Williams Fork Mines C-1981-044

Proposed Decision and Findings of Compliance
For
Permit Renewal No. 8 (RN8)

COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

21 December 2023

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In Fulfillment of C.R.S. 34-33-115 and the following
Regulations of the Colorado Mined Land Reclamation Board for Coal Mining:
Rules 2.08.3, 2.06.2, 2.06.3, 2.06.5, 2.06.7 and 3.02.2

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INTRODUCTION

The Colorado Division of Reclamation, Mining and Safety (the Division) has received an application (RN8), from Moffat County Mining, LLC (MCM), to renew permit C1981044 for conducting surface coal mining and reclamation operations at the Williams Fork Mines.

The Williams Fork Mines were formerly operated by Empire Energy Corporation, Cyprus Empire Corporation, RAG Empire Corporation, BTU Empire Corporation, LLC. The mines were formerly known as the Eagle No. 5 and No. 9 Mines, as well as the Eagle Mine Complex.

The review process for permit renewals as well as detailed information concerning the findings of compliance is described in the Colorado Surface Coal Mining Reclamation Act (C.R.S. 34-33-101 et seq.) and the Regulations of the Colorado Mined Land Reclamation Board for Coal Mining. Rules referred to in this document are contained within those regulations. Specific information about Moffat County Mining LLC. (MCM), and reclamation operations can be found in the permit application and permit revision applications on file with the Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203 and, in DRMS's document management system at the following website:

http://drmsweblink.state.co.us/drmsweblink/search.aspx?dbid=0

This Findings document comprises the decision package prepared by the Colorado Division of Reclamation, Mining and Safety (the Division) for the MCM Permit Renewal No. 8 (RN8), and includes:

1. The proposed decision to approve the renewal application.
2. A summary constituting:
    a. A history of the review of the permit application.
    b. A description of the environment affected by the operation.
    c. A description of the mining and reclamation plan.
3. The written findings of compliance the Division prepared as required by the Colorado Surface Coal Mining Reclamation Act.

Proposed Decision

The Colorado Division of Reclamation, Mining and Safety proposes to APPROVE an application for permit renewal RN8.

The application was submitted by Moffat County Mining LLC. This decision is based on a finding that the operations comply with all requirements of the Colorado State Program as found in the Colorado Surface Coal Mining Reclamation Act, C.R.S. 34-33-101 et seq., and the Regulations promulgated pursuant to the Act. If no request for a formal hearing is made within thirty (30) days of the first publication of the issuance of this proposed decision, then this decision becomes final. The permit will be renewed upon submittal to DRMS of acceptable surety by the applicant. The permit application, all

supporting documentation and any stipulations or conditions become a binding part of the permit.

No coal mining operations may be conducted on any Federal surface or coal until the Assistant Secretary for Lands and Minerals Management with the U.S. Department of the Interior has approved any required federal mining plan or modification thereof.

Summary

The Division is required to make specific written findings. In accordance with Section 34-33-114 of the Colorado Surface Coal Mining Reclamation Act and Rule 2.07.6(2) of the Regulations of the Colorado Mined Land Reclamation Board for Coal Mining, this document presents those findings and the Division's proposed decision regarding approval of MCM's permit renewal application. The findings and proposed decision can be found at the end of this document.

The Review Process: Permit History and Revisions

The following table summarizes the Permitting Actions of the Williams Fork Mine Permit C1981044 since the last renewal (RN7), in December of 2018.

Table 1: Summary of Minor Revisions		
Revision Number	**Description**	**Proposed Decision Date**
MR 58	Mid Term MT8 updates and revisions.	8 April 2022
MR 57	Table 66 Pastureland/Hayland Seed Mix Update	29 April 2019

Table 2: Summary of Surety Actions		
Revision Number	**Description**	**Proposed Decision Date**
SL5	Phase I bond release request for 176.7 acres.	27 January 2020
SL 4	Phase I, II, III Bond Release for Strip Pit and Utah Tract on 323.73 acres.	17 March 2021

Table 3 Summary of Technical Revisions		
Revision Number	**Description**	**Proposed Decision Date**
TR38	This permitting action constitutes a correction to the disturbance area delineation and the Reclamation Plan.	23 December 2020

Status of Stipulations

The stipulation history for the MCM was reviewed with this renewal application. The review included an

investigation of any stipulations imposed, and any responses to existing stipulations received, since the last midterm review. Any stipulations associated with this permit and issued over the life of this operation which are not discussed in this renewal application have been complied with or, terminated.

Enforcement Actions
No enforcement actions have been issued since the last midterm review.

The Review Process for RN8
DRMS received MCM's application 3 March 2023. DRMS provided the preliminary adequacy to Moffat County Mining (MCM), on 5 May 2023 and received MCM's response on 20 November 2023.

- DRMS found the application complete 6 March 2023.
- MCM published its public notice weekly for four consecutive weeks beginning 19 May 2023.
- Proof of publication was submitted by MCM to DRMS on 20 November 2023.
- No objections or requests for informal conferences were received by DRMS during the public comment period.
- The State Historical Preservation officer through History Colorado, provided DRMS a letter stating they had no objections to the application, as did the Colorado Division of Parks and Wildlife.
- MCM's response to adequacy satisfactorily addressed all DRMS's questions.
- DRMS conducted AVS checks on the following dates:
    - 1 May 2023
    - 12 December 2023

The AVS checks returned no issues.

Description of the Environment

Location of Permit Area
The Williams Fork Mines are located in Moffat County, Colorado on lands as described below.

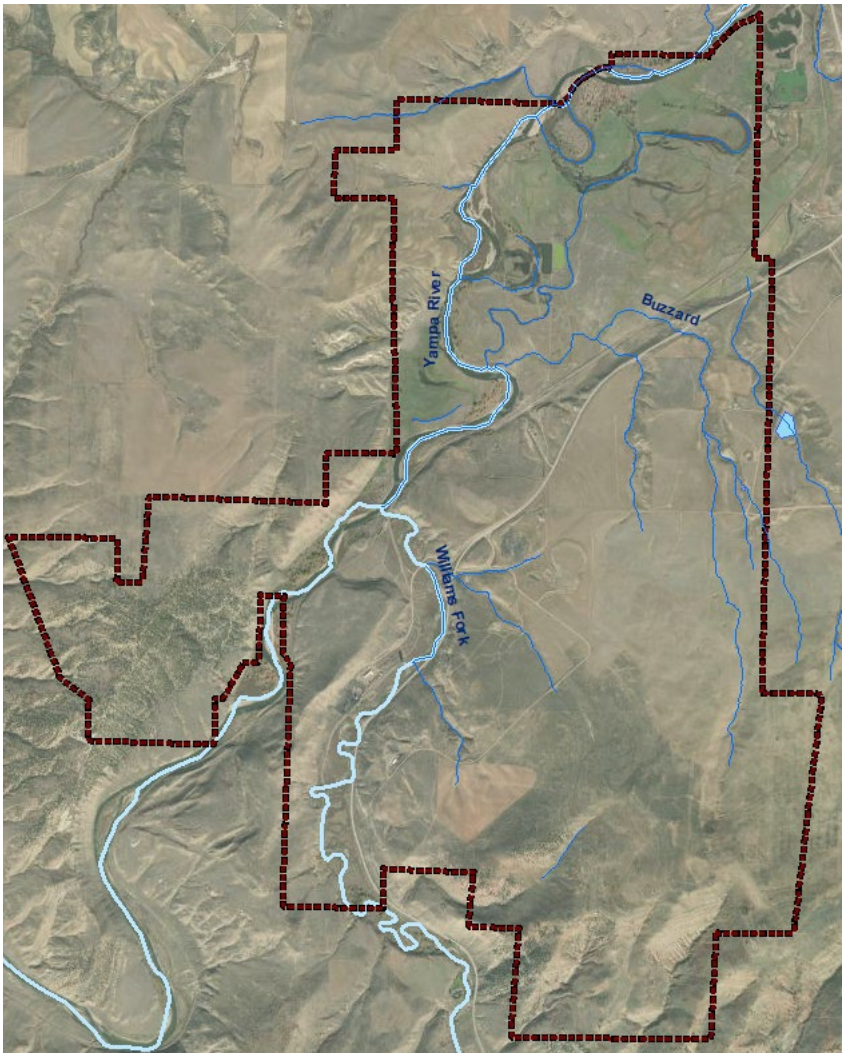
Township 5 North, Range 91 West:
Portions of W½ Section 4
N½ Section 8
N½ Section 6
Portions of S½ Section 6
Section 5, ALL

Township 5 North, Range 92 West:
E½ NE¼ Section 1

Township 6 North, Range 91 West:
Portions of S½ Section 17
W½ SW¼ Section 21
W½ W½ Section 28
W½ Section 33
E½ Section 19
E½ Section 30
Sections 20, 29, 31, 32, ALL

Township 6 North, Range 92 West:
Portions of S½ Section 25
S½ SE¼ Section 26
Portions of E ½ Section 35
Portions of Section 36

Williams Fork Mine is located approximately 7 miles south of Craig, Colorado off of Highway 40. The boundaries of the permit area are illustrated below in Map 1.



Map I: *The Williams Fork Mine permit boundary and the area's typical pre-mine dendritic drainage pattern.*

Local Climate

The climate of the Craig, Colorado area is characteristic of semi-arid steppe regions. The Craig area is in the rain/snow shadow of mountain ranges to the west and south and consequently has a high number of dry, clear days. Average annual precipitation at the Trapper Mine, adjacent to the Williams Fork Mines, is 16.7 inches. The mean annual temperature in Craig is 43˚F, with recorded extremes of -45˚F and +100˚F. Winds are predominantly from the west but are locally modified by topographic features. The growing season for the area around Craig averages 77 days.

Geologic Setting

The Williams Fork Mines are situated on the northeast flank of the northwest plunging Moffat Anticline. The Moffat Anticline is part of the larger-scale Axial uplift that extends northwestward across northwest Colorado to the Uinta Mountains in northeast Utah. The northeast limb of the Moffat Anticline dips northward into the Big Bottom syncline. Small-displacement gravity faults have been found in the permit area. The Williams Fork River crosses through the mine permit area and flows into the Yampa River in the northwest corner of the permit area. The Yampa River is one of the largest tributaries of the upper Colorado River system.

Bedrock at the ground surface in the Williams Fork Mines permit area is a sequence of sandstones, siltstones, shales, and coals that are part of the Cretaceous-age Williams Fork Formation. The Williams Fork Formation is part of the regionally extensive Mesa Verde Group. The Williams Fork Formation is subdivided into the following three units (in ascending stratigraphic order): the lower Williams Fork, the Twentymile sandstone, and the upper Williams Fork. Approximate thicknesses are: lower Williams Fork, 840 ft.; Twentymile sandstone, 120 ft.; and upper Williams Fork, 850 ft. Unconsolidated alluvial deposits of Quaternary age fill stream drainages in the permit area and surrounding areas. The alluvium is thickest in the Yampa and Williams Fork River valleys.

The coal seams formally mined at the Williams Fork Mines comprise the lower and upper units of the Williams Fork Formation exhibiting a thickness of less than 10 feet. The seams mined consisted of the P, F and E seams.

Local Coal Mining History.

The Williams Fork Mines were formerly operated by Empire Energy Corporation, Cyprus Empire Corporation, RAG Empire Corporation, BTU Empire Corporation, LLC. The mines were formerly known as the Eagle No. 5 and No. 9 Mines, as well as the Eagle Mine Complex.

The mine site entered temporary cessation status initially when mining ceased in 1995. The mine was subsequently returned to active status as a result of limited reclamation activities occurring at the site during the period of 2008 to 2010. On June 26, 2013, MCM submitted a request to the Division to return to temporary cessation status. The Division in July 2013 approved a request for the operations return to temporary cessation status. At this time, MCM is completing reclamation of the site and therefore is currently in active status, as of a letter from Peabody Inc, dated 9 November 2016.

Previous mining within the Williams Fork Mines permit area took place from the 1930's through the 1970's mining the E, C and the Hart seams.

Surface Water

Drainages within and adjacent to the permit area are ephemeral and generally extend south to north down the slope in a dendritic pattern. These drainages flow primarily in response to snowmelt or heavy rains eventually entering the Williams Fork River and then to its confluence with the Yampa River.

Flow in the Yampa River depends primarily on mountain snowpack. Flows range from intermittent to perennial, depending on location and precipitation patterns. The Williams Fork River is a major tributary of the Yampa River. The Williams Fork drains approximately 350 square miles, or ten percent of the Yampa River Valley. The Williams Fork fluctuates seasonally like the Yampa, but is more dependent on snowmelt, and there is less ground water discharge to sustain the flows of the river during low flow periods. Flows in the Williams Fork in the permit area typically range between 2500 cfs during spring runoff and less than 100 cfs during low flow.

Water quality also varies seasonally. Total suspended sediment loads are at a maximum during peak flows associated with spring runoff. Steele et al. (1979) reports that up to 90 percent of the annual sediment load of the Yampa River at the Maybell Station is discharged during the period of snowmelt runoff. Total suspended sediment loads increase with increased discharges (flows) in the rivers. The load of dissolved solids shows an inverse relationship with stream discharges.

High quality snowmelt runoff contains low levels of total dissolved solids (TDS). Therefore, concentrations of TDS decrease during peak flow periods. In the summer, when ground water discharge makes up a larger percentage of the flow in the rivers, TDS values increase. The Colorado Water Conservation Board (1969) reports that intermittent (and ephemeral) drainages at lower elevations contribute most of the dissolved and suspended solids that leave the basin.

The dominant cations in the Yampa and Williams Fork Rivers are calcium, sodium, and magnesium. Dominant anions are bicarbonate and sulfate with minor chloride. The concentration of total dissolved solids (TDS) averages around 270 mg/l in the Yampa River immediately below its confluence with the Williams Fork River. The Williams Fork increases the Yampa River's TDS concentration by less than 20 mg/l. The concentration in the Williams Fork averages around 300 mg/l.

Water within the Yampa River Basin is consumed through the irrigation of croplands, municipal water supplies, stock watering, cooling water for power plants, evapotranspiration by riparian vegetation and phreatophytes, and transbasin diversions. Irrigation of cropland constitutes the largest of these uses. Other uses include industrial purposes, municipal water supplies, and other unspecified uses.

Aquifer Stratigraphy.

Within the general vicinity of the Williams Fork Mines, ground water exists in both bedrock and alluvial aquifers. Significant bedrock aquifers are (listed in ascending stratigraphic order) the Trout Creek, Middle, Twentymile, and White Sandstones. The Middle, Twentymile and White Sandstones are in the Williams Fork Formation; the Trout Creek Sandstone is the uppermost member of the underlying Iles Formation. The main alluvial aquifers in the area are associated with the Yampa and Williams Fork Rivers. The alluvial aquifers probably contribute to baseflow of the rivers during dry periods. Coal seams, discontinuous sandstones, and siltstones and smaller alluvial bodies in the area of the mine are also water- bearing but contain insufficient quantities of water to be considered significant aquifers.

Ground Water

The Trout Creek Sandstone, the Twentymile Sandstone, and the White Sandstone are bedrock aquifers currently being used for ground water supplies in the general vicinity of the Williams Fork Mines. The Middle Sandstone is not currently used as a ground water supply in the vicinity. The alluvial bodies associated with the Yampa River and Williams Fork River contain limited ground water and are not considered major aquifers in the general area. Alluvial bodies along the Yampa River up and downstream of the general area, however, are significant sources of ground water. High yield irrigation and municipal water supply wells are completed in the Yampa River alluvium in those areas. Also, the Yampa River alluvium outside the vicinity is widely used as a source of domestic and livestock watering. Within the vicinity, alluvial ground water is not a significant source of water put to beneficial use.

The sandstone aquifers in the Big Bottom Synclinal Basin are recharged at their subcrops beneath the stream/alluvial systems of the Yampa and Williams Fork Rivers, and at their outcrops in upland areas. From a recharge area, flow would be generally northward, downdip toward the axis of the Big Bottom syncline. Faults may provide conduits of flow for ground water wherever a fault is not sealed with fine-grained gouge material.

The sandstone aquifers are under atmospheric pressure (water table conditions) near their recharge areas and under hydrostatic pressure (artesian conditions) within the structural basins or at discharge points. Hydrostatic pressures in the sandstone aquifers increase with depth and are at a maximum in the axial areas of the Big and Round Bottom Synclines. Artesian conditions are developed in aquifers which are confined by overlying and underlying strata with low permeabilities. Several of the wells drilled into the bedrock aquifers within the area exhibit artesian flows at the surface.

Ground water in the Trout Creek Sandstone and Williams Fork Formation is predominantly calcium and sodium bicarbonate types. Water in contact with coals is a calcium sulfate type and can contain fluoride, iron, manganese, selenium, and sulfate concentrations in excess of U.S. Public Health Service drinking water standards, with the water contained in the coals and thin discontinuous sandstones generally being of poorer quality than that from the massive regional sandstone aquifers.

The Yampa River and the Williams Fork River alluviums contain alluvial ground water. These alluvial water bearing units may store, and release water used by the overlying vegetation, and may sustain a component of baseflow to the associated river systems. These alluvial units may provide recharge to rock aquifers and are recharged by rock aquifers within the ground water study area.

Alluvial water quality is variable, depending on the underlying rock and source of alluvial material. Ground water from the Yampa River alluvium is primarily sodium sulfate type. Dissolved solids average 4,586 mg/l with a maximum measure of 8,810 mg/l. Ground water for the Williams Fork alluvium is primarily of the sodium bicarbonate type. Total dissolved solids average 1,009 milligrams per liter (mg/l) with a maximum measured value of 1,510 mg/l. Maximum primary and secondary drinking water standards are exceeded in both aquifers for many parameters including barium, cadmium, chloride, chromium, pH, sulfate, and selenium. In addition, average concentration values for chloride, total dissolved solids, iron, lead, manganese, and sulfate exceed EPA primary and secondary standards.

Natural springs, seeps and spoil springs are detailed in the Annual Reclamation Report submitted to DRMS.

Soil Types Characteristics and Distribution

The permit area is occupied by three soil orders: Aridisols, Entisols, and Mollisols. These soil orders are characteristic of fairly steep, semi-arid regions of northwestern Colorado. They represent soils that grade from recently developed soil bodies with minimum horizon development (Entisols) to older soils with well-defined diagnostic horizons (Mollisols).

Overall, the soils found in the proposed permit area are relatively deep and fairly well-drained. Effective rooting depth varies from two to sixty inches within the area. The deepest soils yielding the greatest rooting depths occur in valleys and on the leeward sides of ridges. Soil reaction is slightly acid to moderately alkaline in the permit area with the exception of small, scattered areas where substrata are saline. These small areas have probably formed in place from weathered sodic shales.

Vegetation Distribution

Vegetation communities in the permit area range from an upland mountain shrub community to cottonwood-willow communities in the riparian zone next to the Williams Fork and Yampa Rivers. Juniper or big sagebrush communities dominate more xeric sites throughout the permit area. Lands disturbed by mining are upland big sagebrush and mountain shrub communities, croplands, and previously mined lands. The croplands are previously mined lands. There are two types of croplands:

1. irrigated hayfields in the fertile river bottom areas, and
2. dryland wheat, found on cleared hillsides which were once sage-dominated. Several areas disturbed by former mining operations are within the disturbed areas.

Wildlife

Wildlife habitat in the permit area is diverse. It is used extensively by mule deer, elk and pronghorn antelope. Known predators include badger, cougar, coyote, red fox and bobcat. Small game and furbearing mammals include the cottontail rabbit, white tailed jackrabbit, raccoon, beaver, muskrat, striped skunk and weasel. Many species of birds are also found within the permit boundary. Of special interest are various species of waterfowl, raptors (including the golden and bald eagles), the sandhill crane, Columbian sharptail grouse and the Greater sage grouse. Fish species in the Williams Fork River, within the affected area, include various suckers and minnows, mottled sculpin, rainbow trout and mountain whitefish.

Land Uses

Land uses within the surface disturbed area are cropland, pastureland and rangeland/wildlife habitat. Mining has occurred within the permit area since the 1930s. Much of the area has been previously disturbed by surface and/or underground mining activities. The Williams Fork Mines have been in existence since 1971.

Cultural and Historic Resources

Exhibit 6 of the Williams Fork Mines permit contains the extensive results of cultural and historic resources inventories that were conducted within and the permit area and in portions of the surrounding area. Appropriate mitigation measures were implemented for any significant cultural sites.

Operation and Reclamation Plans

The operation plan is addressed in detail Permit Section 2.05. The permit application provides detailed information on mining and reclamation operations, transportation routes, and hydrologic controls for the mine. Mining was completed and coal extraction at MCM ceased in early 1995. No additional mining is proposed for the upcoming permit term.

Three of the Williams Fork Mines were underground mines, while the Williams Fork Strip Pit No. 2 and the Utah Tract were surface mines. Room-and-pillar and longwall mining methods have been used to extract the coal resource as well as conventional underground techniques. In advance of any mine disturbance, brush was cleared, and topsoil removed and salvaged. Stockpiles were shaped and seeded to establish vegetation and for protection from wind and water erosion.

The site is undergoing reclamation and currently facilities include: mine dewatering ponds, sediment control ponds, haul roads, a rail spur, and a shop building. Mine water and surface runoff were handled in a series of ditches and ponds during operation. Williams Fork Mines No. 5 Mine water and No. 6 Mine water was collected in a mine sump and pumped to the surface and pumped into a series of ponds along the Williams Fork River, then discharged into the Williams Fork River. Disturbed area drainage is controlled by ponds, except for those areas where small area exemptions were approved. As ponds do not retain water throughout the year they will be reclaimed, and some will be retained as stock tanks as they hold spring runoff.

Roads proposed for retention include the main haul road leading from State Highway 13 to the No. 5 portal; old Highway 13, providing access to the No. 5A portals; and a portion of the road at the Williams Fork Strip Pit. If there is interest from the County, Old Highway 13 may be returned to Moffat County. MCM must provide the documentation as required by Rule 4.03.1(1)(f) and 4.03.2(1)(g) for roads to remain as permanent features. Prior to bond release, MCM must submit this documentation and include it as part of the permit application through a revision. The roads network is shown on Map 29.

Upon permanent cessation of mining activities, or when features are no longer required, all surface disturbed lands will be reclaimed to the following three post-mining land uses: rangeland/wildlife habitat, cropland, and pastureland. As of March 2023, all reclamation has been completed at the site.

Explanation of Findings

Pursuant to Rule 2.07.6(2) of the Regulations of the Colorado Mined Land Reclamation Board for Coal Mining, and the approved state program, the Division of Reclamation, Mining and Safety or the Board must make specific written findings prior to issuance of a permit, permit renewal or permit revision. These findings are based on information made available to the Division that demonstrates that the applicant will be able to operate in compliance with the Colorado Surface Coal Mining Reclamation Act and the Regulations promulgated pursuant to the Act.

The findings in the following Sections required by Rule 2.07.6(2) are listed in accordance with that Rule. The findings and specific approvals required pursuant to Rule 2.07.6(2)(m) are listed in accordance with Rule 4 and are organized under subject or discipline subtitles. The following findings were reevaluated and updated as necessary to reflect changes that occurred during the past permit term. Any stipulations from the original permit and findings document or subsequent revisions that have been totally resolved to the satisfaction of the Division have been removed from this document.

This findings document is updated upon permit renewal, occurring every five years for the Williams Fork Mine. This is the renewal findings document (RN8) for Moffat County Mining LLC. for a five-year permit term.

Section A - Findings Required by Rule 2.07.6(2)

1. The permit application is accurate and complete. All requirements of the Act and these rules have been complied with (2.07.6(2)(a)).

2. Based on information contained in the permit application and other information available to the Division, the Division finds that surface coal mining and reclamation can be feasibly accomplished at the Williams Fork Mines (2.07.6(2)(b)).

3. The assessment of the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance, , entitled: Yampa River Cumulative Hydrologic Impact Statement is available for inspection at the offices of the Division.

The Division finds that the operations proposed under the application have been designed to prevent damage to the hydrologic balance outside the proposed permit area (2.07.6(2)(c)).

Therefore, the Division finds that the operations proposed under RN8 are designed to prevent damage to the hydrologic balance outside the proposed permit area.

The Division is in the process of updating the 2010 version of the Yampa River Cumulative Hydrologic Impact Statement. This update will include an analysis of recent data from water quality

sampling of the Yampa River and tributaries potentially impacted by the Williams Fork Mine. Please refer to Section B.III. E (Probable Hydrologic Consequences), of this document for additional discussion of the predicted hydrologic consequences of mining operations at the Williams Fork Mine (2.07.6(2)(c)).

4. The Division finds that the permit area is, subject to valid rights existing as of August 3, 1977, and is not within:

a) The boundaries of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including rivers under study for designation, and National Recreation Areas (2.07.6(2)(d)(iii)(A))
b) Three hundred feet of any public building, school, church, community or institutional building, or public park (2.07.6(2)(d)(iii)(B)).
c) One hundred feet of a cemetery (2.07.6(2)(d)(iii)(C)).
d) The boundaries of any National Forest unless the required finding of compatibility has been made by the Secretary of the U.S. Department of Agriculture (2.07.6(2)(d)(iii)(D)).
e) One hundred feet of the outside right of way line of any public road except where mine access or haul roads join such line and excepting any roads for which the necessary approvals have been received, notices published, public hearing opportunities provided, and written findings made (2.07.6(2)(d)(iv)).
f) Three hundred feet of an occupied dwelling unless a written waiver from the owner has been provided (2.07.6(2)(d)(v)).
    a. There are three (3) private residences located within the Permit Area. These structures are located outside of the angle of draw calculated for any mining. Therefore, the structures are not expected to incur any subsidence-induced damage. No mining will occur near these structures during the next five-year permit term.
g) On the basis of correspondence from the State Historic Preservation Office (SHPO), the Division finds that subject to valid existing rights as of August 3, 1977, the mining operation will not adversely affect any publicly owned park or place listed on or eligible for listing in the National Register of Historic Places, as determined by the State Historic Preservation Office (2.07.6(2)(d)(vi)). In a letter of 30 November 1999 associated with review of Permit Revision No. 2, the SHPO noted that the entire proposed permit boundary had previously been surveyed for cultural resources, and that only two rock art sites had been determined eligible for listing in the National Register of Historic Places. Subsequent correspondence documented that adequate protection and documentation had been completed with respect to the eligible sites (both located within or adjacent to the original mine permit boundary). No new surface disturbance is proposed for the next five-year permit term; therefore, the letter from the State Historic Preservation Office is still valid. Further On March 29, 2023, the SHPO recommended a finding of no adverse effect to historic properties is appropriate for the RN8 undertakings.
h) An area designation as unsuitable for surface coal mining operations or an area under study for designation as unsuitable for surface coal mining (2.07.6(2)(e)(i) and (ii)).

5. For the surface mining portion of this operation, private mineral estate has been severed from private surface estate; therefore, the documentation specified by Rule 2.03.6(2) has been provided in descriptions of lease numbers, sublease agreements, warranty deeds, and quit claim deeds in the permit pages. (2.07.6(2)(f)).

6. On the basis of evidence submitted by the applicant and received from other state and federal agencies as a result of the Section 34-33-114(3) compliance review required by the Colorado Surface Coal Mining Reclamation Act, the Division finds the owners and controllers of the mining operation, does not own or control any operations which are currently in violation of any law, rule, or regulation of the United States, or any State law, rule, or regulation, or any provision of the Surface Mining Control and Reclamation Act or the Colorado Surface Coal Mining Reclamation Act (2.07.6(2)(g)).

7. The applicant and all persons who own or control the applicant do not control and has not controlled mining operations with a demonstrated pattern of willful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (2.07.6(2)(h)).

8. Pursuant to Rule 2.07.6(2)(i), the Division finds that the Williams Fork Mines will not be inconsistent with other operations anticipated to be performed in areas adjacent to the permit area.

9. The Division currently holds a bond of $1,708,602.00. The Division estimated the cost of reclamation to be $1,968,445. The current amount of bond held is not adequate and MCM will need to submit additional bond in the amount of $259,843. The RN8 revised cost estimate is attached. The applicant must submit additional performance bond required under Rule 3, prior to the issuance of the permit in accordance with Rule (2.07.6(2)(j)).

10. The Division has made a negative determination for the presence of prime farmland within the permit area. The decision was based on a letter from the Soil Conservation Service dated February 2, 1982. Although soil types 03B and fine sandy loam O-56 are found adjacent to the Williams Fork River, this area is not considered prime farmland. Approximately 50 percent of the 03B soil was disturbed prior to the enactment of SMCRA and is considered an industrial site. Therefore, no areas designated as prime farmland are found within the Williams Fork Mines permit area (2.07.6(2)(k)).

11. Based on information provided in the application, the Division has determined that three alluvial valley floors exist within the permit or adjacent area. The alluvial valley floors are known as Williams Fork alluvial valley floor, Yampa River/Big Bottom alluvial valley floor, and Yampa River/Round Bottom alluvial valley floor (2.07.6(2) and 2.06.8(3)(C)). No impacts to the river or the alluvial valley floor were observed over the course of mining operations. No development is currently proposed for the Yampa River/Big Bottom or Yampa River/Round Bottom alluvial valley floors. For additional specific findings concerning these alluvial valley floors, please see Section B XI of this findings.

12. The Division approved the post-mining land use of the operation. It was determined that rangeland/wildlife, pastureland, and cropland meet the requirements of Rule 4.16 for the permit area

(2.07.6(2)(l)).

13. Specific approvals have been granted or are proposed. These approvals are addressed in the following section, Section B (2.07.6(2)(m)).

14. The Division finds that the activities proposed by the applicant would not affect the continued existence of endangered or threatened species or result in the destruction or adverse modification of their critical habitats, or in the case of Bald eagles, "may affect, but not likely to adversely affect" due to potential collisions with power lines. Due to the proximity of golden eagle nests within the permit area as identified by the U.S. Fish and Wildlife Service, the Division previously attached Stipulation No. 4 to the permit. This stipulation imposed seasonal limitations on surface disturbances near the nests. This stipulation was withdrawn during the review of Permit Renewal RN03 as its requirements were incorporated into Section 4.18 of the permit (2.07.6(2)(n)).

Updates to state and federally listed species considered to be threatened or endangered were provided during the adequacy process associated with the RN8 permitting action. The updated information regarding Threatened and Endangered Species will be placed in Appendix 15A.

15. The Division finds that the applicant has satisfied the applicable requirements of Rules 4.23 through 4.29 regarding special categories of mining (2.07.6(2)(p)).

Section B – Findings and Specific Approvals Required by Rule 4

I. Roads - Rule 4.03

The permittee presents a discussion of roads in Section 4.03 of Volume 2 of the permit application. Road locations and designs are presented in Exhibit 17 and on Map 27. All road designs meet the performance standards of Rule 4.03. Road runoff is directed to sediment control facilities (4.03.1(2)(c)). The permittee's design for the road bridge that crosses the Williams Fork River indicates the bridge will safely pass the river flow resulting from a 100 year storm event.

II. Support Facilities - Rule 4.04

Support Facilities discussed in permit Section 2.05, the Operations Plan and meet requirements of Rule (4.04). Support facilities not intended for permanent retention have been reclaimed as of December 2023.

III Hydrologic Balance - Rule 4.05

A. Small Area Exemptions (SAEs)

Map 26 in the permit application shows the disturbed areas where the Division has previously approved exemptions from the requirement to pass drainage through a sediment pond or treatment facility, as allowed in Section 4.05.1(4). All calculations and demonstrations for SAEs are found in Exhibit 18 of the permit. Previous Findings have listed all SAE's in the permit. As of December 2023 all SAE's have

been reclaimed.

B. Stream Channel Diversions

Exhibit 2 of the permit application discusses drainage way construction, channel lining structures, retention basins, and artificial channel roughness structures for erosion control. These features are found to be in compliance (4.05.4(2)(a)).

C. Sediment control

Information on the sediment control system is presented in Section 4.05 and in Exhibit 18 of the permit application. Permit Map 26 shows the location of the components of the sediment control system. All surface disturbance run-off at the Williams Fork Mines, other than from those areas discussed above, is routed to sediment ponds by a series of diversion ditches designed to treat the water for suspended solids.

D. Surface and Ground Water Monitoring

The permittee monitors ground water and surface water as approved by the Division. Monitoring plans are set forth in Exhibit 29 of the permit application. The Division reviewed the ground and surface water monitoring plans and found them adequate for identifying any impacts that develop. The Division has approved the monitoring plans for ground water (4.05.13(1)(a)) and surface water (4.05.13(2)(a)). These plans are followed when the operator is actively mining. The operator may follow a reduced monitoring plan (Exhibit 29, Appendix D) that the Division approved for implementation while the mine is in temporary cessation.

E. Probable Hydrologic Consequences

<u>Projected Impacts</u>

Section 2.05 of the permit application includes an assessment of the probable hydrologic consequences of the mining operation. Those consequences are summarized as:

1. Maximum inflow of ground water into the mines' during mining was estimated at 2,490 gpm.

2. Continued drawdown in the Middle Sandstone was expected to be the most significant impact caused by Mines 5 and 6.

3. About one-half square mile of the Twentymile Sandstone was expected to be undermined by longwall mining in the E and F seams. Impacts to the Twentymile Sandstone were deemed very unlikely. No significant dewatering of the Twentymile was anticipated. Twentymile water quality was not expected to be impacted. It was considered unlikely that any open fractures would extend from the longwall areas up to

the Twentymile Sandstone.

4. Mining in the 5 and 9 Mines was not expected to significantly impact the only domestic well near the permit area that may be completed in the Twentymile Sandstone (Lux well). The predicted drawdown of this aquifer where the well is located would not significantly impair the usefulness of the well.

5. Mining, mine dewatering discharge would cause a net increase in stream flow in the Williams Fork River.

6. Underground mining in the Williams Fork Mines was not expected to directly affect ground water in the Williams Fork River alluvium.

7. Underground entries in the Williams Fork Mines located beneath alluvium would not directly affect ground water in the Yampa River alluvium.

8. Development mining beneath the Big Bottom alluvial valley floor of the Yampa River would not impact the alluvial valley floor.

9. During mining of the 5 and 6 Mines, underground mine discharge from those mines, combined with spoil spring discharge from the Strip Pit, would increase dissolved solids concentration in the Williams Fork River. During low flow of the river and assuming worst-case mine discharges, the concentration was expected to increase by 224 mg/l, from the historical mean of 332 mg/l to 576 mg/l. SAR was expected to increase from the historical mean of 0.44 to 5.05. The Williams Fork River would have a medium salinity hazard during low flow and would have a low to moderate sodium hazard at other times. Based on past discharges, the worst-case discharges were not expected to be reached therefore, the medium salinity hazard was not expected to be achieved. Impacts from dissolved solids loading of the Williams Fork during irrigation season would be minimal due to dilution resulting from high river stage.

10. At this point all the mine pumps are shut off, and the water levels in the #5 and #6 Mines are gradually rising. It is estimated that at the end of the life of the mine, it may take on the order of 16 years for the mines to completely fill. At the writing of this document, the pumps are permanently shut off.

11. After the #5 and #6 Mines refill, water may seep from the coal subcrop into the Williams Fork alluvium. The seepage would be driven by a maximum pressure developing in the subcrop equal to a head of 100 ft. above the ground surface. This head would cause maximum seepage of 20 gpm. In a worst-case scenario, the 19.5 gpm discharge would raise SAR in the Williams Fork River alluvial water from the historical mean of 3.6 to 9.4. The alluvial water is naturally higher in dissolved solids and metals than the mine discharge water; therefore, increased SAR is the only

expected impact.

12. The No. 9 Mine will not refill to the surface. It will refill to an equilibrium level between the Twentymile Sandstone and the overlying White Sandstone.

13. The No. 9 Mine portal backfill area is too small to generate enough leachate to have a measurable effect on nearby aquifers.

The monitoring plan contained in the permit application has been designed to verify the permittee's projected hydrologic impacts of mining. Section 2.05 of the permit application includes a description of the observed hydrologic impacts caused by mining at the Williams Fork Mines. Each year, MCM assesses the on-going impacts to the hydrologic system in its annual hydrologic report. Observed impacts are summarized below.

Observed Ground Water Impacts

Mine Inflows and Discharges
Annual hydrology reports show the total discharge for the 5 and 6 Mines was a constant 600 gpm during active mining in the early 1990s. After mining ceased in 1995, sumped water was pumped down. The pumped mine water was discharged to the Williams Fork River at NPDES outfalls 003 (5 Mine well) and 024 (7 North Angle well). The No. 5 Mine pump was then turned off in August of 2013; no further pumping at this site is anticipated. Monitoring data through 2013 indicate the mine water was consistently alkaline, with total dissolved solids less than 1800 mg/l, and low concentrations of iron and manganese. As the pump is turned off data is no longer collected.

Trout Creek Sandstone
The water level in the Trout Creek Sandstone monitoring well (No. 5 Mine well) fluctuated over the life of the mine. When monitoring resumed in 2006 to July of 2013, the water level remained relatively stable. The No. 5 Mine pump was turned off in July of 2013. Historical field conductivity data for the Trout Creek Sandstone wells indicate no adverse water quality impacts related to mining. The conductivity levels appear elevated to the levels observed in the 80's. As the pump is turned off data is no longer collected.

Middle Sandstone
The most significant hydrologic impact caused by Mines #5 and #6 may be an approximate 60-foot drawdown of ground water in the Middle Sandstone as observed in wells TR-4, TR-7a, 81-01 and 83-03. Historically these wells have exhibited water level fluctuations. As of this writing, water levels have stabilized.

Section 2.04.7 of the permit describes the pre-mine characteristics of the bedrock aquifers and indicate that the Middle Sandstone aquifer often exceeds the primary and secondary EPA drinking water standards. Monitoring is ongoing. Conductivity in Well TR-7a exhibits consistency over time. Conductivity in wells 81-01 and TR-4 range between 1000 to 1600 umhos/cm and 2000 to 2300

umhos/cm respectively. Overall, the trends in water levels and the water quality indicate mining has not adversely impacted the Middle Sandstone aquifer outside the permit boundary.

Twentymile Sandstone
Water level monitoring data reported through the 2022 annual hydrology report had shown no substantial change in the piezometric levels in the Twentymile Sandstone that could be attributable to mining activities. The water quality data for the two Twentymile Sandstone wells, No. 9 Mine Well and Well 259, showed no adverse impact has likely occurred, although conductivity in the #9 Well appears to have risen since 2011 and is currently trending down., while the trend is upward in well 259.

Williams Fork Alluvium
Ground water levels in the alluvium have remained fairly regular, with normal seasonal fluctuations apparently related to changes in river levels. Ground water levels in the alluvium are plotted in Figure 22 in Section 2.04.7 of the permit application package. Annual hydrology reports through 2022 indicate no depletion has occurred and suggest that mining appears to not have affected Williams Fork River alluvial water quality.

Compliance with the Basic Standards for Ground Water
(Regulation 41 of the Colorado Water Quality Control Commission)

Section 4.05.13(1) of the Regulations requires the establishment of one or more ground water points of compliance (wells) for an operation which has the potential to negatively impact the quality of ground water. The mine monitors the Middle Sandstone in well TR-7a and the Williams Fork alluvium in well AVF-5. The TR-7a well is within the expected bedrock flowpath of mine leachate, should the mine discharge leachate to bedrock units. The AVF-5 well is within the expected alluvial flowpath of leachate, should the mine discharge leachate to Williams Fork River alluvium. AVF-5 is also within the expected flow path of pumped mine water, should mine water adversely impact the alluvial water. Both wells meet the qualifications of a compliance point, as those qualifications are listed in Section 4.05.13(1)(b). Monitoring data from both wells indicate the mine has not caused an exceedance of the Basic Standards for Ground Water with the exception of Manganese levels in AVF-5 which is often above the Basic Standards for Groundwater drinking limit. However, according to section 2.04.7 of the permit, dissolved solids, iron, lead, manganese and sulfate often exceed the drinking water standards naturally.

Observed Surface Water Impacts

Discharges from the 5 and 6 Mines have not caused measurable depletion of stream flows in the mine vicinity. Monitoring data in the annual hydrology reports from 1981 through 2022 indicate the Williams Fork Mines have not significantly impacted the water quality of the Williams Fork River.

F. Stream Buffer Zones - Rule 4.05.18

The Williams Fork Mines included several structures located within 100 feet of the perennial Williams Fork River. Locations of these structures are shown on Permit Map 26.

Variances from the 100-foot buffer zone for perennial streams have been granted by the Division upon finding: 1) that the original stream channel will be restored; 2) during and after mining, the water quantity and quality from the stream section from within 100 feet of the surface coal mining operation shall not be adversely affected; and 3) that the operation's reclamation plan provides for the reestablishment of the appropriate vegetation.

IV. Topsoil

Baseline soils information is presented in Section 2.04 and Exhibits 12 and 13 of the permit application. Maps 19 and 19a show the locations of the soil mapping units. The topsoil handling and management plan is given in Section 2.05.3 and Permit Tables 58 through 62 of the permit application. Final reclamation plans, including soils information, are given for the Williams Fork Strip Pit in Exhibit 24. Topsoil stockpile locations are shown on the structures and renewable resources map (Map 25). These locations are verbally described on Tables 58 through 62. Because of the lack of available topsoil in some of the previously disturbed areas, the utilization of overburden material as a plant growth medium has been approved. The applicant demonstrated that inclusion of vegetation cover in salvaged topsoil is necessary or desirable to ensure soil productivity consistent with the post-mining land use (4.06.2(1)).

IV. Sealing of Drilled Holes and Underground Openings

A detailed description of the sealing of underground openings may be found in Section 2.05.4 of the permit with a typical portal seal illustrated in Figure 57. Drill hole sealing may be found in Section 2.05 of the permit. All existing drill holes will be sealed in accordance with Rule 4.07.

V. Use of Explosives

MCM did not propose surface blasting in their mining operation.

VI. Coal Mine Waste Banks

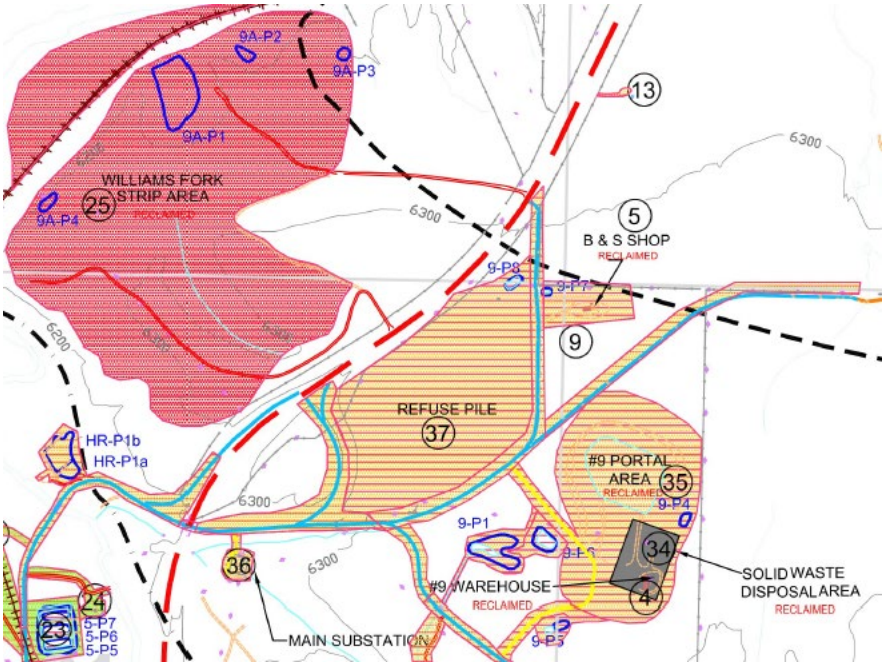
Three approved waste disposal sites have been established, as shown on the Structures and Renewable Resources Map (Map 25). One, The No 9 Coal Refuse Disposal area and the second, a solid waste disposal area and the refuse Pile. Map II below shows the location and extent of the three facilities. All areas have been reclaimed.

Permit Map 25, Map 28 and Exhibit 21 of the permit contains a design report for the coal processing waste pile prepared by CTL/Thompson, Inc. Permit section 2.05 discusses the number 9 Portal area reclamation activities. The Division proposed to re-approve plans for use, construction, and maintenance of a coal mine waste disposal area (4.10.1(1)) through MR54, Solid Waste Dump Site Cleanup. The operator utilized a rotary breaker and screen to size its product. The oversized material, defined as coal processing waste was hauled to both the original refuse pile and the No. 9 portal disposal site. The refuse pile comprised coarse reject material, rock that had been separated from the coal. The applicant disposed of underground development waste within the existing No. 9 Portal Excavation These portals have been

sealed and reclamation of the refuse disposal area was completed in 2009.

Solid Waste Disposal Facility

The solid waste disposal facility comprised any non-hazardous debris as defined in Rule 4.11.4. The proposed solid waste disposal area covers approximately 4.5 acres in Section 32, adjacent to the coal refuse pile and No. 9 Portal Area, as shown on *Map 25, Structures and Renewable Resources*. Permit sections 4.09 through 4.13 discuss the disposal sites.



Map II: *Location of the Refuse Pile and the solid waste disposal area in relation to the 9P ponds.*

VII. Backfilling and Grading

Rule 2.05.5 requires a plan/schedule for backfilling and grading in sufficient detail to allow the Division to evaluate the feasibility of the proposed post-mining topography and the required bond estimate. Volumes of material to be moved were presented on Table 63 of the permit application, and the final backfilled topography is depicted on Map 29.

VIII. Revegetation

Pre-mine vegetation information is provided in Section 2.04.10. Additional information is provided in

Exhibit 14, Supplemental Vegetation Information. Vegetation communities are shown on Map 20 - Vegetation Map. Section 2.05 of the permit application describes the revegetation methodology and revegetation standards for each type of disturbed area. The Williams Fork Strip Pit revegetation plans and revegetation success criteria are given in Exhibit 24, Williams Fork Strip Pit Reclamation Plan. The Reclamation Plan Map (Map 29a) indicates the planned post-mine uses (vegetation types) and the reference areas for the reclaimed areas.

Roughly one-third of the permit area is covered by croplands. MCM has divided the croplands into two categories: 1) irrigated hayfields in the Williams Fork River bottom areas, and 2) dryland wheat, found on cleared hillsides which were once sage-dominated. Productivity data is provided for the irrigated hayfields on Table 69 of the permit application. Wheat production is given in Table 70.

A. The Division has previously approved the use of four introduced species in the reclamation seed mix based on information submitted by the permittee demonstrating that the introduced species are desirable and necessary to achieve the approved post-mining land use and are not poisonous or noxious. These species include Pubescent wheatgrass, Hard fescue, Birdsfoot trefoil, and Cicer milkvetch (4.15.2).

B. The Division has previously approved the use of straw mulch as a means to meet soil stabilization requirements. Straw will be applied at a rate of two tons per acre and secured by crimping or tacking (4.15.4).

IX. Protection of Fish, Wildlife, and Related Environmental Values

Wildlife information is found in the permit application in Sections 2.04 and 2.05, Map No. 21, Exhibit No. 15 and Exhibit 15A and Table 41. All post-mining areas are to be reclaimed to pre-mining land uses, including wildlife habitat. The applicant has selected appropriate plant species and distributions to benefit fish and wildlife in accordance with Rule 4.18(5)(i).

Pursuant to the finding required by Rule 2.07.6(2)(n), and on the basis of available information, the Division finds the current reclamation operation at the site will not affect the continued existence of the previously discussed endangered or threatened species, or result in the destruction or adverse modification of their critical habitat. Due to the potential for Bald eagles to have encounters with power lines, there exists a " may affect, but not likely to adversely affect" finding for Bald eagles. This finding still applies.

X. Subsidence

Subsidence was last detected in the July-December 1995 monitoring period, during the last period of active mining. Section 2.05 of the permit application explains that subsidence monitoring for the No. 5 Mine was discontinued in November 1988 following completion of mining in the No. 5 Mine. Subsidence monitoring for the No. 6 Mine was suspended in October 1997.
1. The Division has previously found the permittee's subsidence control plan complies with Rule 2.05.6(6) and the permittee has committed to adopt all measures in order to reduce the likelihood of subsidence, prevent material damage, and mitigate the effects. The Division has previously approved the

plan (4.20.1(2) and 4.20.3(1)).

2. The Division has previously found that the permittee' s subsidence monitoring program complies with Rule 2.05.6(6)(c), and is designed to determine the commencement and magnitude of subsidence movements. All facilities, including private homes are identified and facilities undermined or proposed for undermining were flagged. The "E" Seam Longwall Subsidence Monitors map submitted with the semi-annual subsidence report depicts the location of monuments installed and structures monitored within the permit and adjacent area. Anticipated subsidence results are presented on Table 80, and worst case is summarized on Table 79 of the permit document. Active mining ceased in 1995 and no mining has occurred since then.

XI. Operations on Alluvial Valley Floors

The applicant has determined that alluvial valley floors exist along both the Yampa and the Williams Fork valleys within the permit and adjacent area. This determination is based upon the fact that flood-irrigated agricultural activities are practiced on unconsolidated streamlaid deposits along both rivers. The Division concurs with this determination. The boundary of the alluvial valley floors is shown on Map 25 of the permit application. Three alluvial valley floors have been identified: the Williams Fork alluvial valley floor, the Yampa River/Big Bottom alluvial valley floor, and the Yampa River/Round Bottom alluvial valley floor.

Alluvial Valley Floor Exemption

Mining operations that, in the year preceding August 3, 1977, 1) produced coal in commercial quantities and were located within or adjacent to alluvial valley floors, or 2) obtained specific permit approval from the State to conduct surface coal mining and reclamation operations within an alluvial valley floor, are exempted under Rule 2.06.8(5)(a) from the alluvial valley floor provisions prohibiting mining in or adjacent to certain alluvial valley floors. On November 12, 1980, Empire Energy Corporation, one of the previous permit holders, submitted a request to exempt their existing and proposed mining operations from these alluvial valley floor provisions. (See Exhibit 4 of the permit application.). DRMS granted the exemption. The geographical extent of the area exempted for the No. 9 Mine was determined from the No. 9 Mine Projection Map dated August 1976 (Exhibit M of the November 1980 Alluvial Valley Floor Exemption request).

Surface coal mining operations conducted within the geographic extent of the area eligible for the exemption are not required to comply with the requirements of Rule 2.06.8(5)(a)(i) and (ii). Operations eligible for the exemption, however, are required to restore the essential hydrologic functions of affected alluvial valley floors as a part of the reclamation plan.

Williams Fork Alluvial Valley Floor

The approximate boundary of the Williams Fork Alluvial Valley Floor is shown on Map 25 of the permit application. Several hay fields exist throughout the site. These hayfields are flood irrigated. The

Worthington Ditch provides water to the hayfields. The essential hydrologic function of this alluvial valley floor is the capacity for flood irrigation, coinciding with the regional practice. Subirrigation may also occur, but it is considered secondary to flood irrigation.

In the Probable Hydrologic Consequences section of the permit application, the applicant has projected impacts that could occur to the Williams Fork alluvial water quality due to seepage from the flooded mine workings into the Williams Fork alluvium. This scenario assumes that the coal seams are in direct hydrologic communication with the alluvium of the Williams Fork River. Upon flooding of the mines, a head is expected to occur which would allow recharge of the alluvium by the mine water. The mine water from the No. 5 Mine is high in sodium content. The applicant has projected a net impact of the seepage into the alluvial valley floor to increase the SAR level from 3.6 to 9.4. The increased SAR would impact alluvial water in contact with the coal seams, specifically water available through subirrigation. The essential hydrologic function of this AVF is flood irrigation, as supplied by the surface water of the Williams Fork River. As the Williams Fork stream water is not projected to be significantly impacted by the mining operation, the essential function of flood irrigation will not be impaired.

This essential hydrologic function, flood irrigation, will be reestablished upon completion of reclamation activities. The surface facilities will be removed, topsoil replaced, and the site seeded with the rangeland or the pastureland mixture, where applicable. The pasturelands will then be flood irrigated. The rangeland and marshy areas will not be irrigated.

Yampa River Alluvial Valley Floors

The No. 9 Mine has undermined portions of the Big Bottom alluvial valley floor (AVF). The No. 5 Mine has mined in areas beneath or hydrologically adjacent to two alluvial valley floors (AVF's) along the Yampa River: the Big Bottom and the Round Bottom alluvial valley floors. Each of these alluvial valley floors are discussed separately, along with the potential impacts of mining.

Yampa River Big Bottom Alluvial Valley Floor

The approximate boundary of the Big Bottom AVF is shown on Map 25 of the permit application. Hayfields and pastureland are located in the Big Bottom (AVF) area and are flood irrigated.

Monitoring has shown no impacts to the alluvial valley floor due to previous undermining by the No. 5 Mine.

The now abandoned No. 9 Mine has development entries under the Big Bottom AVF; however, full extraction mining was not conducted. An AVF exemption for this past mining was requested and approved by the Division and OSM. A copy of the AVF exemption request is presented in Exhibit 4, and the extent of the No. 9 Mine workings is shown on the mine plan map, Map 23.

Subsidence monitoring conducted by the operator has shown no effects to the Big Bottom AVF due to past development mining. The essential hydrologic functions of this AVF have not been affected.

Surface coal mining operations conducted within the geographic extent of the area eligible for the exemption are not required to comply with the requirements of Rule 2.06.8(5)(a)(i) and (ii). Operations eligible for the exemption, however, are required to restore the essential hydrologic functions of the affected alluvial valley floors by implementing the approved reclamation plan. The Division finds that upon completion of the reclamation plan, the essential hydrologic function of both the Yampa and William Fork alluvial valley floors should be restored.

Yampa River Round Bottom Alluvial Valley Floor

The approximate extent of the Yampa River alluvium of the Round Bottom area is shown on Map 25 of the permit application. The essential hydrologic function of the Round Bottom alluvial valley floor is its capacity for supporting flood irrigation. Crop production may be augmented by subirrigation; however, subirrigation is a minor resource. The Round Bottom alluvial valley floor primarily supports flood irrigated hayfields and pasturelands.

The No. 9 Mine workings are not proximal to, nor do they impact areas tributary to, the Round Bottom AVF. Therefore, no impacts to the essential hydrologic functions of the Round Bottom alluvial valley floor occurred. The No. 5 Mine does not extend under the Round Bottom alluvial valley floor. The 2 West workings of this mine did, however, undermine approximately 90 acres containing surface and ground waters tributary to the Round Bottom alluvial valley floor. The 2 West workings undermined small ephemeral streams directly tributary to the Yampa River/Round Bottom alluvial valley floor. The 2 West workings also undermined the Twentymile and Middle Sandstone aquifers along the upper edge of the Round Bottom Synclinal Basin (a regional ground water basin) and along the axis of the Williams Fork Anticline.

The 2 West workings have been abandoned for more than ten years. Only minor areas had pillars pulled. Other mining was development by room and pillaring only. The impacts to the quantity of water supplied to the Round Bottom AVF were previously (in the 1984 Findings Document) predicted to be negligible upon evaluating the proposed mine plan. Due to the reduced areas of mining, impacts are considered to be negligible for both quality and quantity of water supplied to the Big Bottom AVF.

The Division finds that Williams Fork Mines will not impact the essential hydrologic functions of the Yampa River/Round Bottom alluvial valley floor and will not impact the quantity and quality of water supplied to this alluvial valley floor so as to reduce the productivity of the alluvial valley floor.

A. The Division has determined that three alluvial valley floors exist within the affected or adjacent area. Therefore, the following findings are for the alluvial valley floors known as Williams Fork alluvial valley floor, Yampa River/Big Bottom alluvial valley floor, and Yampa River/Round Bottom alluvial valley floor. Map 25 of the permit depicts the locations of these resources. The Division finds that activities proposed by the applicant will not interrupt, discontinue, or preclude farming on the alluvial valley floors that are irrigated or naturally subirrigated (4.24.3(1)).

The proposed activities will not materially damage the quantity or quality of water in the surface or

ground water system described above (4.24.3(3) and 2.06.8(5)(a)(ii)).

The proposed activities will comply with the requirements of the Act and the Regulations with respect to alluvial valley floors (2.06.8(5)(a)(iii)).

The operation proposed by the applicant produced coal in commercial quantities and was located within or adjacent to an alluvial valley floor prior to August 3, 1977 (4.24.3(4)(a) and 2.06.8(5)(b)(i)(A)). The operation proposed by the applicant obtained specific permit approval to conduct surface coal mining and reclamation activities within an alluvial valley floor (4.24.3(4)(b) and 2.06.8(5)(b)(i)(B)).

Therefore, the operations within a specific geographic area were allowed. The specific geographic area was delineated as the actual extent of mine workings on 3 August 1977 and adjacent area for which there existed substantial demonstrable financial or regulatory commitment to mine in the future (2.06.8(5)(b)(ii)(b)).

B. An environmental monitoring system was installed, maintained, and operated by the permittee on all alluvial valley floors during surface coal mining and reclamation operations and will continue until all bonds are released in accordance with Rule 3. The Appendix D in Exhibit 29 contains the water monitoring plan approved for use while the Williams Fork Mines were in temporary cessation status.

XII. Operations on Prime Farmland

Information regarding prime farmlands within the permit area are previously discussed in Section A.10 of this document.

This concludes the Proposed Decision and Findings of Compliance for the Williams Fork Mines Permit Renewal 8.