

Appendix C
Public Comments and Responses

Uintah County

Comment: There appears to be an error on page 6 under the paragraph bolded, Well Site Disturbance. It states, "Well RBU 13-21E would be directionally drilled off of well RBU 16-20E. The two remaining wells will be horizontally drilled." This appears to be an error, as the document does not propose or discuss horizontal drilling, other than in this paragraph.

Response: *The sentence has been changed to say "The two remaining wells will be vertically drilled."*

State of Utah

Comment: The Four Corners Air Quality Task Force Report of Mitigation Options, DRAFT: Version 7, June 22, 2007 (Task Force Report), identified interim emission standards for stationary reciprocating internal combustion engines which are mandated by the BLM as conditions of approval for all APDs in New Mexico. These standards are 2 g/bhp-hr for engines less than 300 hp, and 1 g/bhp-hr for engines over 300 hp. The State encourages the BLM to impose these same emission standards as lease conditions for all new and relocated engines, and as conditions of approval for all new APDs.

Response: *The proposed action is not a leasing action, therefore the standards cannot be imposed as lease conditions for these existing leases.*

Regarding imposing the recommended emission standards as APD conditions of approval; the Vernal RMP/ROD notes that the recommended standards do not apply to engines less than or equal to 40 design-rated horsepower. Dominion has stated that the only engine with the potential to be used on the site is an engine to run a pumping unit near the end of the life of the well to lift water out of the well bore. Dominion would use either an Arrow C-106 engine (39 hp) or the smaller Arrow C-96 engine. Should the Arrow engines be used, the recommended standards would be met, despite the fact that the design-rated horsepower is below 40. Tests by Arrow "indicated that the C-series models C-46 through C-106 engines operated as cleanly as some lean-burn engines with catalytic converters. Typical emissions numbers, the company said, were 1.046 g/bhp-hr NOx; 0.504 g/bhp-hr CO; and 0 g/bhp-hr HC" (Osegna, 1999).

Comment: The proposed well drilling project may require a permit, known as an Approval Order, from the Executive Secretary of the Air Quality Board. If any compressor or pump stations are constructed at the site, a permit application, known as a Notice of Intent (NOI) should be submitted to the Executive Secretary at the Utah Division of Air Quality.

Response: *Dominion is required to obtain all necessary air quality permits. However, no compressor stations are proposed. Please note that the proposed project is located within the restored boundary of the Uintah and Ouray Reservation, so that air quality jurisdiction remains with the EPA.*

Comment: In addition, the project is subject to R307-205-5, Fugitive Dust, since the project could have a short-term impact on air quality due to the fugitive dust that could be generated during the excavation and construction phases of the project. An Approval Order is not required solely for the control of fugitive dust, but steps need to be taken to minimize fugitive dust, such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks.

Response: *An air quality model was run for the XTO Riverbend Infill project. No exceedences of NAAQS are expected (BLM, 2008). Due to the small size of this project, mitigation to control fugitive dust was not determined to be necessary.*

Southern Utah Wilderness Alliance:

Comment: The King's Canyon North EA incorrectly assumes that reclamation measures during the production period of the proposed wells will decrease the erosion rate on disturbed soils. The EA implicitly assumes that some reclamation measures will be successful. However, this determination conflicts with recent BLM findings from the Vernal Field Office.

Response: *Due to soil characteristics of the area, and low average annual precipitation, reclamation in the area is difficult to achieve, and may not be successful in the short term. To address this issue, Chapter 4 has been revised to show that successful reclamation (soil stabilization and re-establishment of vegetation) would result in reduced erosion rates. However, all surface disturbances and resulting direct and indirect impacts are analyzed using the initial disturbance (worst case scenario) calculations. Also, in terms of ensuring reclamation success on public lands, Dominion has secured a bond with the BLM. Bonding is required for oil and gas lease operations in order to indemnify the U.S. government against losses from failure to meet royalty obligations, wells plugged improperly and abandoned on lease, and/or surface restoration and clean up on abandoned operations (BLM and USFS 2006). The bond secured with the BLM would ensure that reclamation would be acceptable to the BLM prior to the release of the operator from responsibility for the wells.*

Comment: The Kings Canyon North EA fails to provide any time estimates for the productive life of the wells. The BLM cannot determine that soil and vegetation impacts will be insignificant when it does not even know how long such impacts will last.

Response: *The wells are assumed to be productive for an average of 30 years. This information has been added to chapter 4. Please note that the determination of significance or non-significance of the impacts is reserved for the Decision Record, and is therefore not included in the Final EA.*

Comment: The Kings Canyon North EA contains no discussion of biological soil crusts or their distribution in the project area and their potential to be impacted by this project. The BLM must quantify and survey for locations of biological soil crust in the project area in order to fully address potential impacts to these resources from the proposed undertaking.

Response: Surveys for biological soil crusts have not been conducted in the Vernal Field Office or within the Project Area; therefore, the exact location or extent is not known. According to the BLM's Technical Reference for Biological Soil Crusts, some types of biological soils are not always visible, and others are difficult to detect, especially in dry conditions (p.6). In addition, biological soils are a complex mosaic of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria (p.1). These properties make site-specific surveys for biological soil crusts difficult to conduct. It is therefore assumed that biological soils are present throughout the project area and may be disturbed on up to 9.5 acres. Please note that biological soil surveys are not required by current regulations or management guidelines which apply to Federal lands under BLM administration.

Comment: The Kings Canyon North EA describes potential erosion rates that would be at least two tons per acre/year. This is a significant impact and requires the preparation of an EIS. Also, the BLM does not quantify the total amount of erosion that would flow into the Green River each year. Rather the EA dismisses this erosion as inconsequential, even though it does not quantify this amount or the amount of sediment found in the Green River.

Response: As disclosed, the proposed surface disturbance would double the amount of erosion in the project area. Two tons of erosion per acre per year on 9.5 acres would equal 19 tons per year until successful reclamation. The White River, a tributary to the Green River, currently carries a sediment load of 2,200,000 tons per year. It is assumed that the Green River carries a similar sediment load. In this context, and assuming all 19 tons per year reach the river, the potential soil erosion increase would be negligible.

Comment: The Book Cliffs RMP identifies the project area as containing severe erosion conditions and critical erosion conditions. The Kings Canyon North EA fails to identify the susceptibility of this area to severe and critical rates of erosion.

Response: According to the NRCS Soil Survey of Uintah Area, Utah, the area has low to moderate susceptibility to water erosion, and a medium low to low susceptibility to wind erosion (see the excerpt below).

The soils in the project area are Cadrina extremely flaggy loam, 4 to 25 percent slopes (map unit 36) and Motto-Casmos complex, 2 to 25 percent slopes (map unit 152). Erosion factors are as shown in the following table. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.

Map symbol and soil name	Depth	Erosion Factors			Wind erodibility group	Wind erodibility index
		Kx	Kf	T		
36:						
Cadrina	0-2	.05	.37	1	8	0
	2-15	.05	.37			
	15-19	---	---			
Rock	0-60	---	---	---	---	---

<i>Outcrop</i>						
<i>152:</i>						
<i>Motto</i>	<i>0-2</i>	<i>.15</i>	<i>.37</i>	<i>1</i>	<i>6</i>	<i>48</i>
	<i>2-12</i>	<i>.28</i>	<i>.28</i>			
	<i>12-14</i>	<i>.28</i>	<i>.28</i>			
	<i>14-17</i>	<i>.05</i>	<i>.28</i>			
	<i>17-21</i>	<i>---</i>	<i>---</i>			
<i>Casmos</i>	<i>0-2</i>	<i>.15</i>	<i>.37</i>	<i>1</i>	<i>6</i>	<i>48</i>
	<i>2-6</i>	<i>.24</i>	<i>.43</i>			
	<i>6-10</i>	<i>---</i>	<i>---</i>			

According to the Uintah Soil Survey:

- *Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.*
 - *Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.*
 - *Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.*
- *Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year. Ratings of 1 to 5 are used, depending on various soil properties.*
- *Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.*
- *Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.*

Comment: The Kings Canyon North EA lacks any discussion of the potential impacts of invasive and noxious weeds on existing native vegetation, wildlife habitat, and fire regimes in the area. This is a significant omission since the cumulative impacts section of the EA mentions that oil and gas development typically leads to the introduction and spread of invasive and noxious weed species.

Response: The checklist discloses that no impacts are expected from invasive or noxious weeds due to the applicant committed measures. The cumulative impacts section of the EA has been revised to reflect the accumulation of impacts expected from the proposed project when combined with past and reasonably foreseeable projects. Since invasive or noxious species would not be directly or indirectly impacted by the project, there will be no accumulation of impacts.

Comment: The Kings Canyon North EA also lacks discussion concerning the effect that increased access to the area might have on special status plant species, though the cumulative impacts sections describe this as a potential problem.

Response: *The checklist discloses that no threatened, endangered, candidate or special status plant species would be impacted by the proposed project. The cumulative impacts section of the EA has been revised to reflect the accumulation of impacts expected from the proposed project. Since special status plant species would not be directly or indirectly impacted by the project, there will be no accumulation of impacts.*

Comment: The project area includes potential habitat for the two threatened plant species and one state sensitive plant species (according to Utah GAP Analysis data), for which the project impacts must be analyzed: the clay reed-mustard, the Uinta Basin hookless cactus, and the Graham's beardtongue.

Response: *The field office files were reviewed and the proposed well sites, roads, and pipelines were surveyed on a site-specific basis for the presence of threatened, endangered, candidate, and special status plants (special status plants). No known occurrences of special status plants are within the area to be affected by the project. The onsite survey determined that special status plants are not present in the project area. A special status plant table has been added to the EA as appendix D to disclose the presence/absence of special status species and the rationale for dismissing those species from further study.*

Comment: The EA fails to consider the direct and cumulative impacts of this project and others to the values of the proposed Four Mile Wash ACEC. The proposed project will have significant impacts on the relevant values of the proposed Four Mile Wash ACEC.

Response: *Since the drafting of this EA, the Vernal RMP was finalized and a ROD was signed. The Four Mile Wash ACEC was not carried forward into the final RMP. The relevant values of the Four Mile Wash ACEC were high value scenery along the Green River and Four Mile Wash, riparian ecosystems, and special status fish. The analysis of and impacts to the Green River viewshed were carried forward into the recreation section in chapters 3 and 4. The Special Status Fish analysis and impacts are also found in chapters 3 and 4. No riparian ecosystems would be impacted by the proposed action as determined during the site-specific onsite. In addition, the proposed project is on the opposite side of the river from Four Mile Wash, so no impacts to the scenery in that wash would occur due to distance and topography.*

Comment: The EA concludes that this project does not have the potential to impact the scenery of the ACEC because scenic values only exist around the Four Mile Wash area. However, the Vernal Field Office Draft Resource Management Plan states that the Four Mile Wash ACEC includes "high value scenery" without limiting that resource value to the Four Mile Wash area.

Response: *The high value scenery cited in the Draft RMP included "this exemplary canyon and adjacent landscape" (p.G-5), meaning the Four Mile Canyon, since that is the canyon after which the potential ACEC was named. It also included "this area [which] has high*

value scenery” (p.3-82), in reference to the east and west sides of the Green River. Based on the last statement, a discussion of the visual resources along the Green River has been added into a recreation section. Since no other high value scenery areas were mentioned as relevant or important in the draft RMP, and since no other areas in the potential Four Mile Wash ACEC were proposed for VRM Class II management under any alternative, the discussion of high value scenery impacts within the final EA was limited to those two canyons.

Comment: The Kings Canyon North EA fails to evaluate the potential direct, indirect and cumulative impacts of this proposed project on cultural resources in the project area. The Book Cliffs RMP specifically commits the BLM to continued inventories and evaluations regarding cultural resources. The Kings Canyon North EA fails to conduct any such evaluation or inventory for cultural resources in the project area.

Response: A class III survey was conducted for all areas potentially disturbed by the proposed project. No cultural resources were found. Therefore, there are no direct, indirect, or cumulative impacts potentially resulting from this project. This fact was disclosed in Appendix A, however that discussion has been expanded to be more explicit.

Comment: The Book Cliffs RMP requires that the BLM prepare a watershed resource management plan for a large region that includes the project area. The BLM must prepare a watershed resource management plan before approving this project so that it may fully and completely analyze the impacts of this proposal on the watershed that encompasses the Kings Canyon project area.

Response: The Record of Decision for the Book Cliffs RMP does identify the watershed management plan as a program specific activity plan to be developed. However, it is not stated that the plan must be completed prior to approval of new oil and gas projects. In addition, on page 1 of the ROD, under Implementation, it is stated that some delays in the watershed plan’s completion schedule may occur. Finally, the subject leases predate the Book Cliffs RMP, and the RMP ROD specified that valid existing rights take precedence over the RMP (p.4).

Comment: The BLM must analyze and evaluate how these proposed wells and associated infrastructure (including both visual and auditory impacts along with perceptions of naturalness, among other things) will impact recreation. The analysis should include impacts on river recreation and the recreation experience throughout the Four Mile Wash ACEC. This project may significantly impact visitors’ recreational experience in the area.

Response: The final EA analyzes the potential impacts to recreationists from the proposed action on visual resources along the Green River. The operator has committed to measures to minimize or eliminate viewshed impacts. Please note that the proposed project is located within VRM Class IV lands, which allows for major modification of the landscape, so that any visual impacts that would result from the proposed project would be within VRM objectives.

Comment: The Book Cliffs RMP requires the BLM to be especially mindful of development that may be visible from the Green River. The Kings Canyon North EA must evaluate the potential for these well sites to be visible from the river corridor and the impact that would have on river recreation.

Response: *The final EA analyzes the potential impacts from the proposed action on visual resources along the Green River in Chapter 4. Due to the applicant committed measure, impacts to recreation would be negligible. Please note that the proposed project is located in an area classified as VRM class IV which allows for major modifications to the landscape so the project would be within VRM objectives.*

Comment: The Book Cliffs RMP limits ORV travel in the project area because of watershed concerns along with wildlife and wild horse concerns. However, the Kings Canyon North EA includes no discussion of the potential impacts from increased ORV use in this limited area.

Response: *The Vernal RMP/ROD also limits ORV travel in the project area. However, increased opportunities for ORV access in the project area would be limited because the proposed action would only result in 0.6 mile of new road in the project area. Therefore, increased OHV use in the area as a result of this project's new access is expected to be negligible.*

Comment: The Kings Canyon North EA fails completely to discuss/analyze wildlife and wild horse concerns, even though it has implemented protections in the project area for those resources.

Response: *No wild horse herd areas or herd management areas occur in the project area, so no impacts to wild horses would occur. No mitigation was identified as being necessary by the BLM biologists. More specific responses to wildlife concerns are addressed below.*

Comment: The BLM must analyze the potential impacts of this project on Rocky Mountain bighorn sheep; the project area contains high value year-round habitat for this species.

Response: *The Vernal RMP/ROD does not require management for UDWR's mapped high value habitat within the project area. A BLM biologist site-visited the project area on March, 2007 and stated the project area contained poor Rocky Mountain bighorn sheep habitat.*

Comment: The BLM must analyze the potential impacts of this project on elk and mule deer as the project area includes year-round habitat for both.

Response: *The Vernal RMP/ROD does not require management for UDWR's mapped year round habitat within the project area.*

Comment: According to Utah GAP Analysis data, the following state sensitive species may be found within the project area and thus the potential impacts this project might have on these

species must be analyzed: Burrowing owl (high-value habitat), long billed curlew (critical habitat), grasshopper sparrow (critical habitat), and black footed ferret (critical habitat).

Response: *Burrowing owl: The project area was site-visited by a BLM biologist during early spring and found no prairie dog burrows within the area – only antelope ground squirrel. Suitable habitat for burrowing owl exists approximately 1½ miles northeast of the project area, but would not be affected by proposed action. Long-billed Curlew: The project area contains poor habitat within the project area. The closest known habitat is along the Green River. Grasshopper sparrow: Although the species appears in areas with sparse coverage the bird prefers areas with significant grass coverage. The project area has approximately 15% vegetation cover consisting mainly of buckwheat and shadscale. Habitat is therefore poor so no impacts are expected. Black-footed ferret: The project area does not contain any Black-footed ferrets. The Primary Management Zone where ferrets were reintroduced is in the Coyote Basin near the Utah/Colorado border.*

Comment: The EA also fails to consider the likelihood that the increased energy development activity in the area will lead to increased rates of poaching. See Patrick O’Driscoll, “Poachers Making a Killing in West’s Oil and Gas Fields,” *Deseret News* (from *USA Today*), Feb. 26, 2007.

Response: *The referenced article state that new roads and roads open year round in previously inaccessible areas lead to increased poaching. The proposed action would only result in 0.6 mile of new access road. In addition, the roads in the project area are generally open year round. Therefore, an increase in the rate of poaching is not expected to result from this project.*

Comment: The visibility from the river corridor of these wells, the associated vehicle traffic, construction activity, and flaring – along with the noise impacts and disturbance to night skies – could potentially affect the likelihood of a scenic designation for this river.

Response: *The proposed action is a minimum of one mile away from the Green River, so it is outside the suitable Lower Green River Wild and Scenic River Segment. The proposed action will not affect the suitable WSR status of the lower Green River.*

Comment: The Kings Canyon North EA must analyze the potential impacts that will result from construction noise and operation noise of these four wells on recreation in the project area, on wildlife, and on wilderness characteristics in the surrounding area.

Response: *All anticipated impacts to wildlife and recreation have been disclosed in the EA. Please note that the proponent has committed to place mufflers on all engines, so noise impacts would be negligible. No BLM natural areas are in or near the project area. No wilderness characteristics are in the project area as determined by the VFO BLM interdisciplinary team’s 2007 review. No impacts would occur to nearby wilderness characteristics.*

Comment: The BLM must characterize emissions from the proposed action before determining that no air quality analysis is needed. The BLM must include an assessment of hazardous air pollutant emissions and impacts. The Kings Canyon North EA must also account for the leakage of volatile organic compounds from wells, storage tanks, and pipelines during the productive life of the project. The EA does not attempt to quantify the level of emissions that will result from construction activities as part of the direct impacts and the cumulative impacts of this project. The BLM must quantify these emission levels in order to determine that such emissions will not result in any significant impacts. Cumulative impacts from this project combined with other foreseeable development in the area could result in significant impacts to air quality. The BLM must perform a modeling analysis to ensure compliance with national ambient air quality standards and to assess cumulative impacts.

Response: *The Uinta Basin is currently classified as being in attainment. An Air Quality Assessment Report was prepared in 2006 to summarize the findings of a 2002 model that was conducted in support of the ongoing RMP revision process. The requested information falls within the scope of that model and report. No exceedences of National Ambient Air Quality Standards were modeled. In addition, an air quality model was run for the 2008 XTO Riverbend Infill project. Again, no exceedences of NAAQS were modeled. Finally, ozone was modeled on a regional basis in support of the West Taveputs EIS project. The West Taveputs proposed action, which includes approximately 800 wells, was estimated to result in a potential ozone increase of 0.44 ppb. Although ozone formation from its component parts (NOx and VOCs) is a non-linear, photo-reactive process, it is anticipated that the incremental change from this four well proposed action would be so small as to be undetectable by both models and monitors.*

Comment: The Kings Canyon North EA relies on an erroneous wilderness character review which arbitrarily concludes that a portion of the Desolation Canyon wilderness inventory area (WIA) no longer contains wilderness characteristics. However, recent field observations demonstrate that such a conclusion is unsupported by on-the-ground evidence.

Response: *The final Vernal RMP and ROD, which post-date the referenced field observations and the BLM's 2007 interdisciplinary wilderness characteristics review, did not identify any wilderness characteristics in the project area.*

Comment: The February 7, 2007 Wilderness Characteristics Review of the Desolation Canyon Area (referred to as the "Desolation Canyon Wilderness Review") relies on evidence such as "field observations" which do not include any written materials or records that may be reviewed by the public. In addition, neither "the BLM road layer including roads on 1:24,000 scale and supplemented by both GPS and aerial photograph" nor the "Uintah County Roads layer August 2006" support the findings of the Desolation Canyon Wilderness Review. In order to determine that certain portions of the Desolation Canyon WIA now lack wilderness characteristics, the BLM must rely on data and information contemporaneous to or predating the Kings Canyon North EA. The BLM must refute, point by point, the 1999 Utah Wilderness Inventory (Revised 2003), as this document contains a detailed and supported finding of wilderness characteristics in the area that the Desolation canyon Wilderness Review now determines to lack those characteristics.

Response: *This comment is beyond the scope of this EA. The wilderness characteristics review was conducted to support the Vernal RMP process, and was offered for public comment through the Vernal RMP Supplemental EIS. Please note that the Final Vernal RMP and ROD, after the BLM considered all public comments received on the Vernal RMP Supplemental EIS, did not identify wilderness characteristics in the project area.*

Comment: The Desolation Canyon Wilderness Review creates an arbitrary boundary for the area found not to have wilderness characteristics. The boundary line that continues northwest from the Kings Canyon Road, separating the Desolation Canyon WIA from the area newly determined to lack wilderness characteristics does not follow any on-the-ground disturbance and is therefore arbitrary and capricious. None of the sources relied upon by the BLM for its decision to exclude this area from the Desolation Canyon WIA show any road or other surface disturbance along that boundary line that would preclude a determination that the surrounding area contains wilderness characteristics.

Response: *See previous comment response.*

Comment: The area excluded by the BLM from the Desolation Canyon WIA still contains naturalness, sufficient size, opportunities for solitude and opportunities for primitive and unconfined recreation. These values would be severely impacted by the proposed development in the Kings Canyon North EA and by the BLM's arbitrary determination that this area no longer contains wilderness characteristics, which is an attempt to completely deny recognition of the wilderness characteristics of this area. The Kings Canyon North EA understates the extent of these impacts because of inadequate analysis regarding auditory impacts, soil impacts, vegetation impacts, wildlife impacts, watershed impacts, and recreational impacts. The Kings Canyon North EA must analyze the direct, indirect, and cumulative impacts to the wilderness characteristics of the excluded area and to the supplemental values of that area. Past, present, and reasonably foreseeable development in the project area could lead to large cumulative impacts in the Desolation Canyon WIA. This is a significant impact that must be evaluated in an EIS.

Response: *No wilderness characteristics are present, so no direct, indirect, or cumulative impacts would occur. The adequacy of the 2007 interdisciplinary review is beyond the scope of this EA (see previous comment response). The other impacts mentioned (soils, vegetation, wildlife, watershed, recreation, and auditory) are addressed more specifically in other comment responses in this appendix.*

Comment: The BLM omitted discussion of past, present and future off-road vehicle use in the area. This error prevents the BLM from being able to accurately evaluate long-term cumulative impacts.

Response: *Increased OHV use in the project area due to increased access would be negligible because only 0.6 mile of new road would be constructed. Since impacts as a result of the proposed project would be negligible, the proposed project would negligibly contribute to the accumulation of impacts (past, present and future). Therefore an accumulation of impacts from increased OHV use would not result from this project.*

Comment: The Kings Canyon North EA improperly relies on the Final EIS and Record of Decision for Castle Peak and Eightmile Flat Oil and Gas Expansion Project Newfield Rocky Mountains Inc., UT-080-02-168 (Fall 2005) (Castle Peak and Eightmile Flat EIS) for cumulative impacts analysis of the present project. The Castle Peak and Eightmile Flat EIS dealt with development in a geographically distinct area and cannot be relied on here to meet the BLM's duties under NEPA.

Response: *The cumulative impact area for the Castle Peak and Eightmile Flat Oil and Gas Expansion Project was defined as the Monument Butte-Red Wash reasonably foreseeable development (rfd) area as delineated in the Draft Vernal RMP. The Kings Canyon North EA falls within this rfd area, it is therefore appropriate to incorporate by reference the general cumulative impacts analysis included in that EIS into this Kings Canyon North EA. Please note that the Kings Canyon North EA in no way relies solely on the Castle Peak EIS for its cumulative impacts analysis. Indeed, for the Kings Canyon EA, a separate cumulative impact area of analysis has been defined from that described in the Castle Peak EIS, and cumulative impacts to resources impacted by the proposed action have been quantified, to the extent possible, and qualified. The cumulative impacts section has been clarified to show that this is what has occurred.*

Comment: The Kings Canyon EA improperly relies on the Dominion Exploration and Production River Bend Unit Pipeline Environmental Assessment, Uintah County, Utah, EA No. UT-080-2001-374 (Nov. 2001) (Pipeline EA) for cumulative impact analysis of the present project. Ironically the Pipeline EA itself specifically forbids reliance on that document for cumulative impacts analyses in future NEPA documents, stating that “[i]f a future action requires NEPA compliance, inclusion in this cumulative impact scenario would not satisfy that requirement.” Beyond this, the Pipeline EA fails to provide any cumulative analysis of impacts to such resources as wilderness characteristics, cultural resources, recreation, potential wild and scenic rivers, and potential ACECs. The air quality analysis of the Pipeline EA is both insufficient and reliant on various scenarios which the BLM has not shown to be descriptive of the present situation in the project area.

Response: *The subject Pipeline EA does state what is quoted above. However, the statement has been misinterpreted. The statement tried to make clear that although reasonably foreseeable projects were mentioned in the Pipeline EA, in order to satisfy NEPA those projects would require additional independent analysis and NEPA documentation to disclose potential direct, indirect and cumulative impacts, and could not rely on the River Bend Pipeline EA Cumulative Impacts section alone for that additional review and documentation.*

This EA (Kings Canyon North), incorporates general cumulative impacts information from the Pipeline EA by reference. Please note that the Kings Canyon North EA in no way relies solely on the Pipeline EA for its cumulative impacts analysis. Indeed, for the Kings Canyon EA, a separate cumulative impact area of analysis has been defined from that described in the Pipeline EA, and cumulative impacts to resources impacted by the proposed action have been quantified, to the extent possible, and qualified. The cumulative impacts section in this

EA has been clarified to show that this is what has occurred. The accumulation of impacts has been addressed for all resources impacted by the proposed action alternative

The Uinta Basin is currently classified as being in attainment. An Air Quality Assessment Report was prepared in 2006 to summarize the findings of a 2002 model that was conducted in support of the ongoing RMP revision process. The requested information falls within the scope of that model and report. No exceedences of National Ambient Air Quality Standards were modeled. In addition, an air quality model was run for the 2008 XTO Riverbend Infill project. Again, no exceedences of NAAQS were modeled. Finally, ozone was modeled on a regional basis in support of the West Taveputs EIS project. The West Taveputs proposed action, which includes approximately 800 wells, was estimated to result in a potential ozone increase of 0.44 ppb. Although ozone formation from its component parts (NOx and VOCs) is a non-linear, photo-reactive process, it is anticipated that the incremental change from this four well proposed action would be so small as to be undetectable by both models and monitors.

Comment: The Kings Canyon North EA improperly relies on the CNG Producing Company Environmental Assessment River Bend and West Willow Creek Units, Uintah County, Utah, EA No. 1997-49 (Mar. 1998 (CNG EA)) for cumulative impact analysis of the present project. The decision to approve the CNG EA assumes that it would support a development project that would end in 2004. Yet the Kings' Canyon EA makes no effort to explain how this analysis is still valid in 2007, nor does it evaluate whether the development scenario analyzed in the CNG EA has been met, exceeded, or was an overestimate. Paradoxically, the CNG EA warns that development near the Green River could impact river recreation and the potential for the river to be designated as part of the Wild and Scenic River System. Much of this EA suggests that continued oil and gas development will result in significant impacts because of harm to wildlife, recreation, and vegetation. The CNG EA does not contain any analysis of cumulative impacts to wilderness characteristics, cultural resources, air quality, potential ACECs, and water quality of the greater project area.

Response: *This EA (Kings Canyon North), incorporates general cumulative impacts information from the CNG EA by reference. Please note that the Kings Canyon North EA in no way relies solely on the CNG EA for its cumulative impacts analysis. Indeed, for the Kings Canyon EA, a separate cumulative impact area of analysis has been defined from that described in the CNG EA, and cumulative impacts to resources impacted by the proposed action have been quantified, to the extent possible, and qualified. The cumulative impacts section in this EA has been clarified to show that this is what has occurred.*

The analysis from the CNG EA is relevant because it is an ongoing action that has or may result in an accumulation of impacts on resources potentially impacted by the alternatives of the Kings Canyon North EA. The 2004 end date was an estimate. Because development proceeded more slowly than was anticipated, some portions of the selected alternative of that EA are still ongoing.

All referenced resources have been taken into consideration during the onsite inspection and subsequent analysis of the Kings Canyon North project, and the Kings Canyon North EA

discloses all potential impacts. Please note that the determination of significance or non-significance of the impacts is reserved for the Kings Canyon North EA's Decision Record, and is therefore not included in this EA. The cumulative impacts section of the Kings Canyon North EA has been revised to more clearly reflect the accumulation of impacts expected from the proposed project.

Comment: Although the cumulative impacts section lists the possibility of impacts to vegetation, soils, air quality, cultural resources, and wildlife, it does nothing to quantify or analyze these impacts.

Response: *Quantification to vegetation and soils was disclosed in the Draft EA, but was revised and expanded in the final EA. Since no direct or indirect impacts would occur to cultural resources, an accumulation of impacts would not occur. Impacts to wildlife are hard to quantify, however impacts to habitat have been quantified to the extent possible.*

Regarding Air Quality, the Uinta Basin is currently classified as being in attainment. An Air Quality Assessment Report was prepared in 2006 to summarize the findings of a 2002 model that was conducted in support of the ongoing RMP revision process. The requested information falls within the scope of that model and report. No exceedences of National Ambient Air Quality Standards were modeled. In addition, an air quality model was run for the 2008 XTO Riverbend Infill project. Again, no exceedences of NAAQS were modeled. Finally, ozone was modeled on a regional basis in support of the West Taveputs EIS project. The West Taveputs proposed action, which includes approximately 800 wells, was estimated to result in a potential ozone increase of 0.44 ppb. Although ozone formation from its component parts (NO_x and VOCs) is a non-linear, photo-reactive process, it is anticipated that the incremental change from this four well proposed action would be so small as to be undetectable by both models and monitors.

Comment: The proposed action authorizes landscape-changing activity. Selecting this alternative would limit the BLM's choice of reasonable alternatives in the ongoing Vernal RMP process because it would allow a fundamental change in the character of the project area. Selection of any development alternative in the EA effectively precludes other reasonable, less-extractive land use alternatives in the Vernal RMP. Among the reasonable choices available in the Vernal RMP process are management decisions that would lead to increased restrictions on portions of the project area (such as management of certain parcels as Areas of Critical Environmental concern in which oil and gas leasing would be prohibited). Neither would a decision adopting the preferred alternative in the Kings Canyon North EA comport with the management of the nearby Lower Green River Wild and Scenic River nor the management of the Desolation Canyon area to protect its wilderness characteristics. A decision on the proposed project should wait until after the Vernal RMP process is completed.

Response: *The subject leases are valid existing rights that include the right to develop subject to the lease terms and conditions. Such rights are not modified by the Vernal RMP (p. 21). This is because the leases are contracts between the lessee and the BLM that include the right to develop the leased minerals subject to the stipulations attached to the leases at the time of issuance. Stipulations cannot be applied to the leases after issuance, though*

mitigation measures to reduce impacts can be implemented as the need is identified through the NEPA process. Also, please note that the proposed project is greater than 0.5 mile away from the river so that no impacts would occur within the suitable Lower Green River Wild and Scenic River. No BLM natural areas, wilderness characteristics, or Areas of Critical Environmental Concern are present in the project area as identified or designated by the Vernal RMP/ROD.

Comment: Specifically, the BLM must disclose who provided independent analysis of the information submitted by Dominion and Dominion's third-party consultants and the qualifications of those reviewers. The BLM should particularly scrutinize the information submitted on well locations and directional drilling as this is a critical component of the proposed project.

Response: *The APDs which were submitted by Dominion's representatives were independently reviewed by an interdisciplinary team including BLM biologists, archaeologists, other natural resource specialists, geologists, and engineers. The directional drilling alternative rebuttal submitted by Dominion's engineers was reviewed by the BLM's petroleum engineers. The proposed action was determined to adequately incorporate directional drilling.*

Comment: The BLM failed to identify the area of potential effect (APE) thereby limiting its ability to identify historic properties and understand the potential effects of the proposed action.

Response: *The area of potential effect was identified in the Class III archaeological surveys that were conducted in association with this project. It was defined as 100 feet to either side of the road and pipeline, and ten acres centered on the well pads. No historic properties were found; therefore no potential effects are expected.*

Comment: The Kings Canyon North EA implicitly and incorrectly assumes that site avoidance means that no significant impacts will result from the project.

Response: *No historic properties were found; therefore no potential effects are expected. Please note that the determination of significance or non-significance of the impacts is reserved for the Kings Canyon North EA's Decision Record, and is therefore not included in the Final Kings Canyon North EA.*

Comment: The BLM should undertake a Class III block survey or a Class II sample survey of the region to determine actual site density.

Response: *A class III survey was completed for this project. The ID checklist has been revised to disclose the results of that survey. No cultural resources were found.*

Comment: Roads facilitate vandalism to cultural resources. Reducing the number of roads in the area will likely reduce the rate of vandalism.

Response: *Comment noted. However, only 0.6 mile of new road is proposed under the action alternative, and no sites are in the area of potential affect, so increases in vandalism rates as a result of the proposed action are not expected to occur.*

Comment: The acknowledgement of some indirect, cumulative effects does not mean that the Kings Canyon North EA contains adequate mitigation measures to avoid such impacts. If the agency determines that the action would have an adverse effect on an historic property, it begins consultation to identify ways to avoid, minimize, or mitigate adverse effects. In addition, should BLM determine that the proposed action will result in a “no historic properties affected” finding, the documentation supporting such a finding must be made available to the public for inspection.

Response: *A class III survey was completed for this project. No historic properties were found; therefore no potential effects are expected. The ID checklist has been revised to disclose the results of that survey.*

Comment: BLM is required to consult with the State Historic Preservation Office (SHPO) and Native American tribes regarding the potential effects of an undertaking such as the proposed action. The EA does not document that BLM has consulted with the SHPO. In addition, the EA does not disclose which Native American tribes were consulted in this process. The BLM should disclose this.

Response: *A class III survey was completed for this project. No historic properties were found; therefore no potential effects are expected. Therefore consultation with the Utah SHPO and the Tribes is not necessary.*

Comment: Although directional drilling has been utilized to “avoid impacts to sensitive resources; avoid topographic features; and/or develop previously unreachable spacing”, that is not its only use, nor even its primary use. Directional drilling is currently being utilized to reduce impacts in high density drilling areas identical to this proposal. Directional drilling is important in reducing impacts to the surface because:

1. A single well pad on the surface can support wells drilled to many widely spaced points in a given reservoir. This allows the reservoir to be effectively drained without a correspondingly large number of surface well pads.
2. These pads can be optimally placed to cause the least damage to the surface.
3. These pads allow the concentration of facilities, a reduced need for roads, pipelines, and other subsidiary equipment.

A potential directional drilling program entails the drilling of the 13-21E, 16-20E, and 14-21E from the existing 12-20E well pad, and the 15-21E well from the 16-21E pad. The horizontal reach of the wells in the recommended scenario are within 1,500’, a figure easily reached from the proposed well pads. In the geologically identical Roan Plateau area, wells with reaches of 2,500’ are being routinely drilled to identical depths as the proposed wells, and produced from the same formations in the same manner.

Response: *The proponent responded to the above comment as follows: the statement is made that the Roan Plateau area is “geologically identical” to the Natural Buttes area. This is true at a superficial level. However, closer analysis of the two areas reveals that the*

production characteristics of the two areas are grossly different. Below is a table documenting the water-gas ratios (WGR) for Roan Plateau area fields (Rulson, Parachute, and Grand Valley fields) as well as the Natural Buttes Field. Please note that in all 3 Piceance fields, the WGR is 13-15 barrels/mmcf gas. Conversely, the WGR for the Natural Buttes Field is approximately 71 barrels/mmcf. Additionally, most Natural Buttes wells produce a few barrels of high-paraffin oil per day, as opposed to the dry gas production found in the Piceance fields. This substantial difference in liquids productions results in a grossly different operating environment. As a result, artificial lift is crucial to maximize reserve recovery for each well. For lifting the quantities of liquids in Dominion's operated area (10-100 barrels of water per day), rod pumps have been shown to be the most effective method of artificial lift. However, due to mechanical limitations, rod pumps are best utilized in vertical wells or in wells that do not exceed 30% build angle. The extend reach of Mr. Kreckel's proposed drilling plans would require much greater than 30% build angle, and would result in extensive mechanical problems requiring frequent well interventions with a completion rig. Other options exist for lifting liquids such as electric submersible pumps (ESPs) and plunger lift. However, ESPs only operate successfully with larger liquid volumes and plunger lift is not capable of lifting these volumes, particularly in the latter stages of production when reservoir pressures are low. Mandating lift methods other than rod pumps, will result in premature abandonment, thereby causing waste of the hydrocarbon resource.

Comparison of Mesa Verde Reservoir Water-Gas Ratios				
	<i>Gas Cum (bcf)</i>	<i>Water Cum (mmbbl)</i>	<i>WGR (bbl/mmcf)</i>	<i>Well Count</i>
<i>Grand Valley</i>	428	6.6	15	1013
<i>Rulison</i>	427	5.7	13	816
<i>Parachute</i>	276	3.8	14	662
<i>Natural Buttes</i>	183	12.9	71	813

BLM petroleum engineers reviewed the proposed action, the suggested directional drilling alternative, and the Company's additional technical information. It was determined that the proposed action adequately incorporated directional drilling.

Comment: No explanation is offered for the "1000 feet" number nor its application to this situation. Consideration of development well locations is commonly based on their location relative to other spacing units. Natural Buttes Field is currently being developed on 40-acre spacing. The proposed wells are all one spacing unit away from existing wells in the field, or about 1320'.

Response: *The 1000-feet comment has been deleted from the document and replaced with data provided by the operator. The BLM petroleum engineers reviewed this data and determined the proposed action adequately incorporates directional drilling.*

Comment: The proposed area is "a known field" in "an area already in production". Natural Buttes Field is a major gas field currently under intense development. This proposal is part of that development. There is no question the proposed wells are development wells directly offsetting known production.

Response: *As there are no wells immediately to the south or west of the proposed locations, the proposed wells are step-out wells, not infill development.*

Comment: The EA states “one well (RBU 13-21E) would be directionally drilled off of well RBU 16-20E. The two remaining wells will be horizontally drilled.” The mention of two of the wells being horizontal was not explained. Horizontal wells drilled in this situation would be highly unusual, due to the thousands of vertical feet usually perforated in the vertical wells. No details were supplied, nor were surface and bottom hole locations adequately documented. BLM needs to explain the nature and significance of these horizontal wells.

Response: *The referenced statement was an error. The statement has been corrected to read that “one well (RBU 13-21E) would be directionally drilled off of well RBU 16-20E. The two remaining wells will be vertically drilled.”*