

Section 2. Approved Project Components.

● Project Components

This ROD provides the BLM Pinedale Field Manager approval to permit the following project components on BLM-administered Federal lands and minerals (79.9 and 83.2 percent of the surface and mineral ownership respectively) within the PAPA (see Figure 2), subject to the constraints specified under Sections 2, 3, and 4, and Appendices A, B, C, D, and E. Development beyond the specified levels will require the preparation of a supplemental environmental impact analysis.

- 900 Initial well pad locations on all lands and minerals within the PAPA.
- 700 Producing wells and/or well pads on all lands and minerals within the PAPA.
- 700 Production facilities at individual well locations.
 - Central production facilities.
 - 4 Compressor facility sites.
 - Water wells for drilling/completion water.
 - 1 BP Amoco Field Office.
- ~121.5 Miles of sales pipeline corridor for multiple pipelines.
- ~276.0 Miles of access road (including collector, local and resource roads).
- ~280.0 Miles of gathering pipeline system.

● Well Pads

The sandstones of the Lance and Mesaverde Formations associated with the Pinedale Anticline Project area are recognized as having low porosity and permeability. However, based on current understanding of the natural gas reservoir characteristics (i.e., geology, flow data from existing producers, expected recovery factors, and economics), it is reasonably expected by the Pinedale Anticline Operators that economically recoverable zones will be developed at a bottom-hole well spacing of 40 acres or 16 wells per section to attain maximum ultimate economic recovery of the natural gas resource with minimum waste (43 CFR 3162(a)). Depending upon the sensitivity of surface resources within PAPA Management Areas (MA) (see Section 4), in areas of intensive development, 8 to 16 wells may be drilled from 8 to 16 pads per square mile; in other cases, where surface resource values are more sensitive, 8 to 16 wells may be drilled directionally or horizontally from 2 to 4 well pads/square mile.

Within each MA, the Pinedale Anticline Operator(s) will construct well pads and drill wells in accordance with the well pad threshold specified under Section 4 entitled, "*Management Area Exploration and Development Restrictions/Limitations for Resource Protection*". Well pad numbers exceeding the MA well pad threshold, which BLM considers reasonable and environmentally acceptable, will require additional environmental analysis. This ROD

authorizes the construction and drilling of up to 900 wells, and the completion, testing, and production of up to 700 producing natural gas well pads within the PAPA. This ROD does not specify a well pad limitation on federal lands and minerals. Rather, BLM will track development within the project area to ensure that development does not exceed the scope of the Pinedale Anticline EIS or create unanticipated impacts.

The current BLM 0.25-mile buffer around occupied dwellings on Federal lands and minerals will continue and is expanded to also include Federal lands and minerals zoned as residential by Sublette County or from subdivisions currently approved by Sublette County. See Figures 3 and 4 for location of lands zoned (as of November 1999).

● Production Facilities

Conventional Well Site Production Facilities. Production facilities will be approved on a case-by-case basis in conjunction with each approved well location. The production facilities include the construction and installation of tanks, separators, dehydration units, remote telemetry and other equipment as needed at each site on BLM-administered lands. These facilities are needed to produce and monitor the well for the life of the well. Site-specific environmental analysis will be required which will address these facilities for each application for permit to drill (APD) and/or Sundry Notice (SN) on BLM-administered lands.

Central/Off-Site Production Facilities (C/OSPF's). C/OSPF's will be installed by the Operators for the more efficient and economic operation of 1 or more wells and/or to avoid or minimize unnecessary and undue surface disturbance and impacts on wildlife, sensitive viewsheds, and other resource values from field development on an 80- and 40-acre well spacing. The need/appropriateness of C/OSPF's will be determined by BLM on a case-by-case basis when an application (NOS, APD, ROW, etc.) is received for a proposed well(s) located within an area of sensitive resource value(s), such as crucial wildlife habitat, sensitive viewshed, and/or other resource value(s). An evaluation will be completed by BLM and the Operator(s) to assess the feasibility, location, design, etc. of the C/OSPF's facility. Known areas where the need/appropriateness for C/OSPF use is most likely are specified under Section 4, "*Management Area Development Restrictions/Limitations for Resource Protection*".

● Pad Drilling

Pad drilling, i.e., directionally drilling one or more wells from a single well pad, will be used by the Operators to avoid or minimize unnecessary and undue surface disturbance and impacts on wildlife, sensitive viewsheds, and other resource values. The need/appropriateness of pad drilling will be

determined in a manner similar to that described above for C/OSPF's. In some cases, PAPA Operators, to avoid or minimize unnecessary degradation on Federal lands, may be required to move a well location (consistent with policy and regulation) and drill the well directionally. In other cases, to avoid or minimize unnecessary degradation on Federal lands from field development on 80- and 40-acre well spacing, an Operator will be given the choice of pad drilling multiple wells from a single pad or installing C/OSPF's. An evaluation will be conducted by BLM and the Operator to determine which option will be most feasible technically and economically. Any other reasonable option identified, but outside the scope and/or not considered in the Pinedale Anticline EIS, will be analyzed in a supplemental environmental analysis to the EIS. The same areas identified under C/OSPF's as most likely will also include consideration of pad drilling (see Section 4). Recommendations to the AO regarding the consideration of pad drilling may also be provided through the AEM process. The filing of a request for exception will be required, in accordance with the "Request For Exception" procedure discussed under Section 3 below, for any one-time deviation from any required use of pad drilling.

● **Water Wells**

Water for drilling, completion, hydrostatic testing of pipelines, and dust abatement will be supplied from water wells drilled on the well pad, from a nearby well pad, or from a surface water source such as the New Fork River. The use of water from water wells and river access points will be permitted through the Wyoming Oil and Gas Conservation Commission (WOGCC) and Wyoming State Engineer's Office (WSEO). Water well sites or river access points affecting BLM-administered lands and/or minerals will require site-specific NEPA analysis, a right-of-way permit from the BLM, and implementation of the specified mitigation measures.

● **Compressors**

The construction and installation of compressors at new or existing sites on BLM-administered lands will require the necessary permits from the Wyoming DEQ-AQD. Coordination with all operators will also be required to ensure that compressor facility authorizations are consistent with the Pinedale Anticline EIS scope of analysis. Coordination among all Operators and pipeline companies is important to ensure that actual construction of compressor facilities remains within the analyzed levels of nitrogen oxide (NO_x) emissions and the potential to impact air quality related values within the Bridger and Fitzpatrick Wilderness areas.

Before right-of-way grants or sundry notices will be issued for any compressor site on BLM-administered lands, including sites analyzed in the Pinedale Anticline EIS as well as new sites

not addressed in the EIS, additional site-specific environmental analysis will be required to address site-specific surface resource concerns and mitigation of unnecessary and undue impacts (e.g., cultural; wildlife; visual; noise impacts at dwellings, sage grouse leks; etc.). Sites that are less than four miles from a dwelling will require additional hazardous air pollutant analysis. This is necessary because the Pinedale Anticline EIS used the analysis for compressors done for the Jonah II EIS which did not analyze dwellings closer than four miles from a compressor. The analysis will be conducted in conjunction with the site-specific environmental analysis and in consultation with the WDEQ-AQD.

In accordance with the Joint Agreement between the BLM, Wyoming DEQ, USDA-Forest Service, and the Environmental Protection Agency, in maintaining diligence in the monitoring for the protection of wilderness air quality related values of visibility and lake acidification, the BLM, in consultation with the Wyoming DEQ-AQD, will track emissions for the Pinedale Anticline and the Jonah II projects on an annual basis.

The BLM will grant new rights-of-way for compressors based upon PAPA monitoring and tracking of actual on-the-ground calculated potential NO_x emissions (i.e., the level of NO_x emission from actually constructed/installed facilities based upon the DEQ-AQD permitted level of NO_x emissions per compressor facility, well location, etc.) to ensure conformance with the level of analysis conducted in the Pinedale Anticline EIS. This approach will allow maximum flexibility in permitting compressors at a level of horsepower greater than the proposed 26,000 horsepower identified in the EIS and still remain within the scope of the NO_x emissions analyzed in the EIS. The actual level of horsepower that could be authorized depends upon the compressor emissions rating, the level of construction and drilling activity, and the number of wells producing at the time.

Table 1 summarizes how variable levels of compression horsepower could potentially be available for the PAPA¹ while remaining within the scope of the Pinedale Anticline EIS Analysis [the maximum NO_x emission level analyzed in the EIS was 694 tons/year].

Table 1. Variable Levels of Compression Horsepower Potentially Available for the PAPA¹		
Compressor Rating (grams/hp-hr)	Producing Wells	Potential Compression
0.7 g/hp-hr	700 wells	96,000 hp
1.0 g/hp-hr	700 wells	67,000 hp
1.5 g/hp-hr	700 wells	45,000 hp

[¹ Potential compression assumes all construction and drilling has been completed and 700 wells are producing.]

Figure 3

Sublette County
Current Zoning Districts
in the Project Area

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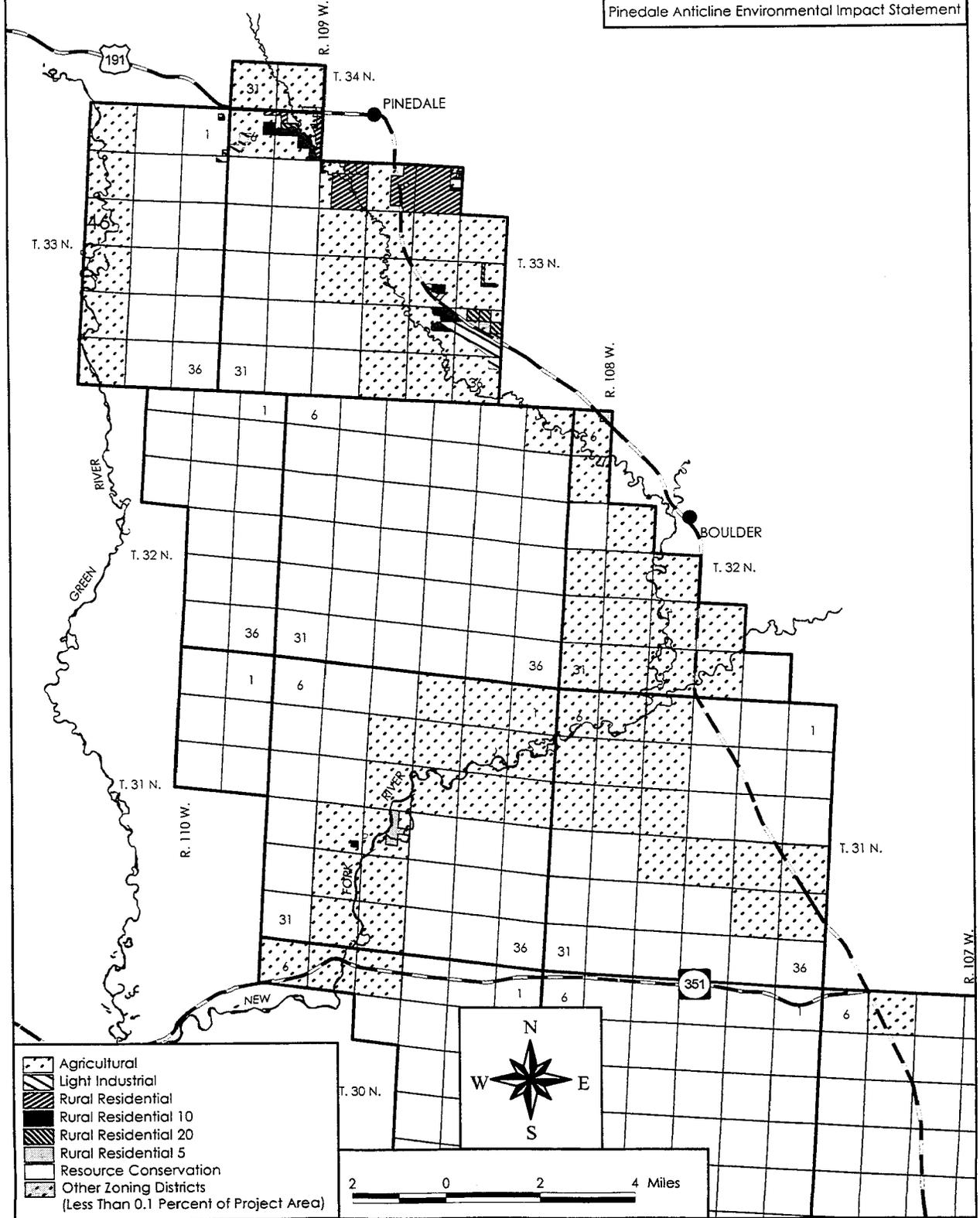
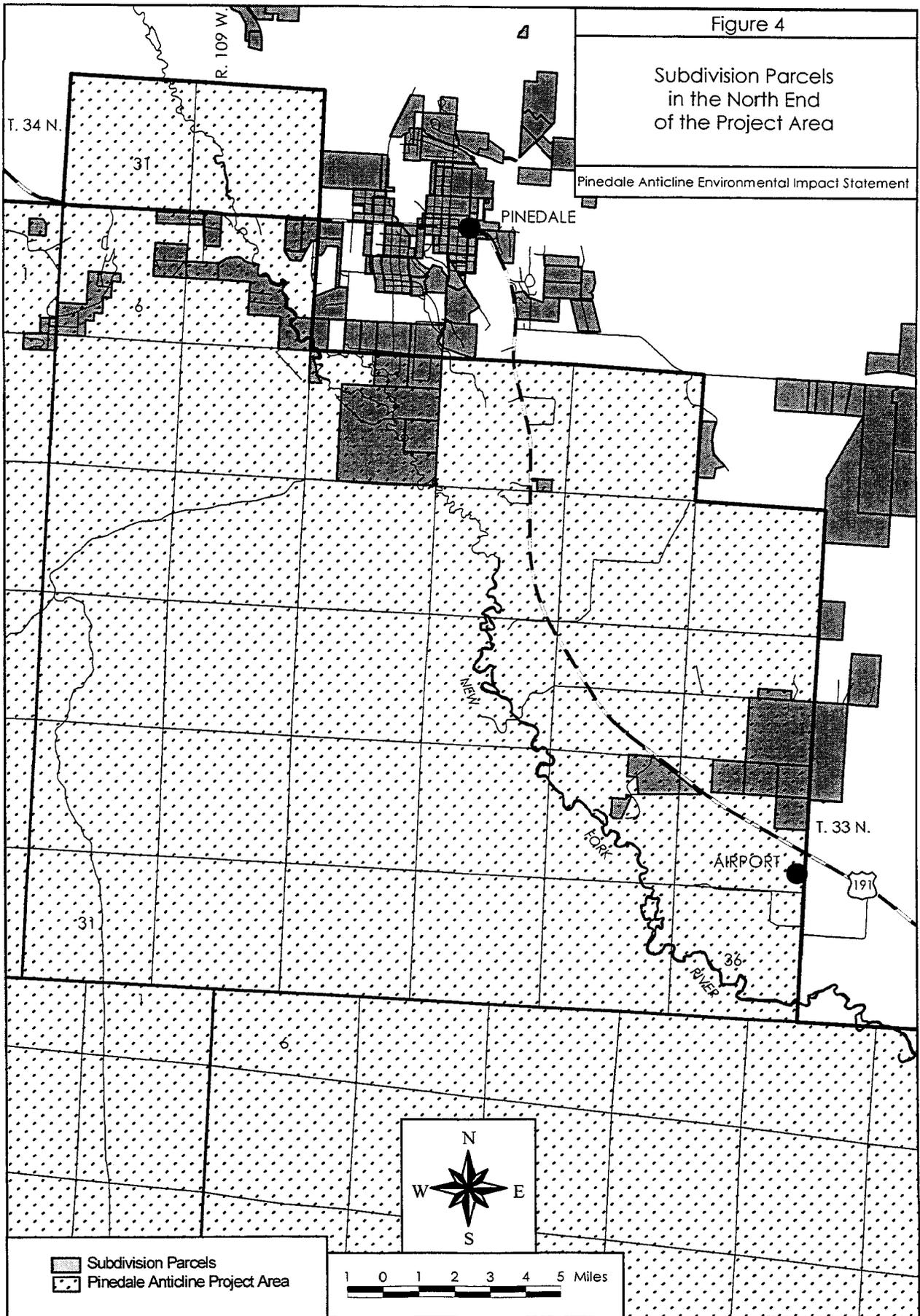


Figure 4

Subdivision Parcels
in the North End
of the Project Area

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- **BP Amoco Field Office**

BP Amoco's Field Office, used during daytime working hours, evening, and/or nighttime emergencies, is approved at a site located east/southeast of the Luman road, out of sight of U.S. Highway 191, in T. 29 N., R. 107 W., Section 23, SW1/4. The specific location of the 5-acre building site will be determined during processing of the right-of-way application. Before the right-of-way grant will be issued for this facility on BLM-administered lands, additional site-specific environmental analysis will be required to address site-specific surface resource concerns and mitigation of unnecessary and undue impacts (e.g., cultural; wildlife; visual; noise impacts at sage grouse leks; nighttime lighting; etc.).

The BP Amoco Field Office, and all other field facilities, will be painted a BLM-approved earthtone color in accordance with Appendix A. The BP Amoco Field Office, or any other field facility, will not be authorized exterior lighting that is motion activated. Continuous nighttime exterior lighting will be authorized for facilities only while the field facility is occupied. An exception will be considered for safety or security reasons. Exterior nighttime lighting is authorized while the field office is occupied. Exterior lights will be shrouded and directed onto the immediate facility area so that lights and glare are not projected or directed away from the facility area. This will minimize night lighting effects and impacts to wildlife, dwelling occupants, visual and recreation resources.

- **Access Roads**

General Access. This ROD approves the construction and/or upgrade of necessary access roads on BLM-administered lands (EIS estimated up to 276 miles). These include collector or major arterial access roads, local access roads, and resource roads (see Transportation Plan Appendix B-2.2, Road Classification). Design and construction will comply with the standards specified in the Transportation Plan (see Appendix B-2.7, Design and Route Location). General transportation plans for the PAPA will be reviewed with the Transportation Planning Committee (TPC), in accordance with the TPC Memorandum of Understanding (MOU) (see *Transportation Plan/Transportation Planning Committee* in Section 3).

Access to the PAPA. As discussed and recommended by the TPC, access to the PAPA will be as follows: Exploratory drilling access - Initial drilling activity will concentrate on exploration to determine the areas where concentrated, intensive field development will occur. Until the concentrated, intensive field development areas are identified, exploratory access to the PAPA will continue to use the existing access as displayed in Figure 5, *Exploratory Drilling Primary Access*. Intensive development access - Once intensive field development areas are identified,

primary access will be determined in consultation with the TPC. However, if intensive field development is concentrated along the crest of the Anticline, then primary access to the intensive development will be as displayed in Figure 6, *Anticline Crest Field Development Primary Access*.

Anticline Crest Field Development Primary Access. Close coordination with the WYDOT and the TPC will be an integral part of transportation planning for the PAPA. The Transportation Plan (Appendix B) and associated Technical Support Document will be reviewed and updated annually to incorporate new information.

Industrial Park Road. The construction of the Industrial Park Road on Federal lands will be authorized when it has been determined that development is eminent on Federal (Figure 6), State or private lands within the area between Pinedale and the Mesa and east of the junction of the Industrial Park Road with the Mesa South road. The TPC will recommend to the Pinedale Field Manager when construction of this road is necessary to avoid impacting the residents along Tyler Street and the Twin Bridges County Road.

Anticline Crest Road North of New Fork River. This segment of the Anticline Crest Road (section of road between the Paradise Road and the Mesa Road, Figure 6) will be constructed when it has been determined that development is eminent within the area described. The TPC will recommend to the Pinedale Field Manager when construction of this road is necessary to avoid unnecessarily impacting wildlife and residents along the Green River road. The need for and feasibility of a bridge across the New Fork River will be further evaluated by the TPC as development progresses. In the interim, access to the Anticline Crest Road from the south will be from the Paradise Road using Wyoming Highway 351 entrance and access to the north end of the Mesa will be from the Green River Road to BLM Road 5105 and 5102 using Wyoming Highway 351 entrance. The Wyoming Highway 351 approach to the Paradise Road and Green River Road will be evaluated by Sublette County, WYDOT, the Operators, and BLM to determine improvements needed (e.g., turn lanes, paving, etc.).

Anticline Crest Road South of New Fork River to Wyoming Highway 351. Access to the Anticline Crest area located between the New Fork River and Wyoming Highway 351 will utilize the road paralleling the "Pipeline Road" (Figure 6). The Wyoming Highway 351 approach to the "Pipeline Road" will be evaluated by Sublette County, WYDOT, the Operators, and BLM to determine improvements needed (e.g., turn lanes, paving, etc.).

North Jonah/Anticline Crest Road - Wyoming Highway 351 South to U.S. Highway 191. Access to the area located between Wyoming Highway 351 and the Jonah Field will

Figure 5

Exploratory Drilling
Primary Access

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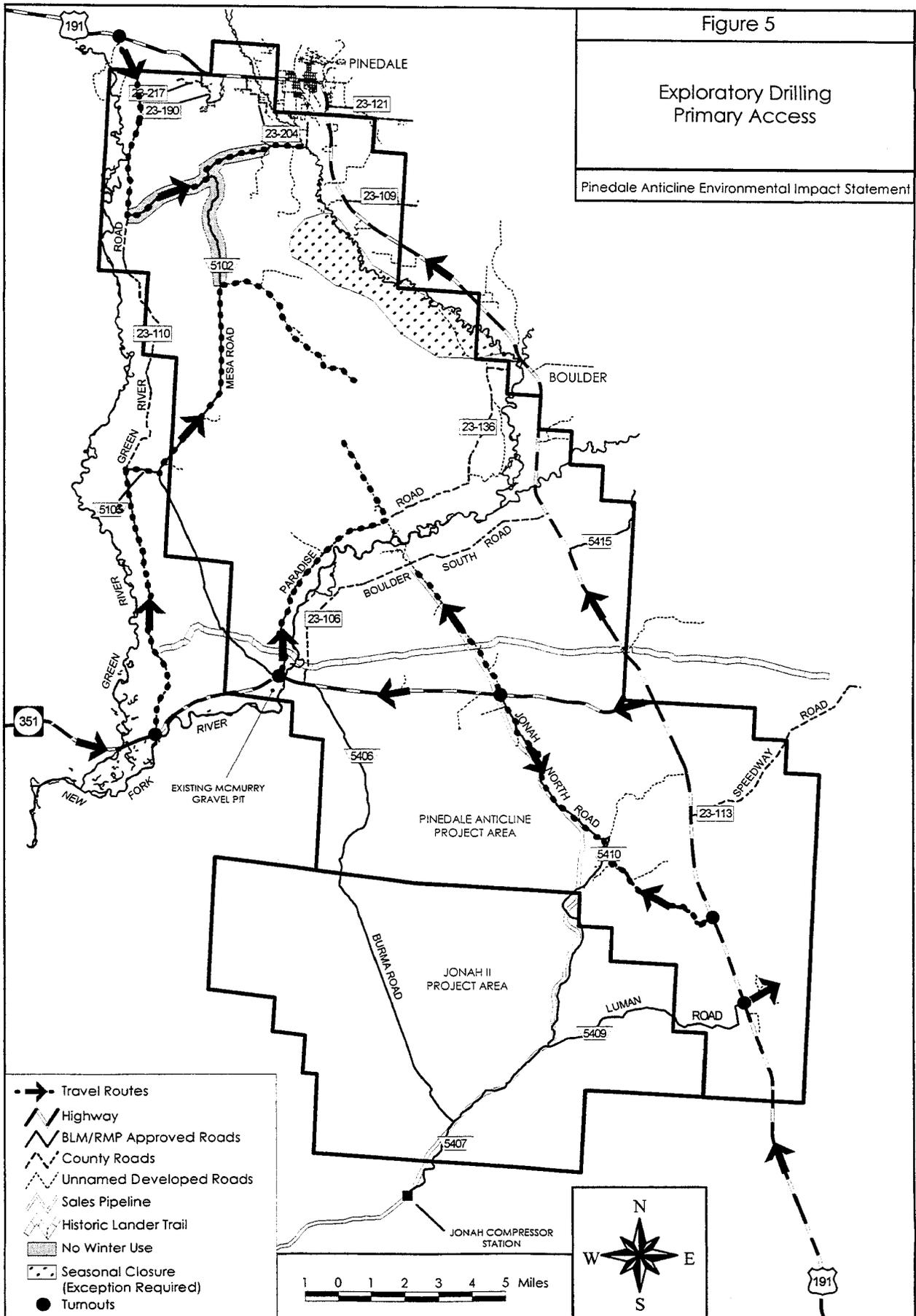
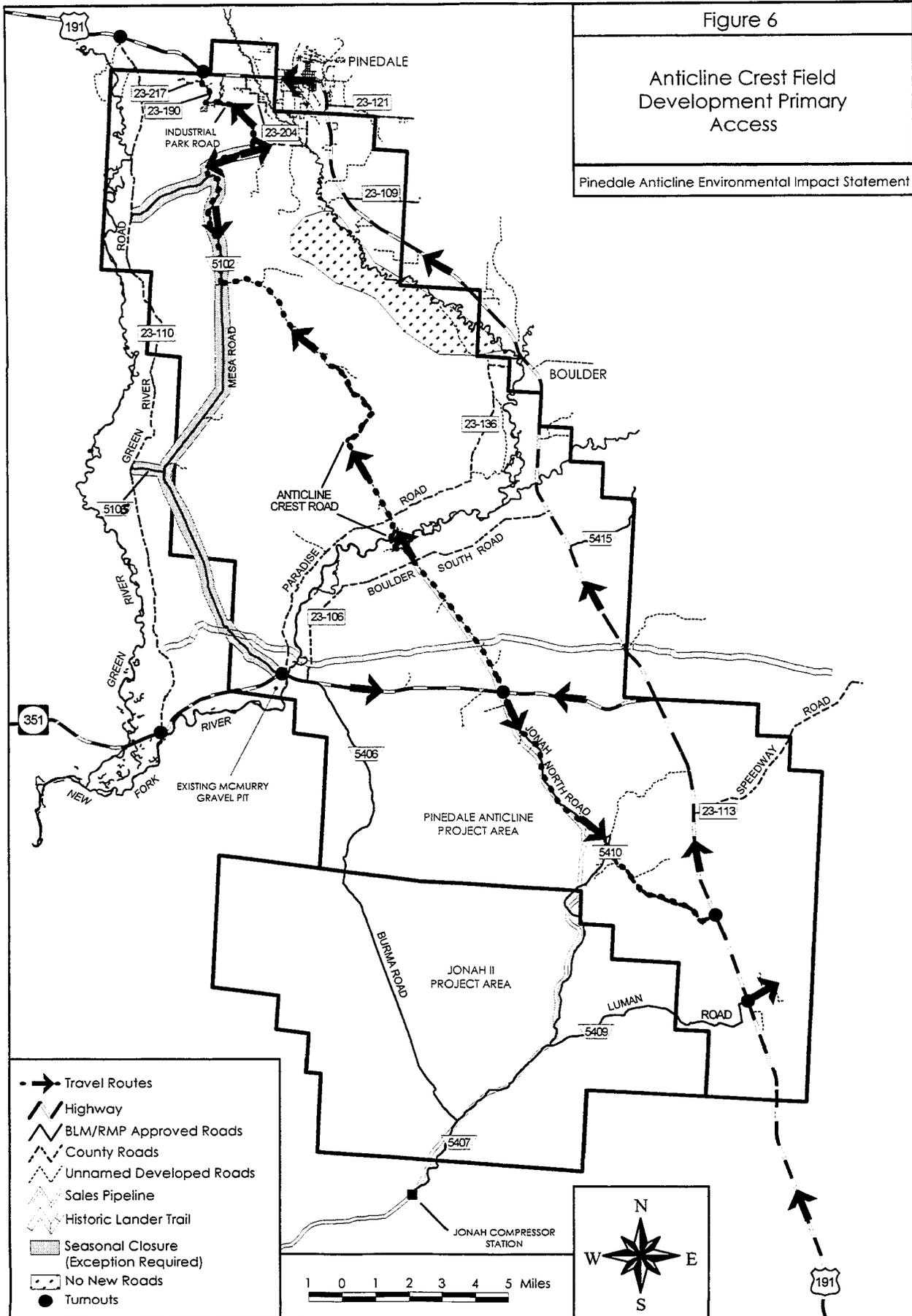


Figure 6

Anticline Crest Field Development Primary Access

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utilize the Jonah North/Anticline Crest Road between Wyoming Highway 351 and U.S. Highway 191 (Figure 6). The entrance off of Wyoming Highway 351 will be evaluated by Sublette County, WYDOT, the Operators, and BLM to determine improvements needed (e.g., turn lanes, paving, etc.). The entrance off of U.S. Highway 191 will be improved as agreed to between the Operators (Yates, McMurry, BP Amoco), the BLM, and WYDOT. Only a west exit will be constructed at this site and the turn lanes will be the only permanent approach west off of U.S. Highway 191 between the Luman road and Wyoming Highway 351.

Seasonal Road Closure. From January 15 through April 30, the seasonal closure of the Mesa Road (Figures 5 and 6) will continue to be imposed on traffic associated with wildlife viewing, construction, drilling, and completion activity to protect wintering mule deer (see Section 2, Request for Exceptions). Operators may be required to install gates on roads specified by the BLM in consultation with the TPC, to restrict unnecessary travel into deer wintering concentration areas.

For the winter of 2000-2001, Operators on the north end of the anticline will need to haul condensate and produced water from existing and potentially new wells. Until a decision is made on whether the Industrial Park Road will be constructed, the transportation of the condensate and water will have to be trucked either through Pinedale via Tyler Street to U.S. Highway 191 or via the Mesa Road (Tyler Draw Road) to the Green River Road and U.S. Highway 191. The recommendation on the route of travel that will be used for this period of time will be made through the TPC.

- **Gathering Pipelines**

Gathering pipelines will transport gas from individual well pads to a central location where the gas will be compressed into a

sales pipeline. Project approval includes the construction and operation of (EIS estimated up to 276 miles) of 3- to 16-inch diameter natural gas gathering pipeline on BLM-administered lands. Gathering pipelines will be routed in a manner that best utilizes the existing topography in order to minimize surface disturbance including surface and buried pipelines, and pipeline placement parallel to existing roads.

- **Sales Pipelines**

This decision approves the general route location of additional sales pipelines to transport natural gas from the PAPA to existing pipeline hubs in the area of Granger and Opal in southwestern Wyoming. A site-specific environmental analysis (including sensitive species clearances, cultural clearances, etc.) of the proponent's Construction and Use Plan for the sales pipeline, and consultation with the TPC will be required before a right-of-way grant will be issued.

Because of gathering pipeline congestion through the Jonah Field and the increased risk of safety hazards associated with numerous gathering pipeline crossings by new sales pipelines, new route deviations from the existing sales pipeline corridor to safely circumvent the existing pipelines in the Jonah Field have been identified and analyzed in the Pinedale Anticline FEIS. This decision approves the existing sales pipeline route (119.9 miles), as well as the route deviations for Alternative A (Burma Road Route, 119.6 miles) and Alternative B (McMurry North Jonah Route, 121.7 miles) analyzed in the FEIS (Figure 7). All three routes, with site-specific modifications, are acceptable routes paralleling existing roads and/or pipelines. The Pinedale Anticline EIS analysis assumed an additional 200-foot wide right-of-way to accommodate multiple future pipelines. Close coordination with the gathering system Operators will be required to avoid and minimize the occurrence of safety hazards.

Figure 7

Sales Gas Pipeline Approved Routes

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PINEDALE ANTICLINE
PROJECT AREA

JONAH II
PROJECT AREA

351

191

T. 32 N.

T. 31 N.

T. 31 N.

T. 30 N.

T. 29 N.

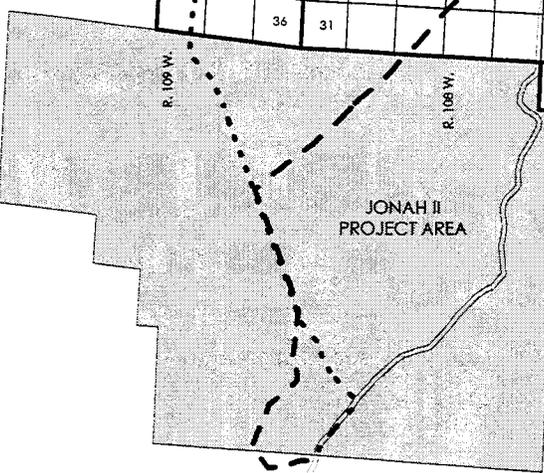
R. 110 W.

R. 107 W.

R. 109 W.

R. 108 W.

R. 107 W.



-  Sales Pipeline Evaluated in DEIS
-  Alternative A
-  Alternative B

