

U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641

DETERMINATION OF NEPA ADEQUACY (DNA)

NUMBER: DOI-BLM-CO-110-2013-0125-DNA

CASEFILE/PROJECT NUMBER: COC74300
COC76434 (Access ROW)

PROJECT NAME: ExxonMobil's Oil Shale RD&D Plan of Development (POD) COC74300

LEGAL DESCRIPTION: T1S, R98W, 6th P.M.
Section 34, Lots 1, 2, 7, and 8

APPLICANT: ExxonMobil Exploration Company (XOM)

ISSUES AND CONCERNS: XOM's submitted POD is a phased approach to the appraisal and development of their oil shale lease tract COC74300. The submitted POD details the Appraisal Phase (the first of four developmental phases of the lease tract) and outlines the remaining three phases. It also contains a reclamation and water monitoring plan. The Appraisal Phase would assess site specific geo/hydrologic resources that are required for the proper design of the three following phases. No heating of the oil shale resource would occur during this phase.

DESCRIPTION OF PROPOSED ACTION: XOM's POD identifies the following four phases of development

- **Appraisal Phase:** During the Appraisal Phase, one or more appraisal wells would be drilled, cored, and logged to understand the local resource. This data is critical to characterize the resource and finalize design of the future experimental programs. A series of ground water monitoring wells (Figure 1) will also be installed as part of this phase to start the baseline monitoring required by the Division of Reclamation Mining & Safety (DRMS). Activity at this time would be the construction of the initial well pad in the southwest corner of the RD&D and the road leading to it. This construction may include preparing a location for the portable office trailers. Well pads on the north and northeast sides of the RD&D lease and the associated roads/entries to those pads could be constructed after the design of Phase I is complete and the appropriate monitoring locations are confirmed.
- **Phase I: Small Scale Construction.** During this phase of the program, the in situ technology would be constructed in the target zone. Monitoring, observation and instrumentation holes will be drilled to understand system performance and rock

behavior. Various operational tests are envisioned to ensure proper construction and verify the associated properties. Phase I operations would be intentionally limited to prevent the generation of oil and gas. During this phase, construction of surface facilities and production wells necessary for Phase II of the program would be executed.

- **Phase II: Small Scale Operation.** During this phase of the program, the Phase I system would be energized and tested under variable conditions to understand its performance during heating.
- **Phase III: Pilot Scale Testing.** Based on the information collected in the previous phases, a larger scale system would be designed, built and tested. If successful, this test is anticipated to operate for several years to verify the long term reliability of the technology as well as determine the commercial potential.

The Appraisal Phase (Figures 1 and 2) proposes to construct up to nine appraisal/groundwater monitoring on three well pads, an administration/storage pad and associated access. Table 1 contains the estimated sizes of the proposed construction in the Appraisal Phase.

Table 1. Appraisal Phase

| Facility Type | Number | Size (feet) | Area (acres) |
|---------------------------------|--------|-------------|--------------|
| Appraisal/Groundwater Well Pads | 3 | 300 x 400 | 8.4 |
| Administration/Storage Pad | 1 | 75 x 400 | 0.7 |
| Access to Pads | 3 | 2,940 x 30 | 2.0 |
| Total | - | - | 11.1 |

Total disturbance may vary somewhat due to topography and drilling equipment requirements but would remain less than 15 acres for the Appraisal Phase. During the Appraisal Phase XOM would initially drill a series of up gradient wells in the southwest corner of the lease tract. After the geologic data is collected from these wells, additional wells may be drilled at appropriate locations down gradient (Figures 1 and 2) for appraisal purposes or to monitor ground water quality leaving site. Down-gradient water monitoring wells may be drilled during the Appraisal Phase or as part of subsequent Experimental Phases. Small tests may be conducted in the appraisal wells and/or groundwater monitoring wells to collect information needed for design of subsequent Experimental Phases. As part of the tests, small water fracs are planned in the stratigraphic zones in and around the target heating zone. These small fracs would provide local fracture orientation and the magnitude of in situ stress that would be used to plan Phase I and ensure that all operations are limited to the target heating zone.

The well pads would be restored per the surface reclamation plan included in the POD, leaving sufficient space around each well for monitoring. The access road and small access well pad will be maintained for each groundwater set to ensure access for periodic sampling and monitoring of groundwater, and maintenance, as needed. To support maintenance, the associated well pad may be temporarily enlarged, but restored per the surface reclamation plan, leaving a sufficient area around each well for monitoring access, adjacent to an access road.

During the Appraisal Phase, the site buildings would only consist of temporary buildings or trailers for office space and limited storage. A safety/security fence would surround the temporary building or the area of activity, as needed, to protect livestock and wild game. The building may be tied-in with the local electrical grid during this phase, pending discussion with White River Electric Association (WREA). Otherwise, electricity will be supplied from portable generators equipped with appropriate noise and emission controls. Water for all needs would be trucked to the site.

Design Features: See Appendix A

Decision to be Made: The BLM will decide whether or not to approve XOM's POD for oil shale RD&D project on oil shale RD&D lease COC 74300 and issue associated access ROW COC76434 allowing for the implementation of XOM's POD Appraisal Phase to exercise their lease rights to research, develop and demonstrate oil shale resource recovery and, if so, under what terms and conditions.

PLAN CONFORMANCE REVIEW:

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: 2-6

Decision Language: "At the discretion of the Secretary of the Interior, research scale lease tracts will be considered within lands available for oil shale leasing. Approval of research tracts will be based on the merits of the technology proposed."

REVIEW OF EXISTING NEPA DOCUMENTS:

List by name and date all existing NEPA documents that cover the Proposed Action.

Name of Document: White River Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS).

Date Approved: June 1996

Name of Document: Colorado Oil Shale Research, Development, and Demonstration (RD&D) Lease Tracts Project (DOI-BLM-CO-110-2011-0177-EA)

Date Approved: August 30, 2012

List by name and date any other documentation relevant to the Proposed Action (e.g., biological assessment, biological opinion, watershed assessment, allotment evaluation, and monitoring report).

Name of Document: TAILS 06E24100-2012-F-016 (U. S. Fish and Wildlife Service (USFWS) concurrence of Section 7 Consultation for Colorado Oil Shale Research, Development, and Demonstration Lease Tract Projects COC 74299 and COC 74300)

Date Approved: May 31, 2012

NEPA ADEQUACY CRITERIA:

1. Is the new Proposed Action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document? If there are differences, can you explain why they are not substantial?

The existing NEPA document DOI-BLM-CO-110-2011-0177-EA is an analysis of the potential impacts that could occur from leasing the lands within COC7300 for the purpose of oil shale RD&D. This existing document is based on a Plan of Operations (POO) submitted by XOM as part of the leasing application process. The POO provided anticipated general lease operations to assist in evaluating the environmental consequences of leasing Oil Shale RD&D lease COC74300. The POD in the current Proposed Action is essentially the same action within the same analysis area as analyzed in DOI-BLM-CO-110-2011-0177-EA. It contains more detailed procedures of XOM's RD&D proposed operations. Approval of XOM's POD would authorize the Appraisal Phase of the research and development of the leased oil shale resources as provided for in the POD. CO-110-2011-0177-EA analyzed a total 112.7 acres of new disturbance of XOM's RD&D lease for all phases of the research project. The Appraisal Phase in the existing document accounted for 41 acres of 112.7 acres new disturbance. The disturbance in the existing document is associated with 24 groundwater monitoring wells on 17 pads (17 acres), 4 appraisal wells on 4 pads (4 acres), and a 20 acres process pad. The POD identifies less than 15 acres of surface disturbance associated with 9 groundwater/appraisal monitoring wells on 3 pads (8.4 acres), access (2.0 acres) and an Administration Pad (0.7 acres) in the Appraisal Phase. The Proposed Action would be approximately 13 percent of the disturbance area analyzed for the Appraisal Phase in the existing document. The associated actions of the Proposed Action in the Appraisal Phase remain the same as analyzed in the existing document.

Any additional activities and/or disturbance not specifically identified within the approved POD would require a submittal requesting a modification of the existing POD and would be subject to NEPA review.

2. Is the range of alternatives analyzed in the existing NEPA document appropriate with respect to the new Proposed Action, given current environmental concerns, interests, and resource values?

Three alternatives (Proposed Action, Proposed Action with Mitigation (specified) and No Action Alternative) were analyzed in DOI-BLM-CO-110-2011-0177-EA. No reasons were identified to analyze additional alternatives and these alternatives are considered to be adequate and valid for the Proposed Action.

3. Is the existing analysis valid in light of any new information or circumstances (such as, rangeland health standard assessment, recent endangered species listings, updated lists of BLM-sensitive species)? Can you reasonably conclude that new information and new circumstances would not substantially change the analysis of the new Proposed Action?

There are no federal listings of special status plants or animals since the original NEPA that would need to be addressed specific to this action. The FWS concurred with the BLM's Biological Assessment of the project for the existing document.

4. Are the direct, indirect, and cumulative effects that would result from implementation of the new Proposed Action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?

The Proposed Action is essentially the same as DOI-BLM-CO-110-2011-0177-EA. The existing document analyzed XOM's POO for leasing purposes. The POD provides more details of the processes/operations for the on lease research and development of the oil shale resources. As mentioned above, approval of the POD is the authorization allowing the implementation of the research and development of the oil shale resource of XOM's lease COC74300. Overall disturbance and operational process are essentially the same. Direct, indirect, and cumulative impacts from project implementation would remain essentially the same. As identified above the Proposed Action and is essentially the same as in DOI-BLM-CO-110-2011-0177-EA.

5. Is the public involvement and interagency review associated with existing NEPA documents adequate for the current Proposed Action?

The proponents' POOs used in the development of the Proposed Action of DOI-BLM-CO-110-2011-0177-EA were made available to the general public at the White River Field Office (WRFO) and posted on the WRFO website on April 18, 2011. A press release on the same day of posting announced the availability of the POOs. This started a 30 day scoping period that ended May 17, 2011 Notices were also concurrently mailed to the following Federal, State, and County agencies and Native American Tribes:

| Federal | State | Counties | Native American Tribes |
|----------------|---|-------------------|-------------------------------|
| FWS | Colorado Division of Parks and Wildlife | Garfield Mesa, | Ute Mountain Ute Indian |

| | | | |
|---------------------------------------|--|-------------------|-------------------------------|
| U. S. Environmental Protection Agency | Colorado Department of Public Health and Environment (CPDHE) (Air Pollution and Water Quality Divisions) | Moffat Rio Blanco | Southern Ute Eastern Shoshone |
| Dinosaur National Monument | | | |
| White River National Forest | Colorado Department of Natural Resources | | |

During the scoping period two informational public open houses provided the opportunity for questions and answer on specific project proposals in Rifle and Meeker, Colorado, respectively. The preliminary Environmental Assessment was posted for 30 day comment period beginning May 18, 2012 and ended June 16, 2012. A total of six comment letters were received from the following: Colorado Parks and Wildlife (CPW), Colorado Department of Public Health and Environment (CPDHE), Garfield County, Western Resources Advocates (WRA) (also represented Colorado Environmental Coalition, EcoFlight, National Wildlife Foundation, Natural Defense Council, Sierra Club, The Wilderness Society, Western Colorado Congress, and Wilderness Workshop), one individual and the National Oil Shale Association. Also consulted was the Colorado State Historic Preservation Officer.

INTERDISCIPLINARY REVIEW:

The Proposed Action was presented to, and reviewed by, the White River Field Office interdisciplinary team on 11/19/2013. A complete list of resource specialists who participated in this review is available upon request from the White River Field Office. The table below lists resource specialists who provided additional remarks concerning cultural resources and special status species.

| Name | Title | Resource | Date |
|------------------|---------------------------------------|--|-------------|
| Kristin Bowen | Archaeologist | Cultural Resources, Native American Religious Concerns | 11/19/2013 |
| Ed Hollowed | Wildlife Biologist | Special Status Wildlife Species | 2/4/2014 |
| Heather Woodruff | Range Management Specialist/Ecologist | Special Status Plant Species | 11/22/2013 |

REMARKS:

Cultural Resources: The analysis done for the DOI-BLM-CO-110-2011-0177-EA remains accurate. The Proposed Action will have no effect to any known sites that are potentially eligible to the National Register of Historic Places.

Native American Religious Concerns: The analysis done for the DOI-BLM-CO-110-2011-0177-EA remains accurate. Native American tribes were notified of this project on October 14, 2011. The Eastern Shoshone Tribe was consulted with and they had no concerns as long as cultural sites were being avoided. No other replies were received.

Threatened and Endangered Wildlife Species: Affected wildlife resources and wildlife influences attributable to development of this RD&D are the same as those addressed in DOI-BLM-CO-110-2011-0177-EA. Operations proposed under the Appraisal Phase remain consistent with those presented in the original EA and are subject to the mitigation measures developed in that document (see below). As established in this project's Section 7 consultation (May 31, 2012), BLM WRFO must provide the BLM Colorado State Office the total annual volume (i.e., acre-feet) of water used over the course of lease development.

Threatened and Endangered Plant Species: There were no special status plant concerns in the original EA (DOI-BLM-CO-110-2011-0177-EA) and the same analysis is sufficient for this Action. Therefore, there are no SSP species concerns associated with the Proposed Action.

MITIGATION:

The following applicable mitigation measures from DOI-BLM-CO-110-2011-0177-EA have been carried forward:

Geology and Minerals

1. To limit interference with the use of Williams' existing well pad RGU 31-34-198, XOM shall contact Williams prior to commencement of construction activities associated with the RD&D lease tract.
2. All sodium minerals recovered during operations remain the property of the federal government and shall not be disposed of without prior approval from the Authorized Officer.

Surface and Ground Water

3. A copy of the SPCC Plan created for surface facilities will be provided to the BLM. Substances that pose a risk of harm to human health or the environment shall be stored in appropriate containers.
4. Prior to conducting any hydraulic fracturing operation, the operator will obtain approval of the Authorized Officer. That approval will require, at minimum, evidence acceptable to the Authorized Officer that the wellbore casing and cement will withstand the hydraulic fracturing pressures and will not allow any fluids or gases to contact useable water aquifers.
5. Develop a remediation plan in conjunction with BLM and other regulatory agencies, as appropriate to remediate any groundwater contamination resulting from RD&D activities.

Invasive, Non-Native Species

6. Conduct pre-construction field surveys prior to construction to identify existing noxious weed infestations within the lease tracts.

Special Status Animal Species

7. Construction or forest clearing activity is prohibited between February 1 and August 15, inclusive, unless a survey indicates that no functional raptor nest sites would be impacted by these activities. No surface occupancy will be allowed within ¼ mile of a goshawk nest (NSO-02 exception and modification criteria apply) or within ⅛ mile of other raptor species nests (NSO-03 exception and modification criteria apply).

8. Raptor surveys consistent with the most-current WRFO raptor nest survey protocols will be conducted prior to construction periods during the nesting season. If an active nest is located appropriate WRFO timing stipulations will be applied. A ½-mile timing limitation buffer will be applied to active goshawk nests [TL-01 exception and modification criteria apply] and a ¼-mile timing limitation buffer will be applied to other active raptor nests [TL-04 exception and modification criteria apply].
9. Construction or forest clearing activity is prohibited between February 1 and August 15, inclusive, (TL-01 and TL-04 exception and modification criteria apply) in the following area:

Township 1 South, Range 98 West
Section 34: S1/2 Lot 1, E1/2 Lot 7, Lot 8

Migratory Birds

10. For all non-raptor migratory birds, ground or vegetation disturbing activity will be avoided to the extent possible during the nesting season (May 15 – July 15).
11. To prevent raptor electrocutions when constructing powerlines, provide adequate clearances to accommodate a large bird between energized and/or grounded parts. It is recommended to use 60 inches of horizontal separation and 48 inches of vertical separation. If adequate clearances cannot be accomplished, covering or insulating phases or grounds is recommended. In addition, perch inhibitors may be used where clearances or cover cannot be used.

Vegetation

12. Seed disturbed areas with the following recommended native seed mix as discussed in the Reclamation Plan of the approved POD:

| Seed Mix | Cultivar | Common Name | Scientific Name | Application Rate (lbs PLS/acre) | |
|----------|----------------------------------|--------------------------|--|---|---|
| 3 | Rosana | Western Wheatgrass | <i>Pascopyrum smithii</i> | 4 | |
| | Whitmar | Bluebunch Wheatgrass | <i>Pseudoroegneria spicata</i> ssp. <i>inermis</i> | 3.5 | |
| | Rimrock | Indian Ricegrass | <i>Achnatherum hymenoides</i> | 3 | |
| | | Needle and Thread Grass | <i>Hesperostipa comata</i> ssp. <i>comata</i> | 2.5 | |
| | Toe Jam Creek | Bottlebrush Squirreltail | <i>Elymus elymoides</i> | 1 | |
| | Maple Grove | Lewis Flax | <i>Linum lewisii</i> | 1 | |
| | | Scarlet Globemallow | <i>Sphaeralcea coccinea</i> | 0.5 | |
| | Alternates:⁽¹⁾ | | | | |
| | | Critana | Thickspike Wheatgrass | <i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i> | 3 |
| | | Sulphur Flower Buckwheat | <i>Eriogonum umbellatum</i> | 1.5 | |

Terrestrial Wildlife

13. Provide all drivers with information and possible training describing the types of wildlife species in the area that are susceptible to vehicular collisions to reduce the potential for vehicle/big-game or vehicle/raptor collisions. Identify seasonal periods where reduced vehicle speeds would be implemented as a means to reduce potential for vehicle/wildlife collisions.

14. The operator shall prevent migratory bird access to facilities that store or are expected to store fluids which may pose a risk to such birds (e.g., drowning, toxicity, compromised insulation). Features that prevent access to such fluids must be in place and functional at all times until such facilities are removed or incapable of storing fluids. All lethal and non-lethal events that involve migratory birds inadvertently gaining access to fluids will be reported to the USFWS Special Agent in Grand Junction, Colorado (970-257-0795).
15. Vegetation clearing and high intensity construction operations are not allowed on big game severe winter ranges from January 1 to April 30, inclusive, on the lease tract. Exceptions and modifications may be granted by the WRFO Field Office Manager consistent with those provisions provided for in the 1997 White River RMP (TL-08 exception and modification criteria).

Cultural Resources

16. The operator/holder is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
17. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. The operator/holder will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The operator/holder, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
18. Pursuant to 43 CFR 10.4(g), the operator/holder must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the operator/holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

Paleontological Resources

19. A paleontological monitor will be present prior to and during any excavation into bedrock of the Uinta Formation, at the direction of the BLM.
20. The lessee and the operator are jointly responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
21. If any paleontological resources are discovered as a result of operations under this authorization, the lessee, operator, or any of their agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect

or remove the resource within 10 working days. Within 10 working days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

Visual Resources

22. All above ground facilities will be painted Juniper Green from the BLM Standard Environmental Color Chart CC-001: June 2008 to blend with the surrounding landscape.

Fire Management

23. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.

Realty Authorizations

24. If installation of linear facilities results in crossing existing federal rights-of-way (ROWs), the applicant will coordinate activities with the ROW holder(s).
25. ROW application(s) will be submitted for any off-lease facilities and/or access roads.

COMPLIANCE PLAN: On-going compliance inspections and monitoring will be conducted by the BLM White River Field Office staff during and after construction. Design features in the XOM's approved Plan of Development, special stipulation in the lease terms of RD&D COC74300, and above the mitigation in this document will be followed. The operator will be notified of compliance related issues in writing, and depending on the nature of the issue(s), will be provided a time limit to resolve such issues.

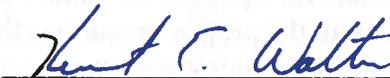
NAME OF PREPARER: Paul Daggett

NAME OF ENVIRONMENTAL COORDINATOR: Heather Sauls

CONCLUSION

Based on the review documented above, I conclude that this proposal conforms to applicable land use plan and that the NEPA documentation fully covers the Proposed Action and constitutes BLM's compliance with the requirements of the NEPA.

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

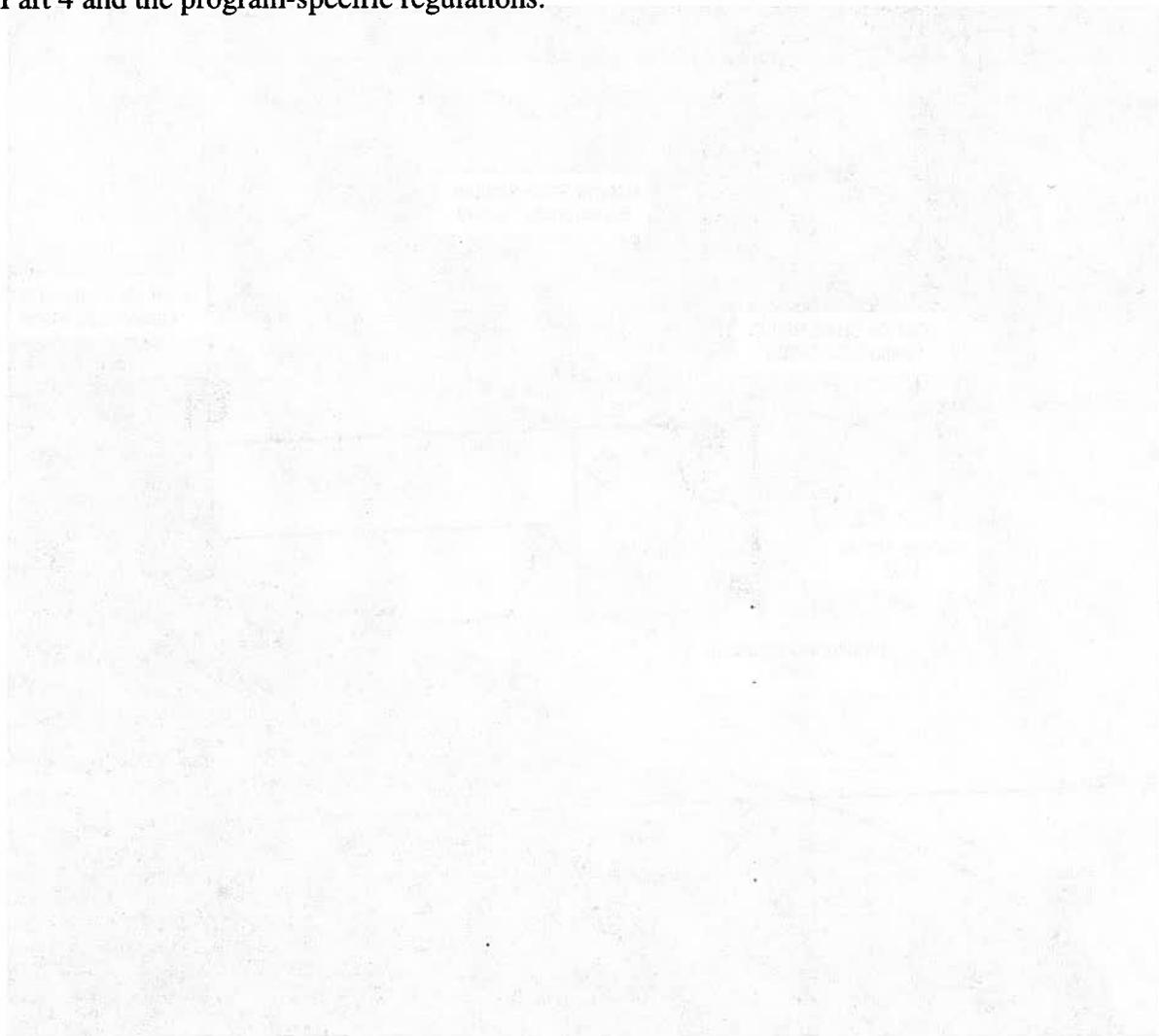
DATE SIGNED:

02/26/2014

ATTACHMENTS:

- Figure 1: Topographic Map
Figure 2: Aerial Photo Map
Appendix A: Applicant Committed Designed Features

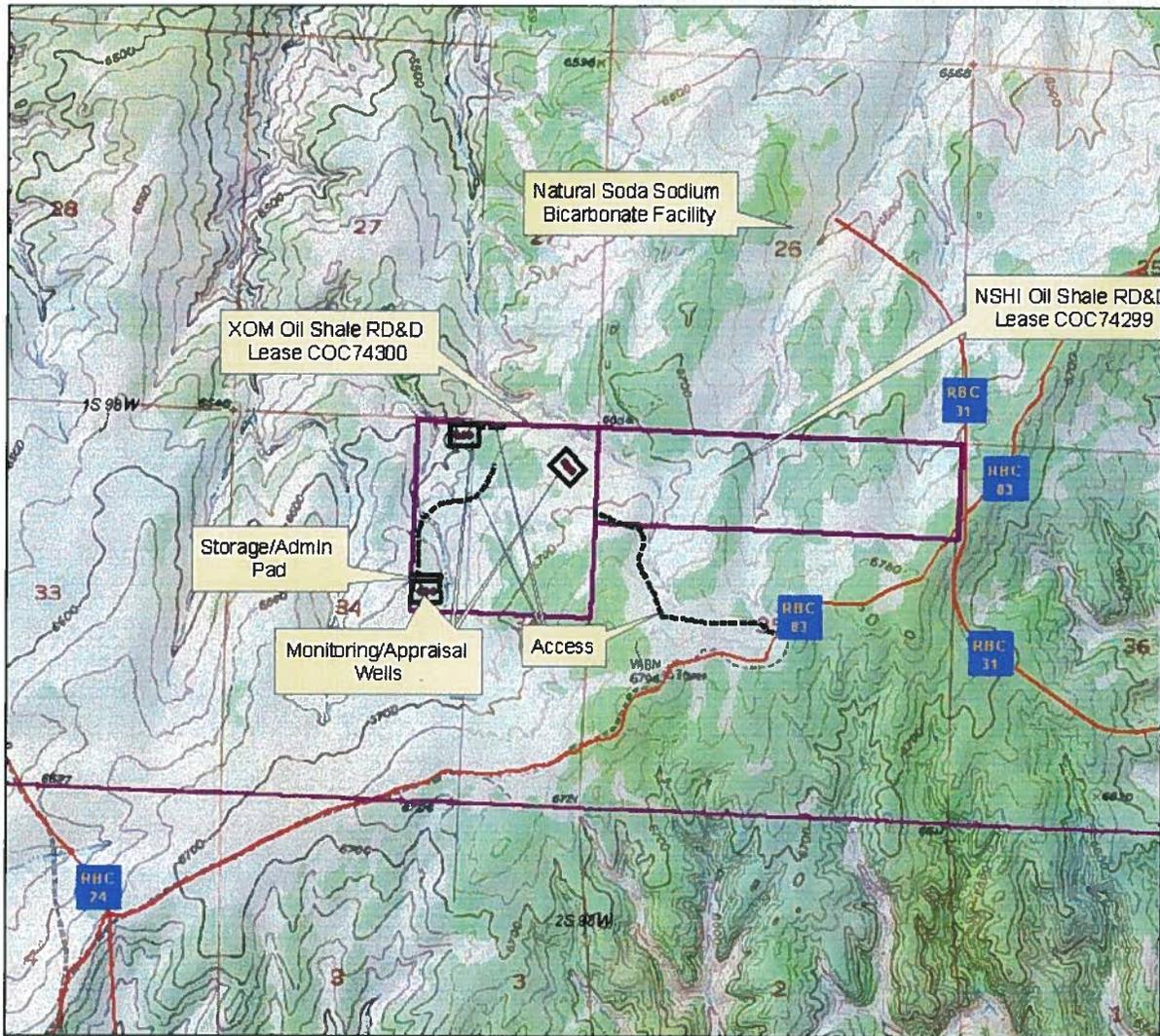
Note: The signed Conclusion in this DNA Worksheet is part of an interim step in the BLM's internal decision process and does not constitute an appealable decision. However, the lease, permit, or other authorization based on this DNA is subject to protest or appeal under 43 CFR Part 4 and the program-specific regulations.



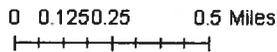
FOR THE DIRECTOR OF THE BUREAU OF LAND MANAGEMENT

Figure 1

DOI-BLM-CO-110-2013-0125-DNA
ExxonMobil's Oil Shale RD&D Plan of Development (POD) COC74300



T.1 S.N., R. 98 W. 6th P.M.
 Section 34



Sources:
 BLM, USGS, CDOW, etc.

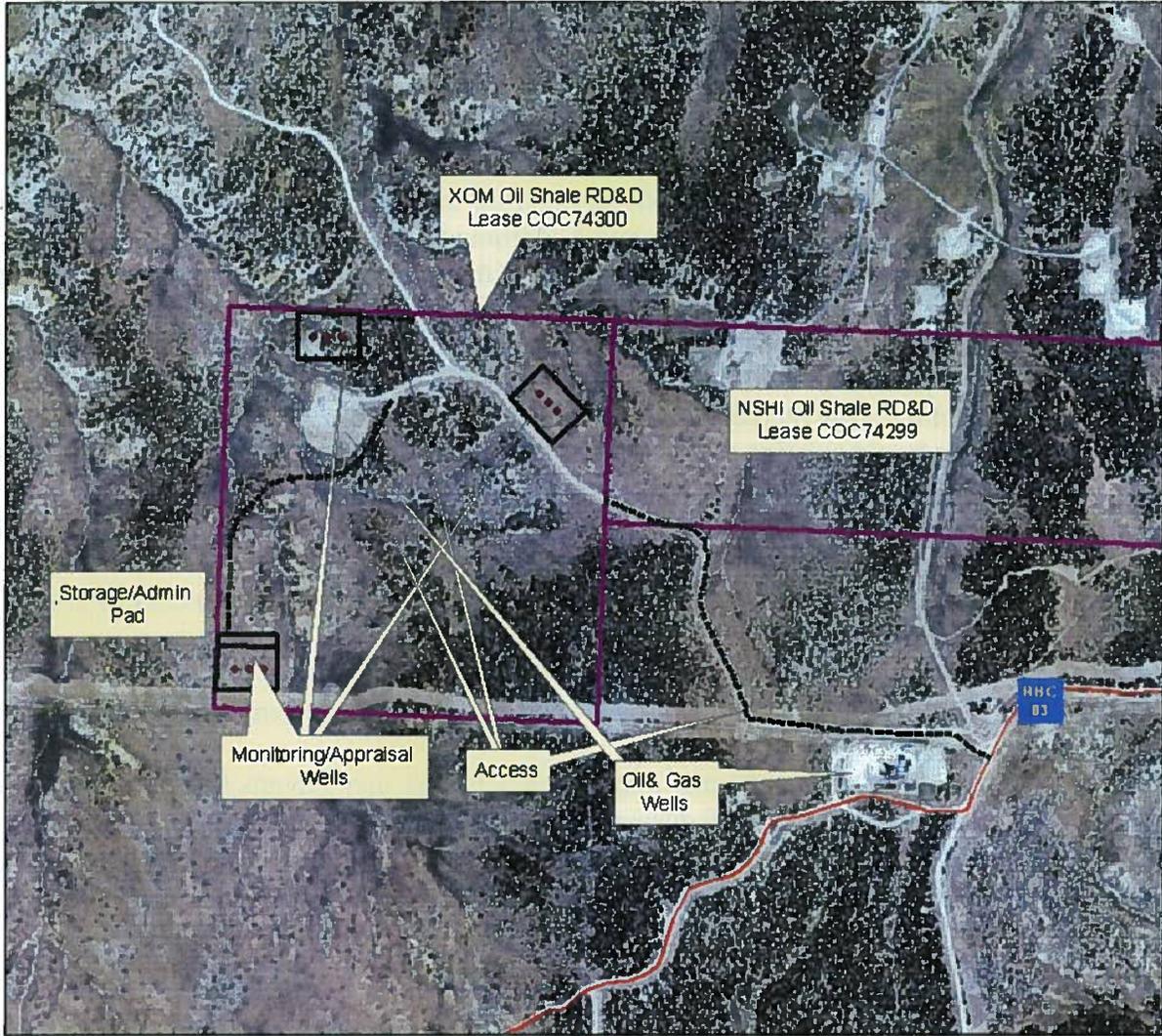
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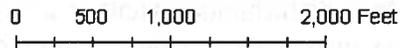


Figure 2

**DOI-BLM-CO-110-2013-0125-DNA
ExxonMobil's Oil Shale RD&D Plan of Development (POD) COC74300**



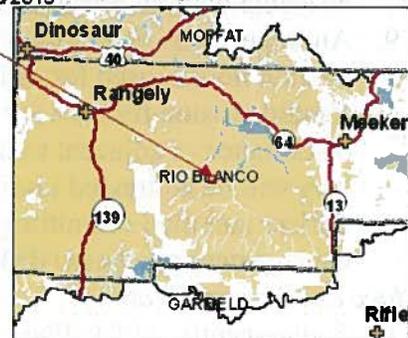
T.1 S.N., R. 98 W. 6th P.M.
Section 34



Sources:
BLM, UCGS, CDOW, etc.

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Appendix A: Applicant Committed Design Features

XOM will apply the following mitigation measures as part of implementing their Proposed Action:

Air Quality and Climate

1. Employ dust suppression techniques (i.e., freshwater use) whenever there is a visible dust trail behind service vehicles. Any technique other than the use of freshwater as a dust suppressant on BLM lands will require prior written approval from BLM.
2. Maintaining appropriate speed limits to help reduce dust emissions.
3. Onsite incineration will be performed to mitigate generation of CO and NO_x.

Soils

4. All new infrastructure and well pads on the lease tract will be located on old disturbance to the maximum extent possible to avoid additional disturbances in the project area.
5. Salvaged topsoil will be re-spread during interim reclamation on stable cut and fill slopes and other areas. Topsoil will not be stored in piles during the interim reclamation.
6. Excess salvaged topsoil will be placed in shallow stockpiles adjacent to construction zones and operational facilities to support and maintain those characteristics of topsoil that will aid in future reclamation and revegetation efforts.
7. All new roads and existing access roads will be constructed and maintained according to BLM Manual 9113 standards including the following:
 - locate culverts or drainage dips in such a manner to avoid discharge onto unstable terrain such as headwalls or slumps;
 - provide adequate spacing to avoid the accumulation of water in ditches or road surfaces;
 - install culverts with adequate armoring of inlet and outlet;
 - patrol areas susceptible to road or watershed damage during periods of high runoff; and
 - keep road inlet and outlet ditches, catch basins, and culverts free of obstructions, particularly before and during spring run-off.
 - Culverts and waterbars will be sized for the 10-year storm event with no static head, and to pass a 25-year event without failing. BMPs associated with stormwater management/erosion control will be applied to the site during construction and drilling/ completion operations. Wattles may be used for perimeter runoff control around the location and stockpiles
8. Gully crossings within both lease tracts will conform to BLM Manual 9113 standards and be stable without erosion for 10 year storm events and not fail with 25-year storm events.
9. An impervious liner with a thickness of at least 24 mils will be required for any pits that contain liquids used for drilling.
10. Should erosion features (i.e., riling, gullying, piping and mass wasting on the surface disturbance or adjacent to the surface disturbance) occur as a result of RD&D activity, they will be addressed immediately upon observation, by first contacting the Authorized Officer and then submitting a plan to assure successful soil stabilization with best management practices (BMPs) to address erosion problems.

Surface and Ground Water

11. A site-specific SPCC Plan will be created for surface facilities.

12. All waste materials generated during operations under this POD will be properly contained onsite. All liquid waste materials will be contained in lined containment pits with bird netting or above-ground storage tanks with proper secondary containment.
13. All water generated during operations will be contained onsite in aboveground storage tanks with lined secondary containment or lined containment pits.
14. A comprehensive Groundwater and Surface Water Monitoring Plan is included as part of the Plan of Development.

Vegetation

15. A Reclamation Plan is included as part of the Plan of Development in accordance with the RD&D lease form.
16. Cut trees with a chain saw and/or mechanical shears and cutting brush with a hydro-axe or similar equipment as close to the ground as possible (six inches or less).
17. Leave stumps and root balls in place except in areas requiring topsoiling, or as necessary to create a safe and level workspace.
18. Shred or chip brush and salvage with topsoil.
19. Salvage and replace topsoil to preserve and replace existing seed banks and return organic matter needed for seed establishment to the soil.
20. Preparing and regrading the disturbed land surface to a grade comparable to the pre-disturbed surface.
21. Restore pre-construction drainage patterns.
22. Prepare a seedbed (scarifying, tilling, harrowing, or roughening) prior to seeding where needed to improve revegetation potential.
23. Install and maintain erosion control measures until vegetation becomes established sufficiently to stabilize disturbed soils. All materials will be certified weed-free.
24. Seeding methods should be drill seeding to ensure proper seed placement (broadcast seeding will be used only in areas where steep slopes make drill seeding impossible, and seeding rates will be doubled). Recommend seeding between September 1 and March 15.
25. Complete drill and/or broadcast seeding prior to redistribution of woody material on reclaim area.

Invasive, Non-Native Species

26. A weed management plan is included in the Reclamation Plan to address treatment from pre-disturbance, the life of the project, and through final abandonment including a summary of methods used to monitor, treat, and report the presence of noxious or undesirable invasive weeds within the project area and surrounding area (i.e., within 200 feet of areas of direct use).
27. Revegetate disturbed areas with approved, weed free seed mixes. To reduce the need for repeated bare ground herbicide treatments around facilities, apply alternative methods such as gravel, weed barrier fabric, or low-growing, disturbance-tolerant herbaceous vegetation as approved by the BLM.
28. Require vehicles and equipment to arrive at the work site clean, power-washed, and free of soil and vegetative debris capable of transporting weed seeds or other propagules.

Special Status Animal Species

29. Unless an exception is approved by BLM, work performed under this POD will be implemented in accordance with the special status animal species restrictions and the measures to minimize impacts to migratory birds and terrestrial wildlife that is specified

in the Decision Record; including “No Surface Occupancy” within the southeastern quarter of the lease tract (Lot 8 of Section 34).

Wildlife

30. Prevent accidental entries or inability of exit of temporary open excavations by wildlife, stock, and public by covering, fencing, or sloping or flagging these areas.

Fire Management

31. Notify Craig Interagency Dispatch (970-826-5037) in the event of any wildland fire within or in the vicinity of the lease. The reporting party will inform the dispatch center of the location of the fire, size, status, smoke color, aspect, fuel type and contact information. The reporting party or a representative will remain nearby, unless otherwise directed, in order to make contact with incoming fire resources to expedite actions taken towards an appropriate management response.
32. The applicant and contractors will not engage in any fire suppression activities outside the approved project area. Accidental ignitions caused by welding, cutting, grinding, etc. will be suppressed by the applicant only if employee safety is not compromised and if the fire can be safely contained using hand tools and portable hand pumps. If chemical fire extinguishers are used, the applicant will notify incoming fire resources of the extinguisher type and the location of use.
33. Natural ignitions caused by lightning will be managed by federal fire personnel. If a natural ignition occurs within the approved project area, the fire may be initially contained by the applicant only if employee safety is not compromised. Moreover, removal of slash and woody debris associated with the Proposed Action shall follow mitigations as authorized.

Forest Management

34. All trees removed in the process of construction shall be purchased from the BLM. Prior to any surface disturbing activities, the operator must purchase and obtain a commercial vegetative materials removal permit from the WRFO-BLM. Once it is known where the infrastructure will be constructed, the amount of cords per acre to be removed must be determined and WRFO must be notified. This volume will be used to charge the applicant for the vegetative materials removed. Trees should first be used in reclamation efforts and then any excess material made available for firewood or other uses.
35. Woody material smaller than 4 inches in diameter will be chipped and stockpiled for later use in reclamation. Woods chips can be incorporated into the topsoil layer to add an organic component to the soil to aid in reclamation success.
36. Woody materials, not used for woods chips, required for reclamation shall be removed in whole with limbs intact and shall be stockpiled along the margins of the authorized use area separate from the topsoil piles. Once the disturbance has been recontoured and reseeded, stockpiled woody material shall be scattered across the reclaimed area where the material originated. Redistribution of woody debris will not exceed 20-30 percent ground cover. Limbed material shall be scattered across reclaimed areas in a manner that avoids the development of a mulch layer that suppresses growth or reproduction of desirable vegetation. Woody material will be distributed in such a way to avoid large concentrations of heavy fuels and to effectively deter vehicle use.
37. Trees that must be removed for construction and are not required for reclamation shall be cut down to a stump height of 6 inches or less prior to other heavy equipment operation. These trees shall be cut in four foot lengths (down to 4 inches diameter) and placed in

manageable stacks immediately adjacent to a public road to facilitate removal for company use or removal by the public.

Noise Abatement

- 38. The building may be tied-in with the local electrical grid during this phase, pending discussion with White River Electric Association (WREA). Otherwise, electricity will be supplied from portable generators equipped with appropriate noise and emission controls.
- 39. The drill rigs necessary for the appraisal phase will be equipped with the appropriate emission and noise mitigating equipment.

Best Management Practices

- 40. Minimize vegetation removal to the extent necessary to allow for safe and efficient construction activities.

**U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641**

DECISION RECORD

PROJECT NAME: ExxonMobil's Oil Shale RD&D Plan of Development (POD) COC74300

DETERMINATION OF NEPA ADEQUACY NUMBER: DOI-BLM-CO-110-2013-0125-DNA

DECISION

It is my decision to implement the Proposed Action, as mitigated in DOI-BLM-CO-110-2013-0125-DNA, authorizing the approval ExxonMobil's POD to allow for the construction, operation, and maintenance of the Appraisal Phase of an oil shale RD&D project on oil shale RD&D lease COC74300 and the issuance of associated ROW COC76434. The following applicable mitigation measures from DOI-BLM-CO-110-2011-0177-EA have been carried forward:

Mitigation Measures

Geology and Minerals

1. To limit interference with the use of Williams' existing well pad RGU 31-34-198, XOM shall contact Williams prior to commencement of construction activities associated with the RD&D lease tract.
2. All sodium minerals recovered during operations remain the property of the federal government and shall not be disposed of without prior approval from the Authorized Officer.

Surface and Ground Water

3. A copy of the SPCC Plan created for surface facilities will be provided to the BLM. Substances that pose a risk of harm to human health or the environment shall be stored in appropriate containers.
4. Prior to conducting any hydraulic fracturing operation, the operator will obtain approval of the Authorized Officer. That approval will require, at minimum, evidence acceptable to the Authorized Officer that the wellbore casing and cement will withstand the hydraulic fracturing pressures and will not allow any fluids or gases to contact useable water aquifers.
5. Develop a remediation plan in conjunction with BLM and other regulatory agencies, as appropriate to remediate any groundwater contamination resulting from RD&D activities.

Invasive, Non-Native Species

6. Conduct pre-construction field surveys prior to construction to identify existing noxious weed infestations within the lease tracts.

Special Status Animal Species

7. Construction or forest clearing activity is prohibited between February 1 and August 15, inclusive, unless a survey indicates that no functional raptor nest sites would be impacted

by these activities. No surface occupancy will be allowed within ¼ mile of a goshawk nest (NSO-02 exception and modification criteria apply) or within ⅛ mile of other raptor species nests (NSO-03 exception and modification criteria apply).

8. Raptor surveys consistent with the most-current WRFO raptor nest survey protocols will be conducted prior to construction periods during the nesting season. If an active nest is located appropriate WRFO timing stipulations will be applied. A ½-mile timing limitation buffer will be applied to active goshawk nests [TL-01 exception and modification criteria apply] and a ¼-mile timing limitation buffer will be applied to other active raptor nests [TL-04 exception and modification criteria apply].
9. Construction or forest clearing activity is prohibited between February 1 and August 15, inclusive, (TL-01 and TL-04 exception and modification criteria apply) in the following area:

Township 1 South, Range 98 West
Section 34: S1/2 Lot 1, E1/2 Lot 7, Lot 8

Migratory Birds

10. For all non-raptor migratory birds, ground or vegetation disturbing activity will be avoided to the extent possible during the nesting season (May 15 – July 15).
11. To prevent raptor electrocutions when constructing powerlines, provide adequate clearances to accommodate a large bird between energized and/or grounded parts. It is recommended to use 60 inches of horizontal separation and 48 inches of vertical separation. If adequate clearances cannot be accomplished, covering or insulating phases or grounds is recommended. In addition, perch inhibitors may be used where clearances or cover cannot be used.

Vegetation

12. Seed disturbed areas with the following recommended native seed mix as discussed in the Reclamation Plan of the approved POD:

| Seed Mix | Cultivar | Common Name | Scientific Name | Application Rate (lbs PLS/acre) | |
|----------|----------------------------------|-----------------------------|--|---------------------------------|--|
| 3 | Rosana | Western Wheatgrass | <i>Pascopyrum smithii</i> | 4 | |
| | Whitmar | Bluebunch Wheatgrass | <i>Pseudoroegneria spicata</i> ssp. <i>inermis</i> | 3.5 | |
| | Rimrock | Indian Ricegrass | <i>Achnatherum hymenoides</i> | 3 | |
| | | Needle and Thread Grass | <i>Hesperostipa comata</i> ssp. <i>comata</i> | 2.5 | |
| | Toe Jam Creek | Bottlebrush Squirreltail | <i>Elymus elymoides</i> | 1 | |
| | Maple Grove | Lewis Flax | <i>Linum lewisii</i> | 1 | |
| | | Scarlet Globemallow | <i>Sphaeralcea coccinea</i> | 0.5 | |
| | Alternates:⁽¹⁾ | | | | |
| | Critana | Thickspike Wheatgrass | <i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i> | 3 | |
| | Sulphur Flower Buckwheat | <i>Eriogonum umbellatum</i> | 1.5 | | |

Terrestrial Wildlife

13. Provide all drivers with information and possible training describing the types of wildlife species in the area that are susceptible to vehicular collisions to reduce the potential for vehicle/big-game or vehicle/raptor collisions. Identify seasonal periods where reduced

vehicle speeds would be implemented as a means to reduce potential for vehicle/wildlife collisions.

14. The operator shall prevent migratory bird access to facilities that store or are expected to store fluids which may pose a risk to such birds (e.g., drowning, toxicity, compromised insulation). Features that prevent access to such fluids must be in place and functional at all times until such facilities are removed or incapable of storing fluids. All lethal and non-lethal events that involve migratory birds inadvertently gaining access to fluids will be reported to the USFWS Special Agent in Grand Junction, Colorado (970-257-0795).
15. Vegetation clearing and high intensity construction operations are not allowed on big game severe winter ranges from January 1 to April 30, inclusive, on the lease tract. Exceptions and modifications may be granted by the WRFO Field Office Manager consistent with those provisions provided for in the 1997 White River RMP (TL-08 exception and modification criteria).

Cultural Resources

16. The operator/holder is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
17. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. The operator/holder will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The operator/holder, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
18. Pursuant to 43 CFR 10.4(g), the operator/holder must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the operator/holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

Paleontological Resources

19. A paleontological monitor will be present prior to and during any excavation into bedrock of the Uinta Formation, at the direction of the BLM.
20. The lessee and the operator are jointly responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
21. If any paleontological resources are discovered as a result of operations under this authorization, the lessee, operator, or any of their agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or

natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 working days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

Visual Resources

22. All above ground facilities will be painted Juniper Green from the BLM Standard Environmental Color Chart CC-001: June 2008 to blend with the surrounding landscape.

Fire Management

23. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.

Realty Authorizations

24. If installation of linear facilities results in crossing existing federal rights-of-way (ROWs), the applicant will coordinate activities with the ROW holder(s).
25. ROW application(s) will be submitted for any off-lease facilities and/or access roads.

COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN

This decision is in compliance with the Endangered Species Act, and the National Historic Preservation Act. It is also in conformance with the 1997 White River Record of Decision/Approved Resource Management Plan.

PUBLIC INVOLVEMENT

Scoping was the primary mechanism used by the BLM to initially identify issues. Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on November 19, 2013. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on December 22, 2013. No comments or inquiries were received regarding this project from the public as of February 20, 2014.

RATIONALE

The decision to authorize XOM's POD was made in consideration of the factors described above. The Proposed Action with mitigation represents an opportunity to develop domestic energy sources and to inform and advance knowledge of commercially viable production, development and recovery technologies of oil shale resources consistent with sound environmental management. It also will provide a basis for informed future decisions about whether and when to move forward with commercial scale development and allow for the assessments of its impacts on the environment.

Analysis of the Proposed Action with mitigation carried forward has concluded that there are no significant negative impacts and that it meets Colorado Standards for Public Land Health.

ADMINISTRATIVE REMEDIES

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 Code of Federal Regulation (CFR), Part 4.400 and Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from date of publication this decision. The appellant has the burden of showing that the Decision appealed from is in error. If you wish to file a petition for a stay of the effectiveness of this Decision during the time that your appeal is being reviewed by the Board, the petition for stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. A copy of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals (IBLA) and to the appropriate Office of the Solicitor (see 43 CFR4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for obtaining a stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied;
2. The likelihood of the appellant's success of the merits;
3. The likelihood of immediate and irreparable harm if the stay is not granted, and;
4. Whether the public interest favors granting the stay.

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

DATE SIGNED: 02/26/2014