



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE



TIERED EA, FONSI, AND DR FORM

Tiered to and Referencing the Atlantic Rim Natural Gas Development Project Environmental Impact Statement

ENVIRONMENTAL ASSESSMENT

EA NUMBER: WY-030-08-EA-241

Lease Numbers:

WYW-123998, 128664, 131778, 133656, 139142, 141278, 148482, 161909, and 163348

Proposed Action:

Sun Dog Unit F Plan of Development (POD), which includes: 13 Coal Bed Methane Natural Gas (CBNG) Wells and 1 Produced Water Injection (Re-Injection) Well on Federal Lands and Minerals Leases, and 2 CBNG Well Locations on Federal Land and State/Fee Leases, with Well Pads, Access Roads, Underground Pipeline/Utility Line Corridors, and associated infrastructure, all within the Unit and unit boundary.

Applicant/Proponent: Anadarko E & P Company, L.P.

BLM Rawlins Field Office (RFO) Interdisciplinary (Review) Team (IDT)

POD IDT Members	Title
Heath Cline	Wildlife Biologist
Shawn Anderson	Fisheries Biologist
Patrick Walker	Archaeologist
Dennis Schult	Hydrologist
Bruce Esvoldt	Civil Engineer
TJ Murry	Rangeland Management Specialist
Gary McDonald	Natural Resource Specialist

Prepared By:

Gary McDonald
Gary McDonald, Sun Dog Unit F POD IDT Lead

9-25-08
Date

Location of Wells and Proposed Action (BLM-administered public lands):

Sun Dog Unit POD "F"

	Name	Well	Number	Aliquot	Sec	T	R	Federal Lease#	Surface Ownership
1	AR Federal	1691	4-2	NWNW	02	16N	91W	131778	Federal
2	AR Federal	1691	6-2	SENW	02	16N	91W	123998	Federal
3	AR Federal	1691	12-2	NWSW	02	16N	91W	123998	Federal
4	AR Federal	1691	8-3	SENE	03	16N	91W	139142	Federal
5	AR Federal	1691	14-3	SESW	03	16N	91W	141278	Federal
6	AR Federal	1691	16-3	SESE	03	16N	91W	139142	Federal
7	AR Federal	1691	6-10	SENW	10	16N	91W	148482	Federal
8	AR Federal	1691	10-15	NWSE	15	16N	91W	139142	Federal
9	AR Federal	1691	14-15	SESW	15	16N	91W	128664	Federal
10	AR Federal	1691	16-15	SESE	15	16N	91W	139142	Federal
11	AR Federal	1691	2-22	NWNE	22	16N	91W	163348	Federal
12	AR Federal	1691	6-22	SENW	22	16N	91W	133656	Federal
13	AR Federal	1791	8-35	SENE	35	17N	91W	161909	Federal
14	AR State	1791	4-36	NWNW	36	17N	91W	State	Federal
15	AR State	1791	12-36	NWSW	36	17N	91W	State	Federal
16	AR Federal	1691	6-10i	SENW	10	16N	91W	148482	Federal

Conformance with Land Use Plan

This proposed action is in conformance with the Great Divide Resource Management Plan (RMP) that was approved on November 8, 1990. The RMP has been reviewed to determine if the proposed action conforms to the land use plan terms and conditions as required by 43 CFR 1610.5. Development of oil and gas reserves is in conformance with the RMP. On page 30, the RMP states "The entire planning area [Great Divide Resource Area] is open to oil and gas leasing".

The development of this project will not affect the achievement of the Wyoming Standards for Healthy Rangelands (August 1997).

Remarks:

The NOS or APD for the proposed action were posted for 30 days (beginning 02/27/2008) in the Rawlins Field Office Information Access Center (Public Room) for review. Notification of preparation of this EA was provided on the Wyoming BLM internet NEPA register (<http://www.wy.blm.gov/nepa/search>).

The Atlantic Rim Area Natural Gas Field Development Project Environmental Impact Statement (AREIS) was written to assess the potential foreseeable and cumulative effects of drilling operations and associated activities in the Project area. The Record of Decision (ROD) for this project was approved on March 23, 2007. The proposed action is in conformance with the AREIS.

The AREIS ROD provides for the drilling of natural gas wells and associated infrastructure, limiting total surface disturbance to 7,600 acres at any one time (not including surface disturbance that occurred prior to implementation of the Interim Drilling Policy). The ROD establishes a goal for per-well surface disturbance of 6.5 acres of short-term disturbance (less in "Category A" areas).

The surface disturbance cap is allocated to operators "...on a prorated mineral leasehold basis." (AR ROD, Page 2), and development is limited to no more than 8 well sites per 640-acre section. If in the event an Operator reaches the surface disturbance cap allocation, then "...further disturbance on federal minerals will not be permitted." (AR ROD, Page 3). The RFO will monitor and track disturbance areas for future proposals, in order to ascertain whether the disturbance cap would be exceeded by any future authorizations.

The APD's, Master Drilling Plan and Master Surface Use Plan with Water Management Plan and Conditions of Approval, contain a complete description of the proposed action. The Master Drilling and Surface Use Plans with associated documents and the Conditions of Approval are considered an integral part of this Environmental Assessment and are incorporated by reference.

Modifications, or alternatives, to the original proposal received from the operator were identified as the result of the pre-approval onsite inspections. At the on-sites, all areas of proposed surface disturbance were inspected to ensure that potential impacts to resources would be reduced. In some cases, access roads were re-routed, and well locations, pipelines, and other water management control structures were moved, modified, or dropped from further consideration to alleviate or reduce environmental impacts. In addition, site specific mitigation and/or Conditions of Approval have been applied to alleviate or reduce environmental effects of the operator's proposal. Onsite changes, implementation of committed mitigation measures contained in the Master Surface Use Plan, Drilling Program and Water Management Plan, and site specific and Standard COAs are incorporated and analyzed in the Proposed Action Alternative.

All POD F wells are located entirely within a Federal Oil and Gas Unit, the Sun Dog Unit, and as result no additional rights-of-way are required as part of the proposed action.

Purpose and Need for Proposed Action

Domestic natural gas production is an integral part of U.S. energy development and conservation plans due to its availability and the presence of existing market delivery infrastructure. Domestic production reduces immediate dependence upon foreign sources of energy, and maintains an adequate and stable supply of fuel to maintain economic well-being, industrial production, and national security. The environmental advantages of burning natural gas are emphasized in the Clean Air Act amendments of 1990.

In addition, the proposed action would allow Anadarko, as leaseholder, to exercise lease rights to explore and develop oil and gas resources within the project lease areas.

For these particular wells, the production is primarily natural gas and produced water from coal seams.

Development of Alternatives

In reviewing the proponent's submitted proposal (APDs, Master Surface Use Plan, Master Drilling Plan, Water Management Plan, etc.), the BLM conducted onsite reviews and considered known and potentially-occurring resources and conditions in the project area. As a result of this review, project components were moved, added, or eliminated in order to reduce potential environmental impacts, and in accordance with BLM policy and accepted Best Management Practices (BMPs). This resulted in the alteration of the proponent's submitted proposal to yield the Proposed Action, which incorporates the changes from the onsite inspections, BLM review, and mandated BLM mitigations (Conditions of Approval). The Proposed Action, then, differs from the original proposal submitted by the proponent. Since the proponent has agreed, by re-submission of the applications and POD plans, to the changes agreed upon as a result of the onsite inspections and BLM review, the Proposed Action represents a *de facto* alternative to the original submittal.

The EIS considered several alternatives to development of the oil & gas resources in the project area (see DEIS, Pages S2-S3 and FEIS Page 1-20).

The BLM interdisciplinary team, in review of this Proposed Action (as modified during onsite inspections and subsequent review), identified no unresolved resource conflicts that would necessitate development of additional alternatives.

Description of Proposed Action Alternative

The proposed action includes the construction and/or reconstruction of access roads and the construction of well pads for the purpose of drilling 15 CBNG wells and 1 (co-located) produced water re-injection well on 15 well locations on federal land.

In addition, the proposed action also includes the construction, operation and reclamation of associated underground gas gathering/sales pipelines, produced water-gathering pipelines and power-lines and utility corridors.

The majority of pipeline/utility corridors are located adjacent and parallel to the proposed or existing access roads and existing pipeline disturbances, except where not feasible and appropriate and surface disturbance would be increased. The maps and illustrations attached to the APDs and Master Surface Use Plan display the locations of the proposed wells, access roads, gas and water-gathering pipelines, power-line (electrical) and other utility (gas and water) corridors.

Any additional facilities later determined to be necessary would be proposed and applied for via a Sundry Notice.

Water for drilling each well would be obtained from existing wells completed in the coal seams of the Mesa Verde Group within the Sun Dog Unit. Water would be hauled by truck to each drill site over existing and proposed roads within the POD. Any changes in the water source or method of transportation would first require written approval by the BLM. To protect any shallow, fresh water aquifers or sources, drilling of surface casing for each well would use either air drilling techniques, or use non-produced (fresh) water from a State permitted local source.

Field Onsite inspections of the POD wells, well pads, access roads and pipeline/utility corridors were conducted on May 6, 7, and 8, 2008. Potential impacts to resources from the location of the well pads, access roads and corridors were reviewed and assessed. As a result, numerous pads, roads and corridors were relocated to reduce potential impacts to soils, vegetation, water, wildlife (including fisheries), cultural and recreational resources.

The location of the proposed development is approximately 22 miles north/northeast of Baggs, Wyoming, east of Highway 789. Access to the area will be from existing County Road 608 to the east off of Highway 789. Some existing roads will be reconstructed and new roads will be constructed to access well locations.

A discussion of the actions generally associated with drilling a well, including (1) a plan of operations, (2) construction of the access road and drilling pad, and (3) pipeline installation, can be located in the following portions of the AREIS or ROD:

- Chapter 2, Proposed Action and Alternatives (AREIS)
- Chapter 4, Analysis of Environmental Consequences (AREIS)
- Appendix A, Project Reclamation Plan (ROD)
- Appendix C, Operator-Committed Practices (ROD)

Mitigation and reclamation measures are described in Chapter 4 and Appendix B of the ROD (Project Performance-Based Monitoring and Best Management Practices). The following narratives summarize elements specific to the proposed action for this EA.

Construction

Well access roads, drill pads and pipeline/utility corridors must be constructed and or re-constructed in order to drill and complete operating and producing coal bed natural gas wells. This is considered a short-term disturbance. Upon completion of a well as a producer and placing into production (gas sales), portions of the well (drill) pad not needed for production operations will be reclaimed to a production pad. Upon the completion of installation of the pipelines/utilities the pipeline/utility corridors will be finally reclaimed. Upon the successful interim reclamation of the areas of the well pad and access/utility corridors not needed for production operations, the remaining surface disturbance is considered as long-term. The entire well pad, access road and pipeline/utility corridor will be totally reclaimed subsequent to well plugging and abandonment under final reclamation.

Surface disturbance estimates for POD F including the well pads and access road/utility/pipeline corridors and are presented in the Table below:

Sun Dog F		Short Term Disturbance Areas			
Well #	Well Pad Acres ¹	Road L. Feet	Corridor Acres ²	Road Acres ³	SUM Acres
4-2	2.2	2000	2.3	1.4	5.9
6-2	2.2	380	0.2	0.5	2.9
12-2	2.0	440	0.3	0.5	2.8
8-3	2.3	2820	1.9	3.3	7.5
14-3	2.3	393	0.3	0.5	3.1
16-3	2.0	80	0.1	0.1	2.2
6-10 & 10i	2.3	482	0.3	0.6	3.2
10-15	2.3	28	0.0	0.0	2.3
14-15	2.3	3117	2.2	3.6	8.1
16-15	2.3	830	0.6	1.0	3.9
2-22	2.3	2100	1.5	2.4	6.2
6-22	2.2	1100	1.0	1.3	4.5
8-35	2.2	1190	0.8	1.4	4.4
4-36	2.9	294	0.2	0.3	3.4
12-36	3.0	1201	0.8	1.4	5.2
Total	34.8	7890	12.5	18.3	65.6

1 Well pad surface disturbance areas are approximately 2.3 acres, including spoil piles and cut/fill slopes.

2 This assumes a corridor surface disturbance with widths equal to 30 feet.

3 This assumes new road surface disturbance with widths equal to 50 feet.

4 Injection well (i), co-located on the same pad with production well; no additional surface disturbance.

The proposed action will result in approximately 65.6 acres of short-term disturbance, comprised of new or reconstructed access roads and adjacent and parallel pipelines and utilities, as detailed above.

The average short-term per-well surface disturbance for POD F is 4.1 acres (4.4 acres per individual well pad and location). The average surface disturbance per well for POD F meets the disturbance goal provided in the AREIS ROD of 6.5 acres or less.

Access

The operator proposes to construct new or reconstruct existing access roads and two track roads to the proposed well locations. The new constructed or reconstructed roads will be constructed to meet BLM specifications for a "Resource Road", as specified in BLM Manual Section 9113. Proper drainage structures will be constructed/installed along the access roads. The width of the access road travel-way (travel surface) will be a minimum of 14 feet within an average right-of-way width of 40 to 50 feet. Unless prohibited by terrain and or excessive surface disturbance or other such circumstances the access road right-of-way will be combined with the 30 feet wide pipeline/utility right-of-way into a road/utility corridor that will be a total of 80 feet in width. In addition, some local connector or collector roads between multiple well locations will be constructed to a minimum 16-18 feet wide travel width within the 80 feet wide corridor.

The access roads including utility corridors would be reclaimed during production operations to the maintenance width of approximately 30 to 40 feet. Utility corridors upon completion of pipeline/power-line installation along with any unneeded access road would be re-contoured, ripped, seeded, and re-vegetated.

Well Sites

In order to drill and complete the wells an approximate 200 feet by 300 feet to 250 by 350 feet acre drill pad (2.0 to 3.2 acres with cut/fill slopes and soils stockpiles) will be constructed for each well location. Some well locations will also include an additional produced water injection well, identified by an "i" at the end of the well number.

In the event the wells become producers, cut and fill portions of the well site will be brought back to grade and reclaimed along with any other unneeded portions of the well site. Soil stockpiles will be re-spread or stabilized, and reseeded with native vegetation. The well pad will be reduced to less than one-half acre for the duration of production operations. Unless otherwise authorized and in conjunction with interim pad reclamation, the reserve pits will have been dried and backfilled within 180 days of well completion or plugging and abandonment. The entire well pad will be re-contoured, ripped, seeded, and re-vegetated during final reclamation upon final plugging and abandonment.

Pipeline/Utility Corridors

The produced water and gas sales and gathering pipelines and power-lines would be buried upon completion of construction and installation, and the surface disturbed areas reclaimed soon thereafter.

Upon well plugging and abandonment and or pipeline/power-line abandonment, the pipelines/power-lines would be properly abandoned in accordance with BLM procedures for abandonment and the right-of-ways and corridors adequately reclaimed.

Major crossings of drainages have been engineered to insure design/construction adequacy and erosion protection. All channel crossings will comply with current BLM policies and mitigation measures appropriate to the crossings (see "Hydraulic Considerations for Pipelines Crossing Stream Channels," BLM Technical Note 423, April 2007).

Produced Water Disposal

Produced water from the proposed wells would be gathered and transported via buried water pipelines to existing and proposed water re-injection wells within the POD and the Sun Dog Unit. Produced water collection, transport and disposal, is addressed in detail in the MSUP and appended Sun Dog Unit Water Management Plan (WMP).

The only method of produced water disposal considered and analyzed under the "proposed action" and this EA is subsurface re-injection using underground injection disposal wells permitted by the State of Wyoming and approved by BLM.

At new injection facilities, it is anticipated that subsurface water sumps will be constructed in lieu of above ground storage tanks. Any modifications to this proposal will be submitted via a Sundry Notice for review prior to approval.

Monitoring wells

As described and detailed in Appendix B of the Atlantic Rim ROD and the Sun Dog Water Management Plan, the Unit Operator shall be responsible for drilling, completing, and equipping one set of three shallow groundwater-monitoring wells completed in water-bearing sandstone units stratigraphically located above the principle producing coal beds in the upper Mesaverde Group prior to production of any of the wells in the two PODs.

No Action Alternative

NEPA regulations require that alternative analyses in NEPA documents "include the alternative of no action" (40 CFR 1502.14(d)). For this analysis, "no action" means that the BLM would reject the proponent's proposal and "the proposed activity would not take place."

Potential Environmental Affects of the "Proposed Action" Alternative

Environmental Element	Affected		Environmental Element	Affected	
	Yes	No		Yes	No
Air Quality	X		T / E Species		X
ACEC's		X	Wastes, Hazardous/Solid	X	
Cultural Resources	X		Water Quality		X
Prime/Unique Farmlands		X	Wetlands/Riparian Zones	X	
Floodplains		X	Wild and Scenic Rivers		X
Native Amer. Rel. Concerns		X	Wilderness		X
Environmental Justice		X	Invasive, Nonnative Species	X	

In addition to the elements referenced above, reviews of potential effects upon paleontological, visual and recreational, soil, vegetation, and wildlife resources were conducted.

The affected environment and analysis of environmental impacts are discussed in the AREIS to which this EA is tiered. Air quality impacts are also disclosed and analyzed in the AREIS. A map showing the known wildlife resources in the project vicinity is attached.

Halogeton and other invasive and/or noxious weeds are a significant concern for this project area. COAs have been added to control the spread, establishment, and plant community changes associated with weed infestation.

Cultural Resources:

A discussion of the affected environment for cultural resources, including the historic trails, can be found in the final AREIS at Section 3.11 Cultural and Historical Resources, page 3-122. A Class III cultural resource inventory was conducted for each component of the proposed project so that appropriate mitigation measures could be developed to reduce or eliminate adverse impacts to cultural as well as historic sites and resources.

Although the historic trail/road and ranch properties and the ACEC and associated avoidance (buffer) areas themselves were not directly affected or impacted; the proposed project is located within the two mile view-shed of the historic Rawlins to Baggs Wagon Road (48CR3648) and the proposed JO Ranch/Sand Hills ACEC. As a result, some of the project and components will be visible from contributing segments of the historic road and ranch and ACEC.

The proposed project has the potential to impact cultural resources as described in the final AREIS at Section 4.11 Cultural Resources, page 4-116. Impacts to archaeological resources identified during the Class III cultural resource inventory will be avoided where possible and or mitigated as described in the final AREIS at Appendix I Cultural Resources Management, page I-8. Site-specific stipulations in the form of COA attached to the APD (e.g. archaeological monitoring, construction barrier fencing, etc.) are applied for specific locations, as necessary.

Since the project is located within two miles and the view-shed of the historic Rawlins to Baggs Wagon Road and proposed JO Ranch/Sand Hills ACEC, and some project components will be visible from contributing segments of the historic trail/road and ranch; certain measures were taken at the field onsite inspections to relocate well pads, roads and utility corridors to less visible areas where possible and practical (refer to the added mitigation table in the following Visual Resource section).

Because adverse affects to the historic trails and roads were identified in the AREIS, a Programmatic Agreement (PA) was executed between the BLM, SHPO, ACHP, proponents, and other interested parties to develop the necessary mitigation to minimize impacts to the setting of the historic trails and roads. As a result additional general or project and more site specific mitigation measures were developed, and restrictions or stipulations in the form of COA have been developed and are added to the MSUP APD authorizations as appropriate.

Those stipulations are summarized below:

For all wells and associated infrastructure in POD F with the exception of those as noted below:

1. Standard Cultural Stipulation
2. An archaeologist with a current BLM permit will monitor construction of the well location and access road due to culturally sensitive soils in accordance with the approved Discovery Plan.
3. An archaeologist with a current BLM permit will inspect any open pipeline trench due to culturally sensitive soils in accordance with the approved Discovery Plan.
4. The Operator shall select and use a seed mix most applicable to each disturbed location, with the goal of restoring individual disturbed sites to closely resemble the pre-disturbance native plant communities, as provided in Appendix A of the ROD, "Project Reclamation Plan."
5. The access road will be surfaced with material compatible in color with the local environment.
6. Unless otherwise authorized, the pipelines/utilities will be plowed or ripped into the un-bladed surface (using technology that does not require trenching). If such techniques are infeasible due to terrain or geology, the surface will be brush-hogged and the utilities will be placed no farther than the outside edge of the ditch slope.

POD F wells: 6-2, 12-2, 8-3, 16-3 2-22, 6-22, 8-35, and 4-36

7. No blading will be allowed outside the staked well location for placement or removal of the topsoil stockpile.

POD F wells: 16-3, 4-36

8. No archaeologist monitor per 2 and 3 above.

Wildlife Resources:

Portions of the proposed actions (wells, pads, access roads and pipeline/power-line right-of ways/corridors) are located within the two mile (protective buffer) of sage grouse leks, within one mile (protective buffer) of nesting raptors (ferruginous hawks) and within crucial winter range for mule deer. Numerous well locations, roads and corridors were relocated outside these areas or buffer zones where practical, and several were relocated on the outside or edge of "Controlled Surface Use" (CSU) areas or zones for these wildlife resources. The CSU is a one-quarter mile radius from the lek perimeter for sage-grouse and one-quarter mile from the nest for ferruginous hawks. As a result of the above, seasonal restrictions or stipulations in the form of COAs were added to the MSUP APD authorizations as appropriate. Those stipulations are summarized below:

Sun Dog Unit POD "F" Wildlife Stipulations

Well Name	Raptor ⁵	Sage-Grouse ⁶	Wintering Wildlife ⁷
4-2	No	Yes	No
6-2	No	Yes	No
12-2	No	Yes	No
8-3	No	Yes	No
14-3	No	Yes	No
16-3	No	Yes	No
6-10	No	Yes	No
6-10i	No	Yes	No
10-15	Yes	Yes	Yes
14-15	Yes	Yes	Yes
16-15	Yes	Yes	Yes
2-22	Yes	Yes	No
6-22	Yes	Yes	No
8-35	No	Yes	No
4-36	No	Yes	No
12-36	No	Yes	No

5 Raptor Stipulations: Construction, drilling and other activities potentially disruptive to nesting raptors are prohibited during the period of February 1 to July 31 for the protection of raptor nesting areas.

6 Grouse Stipulations: Construction, drilling, reclamation and other potentially disruptive activities are prohibited during the period of March 1 to July 15 for the protection of sage grouse.

7 Wintering Wildlife: Construction, drilling and other activities potentially disruptive to wintering wildlife are prohibited during the period of Nov 15 to Apr 30 for the protection of big game winter habitat.

BLM considered recent local mule deer movement data (including *Sawyer 2006 Progress Report for the Atlantic Rim Mule Deer Study*; *Sawyer 2007 "Final Report for the Atlantic Rim Mule Deer Study"*; and *Sawyer and Kauffman 2008 "Identifying Mule Deer Migration Routes in the Atlantic Rim Project Area"*) during wildlife review of this project. An interagency working group initiated by the adaptive management direction in the Atlantic Rim ROD is evaluating activities and infrastructure in areas identified as mule deer migration habitat. The objective is to use the studies and ongoing monitoring to determine whether, where and how development places attainment of the performance goal for migration habitats at risk, and if so, how to mitigate those risks. The working group has not yet identified any impacts to migrating deer from current POD development. As a result, the review team has not yet approved additional preventative stipulations or other mitigation measures for migration habitats potentially affected by this project.

Exceptions to Stipulations: In some instances, the operator may request consideration of a temporary exception to wildlife seasonal restrictions or stipulations. Such exceptions may be granted on a limited individual case by case basis if a determination is made by a BLM wildlife biologist that the wildlife resource will not be adversely impacted. Such case-by-case consideration of exceptions to seasonal restrictions is in compliance with the decisions and analysis to which this EA is tiered, as presented in the following paragraph.

As provided on page 1-9 of the Atlantic Rim FEIS (The BLM's Great Divide RMP and its Record of Decision (ROD) (USDI-BLM 1990) directs management of the federal lands within the project area). The RMP provides direction applicable to BLM consideration of requests for exceptions to seasonal wildlife restrictions: "...Exception, waiver, or modification of this [wildlife] limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer"... (Pages 48-49, Appendix I, Great Divide Resource Area Record of Decision and Approved Resource Management Plan).

The fisheries biologist attended onsite inspections and considered potential impacts to Muddy Creek's 6840 BLM Sensitive fish species and determined that no additional mitigation or monitoring requirements for the proposed action were necessary other than the standard requirements for erosion and sedimentation protection and reclamation.

Other site-specific findings by the interdisciplinary review team are provided in the review documents that accompany the POD MSUP and well APD and this EA in the BLM RFO lease/well and POD/Unit files.

Description of Impacts:

A discussion of the actions generally associated with drilling projects and their associated impacts may be found in the Atlantic Rim Environmental Impact Statement and Record of Decision.

Hazardous Materials

Anadarko has indicated that some hazardous materials could be used during drilling, completion, and production of their proposed wells. The term "hazardous material" as used here means: 1) any substance, pollutant, or contaminant (regardless of quantity) listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA, 2) any hazardous waste as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, and 3) any

nuclear or nuclear byproduct as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq.

It is possible that wastes created or transported during implementation of the proposed action (i.e., waste motor oils, drilling/completion additives) could be accidentally released to the environment. The operator will be required to comply with the Hazardous Materials Management Plan provided in Appendix C of the AREIS. Numerous State and Federal rules and regulations also apply that govern the handling, storage, and disposal of hazardous substances.

Anadarko or any contracted company working for Anadarko will have Material Data Safety Sheets available for all chemicals, compounds, or substances which are used during the course of construction, drilling, completion, and production operations for this project. Additionally, all chemicals will be handled in an appropriate manner to minimize the potential for leaks or spills to the environment.

Impacts to soils, surface and groundwater resources, wildlife, vegetation, and human health could result from the accidental exposure of hazardous materials. However, since the project operations will strictly comply with all applicable federal and state laws concerning hazardous materials, the Hazardous Materials Management Plan for this project, and the operator's Spill Prevention Control and Countermeasure Plan, no significant impacts are anticipated.

Reclamation

Interim reclamation is typically initiated and completed within 6 months of drilling completion. The drill pads will be reduced to a less than one-half acre production well site at each location. Total reclamation of all new disturbances will take place as the wells and facilities are no longer productive or needed and are plugged and abandoned. Appendix A of the ROD contains the reclamation success criteria by which the reclamation status will be judged. The approved Master Surface Use Plan and Conditions of Approval also contain reclamation measures pertaining to reclamation standards.

Description of Mitigation Measures and Residual Impacts:

Mitigation of potential effects is part of the proposed action, and specific mitigation details can be found in the Master Plan Elements including the Conditions of Approval. Residual impacts resulting from the proposed action would include permanent loss of oil and/or gas reserves should the wells become productive. In addition, the well pads, production equipment, and the access roads could remain in place for 30 years or more (until plugging and abandonment, final reclamation).

Potential Environmental Impacts- No Action Alternative

Under the No-Action Alternative, the proposed action would not be authorized. The 14 wells would not be constructed or drilled, and gas production from the proponent's lease would not occur. Existing development would continue to occupy the project area, along with impacts associated from the existing development and development on nearby private (fee) and or state leases.

Residual Impacts/Cumulative Impacts:

The potential residual and cumulative impacts are discussed in the AREIS, Chapter 5, and Cumulative Impacts Analysis. The proposed action entails the addition of 15 CBNG wells, 1 produced water re-injection well, and appurtenant facilities.

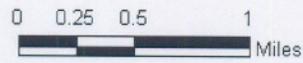
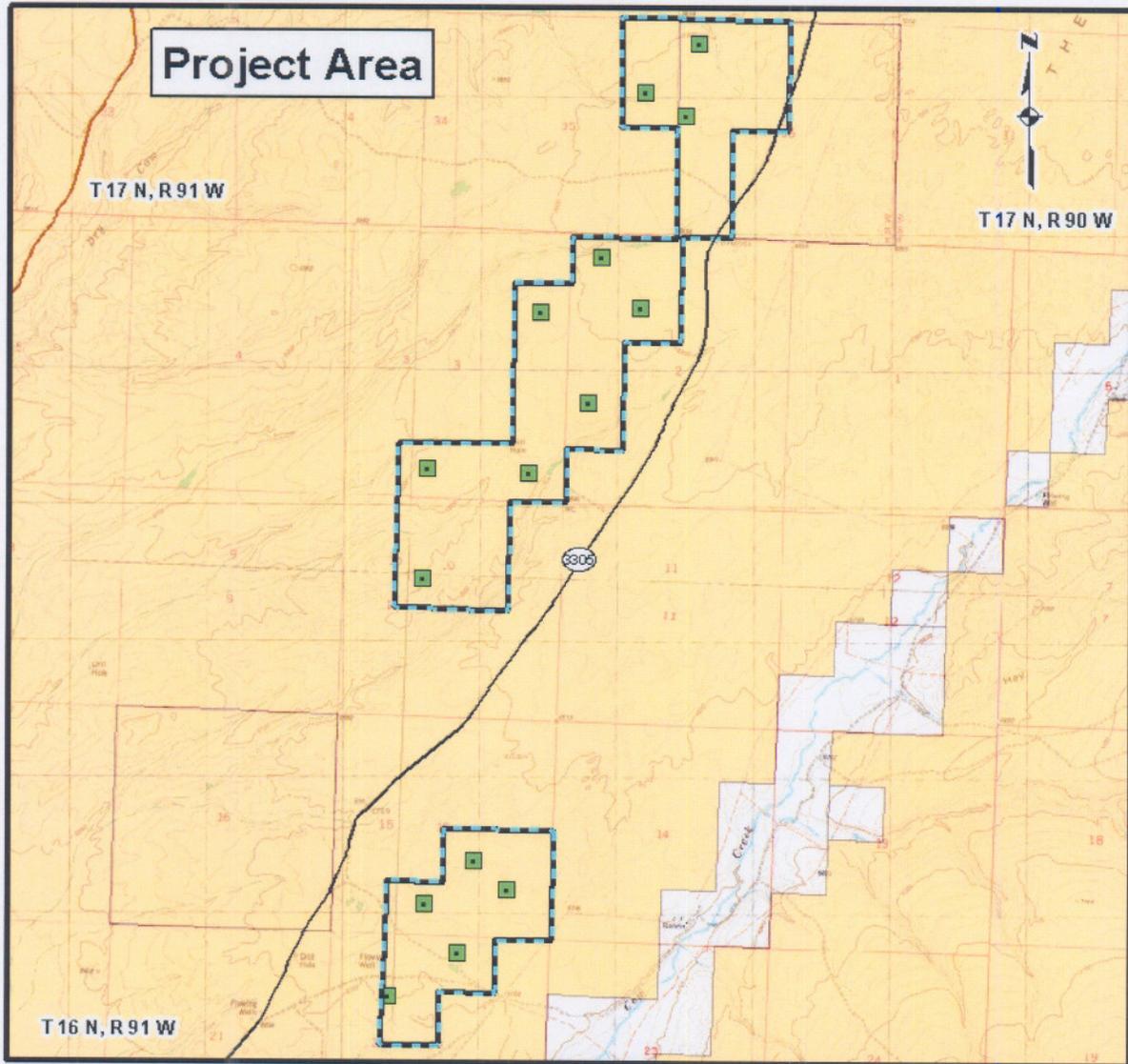
Standard mitigation guidelines are addressed in the ROD's Appendix A, Project Reclamation Plan. Additional mitigation measures are also provided in Appendix B, Performance-Based Monitoring and Best Management Practices, and Appendix C, Operator-Committed Practices. All needed mitigation, for that portion of the proposed action on public land, is part of the proposed action.

The access roads and well/production pads may remain visible for a period of approximately 20 to 30 years after they are abandoned and reclaimed. The oil and gas resource will be permanently lost. All needed mitigation is part of the proposed action.

Additional mitigation measures are addressed in the AREIS, under; Appendix A: Reclamation Plan; Appendix C Hazardous Materials, and; Appendix D Wildlife Protection Plan. All recommended mitigation for that portion of the proposed action on public land, is part of the proposed action and plan of operation found in the well POD MSUP with COA and APD.

Persons/Agencies Contacted and or Consulted:

Paul Avant	Regulatory Analyst	Anadarko E&P Company
Gary Sundberg	Permitting Consultant	Anadarko E&P Company
Dennis Schult	Hydrologist	BLM, Rawlins Field Office
Heath Cline	Wildlife Biologist	BLM, Rawlins Field Office
Bruce Esvoldt	Civil Engineer	BLM, Rawlins Field Office
Patrick Walker	Archaeologist	BLM, Rawlins Field Office
Neal Ruebush	Realty Specialist	BLM, Rawlins Field Office
TJ Murry	Rangeland Specialist	BLM, Rawlins Field Office
Mark Newman	Geologist	BLM, Rawlins Field Office
Jerry Dickinson	Petroleum Engineer	BLM, Rawlins Field Office
Shawn Anderson	Fisheries Biologist	BLM, Rawlins Field Office
Brian Smith	Recreation Planner	BLM, Rawlins Field Office
Skip Stonesifer	Reclamation Specialist	BLM, Rawlins Field Office



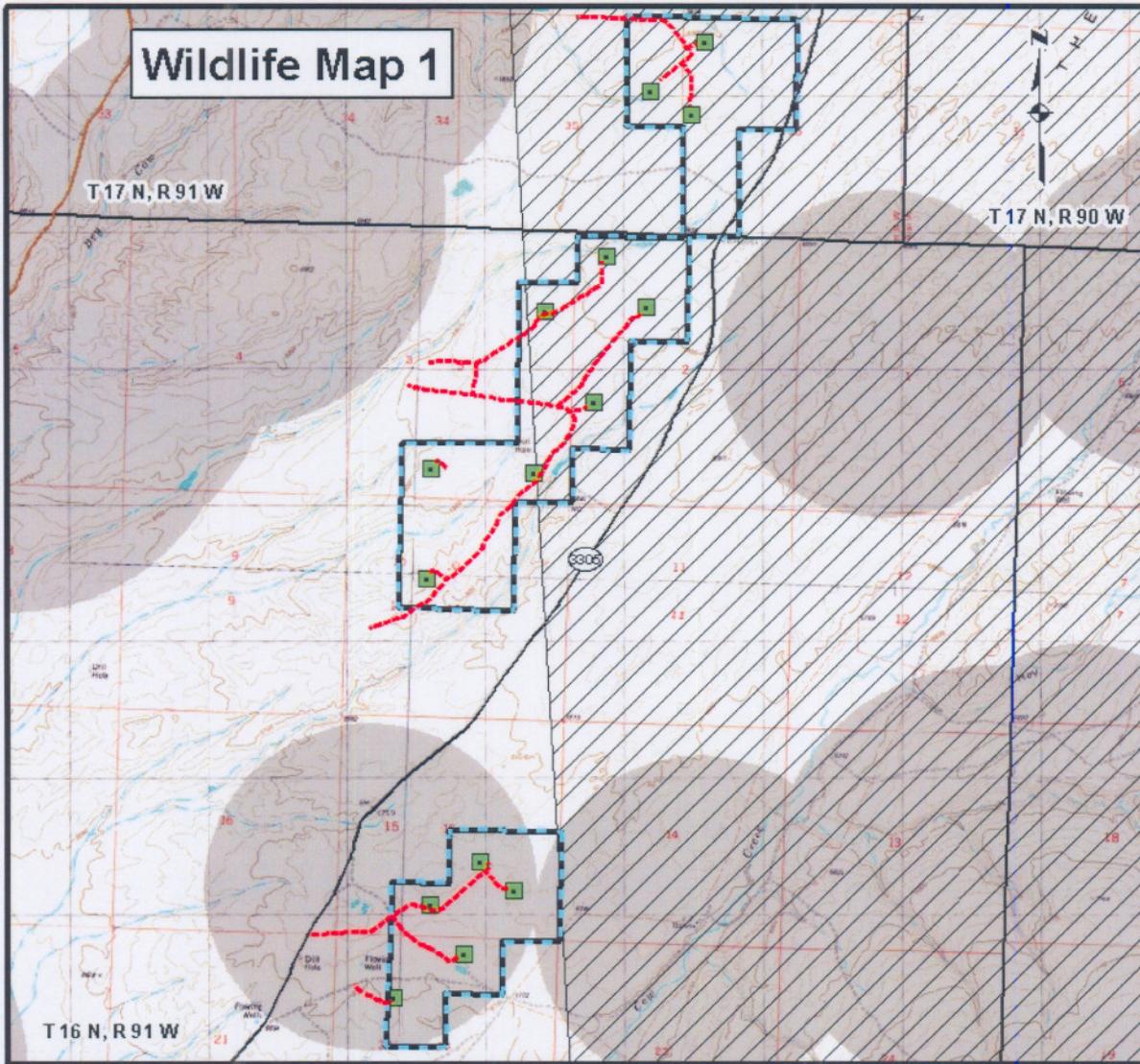
1:40,000

No warranty is made by the Bureau of Land Management as to the accuracy, completeness, or reliability of the information presented.

Drafted: 8/20/2008

Legend

- Sun_Dog_F_wells
- Pod_Name**
- Sun Dog F
- Surface Ownership**
- SURFACE**
- Bureau of Land Management
- Private
- State



Note: The entire project area is subject to Greater Sage-grouse Timing Stipulations (Mar. 1 - July 15).



1:40,000

No warranty is made by the Bureau of Land Management as to the accuracy, completeness, or reliability of the information presented.

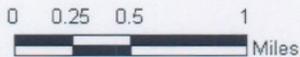
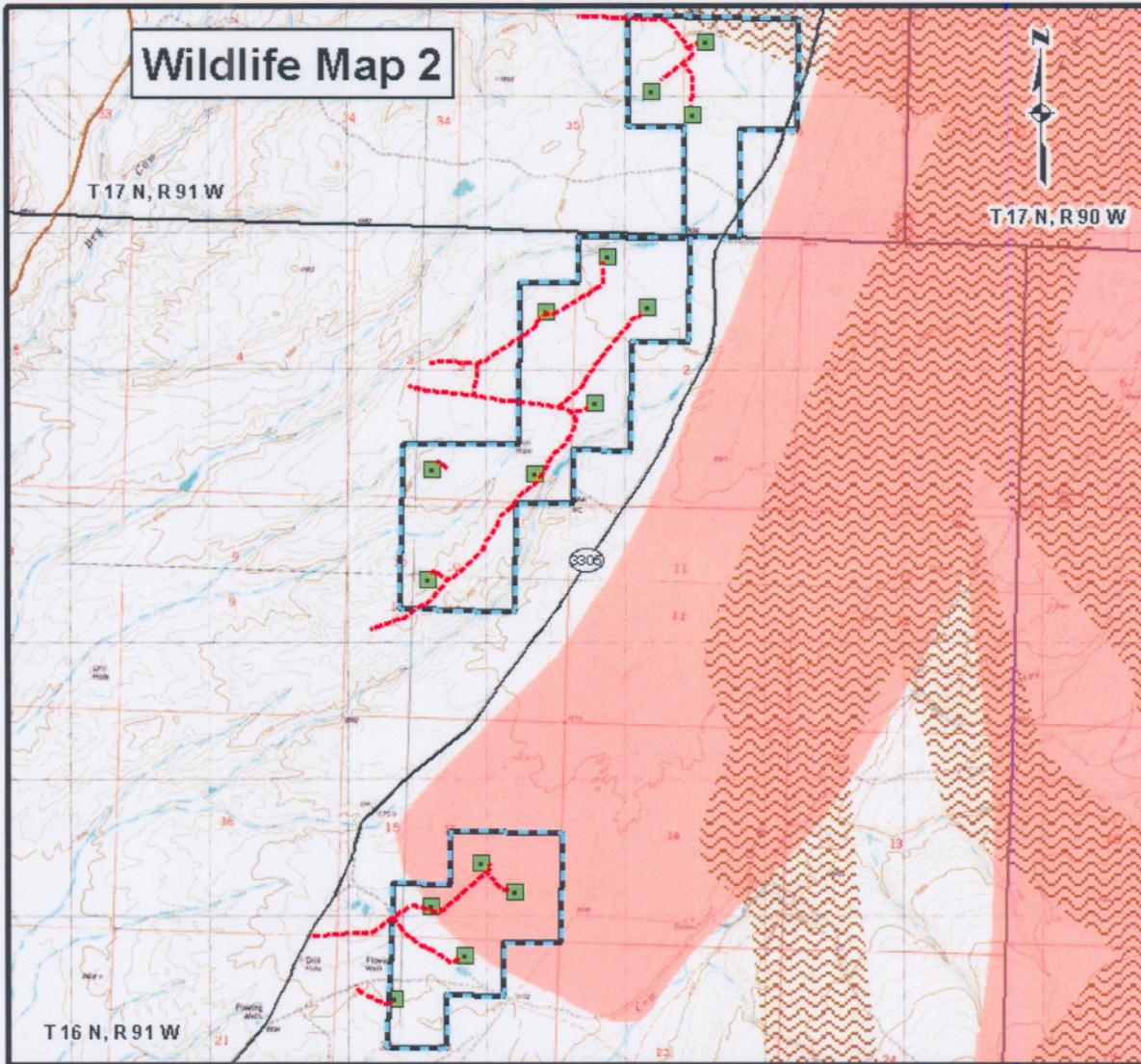
Drafted: 8/20/2008

Legend

- Raptor Timing Stips
- GSG Core Areas
- Sun_Dog_F_wells

Pod_Name

- Sun Dog F



1:40,000

No warranty is made by the Bureau of Land Management as to the accuracy, completeness, or reliability of the information presented.

Drafted: 8/20/2008

Legend

- RFO Big Game CWR stips
- MD Migration Corridor
- Sun_Dog_F_wells

Pod_Name

- Sun Dog F

Appendix A to the Decision Record

Summary of EA Comments and BLM Responses

Two (2) comment letters were received (Biodiversity Conservation Alliance on behalf of Biodiversity and the Natural Resources Defense Council, September 9, 2008, via email/hardcopy, and Husch, Blackwell, Sanders, LLP on behalf of the Theodore Roosevelt Conservation Partnership, September 12, 2008 via fax/hardcopy). The letters have been reviewed to determine whether the information they provided would warrant a determination other than a Finding of No Significant Impact (FONSI). Substantive comments are summarized below, with BLM responses to the comments in italics. Common comments and responses are addressed together where appropriate, as noted. The RFO would like to thank all who commented for taking the time to review the EA.

As noted in the EA (Page 2), information about the proposal was posted in the RFO public room for a 30-day period upon submittal by the proponent (beginning February 27, 2008). In addition, the BLM online NEPA register provides notice of actions for which NEPA documentation is prepared, including the proposal considered under this Environmental Assessment.

In reviewing the comments received, there were some instances where substantial comments were made but we could find no project-specific comments or any description of (1) new information, (2) why or how the analysis is flawed, (3) evidence of flawed assumptions, (4) evidence of error in data presented, or (5) requests for clarification that bear on conclusions presented in the analysis. This was the standard used to identify substantive comments for the following responses.

Biodiversity Conservation Alliance, Comments:

I. Sage Grouse, Leks, and Core Areas

"Populations of sage grouse continue to decline. Yet, BLM persists in relying on mitigation measures that have already failed in other areas. The AR FEIS failed to adequately discuss whether its proposed mitigation measures for sage grouse are appropriate or scientifically defensible".... Indeed, BLM has determined that the quarter-mile NSO buffers and two-mile seasonal stipulations applied under this project are inadequate to sustain sage grouse populations in the Powder River Basin at identical CBM well densities.... Neither of these issues is addressed in the EA's for the ... Sun Dog F ... PODs. BLM is plowing ahead with more drilling permits before it has taken steps to prevent the steady and dramatic decline of the sage grouse. Contrary to the mandates of the BLM's own Sensitive Species policy and the Great Divide Resource Management Plan, BLM's approval of ... Sun Dog F... will harm sage grouse leks and nesting habitat".... these EA's do not even show where, or how many, sage grouse leks are located in or near the project areas...The EA's refer to powerlines...but do not show site specific locations...

"Furthermore, the State of Wyoming has initiated a new sage grouse conservation policy by Executive Order, which depends on conservation of sage grouse in designated Core Areas. See Attachments 3 and 4. This policy constitutes significant new information that has become available subsequent to the issuance of the Atlantic Rim, ROD, and thus tiering to this NEPA analysis is unavailing. Supplemental NEPA will be required to address this issue. The Doty Mountain C Pod appears to be within a designated Core Area, meaning that development cannot occur unless it is compatible with maintaining sage grouse populations".

"As a result of these impacts and considerations, significant impacts to sage grouse are likely and an EIS will be needed prior to project approval".

The BLM recognized significant impacts are likely to occur from the implementation of oil and gas projects in the area analyzed in the AR FEIS/ROD. Potential impacts to sage grouse (including wintering sage grouse) from activities such as those in the proposed action have been discussed in the FEIS (see Page

4-75 through 4-78). The subject ROD and tiered EA include both broad-based and site specific mitigation measures, respectively, to reduce or eliminate potential adverse environmental effects.

The BLMs analysis of the proposed action included site-specific review of potential impacts to sage grouse, consideration of available guidance such as Connelly et.al. (Wildlife Society Bulletin 2000, 28(4):967-985), BLM 2004-057, the RFO Sage Grouse IM, and utilization of the experience and expertise of the BLM biologists as well as data and knowledge collected by the Wyoming Department of Game and Fish, U.S. Fish & Wildlife Service, and other organizations. This analysis of site-specific impacts, the resultant moves and changes in the proposed action and final site-specific Conditions of Approval is addressed in the EA and also by reference (as are specific findings by the interdisciplinary review team).

No substantiation is provided for the opinion that the project analysis process was flawed, so we cannot confirm that conclusion. The seasonal restrictions applied are supported by programmatic BLM decisions (such as the Great Divide RMP and Atlantic Rim ROD, among others), and are consistent with BLM policies developed in consultation with agencies such as the Wyoming Department of Game and Fish. While BLM acknowledges that studies and related findings in the AR area are limited and/or specific to the types of development occurring in that area, BLM and operators are actively working with the Wyoming Game and Fish Department to reduce the impact to grouse as a result of development and to remain in compliance with BLM Manual 6840.

Failure by BLM to disclose lek locations was intentional, as all lek locations are the property of the Wyoming Game and Fish Department (WGFD). BLM is not permitted to disclose or distribute this data and information, and therefore must be obtained directly from the WGFD.

All power lines referenced in the EA and within the project area are buried underground lines.

The BLM is also aware of the State of Wyoming's Executive Order 2008-2 Greater Sage-Grouse Core Area Protection. This is an executive order by the State of Wyoming that applies to state agencies (only), and provides for state agency collaboration with federal agencies, such as the BLM, in implementing the Executive Order. At this time, as this order was only signed into effect August 1, 2008, the BLM is unaware of and cannot predict the exact level, extent and nature of that collaboration and/or implementation. Other agencies and organizations may acquire new information and develop new management practices (such as the State of Wyoming Core Population Areas) that may influence or compliment BLM's decisions and policies. However, as the Executive Order issued by the Governor of Wyoming acknowledges, existing rights need to be recognized and respected. BLM Wyoming continues to work toward establishing consistent policy and direction for sage-grouse management on BLM lands. However, until such time new BLM guidance is developed, the BLM RFO is committed to work with industry and our partners to reduce impacts to sage-grouse habitat from oil and gas development within our existing authority and approved land use planning and project decisions, while recognizing valid existing rights.

II. Water Quality and Downstream Sensitive Fishes

"The EA fails to discuss the potential effects of the ... Sun Dog F... PODs on water quality and downstream sensitive fish species. We are concerned that proposed activities, when occurring on highly saline, erodible, or unstable soils will contribute to significant impacts to the watershed and downstream native fishes..." "The level of direct and cumulative salt loading to the Colorado River System also has not been disclosed, potentially leading to violations of the Colorado River Compact.

The Colorado River Basin Salinity Control Forum, with particular reference to salt loading, is discussed in the EIS (Volume 1, page 4-28). Its administration via the Wyoming Department of Environmental Quality

(DEQ WYPDES), and compliance with the DEQ WYPDES Storm Water Program is an integral part of operator obligations; monitoring/reporting/mitigation are implicit in these permits.

While the Sun Dog Unit F POD project does not propose point source surface discharges, all manner of possible best management practices are applied during project planning, development, interim reclamation, production, and final reclamation stages to control erosion/runoff and salt mobilization in sensitive catchments; the Atlantic Rim EIS/ROD and site-specific Conditions of Approval all address and minimize the project's potential erosional effects.

Channels within the Sun Dog Unit F POD project area drain into Dry Cow and Cow Creeks'. While sensitive species have not been documented this season in those Creeks, this does not preclude the possibility of their historical and/or future presence. Again, project Best Management Practices are deemed to be protective of possible significant impacts to these populations (as applicable). As site-specific NEPA analysis is issue-driven, it is up to the BLM Authorized Officer to determine the scope of the proposed action and the analysis of impacts. If particular resources do not exist in the project area, or in the area identified as the cumulative impact analysis area, it is not necessary to analyze or discuss these resources in the EA (40 CFR 1500.1(b), 1502.20 & 1508.28). BLM watershed and fisheries decisions are also consistent with BLM policies developed in consultation with agencies such as the Wyoming Department of Game and Fish.

The Sun Dog Unit F POD project impacts are not considered to meet either surface or groundwater significance criteria as defined in the EIS (Volume 1, page 4-24). Similarly and at this time, the Rawlins BLM is not aware of NEPA analysis, planning decisions and/or existing on-the-ground conditions within its Field Office boundaries/jurisdiction that violate the Colorado River Basin Salinity Control Act.

In general, you provide no data or substantiation for your opinion that the project analysis was flawed, so we cannot confirm your conclusion.

III. State Certifications Required by Section 401 of the Clean Water Act

"BLM must require that project proponents have acquired certifications (or waiver) from the State of Wyoming, pursuant to Section 401 of the Clean Water Act. The EA should, but does not, indicate whether such certifications have been acquired."

The proponent must comply with all laws, standards, and criteria set forth by all appropriate Federal, State, and Local authorities; which is a standard requirement included in BLM's Conditions of Approval.

This project does not involve point source discharges that may make their way to navigable waters of the United States, and therefore, the proponent is not required to have acquired certifications (or a waiver of such certifications) from the State of Wyoming, pursuant to Section 401 of the Clean Water Act, 33 U.S.C. §1341."

The BLM is aware that Section 401 of the Clean Water Act (33 USC 1341) requires applicants for a federal license or permit that would authorize discharge into waters of the United States to obtain a certification from the State in which the discharge originates. On March 20, 2007, the U.S. Army Corps of Engineers obtained certifications from the Wyoming Department of Environmental Quality for most Nationwide General Permits that authorize discharges pursuant to Section 404 of the Clean Water Act (33 USC 1344) in Wyoming. All certifications remain valid until March 18, 2012, for discharges authorized by nationwide permits and project proponents are not required to obtain separate certifications prior to undertaking those activities. Therefore, roads, pads, pipelines, produced water management structures, and other common activities that result in discharges are currently authorized because certification has been granted. Certifications of any other discharges that are not currently authorized cannot be acquired

until the need for a permit arises. The BLM is confident that those certifications would be acquired by the project proponent as applicable and as certified in the Sun Dog Unit F POD Water Management Plan.

IV. Methane

"BLM continues approve drilling permits without even beginning to collect data regarding the potential for methane seeps." "BLM should quantify potential emissions of methane."

A cooperative working group, including operators and regulatory agencies (WY DEQ, WOGCC, WSGS, and the BLM) formed in March 2007 with the goals, in part, of surveying the project area for seep presence; understanding methane seep risks; considering actions (where applicable) to address the welfare, health, and safety of human and wildlife activity in the area; developing geological models to characterize seeps (including consideration of differing survey and gas and water sampling methodologies); ensuring methane seeps are not present prior to location construction; and monitoring methane seep activity during development of the field.

Methane (which is a greenhouse gas) emissions are not regulated (nor are there any national or state standards) by either the EPA or Wyoming DEQ. Currently the EPA has not established emissions thresholds for methane (or any other greenhouse gas). Without a method or meaningful metric established by EPA there are no jurisdictional or compliance responsibilities for the EPA or the State of WY.

The Atlantic Rim EIS analyzed potential impacts of various air quality pollutants. Under the current Rawlins RMP, analysis of potential greenhouse gas impacts is beyond the scope of the management; NEPA does not require agencies to address "remote and highly speculative consequences," such as the possibility that isolated, unknown, and/or impossible to predict phenomena such as methane seeps exist.

The BLM is not currently aware of any methane seeps within the Sun Dog Unit F POD project area. Methane seeps (including the potential for their increase and associated impacts) are disclosed and addressed in the AR FEIS and Record of Decision (ROD), including: FEIS, Chapter 4, at Page 4-32, 4-33, 4-49, 4-52; and in the Record of Decision, Appendix B at Page B-10 and B-11.

V. Air Quality

"BLM is proceeding without the full picture it needs regarding ozone pollution. BLM relied on an obsolete method to predict ozone impacts and should not approve Doty Mountain Unit POD C or any other drilling permits until it corrects and updates its air quality analysis of ozone impacts."

*Please refer to Page E-9 of the Atlantic Rim Record of Decision.
BLM is unaware of an exceedance of NAAQS standards at area air quality monitoring stations.*

VI. Mule Deer Migration Corridors

"The northernmost wells in sun Dog F are also immediately next to identified migration corridors. Sun Dog F at 14..."

As part of the BLM's application of best available BMP's and mitigation measures the 4-36 well, the only well "immediately next" to identified mule deer migration "corridors" or routes, was intentionally placed and moved outside the corridor or route, as was the 8-35 and 12-36 also placed outside those identified corridors or routes. The BLM worked in conjunction with the well/lease operator to select locations that provided the least potential impact to those wildlife resources and "potential" migration corridors or routes,

as well as other resources in the area, e.g. grouse, raptors, trails, watersheds etc. and yet still maintain a viable location acceptable and suitable to the operator's lease development/rights and obligations to BLM, RMG, WOGCC and others.

The BLMs analysis of the proposed action included site-specific review of potential impacts to sensitive species and habitats, using the experience and expertise of the BLM wildlife biologists. BLM also considered recently obtained data (including Sawyer 2006 Progress Report for the Atlantic Rim Mule Deer Study; Sawyer 2007 "Final Report for the Atlantic Rim Mule Deer Study"; and Sawyer and Kauffman 2008 "Identifying Mule Deer Migration Routes in the Atlantic Rim Project Area") regarding mule deer migration routes in the project area, which was incorporated into the wildlife review of the project. Nine (9) Sun Dog Unit F POD project wells are located "near" "movement routes" identified by data Sawyer (2007) as obtained during the study (February 10, 2005 – November 15, 2006). In addition, five (5) F POD project wells are in the "estimated utilization distribution (UD)" that Sawyer and Kauffman (2008) identify using the same data as in the 2007 report. There are no F POD project wells within the "common migration routes" or "migration corridors", as identified as a result of the studies and data.

At this time the BLM is considering common migration routes when conducting project reviews, in conjunction with Best Management Practices (BMPs). In addition, an interagency working group initiated by the adaptive management direction in the Atlantic Rim ROD is evaluating activities and infrastructure in areas identified as mule deer migration habitat. The objective is to use ongoing studies and monitoring to determine whether, where and how development places attainment of the performance goal for migration habitats at risk, and if so, how to mitigate those risks. The working group is evaluating current and exiting data to identify any potential impacts to migrating deer from current POD development. As a result, additional preventative stipulations or other mitigation measures for migration habitats potentially affected by this project have not been approved.

VII. Impacts to Raptors

The southernmost 5 wells in Sun Dog F are in similar close proximity to raptor nests. Sun Dog F EA at 13... Yet nowhere in these EAs does the BLM provide a site-specific analysis of the direct and cumulative impacts of this large number of industrial intrusions on nesting raptors. Will these developments, directly or cumulatively, result in reduced or eliminated nest success, abandonment of key habitats for the short or long term, and if so, what are the direct and cumulative impacts of these projects on the viability of raptor populations throughout the region? Given the heavy and intensive level of development, will seasonal stipulation that restrict drilling and construction but ultimately not the conversion of the landscape to industrial use have any benefits, even short-term, for raptors nesting in the area? What will be the impacts of production-related truck traffic, human activity, and associated impacts on nesting raptors after wells and roads have been completed and the timing stipulations no longer apply? The EAs (and also their parent Atlantic Rim EIS) are silent on these questions, a significant violation of NEPA.

The BLM's analysis of the proposed action included site-specific review of potential impacts to raptors, using the experience and expertise of the BLM biologists as well as data and knowledge collected by the BLM, Wyoming Department of Game and Fish, U.S. Fish & Wildlife Service, and other organizations. BLM biologists use Best Management Practices (BMPs) such as topography (locating well locations behind hills out of direct line-of-sight). In addition to BMP's specialists also considered nest condition and history, proximity to the nest(s), and other activities beyond control of the BLM (e.g. public access such as county, BLM and other existing roads). This analysis of site-specific impacts, with resultant site-specific Conditions of Approval, is addressed in the EA and also by reference ("Other site specific findings by the interdisciplinary review team are provided on the attached review documents...") [page 8-9]. The EA and Conditions of Approval address BLM specialist's conclusions and required mitigation regarding potential impacts to wildlife.

Over fifteen years of monitoring data has been acquired in Atlantic Rim and other EIS areas. Most of this

data collection has been for highly developed areas. The data acquired within the adjoining Continental Divide/Greater Wamsutter II (CD/W II) EIS area indicates that there is little to no affect on raptor nesting (short or long term) and habitat when timing/seasonal stipulations (COAs) are applied to a project.

Theodore Roosevelt Conservation Partnership Comments:

1) BLM should not approve the Proposed Action as currently configured because eight of the proposed wells are located within sage grouse Core Population Areas ("CPA") identified and singled out for protection by the Governor of the State of Wyoming...While this Order may not bind federal land managers, BLM's EA fails even to acknowledge the existence of these CPAs, and accordingly, has not analyzed the impact of the Proposed Action to determine whether it is consistent with the goals and objectives of the State of Wyoming.

See response to Sage Grouse, Leks, and Core Areas in I. above

2) BLM may not satisfy its NEPA obligation to evaluate alternatives by private consensus with a project proponent...

No alternatives were identified or developed other than the No Action Alternative provided in the EA. The alternatives or modifications discussed in the EA (page 3. Paragraph 2 & 6) are minor modifications to the project components such as minor access road and well pad alignment changes that are a part of BMP's and mitigation measures in order to protect resources and minimize impacts.