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State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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February 6, 2001

TO: ~~XXXXXXXXXX~~

THRU: Daron R. Haddock, Permit Supervisor 

FROM: Peter H. Hess, Senior Reclamation Specialist, Team Lead

RE: Permitting of West Ridge Pump House, West Ridge Resources, Inc., West Ridge Mine, ~~XXXXXXXXXX~~ AM00G1

**SUMMARY:**

During the February, 2000 inspection of the West Ridge Mine, mine personnel were questioned relative to the ownership of the pump house which had been built on the East Carbon City six-inch water supply line. The installation was built to provide adequate water pressures and volumes for both fire fighting capability and mine usage. Thus, it was built by the permittee.

Although two pump houses are mentioned in the U.S. Department of the Interiors Bureau of Land Management's environmental assessment (completed in May, 1998), only one pump house has been constructed (in Section 21, R13E, T14S). Since it was known that a pump house(s) would be constructed, the only question remaining was relative to the ownership of the facility. This was confirmed during the February 2000 inspection, per Mr. Dave Shaver, who indicated that the pump house belonged to West Ridge Resources, Inc. At that time, the permittee was instructed to permit the facility.

The permittee's initial response was received by the UDNR/OGM on March 27, 2000, and returned as deficient on April 3, 2000. Due to excessive workload, the permittee's second response was not received until August 31, 2000. That response was returned as deficient on September 28, 2000.

The permittee submitted a response to the September 28, 2000 deficiency on January 4, 2001. This technical memo is an analysis of the newly submitted information as well as that contained within Appendix 1-12, and the Tables of Appendices for Chapters 1 and 5, which were submitted as part of the second response.

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During the course of the review of the January 4, 2001 submittal, it was determined that a design for the ditch east of the pump house area had not been included, and that Map 5-14 that was submitted on January 4, 2001 contained an error with regard to this ditch. A conversation with the permittee's consultant allowed a ditch design to be submitted on February 2, 2001; a revised, PE certified Map 5-14 was submitted on February 5, 2001.

**TECHNICAL ANALYSIS:**

**OPERATION PLAN**

**SUPPORT FACILITIES AND UTILITY INSTALLATIONS**

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

**Analysis:**

The utility installations description, as provided in Volume 2, Chapter 5, Engineering, page 5-30, of the West Ridge Resources mining and reclamation plan adequately addresses the requirements of the aforementioned regulations.

Volume 2, Chapter 5, page 5-30, paragraph two under R645-301-526.200 Utility Installation and Support Facilities of the West Ridge Resources mining and reclamation plan indicates that "the support facilities will be operated and maintained in accordance with the permit issued for the Mine." The requirements of -526.221 and -526.222 are also addressed in this same paragraph.

The pump house which has been constructed in conjunction with the East Carbon City six-inch water supply line has been constructed in Salt Lake Meridian, T 14 S, R 13 E, Section 21, NE1/4NE1/4. Section 21, NE1/4NE1/4., is 1.45 miles down-canyon of the "C" Canyon County road/Mine security gate. The location is outside of the Mine's permit area, and is within jurisdiction of the Bureau of Land Management, as confirmed from West Ridge Resources MRP Map #5-2, Surface Ownership Map, and Plate IV, of the BLM's environmental assessment dated May, 1998.

As part of the permittee's submittal, an amended right-of-way UTU-77120 and a temporary use permit UTU-77120-1 as granted by the Bureau of Land Management have been included. These were applied for by the permittee on April 19, 1999 and approved by the surface management agency on June 21, 1999. This BLM document includes a legal description (page two) of the authorized area on which the permittee has approval to construct a pumping station in Salt Lake Meridian, T 14 S, R 13 E, Section 21, NE1/4NE1/4. The site encompasses 0.44 acres (see page 5-5, paragraph 4 of the January 4, 2001 submittal).

The permittee's January 4, 2001 application includes three revised pages (5-5, 5-9, and 5-29) with necessary text changes to include the pump house within the site's mining and reclamation plan, upon Division approval.

The January 4, 2001 text of page 5-5, (R645-301-520/521, OPERATION PLAN/GENERAL) discusses the addition of the 0.44 acres to the disturbed area acreage for the site. With the addition of the 1.10 acres of Carbon County road up-canyon of the security gate, and the minimal new acreage included as part of this amendment, the total disturbed area is now 26.54 acres.

The text change of Page 5-9 indicates that the pump house facility being described in AM00G is shown on Plates 1-1 and 5-14. Plate or Map 1-1 shows the pump house location, as it exists in Section 21 of T14 S, R 13 E, Salt Lake Meridian. This location, is as previously described, is 1.45 miles down-canyon of the Mine's security gate. Plate or Map 5-14 shows a plan view for the pump house permit area and its associated details.

As shown on Map 5-14, the access road off of the Carbon County "C" Canyon road is 32 feet in length and 14 feet wide. Although the access will see frequent use, it is felt that the requirements which must be addressed relative to primary roads do not need to be addressed due to the very short length of the access.

The Map 5-14, Revision #4 as submitted January 4, 2001 was submitted in order to address inaccuracies found as part of the second review, as determined by a field check of the area on September 5, 2000. These were as follows:

- 1) A ripped ditch exits the NW side of the pump house pad, and was previously indicated as being outside of the permitted area. The ditch drains a concrete drainage box which provides pressure relief for the water pumps. Neither the ditch, nor the riprap, were shown on Map 5-14, Submittal #2. Although this flow reports to the 18-inch corrugated metal pipe under the access road junction, it is felt that these flows will, at worst, be minimal, and therefore, no designs for the ditch or the riprap are felt to be necessary.

Map 5-14, Revision #4, submittal #3 (as received on January 4, 2001 and February 5, 2001) now shows the ripped ditch which routes the drain box flows to the road ditch on the NW side of the permit area.

- 2) The 18-inch culvert mentioned in #1 was not shown on Map 5-14, (second submittal). This deficiency was corrected with the submittal of Map 5-14, Revision #4 of the January 4, 2001 response. As it lies under the permittee's access road, the responsibility of maintaining same is that of the permittee. The January 4, 2001 submittal (Appendix 5-7, page 7) confirms that the in place 18-inch culvert is more than adequate to carry any flows reporting to it from its disturbed area water shed plus any flow contributed from the pump house system

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pressure relief apparatus. The culvert was sized through engineering analysis, and that information was included with the January 4, 2001 deficiency response, (see Appendix 5-7). This meets the requirements of **R645-301-742.411.**

- 3) The area which the permittee is proposing to permit as the pump station ASCA shows contour lines which once correlated with the surrounding topography. These contour lines have been revised to reflect the reshaped surface area/drainage pattern of the pump house permit area. The flow patterns which are indicated by the blue arrows on the east side of the pump house on Map 5-14 indicate a dual directional ditch. This ditch will route any disturbed area runoff from the surface roughened area east of the pump house pad to undisturbed drainages outside of the area being permitted. A silt fence should be installed at each outlet of this ditch just inside the north and south permit boundaries.

The design for this ditch is included as part of the engineering calculations shown on page 8 of Appendix 5-7. Figure 5-7-1 shows a typical ditch cross-section. The design for this diversion is PE certified to meet the requirements of R645-301-512.140.

- 4) Map 5-14 previously contained several notes which indicated "ASCA OR ALTERNATE SEDIMENT CONTROL (SILT FENCE) AS NEEDED." Revision #4 of Map 5-14 (as submitted on January 4, 2001) has had these notes removed. Sediment control has been discussed on pages 4, 5, and 6 of Appendix 5-7. As depicted on Map 5-14, Revision #4, a three inch layer of slag rock (see page 4, Appendix 5-7, paragraph 4) has been placed on the 0.09 acres comprising the fenced pump house road and its associated access road. This accepted means of sediment control for the area negates any need for silt fences to treat runoff from the pump house pad and access road.

As determined during the September 5, 2000 inspection of the area, the permittee has installed a silt fence steel mesh frame both up-channel and down-channel from the access road junction, with straw bales. As the means of sediment control has now been established as the slag rock on the access road and within the fenced area, the straw bales are **not needed and should be removed.**

- 5) The pump station pad area exists at the base of a slope. The area immediately behind and to the SE of the pump house pad was denuded of vegetation by construction activities. This area consists of approximately 0.229 acres and has been roughened and reseeded (see paragraph 2, page 4, Appendix 5-7). The eastern perimeter boundary is about ten feet higher in elevation than the elevation of the pump house pad. The January 4, 2001 submittal contains a diversion ditch to redirect any sheet flow reporting to same to the north and south side undisturbed drainages. The ditch segment which flows toward the southern permit boundary only handles disturbed area flow from within the perimeter area.

Undisturbed flow in this area reports to the undisturbed area drainage depicted by the blue line immediately east of the eastern permit boundary.

The ditch segment which flows toward the northern permit boundary appears to collect disturbed as well as undisturbed quantities. This ditch, as depicted, was previously shown on the January 4, 2001 Map 5-14, ran uphill. The Map 5-14 which was submitted on February 5, 2001 has corrected this.

As mentioned above, the permittee may want to consider placing silt fences at the discharge end of each of these ditch segments as a final means of sediment control prior to any collected flows exiting the permit area. The need for these fences can be established by regular field inspections of this area.

All methods of treatment for this ASCA are within the permit area such that they can be maintained. By expanding the disturbed area perimeter, as shown on Map 5-14, Revision #4, this has been accomplished.

- 6) The Carbon County under-road culvert (30-inch diameter) north of the pump house permitted area was not shown on previous submittals of Map 5-14. Map 5-14, Revision #4 (as received January 4, 2001) now incorporates this diversion.
- 7) Page 5-29 of the January 4, 2001 submittal, designates the pump house pad area and the 0.229 acres between the pad and the disturbed area perimeter as an ASCA. R645-301-742.231, under Other Treatment Facilities requires that other treatment facilities will be **“designed to treat the 10-year, 24-hour precipitation event.....and a demonstration by the operator that the effluent limitations of R645-301-751 will be met.”** The January 4, 2001 submittal for AM00G includes sediment yield calculations comparing undisturbed sediment loading with loading from the area being permitted. The sediment yield reporting from the pump house permitted area is less than that reporting from a similar acreage of undisturbed land.

**Findings:**

The requirements of R645-301-526.200 and 526.210 have been adequately addressed.

**RECLAMATION PLAN**

**APPROXIMATE ORIGINAL CONTOUR RESTORATION**

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

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**Analysis:**

Page 1 of Appendix 5-7, West Ridge Mine Pump House Reclamation and Sedimentation Control, paragraph (f) briefly mentions grading and ripping of the pad road area. The area is very nearly flat, and to what extent grading would be performed was not understood.

The permittee's most recent deficiency response now includes Map 5-14A, Pump House Reclamation Map, which shows the surface contours to which the area will be regraded, and Map 5-14B, which show the cross-sections relevant to 14A. Analysis of the five reclamation cross sections shown on Map 5-14B shows that a minimum amount of grading (the largest cut necessary is 21 yards, the largest fill is 22 yards) will be necessary to return the area to the pre-mining surface configuration. Both of the maps (Map 5-14A and 14B) are certified by Mr. Dan Guy, Utah registered professional engineer.

The requirements of R645-301-553.150 have been adequately addressed.

**Findings:**

The permittee has provided a contour map with cross sections of the reclaimed area showing how the disturbance of the pump house area will be regraded to meet the requirements of the approved post mining land use, and more specifically, R645-301-553.150.

**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

**Analysis:**

**Other Treatment Facilities**

The permittee's January 4, 2001 deficiency response discusses sediment control/sediment yield on pages 4, 5, and 6 of Appendix 5-7. As required by R645-301-742.231, a design must be submitted to effectively treat a 10 year 24 hour design event. A demonstration must also be provided to confirm that the design is effective enough to meet the requirements of R645-301-751.

Page 4 discusses the design incorporated into the area being permitted as an ASCA. The pump house pad area is covered with three inches of Geneva slag rock, as is the access road (0.08 acres). The slag rock provides the sediment control.

The acreage between the slag rock pad and the disturbed area perimeter boundary (0.229 acres) has been roughened and seeded to provide the sediment control. Protection from

up-slope runoff damaging the slagged area is provided by a diversion ditch located east of the pump house pad. This is a dual direction ditch and diverts any collected surface flow from the permit area and directs it to undisturbed drainages located on the northern and southern end of the permit area.

The design for this ditch is included as part of Appendix 5-7.

Sediment yield calculations for the ASCA are included as pages 5 and 6 of Appendix 5-7. The conclusion included with the calculations determines that the sediment yield from the proposed ASCA will be less than the sediment yield from an undisturbed area of similar acreage.

**Findings:**

The requirements of R645-301-742.231 have been adequately addressed.

**MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

**Analysis:**

**Final Surface Configuration Maps**

Page 1 of Appendix 5-7, West Ridge Mine Pump House Reclamation and Sedimentation Control, paragraph (f) briefly mentions grading and ripping of the pad road area. The area is very nearly flat, and to what extent grading would be performed, was not understood.

The permittee's most recent deficiency response now includes Map 5-14A, Pump House Reclamation Map, which shows the surface contours to which the area will be regraded, and Map 5-14B, which show the cross-sections relevant to 14A. **Analysis of the five reclamation cross sections** shown on Map 5-14B shows that a minimum amount of grading (the largest cut necessary is 21 yards, the largest fill is 22 yards) will be necessary to return the area to the pre-mining surface configuration. Both of the maps (Map 5-14A and 14B) are certified by Mr. Dan Guy, Utah registered professional engineer.

**Findings:**

The permittee's January 4, 2001 submittal contains a final surface configuration map with cross sections which supports the approved post mining land use. The requirements of regulations R645-301-542.300, -542.310, and -301-512. have been adequately addressed.

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## BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

### Analysis:

#### Determination of Bond Amount

The permittee submitted to the Division detailed reclamation cost estimates for the pump house addition with the August 31, 2000 submittal. Although the demolition and revegetation costs were felt to be adequate, there were no detailed earthwork calculations/costs provided. These were requested in the September 26, 2000 deficiency document.

The Division reviewed the earthwork calculations and costs as received on January 4, 2001 and determined that they were correct, (see **R645-301-830.140**). These new costs were incorporated into the master reclamation cost estimate. The reclamation cost estimate for the pump house area is \$6193.52, which is less than 0.31% of the existing bond.

The Division has an unofficial policy that the bond will not be increased if the cumulative reclamation costs increases are less than 5% of the bond amount. Since the cumulative increase is less than 5% of the bond, the Division will not increase the bond at this time.

### Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of the pump house.

### RECOMMENDATIONS:

The information which the permittee has provided within the August 31, 2000, the January 4, 2001 and the February 2 and 5, 2001 revisions adequately address all of the outstanding deficiencies aired in the Division's September 26, 2000 deficiency document.

Based on the above, it is recommended that C/007/041-AM00G3 be approved conditionally, pending receipt of five clean copies for insertion into the mining and reclamation plans.