draft EA Response to Comments. *"As stated in the third paragraph of Section 1.3 of the Thurston DEA, The Service prepared this EA to evaluate potential impacts resulting from the Proposed Action and Alternatives and to assess whether Thurston's proposed oil and gas exploration and development is conducted in a manner most protective to the surface estate while recognizing the mineral owners right to access. By preparing this EA, the Service is fulfilling its responsibilities under federal law to protect the surface estate and associated resources of the Refuge from unreasonable damage by Thurston in their Plan of Operations. The Service has included specific conservation measures that will protect the surface estate and associated resources from unreasonable damage, while still recognizing Thurston's vested rights to access and explore the oil and gas mineral estate underlying Refuge lands. This EA will facilitate the Service's decision-making process as to whether to issue a Special Use Permit (SUP) granting Thurston access to Refuge lands and the terms and conditions of the SUP based on an evaluation of the expected impacts. A decision to issue an access agreement/permit would authorize Thurston to exercise the rights of their mineral lease, subject to specific Conditions of Approval (COAs) and additional site-specific review and approval, as necessary. Restatement of the first sentence in paragraph 2 of Thurston DEA Section 1.3. This statement states the purpose of the Proposed Action."*

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Comment 70	Nick Schou, Utah Rivers Council	Because it believed that its options were constrained by the existence of the mineral rights, FWS limited its NEPA analysis in a way that resulted in a number of fatal flaws that must be addressed. For example, FWS did not adequately consider alternatives or their environmental consequences in the SEA. As discussed below, FWS does actually have the authority to implement additional options and should have analyzed those in the SEA. Additionally, due to the number and complexity of the issues involved, and the potentially significant impacts to the Ouray Refuge, FWS should have completed an EIS. Finally, the SEA's analysis of indirect and cumulative impacts is inadequate.	The Service previously responded to this comment. Please see response to Comment 3, Draft EA Response to Comments. *"Based on discussions about alternatives (Meeting Summary, Item 2) at the meeting held on October 12, 2012, the Service dismissed the directionally drilling alternative. Additional rationale for the dismissal of a directional drilling alternative will be added to Chapter 2.0 of the EA. Furthermore, as discussed in Section 2.3.4, the Service considered the alternative of directionally drilling all four proposed wells from a single pad (one vertical and three directional wells) to limit surface disturbance to one site. However, this alternative is not technically feasible due to limitations of directional drilling associated with oil and gas development in the Project Area. As such, the Service has determined that requiring additional directional drilling is not a feasible alternative because it would not meet the purpose and need of the project and would not offer greater protection for the resources of the Refuge. Therefore, Alternative F has been dismissed from further analysis. Three alternatives will be added to Section 2.3 to fully address a reasonable range of alternatives in the EA. These alternatives include Seasonal Restrictions, Land Exchange, and Lease Buyout. "See also Response to Utah Rivers Council et al. Comment #1 regarding Service rationale for not completing an EIS. "The Service has analyzed all public comments received and incorporated changes as needed into the EA. As a result of the environmental analysis and interagency review during the EA process, and because of the project modifications that significantly reduce any potential environmental impacts, the Service has determined*

Comment #	Reviewer	Comment	Response
			that the project has no significant impacts on the quality of the environment."

Comment #	Reviewer	Comment	Response
Comment 71	Nick Schou, Utah Rivers Council	To fulfill its purposes, NEPA requires federal agencies to prepare an environmental impact statement (EIS) before undertaking "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). An EIS must take a "hard look" at the potential environmental impacts of the proposed action and disseminate its analyses to the public. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349-50 (1989); Utahns for Better Transp. v. U.S. Dep't of Transp., 305 F.3d 1152, 1163 (10th Cir. 2002) as modified on reh'g, 319 F.3d 1207 (10th Cir. 2003).	The Service previously responded to this comment. Please see response to Comment 4, Draft EA Response to Comments. *"As stated in Section 1.4 of the Thurston DEA, this EA has been prepared to comply with NEPA and the Council on Environmental Quality (CEQ) regulations 40 CFR 1500-1508. The Service will need to decide based on this EA if the selected alternative is a major Federal action that significantly affects the quality of the human environment, thus requiring preparation of an EIS per CEQ Regulations." In the 2015 FONSI, the Service made the decision that the EA provided an adequate analysis."*
Comment 72	Nick Schou, Utah Rivers Council	When an agency is uncertain whether a federal action may have significant environmental impacts, the agency must prepare an environmental assessment (EA) to determine whether to prepare an EIS. 40 C.F.R. § 1508.9(a); 36 C.F.R. § 220.7; 43 C. F.R. § 46.300. Although an EA may be more brief than an EIS, the EA must nonetheless disclose, analyze, and take a hard look at the "need for the proposal, …alternatives as required by [NEPA] section 102(2)(E), [and] the environmental impacts of the proposed action and alternatives." 40 C.F.R. § 1508.9(b). If the agency concludes the action may have significant impacts, it must prepare an EIS. Only if it reasonably concludes that no significant impacts are likely may it issue a "Finding of No Significant Impact" and forego preparing an EIS. 40 C.F.R. § 1508.13.	The Service previously responded to this comment. Please see response to Comment 10, Draft EA Response to Comments. *"The Service followed proper NEPA requirements and procedures in preparation of this EA."* Please see also response to comment 66.

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Comment 73	Nick Schou, Utah Rivers Council	NEPA requires agencies to consider "alternatives to the proposed action" in an EA. 42 U.S.C. § 4332(2)(C)(iii). The alternatives analysis is the "heart" of a NEPA document, and the statute's implementing regulations direct BLM to "[r]igorously explore and objectively "reasonable" alternative that must be analyzed in detail is one that: (1) satisfies the project's purpose; (2) "falls within the agency's statutory mandate"; and (3) is evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). "Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded." See New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 708 (10th Cir. 2009). A "significantly distinguishable from the alternatives already considered." New Mexico, 565 F.3d at 709; Davis v. Mineta, 302 F.3d 1104, 1120 (10th Cir. 2002) (granting injunction where EA failed to consider reasonable alternatives). This alternatives analysis "is at the heart of the NEPA process, and is 'operative even if the agency finds no significant environmental impact.'" Diné Citizens Against Ruining Our Env't, 747 F. Supp. 2d at 1254 (quoting Greater Yellowstone Coal. v. Flowers, 359 F.3d 1257, 1277 (10th Cir. 2004)). Reasonable alternatives must be analyzed for a SEA even where a FONSI is issued because "nonsignificant impact does not equal no impact. Thus, if an even less harmful alternative is feasible, it ought to be considered." Ayers v. Espy, 873 F. Supp. 455, 473 (D. Colo. 1994) (internal citation omitted).	Please see response to comment 70. Three new alternatives including include Seasonal Restrictions, Land Exchange, and Lease Buyout, were evaluated in the Final EA. A more comprehensive discussion on why directional drilling was not considered a viable alternative was also included in section 2.3.4 of Appendix A..

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Comment 74	Nick Schou, Utah Rivers Council	"The existence of a viable but unexamined alternative renders an alternatives analysis, and the EA which relies upon it, inadequate." Diné Citizens Against Ruining Our Env't, 747 F. Supp. 2d at 1255 (quoting New Mexico, 565 F.3d at 709). The agency's obligation to consider reasonable alternatives applies to citizen-proposed alternatives. See Ctr. for Biological Diversity v. National Highway Traffic Safety Admin., 538 F.3d 1172, 1217-19 (9th Cir. 2009) (finding EA deficient, in part, for failing to evaluate a specific proposal submitted by petitioner).	The Service previously responded to this comment. Please see response to Comment 11, Draft EA Response to Comments. *"Three alternatives will be added to Section 2.3 to fully address a reasonable range of alternatives in the EA. These alternatives include Seasonal Restrictions, Land Exchange, and Lease Buyout."*
Comment 75	Nick Schou, Utah Rivers Council	Importantly, "alternatives should not be limited solely to those measures the agency has the authority to implement, but should be wide ranging and incorporate those reasonable alternatives capable of implementation either by other federal agencies or by the private sector. State of Ala. Ex rel. Baxley v. U.S. Army Corps of Engineers, 411 F. Supp. 1261 (N.D. Ala. 1976), citing Sierra Club v. Lynn, 502 F.2d 43 (5th Cir. 1974). All reasonable alternatives must be considered even if such alternatives "do not offer a complete solution to the problem." Natural Res. Defense Council v. Morton, 458 F.2d 827, 836 (1972), aff'g, 337 F.Supp. 165 (D.D.C.1971).	The Service previously responded to this comment. Please see response to Comment 11, Draft EA Response to Comments. *"Three alternatives will be added to Section 2.3 to fully address a reasonable range of alternatives in the EA. These alternatives include Seasonal Restrictions, Land Exchange, and Lease Buyout."*

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Comment 76	Nick Schou, Utah Rivers Council	Here, the FWS's obligation to protect refuge values from mineral development is not only fully extant, but fundamental to the fulfillment of its statutory obligations. As summarized in a report prepared by the Government Accountability Office in 2003: [T]he activities of private mineral owners on refuges are subject to a variety of legal restrictions, including FWS regulations. A variety of federal laws affect how private mineral rights owners conduct their activities. For example, the Endangered Species Act of 1973 prohibits the "take" of any endangered or threatened species and provides for penalties for violations of the act; the Migratory Bird Treaty Act prohibits killing, hunting, possessing, or selling migratory birds, except in accordance with a permit; and the Clean Water Act prohibits discharging oil or other toxic substances into waters of the United States and imposes liability for removal costs and damages resulting from a discharge. Government Accountability Office, "Opportunities to Improve the Management and Oversight of Oil and Gas Activities on Federal Lands," 03-517 at 9 (2003). And, as noted in the DEA and SEA, proposals to drill for minerals on refuges lands are subject to NEPA requirements.	The Service previously responded to this comment. Please see response to Comment 14, Draft EA Response to Comments. *" The Thurston EA was prepared in accordance with NEPA requirements, Federal, State, and local laws, and Service regulations. The Service has collaborated with Thurston on modifications to the project that will significantly reduce the environmental effects."*

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Comment 77	Nick Schou, Utah Rivers Council	Additionally, regulations that govern the exploitation of mineral rights in National Wildlife Refuges also emphasize the FWS's obligation to protect refuge values. The regulations provide that holders of mineral rights shall: to the greatest extent practicable, conduct all exploration, development, and production operations in such a manner as to prevent damage, erosion, pollution, or contamination to the lands, waters, facilities and vegetation of the area. So far as is practicable, such operations must also be conducted without interference with the operation of the refuge or disturbance to the wildlife thereon. Physical occupancy of the area must be kept to the minimum space compatible with the conduct of efficient mineral operations. Persons conducting mineral operations on refuge areas must comply with all applicable Federal and State laws and regulations for the protection of wildlife and the administration of the area. Oil field brine, slag, and all other waste and contaminating substances must be kept in the smallest practicable area, must be confined so as to prevent escape as a result of rains and high water or otherwise, and must be removed from the area as quickly as practicable in such a manner as to prevent contamination, pollution, damage, or injury to the lands, waters, facilities, or vegetation of the refuge or to wildlife.	The Service previously responded to this comment. Please see response to Comment 15, Draft EA Response to Comments. *"The Thurston DEA has been prepared in accordance with Service regulations, including the National Wildlife Refuge System Administration Act (NWRSAA)." The Service worked with the proponent to plan all exploration, development, and production operations in such a manner as to minimize damage, erosion, pollution, or contamination to the lands, waters, facilities and vegetation of the area, including wildlife and other natural resources, to the greatest extent practicable.*

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Comment 78	Nick Schou, Utah Rivers Council	50 CFR §29.32.1 While nothing in the regulation "shall be applied so as to contravene or nullify rights vested in holders of mineral interests on refuge lands," that does not mean that drilling applicants can dictate the terms of the project or that the FWS is barred from imposing reasonable restrictions on the mineral activity to protect the unique and valuable wildlife species and habitat in the Ouray Refuge and ensure the smallest impact practicable. Indeed, as described below, NEPA even requires that the FWS analyze the alternative of trading out or buying out Thurston's mineral rights and avoiding impacts to the Ouray Refuge altogether.	The Service previously responded to this comment. Please See response to Comment 16, Draft EA Response to Comments. *"The Lease Buyout Alternative will be added to Section 2.3 to fully address a reasonable range of alternatives in the EA Moreover, the rationale for the dismissal of a buyout alternative will be added to fully address why this alternative would not meet the purpose and need of the proposed project. Project design features outlined in Thurston's Proposed Action along with other applicant committed environmental protection measures (ACEPMs) and Service terms and conditions would fulfill the requirements outlined in 50 CFR §29.32.2 to minimize environmental impacts and disruption to Refuge operations, as practicable. Additionally, the FWS has the authority to impose further mitigation measures as conditions of approval (COAs) for the Decision Record or FONSI."*
Comment 79	Nick Schou, Utah Rivers Council	The DEA's impermissibly narrow range of alternatives ignored the reasonable alternative of buying out, or trading out, Thurston's mineral rights. Doing so would still provide Thurston fair value for its rights either via compensation or by acquiring lands with comparable mineral value outside the Ouray Refuge. This would satisfy the dual purpose and need of the project: recognizing and satisfying Thurston's mineral rights and protecting the values for which the Refuge was created.	The Service previously responded to this comment. Please see response to Comment 16, Draft EA Response to Comments. *"The EA will be edited in Section 2.3 to address the consideration of buying out or exchanging mineral rights and why these alternatives were not brought forth for detailed analysis."*

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Comment 80	Nick Schou, Utah Rivers Council	Indeed, in a similar case involving Colorado's Baca National Wildlife Refuge, a federal court in Colorado held that the FWS violated NEPA by not considering a buy-out option. As a result, the court enjoined the FWS from taking or approving any action that would change the status quo in the refuge and enjoined the FWS from relying on the EA. San Luis Valley Ecosystem Council v. U.S. Fish and Wildlife Service, 657 F.Supp.2d 1233 (D. Colo. 2009) ((attached as Exhibit A)). The court specifically faulted the FWS for failing to evaluate the cost of acquiring the mineral rights or considering that option in the NEPA document. As in the Thurston DEA, "[p]rohibiting all drilling was not addressed in any meaningful way because the government took the position that it could not do this." San Luis, Ex. A at 23. Importantly, after the injunction in the Baca Refuge, the mineral rights owner itself suggested a trade of the refuge holdings for BLM lands and a broad coalition of citizens and elected officials, including Colorado's United States senators, began talks about how to buy out the mineral rights in Baca and on nearly protected landscapes. See www.slvec.org/component/content/article?id=8&Itemid=0. That mineral owner has now offered to sell its rights, an outcome that might well occur here. An analysis of this alternative must include an objective appraisal of the value of the mineral rights, which must reflect the fact that the owner purchased those rights (with notice) in a Refuge with strict limitations on its ability to access and develop those minerals. The outcome in the Baca Refuge demonstrates why NEPA requires public participation and consideration of a range of reasonable alternatives: such analysis educates both the public and policy makers about more protective alternatives to a proposal with impacts to important environmental values. Given the unique and "priceless" rare fish species and other resources placed at risk by Thurston's proposal, the FWS should have considered this alternative.	The Service previously responded to this comment. Please see response to Comment 16, Draft EA Response to Comments. *"An analysis of a buyout alternative has been added to Section 2.3 along with rationale for why this alternative was not brought forward for detailed analysis."*

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Comment 81	Nick Schou, Utah Rivers Council	The Ouray Refuge provides important habitat for the 237 species of migrating birds that use the Refuge for resting, feeding, nesting and other behaviors critical to their survival and health. Many of these migrants rely on riparian corridors for nesting and migration purposes in arid country like the Refuge and its surrounding area. The Green River, which runs through the Refuge, is a migratory corridor for much of the waterfowl in eastern Utah. However, human disturbance, such as hunting and boating, greatly influence the number of birds present. Additionally, several endangered fish species that are protected under the Endangered Species Act and on the brink of extinction are found here as well, and the Refuge contains critical habitat for the Colorado pikeminnow and Razorback sucker. The Refuge is also home to the Yellow-billed cuckoo and the Uintah Basin hookless cactus, both protected under the Endangered Species Act. Various habitat types in the Refuge contribute to the diversity and abundance of wildlife in the area as they generally provide a microhabitat for wildlife uniquely adapted to or dependent on these features. Big game like pronghorn antelope, mule deer, elk and bear also live in the Refuge.	Comment Noted. An analysis of effects to wildlife was included in section 4.4.3 of the 2015 EA and Draft SEA.
Comment 82	Nick Schou, Utah Rivers Council	Given the wealth of the species diversity in the Refuge, the FWS's obligation to protect the long-term sustainability and health of these species (and in the case of species listed under the Endangered Species Act, preclude "take" of those species), and that many of these species are adversely affected by human disturbance, the FWS should have considered other options to protect wildlife, including seasonal restrictions. Seasonal restrictions make sense because the significance of the impacts on wildlife vary according to the time of year. Because it failed to consider alternatives that minimize the impacts on Refuge resources, FWS did not satisfy the purposes for which the Refuge was created or its own obligations to protect Service resources to	The Service considered seasonal and daily restriction on construction, development, and production activities including no construction or development during the yellow-billed cuckoo nesting season and confining production activities between 1 p.m. to 4 p.m. daily. A thorough discussion is included in section 4.4.3 of the 2015 EA and Draft SEA.

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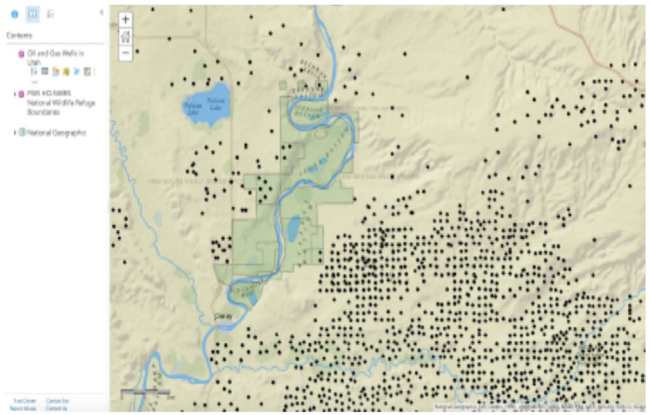
		the maximum extent possible without infringing on the rights of subsurface owners.	
Comment 83	Nick Schou, Utah Rivers Council	An alternative involving directional drilling of the proposed wells from a single pad was "briefly summarized" in the EA but was "dismissed" from analysis. However, numerous wells are drilled in the Uintah Basin using directional drilling and the SEA does not provide sufficient analysis that explains why that alternative is not feasible in this instance. See, e.g., BLM's Gasco 16-Well EA which analyzes a project that would utilize directional drilling in an area near the Refuge.2 Many other examples of directional drilling exist, and on BLM lands that are not governed by special restrictions like the Refuge and which do not have the same heightened conservation values that exist in the Refuge.	A thorough discussion of a directional drilling alternative is covered in Section 2.3.4 of the 2015 EA. Three additional alternatives were added to Section 2.3 to fully address a reasonable range of alternatives in the EA. These alternatives include Seasonal Restrictions, Land Exchange, and Lease Buyout."
Comment 84	Nick Schou, Utah Rivers Council	Indeed, several internal documents from the FWS show that the agency believed that directional drilling should be viewed as an alternative to protect the "priceless" brood stock for the razorback sucker. See email from Tom Chart to Cris Dippel, dated June 10, 2013 (identifying directional drilling as a potential solution to the risk that the project poses to protected Colorado River fish); email from Cris Dippel to Tom Chart, dated June 7, 2013 (same). FWS emails obtained through a Freedom of Information Act Request by the Grand Canyon Trust are attached to these comments.	Please see response to Comment 83.
Comment 85	Nick Schou, Utah Rivers Council	As noted above, the FWS's obligation in this case is to protect the Refuge, not to accommodate the project proponent's desires for the least costly drilling operation. Here, the FWS must consider directional drilling and analyze that alternative based on more information than that provided by the proponent.	The Service previously responded to this comment. Please see response to Comment 26, Draft EA Response to Comments. *"Project design features outlined in Thurston's Proposed Action along with other applicant committed environmental protection measures (ACEPMs) and Service terms and conditions would fulfill the requirements outlined in 50 CFR §29.32.2 to minimize environmental impacts and disruption to Refuge operations, as practicable.*

Comment #	Reviewer	Comment	Response
Comment 86	Nick Schou, Utah Rivers Council	For most resources, the FWS narrowly defined the cumulative impacts analysis area as the Ouray Refuge boundary or the Project area boundary. See SEA at 38. As a result, it did not assess the cumulative impacts of activities, including the significant oil and gas drilling and related industrial activities on other public lands in proximity to the Refuge. A cumulative effects analysis that includes areas beyond the Refuge is important to understanding the impacts of this project. As the 2014 DEA explained: In response to the increase in human activity (e.g., equipment operation, vehicular traffic, noise, and lighting) wildlife may avoid or move away from the sources of disturbance to other habitats. This avoidance or displacement could result in underutilization of the physically unaltered habitats adjoining the disturbances. The net result would be that the value of habitats near the disturbance footprint would be decreased and previous distributional patterns would be altered. The habitats would not support the same level of use by wildlife as before the onset of the disturbance. Additionally, some wildlife would be displaced to other habitats which may lead to some degree of overuse and degradation of those habitats. Thus, while wildlife that normally live in the Refuge would be displaced by this project to other habitats, there is no way to know if those habitats are present and available to displaced wildlife given the amount of oil and gas development and its associated roads, pipelines, utility corridors, lights and other disturbances. While the Refuge does contain some drilling activity, the SEA does not explain whether the Refuge is the last preserve of many of these species and whether its unavailability leaves species that depend on the Refuge with no place to go. If that is the case, the Refuge is absolutely critical as a relatively natural island in a sea of industrial development. The map below demonstrates this.	The Service previously responded to this comment. Please see response to Comment 13, Draft EA Response to Comments. *"Additional rationale for the area considered for the cumulative impacts analysis has been added to the relevant resources analyses in Chapter 4.0 of the EA. Additional details of available habitat for wildlife species within the CIAA has been added to the wildlife cumulative impacts analysis in Section 4.4.4.3 of the EA.* *Direct impacts are a result of the project. After review and analysis, impacts were tiered from the Anadarko GNB Final EIS, Gasco Final EIS, and Appendix B – Air Quality Technical Support Document for Newfield's Monument Butte Oil and Gas Development Project Draft EIS. See Chapter 4.0 of the EA."* The scope of the Draft EA and Draft SEA was established to identify and mitigate impacts to the greatest extent possible within the net Project Area and Refuge with the goal of minimizing degradation of wildlife habitats and displacement of wildlife in the areas under the respective control of Thurston and the Service.

Comment #	Reviewer	Comment	Response
			
Comment 87	Nick Schou, Utah Rivers Council	As the 2014 DEA recognized: each acre of vegetation and wildlife habitat disturbance in the Refuge would be additive to other losses of habitat, foraging areas, breeding areas, ground cover, and increased habitat fragmentation within the Uintah Basin. d. at 138. Yet, with having acknowledged the region-wide impacts, the SEA then ignores them. However, information about the cumulative impacts is not only required by NEPA but should also influence FWS decisions about limitations to put on Thurston's operations or whether to initiate a process that would lead to a buy out or trade of Thurston's mineral interests.	The 2015 EA includes rationale for the selection of the Refuge boundary as the boundary for the cumulative impacts analysis in Chapter 4.0 - Wildlife. In addition, a description of available habitat for wildlife species within the Cumulative Impact Assessment Area (CIAA) has been added to the wildlife cumulative impacts analysis." Modifications to the 2015 EA were incorporated by reference into the Draft SEA.

Comment #	Reviewer	Comment	Response
Comment 88	Nick Schou, Utah Rivers Council	Moreover, the SEA does not even analyze the cumulative impacts of projects within the Ouray Refuge boundaries. There are six other well sites within the Refuge that have impacts on wildlife and other resources, yet the SEA does not explain where these other activities are located or how they affect the resources that would be impacted by Thurston's proposal. It is not clear, for example, whether wildlife displaced by the roads, noise, excavation and other activities at Thurston's site have alternative suitable habitats within the Refuge. Similarly, there is no analysis of the effects of Refuge activities on habitat fragmentation overall.3. At the time of the DEA, FWS processed another proposal at the same time as Thurston's for Ultra, yet the SEA says nothing about the cumulative impacts of that project.	The Service previously responded to this comment. Please see response to Comment 14, Draft EA Response to Comments. Existing well counts and other development were added to the cumulative impacts calculations for past, present, and reasonably foreseeable development within the CIAA (see below). The following was added to Chapter 4.0 of the EA: "It is anticipated that 48 wells will be drilled from multi-well surface locations on the Refuge (on State lands leased from SITLA, with SITLA minerals) (Golob 2014) in Sections 2 (21 wells) and 36 (27 wells); of these, 11 wells are currently planned for 2014 and the remainder is planned for 2015 and 2016. Based on a mix of 2 to 6 wells/pad, the average size is 0.75 acres/well. The following reference was added to Chapter 6.0 of the EA for this citation: "Golob, Jeremy. 2014. Ultra Petroleum, Asset Manager. Email Correspondence with Louis Bridges, Kleinfelder and William Sparks, Beatty & Wozniak, P.C. regarding planned well counts in the NWR. June 10 and 11, 2014." "Discussion of habitat fragmentation as it pertains to development within the CIAA was added to better address indirect impacts to wildlife and vegetation." Modifications to the 2015 EA were incorporated by reference into the Draft SEA.

Comment #	Reviewer	Comment	Response
Comment 89	Nick Schou, Utah Rivers Council	The SEA's general description of impacts (related minimization of those impacts based on general, unquantified mitigation results) fails to satisfy NEPA's "hard look" requirement. 42 U.S.C. § 4332(2)(C); 40 C.F.R. §§ 1502.1, 1508.25(c); Robertson, 490 U.S. at 349-50. This requirement seeks to ensure informed and transparent agency decision-making. Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc., 462 U.S. 87, 97 (1983). To satisfy the hard look requirement, an EA first must describe the existing environment that will be affected by the proposal. 40 C.F.R. § 1502.15. The EA then must analyze and disclose any significant impacts of the proposed action. 42 U.S.C. § 4332(2)(C); 40 C.F.R. §§ 1502.1, 1502.16, 1508.8. See New Mexico, 565 F.3d at 718 (site-specific analysis "of all 'reasonably foreseeable' impacts must occur at the earliest practicable point, and must take place before an 'irretrievable commitment of resources' is made") (quoting 42 U.S.C. § 4332(2)(C)(v)).	The Service previously responded to this comment. Please see response to Comment 18, Draft EA Response to Comments. *"Comment noted. The Service has read and acknowledges this comment about NEPA's "hard look" requirement. The Thurston DEA has been prepared in accordance with NEPA requirements and federal, state, and local laws."*
Comment 90	Nick Schou, Utah Rivers Council	The SEA does not adequately consider the impacts of this drilling proposal on fish, wildlife, and plant species that rely on the Refuge. In order to approve this project, the FWS must thoroughly analyze the Project's impact on fish, wildlife, and plants. The Ouray Refuge's healthy habitats are critical for fish and wildlife survival, and provide a rare and important respite from the impacts of decades of oil and gas development in the Uintah Basin as well as extensive water development on the Green River. This development has resulted in significant impacts on endangered species, stream flows, fisheries, wetlands, riparian habitat and wildlife migration corridors. The Ouray NWR acknowledges this in its own Comprehensive Conservation Plan, (July 2000): Since the construction of Flaming Gorge Dam upstream, the Green River system has changed dramatically resulting in long-term loss and degradation of riparian habitats and wildlife species dependent on them. The Refuge's riparian habitat is now critically important	The Service has previously responded to this comment. Please see response to Comment 19, Draft EA Response to Comments. "The analysis of the existing environment and potential impacts to fish, wildlife, vegetation, and special status species is included in Section 4.4 – Biological Resources. Additional CIAA information has been included in Chapter 4.0 of the EA to address new information relative to natural resources. "

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		to protect declining fish and migratory bird species using the Green River corridor	
Comment 91	Nick Schou, Utah Rivers Council	The SEA acknowledges that some of the Project's impacts could be significant, but its conclusions that the mitigation measures would solve the problem are unsubstantiated, and it the full range of impacts from all the proposed activities -- from drilling to pad excavation and truck traffic for 30-40 years -- are addressed for all the species and resources. The SEA is also insufficient because its conclusions about the impacts are overgeneralized and do not adequately analyze all the proposed activities' impacts on all of the species which were grouped together for common discussion (i.e. each of the four endangered fish which use the Green River within the Refuge in different ways, for different purposes, during different times of the year).	The Service previously responded to this comment. Please see response to Comment 20, Draft EA Response to Comments. *"The Colorado River endangered fish species were grouped together within the impacts analysis as impacts to each species are expected to be similar under all alternatives. While each species has its own lifestyle characteristics, they would be subject to the same impacts rooting from sedimentation, water depletion, etc.* *Therefore, they were grouped together for simplicity and to reduce redundancy. While this may remove specificity for some species, it provides a more conservative analysis for those species that may be less likely to use the habitats within the Project Area or CIAA. For other resources that are thought to be overgeneralized, the analyses were developed using the most recent knowledge and data available, while staying within the identified scope of the EA."*

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Comment 92	Nick Schou, Utah Rivers Council	The Ouray NWR is located on the Green River, the longest and main tributary to the Colorado River, which supplies water to 35 million people in the Southwest. The FWS should not approve a project that will lead to any further impacts on the water quality and quantity in the heavily developed Green River, which is the lifeblood of four endangered native fishes that inhabit the river within the Ouray NWR. The SEA states: Under the Proposed Action, habitat for native and/or recreational fish species inhabiting the Green River within and adjacent to the Project Area may be degraded by increased erosion, sediment yield, and the potential for exposure to hazardous substances from an accidental spill that would result in crude oil and other hydrocarbon material entering the Green River. This risk is increased under the proposed action due to tanker truck travel along the Refuge/NFH road during the 30 to 40 year life of the wells.	The Service previously responded to this comment. Please see response to Comment 21, Draft EA Response to Comments. "*As stated in the Section 4.4.3.1 of the EA, degradation of fish habitat related to increased erosion and sedimentation would be minimized through design features (see Section 2.1 of the EA) and conservation measures listed in Section 2.1.10 of the EA that include provisions to implement and monitor reclamation procedures, adhere to a stormwater pollution prevention plan (SWPPP), and use best management practices (BMPs) to reduce or minimize the potential for erosion and sedimentation within the Project Area. In addition, impacts related to exposure of hazardous substances would be minimized by implementation of and adherence to action items specified in the Spill Prevention, Control and Countermeasure (SPCC) Plan. As stated above, moving the tank battery over 1 mile from the Green River and thereby removing the tanker traffic on the main Refuge road will greatly reduce the chance of a spill."*
Comment 93	Nick Schou, Utah Rivers Council	The SEA fails to adequately analyze the impacts of this proposed 2-well project on water quality in the area. The SEA should have gone much farther in considering potential issues of increased sedimentation, increased runoff and contamination. For example, any increase in sedimentation and other water pollutants in the Green River would not only harm endangered fish species but would likely be a violation of state water quality standards. Violating state water quality standards would not uphold FWS's obligation to ensure that habitat in the Ouray NWR is not harmed as a result of its approvals.	The Service previously responded to this comment. Please see response to Comment 21, Draft EA Response to Comments. See also SEA section 4.3.

Comment #	Reviewer	Comment	Response
Comment 94	Nick Schou, Utah Rivers Council	The SEA should also specifically address whether and how the Colorado Salinity Congress Act applies to this proposal.	The Service is not aware of *the Colorado Salinity Congress Act. However, the Colorado River Basin Salinity Control Act, which is mentioned in Section 3.3.2.3 of the 2015 EA is referenced.*
Comment 95	Nick Schou, Utah Rivers Council	Utah is ranked 11th in the U.S. for crude oil production and 10th in natural gas output. There are over 11,000 active oil and gas wells in Utah, with a cavalcade of other projects in the wings including tar sands, oil shale, refinery expansions and an elaborate network of new roads and pipelines originating in the Uintah Basin. Recent oil pipeline failures in Utah impacting Red Butte Creek, Willard Bay, the Escalante watershed and the Green River are likely to become more common in the future due to the expanding extent and age of oil and gas infrastructure.	The Service previously responded to this comment. Please see response to Comment 24, Draft EA Response to Comments. *"Pipelines to transport oil, gas, and water will be constructed as part of this project. These pipelines will be bundled to reduce the amount of habitat disturbance. They will be laid on the surface, which will facilitate maintenance and repair."*
Comment 96	Nick Schou, Utah Rivers Council	The proposed Thurston Energy drilling and associated development will occur near the Green River in an area that provides habitat for a number of endangered species, which may cause significant loss or destruction of the aquatic ecosystem within the refuge. The SEA failed to adequately address the potential for endangered native fishes and their productive nursery habitats within the Ouray NWR to be exposed to hazardous chemicals and hydrocarbons resulting from accidental spills into the Green River. The SEA states: Project activities impacting water resources would only affect those present within the Ouray NWR boundary and its adjacent lands and would not cause additive effects to those occurring elsewhere. The impact of any spills would not be limited to the Refuge and would extend to native fishes downstream and would include groundwater as well as surface waters.	The Service previously responded to this comment. Please see response to Comment 25, Draft EA Response to Comments. *"As described in Section 2.1.8 of the EA, the project has been modified so that the chance of a spill has been greatly reduced.* *In addition, as discussed in Section 2.1.8 of the EA, none of the chemicals that would be used during drilling, completion, or production operations for the proposed Ouray NWR 2-well project meet the criteria for being an extremely hazardous substance, as defined in 40 CFR 355, or meet the quantities criteria per the BLM Instruction Memorandum No. 93-344.* *Additional language specifying the extent to which a spill of hazardous material could affect sensitive fish species has been added to the EA.*

Comment #	Reviewer	Comment	Response
Comment 97	Nick Schou, Utah Rivers Council	Additionally, a simple “Jersey Barrier” will do little to keep oil out of the river should a spill result from one of the many tanker trucks now proposed to travel on the Refuge Road. It will also do little to keep a tanker truck out of the river should one lose control on the Road, which is often very slippery following a significant precipitation event.	The Jersey barrier will be installed to help alleviate human health and safety concerns for Refuge visitors, staff, and oil workers. While it will not, by itself, prevent oil spills from occurring, in combination with imposed speed restrictions, right of way requirements, and improving site distance on the Refuge/Hatchery Road beyond the Jersey barrier location, it should minimize the potential for trucks to go off the road at this location, thus minimizing spill potential.

Comment #	Reviewer	Comment	Response
Comment 98	Nick Schou, Utah Rivers Council	Both of the two proposed well pads are very close to the Green River's 100 year floodplain and part of the Leota Bottom wetland complex. Critical habitat for endangered fishes of the Green River like razorback suckers extends to the 100 year floodplain on the Ouray NWR. Direct and indirect exposure to hazardous chemicals and hydrocarbons resulting from accidental spills into the Green River's 100 year floodplain would adversely impact endangered fishes within and downstream of the Refuge. The SEA should have thoroughly analyzed and disclosed how all facets and phases of construction and operation of the proposed action, including related and connected actions, may impact the Green River's 100 year floodplain and therefore critical habitat for species of endangered fish on the Ouray NWR. Flaming Gorge dam spring operation objectives aim to provide river to floodplain connection in order to provide flooded water habitat for all life stages of the four endangered fish, most importantly as nursery habitat for larval razorback sucker. These floodplain habitats on the Ouray NWR, like Leota Bottom constitute a significant amount of floodplain nursery habitats. Contamination of surface or groundwater at the Ouray NWR could adversely impact those habitats and "take" an uncertain number of wild produced razorback sucker larvae and other life stages of the other endangered fish species. Amazingly, the SEA not only acknowledges that there is a risk to fish species, but stated that: This risk is increased under the proposed action due to tanker truck travel along the Refuge/NFH road during the 30 to 40 year life of the wells. This is a clear reason why the SEA is insufficient and a full EIS should be done by the FWS and greater safeguard required if the proposed action is approved.	The Service previously responded to this comment. Please see response to Comment 26, Draft EA Response to Comments. *"As described in Section 2.0 of the EA, the project has been modified so that the chance of a spill and contamination of surface water has been greatly reduced. The chance of groundwater contamination is considered low because of drilling techniques that encase the bore in layers of concrete and steel piping.* *As discussed in Section 2.1.8, none of the chemicals that would be used during drilling, completion, or production operations for the proposed Ouray NWR 2-well project meet the criteria for being an extremely hazardous substance, as defined in 40 CFR 355, or meet the quantities criteria per the BLM Instruction Memorandum No. 93-344."* While the Service acknowledged in the SEA that there is an increased risk of spill into the Green River due to tanker truck traffic over the 30-40 year life of the wells (see Draft SEA at section 4.3.2), there is no mechanism to quantify effects of an accident which has not yet happened. The Service minimized accidental spill potential by requiring the installation of Jersey barrier where trucks pass near the Green River, limiting production truck traffic to daylight hours between 1 and 4 p.m., and requiring trucks to travel at a speed of 10 mph or less.

Comment #	Reviewer	Comment	Response
Comment 99	Nick Schou, Utah Rivers Council	Pollution of that shallow groundwater by oil and gas operations contemplated in the proposed action would effectively eliminate the sole source of water for the Randlett Unit. This could result in the loss of genetic source stock and interrupt and undermine fish stocking efforts. This threatens to jeopardize the survival of the bonytail and razorback sucker and thwart the Recovery Program because those species' survival and recovery and the Recovery Program itself depend on operation of the Randlett Unit. Because populations of endangered fish are not self-sustaining in the wild in the Upper Basin, without hatchery stock, including those produced at the Randlett Unit, those populations would go extinct in the wild. The U.S. Fish and Wildlife Service's most recent 5-Year Status Review for razorback sucker depicts the centrality of hatchery stock to recovery efforts:	Thurston originally proposed a 4-well development on its Utah state oil and gas lease but eliminated 2 of those wells from the Draft EA due to concerns about proximity to the Randlett Unit freshwater well field despite the fact that well construction techniques eliminate the possibility of impacts to those assets. The Proposed Action includes well construction activities that are down gradient from the Randlett Unit freshwater well field and above the 100-year floodplain of the Green River and presents no possibility of impact to the activities of the Randlett Unit and the Ouray National Fish Hatchery stock recovery efforts.
Comment 100	Nick Schou, Utah Rivers Council	The razorback sucker population in the Colorado River subbasin has been increasing over the last decade through stocking efforts and is currently estimated at 5,000-8,000 adults (Elverud in prep). Spawning and larval presence have been documented in the mainstem Colorado and tributaries above the confluence with the Green River. Untagged juveniles and adults have rarely been encountered, indicating that recruitment from the larval stage to other life stages is not commonly occurring. In both Green River and Colorado River subbasin populations, a lack of recruitment is considered a result of nonnative predation and lack of access to rearing habitat… The San Juan River subbasin adult population has been consistent in size (approximately 3,000), but also consists almost entirely of hatchery-reared individuals (SJRIP 2017). Spawning and larval production has occurred annually for the last 20 years, but there are indications that only a small percentage of the population is participating in spawning. Juvenile survival has rarely been documented except for the Lake Mead population in the Lower Basin, "[A]ll other populations are maintained through	Comment Noted.

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		stocking efforts as the young are eaten by nonnative fish before they reach adulthood."	
Comment 101	Nick Schou, Utah Rivers Council	The U.S. Fish and Wildlife Service's most recent 5-year status review for bonytail similarly concludes that, "While augmentation has been occurring for over a decade, recruitment of age-3 fish to adult (age-4) has not been realized; therefore, the population is not considered self-sustaining."9	Comment Noted.
Comment 102	Nick Schou, Utah Rivers Council	The Randlett Unit is responsible for stocking both of these species, and therefore also for the both species' continued survival in the Green and White Rivers. Stocking goals established by the Recovery Program for the Randlett Unit include "annual production and distribution of 6,000 razorback sucker averaging 350 mm and 10,000 bonytail averaging 250 mm into the middle and lower Green River in Utah." 10 Each year, thousands of bonytail and razorback sucker raised at the hatchery are stocked into the Green and White Rivers. In 2018, 11,939 bonytail were introduced into the Green and White Rivers from Randlett; 6,259 young razorback sucker and 192,860 of its fry were also stocked into the Green River from the hatchery.11 Razorback larvae raised at ONFH are used for scientific studies, including of nursery habitat and larval drift.	Comment Noted.

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Comment 103	Nick Schou, Utah Rivers Council	In sum, should a spill of hazardous hydrocarbons from oil and gas operations in the refuge cause contamination to groundwater, that would risk harming the hatchery program upon which the entire recovery program depends, which in turn may jeopardize both species of fish by impairing FWS's ability to successfully carry out the hatchery and stocking operations on which the species' continued survival relies.	The Service previously responded to this comment. Please see response to Comment 26, Draft EA Response to Comments. "As discussed in Section 2.1.8, none of the chemicals that would be used during drilling, completion, or production operations for the proposed Ouray NWR 2-well project meet the criteria for being an extremely hazardous substance, as defined in 40 CFR 355, or meet the quantities criteria per the BLM Instruction Memorandum No. 93-344. As stated in the Section 4.4.3.1.5 of the Thurston DEA, degradation of fish habitat related to increased erosion and sedimentation would be minimized by actions set forth in the Proposed Action, including ACEPMs described in Sections 2.1.10, which include provisions to implement and monitor reclamation, adhere to a SWPPP, and use BMPs to reduce or minimize the potential for erosion and sedimentation within the Project Area. In addition, impacts related to exposure of hazardous substances would be minimized by implementation of and adherence to action items specified in the SPCC Plan and APD."
Comment 104	Nick Schou, Utah Rivers Council	Moreover, groundwater, which is the main water source for the Ouray National Fish Hatchery on the Refuge. ontamination is one of the largest concerns considering the proposed fracking process. Most of the gas wells in Utah are being fracked, a largely unregulated means of extracting natural gas by injecting a cocktail of carcinogens deep into the ground to drive natural gas and other pollutants up out of the ground through explosive pressure. The process is more destructive than many other extraction techniques because fracking is exempt from the Clean Water Act, NEPA, the Clean Air Act, the Safe Drinking Water Act and the Superfund Act, among other federal regulations. Proper well construction is critical to well integrity, which in turn is crucial to ensuring that	The Service previously responded to this comment. Please see response to Comment 27, Draft EA Response to Comments. *"As discussed in Section 2.1.2 of the EA, all drilling operations would be conducted in compliance with all applicable rules and regulations, and COAs applied by UDOGM and FWS.* *Well construction would be designed based on "Gold Book" standards, which are implemented to support well integrity and reduce future unforeseeable releases."* The Service has read and acknowledges this comment about hydraulic fracturing.

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		oil, gas, fracking fluids, and fracking waste do not migrate into and	
Comment 105	Nick Schou, Utah Rivers Council	With many documented cases of poor well integrity causing drinking water contamination in places like Pennsylvania, the FWS should reject the proposed action because even greater protections to the source of water for the Hatchery, which is a crucial component of the Upper Colorado River Endangered Fish Recovery Program, are inadequate. Razorback sucker and humpback chub broodstock key to successful restocking efforts in the Green River could be lost forever with only one occurrence of shallow groundwater contamination by fracking before periodic water quality testing would indicate there is a problem. These broodstock are irreplaceable and their loss cannot be mitigated. In excess of 25,000 individual razorback suckers in various life stages are on site at the Hatchery and contamination could destroy hatchery broodstock and would constitute a "take" of endangered species protected under the ESA. Loss of production of razorback sucker at the hatchery could jeopardize ESA compliance for around 2000 water development projects that deplete water from the Upper Colorado River Basin.	The Service previously responded to this comment. Please see rsponse to Comment 28, Draft EA Response to Comments. *As stated in the Section 4.4.3.1 of the EA, degradation of fish habitat related to increased erosion and sedimentation would be minimized through design features (see Section 2.1 of the EA) and conservation measures listed in Section 2.1.10 of the EA that include provisions to implement and monitor reclamation, adhere to a SWMP, and use BMPs to reduce or minimize the potential for erosion and sedimentation within the Project Area. In addition, well construction standards described in the "Gold Book" as well as implementation of and adherence to action items specified in the SPCC Plan would minimize impacts related to potential exposure of hazardous substances.*

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Comment 106	Nick Schou, Utah Rivers Council	However, the FWS is remarkably confident that because of the great depth at which hydraulic fracturing would take place would not impact groundwater resources. This claim is unsubstantiated and overlooks the fact that groundwater aquifers considered to be separate often have linked hydrology and fracking can also compromise the integrity of aquifers and forever change their hydrological processes. Considering the devastating possible water contamination impacts to the Hatchery, the FWS should have included in the SEA a requirement of baseline water quality testing where the results would be made public, and should have established a detailed monitoring plan to ensure that any contamination is not only quickly identified, but addressed.	The Service previously responded to this comment. Please see response to Comment 29, Draft EA Response to Comments. "*Thurston agrees to comply with all State of Utah water monitoring and sampling requirements. Thurston will use samples from existing wells to help establish baseline water quality metrics. Thurston does not currently have access or authorization to drill additional monitoring wells."* *The following conservation measure was added under Section 2.1.10 of the EA:* *"Thurston would sample and test any known water wells located within a 0.50 mile radius up-gradient or immediately down-gradient of the oil extraction wells. The testing protocol will be developed jointly by the Service and Thurston."*
Comment 107	Nick Schou, Utah Rivers Council	The SEA states that: The estimated total freshwater needed for the proposed project (5.7 acre-feet) could result in depletion to the Green River, thus directly affecting the Colorado River fish and their habitat.	The Service has already responded to this comment. Please see response to Comment 30, Draft EA Response to Comments. Depletions to the Green River under the Proposed Action are discussed as they relate to nursery habitat. The EA and BA determine that: (1) Any water use will be considered a depletion; and 2) a formal Section 7 consultation has already been completed to analyze water depletion impacts to the four Colorado River endangered fish." However, as stated in the Draft SEA, Thurston intends to purchase water from an existing owner in the Ouray Park Water Management District at Pelican Lake and use the Refuge pipeline, via special use permit, to deliver water to the drilling site. There will be no depletion to the Green River beyond what is occurring at present.

Comment #	Reviewer	Comment	Response
Comment 108	Nick Schou, Utah Rivers Council	However, the FWS is surprisingly confident that depletions of the Green River and its tributaries associated with the proposed action will only impact individual fish and will not impact the fishery on population or species levels. This assertion is unsubstantiated and based on an overgeneralization of the Green River's hydrology and fishery. While the SEA is apparently focused on the main channel of the river it completely overlooks the importance of relatively small amounts of water that make all the difference in forming and maintaining essential backwater habitat within the Refuge that is crucial for reproductive efforts of four species of endangered native fishes. Because of the location of depletions stemming from the proposed action, any such depletions could certainly harm large numbers of larval and young-of-year endangered fishes affecting recruitment and hindering efforts to restore the native fishery and fulfill FWS obligations under the Endangered Species Act.	Please see response to Comment 107.
Comment 109	Nick Schou, Utah Rivers Council	The Ouray NWR is a sanctuary for native fishes because it straddles the Green River near its widest alluvial reach and most extensive floodplain. Water development has reduced frequency and duration of the connection between the Green's main channel and floodplains along with barriers like levees, which isolate larval fish from critical nursery habitat. Self-sustaining razorback sucker and populations depend on long-term inundation of floodplain habitat, which harbor their young and those of other native fish like pikeminnow. Their larvae hatch in the spring just a week after the suckers spawn on gravel beds in the main channel and like larval pikeminnow they rely on substantial instream flows for passive drift. The lateral movement of water over the banks and into the Refuge's many backwaters transports fish, oxygen and nutrients to the flood plain and it enhances biological productivity, food and plant life that provides protection from predators and the periodic high velocity of the main channel.	Comment noted. The Service has read and acknowledges this comment about native fishes (Colorado River fish species) in the Refuge.

Comment #	Reviewer	Comment	Response
Comment 110	Nick Schou, Utah Rivers Council	The critical habitat on the Refuge provides native fish with a source of protection from predation by non-natives, which is especially devastating to the defenseless young of endangered native fish species. Explosions of non-native fish populations like small mouth bass in recent low water years in the Green River, also mean fewer native larval fish hatch and make it through the gauntlet to the Refuge's nursery downstream. Water depletions can also contribute to alterations in flow regimes that favor non-native fish, which increases forage and habitat competition for and predation on the Colorado River fish species.	Please see response to Comment 107.
Comment 111	Nick Schou, Utah Rivers Council	Since Flaming Gorge Dam was completed in 1964 the Green and Yampa Rivers have been unable to regularly collaborate on seasonal floods and the preservation of pieces of critical habitat like that in the Refuge has been instrumental for sustaining the remaining native fishery. The United States Fish and Wildlife Service is only beginning to understand the extent to which the fish use and depend on certain habitat within and surrounding the Refuge. Wild razorback suckers, relatives of those now being raised in the Ouray National Fish Hatchery have had virtually no natural recruitment for 20-30 years because of lack of wetland habitat as well as possible chemical, biological, parasitic factors. Because of this over the last few years the FWS has stocked thousands of razorback suckers in the Green River on the Ouray National Wildlife Refuge, which is just upstream from its confluence with the White River. In 2011 razorback suckers were documented congregating and spawning in the White River, some of which had PIT tags indicating they came from the Ouray Hatchery. Despite being reduced to twenty-five percent of its former range, a considerable population of endangered Colorado pikeminnow still exist in the Green River, and have shown their evolutionary fitness by adjusting to numerous environmental insults. In years with higher flows in the Green like 2011, the FWS found larger numbers of pikeminnow larvae in the alluvial reaches of the Basin in late summer. Much of this sampling was	Please see response to Comment 107.

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		done on backwater habitat within the Ouray NWR. Unlike other heavily impounded stretches of the Green River, the small unconnected amounts of remaining suitable habitat like that on the Refuge are somehow keeping the native fishery alive and we are only beginning to understand why. These endangered fishes are still relying on the Ouray NWR, and if the FWS is successful at saving endangered species like razorback suckers or pikeminnow and preserving their habitat on a heavily used river like the Green, it would be a remarkable accomplishment among endangered species projects. If the FWS allows impacts from drilling on the Refuge to impact the endangered fishes of the Green River it will be a huge step backward for the recovery effort after many great strides were made right on the Ouray NWR itself. In other words, water available for the endangered fishes critical "nursery" habitat on the Refuge is directly related to the health of entire populations of endangered fishes in the Upper Colorado River System including the success of razorback sucker reintroduction efforts that take place directly on the Ouray NWR.	
Comment 112	Nick Schou, Utah Rivers Council	The proposed action will take large amounts of water, as will the facilities that support the people working, and all the other consumptive needs associated with oil and gas development like pumping water from the river to minimize dust from pads and new roads. The SEA does not adequately address the impact to annual average flows of the Green River at the Ouray gauge and failed to acknowledge impacts caused by depletion of the river in summer months of drought years when there is very little water in the main channel of river and less backwater habitat. The SEA states that depletions to the river resulting from drilling would be negligible, but this is unsubstantiated and it is unclear whether the anticipated 5.7 acre-foot depletion would be spread out over every second of a calendar year causing a 0.0001 percent depletion or whether there would be greater depletions to the river during some times rather than consistently. The SEA apparently	Please see response to Comment 107.

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		based these assumptions on the mean annual average flows of the Green River for two months at the Ouray/Jensen gauges. However, the SEA failed to analyze impacts caused by depletion of the river in summer months of drought years when there is very little water in the main channel of river and far less backwater habitat. If one also considers the minimum daily mean values for the Green River near Jensen the impacts of water depletion would be greatly increased. According to the USGS, the minimum daily mean for August 1 is just 266 cubic feet per-second, far less than the mean of monthly discharge for June at 11,100. Moreover, because projects impacts are likely to extend 30-40 years the FWS should consider project impacts to the Green River associated with reduced flows in the future as a function of warmer air temperatures occurring from climate change. Given that hundreds of studies have been published over the last few years documenting the very real and impacting nature of air temperature increases to the West, Intermountain West, Southwest, and Colorado River Basin, it is surprising the FWS refused to acknowledge any of this science when assessing the proposed action's impacts on endangered fishes. Most notably, the SEA fails to even consider the effect of reduced streamflows on the Green River as a function of increased air temperature. The FWS has qualified personnel who could prepare a streamflow analysis of future reductions of annual flows and impacts to native endangered fish habitat by virtue of rising temperatures. The FWS is effectively proposing to increase the impacts of climate change upon the Green River ecosystem of the Ouray NWR by implementing the proposed project upon the Colorado River ecosystem. The SEA should have analyzed the 50 year supply and demand study for the Colorado River Basin, published by the Bureau of Reclamation or The Twenty-First century Colorado River Hot Drought and Implications for the Future, published by Udal and Overpeck in 2017. The FWS analysis of depletions in the SEA disregards the loss of streamflows by virtue of climate	

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		change in any meaningful manner and how these depletions from the proposed action would exacerbate impacts on the fishery.	
Comment 113	Nick Schou, Utah Rivers Council	The Migratory Bird Treaty Act (MBTA), originally passed in 1918, implements the United States' commitment to four bilateral treaties, or conventions, and provides for closed and open seasons for hunting game birds. The MBTA protects over 800 species of birds by implementing the four treaties within the United States. The list of migratory bird species protected by the MBTA appears in Title 50, section 10.13, of the Code of Federal Regulations (50 C.F.R. § 10.13). The MBTA provides that it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Take is defined in the regulations as: "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." Construction and operation of the proposed action and related, connected actions, like exploration, transportation, and transmission, could "take" migratory birds in a variety of ways, such as through direct mortality, vehicle collision, electrocution, pollution, and behavioral disruption. The SEA should have thoroughly analyzed and disclosed how all facets and phases of construction and operation of the proposed action, including related and connected actions, may "take" migratory birds. Moreover, the SEA does not adequately consider the potential effects of oil and gas development on all individual bird species that frequent the Ouray NWR including disclosures regarding the likelihood of birds avoiding the Ouray NWR as a result of development activity. The FWS has failed to address in the SEA exactly how these losses will be mitigated.	The potential impacts to migratory bird species are discussed in Section 4.4.3.1 of the EA. Conservation measures aim to reduce any potential impacts to migratory bird species. Because the Proposed Action is subject to all applicable Federal, State, and local regulations, adherence to the Migratory Bird Treaty Act is required for the operations related to this project.

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Comment 114	Nick Schou, Utah Rivers Council	The Bald and Golden Eagle Act prohibits anyone from taking, possessing, or transporting a bald eagle (Haliaeetus leucocephalus) or golden eagle (Aquila chrysaetos), or the parts, nests, or eggs of such birds without prior authorization. This includes inactive nests as well as active nests. Take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Activities that directly or indirectly lead to take are prohibited without a permit. Construction and operation of the proposed action and related, connected actions, like exploration, mining, transportation, and transmission, could directly or indirectly impact golden and bald eagles in a variety of ways, such as through direct mortality, vehicle collision, electrocution, pollution, and behavioral disruption. The SEA should have thoroughly analyzed and disclosed how all facets and phases of construction and operation of the proposed action, including related and connected actions, may "take" bald and especially golden eagles that are confirmed nesters on the Ouray NWR.	Section 4.4.4.1 of the Thurston DEA discussed impacts from the Proposed Action on Bald and Golden eagles that use the Ouray NWR and the surrounding region including impacts of the proposed action and all other connected actions. In addition, conservation measures were incorporated to reduce impacts to raptors.

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Comment 115	Nick Schou, Utah Rivers Council	Riparian habitats represent a tiny fraction of Utah's land surface, around 1 percent, but they support about 80-90 percent of Utah's wildlife species during their lifecycles. Due to extensive oil and gas development throughout the Uintah Basin over the course of decades riparian habitat like that in the Refuge has become even more important to protect because it is not easily replaced. The riparian habitat that makes the Green River corridor within the Refuge unique is composed of extensive tracts of willows and cottonwoods and the quality and diversity of the riparian vegetation in this stream segment make the Ouray NWR regionally important for wildlife. The wise management of Refuge staff and the current flow regime in this system have contributed to the development and maintenance of an ecosystem that forms the underpinning of resident and migratory wildlife populations. In a state where few rivers or creeks remain unaltered by some sort of dam or diversion, and in the heart of one of the largest oil and gas fields in the U.S. it is rare to find a waterway that supports a healthy, robust, and diverse willow/cottonwood wetland ecosystem. The Proposed action will impact several miles of sensitive wetlands and riparian habitat. The relatively few roads on the Refuge also makes it one of the area's most valuable habitats for elk. The disruption of the area due to construction and the subsequent road access and tanker truck traffic for the next 30-40 years will impact the entire surrounding area, putting increased pressure on one of the state's most popular game species. The FWS has failed to address in the SEA exactly how these losses will be mitigated.	*Sections 4.4.3.1 and 4.4.4.1 of the Thurston DEA discussed impacts from the Proposed Action on wildlife that use riparian habitat in the Ouray NWR and the surrounding region.* *Under the Proposed Action, implementation of certain design features described in Section 2.1, ACEPMs outlined in Section 2.1.10, and additional Service terms and conditions (detailed in Section 2.1.11) would reduce impacts to wildlife, including elk, and wildlife habitat, thus reducing long-term cumulative impacts within the Refuge. These actions include avoidance of sensitive wildlife habitat (i.e., floodplains/riparian area); preconstruction surveys; adherence to speed limits; implementation of SWPPP and SPCC plans; and minimizing noise during construction, drilling, and completion activities.*

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Comment 116	Nick Schou, Utah Rivers Council	NEPA Regulations Require the Preparation of an EIS for this Project. Federal agencies must prepare an EIS for any proposal that "significantly affects the quality of the human environment." 42 U.S.C. § 4332(C). Whether a proposal would result in "significant" effects turns on the application of ten factors specified in the NEPA regulations, 42 C.F.R. § 1508.27, which provide as follows: "Significantly" as used in NEPA requires considerations of both context and intensity: (a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant. Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity: 1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. 2. The degree to which the proposed action affects public health or safety. 3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. 4. The degree to which the effects on the quality of the human environment are likely to be highly controversial. 5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. 6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. 7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is	Comment Noted

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		reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. 8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. 9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.	

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Comment 117	Nick Schou, Utah Rivers Council	Application of these factors demonstrates that an EIS is required in this case. As an initial matter, the context of the proposal – the drilling of nine wells, excavation and stockpiling of soils, scraping of native vegetation, installation of pipelines and utility corridors, construction of well pads and roads – in a National Wildlife Refuge which harbors endangered species and critically important and rare riparian habitat for birds, mammals and fish, calls out for the kind of analysis provided in an EIS.	Comment noted. For clarification, the Draft SEA proposed action would drill only two wells; Construction impacts were addressed in Chapter 4 of the 2015 EA and Draft SEA.

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Comment 118	Nick Schou, Utah Rivers Council	Additionally, the **"intensity" factors** weigh heavily in favor or preparing an EIS: ● First, there are no impacts that would be beneficial to the Refuge, but many impacts that would be detrimental and harm and even extirpate the very wildlife and habitat that the Refuge was created to protect. As the FWS itself noted, the proposed drilling could have devastating effects on the listed fish species, particularly the razorback sucker. See FOIA response, attached. ● Second, fracking nine wells and storing toxic chemicals in proximity to a water source – the Green River – that millions of people use for drinking, bathing and recreating clearly poses a risk to public health or safety, and the mitigation measures listed in the DEA have not been analyzed sufficiently to demonstrate their effectiveness. ● Third, the site is within a National Wildlife Refuge and in proximity to wetlands and ecologically critical areas. ● Fourth, the effects of the proposal on the environment are highly controversial due to the potential impacts of fracking on the groundwater, surface water and other resources of the Refuge. In particular, the level of concern and study relating to the impacts of fracking on groundwater has been the topic of heated public and scientific debate for years. The critical resources at risk here on the Refuge and the Green River, heighten the controversial nature of the project's effects. Again, the fact that the proposed drilling would occur in proximity to a fish hatchery housing the only brood stock for the listed razorback sucker is the kind of controversy that should lead FWS to prepare an EIS. ● Similarly, the fifth factor – the degree to which the possible environmental effects are highly uncertain or involve unique or unknown risks – also weighs in favor of an EIS. The FWS simply cannot say with certainty that Refuge's resources or the Green River will not be harmed by pollutants and the disturbance associated with the drilling. It is well known that significant	Please see responses to Comments 2, 8, 15, 21, 24, 28. 52, 53 and 55. Reiterated response to Comment 50: Code of Federal Regulations (CFR) Title 50 Subpart C 29.32 Non-Federal Mineral Rights defines the requirements for oil and gas development on Service land. The policy requires that the project proponent "must, to the greatest extent practicable, conduct all exploration, development, and production operations in such a manner as to prevent damage, erosion, pollution, or contamination to Service administered lands, waters, facilities, and to wildlife thereon." There is no requirement for the project proponent to benefit wildlife; however, they must ensure that their operations are not detrimental to wildlife and their habitats. The Service has previously responded to this comment. Please see response to Comment 39, Draft EA Response to Comments. "Based on initial scoping for Thurston's proposed development within the Ouray NWR, the USFWS determined that an EA was necessary to determine the complete context and intensity of the impacts. The EA identified the potential impacts and determined their significance. Because no significant impacts were found, based on level of impact and the project's conservation measures, then the USFWS will issue a Finding of No Significant Impact (FONSI) for the project. Additional alternatives under **Section 2.3** of the EA were analyzed and dismissed for impacts related to natural resources and construction feasibility.Please

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		controversy exists over the impacts of fracking, particularly on groundwater. **Intensity Factors Cont.** ● Sixth, the decision to allow the drilling of two additional wells in the Refuge would make it easier to approve the next request, and it would raise expectations among oil and gas developers that the Refuge is open for drilling and in turn make it more difficult for FWS to reject future such proposals. ● Seventh, the Thurston Proposal is one of two drilling proposals currently before the FWS and would add wells and associated industrial development in a unique area surrounding by oil and gas development and leased lands. The increasing concentration of drilling and the roads, pipelines, traffic, excavation and other impacts in this area is having, and will continue to have, a significant impacts on the various wildlife and other resources the Refuge is designed to protect. Unless these impacts are analyzed together, the full scope of the impact and the effectively of the proposed mitigation measures, cannot be assessed. ● Eighth, given that the proposed drilling and associated development will occur in a National Wildlife Refuge along the banks of the Green River in an area that provides habitat for a number of endangered species, and could eradicate the rreplaceable razorback sucker brood stock, it is clear that the proposal may cause loss or destruction of significant scientific resources. Groundwater contamination is one of the largest concerns considering the proposed fracking process and ensuring that oil, gas, fracking fluids, and fracking waste do not migrate into and pollute groundwater, the sole water source for the Ouray National Fish Hatchery on the Refuge. With many documented cases of drinking water contamination in places like Pennsylvania, the FWS should seek to secure even greater protections to the sole source of water for the hatchery, which is a crucial component of the Endangered Fish Recovery Program. Razorback sucker brood stock is key to successful restocking efforts in the Green River	also see response to Utah Rivers Council et al. Comment #1.

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		could be lost forever with only one occurrence of groundwater contamination. **Intensity Factors Cont.** ● Ninth, the proposed drilling on the Refuge poses great risks to critical habitat for federally listed species occurring within the project area including Ute ladies'-tresses, the Uinta Basin hookless cactus, the Yellow-billed Cuckoo, Bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker. As the Green River makes its way through the Basin, the Refuge provides rare important nursery habitat for young-of-year endangered fish as well as migration corridor for endangered species like Colorado pikeminnow. The DEA fails to adequately analyze the impacts of drilling on this unique place and the critical native fish habitat and fails to address possible effects on threatened and endangered species on the Refuge. ● Finally, there is a risk that of water contamination from pollutants and sedimentation from the drilling, tanks, pipelines and other facilities that would violate, at a minimum, the Clean Water Act and the Endangered Species Act. See e. g., FOIA response attached. In short, application of the ten "significance factors" weighs heavily in favor of an EIS in this case. Given the serious risks to the Ouray Refuge and the scope of the damage from the proposal and any accidental spill, an EA is insufficient. If the FWS intends to rely on reclamation and revegetation to reduce the impacts of the proposed activities to reduce impacts below a "significant" level and prepare a mere EA, the agency must have a reasoned basis for such a conclusion.	
Comment 119	Nick Schou,	First, an agency's EA must fully analyze and evaluate the mitigation measures. 40 C.F.R § 1508.9 (EA must "provide sufficient evidence and analysis for ... a finding of no significant impact"). Federal courts hold that a perfunctory description or	Please see response to Comment 118.

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	Utah Rivers Council	mere listing of the measures is not sufficient to support an insignificance finding based on mitigation measures. Colorado Environmental Coalition v. Dombeck, 185 F.3d 1162, 1173 (10th Cir. 1999) ("[i]t is not enough to merely list possible mitigation measures"); Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1151 (9th Cir. 1998) (court rejected agency's conclusory statement that mitigation measures were sufficient where analytical data was lacking). Second, the agency must have proof that the mitigation measures will work. They cannot be speculative or lack support about their efficacy. Davis, 302 F.3d at 1125 ("agencies ... should not rely on the possibility of mitigation as an excuse to avoid the EIS requirement"); National Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 734, 735 (9th Cir. 2001) ("speculative and conclusory statements were insufficient to demonstrate that the mitigation measures would render the environmental impacts so minor as to not warrant an EIS"); National Audubon Society v. Hoffman, 132 F.3d 7, 17 (2d Cir. 1997) (agency may rely on mitigation measures only when "the adequacy of proposed mitigation measures is supported by substantial evidence"); Western Land Exchange Project, 315 F. Supp. 2d 1068 (D. Nev. 2004) (mitigation plan violates NEPA because agency cannot evaluate whether it will be effective, "in the absence of any 'supporting analytical data' whatsoever"). Accordingly, supporting data is required to sustain a finding of no significant impact. Moreover, under NEPA's regulations, to the extent mitigation measures are unproven or lack support regarding their effectiveness such that the severity of impacts is unknown, impacts are likely significant. 40 C.F.R § 1508.27(b)(5); National Parks, 241 F.3d at 735.	

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Comment 120	Nick Schou, Utah Rivers Council	The SEA here takes a much more perfunctory approach to the mitigation measures than allowed by NEPA. In essence, the SEA acknowledges important impacts, but then references a list of mitigation measures that it asserts will be effective in reducing those impacts. There is no substantive analysis, however, of the degree of effectiveness of those measures, or any relevant substantive information that would allow the reviewer to assess the efficacy of the mitigation measures. As a result, it is not at all clear that impacts will be reduced to less than significant, and accordingly, and EIS must be prepared.	The Service has already responded to this comment. Please see response to Comment 40, Draft EA Response to Comments. *"The Service followed proper NEPA requirements and procedures in preparation of this EA.* *Under Section 2.1.6 of the Thurston EA, a monitoring plan would be implemented to provide quantifiable data to assess interim reclamation operations including annual site visits to ensure timely achievement of reclamation goals and weed control. Thurston Energy would modify reclamation procedures as necessary to achieve reclamation success as determined by the Service. For more information regarding the monitoring strategy and success criteria, refer to the Draft Reclamation Plan included in Appendix F of this EA.* *Thurston would monitor final reclamation operations to ensure timely achievement of reclamation goals by documenting and comparing the progress of reclamation and weed control against baseline data collected prior to commencing operations. Thurston would modify its reclamation procedures as necessary to achieve the outcomes that are mutually agreed-upon with the Service AO"*
Comment 121	Nick Schou, Utah Rivers Council	As the SEA acknowledges, on June 4, 2018, the EPA designated the Uinta Basin as in nonattainment with 2015 federal air quality standards for ozone.13 The designation became effective on August 3, 2018. As the state of Utah has acknowledged, "oil and gas production and development is the most significant emission source in the Basin."14 Thus, FWS must analyze the impacts of	Other resources have been produced which characterize the air quality impacts of large projects such as the Greater Natural Buttes (GNB) gas field development located a few miles to the southeast of the refuge. The Draft EA and Draft SEA compared and contrasted the Approved Action and Proposed Action with the conclusions of the GNB Final EIS as a method to demonstrate the de minimus scale of the

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		the proposed action on air quality in the region. Unfortunately, here, FWS's analysis is incomplete.	pollutants proposed to be released into the Uinta Basin airshed.
Comment 122	Nick Schou, Utah Rivers Council	To start, although we appreciate the fact that the SEA includes an annual emissions table with emissions estimates (including ozone precursors) for the proposed action, SEA at 45–46, a focus solely on annual emissions obscures the full impacts of the proposed action. Instead, to fully assess the impacts of the project, FWS must calculate total direct emissions for the proposed action over the total lifespan of the project— the 30 to 40 year production phase. Only then will FWS and the public have an understanding of the full impacts that will result from approval of these wells.	The SEA emissions tables presented the annual estimated emissions of all aspects of the development phase of the Approved Action and Proposed Action which included construction, drilling, well completion, interim reclamation and production. All of the emissions from the development phase activities are planned to occur within a single year. The annual estimated emissions from all production phase activities including production export trucking out of the Uinta Basin airshed were presented separately based upon the first year of production. The first year of the production phase will produce the greatest emissions impacts which decrease in an exponential manner along with the production from the wells. Thurston submitted a production traffic projection as an attachment to the application for a surface use permit from the Service which was based upon the actual composite production from two wells in oil fields adjacent to the Refuge. Emissions from the production facilities and the production trucking are positively linked. The production traffic projection included variances in oil and water production with time plus the effect of a future well workover which yielded data over a 38-year period. By calculating the percentage decline in production and resultant projected traffic decline from the first year for each subsequent year it was estimated that cumulative production traffic emissions and grand totals in tons

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			including the previously stated Draft SEA development phase emissions estimates are: NOx 19.55 & 22.24; CO 7.04 & 8.46; VOC 75.44 & 75.95; SO2 0.025 & 0.61; PM10 125.91 & 126.81; PM2.5 13.50 & 13.72; CO2 4550.69 & 4811.09; CH4 43.17 & 43.37; N2O 0.06 & 0.62; GWP 5475.30 & 5740.50; Benzene 2.54 & 2.54; Toluene 4.43 & 4.44; Ethylbenzene 1.76 & 1.76; Xylene 2.54 & 2.54; n-Hexane 2.02 & 2.02; and Formaldehyde 0 & 0.00034.

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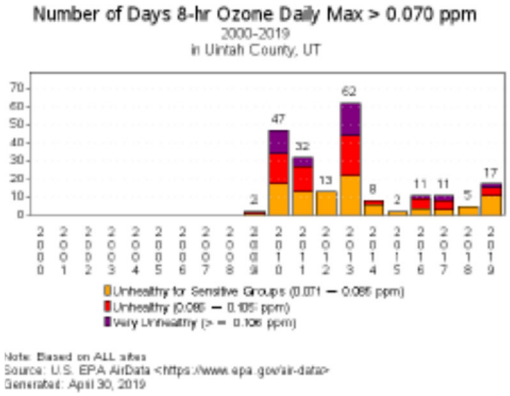
Comment 123	Nick Schou, Utah Rivers Council	Finally, FWS must also assess the cumulative impacts of the proposed action when added to past, present, and reasonably foreseeable future actions. 40 C.F.R. § 1508.7. Although BLM points to the Greater Natural Buttes EIS for comparison, SEA at 42, this document is from 2015 and therefore fails to assess current actions which may impact ozone levels. Indeed, ozone levels in the area have increased since 2015. A quick look at EPA monitoring data indicates that this is the case. Thus, BLM cannot rely on the outdated cumulative emissions calculations in the GNB EIS.	The 2015 EA and Draft SEA estimated the emissions in logical scope from the Approved Action and Proposed Action which are foreseeable and not significant in impact to the entirety of the Uinta Basin airshed. Draft guidance published in the Federal Register June 26, 2019 by the Council on Environmental Quality (CEQ) reiterated that "NEPA requires that Federal agencies study the environmental impacts of major Federal actions significantly affecting the quality of the human environment 42 U.S.C 4332(2)(C)." and further suggests that "Under CEQ regulations and the "rule of reason" that bounds all NEPA analysis, impacts of a proposed action should be discussed in proportion to their significance, and there should only be brief discussion of issues that are not significant."
Comment 124	Nick Schou, Utah Rivers Council		Please see response to Comment 123.

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Comment 125	Nick Schou, Utah Rivers Council	Within the context of climate change, NEPA requires BLM to quantify and discuss the significance of the direct, indirect, and cumulative greenhouse gases generated by its proposed action. 40 C.F.R. §§ 1502.16 (outlining what's required in an impacts analysis), 1508.7 (defining cumulative impacts), 1508.8 (defining direct and indirect impacts); Western Org. of Res. Councils v. U.S. Bureau of Land Mgmt., CV 16-21-GF-BMM, 2018 WL 1475470, (D. Mont. Mar. 26, 2018) (requiring consideration of climate change the RMP stage); Sierra Club v. Fed. Energy Regulatory Comm'n, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (requiring quantification of indirect greenhouse gas emissions); Center for Biological Diversity v. National Highway Traffic. Admin., 538 F.3d 1172, 1215 (9th Cir. 2008) (requiring assessment of the cumulative impacts of climate change); San Juan Citizens All. v. United States Bureau of Land Mgmt., 326 F. Supp. 3d 1227, 1244 (D.N.M. 2018) (requiring a lease sale specific analysis); WildEarth Guardians v. Zinke, 368 F. Supp. 3d 41 (D.D.C. 2019) (requiring a robust analysis of the direct and indirect climate impacts from nine lease sales as well as requiring an quantitative, regional cumulative impacts analysis of surrounding, reasonably foreseeable lease sales).	Please see response to Comments 123 and 128.
Comment 126	Nick Schou, Utah Rivers Council	Here, although the SEA quantifies direct greenhouse gas emissions, the SEA contains a number of significant omissions including: 1) failure to assess the significance of direct emissions, 2) failure to quantity and assess the significant of indirect (downstream) greenhouse gas emissions, and 3) failure to assess cumulative emissions within the region and nation.	Please see responses to Comments 122 and 123.
Comment 127	Nick Schou, Utah Rivers Council	Turning to the first issue—the significance of direct emissions—although we appreciate that FWS calculations annual direct greenhouse gas emissions, FWS must also calculate total direct greenhouse gas emissions for the lifespan of the proposed wells.	Please see response to Comment 122.

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		Without this information, the full impacts of the proposed action are obscured.	
Comment 128	Nick Schou, Utah Rivers Council	With regard to indirect emissions, the law is clear that FWS must quantify and analyze the impacts emissions from combustion of the resource. San Juan Citizens All. v. United States Bureau of Land Mgmt., 326 F. Supp. 3d 1227, 1242 (D.N.M. 2018)	For the most part, the combustion of the oil and gas resources or their conversion to petrochemicals will not occur within the Uinta Basin airshed and is not under the control of FWS. However, it is within reason to expect that most of the oil and gas resources from the 2-Well Proposed Action will be consumed by combustion somewhere in the western U.S producing indirect emissions. The EPA website contains a page entitled *Green House Gas Equivalencies Calculator-Calculations and References* which provides formulas to estimate the GHG emissions in metric tons of CO_2 (equivalent) from burning natural gas and crude oil. There is significant uncertainty in this estimation method due to the lack of information on combustion devices or degree of conversion to nonfuel products. It is based upon the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories, Volume 2 (Energy) estimation formulas which account for 100% oxidation of carbon in the fossil fuel to CO_2 regardless if the carbon atom is part of a CO_2, CH_4 or other hydrocarbon molecule. The IPCC GHG estimations are produced in metric tons of CO_2 equivalent based upon natural gas yield of 0.0551 per Mcf and crude oil yield of 0.43 per barrel (Bbl). The 2-well Proposed Action considered by the Draft SEA could produce up to 400,000 Bbls of crude oil and 300,000 Mcf natural gas over a 35-year period,

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			with roughly 50% of those volumes coming from each well, for a grand total of 188,530 metric tons of CO_2 equivalent. The average annual yield would be 5,386.6 metric tons of CO_2 equivalent per year from both wells combined. However, in reality the first years of the impact would be the greatest declining exponentially with time along with the oil and gas resource production as discussed with the truck traffic estimates. Analysis of these estimates of CO_2 equivalent yield indicate that they are not significant in comparison with the direct and indirect emissions related to the resource production from the thousands of wells that are currently in production and will continue to produce crude oil and natural gas in the Uinta Basin for the next several decades. Another comparison on a broader scale, can be drawn with the most recent estimate of the total gross GHG emissions from the entire state of Utah for the year 2020 produced by the Center for Climate Strategies (CCS) in the *Utah Greenhouse Gas Inventory and Reference Case Projections, 1990-2020* prepared in Spring 2007 for the Utah Department of Environmental Quality (UDEQ). The CCS estimated 96.1 million metric tons of CO_2 equivalent for the calendar year 2020. The CCS 2020 GHG projections for that single year include in millions of metric tons of CO_2 equivalent: 79.9 from electricity production gross (36.6 electricity consumption based net); 22.4 from the transportation sector; 16.3 from residential/commercial/industrial fuel use; 5.8 from industrial processes; 5.8 from agriculture; 4.7 from

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			waste management and 4.6 from the fossil fuel industry. The estimated average annual contribution from the proposed 2-Well Project of 5,386.6 metric tons of CO_2 equivalent would be 0.0056% of the CCS year 2020 projection total for Utah and 0.117% of the CCS 2020 estimation total projected from the fossil fuel industry in the state.
Comment 129	Nick Schou, Utah Rivers Council	(holding that "combustion emissions are an indirect effect of an agency's decision to extract [ ] natural resources" and that failure to consider such emissions at the oil and gas lease sale stage was arbitrary and capricious). Indeed, at the drilling stage, the last stage in oil and gas development, there is no doubt that emissions are reasonably foreseeable. Thus, FWS' failure to include this information is in clear violation of NEPA.	Please see responses to Comments 123 and 128.
Comment 130	Nick Schou, Utah Rivers Council	Finally, as the D.C. District Court made clear in WildEarth Guardians v. Zinke, FWS must include a cumulative greenhouse gas impacts analysis for the proposed action. 368 F. Supp. 3d 41, 63, 77 (D.D.C. 2019). This analysis must include reasonably foreseeable actions not only within the vicinity of the project, but within the region an nation. Id. As the United States Geological Survey found in 2018, federal fossil fuel production contributes to 23% of all U.S. carbon dioxide emissions and to 23% of all U.S. greenhouse gas emissions.15 Utah is a significant source of emissions and is the fifth highest state emitter of carbon dioxide and the fourth highest state emitter of methane.16 For example, as shown by the map below, a number of Bureau of Land Management	Please see responses to Comments 122, 123 and 128.

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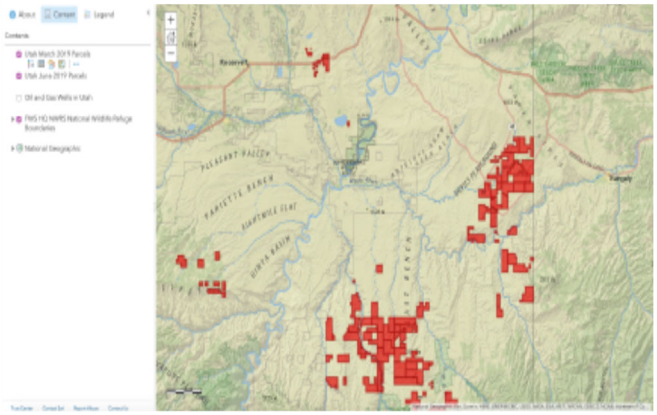
Comment 131	Nick Schou, Utah Rivers Council	("BLM") oil and gas lease sales are occurring in Utah near the refuge in 2019. FWS must at a minimum, assess the cumulative greenhouse gas emissions that will result from these sales in conjunction with the proposed action. 	Please see responses to Comments 122, 123 and 128.

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Comment 132	Nick Schou, Utah Rivers Council	We also urge FWS to thoroughly consider assessing the significance of the proposed action using the social cost of carbon, carbon budgeting, or proposed alternatives. All of these tools provide ways to assess the significance of greenhouse gas emissions and are well-supported by scientific research. FWS' sister agency, the BLM, has successfully used the social cost of carbon at the oil and gas lease sale level. For example, the Billings Field Office in Montana estimated "the annual SCC [social cost of carbon] associated with potential development on lease sale parcels."17 In conducting its analysis, the BLM used a "3 percent average discount rate and year 2020 values," presuming social costs of carbon to be $46 per metric ton.18 Based on its estimate of greenhouse gas emissions, the agency estimated total carbon costs to be "$38,499 (in 2011 dollars)."19 In Idaho, the BLM also utilized the social cost of carbon protocol to analyze and assess the costs of oil and gas leasing. Using a 3% average discount rate and year 2020 values, the agency estimated the cost of carbon to be $51 per ton of annual CO2e increase.20 Based on this estimate, the agency estimated that the total carbon cost of developing 25 wells on five lease parcels to be $3,689,442 annually.	The Service chose not use social cost of carbon estimates for several reasons. First, social cost of carbon estimates are an economic metric meant to monetize the net effects associated with an increase in carbon dioxide emissions. As such, social cost of carbon estimates are developed through an economic cost-benefit analysis. NEPA does not require an economic cost -benefit analysis (40 C.F.R. § 1502.23). Without a complete monetary cost-benefit analysis, which would include the social benefits of energy production to society as a whole and other potential positive effects, inclusion of a global social cost of carbon analysis would be unbalanced, potentially inaccurate, and not useful. Additionally, CEQ's draft NEPA Guidance on Consideration of GHG Emissions states "an agency need not weigh the effects of the various alternatives in NEPA in a monetary cost-benefit analysis using any monetized Social Cost of Carbon (SCC) estimates and related documents (collectively referred to as "SCC estimates"),or other similar cost metrics.

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Comment 133	Nick Schou, Utah Rivers Council	Additionally, FWS must specifically assess whether carbon budgeting would contribute to informed decisionmaking. Recent reports demonstrate the evident usefulness of carbon budgeting in assessing the significance of future emissions. For example, the October 2018 IPCC Global Warming of 1.5°C special report provided a revised carbon budget for a 66 percent probability of limiting warming to 1.5°C, estimated at 420 GtCO2 and 570 GtCO2 depending on the temperature dataset used, from January 2018 onwards.22 Compared with the average global emissions rate of 36 GtCO2 per year noted above for 2012-2014, the IPCC explained the global emissions rate has increased to 42 GtCO2 per year. 23 At this rate, the global carbon budget would be expended in just 10 to 14 years, underscoring the urgent need for transformative global action to transition from fossil fuel use to clean energy.24 In effect, we're burning through our carbon budget at a rapid pace and thereby limiting the flexibility future generations may require or desire as they intensify our world's transition away from fossil fuels.	Please see response to Comment 123
Comment 134	Nick Schou, Utah Rivers Council	In sum, FWS must comply fully with the requirements of NEPA to not only quantify greenhouse gas emissions but also assess the significance of the proposed action using these readily available tools.	Please see responses to Comments 122 and 123.
Comment 135	Nick Schou, Utah Rivers Council	The Fish and Wildlife Service is obligated to conserve species listed under the Endangered Species Act ("ESA"), 16 U.S.C. § 1536. Under section 7 of the ESA, federal agencies must "insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical." 16 U.S.C. § 1536(a)(2). Congress enacted the ESA in 1973 to provide for the conservation of endangered and threatened fish, wildlife, plants and their natural habitats. The ESA imposes substantive and procedural	`The Service has previously responded to this comment. Please see Response to Comment 69, Draft EA Response to Comments. "Comment noted. *The Service has read and acknowledges this comment about meeting Section 7 obligations, complying with ESA, and initiating the Section 7 formal consultation process.* *The Thurston DEA (including the Biological Assessment) has been prepared in accordance with*

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		obligations on all federal agencies with regard to listed and proposed species and their critical habitats. Under section 7 of the ESA, federal agencies must "insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical."27 The definition of agency "action" is broad and includes "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies," such as the FWS action at issue here. Under Section 7(a)(2) of the ESA, its implementing regulations, and FWS's consultation policies, it is clear that "internal consultation" is required when FWS is the action agency: FWS units will consult or confer with the appropriate FWS Ecological Services field office on actions they authorize, fund, or carry out that may affect listed, proposed or candidate species or designated or proposed critical habitat. These actions include refuge operations, public use program, private lands and federal aid activities, as well as promulgating regulations and issuing permits. A Service office resulting formal consultation provides the data required by the regulations at 50 CFR 402.14(c) and is treated as any other action agency (See Appendix E for a copy of the Intra-Service Consultation Handbook. Appendix E to the Consultation Handbook unambiguously provides, [i]If any adverse effect or any incidental take of listed species or critical habitat is likely to occur, formal consultation must be initiated; if any candidate or proposed species are likely to be jeopardized and if proposed critical habitat may be adversely modified, then conference is required." In this case, formal consultation must be initiated. The Supplemental Environmental Assessment explicitly concludes that	*Section 7 of the ESA. The Service followed proper Section 7 procedural requirements to initiate formal consultation and reviews for the Ouray NWR 2-well project.* *The FOIA Email Response has been previously incorporated into the Thurston DEA and is part of the Administrative Record."* *The Service continued to work with the Utah Field Office to develop appropriate conservation measures to protect threatened and endangered species. At their request, the Service reinitiated formal Section 7 consultation on July 23, 2019 and a Biological Opinion was prepared and will be appended in the final EA.*

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		the proposed action is likely to adversely affect the four Colorado River listed fish: implementation of the Proposed Action may affect, is likely to adversely affect the Colorado River fish and their USFWS-designated critical habitats in the Green River. This determination can be attributed to the anticipated 5.7 acre-feet depletion of water from the Green River Basin and the potential for the Colorado River fish and their designated critical habitat to be exposed to hazardous substances originating from an accidental spill, which could result in the release or discharge of condensate or hydrocarbon materials into the Green River and its associated 100-year floodplain. Supplemental Environmental Assessment at 59 (emphasis in original). These adverse impacts include hazardous substance contamination of critical habitat, and are not limited to water depletions. Because the adverse effects are not only water depletions, they are expressly not covered by the Colorado River Endangered Fish Recovery Program nor its Biological Opinions. The scope of the Recovery Program is expressly restricted to adverse impacts caused by water depletions from the Colorado River watershed—not other impacts such as hazardous pollution from hydrocarbon discharges. Despite its own conclusion that the proposed action will adversely affect the Colorado River fish and their designated critical habitats, FWS has not initiated formal consultation, prepared a Biological Opinion, determined whether the proposed action will cause jeopardy or adverse modification, nor prepared an incidental take statement. Such a failure to ensure that its action "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical" is a clear violation of FWS's obligations under ESA Section 7(a)(2), and the proposed action may not proceed prior to completion of formal consultation and preparation of an adequate Biological Opinion.	

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Comment 136	Nick Schou, Utah Rivers Council	The National Wildlife Refuge System Improvement Act of 1997 (Improvement Act), which amended the National Wildlife Refuge System Administration Act of 1966 (Administration Act) strengthened prohibitions against Refuge uses found to be incompatible with wildlife and habitat conservation, established recreational use preferences, created binding and substantive management direction, and outlined detailed planning requirements. Overarching all of these mandates, the Improvement Act directs FWS to achieve its overall goal of conservation by ensuring that the "biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans." The Improvement Act clarified and strengthened the "compatibility" standard first outlined by the Refuge Administration Act in 1966. Under these amendments, FWS "shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge," unless that use is determined to be a "compatible use." 16 U.S.C. § 668dd(d)(3)(A)(i). FWS regulations define a compatible use as "a proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose(s) of the national wildlife refuge system. . .. " 50 C.F.R. § 25.12(a). "Wildlife-dependent recreational uses," in turn, are defined as the "six priority general public uses" of the Refuge system: hunting, fishing, wildlife observation, wildlife photography, environmental education, and environmental interpretation. These priority uses are generally presumed to be compatible with the System's overall mission to conserve wildlife and their habitats. In contrast, economic uses such as oil and gas activities can only be approved when the FWS makes an affirmative determination that such uses will not materially interfere or detract from that overall mission of	*The Service has previously responded to this comment. Please see Response to Comment 42, Draft EA Response to Comments. "FWS regulations associated with oil and gas activities on NWRS lands are discussed in Section 1.5 of the Thurston DEA.* *As stated in **Section 1.5.1.3** of the EA, the Appropriate Refuge Use Policy of the NWRSAA does not apply because exercise of the subsurface mineral holder's rights is not at the FWS' discretion and jurisdiction. Therefore, the FWS has determined that it should not prepare a compatibility determination for a project that grants reasonable access to minerals for those who own or lease them."*

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		the Refuge system, as well as the specific purposes of the individual Refuge. In making compatibility determinations, FWS must provide an opportunity for public review and comment and reevaluate each existing use at least once every ten years. Undertaking a compatibility determination for the proposed operations at the Ouray Refuge is thus both legally required and essential from a management perspective. Compatibility findings are designed to ensure that no uses of a Refuge system will be permitted that materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose of the individual national wildlife refuge. Moreover, FWS's regulations addressing economic uses of Refuges set an even higher bar by requiring an affirmative determination that the use "must contribute to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission." 50 C.F.R. § 29.1. By the FWS's own admission, the proposed operations will directly and negatively impact both wildlife and habitat, in both the short and long-term. These impacts weigh heavily in favor of a compatibility process before allowing the proposed operations to proceed. Because FWS's SEA relies on the false assumption that it has limited legal authority, it should be revised and recirculated for public comment.	