

FINAL

# LA PLATA COUNTY IMPACT REPORT

La Plata County

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- Exhibit 2

BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

INT EXHIBIT NO. 4

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## **EXECUTIVE SUMMARY**

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### **SUMMARY**

This section provides an overall summary of the County Impact Report (CIR) that was prepared to identify the potential impacts to and mitigation measures for specific resources in La Plata County from the anticipated development of coal bed methane (CBM). The resources addressed were selected based on the goals and objectives defined by La Plata County. The CIR covers a study area defined by La Plata County and is based on the maximum number of Colorado Oil and Gas Conservation Commission (COGCC) established well windows within the study area. With these parameters, it is anticipated that about 318 additional CBM wells could be drilled in the study area. Of these 318 CBM wells, up to 194 could occur on private lands. These wells would be in addition to the 285 existing CBM, conventional gas, and disposal wells within the study area.

This summary provides a brief overview of the potential impacts of and mitigation measures for the resources addressed in the CIR. It briefly describes the goals and objectives of the CIR (Section 2.0), the existing conditions (Section 3.0), anticipated CBM development (Section 4.0), potential impacts from the anticipated CBM development (Section 5.0), options for minimizing or mitigating the primary impacts, and possible implementation methods for the options (Section 6.0).

### **LAND USE**

The existing land use for most of the land area within the study area is agriculture/rangeland. The land use generally considered most sensitive to CBM development is residential. Currently, there is no countywide designation of future land uses for La Plata County and there are no defined countywide zoning districts.

The primary potential impacts to land use associated with CBM development include direct loss of agricultural land displaced by CBM facilities and the convergence of residential and CBM development over time.

Objectives defined by the county for mitigation related to land use impacts included development of quantitative measures for mitigating land use conflicts and impacts to property values, providing full disclosure of information on all relevant topics, providing information on precedents concerning ways to ease surface impacts through policy and code changes, defining legal and practical ways for surface interests to have more influence on the facility siting process, and defining options to mitigate impacts of well drilling and production on agricultural activities.

The key options identified for minimizing land use conflicts and impacts from CBM development include four primary methods. First, the county could designate future land use categories, including defining CBM development areas, in the Comprehensive Plan. Second, the county could add performance-based zoning to the La Plata County Land Use Code, with defined zoning districts and specified performance standards. In addition, the county could define an Overlay District for methane seepage hazard areas or CBM development areas, where residential development could be limited, setbacks increased, or both. Third, the county could develop and implement more detailed performance standards oil and gas development permits to include additional mitigation measures to minimize visual and noise impacts to adjacent properties. Finally, a Surface Use Program could be developed for CBM wells on private lands similar to the standards required for wells on federal lands. This option could be implemented using the well permitting process of either the county or the state.

## **SOCIOECONOMICS**

The economy of La Plata County is well diversified. Currently, the oil and gas industry represents about 1 percent and tourism represents about 40 percent of the total basic employment in the county. From 1989 to 2000, revenues from oil and gas property tax have increased from approximately 12 to 45 percent of the total property tax revenues of the county. The population in the county has been growing over the last decade, and is expected to continue to grow with or without CBM development. Revenues in the county have continued to increase over time in proportion to population increases, while the oil and gas labor force has decreased in recent years.

The primary socioeconomic impacts associated with the anticipated CBM development are increased revenues to the county during the 30-year production period, primarily from property tax revenues from CBM well production sales. This impact is positive, but the property tax revenues from the CBM wells would decline gradually over time at the end of the production period. However, total revenues to the county, as well as expenses, are expected to continue to increase over time in proportion to population increases, with or without CBM development.

Because the small number of new jobs associated with the project would represent less than a 1 percent increase in either the total basic employment or total population of the county, there would little impact to employment, per capita income, population, or housing.

The anticipated CBM development could affect some property values because of the effects of the proximity of wells for the life of the project. Property sales data were used to determine the affect of well proximity on property values. The results from the modeling effort performed by BBC Research and Consulting indicated that in general, the proximity of 1 or more CBM wells to a residential property had a small effect on property sales values; on average, properties near wells may have a sales value less than 1 percent lower than properties that are not near wells. Although the overall property values in the study area have not been significantly (less than 1 percent) affected by CBM wells, the model indicates that properties with a CBM well located on them (12 of 754 properties studied) have had a net reduction in sales value of 22 percent. Based on increases in overall property values of almost 7 percent per year over the last decade, overall property values in the study area are likely to continue to increase over the life of the project.

One option to minimize the socioeconomic impacts from the decline of tax revenues from CBM development over time is to increase the mill levy. This option would be implemented by voter approval of an increase mill levy, and by law could not be increased by more than 5 percent from the previous year, not counting inflation. The county could also actively pursue continued diversification of the economy using tax incentives for new industry.

Impacts to property values could be minimized by including performance-based zoning in the Land Use Code to limit residential development near existing CBM facilities, well windows, or lease areas; by requiring disclosure of mineral ownership and proposed CBM development at the time a property is transferred; or by reducing tax assessments for properties affected by proximity to CBM wells to provide tax relief as compensation.

## **TRAFFIC AND TRANSPORTATION**

Access to existing CBM well sites in the study area is primarily from county and Forest Service (FS) roads that connect with the highway system. Workers and vehicles that transport oil and gas equipment and supplies for CBM operations and maintenance in the study area use this network, sharing this

infrastructure with residential, business, or agricultural traffic and visitors to the area. County roads (CRs) in the study area used to access existing CBM well sites include roads with asphalt and gravel surfaces. CRs 200, 234, 501, 509, and 510 are most heavily traveled. The highest accident rates are CRs 228, 234, 501, and 509.

Maintenance vehicles account for an estimated 371 trips per year for daily maintenance, and an annual workover trip for each well. The roads with the highest level of maintenance vehicle trips for existing wells are CRs 223, 228, 501, 504, 505, and 527.

Five types of impacts would affect the ability of the county to maintain roads that would be used during maximum development of the new wells: (1) the impact of additional traffic volume on county roads; (2) the impact on existing roadway congestion; (3) the impact on the number of traffic accidents in the study area; (4) the potential cost increases related to road maintenance from truck traffic generated by anticipated CBM development, including maintenance related to invasions of noxious weeds; and (5) conflicts with public access to existing residential areas from CBM traffic on county roads, as well as from construction and operation of well access roads.

The maximum CBM maintenance traffic associated with the additional wells compared with existing traffic levels on study area roads from all vehicle types would generate less than 10 percent of additional vehicle daily trips on every affected county road, and less than 1 percent traffic on U.S. Highway 160.

The additional maximum CBM construction traffic for all vehicle types would generate increases in traffic. Heavy truck traffic would account for the majority of CBM construction vehicle trips. Construction vehicles would affect road surfaces to a greater degree than is indicated by the small increases in overall traffic volume. Heavy truck traffic would result in increased road maintenance costs because heavy trucks cause more damage to road surfaces of all types than do automobiles and light trucks.

One option for mitigating transportation impacts from CBM development would be to specify that a portion of tax revenue generated by CBM production be applied to maintain the roadways used by the industry.

Other options for minimizing impacts and conflicts of CBM development traffic on county roads include methods of providing additional revenue to the county from the establishment of additional fees for CBM-related vehicles using county roads or for developing new access roads. The county also could develop agreements with operators to construct improvements and maintenance on roads that are affected by oil and gas operations. This agreement would decrease county expenditures for road maintenance related to CBM development. All of these options would result in additional costs to operators.

The development of new fees or permits related to oil and gas industry use of county roads would require a revision of the following sections of the La Plata County Code: Oil and Gas Performance Standards for Roads and Access; Roads and Bridges, Development Standards and Specifications; and Roads and Bridges, Size, Weight and Load Limits. Implementation of additional fees and permits may temporarily increase expenditures by the county. If agreements are used, the county would need to develop road use agreements that would require operators to maintain roads and bridges to standards and specifications developed for the county code for oil and gas industry uses of county roads.

## VISUAL RESOURCES

The visual sensitivity of an area is affected by the type of land use and the landscape type. The CIR study area generally consists of a scenic quality that tends to be common throughout the surrounding area and is not outstanding or unique. Visual impacts from oil and gas development consist of the introduction of solid geometric features, such as meter houses, pump jacks, condensate tanks, on-site storage tanks, and covered produced water pits on the landscape. Linear elements associated with oil and gas pipelines, roads, and well pads can involve clearing of dense vegetation and or construction on steep slopes that makes them more noticeable.

As the number of wells within the study area increase, more people and viewpoints will be visually affected. The impacts will be more prominent during the construction phase and less prominent during the operation phase. The level of visual sensitivity to new well facilities varies by land use type. Agricultural lands will have the fewest viewers, but the well characteristics are most apparent in this land use category as a result of the relatively flat topography and short vegetation of homogeneous color. Rural residential lands will have more viewers than on agricultural lands, but the topography and vegetation colors and heights will vary, possibly screening the well facilities in the middleground and background distance zones. High-density areas residential will have more viewers, but the wells are often screened from multiple viewers by the homes in these areas.

Visual impacts from wells and related facilities could be mitigated through the siting process so that they are strategically located to minimize visual impacts. This approach could minimize the number of receptors (persons that may view the facilities) and lessen the likelihood that the site will attract attention. Examples of this type of visual mitigation include locating facilities at the base of slopes instead of on ridges and designing roads to follow the contours of the land. Wells could also be visually mitigated using specific post-construction and operation measures. This approach could be used in addition to siting mitigation, or used when siting mitigation is not feasible. Examples of this type of mitigation include painting facilities, landscaping, feathering or rounding the edges of a surface location, and using low-profile equipment. Based on the impacts, the most extensive mitigation should occur in the immediate and foreground distance zones in all land uses.

To implement these mitigation measures, the review process for oil and gas development could include a checklist with a quantitative ranking system for visual impacts and mitigation measures. These measures could be incorporated into performance standards for specific zoning or overlay districts, and in the permitting process for CBM facilities.

## NOISE

Existing noise levels in rural locations of La Plata County, with the exception of locations along highways and in large towns, are generally in the range of 42 to 45 A-weighted decibels (dBA). However, existing noise is higher near the existing 285 oil and gas wells plus ancillary facilities, such as compressor stations, that represent current activity. The COGCC noise standards state that CBM facilities should not produce a noise of more 55 dBA during the day and 50 dBA at night at residences. Construction-related noise can exceed 55 dBA at 1,500 feet from construction sites, but is short term at any one location and would occur only during daytime hours. On the other hand, noise from a typical compressor station generally occurs 24 hours per day and is approximately 50 dBA at 375 feet from the property boundary. The noise from pumping units at each well is approximately 50 dBA at 325 feet from the well pad and also occurs 24 hours per day.

Several options are available to reduce noise impacts from a CBM facility. Because noise decreases by approximately 6 dBA with every doubling of distance, the best, and most economic, option is a distance separation between a CBM facility and a noise-sensitive receptor. Compressor engines are often enclosed in buildings not only for noise suppression but also for climate protection and security measures. Noise mufflers could be installed on the compressor engine exhaust. Finally, placing obstacles such as walls and berms or using naturally occurring topographical features can be used to reduce noise impacts. A barrier can reduce noise at least 5 dBA if it breaks the line of sight between a CBM facility and a receptor. Generally, noise will be reduced by 1.5 dBA with each 3.5 feet of barrier height above the line of sight. These measures could be incorporated into performance standards for specific zoning or overlay districts and in the permitting process for CBM facilities.

## HEALTH AND SAFETY

The Fruitland Formation is the geologic formation in the area that is the target of CBM development. Historical and existing public health risks associated with this formation and documented before CBM development began include methane and hydrogen sulfide gas seepage into domestic water wells and residences, dying vegetation, coal fires along the outcrop, and coal mine explosions. Within the study area, areas where the documented frequency of soil gas seeps is higher than background values are located near the outcrop area for the Fruitland Formation. Wildfires within the study area may ignite both naturally occurring methane gas seeps and potential methane gas leaks associated with CBM development. Fire management in the San Jan Basin is a coordinated interagency effort. Cooperative agreements among the federal, state, and local agencies are in place to facilitate rapid emergency response.

Several federal, state, and local health and safety regulations are applicable to oil and gas well drilling operations. As a result of poor isolation of the coal zones in older wells and potential methane seepage from additional development, increased public safety risks are anticipated to occur in proportion to the number of additional CBM-related facilities. There would be a potentially increased risk of methane seepage in soils and water wells, fires, and accidents with increased CBM development. Residential properties near the anticipated CBM facilities would be most sensitive to these risks.

The options to mitigate potential public health and safety impacts from CBM development include using performance-based zoning and adequate setbacks to provide buffer zones between methane seepage hazards areas, CBM facilities, and residential or other development to minimize public health and safety risks in the event of accidental releases of combustible gases. Additionally, when considering well site locations, areas within unventilated deep or narrow spaces where combustible gases may accumulate in the event of an accidental release should be avoided. The county could also enforce requirements for operators to submit annual updates for Emergency Preparedness Plans and require dust suppression and traffic control plans to minimize potential health and safety and traffic accidents as needed for access roads.

In permitting oil and gas facilities, the county could require geo-referenced spatial data for as-built locations of wells access road locations, flowlines, and other facilities to minimize incidents associated with accidental excavation within gas line locations and to facilitate emergency response, if needed. This option could be implemented using performance standards for new developments in the zoning code and the permitting process for CBM facilities. The county could establish cooperative agreements with federal and state agencies to facilitate information sharing and to defer the regulation and monitoring of health and safety-related issues associated with CBM development to other regulatory agencies.