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SDR-922-91-10
3165.3 (922.L)

May 8, 1991

CERTIFIED-RETURN RECEIPT REQUESTED

DECISION

(1) Mr. Michael G. Bader
Executive Director
Alliance for the Wild Rockies
P.O. Box 8731
Missoula, Montana 59807

(2) Mr. Robert J. Yatter
Director
Badger Chapter of the
Glacier-Two Medicine Alliance
P.O. Box 8374
Missoula, Montana 59807

SDR No. 922-91-10

AFFIRMED

Mr. Michael G. Bader, Executive Director, Alliance for the Wild Rockies and Mr. Robert J. Yatter, Director, Badger Chapter of the Glacier-Two Medicine Alliance (Appellants) have requested a State Director Review (SDR), on the Record of Decision (ROD) issued February 19, 1991, on the Fina Oil and Chemical Company (Fina) Federal South Glacier No. 1-26 well and the Final Environmental Impact Statement (FEIS) for the proposed oil and gas drilling near Badger Creek and Hall Creek in the Badger-Two Medicine area of the Lewis and Clark National Forest in Montana. This appeal has also been filed with the U.S. Forest Service (USFS), Region 1, Missoula, Montana. The request was dated April 15, 1991, and was timely received by this office on April 17, 1991. On April 24, 1991, the Appellants were notified by the BLM, Montana State Office, that a decision on the SDR request would be delayed beyond the 10 business days outlined in the regulations under 43 CFR 3165.3(d).

The Appellants have also requested a stay on all activities which would implement the ROD and selected alternative. This stay request includes a stay on any ground disturbing activities including road building, removal of vegetation from the proposed wellsite and access road, survey marking of the proposed access road, or any other ground disturbing activities, but excluding work on proper analyses requested in the Statement of Reasons (SOR).

As stated in the ROD, Part XI. Appeal Procedures, Page 25, the decisions made by the BLM related to the approval of the Drilling Plan and the Hydrogen Sulfide (H_2S) Contingency Plan are appealable to the State Director, Montana State Office, pursuant to 43 CFR 3165.3. The BLM's response to the SDR request is only related to the Drilling Plan and the H_2S Contingency Plan. The USFS will respond to the other issues not specifically related to the Drilling Plan and the H_2S Contingency Plan.

The Area Manager of the Great Fall Resource Area (GFRA) approved the Fina application for permit to drill (APD) on March 6, 1991. The proposed Federal South Glacier No. 1-26 well is located in the SE¼NE¼ sec. 26, T. 30 N., R. 13 W., PMM, Glacier County, Montana. The FEIS was prepared to assess the probable environmental impacts of drilling this well and the Chevron well, located in the SW¼NE¼ of sec. 35, T. 29 N., R. 12 W., PMM, Pondera County, Montana which is approximately 10 miles to the southeast. The APD for the Chevron well has not been approved by the GFRA. The FEIS was completed on November 27, 1990, and the ROD on the Fina well was issued February 19, 1991.

The following issues and responses are organized in order as presented by the Appellants SDR request:

1. Pages 10-18, B. Hydrogen Sulfide. The Appellants assert that the worst-case analysis of a well blowout and subsequent outbreak of poisonous H_2S gas is not adequate and omits information relevant to the decisionmaker. The Appellants assert that effects of H_2S gas on human health were not thoroughly researched and were not properly considered before a final decision was made. They stated that the FEIS should have contained information about varying thresholds of safety for different individuals, as well as plans detailing the special precautions and emergency actions which must be taken to protect the health and life of children, pregnant women, elderly people, and people with respiratory problems who might be working, living, or camping in the area at the time of a well blowout. The Appellants assert that the failure of the FEIS to contain information on the threat that a blowout poses to wildlife violates laws set up to protect the lives and habitats of threatened and endangered species. The Appellants assert that the dangers of sulfur dioxide (SO_2) were not adequately addressed in the FEIS.

Response:

The concerns about H_2S gas were identified during the scoping process (Appendix D-4-6). The FEIS Chapter IV-163, which also references the Chevron Project, Chapter IV-95, have adequately addressed the potential for and effects of H_2S gas exposure during drilling and SO_2 emissions. Chapter IV-97, Table 4.12, is a summary of toxic effects of H_2S gas on humans based on animal studies as well as actual exposure to man. Every attempt has been made to research, analyze, and educate the

public on the effects of H_2S gas. Numerous studies conducted by the Occupational Safety and Health Association (OSHA), the Lawrence Livermore National Laboratory (1984), Kruger (1987), and Energy Resources Conservation Board (1984) were researched and any relevant information obtained was incorporated into the text of the FEIS.

The H_2S Contingency Plan under Appendix B-47 insures the safety for all workers and others in the area. As stated under Appendix B-56, this plan provides for personnel safety programs, precautionary measures, safety equipment and emergency procedures, and sets forth responsibilities and duties pertaining to drilling in a sour gas area. It is the intent of Fina and the drilling contractor to make every effort to provide adequate safeguards against harm to persons on the rig and in the immediate vicinity from the effects of H_2S, which may be released into the atmosphere under emergency conditions. The H_2S Contingency Plan was prepared to assist the communities in preparing for such an incident. We have not received any concerns that medical facilities in the surrounding communities would not be able to handle such an emergency, if it ever arises. There are no residents within the 2 mile radius around the wellsite; however, Fina will check for area residents, livestock operations, stock owners, or any persons that might have reason to come into the area during every facet of the operations beginning from road construction through drilling operations.

The H_2S Contingency Plan adequately addresses the safety precautions that are necessary in the event of an uncontrolled release of H_2S gas to the atmosphere. This also covers SO_2 emissions which would result from the ignition of H_2S gas. As stated in the H_2S Contingency Plan, Appendix B-65, "If the well is ignited, the burning hydrogen sulfide will be converted to sulfur dioxide which is also poisonous. Therefore, DO NOT ASSUME THAT THE AREA IS SAFE AFTER THE GAS IS IGNITED. CONTINUE TO OBSERVE EMERGENCY PROCEDURES AND FOLLOW THE INSTRUCTIONS OF SUPERVISORS." The emergency procedures that are being referred to in this discussion of SO_2 are the same procedures being used in the H_2S Contingency Plan.

2. Page 20-21, D. Water Pollution and Disturbance. The Appellants argue that the FEIS does not address the possibility encountering lost circulation zones and the amount of water that will be used may be greater than that stated in the FEIS or ROD.

Response:

The Appellants reference Chapter III-17, and attempt to imply that because the Madison Formation is cavernous and the caverns did not contain water in the closest well drilled to the proposed project area, Phillips Petroleum 1-1 Kiyo, that the potential for lost circulation zones exist. The FEIS discusses this possibility under Chapter IV-106,

which also references the Chevron Project under Chapter IV-13. The industry and drilling contractor are aware of the fact that the possibility always exists during routine drilling operations that lost circulation zones may be encountered. This is standard operating practice and when encountering these lost circulation zones, additives such as cotton seed hull, cedar fiber chips, etc, are introduced into the drilling mud to seal off the lost circulation zones. After the lost circulation is stopped, a filter cake begins to form in the wellbore around these zones and seals off the lost circulation zone. The potential lost circulation zones are always being monitored by the drilling contractor and precautions are being taken to ensure that drilling fluids are prepared prior to encountering these lost circulations zones. The routine monitoring of the drilling fluid levels in the pits and pressure gauges on the rig floor will alert the drilling contractor of the lost circulation in the wellbore. This routine monitoring will allow for a quick recovery of the hole by mixing the additives to prevent further fluid loss into the formation. Fina will file a Notice of Completion of Groundwater Development permit, with the Montana Department of Natural Resources and Conservation, which would allow Fina the right to use water up to 100 gallons per minute. As stated in Chapter IV-106, water use should not exceed 50 gallons per minute during drilling and in the event water was not available in adequate quantities, it is anticipated that Fina would seek alternate water sources. These are discussed further in the FEIS.

Page 24, Section 5. The Appellant states that impermeable membranes and well casings are inadequate methods of preventing water quality degradation. They also refer to a report about a study that was conducted in eastern Montana by Dewey, B.M. 1982 which states that inadequate lining in reserve pits, poor pit reclamation practices and drilling with saline water, and improper well casing have all resulted in ground and surface water degradation. It documents twenty-one cases due to oil and gas well drilling, storage, transport, and exploration but suggests the problems may be more widespread than currently realized.

Response:

The Appellants have not presented any substantial information that indicates that the same events which occurred in eastern Montana may also be prevalent to this area. The drilling mud used in those areas was primarily salt (saline) water, where in the Fina well, fresh water mud will be used. Chapter II and IV of the FEIS discuss the procedures that are being applied to protect the groundwater sources in the area and Chapter III of the FEIS addresses the casing program and the preventive measures to protect the contamination of the groundwaters.

Page 26, E. Drilling Considerations. The Appellants state that gamma-ray and neutron porosity tools use a nuclear source, some are larger and hotter than others and pose a threat to groundwater sources when trapped and the tool casing eventually corrodes. They also ask what are the plans in case of a stuck or lost nuclear tool. The Appellants state that nowhere in this document has this been dealt with or addressed; therefore, the National Environmental Policy Act is being violated.

Response:

On occasion radioactive logging tools do become stuck in the hole; however, they are rarely lost or abandoned. Even though it is very rare to loose such a tool, the logging industry as a whole treats this event very seriously. These tools, if lost will be fished out of the hole with a standard cut and thread method which has recovered tools stuck in the hole. It is also very rare to loose a tool in the hole, specifically in the areas were casing has been placed. The potential may exist below the intermediate casing string depth; however, before a logging tool is placed in the hole, the drilling contractor has to determine the stability of the hole prior to running the tool. An operator will not run a logging tool, particularly when you look at the cost of a radioactive tool, if the stability of the hole has not been determined. If the hole is unstable, the chances are that the operator will opt to use a resistivity tool. The standard practice is to run a resistivity tool prior to running the radioactive tool in the hole (Schlumberger Well Services). There are different levels of radioactive sources; however, the most commonly used in these tools is Cesium 137 and Americium 241 Beryllium. These sources are not water soluble and would not pose a threat to groundwater sources. The only water soluble radioactive source is Radium 226; however, the industry no longer uses this source in logging tools. It is primarily used as a source for calibrating the other tools. The Nuclear Regulatory Commission (NRC) regulates and requires that all radioactive sources be doubly encapsulated in a well constructed pressure vessel with a high technological material that is corrosion resistive and which will insure no leakage. The NRC requires that these vessels are tested every 6 months.

Generally speaking, if the tool is lost and cannot be fished, the tool would be lost at a great depth and the chances of encountering fresh water at such a depth is very rare. Also, a majority of the logging will be conducted below the intermediate casing and all potential water aquifers have been protected. As we have continued to state, the probability of abandoning a radioactive tool in the hole is very rare.

If for any reason, a radioactive source is lost in the hole, the logging engineer and drilling contractor are required to contact the NRC which has very strict requirements on abandoning radioactive sources. The requirements are specified in their regulations under 10 CFR 39. They state the amount of cement and/or concrete to be placed in the hole above the radioactive source. These requirements also include adding a red dye to the cement to alert the driller who may be attempting to re-enter the hole that there is a radioactive source in the hole. The abandonment marker on the location will also have some specific language which identifies the well location, the radioactive source, and the logging company.

The appellant has not substantiated the statistical validity of this event occurring and our research indicates that these occurrences are very rare; however, the industry does have in place a normal operating procedure to handle these instances.

After reviewing the Appellants SOR, including appendices, and other supporting documentation, the ROD and the FEIS, we affirm the CFRA, Area Manager's decision approving the drilling plan of the Fina APD. Also, your request for a stay on the drilling of the well is denied.

This Decision may be appealed to the Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR 4.400 and the enclosed Form 1842-1 (Enclosure 2). If an appeal is taken, a Notice of Appeal must be filed in this office at the aforementioned address within 30 days from receipt of this Decision. A copy of the Notice of Appeal and of any statement of reasons, written arguments, or briefs must also be served on the Office of the Solicitor at the address shown on Form 1842-1. It is also requested that a copy of any statement of reasons, written arguments, or briefs be sent to this office. The appellant has the burden of showing that the decision appealed from is in error.

/s/ Chun C. Wong
Chun C. Wong, Acting
Deputy State Director
Division of Mineral Resources

2 Enclosures
1- Appellants letter dated April 15, 1991 (183 pp)
2- Form 1842-1 (1 p)

cc: (w/o encls.)
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DM, Lewistown
AM, CFRA