

**United States Department of the Interior
Bureau of Land Management
Royal Gorge Field Office
3028 E. Main Street
Cañon City, CO 81212**

Environmental Assessment

Razor 30-3124H and Razor 32-2933H APDs

DOI-BLM-CO-200-2013-080 EA

June, 2013



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CHAPTER 1 - INTRODUCTION

1.1 IDENTIFYING INFORMATION

CASEFILE/PROJECT NUMBER (optional): Lease # COC 61148

PROJECT TITLE: Application for permits to drill oil wells Razor 30-3124H and Razor 32-2933H

PLANNING UNIT: Northeast

LEGAL DESCRIPTION: Weld County, T10N R58W S 30 & 32

APPLICANT: Whiting Oil and Gas

1.2 INTRODUCTION AND BACKGROUND

BACKGROUND: This EA has been prepared by the BLM to analyze environmental impacts of the construction of two well pads, with associated access roads, connecting pipelines, and the drilling of two horizontal oil wells on private surface estates/over private mineral estates (fee/fee). The projects are located on rangeland in Northwest Weld County approximately 17 miles east of the town of Grover, Colorado. The wells will access fee and Federal minerals. The Federal mineral estate that will be accessed by the wells is leased and subject to oil and gas development. All surface activities related to these actions will take place on a private surface, over private minerals, outside of the lease boundary.

1.3 PURPOSE AND NEED

The purpose of the action is to provide the applicant the opportunity to develop their leases for the production of oil and gas. The need for the action is to develop oil and gas resources on Federal Lease COC61148 consistent with existing Federal lease rights provided for in the Mineral Leasing Act of 1920, as amended.

1.4 DECISION TO BE MADE

The BLM will decide whether to approve the proposed Razor 30-3124H and Razor 32-2933H Application for Permits to Drill (APDs) project based on the analysis contained in this Environmental Assessment (EA). This EA will analyze the proposed action; to construct two well pads, install production facilities, gas pipelines and access roads, and drill wells in order to develop federal minerals from a private surface. Access to the proposed well pads would be on existing highway, county and oil field roads. The finding associated with this EA may not constitute the final approval for the proposed action.

1.5 PLAN CONFORMANCE REVIEW

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Northeast Resource Area Plan and Record of Decision as amended by the Colorado Oil and Gas Final EIS and Record of Decision (RD)

Date Approved: 09/16/86 amended 12/06/91

Decision Number: O&G Resources, Issue 21

Decision Language: “These 210,410 acres of surface and subsurface may be leased and developed for oil and gas with the standard stipulations included in the leases and standard site-specific stipulations included in any use authorization.”

1.6 SCOPING, PUBLIC INVOLVEMENT AND ISSUES

1.5.1 Scoping: NEPA regulations (40 CFR §1500-1508) require that the BLM use a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis.

Persons/Public/Agencies Consulted: The federal mineral estate parcels being accessed with this action were scoped and made available for public comment during the leasing process. Scoping for the current action occurred through posting on the BLM NEPA website.

Issues Identified:

No issues were identified during public scoping.

CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The BLM has received 2 Application Permits to Drill (APDs), proposing the construction of two well pad locations, pipelines, access roads and the drilling of two horizontal oil wells on fee/fee (private surface over private minerals), accessing both private and federal minerals. Since all surface activity and related disturbance is taking place off lease on private surface over private minerals, and private minerals are targeted along with federal minerals, BLM has limited authority over the actions that take place on the surface, including authority to impose mitigation measures (as COAs to the approved APD) pertaining to the surface management of the well site. However, BLM will analyze the impacts to all applicable resources, including some that BLM has no authority to affect.

The projects are in Weld County, approximately 17 miles east of the Town of Grover. The federal mineral estate is leased and subject to oil and gas development.

The general area description would be defined as rural rangeland located in the northeastern plains of Colorado, used primarily for livestock production and oil and gas development. There are a few county roads in the project area. Access is limited to private or petroleum field roads, over private surface. The roadways vary in development but most are dirt/primitive roads.

Extensive oil and gas development has occurred in the area, mostly on private mineral and surface estate.

2.2 ALTERNATIVES ANALYZED IN DETAIL

2.2.1 Proposed Action

The proposed action is to construct two well pads, access roads, gas pipelines and drill two horizontal wells to develop private and federal minerals, from a private surface over private minerals. Access to the proposed projects would be gained by traveling on existing highways, county and oil field roads.

Razor 30-3124H: The proposed Razor 30-3124H pad will be constructed in T10N R58W S30.

The proposed new access road to Razor 30-3124H would be 25 feet wide, crowned and ditched, (15 foot wide traveling surface, 5 foot ditches on either side), and 3,297 feet long, and would be constructed to road standards specified in the “Gold Book.” The maximum road grade is less than 3% and there are no major cuts or fills required. The roadside disturbances and ditches along the road will be re-vegetated in accordance with the reclamation section of the multi-point surface operations plan upon completion of road construction, reducing the surface disturbance of the road from approximately 1.9 acres to 1.1 acres.

The proposed pipelines for the Razor 30-3124H consist of one 4” one 6” pipeline which will be buried in a single trench. The pipeline corridor will be 20 feet wide by approximately 10,010 feet long. The pipeline corridor will be re-vegetated in accordance with the reclamation section of the multi-point surface operations plan upon completion of pipeline construction.

The proposed Razor 30-3124H pad would have a maximum cut of 12.2 feet and a maximum fill of 3.9 feet resulting in 42,250 cu yards of excess material, plus 6,870 cu yards of topsoil which will be stripped from the top 6” of the surface and stockpiled before construction, for use during interim reclamation. Construction of the well pad would result in approximately 11.5 acres of new surface disturbance, which would be reduced to 4 acres after successful interim reclamation. The proposed drilling and completion will utilize a closed loop system, and produced water will be stored in steel tanks within the production facility. No pits will be utilized. All waste materials (drill cuttings, drilling mud, produced water, sewage and garbage) will be hauled off site and recycled at or disposed of at applicable approved commercial treatment/disposal facilities. The duration of construction and drilling activities is estimated to be 60 days.

If the Razor 30-3124H well is a good producer, the operator may delay interim reclamation on the pad in order to drill additional wells on this pad, which would take place after the proper permits (BLM, COGCC ect.) are obtained for these wells by the operator. Stormwater/ erosion control measures will be taken to stabilize site. Interim reclamation would then take place within 6 months of completion of final well on the pad.

Razor 32-2933H: The proposed Razor 32-2933H pad will be constructed in T10N R58W

S32.

The proposed new access road to Razor 32-2933H would be 25 feet wide, crowned and ditched, (which will allow for a 15 foot wide traveling surface with 5 foot ditches on either side) by 105 feet long and would be constructed to road standards specified in the "Gold Book." The maximum road grade is less than 3% and there are no major cuts or fills required. The roadside disturbances and ditches along the road will be re-vegetated in accordance with the reclamation section of the multi-point surface operations plan upon completion of road construction, reducing the surface disturbance of the road from approximately .06 acres to .04 acres.

The proposed pipelines for the Razor 32-2933H consist of one 4" one 6" pipeline which will be buried in a single trench. The pipeline corridor will be 20 feet wide by approximately 1,288 feet long. The pipeline corridor will be re-vegetated in accordance with the reclamation section of the multi-point surface operations plan upon completion of pipeline construction.

The proposed Razor 32-2933H pad would have a maximum cut of 3 feet and a maximum fill of 1.5 feet resulting in no excess material, except for the 2,780 cu yards of topsoil which will be stripped from the top 6" of the surface and stockpiled before construction, for use during interim reclamation. Construction of the well pad would result in approximately 3.8 acres of new surface disturbance, which would be reduced to 2 acres after successful interim reclamation. The proposed drilling and completion will utilize a closed loop system, and produced water will be stored in steel tanks within the production facility. No pits will be utilized. All waste materials (drill cuttings, drilling mud, produced water, sewage and garbage) will be hauled off site and recycled at or disposed of at applicable approved commercial treatment/disposal facilities. The duration of construction and drilling activities is estimated to be 60 days.

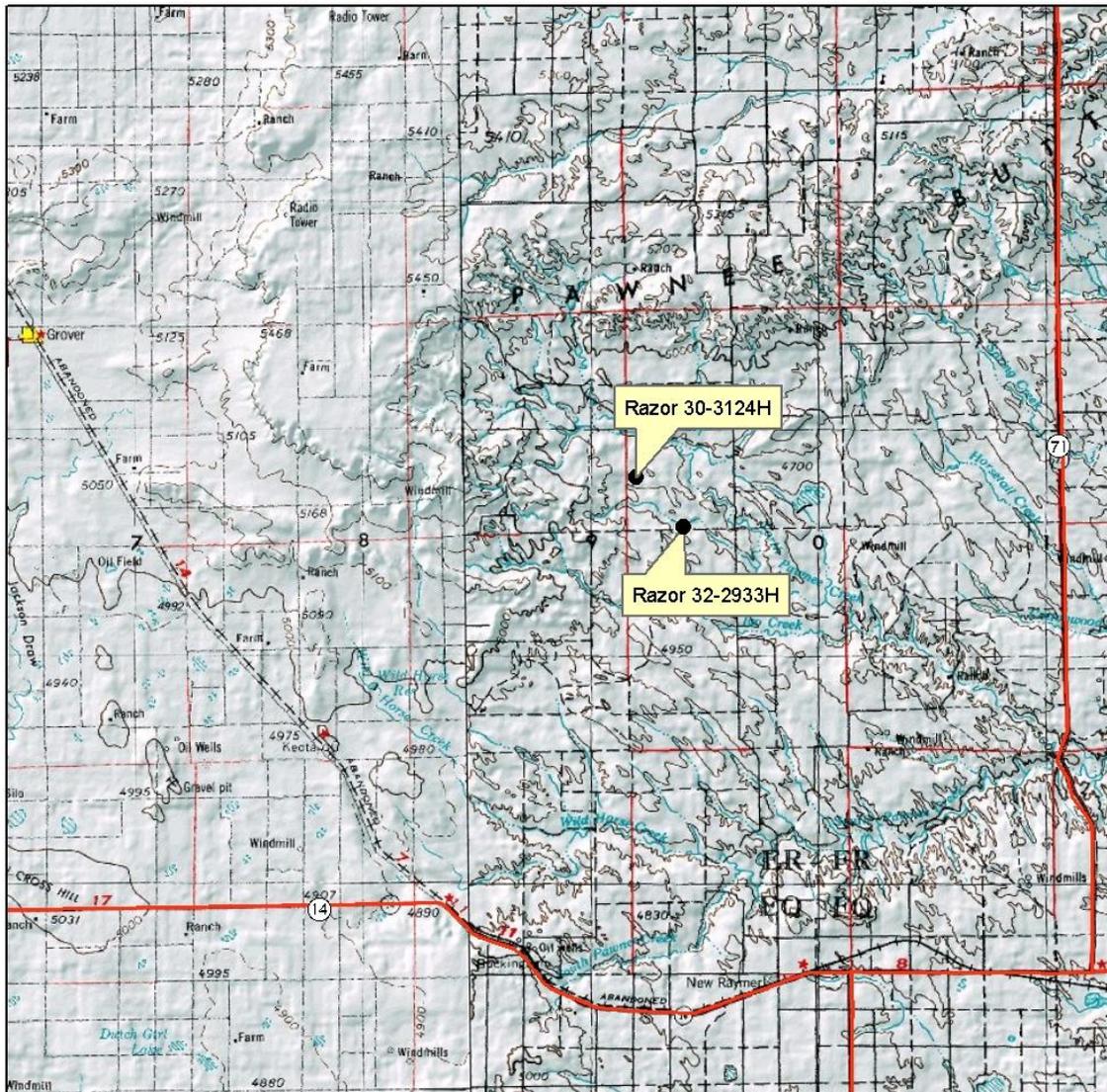
Interim reclamation of each pad will begin within 6 months (weather permitting) of completion of final well. Interim reclamation will consist of redistribution of excess soil, re-contouring the areas of the pad not needed for production as close to original as possible. All areas not needed for transportation of produced liquids and routine maintenance would be re-vegetated in accordance with the reclamation section of the multi-point surface operations plan.

Final reclamation of each project will begin within 6 months (weather permitting) of final well plugging, or in the event of a dry hole. Final reclamation will be completed in accordance with the reclamation section of the multi-point surface operations plan, which consists of proper plugging of wells, removal of all facilities and related equipment from the surface of the site (if left in place, abandoned pipelines will be flushed, cut below ground level, and capped), and removal of any surfacing materials on road or pad. Top soil will be stripped and segregated so it

can be spread evenly over the entire area. Pad and road areas will be ripped, re-contoured to their original form and top soil will be evenly spread over the surface. The area will be drill or broadcast seeded, and if necessary covered with weed free mulch. Area will be monitored for presence of weeds, which will be controlled if present. If initial seeding is not successful, the operator must re-seed the area until desirable vegetation is established. The bond will not be released until BLM has determined that successful reclamation has been achieved.

The Application for Permit to Drill (APD) for each new well includes a detailed and specific drilling program and multi-point surface operations plan (including detailed construction and reclamation plans.) The proposed action would be implemented consistent with the operations plans provided with approved permit, with Conditions Of Approval (COAs), Onshore Oil and Gas Orders, the applicable terms of Federal Lease COC63737, Onshore Oil and Gas Orders, and 43 CFR §3100.

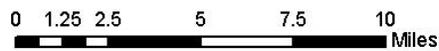
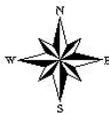
Overview Map



OVERVIEW MAP RAZOR 30-3124H AND RAZOR 32-2933H

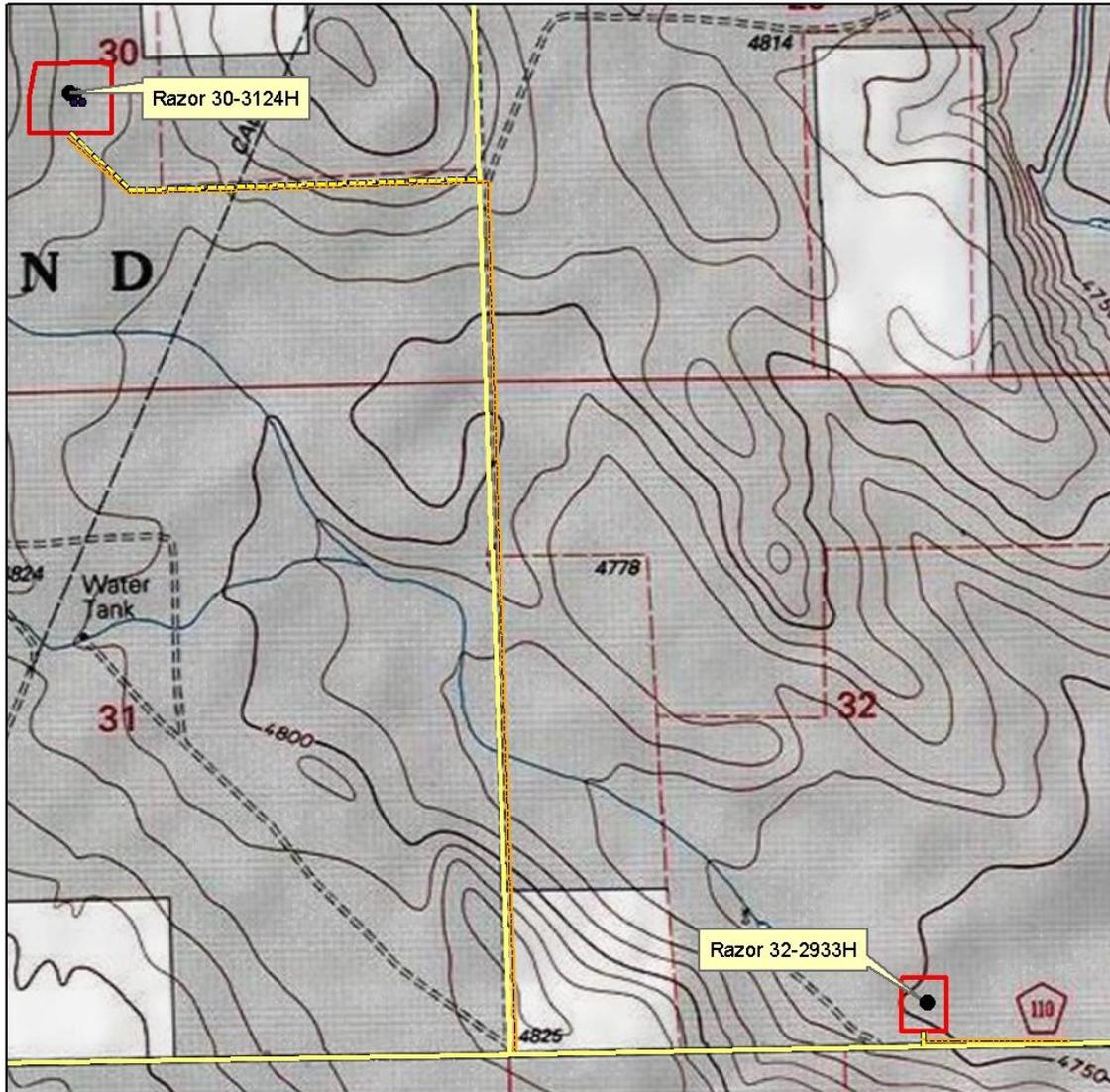
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6TH PM, T10N R58W S 30



NOTE TO MAP USERS
No warrantee is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of the data layers shown on this map. The official land records of the data providers should be checked or current status on any specific tract of land.

Topographic Project Map

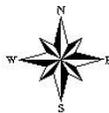


PROJECT MAP RAZOR 30-3124H AND RAZOR 32-2933H

DOI-BLM-CO-200-2013-080 EA

6TH PM, T10N R58W S 30

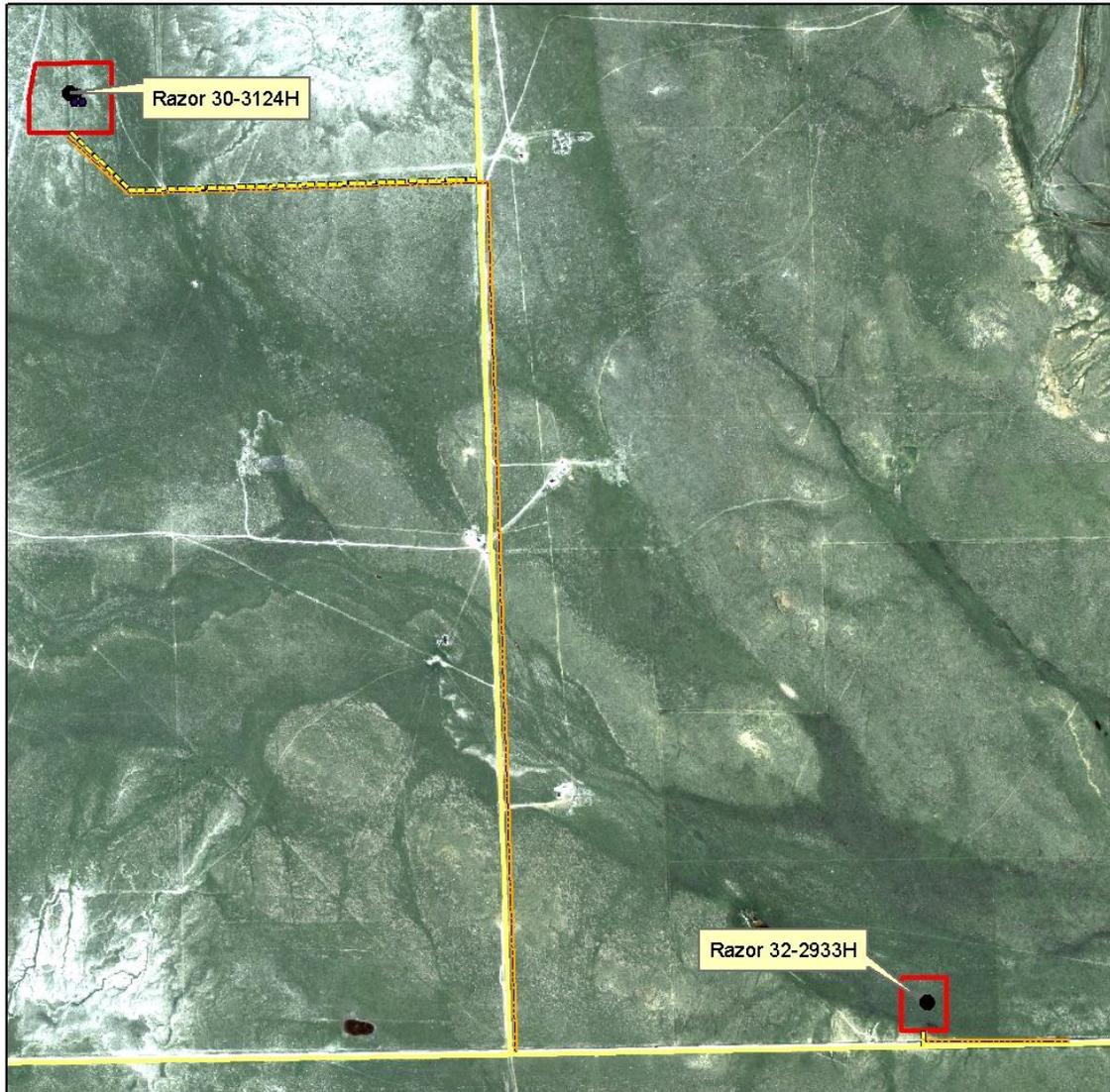
| Legend | |
|---|----------------------|
|  | Proposed Pad |
|  | Proposed Road |
|  | Proposed Pipeline |
|  | Existing Road |
|  | Possible Future Well |



0 0.05 0.1 0.2 0.3 0.4 Miles

NOTE TO MAP USERS
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Aerial Photo of Project

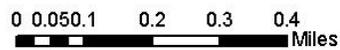
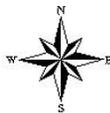


PROJECT NAIP RAZOR 30-3124H AND RAZOR 32-2933H

DOI-BLM-CO-200-2013-080 EA

6TH PM, T10N R58W S 30

| Legend | |
|---|----------------------|
|  | Proposed Pad |
|  | Proposed Road |
|  | Proposed Pipeline |
|  | Existing Road |
|  | Possible Future Well |



NOTE TO MAP USERS
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2.2.2 No Action Alternative

The proposed action involves Federal subsurface minerals that are encumbered with Federal oil and gas leases, which grant the lessee a right to explore and develop the leases. Although BLM cannot deny the right to drill and develop the leasehold, individual APDs can be denied to prevent unnecessary and undue degradation. The no action alternative constitutes denial of the APDs associated with the proposed action. Under the no action alternative, therefore, none of the proposed developments described in the proposed action would take place.

2.3 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Other alternatives were not considered due to the proposed project being a non-discretionary action being proposed on private surface.

CHAPTER 3 - AFFECTED ENVIRONMENT AND EFFECTS

3.1 INTRODUCTION

This section provides a description of the human and natural environmental resources that could be affected by the Proposed Action and presents comparative analyses of the direct, indirect and cumulative effects on the affected environment stemming from the implementation of the actions under the Proposed Action and other alternatives analyzed.

3.1.1 Interdisciplinary Team Review

The following table is provided as a mechanism for resource staff review, to identify those resource values with issues or potential impacts from the proposed action and/or alternatives. Those resources identified in the table as potentially impacted will be brought forward for analysis.

| <u>Resource</u> | <u>Initial and date</u> | <u>Comment or Reason for Dismissal from Analysis</u> |
|---|--------------------------------|---|
| <u>Air Quality</u> <i>Ty Webb, Chad Meister, Melissa Hovey</i> | AR, 8/29/13 | See affected environment |
| <u>Geology/Minerals</u> <i>Stephanie Carter, Melissa Smeins</i> | MJS, 09/06/2013 | See affected environment |
| <u>Soils</u> <i>John Smeins</i> | JS, 8/28/13 | All infrastructure (roads, drill pads, etc.) being proposed, would be built and reclaimed according to BLM Gold Book standards unless otherwise stipulated by the surface owner. See more in Soils section. |
| <u>Water Quality</u> <u>Surface and Ground</u> <i>John Smeins</i> | JS, 8/28/13 | See Water Quality section. |

| <u>Resource</u> | <u>Initial and date</u> | <u>Comment or Reason for Dismissal from Analysis</u> |
|--|--------------------------------|--|
| <u>Invasive Plants</u> <i>John Lamman</i> | JL, 09/03/2013 | See affected environment. |
| <u>T&E and Sensitive Species</u> <i>Matt Rustand</i> | MR, 8/7/2013 | No T&E species or habitats are located within the action area. The ferruginous hawk, a BLM sensitive species, may be found in this habitat type. |
| <u>Vegetation</u> <i>Jeff Williams, Chris Cloninger, John Lamman</i> | JL, 09/03/2013 | See affected environment |
| <u>Wetlands and Riparian</u> <i>Dave Gilbert</i> | DG, 9/3/13 | Proposed action is within upland rangelands. |
| <u>Wildlife Aquatic</u> <i>Dave Gilbert</i> | DG, 9/3/13 | Proposed action is within uplands. |
| <u>Wildlife Terrestrial</u> <i>Matt Rustand</i> | MR, 8/7/2013 | See affected environment |
| <u>Migratory Birds</u> <i>Matt Rustand</i> | MR, 8/7/2013 | See affected environment. |
| <u>Cultural Resources</u> <i>Monica Weimer</i> | MMW, 8/26/13 | <u>No concerns.</u> Both historic and prehistoric sites are present in the vicinity of the areas of potential effect [see Reports CR-RG-13-76 (N) and CR-RG-13-115 (P)]. However, no historic properties were recorded during the cultural resources inventories. Therefore, the inventory will not affect historic properties. |
| <u>Native American Religious Concerns</u> <i>Monica Weimer</i> | MMW, 8/26/13 | <u>No concerns.</u> Although aboriginal sites are present in the vicinity of the area of potential effect, no possible traditional cultural properties were located during the cultural resources inventory (see Cultural Resources section, above). There is no other known evidence that suggests the project area holds special significance for Native Americans. |
| <u>Economics</u> <i>Dave Epstein, Martin Weimer</i> | mw, 8/1/13 | Few negative impacts to the economy of the area are anticipated with construction of the wells. Positive impacts include benefits in royalties and revenue generated to the federal government from productive wells. Other indirect effects could include effects due to overall employment opportunities related to the oil and gas and service support industry in the region as well as the economic benefits to state and county governments related to royalty payments and severance taxes. Other beneficial impacts from the action would be the potential for productive wells being created that would add, albeit in a small way to national energy independence. |
| <u>Paleontology</u> <i>Melissa Smeins, Stephanie Carter</i> | MJS, 09/06/2013 | See affected environment |
| <u>Visual Resources</u> <i>Kalem Lenard</i> | KL, 7/29/2013 | The project is within a highly modified environment with existing structures and wells and would not impact visual resources. |
| <u>Environmental Justice</u> <i>Martin Weimer</i> | mw, 9/9/13 | The proposed action affects areas that are rural in nature. The land adjacent to the well site is grassland, as a result, there are no minority or low-income populations in or near the project area. As such, the proposal will not have a disproportionately high or adverse environmental effect on minority or |

| <u>Resource</u> | <u>Initial and date</u> | <u>Comment or Reason for Dismissal from Analysis</u> |
|--|-------------------------|--|
| | | low-income populations. |
| <u>Wastes Hazardous or Solid</u> <i>Stephanie Carter</i> | MJS, 09/06/2013 | See affected environment |
| <u>Recreation</u> <i>Kalem Lenard</i> | KL, 7/29/2013 | Not Present |
| <u>Farmlands Prime and Unique</u> <i>Jeff Williams, Chris Cloninger, John Lamman</i> | JL, 09/03/2013 | Not Present |
| <u>Lands and Realty</u> <i>Steve Craddock, Vera Matthews</i> | | N/A |
| <u>Wilderness, WSAs, ACECs, Wild & Scenic Rivers</u> <i>Kalem Lenard</i> | KL, 7/29/2013 | Not Present |
| <u>Wilderness Characteristics</u> <i>Kalem Lenard</i> | KL, 7/29/2013 | Not Present |
| <u>Range Management</u> <i>Jeff Williams, Chris Cloninger, John Lamman</i> | JL, 08/30/2013 | Not Present |
| <u>Forest Management</u> <i>Ken Reed</i> | KR, 8/5/13 | Not Present |
| <u>Cadastral Survey</u> <i>Jeff Covington</i> | JC, 8/29/13 | COS is attached in the project folder. |
| <u>Noise</u> <i>Martin Weimer</i> | mw, 9/9/13 | The project area is located in grassland. Certain levels of noise are associated with drilling operations, these include drill rig operation, compressors/generators and general machine and vehicle operation. These impacts are temporary and terminate when drilling operations are complete. |
| <u>Fire</u> <i>Bob Hurley</i> | | N/A |
| <u>Law Enforcement</u> <i>Steve Cunningham</i> | | N/A |

The affected resources brought forward for analysis include:

- Air quality
- Geology/Minerals
- Water Quality

- Soils
- Invasive Plants
- Vegetation
- Wildlife Terrestrial
- Migratory Birds
- Paleontology
- Wastes Hazardous or Solid

3.2 PHYSICAL RESOURCES

3.2.1 AIR QUALITY AND CLIMATE

Affected Environment: The proposed action area (Northern Weld County) is predominantly used for agriculture. Approximately 75% of the available land area of Weld County is linked to the agricultural sector of the economy in one form or another. Oil and gas development is another major economic driver for the area, and Weld County has some 17,000 active wells within its boundaries.

The population density of Weld County is generally dispersed within the proposed action area, and is generally less than 25 people per square mile. Mean temperatures in the area range from 15.6 degrees in January to 88.7 degrees in July. The area receives average annual precipitation of approximately 14.22 inches. Frequent winds in the area provide excellent dispersion characteristics for anthropogenic emissions.

Activities occurring within the area that affect air quality include exhaust emission from cars, drilling rigs, other vehicles, and oil and gas development activities, as well as fugitive dust from roads, agriculture, and energy development.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: In general the proposed action will have a temporary negative impact to air quality which will mostly occur during the construction phase. Utilization of the access road, surface disturbance, and construction activities such as drilling, hydraulic fracturing, well completion, and equipment installation will all impact air quality through the generation of dust related to travel, transport, and general construction. This phase will also produce short term emissions of criteria, hazardous, and greenhouse gas pollutants from vehicle and construction equipment exhausts. Once construction is complete the daily activities at the site will be reduced to operational and maintenance checks which may be as frequent as a daily visit. Emissions will result from vehicle exhausts from the maintenance and process technician visits. The pad can be expected to produce fugitive emissions of well gas, which contains mostly methane and a

minor fraction of volatile organic compounds. Fugitive emissions may also result from pressure relief valves and working and breathing losses from any tanks located at the site, as well as any flanges, seals, valves, or other infrastructure connections used at the site. Liquid product load-out operations will also generate fugitive emissions of VOCs and vehicular emissions. If the operator is unable to sell any produced gas from the well, then gas flaring will also produce emissions of criteria, HAP, and GHG emissions.

Cumulative Impacts: The area currently has a high degree of alteration in the form of agricultural fields, roads, houses, and oil and gas production. The addition of the infrastructure needed to construct and drill the additional pad and well would have a cumulative impact to the area's air quality; however, given the existing level of development in the area, the proposed well's impact would be very minor. In the long term, if economical quantities of oil and gas are found, additional wells can be expected to be drilled on Federal, State, and private lands. This could result in a larger impact to air quality in the future.

Mitigation/Residual Effects: Interim reclamation practices should be implemented in order to stabilize the site and prevent fugitive dust from being generated. Dust suppression practices, i.e. water spraying should be employed to minimize the amount of fugitive dust related to construction, travel, and transport of equipment. It is anticipated that the operator would apply for either an APCD air permit for the site as a whole, or cover individual equipment under one of Colorado's general permits for oil and gas operations. The state as the regulatory authority for oil and gas actions requires controls of emissions and standards for compliance that the operator will be subject to. It is expected that the operator will comply with the requirements and make every effort to minimize emissions through good engineering and operating practices to the maximum extent practical.

No Action Alternative

Direct and Indirect Impacts: None

Cumulative Impacts: None

Mitigation/Residual Effects: None

3.2.2 GEOLOGIC AND MINERAL RESOURCES

Affected Environment: The proposed APD well is located in the northern part of the Denver Basin where due to new drilling and completion technologies in mudrock dominated intervals interest has been reignited in the Rocky Mountain region Niobrara play. In addition to the Niobrara Formation, historically oil and gas in the Denver Basin has been produced from Cretaceous sandstones: J-Sandstone, Codell Sandstone, Niobrara Formation, Hygiene Sandstone, and Terry Sandstone (also known informally as the Sussex and Shannon Sandstones).

In addition to oil and gas, uranium and coal resources are also found in Weld County. Uranium resources are found in the Upper Laramie Formation north of Greeley. Coal resources are found

throughout the Denver Basin in the Denver Formation and the upper Laramie Formation in the Denver Basin although most of the coal resources in the Denver Basin have come from Laramie Coals.

Several sand and gravel pits have been developed within 5 miles of the proposed wells so sufficient materials should already be available for construction needs.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: The proposed action would drill through the Laramie Formation that contains the uranium and coal resources to produce hydrocarbons from underlying formations. During drilling operations on the parcels, loss of circulation or problems cementing the surface casing may affect freshwater aquifer and mineral zones encountered.

Cumulative Impacts: Cumulative impacts on geology and minerals resources would primarily occur as a result of oil and gas development, which would irreversibly deplete recoverable oil and gas from the producing formations.

Mitigation/Residual Effects: Recommended Mitigation is as follows:

BLM Onshore Order #2 (OO#2) requires that the proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. A review at the Application for Permit to Drill stage includes a geologic evaluation of the potential subsurface formations that will be penetrated by the wellbore, followed by an engineering analysis of the drilling program to ensure the well construction design is adequate to protect the surface and subsurface environment, including the potential risks identified by the geologist, and all known or anticipated zones with potential risks.

BLM will require that the surface casing be run across the aquifers, and placed at least 100 feet into a formation that should not fracture or breakdown with the maximum weighting of mud that may be needed when drilling to the depth that the intermediate casing is going to be set. Before drilling an intermediate hole, the surface casing will be cemented in place to surface between the casing and the formation.

A BLM representative may be on location during the casing and cementing of groundwater-protective surface casing and other critical casing and cementing intervals constructed to isolate subsurface zones that present high risk for potential adverse impact to human health or safety or at high risk potential for environmental contamination.

A cement bond log will be required on the production casing, to ensure the quality of the cement bond between the casing and the formation. A minimum of 100 feet of cement

will be required above any producing interval, or any zone of interest. Remedial cementing procedures will be required when cementing doesn't meet BLM requirements.

If the proposed project plans to utilize federal minerals in the construction of roads, pad building or for any other construction needs, then compliance with 43 CFR 3600 is required. The project proponent will need to submit an application for a mineral materials disposal with BLM, prior to any disturbance being initiated. Federal mineral materials regulations also apply to split estate (i.e. a private surface landowner could not dispose of federal mineral materials for this project, surface or subsurface, without prior authorization from the BLM).

No Action Alternative: Under the no action alternative APDs would be denied and no action would occur. Although, Federal subsurface minerals are encumbered with Federal oil and gas leases, which grant the lessee a right to explore and develop the leases.

Direct and Indirect Impacts: Not approving the APD could set up a situation in which reservoirs could not be adequately developed and public minerals could be drained by nearby private or state wells, resulting in a loss of revenue due to drainage situations that could be resolved by authorizing APDs. Drainage cases commonly occur in northeastern Colorado where land and mineral ownership patterns are complex.

Cumulative Impacts: None

Mitigation/Residual Effects: None

3.2.3 SOILS (includes a finding on standard 1)

Affected Environment:

The Weld county soil survey has identified the soil series in the proposed project area as:

For the Razor 32-2933H:

Shingle Clay Loam, 0-9 percent slopes. The Shingle component makes up 80 percent of the map unit. Slopes are 0 to 9 percent. This component is on breaks, ridges, and plains. The parent material consists of calcareous, clayey loamy residuum weathered from shale. Depth to a root restrictive layer is 10-20 inches to paralithic bedrock. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low to moderately high (.06-.2 in/hr). Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R067BY045CO Shaly Plains ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 15 percent.

For the Razor 30-3124H:

Kim-Mitchell complex, 0-6 percent slopes. The Kim component makes up 45 percent and the Mitchell makes up 40 percent of the map unit. Slopes are 0 to 6 percent. This component is on plains and alluvial fans. The parent material consists of calcareous loamy alluvium. Depth to a root restrictive layer is greater than 80 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high (.20-.6 in/hr). Available water capacity of this soil is high; however it is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. The Kim component is in the R067BY002CO Loamy Plains ecological site and the Mitchell component is in the R067BY009CO Siltstone Plains ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 15 percent.

Environmental Effects

The proposed development could result in a small percent of increased wind erosion during initial operations of associated with construction and drilling. A high risk of windblown erosion will continue until those disturbed lands are hardened, reclaimed by vegetation cover, protected by tackifier, straw, or manure, or protected by other methods. Overall-negative effects to soil resources, such as loss of top soil resulting from wind erosion should be reduced significantly through the correct implementation of interim and final reclamation measures and the implementation of BMPs during the construction.

Proposed Action

Direct and Indirect Impacts: This action would result in up to 22.5 acres of total combined new and previously disturbed surface disturbance. Well and tank battery pad construction would require approximately 9650 yrd³ of top soil stripped (at 6 inch depth) and stockpiles for reclamation. In the event the wells are developed into a production well, the amount of long term disturbance would be approximately 4 acres for one well and 2 acres for the other. This is assuming successful interim reclamation including recontouring, seeding, and necessary stabilization. The proposed action would have a moderate to major direct impact to soils present at the construction site. Indirectly, the increased runoff from the disturbed soils could result in increased erosion and gullying down gradient. Due to the gentle slopes and construction standards being proposed impacts to soils off site would be minor.

Cumulative Impacts: The area around the proposed wells has a variety factors effecting soils including roads, housing, agriculture, and livestock grazing. The addition of the infrastructure needed to drill the pads would have an additional impact to the areas soils. In the long term, if economical quantities of oil and gas are found, additional wells can be expected to be drilled. This could add a large amount of disturbance that could have a larger impact on soils in the future.

Mitigation/Residual Effects: After completion and/or abandonment of the wells, the soils would still be irreversibly different than they originally were. Overall, with the proposed reclamation, soil productivity would not be considerably altered if the proposed areas are abandoned. All infrastructure (roads, drill pads, etc.) being proposed, would be built to BLM Gold Book standards. No additional mitigation would be required.

No Action Alternative

Direct and Indirect Impacts: Under this alternative, there would be no new construction. There would be no direct or indirect impact to: soils, risk of increased runoff, or risk of increased erosion in the proposed project area.

Protective/Mitigation Measures: N/A

3.2.4 WATER (SURFACE AND GROUNDWATER, FLOODPLAINS)

Affected Environment: The proposed wells would be located in a dry upland setting tributary to the South Platte River with no perennial surface water nearby. Groundwater in this area consists of the Laramie Fox-Hills aquifer that is used for domestic and agricultural purposes and is generally produced from artesian wells. This aquifer can be up to 350 feet thick, although total thickness of water yielding material rarely exceeds 200 feet. The Lower Fox Hills and upper Pierre Aquifer or upper transition zone of the Pierre shale are also important water resources that should be protected, this interval occurs at depths of about 600' to 1500'. Underlying the Fox Hills is nearly 5,000 feet of Pierre Shale. Based on state records, there are 5 water wells within a one mile radius of the proposed Razor 32-2933H well and 1 water well within a one mile radius of the Razor 30-31244H. Water required for the drilling and completion of the wells would be obtained from a nearby water well (permit #69175).

Environmental Effects

Proposed Action

Direct and Indirect Impacts: Surface water impacts of the proposed wells are mainly associated with the surface disturbance associated with drilling and related infrastructure after well completion. For all proposed wells, 22.5 acres would be disturbed. Most of this disturbance would be new. Most impacts to surface water from oil and gas activity is due to removal of vegetation and exposure of mineral soils. Specific impacts would be soil compaction caused by construction that would reduce the soil infiltration rates, in turn increasing runoff during precipitation events. Downstream effects of the increased runoff may include changes in downstream channel morphology such as bed and bank erosion or accretion. Due to the flat nature of the topography and infiltration rates of the soils in this area, little to no new impacts to surface water quality would result from the surface disturbance portion of drilling the proposed wells. Additional surface water impacts could result from chemicals, or other fluids, accidentally spilled or leaked during the development process and could result in the contamination of both ground and surface waters. Best management practices would be contained in the condition of approval that would mitigate this threat.

The drilling of the proposed wells would pass through usable groundwater. Groundwater in this area is relied on for agricultural uses, as well as, domestic use. Potential impacts to groundwater resources could occur if proper cementing and casing programs are not followed. This could include loss of well integrity, surface spills, or loss of fluids in the drilling and

completion process. It is possible for chemical additives used in drilling activities to be introduced into the water producing formations without proper casing and cementing of the well bore. Changes in porosity or other properties of the rock being drilled through can also result in the loss of drilling fluids. When this occurs, drilling fluids can be introduced into groundwater without proper cementing and casing. Site specific conditions and drilling practices determine the probability of this occurrence and determine the groundwater resources that could be impacted. In addition to changing the producing formations' physical properties by increasing the flow of water, gas, and/or oil around the well bore; hydraulic fracturing can also introduce chemical additives into the producing formations. Types of chemical additives used in drilling activities may include acids, hydrocarbons, thickening agents, lubricants, and other additives that are operator and location specific. These additives are not always used in these drilling activities and some are likely to be benign such as bentonite clay and sand. Concentrations of these additives also vary considerably since different mixtures can be used for different purposes in oil and gas development and even in the same well bore. If contamination of aquifers from any source occurs, changes in groundwater quality could impact springs and water wells that are sourced from the affected aquifers. Onshore Order #2 requires that the proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones.

At this stage, geologic and engineering reviews have been done to ensure that cementing and casing programs are adequate to protect all downhole resources. Known water bearing zones in the APD area are protected by drilling requirements and, with proper practices, contamination of ground water resources is highly unlikely. Casing along with cement would be extended well beyond fresh-water zones to insure that drilling fluids remain within the well bore and do not enter groundwater.

Protective/Mitigation Measures: No additional mitigation is required to protect water resources beyond what is found in other sections of this document and other APD approval requirements.

No Action Alternative

Direct and Indirect Impacts: If the wells are not drilled, no new impacts to either ground or surface water quality would occur.

Protective/Mitigation Measures: None

3.3 BIOLOGICAL RESOURCES

3.3.1 INVASIVE PLANTS*

Affected Environment: Invasive plants are common in the area due to historical agricultural practices. It is likely that the native plant community has been altered due to the long-term grazing practices in the area. The ecological sites that make up the project site are prone to a wide variety of weeds if severe soil surface disturbance occurs.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: Due to the long-term exposure of the project area to historical agricultural practices, expected impacts are thought to be minor.

Protective/Mitigation Measures: Equipment used to implement the proposed action should be washed prior to entering the project area to remove any plant materials, soil, or grease. Areas disturbed by project implementation will be monitored for the presence of weeds on the Colorado State Noxious Weed list. Identified noxious weeds will be treated. Monitoring is required for the life of the project and for three years following completion and/or abandonment of the wells and elimination of identified Colorado State Noxious Weeds list A and B species.

No Action Alternative

Direct and Indirect Impacts: None

Protective/Mitigation Measures: None

*Invasive plants are plants that are not part of (if exotic), or are a minor component of (if native), the original plant community or communities that have the potential to become a dominant or co-dominant species on the site if their future establishment and growth are not actively controlled by management interventions, or are classified as exotic or noxious plants under state or federal law. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants.

3.3.2 VEGETATION

Affected Environment: The area around Razor 32-2933H supports alkali sacaton, western wheatgrass, blue gramma, sideoats grama, fourwing and saltbrush plant community. The area around Razor 30-3124H supports blue gramma/buffalograss sod with cool season remnants. It is likely that the native plant community has been altered due to the long-term grazing practices in the area.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: Generally oil and gas development involves complete removal of vegetation and at times re-contouring of the landscape to allow for resources to be retrieved. The type of ground activity associated with oil and gas development does result in increased susceptibility to adverse impacts such as soil compaction, weed infestations and erosion (See Soils and Invasive Plants sections). Due to these adverse impacts, establishment of native vegetation similar to adjacent undisturbed vegetation can take up to 30 years.

Protective/Mitigation Measures: See 2.2.1 None beyond design elements in the Proposed Action.

No Action Alternative

Direct and Indirect Impacts: None

Protective/Mitigation Measures: None

3.3.3 THREATENED, ENDANGERED AND SENSITIVE SPECIES

Affected Environment: The habitat in the project area consists of sand sagebrush and includes species such as western wheatgrass, prairie sandreed, red threeawn, sand dropseed, needle and thread, cheatgrass. There are small amounts of yucca, prickly pear, and annual forbs.

Ferruginous hawks is a BLM sensitive species that will nest in isolated trees or small groves of trees and on other elevated sites such as rock outcrops, buttes, large shrubs, haystacks, and low cliffs. Nests are situated adjacent to open areas such as grassland or shrubsteppe. These hawks are closely associated with prairie dog colonies, especially in winter.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: Any trees located on federal mineral estate that could provide nesting habitat for ferruginous hawks should be protected. Ferruginous hawks are sensitive to disturbance at the nest; activities such as mineral extraction near nests result in lower nest success or abandonment. There should be no activities within 0.5 mi of active nests.

No Action Alternative

Direct and Indirect Impacts: None.

Protective/Mitigation Measures: None.

Finding on the Public Land Health Standard for Threatened & Endangered species:
Public land health standards do not apply on private lands.

3.3.4 WILDLIFE TERRESTRIAL

Affected Environment: The action area is located within the short-grass prairie habitat type that is likely grazed at some point in the year. However, this section of land has experienced extensive disturbance from oil and gas activity. The utility of the action area to wildlife as critical habitat, specifically mega fauna, is limited. Wildlife species that have adapted and are common in this habitat are mule deer, pronghorn antelope, coyote, badger, fox, various rodents and an assortment of birds, including raptors such as Swainson's hawk and rough legged hawk. Colorado Parks and Wildlife have mapped the area as winter range for pronghorn antelope and mule deer.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: The proposed action will result in a relatively small amount of lost habitat. The proposed action will use existing infrastructure and expand existing facility sites. Habitat adjacent to the disturbance footprint may not be utilized by wildlife due to its proximity to drilling and production activity. Human activity peaks at the drilling phase, causing increased stress levels or excluding wildlife from the action area. When wells are in production there is significantly less human activity and some species will adapt to the disturbances.

Protective/Mitigation Measures: A visual survey for raptor nests will be conducted in surrounding trees and uplands within a quarter mile of the project site. If an active raptor nest is found, a no surface use timing limitation from February 1 through August 15 will be applied.

No surface use beginning January 1 for a period of 60 days to protect big game winter ranges as mapped by Colorado Parks and Wildlife. An exception may be granted because of climatic conditions or if the winter range habitat is unsuitable or unoccupied during winter months.

No Action Alternative

Direct and Indirect Impacts: None.

Protective/Mitigation Measures: None.

Finding on the Public Land Health Standard for Threatened & Endangered species:
Public land health standards do not apply on private lands.

3.3.5 MIGRATORY BIRDS

Affected Environment: The habitat in the project area consists of sand sagebrush and includes species such as western wheatgrass, prairie sandreed, red threeawn, sand dropseed, needle and thread, cheatgrass. There are small amounts of yucca, prickly pear, and annual forbs. Cassin's sparrow, McCown's longspur, mountain plover, upland sandpiper, sprague's pipit, lark bunting, and chestnut collared longspur are on the US Fish and Wildlife Services "Birds of Conservation Concern-2008 List for BCR-18 (Shortgrass Prairie) and might occur in the project area based on their habitat requirements.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: Surface disturbing activities associated with oil and gas development, such as road building, pipeline installation or pad construction may "take" nests if such activity were to occur during the nesting season. Noise generated during construction, drilling, and production phases will likely result in a larger impact footprint than the disturbance footprint alone. Migratory birds may be burned or killed by exhaust vents, heater-treaters, flare stacks, etc., if perched at the opening while in operation. An increase in activity, i.e. road traffic, will likely result in an increase in vehicular collisions with migratory birds.

The location and surrounding area is highly disturbed by oil and gas development. While the habitat may not be ideal, some plains birds have adapted to and currently use habitat patches within well fields for reproduction and growth. However, it is likely that species richness and diversity have been forfeited to some degree as a result of this conversion. In this case, it is unlikely the proposed action will cause an additive negative impact to migratory birds currently present at the site

Protective/Mitigation Measures: To be in compliance with the Migratory Bird Treaty Act (MBTA) and the Memorandum of Understanding between BLM and USFWS required by

Executive Order 13186, BLM must avoid actions, where possible, that result in a “take” of migratory birds. Generally this is a seasonal restriction that requires vegetation disturbance be avoided from May 15 thru July 15. This is the breeding and brood rearing season for most Colorado migratory birds. If the operator prefers to conduct vegetation disturbing activities during the restricted period, the operator may contract a qualified wildlife biologist to conduct a migratory nest survey clearing the project footprint of migratory bird nests prior to vegetation disturbance.

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds from entering, and to discourage perching, roosting, and nesting. Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, and in-line units. Any action that may result in a “take” of individual migratory birds or nests that are protected by MBTA will not be allowed.

No Action Alternative

Direct and Indirect Impacts: None.

Protective/Mitigation Measures: None.

3.4 HERITAGE RESOURCES AND HUMAN ENVIRONMENT

3.4.1 PALEONTOLOGICAL RESOURCES

Affected Environment: The proposed wells are geographically located in an area overlying part of the geologic feature that is the eastern flank of the Denver Basin. The Basin consists of a large asymmetric syncline of Paleozoic, Mesozoic, and Cenozoic sedimentary rock layers, trending north to south along the east side of the Front Range from about Pueblo north to Wyoming. The basin is deepest near Denver and ascends gradually to its eastern outcrop in central Kansas. The White River Formation underlies the proposed well location.

The White River formation is a Class 5 geologic formation, according to the BLM’s Potential Fossil Yield Classification (PFYC) System that was created to assist in determining proper mitigation approaches for surface disturbing activities (WO IM2008-009). This is a Class 5 formation because it is highly fossiliferous and indicates the highest potential for paleontologic resources. The potential for this proposed project to be sited on or impact a significant fossil locality is high. There are several vertebrate fossil finds in the same formation within one to three miles of the proposed well location.

Environmental Effects

Proposed Action: The proposed access roads, pipelines, and well pads would disturb the surface and well pads will have a maximum cut of up to 12 feet. Construction activities may potentially penetrate the protective soil layer and potentially encounter federally protected vertebrate fossils.

Direct and Indirect Impacts: Potential impacts to fossil localities would be both direct and indirect. Direct impacts to or destruction of fossils would occur from unmitigated activities conducted on formations with high potential for important scientific fossil resources. Indirect

impacts would involve damage or loss of fossil resources due to the unauthorized collection of scientifically important fossils by workers or the public due to increased access to fossil localities in the Project Area. Adverse impacts to important fossil resources would be long-term and significant since fossils removed or destroyed would be lost to science. Adverse significant impacts to paleontological resources can be reduced to a negligible level through mitigation of ground disturbing activities. It is possible that the proposed project would have the beneficial impact that ground disturbance activities might result in the discovery of important fossil resources.

Protective/Mitigation Measures: The proposed construction of the well pads, access to the well pads, and pipeline may penetrate the protective soil layer impacting the bedrock unit below. Because a highly fossiliferous (Class 5) formation is present and susceptible to adverse impacts, mitigation measures are required. The BLM recommends that a field inventory be performed prior to any surface disturbing activity. Depending on the results of the inventory, monitoring during construction may be recommended. If any significant fossils are found, development of a research design and data recovery may also be recommended before the project proceeds. Any fossils recovered on private land belong to the private landowner; however the BLM recommends the use of a federally approved repository for storage of any fossils recovered in these efforts.

In many instances where the surface estate is not owned by the Federal Government, the mineral estate is, and is administered by the BLM. Paleontological resources are considered to be part of the surface estate. If BLM is going to approve an action involving the mineral estate that may affect the paleontological resources, the action should be conditioned with appropriate paleontological mitigation recommendations to protect the interests of the surface owner. The surface owner may elect to waive these recommendations; such a waiver must be documented in the casefile.

3.4.2 WASTES, HAZARDOUS OR SOLID

Affected Environment: It is assumed that conditions associated with the proposed project site, both surface and subsurface, are currently clean and that there is no known contamination. A determination will be made by the operator prior to initiating the project, if there is evidence that demonstrates otherwise (such as solid or hazardous wastes have been previously used, stored, or disposed of at the project site).

Nothing in the analysis or approval of this action by BLM authorizes or in any way permits a release or threat of a release of hazardous materials (as defined under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations) into the environment that will require a response action or result in the incurrence of response costs.

Environmental Effects

Proposed Action

Direct and Indirect Impacts: Possible contaminant sources associated with the drilling operations are:

- Storage, use and transfer of petroleum, oil and lubricants

- Produced fluids
- General hazardous substances, chemicals and/or wastes
- Concrete washout water
- Drilling water, mud and cuttings

Protective/Mitigation Measures: The following mitigation will assist in reducing potential spills resulting in groundwater and/or soil contamination:

- All Above Ground Storage Tanks will need to have secondary containment and constructed in accordance with standard industry practices or an associated Spill Prevention Control and Countermeasures plan in accordance with State regulations (if applicable).
- If drums are used, secondary containment constructed in accordance with standard industry practices or governing regulations is required. Storage and labeling of drums should be in accordance with recommendations on associated MSDS sheets, to account for chemical characteristics and compatibility.
- Appropriate level of spill kits need to be onsite and in vehicles.
- All spill reporting needs to follow the reporting requirements outlined in NTL-3A.
- No treatment or disposal of wastes on site is allowed.
- All concrete washout water needs to be contained and properly disposed of at a permitted offsite disposal facility.
- If pits are utilized they need to be lined to mitigate leaching of liquids to the subsurface, as necessary.

No Action Alternative

Direct and Indirect Impacts: None

Protective/Mitigation Measures: None

3.5 CUMULATIVE IMPACTS SUMMARY

The proposed project is located in Weld County, Colorado. Weld County's economy is based primarily on agriculture (farming and livestock production) and oil and gas development. Due to this, most of the natural landscape of Weld County has been modified. Weld County has more than 16,500 active petroleum wells, more than any other county in the United States, according to Weld county commissioners. Most of these wells are located on privately owned surface and produce entirely privately owned minerals. BLM is involved in less than 5% of all petroleum wells in Weld County. Because of the comparatively small number of Federally owned mineral parcels in this area, the cumulative impact of Federal petroleum development is minor in comparison to the impact of the overall petroleum development in Weld County.

Air: The area currently has a high degree of alteration in the form of agricultural fields, roads, houses, and oil and gas production. The addition of the infrastructure needed to construct and drill the additional pad and well would have a cumulative impact to the area's air quality; however, given the existing level of development in the area, the proposed well's impact would be very minor. In the long term, if economical quantities of oil and gas are found, additional wells can be expected to be drilled on Federal, State, and private lands. This could result in a larger impact to air quality in the future.

Geologic and Mineral Resources: Cumulative impacts on geology and minerals resources would primarily occur as a result of oil and gas development, which would irreversibly deplete recoverable oil and gas from the producing formations.

Soils and water: The area around the proposed wells has a variety factors effecting soils and water including roads, housing, agriculture, and livestock grazing. The addition of the infrastructure needed to drill the pads would have an additional impact to the areas soils. In creased soil disturbance can lead to increased sedimentation in runoff water and any spills occurring could further contaminate surface waters adding, albeit in a minor way, to accumulated waste in the local water courses. In the long term, if economical quantities of oil and gas are found, additional wells can be expected to be drilled. This could add a large amount of disturbance that could have a larger impact on soils and surface water in the future.

CHAPTER 4 - CONSULTATION AND COORDINATION

4.1 LIST OF PREPARERS AND PARTICIPANTS

Please see Interdisciplinary Team Review list for BLM Participants

4.2 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

Native American Tribes were consulted at the lease stage.

CHAPTER 5 - REFERENCES

Bureau of Land Management. 1986. Northeast Resource Area Management Plan and Record of Decision. Lakewood, Colorado.

Bureau of Land Management. 1991. Colorado Oil and Gas Leasing Environmental Impact Statement. Lakewood, Colorado.

Bureau of Land Management. 2008 H-1790-1 National Environmental Policy Handbook. Washington, D.C.

Finding Of No Significant Impact (FONSI)

DOI-BLM-CO-200-2013-0080 EA

Based on review of the EA and the supporting documents, I have determined that the project is not a major federal action and will not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects from any alternative assessed or evaluated meet the definition of significance in context or intensity, as defined by 43 CFR 1508.27. Therefore, an environmental impact statement is not required. This finding is based on the context and intensity of the project as described below:

RATIONALE:

Context: The BLM has received 2 Application Permits to Drill (APDs), proposing the construction two well pads, with associated access roads, connecting pipelines, and the drilling of two horizontal oil wells on private surface estates/over private mineral estates, in order to develop private and federal minerals (fee/fee/fed) in Northwest Weld County approximately 17 miles east of the town of Grover, Colorado. The federal mineral estate is leased and subject to oil and gas development.

The general area description would be defined as rural rangeland located in the northeastern plains of Colorado, used primarily for livestock production and oil and gas development. There are a few county roads in the project area. Access is limited to private or petroleum field roads, over private surface. The roadways vary in development but most are dirt/primitive roads.

Extensive oil and gas development has occurred in the area, mostly on private mineral and surface estate.

Intensity:

I have considered the potential intensity/severity of the impacts anticipated from the proposed Razor 30-3124H and Razor 32-2933H APD projects. Project decision relative to each of the areas suggested for consideration by the CEQ. With regard to each:

Impacts that may be beneficial and adverse:

There would be minor impacts to air quality from the proposed wells. Most of this would occur during the drilling phase. Potential impacts might occur to ground water; however such impacts should not occur if strict drilling requirements are followed. Other minor impacts might occur to wildlife and migratory birds but would be mitigated through the use of timing stipulations. Positive impacts include benefits in royalties and revenue generated to the federal government from productive wells. Other indirect effects could include effects due to overall employment opportunities related to the oil and gas and service support industry in the region as well as the economic benefits to state and county governments related to royalty payments and severance taxes. Other beneficial impacts

from the action would be the potential for productive wells being created that would add, albeit in a small way to national energy independence.

Public health and safety:

The proposed action will have a temporary negative impact to air quality through the generation of fugitive dust during the construction phase. Utilization of the road, surface disturbance, and construction activities such as drilling, hydraulic fracturing, well completion, and equipment installation will all impact air quality through the generation of dust related to travel, transport, and general construction. This phase will also produce short term emissions of criteria, hazardous, and greenhouse gas pollutants from vehicle and construction equipment exhausts. Once construction is complete the daily activities at the site will be reduced to operational and maintenance checks which may be as frequent as a daily visit. Emissions will result from vehicle exhausts from the maintenance and process technician visits. The pad can be expected to produce fugitive emissions of well gas, which contains mostly methane and a minor fraction of volatile organic compounds. Fugitive emissions may also result from pressure relief valves and working and breathing losses from any tanks located at the site, as well as any flanges, seals, valves, other infrastructure connections used at the site. Liquid product load-out operations will also generate fugitive emissions of VOCs and vehicular emissions. If the operator is unable to sell any produced gas from the well, then gas flaring will also produce emissions of criteria, HAP, and GHG emissions.

Unique characteristics of the geographic area:

The EA evaluated the area of the proposed action and determined that no unique geographic characteristics such as: wild and scenic rivers, prime or unique farmlands, Areas of Critical Environmental Concern, designated wilderness areas, wilderness study areas or Lands with Wilderness Characteristics; were present.

Degree to which effects are likely to be highly controversial:

The potential for controversy associated with the effects of the proposed action is low. There is no disagreement or controversy among ID team members or reviewers over the nature of the effects on the resource values on public land by the proposed action.

Degree to which effects are highly uncertain or involve unique or unknown risks:

The drilling of oil and gas wells has occurred historically over the past century and although the potential risks involved can be controversial, they are neither unique nor unknown. Numerous other well locations having been successfully drilled in this area of Weld County.

Consideration of whether the action may establish a precedent for future actions with significant impacts:

The proposed APDs will be limited to standard construction procedures associated with pad/road construction and drilling in Weld County and have occurred historically on split and private mineral estate. There are no aspects of the current proposal that are precedent setting.

Consideration of whether the action is related to other actions with cumulatively significant impacts:

The action is a continuation of oil and gas activities that have historically occurred in the area. Continued oil and gas activity in the area will have minor but additive impacts to air and the production greenhouse gas emissions. The project area having been subject to historic drilling activity will continue to experience gradual depletion of the recoverable oil and gas products. Although past cattle grazing had contributed to cumulative impacts, there have been no other recent activities besides oil and gas that has contributed to cumulative impacts.

Scientific, cultural or historical resources, including those listed in or eligible for listing in the National Register of Historic Places:

Both historic and prehistoric sites are present in the vicinity of the areas of potential effect [see Reports CR-RG-13-76 (N) and CR-RG-13-115 (P)]. However, no historic properties were recorded during the cultural resources inventories. Therefore, the inventory will not affect historic properties.

Threatened and endangered species and their critical habitat:

No T&E species or habitats are located within the action area. The ferruginous hawk, a BLM sensitive species, may be found in this habitat type.

Any effects that threaten a violation of Federal, State or local law or requirements imposed for the protection of the environment: The proposed action conforms with the provisions of NEPA (U.S.C. 4321-4346) and FLPMA (43 U.S.C. 1701 et seq.) and is compliant with the Clean Water Act and The Clean Air Act, the National Historic Preservation Act, Migratory Bird Treaty Act (MBTA) and the Endangered Species Act.

NAME OF PREPARER: Aaron Richter

SUPERVISORY REVIEW: Jay Raiford

NAME OF ENVIRONMENTAL COORDINATOR: /s/ Martin Weimer

DATE: 9/26/13

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Melissa Garcia
for Keith E. Berger, Field Manager

DATE SIGNED: 9/26/13

APPENDICES:
ATTACHMENTS:

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ROYAL GORGE FIELD OFFICE**

DECISION RECORD

Project Name

DOI-BLM-CO-200-2013-0080-EA

DECISION: It is my decision to authorize the Proposed Action as described in the attached EA. The proposed action is to **construction two well pads, with associated access roads, connecting pipelines, and the drilling of two horizontal oil wells on private surface estates/over private mineral estates, in order to develop private and federal minerals (fee/fee/fed)**. Access to the proposed Razor 30-3124H and Razor 32-2933H projects would be gained by traveling on existing state, county and petroleum field roads.

The proposed project is located in Northwest Weld County approximately 17 miles east of the town of Grover, Colorado. The federal mineral estate within the project boundary is leased and subject to oil and gas development.

The proposed action was analyzed in the Environmental Assessment (EA) DOI-BLM-CO-200-2013-0080 and a Finding of No Significant Impact was reached and an EIS will not be prepared.

RATIONALE: This APD will develop oil and gas resources on Federal minerals Lease COC 61148 consistent with existing Federal lease rights provided for in the Mineral Leasing Act of 1920, as amended. Extensive oil and gas development has occurred throughout the project area, mostly on private mineral estate.

The project area currently has a high degree of alteration in the form of agricultural fields, roads, houses, and oil and gas production. The addition of the infrastructure needed to construct and drill the four proposed wells would have mostly temporary and overall minor impacts on resources present in the project area.

MITIGATION MEASURES\MONITORING:

Air Quality: Interim reclamation practices should be implemented in order to stabilize the site and prevent fugitive dust from being generated. Dust suppression practices, i.e. water spraying should be employed to minimize the amount of fugitive dust related to construction, travel, and transport of equipment. It is anticipated that the operator would apply for either an APCD air permit for the site as a whole, or cover individual equipment under one of Colorado's general permits for oil and gas operations. The state as the regulatory authority for oil and gas actions requires controls of emissions and standards for compliance that the operator will be subject to. It is expected that the operator will comply with the requirements and make every effort to

minimize emissions through good engineering and operating practices to the maximum extent practical.

Geology and Mineral Resources: If the proposed project plans to utilize federal minerals in the construction of roads, pad building or for any other construction needs, then compliance with 43 CFR 3600 is required. The project proponent will need to submit an application for a mineral materials disposal with BLM, prior to any disturbance being initiated. Federal mineral materials regulations also apply to split estate (i.e. a private surface landowner could not dispose of federal mineral materials for this project, surface or subsurface, without prior authorization from the BLM).

BLM Onshore Order #2 (OO#2) requires that the proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. A review at the Application for Permit to Drill stage includes a geologic evaluation of the potential subsurface formations that will be penetrated by the wellbore, followed by an engineering analysis of the drilling program to ensure the well construction design is adequate to protect the surface and subsurface environment, including the potential risks identified by the geologist, and all known or anticipated zones with potential risks.

BLM will require that the surface casing be run across the aquifers, and placed at least 100 feet into a formation that should not fracture or breakdown with the maximum weighting of mud that may be needed when drilling to the depth that the intermediate casing is going to be set. Before drilling an intermediate hole, the surface casing will be cemented in place to surface between the casing and the formation.

A BLM representative may be on location during the casing and cementing of groundwater-protective surface casing and other critical casing and cementing intervals constructed to isolate subsurface zones that present high risk for potential adverse impact to human health or safety or at high risk potential for environmental contamination.

A cement bond log will be required on the production casing, to ensure the quality of the cement bond between the casing and the formation. A minimum of 100 feet of cement will be required above any producing interval, or any zone of interest. Remedial cementing procedures will be required when cementing doesn't meet BLM requirements.

If the proposed project plans to utilize federal minerals in the construction of roads, pad building or for any other construction needs, then compliance with 43 CFR 3600 is required. The project proponent will need to submit an application for a mineral materials disposal with BLM, prior to any disturbance being initiated. Federal mineral materials regulations also apply to split estate (i.e. a private surface landowner could not dispose of federal mineral materials for this project, surface or subsurface, without prior authorization from the BLM).

Invasive Plants: Equipment used to implement the proposed action should be washed prior to entering the project area to remove any plant materials, soil, or grease. Areas disturbed by project implementation will be monitored for the presence of weeds on the Colorado State

Noxious Weed list. Identified noxious weeds will be treated. Monitoring is required for the life of the project and for three years following completion and/or abandonment of the wells and elimination of identified Colorado State Noxious Weeds list A and B species.

Wildlife Terrestrial: A visual survey for raptor nests will be conducted in surrounding trees and uplands within a quarter mile of the project site. If an active raptor nest is found, a no surface use timing limitation from February 1 through August 15 will be applied.

No surface use beginning January 1 for a period of 60 days to protect big game winter ranges as mapped by Colorado Parks and Wildlife. An exception may be granted because of climatic conditions or if the winter range habitat is unsuitable or unoccupied during winter months

To be in compliance with the Migratory Bird Treaty Act (MBTA) and the Memorandum of Understanding between BLM and USFWS required by Executive Order 13186, BLM must avoid actions, where possible, that result in a “take” of migratory birds. Generally this is a seasonal restriction that requires vegetation disturbance be avoided from May 15 thru July 15. This is the breeding and brood rearing season for most Colorado migratory birds. If the operator prefers to conduct vegetation disturbing activities during the restricted period, the operator may contract a qualified wildlife biologist to conduct a migratory nest survey clearing the project footprint of migratory bird nests prior to vegetation disturbance.

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds from entering, and to discourage perching, roosting, and nesting. Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, and in-line units. Any action that may result in a “take” of individual migratory birds or nests that are protected by MBTA will not be allowed.

Paleontological Resources Paleontologic Resources: The proposed construction of the well pads, access to the well pads, and pipeline may penetrate the protective soil layer impacting the bedrock unit below. Because a highly fossiliferous (Class 5) formation is present and susceptible to adverse impacts, mitigation measures are required. The BLM recommends that a field inventory be performed prior to any surface disturbing activity. Depending on the results of the inventory, monitoring during construction may be recommended. If any significant fossils are found, development of a research design and data recovery may also be recommended before the project proceeds. Any fossils recovered on private land belong to the private landowner; however the BLM recommends the use of a federally approved repository for storage of any fossils recovered in these efforts.

In many instances where the surface estate is not owned by the Federal Government, the mineral estate is, and is administered by the BLM. Paleontological resources are considered to be part of the surface estate. If BLM is going to approve an action involving the mineral estate that may affect the paleontological resources, the action should be conditioned with appropriate paleontological mitigation recommendations to protect the interests of the surface owner. The surface owner may elect to waive these recommendations; such a waiver must be documented in the casefile.

Wastes, Hazardous or Solid: The following mitigation will assist in reducing potential spills resulting in groundwater and/or soil contamination:

- All Above Ground Storage Tanks will need to have secondary containment and constructed in accordance with standard industry practices or an associated Spill Prevention Control and Countermeasures plan in accordance with State regulations (if applicable).
- If drums are used, secondary containment constructed in accordance with standard industry practices or governing regulations is required. Storage and labeling of drums should be in accordance with recommendations on associated MSDS sheets, to account for chemical characteristics and compatibility.
- Appropriate level of spill kits need to be onsite and in vehicles.
- All spill reporting needs to follow the reporting requirements outlined in NTL-3A.
- No treatment or disposal of wastes on site is allowed.
- All concrete washout water needs to be contained and properly disposed of at a permitted offsite disposal facility.
- If pits are utilized they need to be lined to mitigate leaching of liquids to the subsurface, as necessary.

PROTEST/APPEALS: This decision shall take effect immediately upon the date it is signed by the Authorized Officer, and shall remain in effect while any appeal is pending unless the Interior Board of Land Appeals issues a stay (43 CFR 2801.10(b)). Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4. Within 30 days of the decision, a notice of appeal must be filed in the office of the Authorized Officer at the Royal Gorge Field Office, 3028 E. Main, Cañon City, Colorado, 81212. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals, Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy St., Suite 300, Arlington, VA 22203 within 30 days after the notice of appeal is filed with the Authorized Officer.

SIGNATURE OF AUTHORIZED OFFICIAL:

/s/ Melissa Garcia
for Keith E. Berger, Field Manager

DATE SIGNED: 9/26/13

ATTACHMENTS: