

0007



JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

COPY

Outgoing

C0070005

#3463

R

February 24, 2010

Wess Sorensen, Mine Manager
Canyon Fuel Company, LLC
HC 35 Box 380
Helper, Utah 84526

Subject: Application Denied for Winter Quarters Ventilation Facility, Canyon Fuel Company, Skyline Mine, C/007/0005, Task ID #3463

Dear Mr. Sorenson:

The Division has reviewed the application for the Winter Quarters Ventilation Facility and finds that it does not meet the requirements of the Coal Rules. Attached is a copy of the Technical Analysis (TA), which documents the findings of our review. You will note at the beginning of the TA there is a summary of deficiencies that were identified during the review. The deficiencies will need to be corrected in order for us to approve this project.

The plans as submitted are denied and we are returning them to you. If you plan to pursue this project, you will need to resubmit the entire application with the deficiencies corrected.

Our review of the application has made us aware of some issues that may also require special attention in your response. The Winter Quarters Ventilation Facility application identified the likelihood of mine water discharge. Since this was not previously identified in the Cumulative Hydrologic Impact Assessment, this is considered to be a significant revision to the mine plan and will need to be processed as such when the application is resubmitted. Other issues such as conducting mining operations within a stream buffer zone, variance from zoning requirements, use of a public road, and impacts to adjacent landowners also need to be considered. In your response, you will need to provide a proposed public notice in accordance with R645-300-120 that will be placed in a local newspaper at least once a week for four consecutive weeks.

File in:

Confidential

Shelf

Expandable

Refer to Record No. 0007 Date 02/24/2010

In C/0070005 2010. Outgoing

For additional information

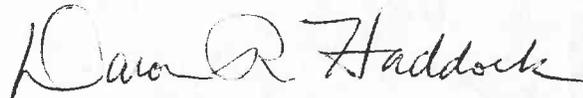


COPY

Page 2
Wess Sorenson
February 24, 2010

The Division looks forward to receiving your response. If you have any questions, please call me at (801) 538-5325 or Jim Smith at (801) 538-5262.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock". The signature is written in a cursive style with a large initial "D" and "H".

Daron R. Haddock
Permit Supervisor

DRH/ss
Attachment
cc: Price Field Office
O:\007005.SKYFINAL\WG3463\COVERLETTER.DOC

State of Utah



Coal Regulatory Program

Skyline Mine
Canyon Fuel Company, LLC
Technical Analysis for Winter Quarters Ventilation Facility
Task #3463
February 18, 2010

TABLE OF CONTENTS

TECHNICAL ANALYSIS DESCRIPTION	1
GENERAL CONTENTS.....	9
RIGHT OF ENTRY	9
LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS.....	9
ENVIRONMENTAL RESOURCE INFORMATION	11
GENERAL.....	11
PERMIT AREA.....	11
HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION	12
VEGETATION RESOURCE INFORMATION.....	14
FISH AND WILDLIFE RESOURCE INFORMATION	15
SOILS RESOURCE INFORMATION	18
LAND-USE RESOURCE INFORMATION	18
ALLUVIAL VALLEY FLOORS.....	19
Alluvial Valley Floor Determination.....	19
Applicability of Statutory Exclusions.....	19
Alluvial Valley Floor Determination.....	20
Protection of Agricultural Activities	21
Monitoring.....	21
PRIME FARMLAND.....	22
CLIMATOLOGICAL RESOURCE INFORMATION.....	23
HYDROLOGIC RESOURCE INFORMATION.....	23
Sampling and Analysis	23
Baseline Information	23
Baseline Cumulative Impact Area Information.....	23
Modeling.....	24
Probable Hydrologic Consequences Determination.....	24
Groundwater Monitoring Plan.....	25
Surface-Water Monitoring Plan.....	25
MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION	26
Monitoring and Sampling Location Maps.....	26
Surface Water Resource Maps.....	26
Well Maps.....	26
Archeological Site Maps.....	26
Monitoring and Sampling Location Maps.....	26
Vegetation Reference Area Maps.....	27
OPERATION PLAN	29
PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES	29
FISH AND WILDLIFE INFORMATION	29
Protection and Enhancement Plan	29
Endangered and Threatened Species	30
Bald and Golden Eagles.....	30
Wetlands and Habitats of Unusually High Value for Fish and Wildlife	31

TABLE OF CONTENTS

TOPSOIL AND SUBSOIL.....	32
Topsoil Removal and Storage.....	32
VEGETATION.....	33
SPOIL AND WASTE MATERIALS.....	33
Coal Mine Waste.....	33
Excess Spoil.....	33
HYDROLOGIC INFORMATION.....	34
Groundwater Monitoring.....	34
Surface Water Monitoring.....	34
Acid- and Toxic-Forming Materials and Underground Development Waste.....	35
Transfer of Wells.....	35
Discharges Into an Underground Mine.....	35
Gravity Discharges from Underground Mines.....	35
Water-Quality Standards and Effluent Limitations.....	36
Diversions: General.....	36
Diversions: Perennial and Intermittent Streams.....	36
Diversions: Miscellaneous Flows.....	36
Stream Buffer Zones.....	37
Sediment Control Measures.....	38
Siltation Structures: General.....	38
Siltation Structures: Sedimentation Ponds.....	38
Siltation Structures: Other Treatment Facilities.....	39
Siltation Structures: Exemptions.....	39
Discharge Structures.....	39
Ponds, Impoundments, Banks, Dams, and Embankments.....	40
MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS.....	44
Monitoring and Sampling Location Maps.....	44
RECLAMATION PLAN.....	45
POSTMINING LAND USES.....	45
APPROXIMATE ORIGINAL CONTOUR RESTORATION.....	45
CASING AND SEALING OF UNDERGROUND OPENINGS.....	46
MINE OPENINGS.....	47
TOPSOIL AND SUBSOIL.....	48
Redistribution.....	48
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES.....	49
HYDROLOGIC INFORMATION.....	49
Hydrologic Reclamation Plan.....	49
CONTEMPORANEOUS RECLAMATION.....	51
General.....	51
REVEGETATION.....	51
Revegetation: General Requirements.....	51
Revegetation: Timing.....	52
Revegetation: Mulching and Other Soil Stabilizing Practices.....	52
Revegetation: Standards For Success.....	52

TABLE OF CONTENTS

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS	53
Reclamation Monitoring and Sampling Location Maps.....	53
Reclamation Treatments Maps	53
BONDING AND INSURANCE REQUIREMENTS	54
General.....	54
Form of Bond.....	54
Determination of Bond Amount	54
Terms and Conditions for Liability Insurance.....	56
CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA).....	57

TECHNICAL ANALYSIS DESCRIPTION

The Division regulates coal mining and reclamation operations in the State of Utah under the authority of the Surface Mining Control and Reclamation Act of 1977(SMCRA) and the Utah R645-Coal Mining Rules. Federal law requires that the Utah Coal Mining Rules are at least as stringent as SMCRA. The Division reviews the proposal for conformance to the R645-Coal Mining Rules when companies submit a Permit Application Package or an amendment to their Mining and Reclamation Plan. The Permittee must comply with the minimum regulatory requirements as established by SMCRA.

The regulatory requirements for obtaining a Utah Coal Mining Permit are included by reference. A complete and current copy of the coal rules can be found at <http://ogm.utah.gov>

The Division writes a Technical Analysis (TA) as part of the review process. The TA includes section headings following the R645-Coal Mining Rules. The Division analyzes each section and writes findings that indicate whether or not the application is in compliance with the requirements of that section of the R645-Coal Mining Rules. For permit changes, only those regulatory requirements subject to the change are evaluated. The other sections were previously analyzed during the original permit review and since they are not affected by the permit change, the original analysis will suffice for those sections. All sections not discussed in this Technical Analysis are considered to be in compliance with the regulatory requirements.

Often the first technical review of an application results in findings of deficiencies with the application. The Division discusses the deficiencies in the analysis section and cites regulatory references in the findings section of the Draft TA. The regulatory reference cited describes the minimum requirements for obtaining a permit. A list of deficiencies is provided at the beginning of the document. The Division finalizes the draft TA after the Applicant/Permittee adequately addresses the deficiencies.

The Final TA is the starting point for review of each subsequent application from the Permittee. The review process includes evaluating the Final TA sections pertinent to the current application. The Permittee remains in compliance with the remaining sections.

At the completion of a review, the Permittee or Applicant will receive a list of deficiencies and a redline strikeout version of the Draft TA for each application. Upon approval, the Permittee will receive an electronic version of the revised Final TA.

- R645-301-114.100**, please provide the date of execution of the deed from the Allred Family Trust to Ark Land Company. Also, please identify the specific legal description of the parcel to which the document pertains. [AN]
- R645-301-115.100**, please provide documentation that mining construction in Winter Quarters Canyon is compatible with local land use zoning. [AN]
- R645-301-120.200**, The Permittee estimates Winter Quarters could receive “500-600 gallons of water” from the reclaimed WQVF. It might be assumed that the additional flow is 500 – 600 gpm, but the Permittee needs to clarify this. [JDS]
- R645-301-120.200**, In Section 4.11.2, Monitoring Program, the last two sentences in the paragraph near the center of page 4-68 are unclear: “Quarterly samplings will continue to be analyzed according to Table 2.3.7-1 during the postmining period. The remaining samples are per Table 2.3.7-2.” Table 2.3.7-1 gives the sampling schedule and Table 2.3.7-2 lists the monitoring parameters. The Permittee needs to clarify this statement. [JDS]
- R645-301-121.200**, The double description of the groundwater monitoring well on page 2-35c is confusing, giving the impression that there are two wells, 08-1-5 and a “deep groundwater well” mentioned in the last sentence. The Permittee needs to clarify the language on page 2-35c to indicate there is one groundwater-monitoring well. [JDS]
- R645-301-121.200**, The amendment states on page 2-35c that spring WQ1-1 monitors near-surface groundwater in the vicinity of the WQFV. On the other hand, Section 2.3.4.4 states that no springs are located in the immediate vicinity of the WQVF. The Permittee needs to clarify where spring WQ1-1 is in relation to the WQFV and what information it will provide on groundwater at the WQVF. [JDS]
- R645-301-121.200**, the redline map citation on page 4-83 is inaccurate. •The acreage within the permit area outlined in Section 3.4 adds up to 133.58 or 118.39 if only the active portion of the Waste Rock site is included. Neither number agrees with the figure provided for Total Disturbed Area on page 1-37. •The application states on page 2-30(j) that there are no springs located in the immediate vicinity of the WQVF site, but on page 2-35c monitoring of an adjacent spring WQ1-1 is described. [PWB]
- R645-301-231.300**, the plan should include a commitment to collect two composite samples of the salvaged topsoil for analysis of phosphorus and potassium, two elements that are essential for plant growth and for which no baseline was established. [PWB]

R645-301-311: The adjacent area (depicted on map 1.6-3) must include the area in which any resource(s) could be expected to be adversely impacted by coal mining and reclamation operations. Plate 1.6-3 states in the narrative that the adjacent area is ¼ mile beyond all lease areas. The map does not depict this, and ¼ mile is not sufficient for all resources. Please either remove the adjacent area delineation or include all adjacent area. [IW]

R645-301-322: The application states on page 2-111b of Sec 2.10 that Appendix A-3, Vol. 2 includes raptor surveys conducted in 2005, 2007, and 2008 and a summary report addressing the proposed facility's effect on raptors. However, no surveys or summaries are located in that volume. Please provide the surveys and summary reports. [IW]

R645-301-323.200: Please provide macroinvertebrate-monitoring locations *downstream* of the proposed ventilation facility. Please update plate 2.8.1-1 to include a downstream location.

Please update Table 2.8-1a to show that the surveys conducted in 2007 until present have been completed. The water discharge into the stream as well as potential sediment runoff could negatively affect the stream. Therefore, surveys for winter quarters (above and below the ventilation facility) need to occur at least until the site has been reclaimed and erosion is properly controlled (possibly at phase I bond release). Please extend the table accordingly.

Please include a discussion of the impacts of the increased water discharge on the stream morphology and aquatic organisms. Include the correspondence from Mt. Nebo Scientific regarding the fish habitat and possible monitoring plans. [IW]

R645-301-342.100: According to the Mt Nebo Report in Appendix A-2 of Vol. 2, the site is presently degraded due to noxious weed infestations. Please include a weed control plan to supplement the fish and wildlife enhancement measures on page 4-103B of Section 4.18 and to comply with the Utah Noxious Weed Act. [IW]

R645-301-354: Please update table 4.2-1 to include the winter quarter's ventilation facility. [IW]

R645-301-356.300, -763.100, The amendment includes a statement on page 4-78(a) that the WQFV sedimentation pond will be removed during early Phase I reclamation and alternate sediment control measures such as silt fences, straw bales and check dams will be used until the area is vegetated and runoff meets applicable standards. The Coal Mining Rules specify that sedimentation ponds can be removed no sooner than 2 years after the last augmented seeding, which would preclude removal as part of Phase I reclamation. The Permittee needs to clarify

that the sedimentation pond will remain until at least 2 years after the last augmented seeding. [JDS]

R645-301-358: The Tetrattech report lists that no sensitive resource locations such as nesting raptors, elk calving or mule fawning areas are located in or adjacent to the project area, and therefore minimal impacts should occur. However, the 2009 wildlife report by Western Land Services states: "portions of the pad disturbance area contain areas suitable for elk calving". The DWR lists the canyon as high value summer habitat for mule deer and critical summer habitat for rocky mountain elk. Please correct this discrepancy and provide a protection and enhancement plan for the Elk and Mule deer high priority habitat located within and adjacent to the proposed pad area. [IW]

R645-301-411: Table 2.12.2-1 lists that the winter quarters proposed ventilation pad has a land area of 1.6 acres of sagebrush with 53.8 Animal Units and 1.8 Animal unit months. However, plate 1.6-3 states that the winter quarter's disturbance area is 7.93 acres. Please correct the acreage and resulting AU and AUM unit discrepancies. [IW]

R645-301-513.500, the capping, sealing and backfilling of the Winter Quarters airshafts must meet the requirements of 30 CFR 75.1711-1. See R645-301-551. [PHH]

R645-301-521, 521.180) In Section 3.2, 3-31, the applicant states: "the 28-ft vertical shaft will be approximately 300 feet deep and constructed using one of two methods". Also, the shaft depicted with the drawing titled: *Winter Quarters Ventilation Shaft Proposed Abandonment* appears to be a 28-ft vertical shaft. These details are inconsistent with Section 2.2, 2-21(a), where it states that there will be one 20-ft shaft and one 8-ft shaft. The above-mentioned sections must be edited to clarify and include how many shafts are proposed and their specifications, details, drawings, cross sections, etc. Details should clearly define the proposed shaft(s) specifications. The map entitled *Winters Quarters Ventilation Shaft Pad Proposed Facilities Plan* appears to have the details of two separate shafts. References to a 28-ft shaft must be eliminated if no such shaft will be sunken or raised. Also, all maps, plans, cross sections, etc. must be stamped/certified by a licensed professional engineer. [JCO]

R645-301-527, R645-301-534 The applicant must include a section, or edit a section of the application to include a more detailed description of each road. All roads intended for use must be classified and specifications for each road must be included in terms of usage, maintenance, possible damage, improvements, alterations, construction, design, location, reclamation, etc. If waste material is to be transported to the Scofield Waste Rock site, details must be included in terms

of transportation method and road adequacy. Detailed plans, maps, cross-sections, etc. for all roads must also be included. [JCO]

R645-301-551, The Permittee must commit to backfilling the two vertical mine openings associated with this permit amendment from the bottom of the coal seam to the surface. [PHH]

R645-301-551, R645-553.260, R645-536 through R645-536.200, R645-536.210 As per R645-301-551, the two shafts described/referenced in Section 2.2.12, Section 4.1.2, and Section 4.9 of the application, must be capped and backfilled. Filling details are not sufficient for compliance with Coal Mining Rules requirements. The above-mentioned sections (including the drawings, plans, and cross-sections within Section 4.9) of the application must be edited to include specifications, details, drawings, cross sections, etc. for filling the shafts, as per 30 CFR Part 75.1711-1 and R645-301-551. Filling shall be for the entire depth of the shaft, and for the first 50 feet from the bottom of the coal bed, the fill shall be of incombustible material. The applicant must also demonstrate that the shaft fill will be stable and include a description of the measures to be used to backfill the shaft. In Section 4.16, pg 4-90, the applicant states that "At reclamation, the developmental waste will be used in backfilling of the Declined Slope, the vertical shafts and attainting (AOC)." According to R645-553.260, disposal of underground development waste will be in accordance with R645-536 through R645-536.200, wherein the applicant is required to demonstrate that disposal facility (the shaft) will be designed using prudent engineering practices. According to R645-536.210, the applicant must ensure mass stability and prevent mass movement during and after construction. Capping details are adequate and comply with 30 CFR Part 75.1711-1 and R645-301-551. Details included for sealing the slope entry are also sufficient to satisfy Coal Mining Rules requirements [JCO]

R645-301.624.220: Please provide additional information addressing whether or not chemical analysis for acid-toxic-forming, or alkalinity producing materials is necessary for the rock material produced from the installation of the shaft and decline slope and escape way boreholes. The Division understands that prior baseline chemical analysis has been performed on rock strata from other areas of the mine. However, please provide more information or a justification on whether or not the geology in this area is variable enough to warrant any new/additional chemical analysis. [AAA]

R645-301.631: Given that a mine water discharge is possible at reclamation, it is the opinion of the Division that the vertical shaft requires a stable, backfill material in addition to the 6-inch cap. This measure would provide the necessary stability to seal the shaft. Additionally, materials have the propensity to settle in underground openings, especially when compounded in with an underground source of water expected to discharge from the sealed openings. This mine water

discharge has the potential to soften and undermine the backfill material, which can contribute to material settling. Please address the type of material that will be used to backfill the shaft and a plan to monitor and prevent any potential settling of the shaft. [AAA]

R645-301-728.333, Flow data in the Division's database for CS-20 show an average flow of 614 gpm in Winter Quarters Creek, with 2,800 and 108 gpm being the measured maximum and minimum. Discharging 500 to 600 gpm of sediment-free water to this stream has the potential to markedly change its character. The Permittee must address flooding and stream flow alteration from this significant inflow to Winter Quarters Creek in the PHC. [JDS]

R645-301-731.221, -731.222, CS-24 is near the midpoint of the WQVF pad, not downstream of it, and it is upstream of the Topsoil Pile Sediment Trap (Drawings 2.3.6-1 and 3.2.4-3B). The Permittee needs to either move CS-20 farther downstream or add another surface-water monitoring point that is unquestionably downstream of the WQVF. [JDS]

R645-301-731.311, R645-301-624.200, R645-301-553.300, The plan describes construction of a pad with underground development waste and storage of excess underground development waste on the pad (p. 3-31a). The plan describes using this fill to achieve AOC, but does not provide chemical analysis of the strata or overburden to be stored on the surface. To ensure an adequate rooting zone beneath the one foot topsoil cover, the plan should either provide the chemical analysis of the borehole cores so that potential acid/toxic issues can be evaluated or commit to the sampling and analysis of the overburden stored on site and within the crib wall during construction or commit to the sampling of the final regraded fill for acid/toxic parameters prior to topsoil replacement. The suggested list of analytes are outlined in Tables 3 and 7 of the Division Guidelines for Topsoil and Overburden Handling and include: pH, EC, SAR, Se, B, and Acid Base Potential. [PWB]

R645-301-731.520, In order for the Division to allow gravity discharges of water from an underground mine, the Permittee must **demonstrate** that the discharge complies with the performance standards of R645-301 and R645-302 and any additional UPDES permit requirements. Because this discharge is likely after reclamation, when no treatment will be possible, the Permittee must demonstrate that untreated water will meet these standards. The Division cannot approve the plan as presented until this information is provided. [JDS]

R645-301-731.600, Before the Division can authorize coal mining and reclamation operations within the Stream Buffer Zone, the Permittee must provide a plan to prevent violation of applicable water quality standards and adverse impacts to the

water quantity and quality or other environmental resources of Winter Quarters Creek from runoff from the outslope of the Sedimentation Pond and Topsoil Pile berm and the outfall from the Topsoil Sediment Trap and Upper Road ditch and culvert. [JDS]

R645-301-732.210, -731.220, The Permittee needs to analyze the water samples from WQ1-1, 08-5-1, and CS-24 for the baseline parameters that are listed in Table 2.3.7-2. [JDS]

R645-301-742.112, The Permittee must provide a plan to continue monitoring of the discharge from the mine to Winter Quarters Canyon after reclamation is completed. [JDS]

R645-301-742.111, -112, 113, The outfalls for the ASCA 39 culvert and Upper Road culvert are shown on Drawing 3.2.4-3A and detailed on Drawing 3.2.4-3E, but the Permittee needs to design a means to convey the water from the outfall to the stream in order to minimize erosion and contributions of sediment to the stream. [JDS]

R645-301-742.111, -112, 113, The Sedimentation Pond primary and secondary spillways are shown on Drawing 3.2.4-3A and detailed on Drawing 3.2.4-3D, but the Permittee needs to design a means to convey the water from the end of the spillways to the stream in order to minimize erosion and contributions of sediment to the stream. [JDS]

R645-301-742.120, ASCAs 37, 38, and 39 are shown on Drawing 3.2.4-3A.

- Discussion for ASCAs 37 and 38 have been added to pages 3-72(b) and 3-72(c), but the Permittee needs to discuss ASCA 39.
- Drawing 3.2.4-3A indicates ASCA 37 covers only a small corner of the Topsoil Storage Pile, but the description on page 3-72(b) indicates the entire pile is included in the ASCA. The Permittee needs to clarify this.
- Sediment control on the outslope of the Sedimentation Pond, either as an ASCA or Exempt Area, must be included in the plan. [JDS]

R645-301-742.224, The calculations and designs in Engineering Calculations Vol. 5 - Section 24; *Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report* by EarthFax Engineering are not certified. [JDS]

R645-301-742.313, -742.314, -761, Drawing 4.4.2-3A does not give the location for the stainless steel pipe designed to carry water from the sealed slope portal to Winter Quarters Creek; the Permittee needs to add this pipe location to Drawing 4.4.2-3A. [JDS]

SUMMARY OF PERMIT DEFICIENCIES

R645-301-743.120, The Sedimentation pond design is in the *Sediment Control Design Report*. Section 3.2.1 states that an engineer's certification to meet requirements of R645-301-743-110 and R645-301-514 is located on all necessary designs and calculations for the ponds in the appropriate appendices and inspection reports: No such certification for the WQVF sedimentation pond is found in the *Sediment Control Design Report*. The Permittee must provide the required certification for the sedimentation pond design. [JDS]

R645-301-743.120, Drawing 3.2.4-3D indicates a 1.45-foot freeboard above the primary spillway elevation; however, the calculations or other design information used to determine that this freeboard is sufficient to prevent overtopping by waves or sudden increases in storage volume could not be found in the submittal. [JDS]

R645-301-750, -752.250, To accommodate the possible 500 to 600 gpm gravity discharge from the WQVF at reclamation, the Permittee is planning for an 8-inch (minimum) stainless steel pipe to extend from inby the slope portal seal down to the creek, with a trash-rack on the inby end. The pipe will be buried, daylighting at creek level at a location where the creek is well-armored to accommodate the flow. Figure 4.9-D is a conceptual drawing of this drain, but the amendment contains no design details or sizing calculations for this culvert or for the armoring of the stream. [JDS]

R645-301-830.140, the Permittee must provide supporting calculations for the backfilling and grading and topsoiling costs submitted as part of the Task ID # 3463 application. The numbers utilized in the submitted application must be justified in order that the review of the submitted figures can be determined as accurate. The Permittee must provide supporting calculations to show how the time requirements were determined for the trackhoe, dozer and pickup crew 4 X 4 for the backfilling and topsoiling costs for the pad area. [PHH]

R645-302-324.300, The plan should include a commitment to monitor the Winter Quarters stream channel downstream of the permit area for bank stability and stream morphology to establish baseline prior to reclamation and before discharge of flow from the reclaimed slope into the Winter Quarters stream channel. [PWB]

GENERAL CONTENTS

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

A description of the documents upon which the Permittee bases their legal right to enter and begin coal mining and reclamation operations can be found on page 1-34. A deed from the Allred Family Trust to Ark Land Company conveys about 12.7 acres of surface land to Ark Land Company. The parcel is located in the Winter Quarters Canyon in the N1/2 of Section 1, T. 13S., R. 6E., SLB&M.

Findings:

R645-301-114.100, please provide the date of execution of the deed from the Allred Family Trust to Ark Land Company. Also, please identify the specific legal description of the parcel to which the document pertains.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

Analysis:

The road leading up to Winter Quarters is a public road for approximately one mile, after which it becomes a private road, as noted on the carbon county website:

<http://ims.carbon.utah.gov/zoning/mainpage.asp>, accessed January 27, 2010. Also, Priscilla Burton visited with the Carbon County Planning and Zoning office on February 16, 2010 and was informed that the county claims the road up winter quarters as a public road for ¼ mile into Section 6. This is probably one mile from the mine site.

Also, while determining suitability, it was discovered that the area is zoned Watershed.

Findings:

Prior to approval, please submit the following in accordance with:

R645-301-115.100, please provide documentation that mining construction in Winter Quarters Canyon is compatible with local land use zoning.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Analysis:

The North Lease is in a montane area of elevation 8300 –9300 feet. Slopes are well vegetated with aspen and conifers. Two main drainages (Winter Quarters and Woods Canyon) flow northeast emptying into Mud Creek (or Pleasant Valley Creek). Each drainage has several reaches contributing flow. The gradient of the creeks is gentle along the valley bottom. Winter Quarters Creek has a wide floodplain vegetated with grasses.

There are two seams of interest in the North Lease: the Lower O’Conner “A” seam and the Flat Canyon seam (also called the Woods Canyon) seam in the Blackhawk Formation, which in the North Lease lies in a zone of compression. The compression appears to limit the ground water inflow to the mine.

Findings

The information provided is adequate.

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Analysis:

The letter included with the application states that due to the recent interpretation of ‘permit boundary’ by the Division, every plate illustrating permit areas was modified as part of the submittal. The permittee changed map 1.6-3, skyline mines permit area, so that the previous permit area line is now the adjacent area line. The permittee also added a new boundary line to this map, which depicts all surface disturbances as the permit boundary. This includes roads, pipelines, portal yard, conveyor bench, loadout, waste rock disposal site and the proposed winter quarter’s ventilation facility. The narrative at the bottom of the map states that the adjacent area is ¼ mile beyond lease acreage. However, the line does not depict this, and a ¼ mile is not

sufficient for certain disciplines including hydrology and wildlife resources. The Division does not require that adjacent area be defined on a map. Adjacent area can vary in size according to individual disciplines such as hydrology, biology, etc. If the permittee chooses to depict the adjacent area on a map with a boundary line, then the adjacent area, according to R645-100-200 definition is:

“The area outside the permit area where a resource or resources, determined according to the context in which adjacent area is used, are or reasonably could be expected to be adversely impacted by proposed coal mining and reclamation operations, including probable impacts from underground workings”.

For the context of biology, cultural resources and land use, this area may be different for all three. For instance, adjacent area for a surface disturbance with respect to cultural resources would be relatively small because the area that ‘reasonably could be expected to be adversely impacted’ from a surface disturbance is very minor and could be none. However, the adjacent area relative to high value habitat for the same surface disturbance could be quite significant because wildlife utilizing the habitat could be impacted from visual, auditory and other disturbances. From this standpoint, it is recommended that the permittee either eliminate the adjacent area line from the map or place the line according to the resource with the largest adjacent area.

Findings:

The information provided is not considered adequate to meet the minimum regulatory requirements for this section. Prior to approval, the permittee must submit the following in accordance with:

R645-301-311: The adjacent area (depicted on map 1.6-3) must include the area in which any resource(s) could be expected to be adversely impacted by coal mining and reclamation operations. Plate 1.6-3 states in the narrative that the adjacent area is ¼ mile beyond all lease areas. The map does not depict this, and ¼ mile is not sufficient for all resources. Please either remove the adjacent area delineation or include all adjacent area.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

A summary of the cultural resource evaluations can be found on page 2-4c1 of Section 2.1. Earth Touch Inc. completed a cultural resource assessment for the proposed ventilation facility in April of 2009. This report will be incorporated in the confidential MRP binder. The

project area is located in Winter Quarters Canyon and consists of approximately 7.93 acres comprised of the facility and a 530 ft. stretch of road that will be rerouted to provide access. Additional area was studied along a 1.5-mile stretch of Winter Quarters Canyon where the power line corridor will be located. A class I file search of the project area was conducted at the SHPO office on September 25, 2007 and another at the Manti La Sal Forest Service office in October of 2007. A class III pedestrian inventory was completed by EarthTouch in October of 2007 through November of 2008. A winter quarter's townsite map is located in Appendix C of the report.

The Winter Quarters townsite is listed as site 42CB268 from previous surveys. This assessment added forty features to the existing townsite and brief summaries of these features are located within the report. The townsite has been recommended for listing as a significant historic property since the 1981 inventory under criterion A, C and D. However, several landowners have objected to the nomination for listing in the national register and the listing was temporarily postponed. The report states that sites that are determined potentially eligible regardless of listing in the National Register are still to be treated as eligible, listed sites.

EarthTouch consultants concluded that development of the proposed ventilation facility would have an adverse effect on a portion of the historic Winter Quarters Townsite including seven associated features eligible for listing. The consultant also determined that the following restrictions would need to be placed on the mine operation in order to protect unidentified cultural properties:

1. Personnel and equipment associated with the project should be restricted to the area cleared for the project.
2. Personnel associated with the project should refrain from collecting or otherwise disturbing cultural materials that may be encountered during development.
3. If unrecorded cultural materials are encountered during the project, activities in the affected area should cease, and the USHPO should be notified before development in the area is resumed.
4. Human burials or other physical remains encountered during the project, require immediate cessation of activity in the affected area, as well as immediate notification of proper authorities. Native American burials or other remains must be reported to the Utah SHPO and appropriate Native American groups.

The report was sent to the SHPO by the Division with a request for concurrence on the finding of adverse effect on November 17, 2009. USHPO granted concurrence with the original report on November 23, 2009. (See Incoming File 0067). The permittee then withdrew the amendment application.

On January 11th 2010, the permittee resubmitted the application and revised the disturbance area so that it was isolated to the north side of the stream rather than over the stream. In this submittal of the application, the permittee included an addendum to the original cultural resource report. This addendum was developed in consultation with the Division, USHPO, and

PLPCO and included a mitigation plan for the eleven features to be affected. The eleven features included stone foundations, earthen foundations, walls, and a leveled area. The consultant concluded that the disturbance area will be far enough away and hidden by the canyon so that the proposed facility would have no impact on the view shed of the main townsite. Also, due to the degradation of the features to be impacted, excavation would contribute little to no significant data. Therefore, the consultant proposed that adequate mitigation would include a detailed GPS inventory of all features associated with the townsite, and an informational sign along route 96. The detailed GPS inventory has been completed. The informational sign will be placed next to existing signs associated with the Huntington and Eccles Canyons National Scenic Byway. Further information regarding the sign can be found in appendix B of the addendum report.

The addendum report was submitted to SHPO for concurrence on January 19, 2009.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section. However, prior to approval, the USHPO must concur with the Division's findings.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Analysis:

Vegetation information of the permit area is located in Vol. 1A Sec.2.7, 2.7.1, and 2.7.6. Survey reports are included in the MRP in Vol. A-2 North Lease 2nd volume and Vol. A-2 2nd Volume. Section 2.7.8 located on page 2-63 includes a summary of the vegetation analysis for the proposed winter quarter's ventilation facility. Vegetation information was collected in 2008 and revised in 2009. The proposed site is located approximately 24 ft. from the stream bank. The proposed pad area contains sagebrush and mountain brush south facing hillside, and minimal riparian areas. The riparian areas are degraded due to heavy livestock grazing and a large population of noxious weeds.

Productivity information is summarized on page 2-127 of section 2.12. The proposed ventilation facility area was assessed for productivity by NRCS Range Management Specialist, Dean Stacy. Mr. Stacy determined that the area ranked low on the Potential Natural Community Scale. The south-facing slope (where the disturbance will be located) was approximated at 1300 lb./ac productivity. The Willow and aspen communities were estimated at only 800 lb. /ac. The NRCS report is located in Appendix A-2 Vol. 2.

The vegetation survey was conducted by Dr. Patrick Collins of Mt. Nebo Scientific in July of 2009. During construction and operations of the ventilation facility, disturbance will be contained on the sagebrush/grass community. A survey was conducted on this area and on the proposed reference site.

Sagebrush Grass Community (proposed disturbed area and reference area)

The living cover was 48.5% and the woody species density was 6303 stems per acre. The reference area for this community is shown on Map A of the report. For the reference area, living cover was 49.75% and woody species density was 4389 stems per acre.

Riparian Area (proposed Disturbed and reference area)

Very little disturbance will occur within the riparian area during the construction and operation of the ventilation facility. Therefore, no revegetation success standards were needed for this community. A very small portion of riparian habitat might be affected and a riparian seed mixture will be used during reclamation for this area.

Page 9 of the report suggests that a lower woody stems per acre amount should be used as a standard in order to achieve a more suitable grazing habitat in the area. The Division and DWR will conduct a site visit this spring to determine the appropriate standard for woody stems density.

Color photographs and a map are provided in the report.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Analysis:

Fish and wildlife information pertaining to the Winter Quarters Canyon proposed facility can be found in Section 2.1 page 2-4d, Sec 2.8 p 2-67. Surveys associated with the canyon have been conducted since 2005. Page 2-104(j) of section 2.9.5 (a) summarizes the data that has been collected for the proposed project. All surveys conclude that the project will have minimal effects on fish and wildlife.

Macroinvertebrate Sampling:

Page 2-67 of sec. 2.8 summarizes the macroinvertebrate sampling plan for the proposed Winter Quarters Ventilation Facility. The Winter Quarters Canyon Creek has a moderate population of macroinvertebrates according to the 1995 environmental assessment by the USFS and BLM. Presence and abundance of certain macroinvertebrate populations can be very useful in evaluating the health of a stream. Sampling locations are located on Plate 2.8.1-1 and sampling frequency is located on table 2.8-1a. Plate 2.8.1-1 indicates that there are three sampling points above the proposed winter quarter's ventilation facility. The purpose of the surveys is to determine the effect of the construction and operations on the stream. Therefore, there must be a sampling point below the proposed facility so that it can be compared to pre activity conditions as well as upper stream conditions. Table 2.8-1a shows that Winter Canyon has been monitored for macroinvertebrates at the three sites above the ventilation facility fall of 2002, spring and fall of 2003, spring 2004, and others are scheduled for fall 2007, spring 2008 and fall 2011. This table needs to be updated to show that the 2007 and 2008 surveys have been completed. The surveys should also continue until at least phase I bond release following reclamation of the site. The facility will discharge water into the stream, according to the application. Therefore, it is important to monitor the stream for impacts until reclamation has been completed and the site is stable.

The withdrawn application, submitted in October 2009, included correspondence between Mr. Galecki of CFC and Dr. Shiozawa from Mt. Nebo Scientific regarding the fish habitat in the stream. This current submittal does not have any baseline information regarding the stream because the stream will no longer be culverted. However, according to the application, a large volume of water will be discharged from the ventilation pad to the stream. This discharge could potentially alter the stream morphology and may have an adverse affect on the stream habitat. The baseline information needs to be included in the application, along with a protection and enhancement plan for the stream habitat.

Northern Goshawk, Flammulated Owl and other Wildlife Surveys Appendix A-3, Vol. 2

This report was conducted by Western Land Services, Inc and prepared in July of 2009. The Northern Goshawk and flammulated owl surveys were conducted using the USDA Forest Service protocols. The Northern Saw Whet Owl survey protocol was very similar to the flammulated owl survey. No responses were elicited from any of the three species.

While conducting these surveys, Elk and mule deer were encountered and the locations were recorded. It was determined that the canyon, including the proposed pad area, was suitable for elk calving.

A map is included at the end of the report showing the survey boundary (1/2 mile from proposed pad area and subsidence area) and call station locations.

Tetra Tech Letter Appendix A-3, Vol. 2

The application includes a letter from the consultant Tetra Tech regarding the Winter Quarter's Canyon Wildlife Studies Summary for 2006 through 2008. The letter will be incorporated in Appendix A-3, vol. 2. Tetra tech conducted surveys between these times for Northern Goshawks. Only one Goshawk was observed within a mile of the proposed ventilation pad area. No nests were found. Elk, elk calves, mule deer, and mule deer fawns have been documented throughout the canyon, but greater than a mile from the pad site. Therefore, the consultant concluded that no impacts to wildlife should occur with the construction of the ventilation facility.

The letter also addressed the exhaust fan sound and its potential impact to wildlife. A sound study was conducted by Tetra tech for SUFCO mine in 2008. It was concluded that ventilation fans produce noise that recedes to background noise levels at about 1.43 miles. Furthermore, the consultant believes that with the additional topography, the Winter Quarter's Canyon should provide a greater buffer to the sound and reduce the travel area.

The letter includes Table 1: Winter Quarters Canyon Northern Goshawk Calling Station results 2006-2008 within one mile of the proposed ventilation shaft and pad. Other wildlife observed according to the table include: green tailed towhee, olive sided flycatcher, marten, red tailed hawk, mule deer, elk, sharp shinned hawk, sage thrasher, sparrow, golden eagle, coopers hawk, woodpecker and ravens.

The fish and wildlife information was sent to Nicole Nielson of the Division of Wildlife Resources on Feb. 4, 2010 to inform DWR and elicit any recommendations or concerns they might have with the proposed project.

Findings:

The information provided is not considered adequate to meet the minimum regulatory requirements for this section. Prior to approval, the applicant must provide the following in accordance with:

R645-301-323.200: Please provide macroinvertebrate-monitoring locations *downstream* of the proposed ventilation facility. Please update plate 2.8.1-1 to include a downstream location

Please update table 2.8-1a to show that the surveys conducted in 2007 until present have been completed. The water discharge into the stream as well as potential sediment runoff could negatively affect the stream. Therefore, surveys for winter quarters (above and below the ventilation facility) need to occur at least until the site has been reclaimed and erosion is properly controlled (possibly at phase I bond release). Please extend the table accordingly.

Please include a discussion of the impacts of the increased water discharge on the stream morphology and aquatic organisms. Include the correspondence from Mt. Nebo Scientific regarding the fish habitat and possible monitoring plans.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

The soil survey indicates the 8-acre area to be disturbed is a 25 – 35% slope with a thin surface layer of sandy loam soil (MRP Vol 2., App. A-2). The soil is neutral in pH and has very little carbonate or neutralizing content. The baseline data collection did not include potassium or phosphorus analysis. This information can be collected at the time of topsoil salvage to provide an indication of the need for fertilization at the time of reclamation, a deficiency has been written under R645-301-231.300.

Findings:

The information provided is not adequate for the purposes of the regulations. The baseline data collection did not include potassium or phosphorus analysis. This information can be collected at the time of topsoil salvage to provide an indication of the need for fertilization at the time of reclamation, a deficiency has been written under R645-301-231.300.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.22; R645-301-411.

Analysis:

Land use information is located on page 2-125 of Sec. 2.12. Current and historic land uses of the Winter Quarters Canyon are described as grazing, wildlife habitat, recreation, hunting, forestry and timber production and mining. The condition and capability of the land is also described on page 2-63 of Section 2.7. The area has been heavily grazed and is invaded with the noxious weed *Carduus nutans*. The condition and capability of the land may therefore improve after reclamation and bond release.

Table 2.12.2-1 lists the grazing potential for the area to be affected by mining surface operations and facilities. The table also lists that the Winter Quarters proposed ventilation pad

has a land area of 1.6 acres of sagebrush with 53.8 Animal Units and 1.8 Animal unit months. However, plate 1.6-3 states that the winter quarter's disturbance area is 7.93 acres.

Table 4.12-1 lists the premining land use as Grazing, mining and wildlife.

A land use map can be found in the approved M&RP as plate 2.12.1-1. This map shows that the proposed ventilation facility is adjacent to the Manti-la Sal National Forest and several grazing allotments. The proposed facility is located on private property, which is used for cattle grazing.

Findings:

The information provided is not considered adequate to meet the minimum regulatory requirements for this section. Prior to approval, the applicant must provide the following in accordance with:

R645-301-411: Table 2.12.2-1 lists that the winter quarters proposed ventilation pad has a land area of 1.6 acres of sagebrush with 53.8 Animal Units and 1.8 Animal unit months. However, plate 1.6-3 states that the winter quarter's disturbance area is 7.93 acres. Please correct the acreage and resulting AU and AUM unit discrepancies.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

Analysis:

Alluvial Valley Floor Determination

The stream flows through a V-shaped valley with steep side-slopes. Nevertheless, the stream has developed a narrow floodplain. The gentle meanders of the stream are evident on topographic maps, and the Clement Drilling and Geophysical seismic refraction report states that refraction profiles 1 and 3 show evidence of past lateral migration of the stream. There is no evidence of irrigation other than natural flooding, but water in the stream provides natural subirrigation.

Applicability of Statutory Exclusions

The extent of agricultural activity, i.e. rangeland, on the proposed permit and adjacent area is not known; however, the total area for the proposed WQVF permit area will be less than 8 acres, and not all of the 8 acres will be disturbed. The area of the potential AVF that may be disturbed is estimated by the Division to total approximately one acre. The stream is the south boundary of the proposed permit area but the planned mining and reclamation activities should

not disturb the stream itself. There is no indication that the proposed disturbance will interfere with essential hydrologic functions inside or outside the permit area. The Division finds that the Statutory Exclusions of R645-302-324.220 apply and will make no further determination as to the presence of an AVF within the proposed permit area.

Findings:

The Division finds that the Statutory Exclusions of R645-301-324.220 would apply if there were an AVF and will make no further determination as to the presence of an AVF within the proposed permit area.

Adjacent Area Analysis:

Alluvial Valley Floor Determination

The existence of an alluvial valley floor with irrigated pastures and areas of subirrigation along Mud Creek in Pleasant Valley below the Utah No. 2 Mine (now called the White Oak Load Out) was previously established by the Division (1984 Technical Analysis of the Valley Camp Mine, ACT/007/001, and Valley Camp MRP Map R645-301-411.100 Premining Land Use Map). Figure 2.12.D in the Skyline Mine MRP illustrates the locations of pastures downstream and outside the permit area.

Similarly, there exists an alluvial valley floor in the broad, valley bottom of Winter Quarters Canyon and Woods Canyon, outside the permit area (MRP, Section 2.12). Measurements of flows taken on November 26, 2001 (Appendix D, Skyline Mine MRP) recorded 18.4 cfs in Mud creek after the confluence with Eccles Creek and 24.44 cfs after the confluence with Winter Quarters Creek. The gain in flow downstream was attributed to contributions from springs and side streams (2 – 3 cfs) and re-emerging base flow from the alluvium of 3 – 4 cfs (Section 2.12 and Appendix D July 2002 Addendum to the Skyline Mine PHC).

Figure 2.12.D illustrates the locations of pastures in the Alluvial Valley Floor. Table 2.12.3 provides information on land ownership, pasture size, and crop grown. There are six landowners along Mud, Winter Quarters, and Woods Canyon Creeks. The land is used for grazing of pasture grass. All pastures were estimated to produce 2.5 Tons/acre of grass annually (Ray Jensen, Range Specialist for the Bureau of Land Management (BLM) is the source of this yield estimation. He suggested a range of 4000-6000 pounds/acre for sub-irrigated grassland, in 2001.) The predominant vegetation type is grass. Horses and cows graze in pastures (Division observation). The number of animals grazed on the pastures by each landowner is variable with time.

Within the permit area, the sinuosity of Winter Quarters Creek is 1.1 and the channel width varies from 6 – 8 ft. Flows ranged from 108 – 871 gpm during the baseline gathering study period. In Woods Canyon, the AVF is limited to 3 acres and sinuosity and channel width

were not measured. However the flow ranged from 23 –410 gpm during baseline collection (Section 2.12).

Protection of Agricultural Activities

Mud Creek stream channel vegetation was assessed several times in the last decade as a result of sustained, large flows being pumped from the mine (Appendix A of Appendix D July 2002 Addendum to the Skyline Mine PHC and the July 2004 Mt. Nebo Scientific, Inc report entitled, "Baseline Monitoring Riparian Plant Communities at Eccles Creek & Mud Creek 2002-2003").

As a result of this monitoring, the Division was able to make a finding (August 2005 Task 2246 Subsidence Mining North Lease), in accordance with R645-302-323.122, that

- Skyline Mine operations had not materially damaged the underground water systems in Pleasant Valley, outside the permit area of the existing coal mining and reclamation operation.
- The increased mine discharge has had no negative impact on agricultural activity along Mud Creek.
- Instability in the channel banks and increased erosion of the stream channel in reaches of the channel that are not well vegetated are very small in relation to the acreage being pastured and are negligible to the total production of the pastures.
- There has been no significant impact to productivity of the pasturelands in Pleasant Valley.
- The quality of the mine water discharge in terms of Total Dissolved Solids has improved with the quantity of water discharged.

In 2005, in accordance with R645-302-324.300, The Division required continued monitoring of the vegetation, erosion of banks, flows and chemical quality of the waters at established locations on Mud Creek, Winter Quarters Creek and Woods Canyon Creek. A commitment to monitor the Winter Quarter stream channel downstream of the permit area is requested in order to establish parameters of bank stability and other baseline characteristics prior to reclamation and the likely 500 - 600 gpm post mining water discharge into the Winter Quarters stream channel (Sec. 4.11.9).

Monitoring

The MRP describes monitoring of stream flows (Section 2.4) and vegetation (Section 2.7) in Woods and Winter Quarters Creeks during and immediately after mining to provide a trigger for implementing the best technology available to mitigate potential subsidence damage

(Section 4.17). The BTCA for repair of subsidence cracks will be jointly determined immediately prior to implementation (Section 2.7), but will likely involve backfilling with surrounding material and bentonite (Section 4.17).

Scofield Reservoir is a drinking water source for Price, and a premiere cold-water fishery in the State. Unfortunately, it has been listed as an impaired water body by the EPA. Of special concern is the concentration of total phosphorus in the reservoir (Appendix E of the July 2002 Addendum to the PHC). A significant source of phosphorus pollution in the Scofield Reservoir are the sediments entering the reservoir delivered by Mud Creek. Consequently, the contributions of mine water to phosphorus loading has been evaluated by the Permittee (Section 2.12 Attachment 3). Monitoring at two sites on Eccles and five sites on Mud Creek included: total flow, TDS, TSS, and total phosphorous, stream morphology. (Station locations are shown on Figure 1 Location of Reference Sites Attachment 3 Land Use of Section 2.12.) Stations are monitored four times a year (seasonally) and will be monitored for a period of one year following a reduction in discharge to a rate of 350 gpm or less. Sediment yield loading from flows in Mud Creek have been computed from the TSS and flow data collected. Annual evaluations of the stream are summarized in a report provided to the Division with the Skyline Mine Annual Report. The monitoring plan also evaluates the changes in stream morphology and vegetation at the stations over the same time period. Total phosphorus has been included in the list of parameters to be monitored on Winter Quarters creek waters.

Findings:

R645-302-324.300, The plan should include a commitment to monitor the Winter Quarter stream channel downstream of the permit area for bank stability and stream morphology to establish baseline prior to reclamation and before the discharge of flow into the Winter Quarters stream channel.

PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

Analysis:

Section 2.14 and Appendix Volume A-2 has a prime farmland determination letter for the area. There is no historical use of cropland within the proposed permit area. The proposed disturbed area has concave slopes at 25 – 35% inclination.

Findings:

The Division concurs with the Natural Resource Conservation Service that there is no prime farmland within the permit area.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

Analysis:

Climatological Resource Information is in the current MRP. No new climatological data have been submitted with this amendment; however, Attachment A contains Precipitation Frequency Estimates from NOAA (<http://hdsc.nws.noaa.gov/cgi-bin/hdsc>).

Findings:

Climatological Resource Information meets the requirements of the Coal Mining Rules.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Sampling and Analysis

The Permittee recently added stream monitoring point CS-24 (Nov 2009 – one sample), spring WQ1-1 (June 2008 – six samples), and well 08-5-01 (Nov 2009 – depth only; one sample) in the vicinity of the proposed WQVF in anticipation of the WQVF submittal. These have been added to the monitoring schedule in Tables 2.3.7-1 and 2.3.7-3.

Analyses at WQ1-1 have been for Field or Operational rather than Baseline parameters, which are listed in Table 2.3.7-2 of the current MRP. The Permittee needs to analyze water samples from WQ1-1, 08-5-1, and CS-24 for the baseline parameters that are listed in Table 2.3.7-2.

Baseline Information

The Permittee has already provided some baseline geologic and hydrologic data for the Winter Quarters Canyon area in the current MRP. Additional baseline is being gathered at the three points discussed in the preceding section; however, see the preceding deficiency

Baseline Cumulative Impact Area Information

The Division prepared a CHIA for the Mud Creek and Upper Huntington Creek Basins; the Division last updated it in March 2006. That CHIA encompassed Winter Quarters Canyon, but there is no discussion of possible impacts from disturbance in this canyon. Therefore, the Division will need to update the CHIA to include the proposed disturbance in Winter Quarters Canyon. The Skyline Mine WQVF is the only proposed or anticipated mining activity in the Winter Quarters drainage.

In order for the Division to update the CHIA determination, the Permittee must provide information on the potential for acid- and toxic forming materials in the underground development waste that will be generated during construction of the shafts and slope and placed adjacent to the stream in the WQVF pad.

Modeling

No modeling was done for this amendment.

Probable Hydrologic Consequences Determination

Waste material generated from the Winter Quarters Ventilation Facility (WQVF) Declined Slope will be used to create the facility pad itself. Material will be placed in lifts and compacted and reinforced with a retaining wall. In the event there is an excess of material that cannot be stored on site, whether from the Declined Slope or Vertical Shaft construction, this material will be transported to the Scofield Waste Rock site. Material sent to the Scofield Waste Rock site will be analyzed for toxicity approximately every 2,000 tons of material sent to the site. Waste Rock generated from construction of the Vertical Shaft using the raised-bore drilling technique will likely be placed underground.

In Section 4.11.9, the Permittee states that the WQVF decline slope portal (elevation 8,120 feet) is approximately 460 feet below the Trespass Portal (8,580 feet), currently the lowest portal in Eccles Canyon. Because of this lower elevation, gravity discharge from the WQVF is likely when mine dewatering ceases and reclamation begins. The Permittee estimates Winter Quarters could receive "500-600 gallons of water" from the reclaimed WQVF, with an estimated TDS concentration in the range of 500-700 mg/L. It can be assumed that the additional flow is 500 – 600 gpm, but the Permittee needs to clarify this.

Flow data in the Division's database for CS-20 show an average flow of 614 gpm in Winter Quarters Creek, with 2,800 and 108 gpm being the measured maximum and minimum. Based on this limited knowledge of the creek, adding 500 to 600 gpm of sediment-free water to this stream has the potential to markedly change its character. The Permittee must address flooding and streamflow alteration from this significant inflow to Winter Quarters Creek in the PHC.

The Permittee anticipates the untreated water quality will comply with performance standards of R645-301, R645-302 and any additional UPDES permit requirements. Discharge pipe details are in Section 4.9 and Figure 4.90. Because the majority of this groundwater would not naturally discharge to the surface in the immediate area, this discharge should not produce a significant depletion of water reaching the surrounding creeks and springs since these water sources (creeks and streams) are located stratigraphically above the in-mine water source. Groundwater intercepted and discharged into Winter Quarters Creek would be consistent with the groundwater gradient information submitted in the PHC - generally to the north-northeast (PHC Volumes July 2002 and October 2002).

Groundwater Monitoring Plan

The Permittee recently added spring WQ1-1 (June 2008 – six samples) and well 08-5-01 (Nov 2009 – depth only; one sample) in the vicinity of the proposed WQVF in anticipation of the WQVF submittal. These have been added to the monitoring schedule in Tables 2.3.7-1 and 2.3.7-3.

Surface-Water Monitoring Plan

The Permittee recently added stream monitoring point CS-24 (Nov 2009 – one sample to date) in the vicinity of the proposed WQVF in anticipation of the WQVF submittal. These have been added to the monitoring schedule in Tables 2.3.7-1 and 2.3.7-3.

In Section 4.11.2, Monitoring Program, the last sentence (which has been updated) in the paragraph near the center of page 4-68 is unclear: “Quarterly samplings will continue to be analyzed according to Table 2.3.7-1 during the postmining period. The remaining samples are per Table 2.3.7-2.” This seems to be an “apples-oranges” comparison, as Table 2.3.7-1 gives the sampling schedule and Table 2.3.7-2 lists the monitoring parameters. The Permittee needs to clarify this statement.

Findings:

R645-301-120.200, The Permittee estimates Winter Quarters could receive “500-600 gallons of water” from the reclaimed WQVF. It might be assumed that the additional flow is 500 – 600 gpm, but the Permittee needs to clarify this.

R645-301-120.200, In Section 4.11.2, Monitoring Program, the last two sentences in the paragraph near the center of page 4-68 are unclear: “Quarterly samplings will continue to be analyzed according to Table 2.3.7-1 during the postmining period. The remaining samples are per Table 2.3.7-2.” Table 2.3.7-1 gives the sampling schedule and Table 2.3.7-2 lists the monitoring parameters. The Permittee needs to clarify this statement.

R645-301-728.333, Flow data in the Division's database for CS-20 show an average flow of 614 gpm in Winter Quarters Creek, with 2,800 and 108 gpm being the measured maximum and minimum. Discharging 500 to 600 gpm of sediment-free water to this stream has the potential to markedly change its character. The Permittee must address flooding and streamflow alteration from this significant inflow to Winter Quarters Creek in the PHC.

R645-301-732.210, -731.220, The Permittee needs to analyze the water samples from WQ1-1, 08-5-1, and CS-24 for the baseline parameters that are listed in Table 2.3.7-2.

R645-301-725.200, (See previous deficiency under Baseline Cumulative Impact Area Information).

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Monitoring and Sampling Location Maps

Drawing 2.3.6-1 shows the water monitoring locations.

Surface Water Resource Maps

Drawings 2.3.5.1-1 and 2.3.5.2-1 show, respectively, the locations for water rights on surface and ground water.

Well Maps

Other than the Permittee's deep groundwater well 08-1-5, the Division is not aware of any wells near the proposed WQVF. Drawing 2.3.6-1 shows the location of 08-1-5 and other wells associated with the Skyline Mine.

Archeological Site Maps

The cultural resources map for the ventilation facility is located in the Cultural Resource report and addendum NO. 09-0137. The map shows the facility boundary and the affected resource locations.

Monitoring and Sampling Location Maps

The Macroinvertebrate Sample Site locations Map is labeled as DWG NO: 2.8.1-1. This map includes the locations of ten monitoring points within the burnout, James, Eccles, Winter Quarters and Woods Canyons. There are three Winter Quarters sample sites, an upper, middle and lower reach. All three are located upstream from the proposed disturbance area. A sample site needs to be established below the proposed disturbed site in order to assess the impact to the stream from the disturbance. This deficiency is listed in the previous section Fish and Wildlife Resource information.

Vegetation Reference Area Maps

A map of the vegetation types in the winter quarter's permit and adjacent area is labeled DWG. NO: 2.7.1-1a. The map shows that the proposed permit area consists of a sagebrush/grass community with scattered mountain brush areas. The adjacent area vegetation includes aspen, oak, conifer, sagebrush/grass, and riparian. The location of the sagebrush/grass reference area is located on Map 1 of the Vegetation report for the ventilation shaft site located in Appendix A-3 of vol. 2. The reference area is approximately 900' from the proposed disturbed site and is located at: UTM NAD 27 0483296 E 4396592 N.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

OPERATION PLAN

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR784.17; R645-301-411.

Analysis:

The cultural resource report for the proposed ventilation facility is located in the confidential binder. Page 4-84 of section 4.14 includes a summary of the Protection plan of public parks and historic places. Earthtouch consultants recommended that excavation of any of the features that will be affected by the facility would contribute no significant data. Therefore, Earthtouch recommended that the operator conduct a mitigation plan involving a detailed GPS inventory of all features within the townsite and an informational sign for the public about the site. The report and mitigation plan was sent to the Utah SHPO for concurrence on January 19, 2010. This plan has been discussed with representatives from the Division, PLPCO and SHPO. The operator will implement the plan upon approval of this application.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

Protection and Enhancement Plan

Page 2-68 of Sec. 2.8 indicates that silt fencing will be installed along the entire length of the construction zone to minimize sediment loading in the stream that may impact fish. Long-term sediment control will include installation of a sediment pond.

The Protection plan is located on page 2-99 under section 2.9.4 of volume 1A in the official M&RP. In this section, the permittee describes five disturbances to wildlife from mining operations including: surface disturbance, loss of habitat, noise, human activity and air pollution. The protection plan specific to the winter quarter's ventilation facility is on page

2.104j of this section. The 2009 tetra tech report located in Appendix A-3 notes that there will be minimal effects on mammals and game species during the construction and operation of the facility. Furthermore, the permittee states that minimum temporary habitat loss will occur in relation to the abundant surrounding habitat for wildlife. Once the facility is in operation, the facility will not be accessed on a regular basis. The tetra tech report also addresses the issue of noise disturbance to wildlife. The consultant concluded that the orientation of the fan with respect to topographic features, vegetation buffers, time of day, wind patterns, seasonal events and other factors will be key in sound reduction of the facility. The consultant also concluded that no sensitive resource locations such as nesting raptors, elk calving or mule fawning areas are located in or adjacent to the project area, and therefore minimal impacts should occur. However, the 2009 wildlife report by Western Land Services states, "portions of the pad disturbance area contain areas suitable for elk calving". The DWR lists the canyon as high value summer habitat for mule deer and critical summer habitat for rocky mountain elk.

A summary of the enhancement plan is located on page 4-103B of Section 4.18. The plan includes the diverse revegetation seed mixture to be utilized at reclamation and the buffer zone that will be utilized during mining activities. The revegetation process may act as an enhancement to the area because of the current degradation of the site. The site has been overgrazed and has a high concentration of noxious weeds. (See Mt. Nebo Report in Appendix A-2, Vol. 2.)

Endangered and Threatened Species

Reports for TES species are located in Appendix A-2, Vol. 2 and Appendix A-3, volume 2. Page 2-111b of sec. 2.10 states that no TES species have been documented in studies involving the Winter Quarters Ventilation Facility that would prohibit construction. A TES analysis is included in the Vegetation report conducted by Dr. Patrick Collins titled, "Vegetation Sampling & Sensitive Species at the Ventilation Shaft Site in Winter Quarters Canyon." Page 13 of the report includes a list of seven federally listed threatened, endangered & candidate species in Carbon County and their presence in the proposed ventilation area. No TES species was found or had habitat in the project area.

Bald and Golden Eagles

Page 2-111b of Sec 2.10 summarizes the raptor inventories conducted in the Winter Quarters Canyon. It states that Appendix A-3, Vol. 2 includes raptor surveys conducted in 2005, 2007, and 2008 and a summary report addressing the proposed facility's effect on raptors. However, no surveys or summaries are located in that volume.

The confidential 2nd volume of Appendix volume A-4 includes raptor surveys. A raptor survey was conducted in winter quarter's canyon in 1993 and two red-tailed hawks were observed but no nests were identified. A preliminary ground survey and follow up survey for the lease expansion was conducted by Jim Parrish in 1992 and 1993. Nests were located in section 22, 28, 34, 26, 25, 36, 3, 4, 9 and 1. The nest in section 1 is within ½ mile of the proposed

facility; however, the nest could not be ground surveyed for activity because it was on private property and outside the permit boundary at the time. The survey states that golden eagles in this area tend to nest in trees. Another survey was conducted in 2005. Three golden eagle nests were identified, but all were well over one mile from the proposed ventilation facility. The survey conducted in 1997 shows an active kestrel, active retail hawk and one inactive nest over a mile from the site.

A letter from DWR to the Division in 2000 suggests that aerial raptor surveys should not be discontinued for skyline mine due to the habitat including dense conifers. (See 2001 incoming file 0036).

In a conversation with Mace Crane of Western Land Services, Mr. Crane confirmed that there was not suitable habitat for golden eagles within or adjacent to the project area. He felt that surveys specific to golden eagles were not necessary, and that during the Goshawk and flammulated owl surveys conducted for the area (see appendix A-3 Vol. 2), no evidence of golden eagles was found. (See 2010 incoming email 0009).

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

Protection of the stream and riparian area during construction and operation of the ventilation facility is located in several places including: p. 2-4d of section 2.1, p. 2-63 of section 2.7, p. 2-67 thru 2-68 of section 2.8, p. 2-127 of section 2.12, and p. 4-90 of section 4.14,

The activities will stay a minimum of 2 bank full widths (approx. 24 ft) from the stream. Silt fencing will be installed prior to construction to minimize sediment and debris entering the creek. Sediment ponds will be installed for long-term sediment control in the stream. Dr. Pat Collins of Mt. Nebo Scientific suggested that successful revegetation of impacted riparian areas is very likely due to the vegetation present and the available water. Macroinvertebrates will be monitored on a regular basis to assess the water and habitat quality of the stream and riparian area. (See discussion under Fish and wildlife resource information and Protection of fish and wildlife and related environmental values.)

Findings:

The information provided is not considered adequate to meet the minimum regulatory requirements for this section. Prior to approval, the applicant must provide the following in accordance with:

R645-301-322: The application states on page 2-111b of Sec 2.10 that Appendix A-3, Vol. 2 includes raptor surveys conducted in 2005, 2007, and 2008 and a summary report addressing the proposed facility's effect on raptors. However, no surveys or summaries are located in that volume. Please provide the surveys and summary reports.

R645-301-358: The Tetrattech report lists that no sensitive resource locations such as nesting raptors, elk calving or mule fawning areas are located in or adjacent to the project area, and therefore minimal impacts should occur. However, the 2009 wildlife report by Western Land Services states, "portions of the pad disturbance area contain areas suitable for elk calving". The DWR lists the canyon as high value summer habitat for mule deer and critical summer habitat for rocky mountain elk. Please correct this discrepancy and provide a protection and enhancement plan for the Elk and Mule deer high priority habitat located within and adjacent to the proposed pad area.

R645-301-342.100: According to the Mt Nebo Report in Appendix A-2 of Vol. 2, the site is presently degraded due to noxious weed infestations. Please include a weed control plan to supplement the fish and wildlife enhancement measures on page 4-103B of Section 4.18 and to comply with the Utah Noxious Weed Act.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

The plan states in on page 2-120c that one to two feet of surface soil will be salvaged. However the soil survey in App. A-2, Vol 2. suggests that a salvage depth of 6 – 18 inches of sandy loam soil is more likely to be salvaged from 1.6 acres within the 8 acre disturbed area. A stockpile will be constructed on 0.67 acres (ASCA Area 37 described on page 3-72b) and illustrated on Plate 3.2.4-3A. The stockpile area can hold 4,421 cu yds of soil (p. 4-34(a)). The toe of the stockpile is located 25 feet from the perennial Winter Quarters stream channel. It will be placed on a gentle slope that is four feet in elevation higher than the stream channel. The topsoil will be protected by a six-inch high berm constructed as shown on Dwg 3.2.4-3E. The size of this berm may not be adequate to withhold runoff. However, the design information for the topsoil berms is provided in Vol 5. Sec 24, Table 3 (p. 21).

Section 4.6.1 of the approved plan describes equipment to be used and protection of topsoil stockpiles. The interim seed mix is described in Table 4.7-8A.

Findings:

R645-301-231.300, The plan should include a commitment to collect two composite samples of the salvaged topsoil for analysis of phosphorus and potassium, two elements that are essential for plant growth and for which no baseline was established.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

The operator has committed to containing the surface disturbance to two full bank widths from the stream in order to protect the riparian vegetation and habitat. The 2009 tetra tech report located in Appendix A-3 notes that minimum temporary habitat loss will occur in relation to the abundant surrounding habitat for wildlife. Page 3-72(b) of section 3.2 describes that the removed topsoil will be stockpiled and seeded with the interim seeding mixture. Silt fences will control erosion until interim vegetation has been established.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

SPOIL AND WASTE MATERIALS

Regulatory Reference: R645-301.624.220

Analysis:

Coal Mine Waste

Waste material generated from the Winter Quarters Ventilation Facility (WQVF) Declined Slope will be used to create the facility pad itself. Material will be placed in lifts and compacted and reinforced with a retaining wall. In the event there is an excess of material that cannot be stored on site, whether from the Declined Slope or Vertical Shaft construction, this material will be transported to the Scofield Waste Rock site. Material sent to the Scofield Waste Rock site will be analyzed for toxicity approximately every 2,000 tons of material sent to the site. Waste Rock generated from construction of the Vertical Shaft using the raised-bore drilling technique will likely be placed underground.

Excess Spoil

The Permittee has indicated on page 3-31(a) of the application that during construction of the Winter Quarters Ventilation Pad (WQVF) all materials brought to the surface either by conventional sinking methods or raised bore construction will be stored underground, on the surface, contained within the pad, or shipped to the Waste Rock site.

Findings:

R645-301.624.220: Please provide additional information addressing whether or not chemical analysis for acid-toxic-forming, or alkalinity producing materials is necessary for this rock material produced from the shaft installation. The Division understands that prior baseline chemical analysis has been performed on rock strata from other areas of the mine. However, please provide more information or a justification on whether or not the geology in this area is variable enough to warrant any new/additional chemical analysis.

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:

Groundwater Monitoring

Spring WQ1-1 monitors near surface groundwater in the vicinity of the WQFV (p. 2-35c). No springs are located in the immediate vicinity of the WQFV site (Section 2.3.4.4). The Permittee needs to clarify where this spring is in relation to the WQFV and what information it will provide on the groundwater at the WQFV.

The paragraph about monitoring that has been added on page 2-35c mentions well 08-1-5 that is screened from 297-317 feet to monitor the water elevation below the coal seam in the vicinity of the WQFV, then the last sentence refers to a "deep groundwater well" that will monitor the aquifer below the coal seam. Other information in the amendment indicates that there is only one groundwater-monitoring well, but the double description on page 2-35c is confusing, giving the impression that there are two wells. The Permittee needs to clarify the language regarding the groundwater monitoring well on page 2-35c.

Surface Water Monitoring

The Permittee proposes to monitor surface-water in the vicinity of the winter Quarters ventilation Facility (WQFV) at two sites, CS-20 and CS-24 to ensure the shaft and slope are not compromising the surface water system. Stream monitoring station CS-24 was added in Winter Quarters Canyon with the addition of sediment pond discharge point UPDES-004, which is the sampling point for discharge from the WQFV pad site. CS-20 is located upstream of the site; however, CS-24 is near the midpoint of the WQFV pad, not down stream of it, and it is upstream of the Topsoil Pile Sediment Trap (Drawings 2.3.6-1 and 3.2.4-3B). The Permittee needs to

either move CS-20 farther down stream or add another surface-water monitoring point that is unquestionably downstream of the WQVF.

Sampling frequency and analysis are located in Tables 2.3.7-1, and 2.3.7-2, respectively, and Table 2.3.7-3 contains information on Monitoring Station Identification. Tables 2.3.7-1 and 2.3.7-3 have been updated for this amendment.

Acid- and Toxic-Forming Materials and Underground Development Waste

Waste material generated from the Winter Quarters Ventilation Facility (WQVF) Declined Slope will be used to create the facility pad itself. Material will be placed in lifts and compacted and reinforced with a retaining wall. In the event there is an excess of material that cannot be stored on site, whether from the Declined Slope or Vertical Shaft construction, this material will be transported to the Scofield Waste Rock site. Material sent to the Scofield Waste Rock site will be analyzed for toxicity approximately every 2,000 tons of material sent to the site. Waste Rock generated from construction of the Vertical Shaft using the raised-bore drilling technique will likely be placed underground.

In order for the Division to update the CHIA determination, the Permittee must provide information on the potential for acid- and toxic forming materials in the underground development waste that will be generated during construction of the shafts and slope and placed adjacent to the stream in the WQVF pad (see previous deficiency under Baseline Cumulative Impact Area Information).

Transfer of Wells

The Permittee makes no mention of transferring wells.

Discharges Into an Underground Mine

The Winter Quarters Ventilation Facility design includes the locations of the declined slope, exhaust shaft, emergency escapeway shaft, sediment pond, and drainage plan for both the disturbed and undisturbed drainage. The pad is located a minimum of approximately 30 feet north of Winter Quarters Creek and approximately 20 feet higher in elevation to minimize water entering the mine. The mine openings (shafts/slope) are located up dip of the mine workings, eliminating concern of any gravity discharge during the operation of the mine. Initially, mine water can be discharged from this location when discharge parameters are met. A UPDES water discharge point was added to the Skyline Mine water discharge permit in December 2009 to accommodate discharging water to Winter Quarters Creek both from the sedimentation pond and potentially future mine water discharge. (Section 4.11.9)

Gravity Discharges from Underground Mines

The Winter Quarters decline slope portal is at an elevation of 8,120 feet, which is approximately 460 feet below the lowest portal in Eccles Canyon (the Trespass Portal at 8,580 ft.). Due to the elevation change, a gravity discharge from the mine is likely at reclamation. In the absence of building bulkheads within the mine at various locations to prohibit gravity discharge, Winter Quarters Creek has the potential to receive an additional 500-600 gallons of water with an estimated TDS concentration in the range of 500-700 mg/L. The Permittee anticipates that the untreated water quality will comply with performance standards of R645-301, R645-302, and any additional UPDES permit requirements (Section 4.11.9); however, the Division cannot approve the plan as presented until the Permittee demonstrates that the discharge will with the performance standards of R645-301 and R645-302 and any additional UPDES permit requirements. Because this discharge is likely after reclamation, when no treatment will be possible, the Permittee must demonstrate that untreated water will meet these standards.

The Permittee thinks that because the majority of this groundwater would not naturally discharge to the surface in the immediate area, no significant depletion will occur in the amount of water reaching the surrounding creeks and springs as these are located stratigraphically above the in-mine water source. Further, any groundwater intercepted and discharged into Winter Quarters Creek would be consistent with the groundwater gradient information submitted in PHC Volumes July 2002 and October 2002 - generally to the north-northeast (Section 4.11.9).

Water-Quality Standards and Effluent Limitations

In order for the Division to allow gravity discharges of water from an underground mine, the Permittee must demonstrate that the discharge complies with the performance standards of R645-301 and R645-302 and any additional UPDES permit requirements. Because this discharge is likely after reclamation, when no treatment will be possible, the Permittee must demonstrate that untreated water will meet these standards. The Division cannot approve the plan as presented until this information is provided.

Diversions: General

The runoff conveyance system for the sedimentation pond, topsoil stockpile, and ASCA will be temporary, and were designed using the 10-year, 24-hour storm event.

Diversions: Perennial and Intermittent Streams

There is to be no diversion of perennial or intermittent streams or of ephemeral streams draining an area greater than 1 square mile.

Diversions: Miscellaneous Flows

Section 4.3 of Attachment A of Vol. 5 - Section 24; *Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report* states that "The ASCA [39] catch basin will

convey runoff into an 18-inch culvert under the access road and into a riprap pad along the north side of the existing road south of the access road. The riprap pad will dissipate flow and allow the runoff to flow along its natural path across the existing road. From the south side of the existing road runoff will flow west along the north side of the topsoil berm toward Winter Quarters Creek.” Simply allowing the water to follow its natural path across the road and along the topsoil pile berm will not minimize erosion and contributions of sediment to Winter Quarters Creek; the natural flow in this area would be overland flow, not the concentrated flow that will emerge from the riprap pad. The Permittee needs to design a means to convey the water from the outfall to the stream in order to minimize erosion and contributions of sediment to the stream.

Similarly, although they are not discussed in the *Sediment Control Design Report*, the outflows from the Sedimentation Pond spillways and the Upper Road culvert need a means to convey the water from the outfall to the stream in order to minimize erosion and contributions of sediment to the stream.

Stream Buffer Zones

Winter Quarters Creek, a small perennial stream, forms the south boundary of the proposed permit area. The stream itself should not be disturbed by the planned mining and reclamation activities for the WQVF, but some activities will be within 100 feet of this stream, including the Power Substation, Ventilation Shaft, Escape Shaft, and Slope Portal (Drawing 3.2.4-3A). The Permittee states to have purposefully designed the pad to minimize potential impacts to the stream by maintaining a minimum of two stream widths (approximately 24 feet) from the stream, thereby avoiding direct impacts to the stream and riparian areas.

The Permittee monitors macroinvertebrates to determine the health of the stream; however, the monitoring points on Winter Quarters Creek are upstream of the WQVF. Plate 2.8.1-1 shows the monitoring locations, and Table 2.8-1a gives the monitoring frequency.

The sedimentation pond will treat all water leaving the pad area. A UPDES water discharge point was added to the Skyline Mine water discharge permit in December 2009 to accommodate discharging water to Winter Quarters Creek both from the sedimentation pond and potential future mine water discharge. Silt fence provides sediment control for the runoff from ASCA 38, the outslope of the pad.

Wattles placed around the inlet of a catch basin will treat discharge from ASCA 39. From the catch basin, water will flow through a culvert under the road and discharge onto a riprap pad along the north side of the existing road. The riprap pad will dissipate flow and allow the runoff to flow along its natural path across the road, west along the north side of the topsoil berm, and to Winter Quarters Creek. However, simply allowing the water to follow this “natural” path across the road and along the topsoil pile berm will not minimize erosion and contributions of sediment to Winter Quarters Creek.

Similarly, the plans do not show sediment control for the outslope of the Sedimentation Pond and Topsoil Pile berm and the outfall from the Topsoil Sediment Trap and Upper Road ditch and culvert.

The Division finds that operation of the WQVF as shown on the submitted plans is likely to cause or contribute to the violation of applicable water quality standards and may adversely affect the water quantity and quality or other environmental resources of Winter Quarters Creek. Before the Division can authorize coal mining and reclamation operations within the Stream Buffer Zone, the Permittee must provide a plan to prevent violation of applicable water quality standards and adverse impacts to the water quantity and quality or other environmental resources of Winter Quarters Creek.

Sediment Control Measures

The Permittee commits that prior to construction of the WQVF, silt fencing or similar best management practice will be installed along the entire length of the construction zone to minimize sediment and debris from entering the creek. Once construction is complete and other sediment controls are installed, these siltation structures will be removed. During the life of the WQVF pad, long-term sediment control will be implemented through a sediment pond and outfall UPDES-004, and ASCAs (Sections 2.7.8 and 3.2.11(b)).

Siltation Structures: General

A single sedimentation pond is the only Siltation Structure (defined at R645-100-200 as a sedimentation pond, series of sedimentation ponds, or other treatment facility) proposed for the WQVF.

Siltation Structures: Sedimentation Ponds

The design drawings for the Winter Quarters pond are shown in Map 3.2.4-3D. Watersheds reporting to the pond are shown on Drawing 3.2.4-3G. The pond will be constructed from native or imported materials, not from coal mine waste rock (Chapter 2, *Sediment Control Design Report*).

A sediment pond will be located near the middle of the WQVF site. Design information and calculations are in the *Sediment Control Design Report*. The pond is designed to contain the runoff from a 10-year, 24-hour storm event in addition to sediment yielded from its catchment area, approximately 3.69 acres (1.18 acres of disturbed area from the facility and 2.52 acres of undisturbed area above the site). See Plate 3.2.43D for pond designs and Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report - Volume 5, Section 24 for calculations.

The sediment level will be determined by cross sectioning the sediment level through B-B' on Map 3.2.1-2B and through A-A on Map 3.2.1-4 at no greater than 3 year intervals. During sediment clean out the pond may be drained of all water that will meet permit requirements. Water not meeting discharge requirements will be hauled to the other sediment pond. Mine water discharge during clean out of the mine site sediment pond shall by-pass the pond but shall still meet UPDES Discharge Permit requirements. Sediment will be disposed of as outlined in Section 4.16 (Section 3.2.1).

The area under the sedimentation ponds will not be subsided. All ponds are to be operated in accordance with UPDES Discharge Permit conditions. Operations affecting the UPDES Discharge Permit, which are not clearly defined in the permit, are to be coordinated with the Division of Environmental Quality. The Permittee will operate the ponds in a prudent manner and will attempt to reduce the sediment loading to the receiving waters into Eccles Creek. Pond decanting will be utilized to minimize sediment loading into the receiving stream. When decanting operations are conducted, they will conform to applicable water quality standards including exercising the settleable solids measurement option of the UPDES Discharge Permit during periods of storm runoff or snowmelt (Section 4.13.1).

Siltation Structures: Other Treatment Facilities

No "Other Treatment Facilities" are proposed.

Siltation Structures: Exemptions

The ditch along the road above the Facility and the culvert that carries water from the ditch to the creek are to be left at reclamation.

Because they carry water only from areas in which the only coal mining operation is the road, diversion ditch, and culvert themselves and for which the upstream area is undisturbed, this road, ditch, and culvert are not included in the Disturbed Area for the rules applying to sedimentation ponds (R645-100.200 "Disturbed Area"); however, they are not exempt from reclamation rules. Ark Land Company is (or is to be) the landowner, and the plan is to conduct an inter-company perpetual and exclusive lease with Canyon Fuel Company, LLC. - Skyline Mine (Section 114); therefore, leaving this road, ditch and culvert appears to be compatible with the post mining land use (PMLU).

Discharge Structures

The primary and emergency spillways were designed using a 10-year, 24-hour and 25-year, 6-hour rainstorm events. Peak Stage during the 10-year, 24-hour event was determined to fill the pond to the elevation of the primary spillway (8075.05 feet). A 25-year, 6-hour event immediately following the 10-year, 24-hour event would discharge at a rate of 1.15 cfs with a velocity of 3.67 fps.

The emergency spillway will not normally discharge during the design runoff events. However, assuming the primary spillway was not functioning and the pond was assumed full to the emergency spillway crest (8,075.55 ft) prior to the occurrence of a 25-year, 6-hour storm event, the emergency spillway is calculated to discharge 0.84 cfs with a velocity of 3.35 fps at the crest. This velocity is considered non-erosive. The required volume for annual sediment storage has been estimated at 1,108 cubic feet. The 60 percent sediment volume is at an elevation of 8,071.7 feet. The 100 percent sediment 'clean-out' marker is at an elevation of 8,072.2 feet which corresponds to the elevation of the 6-inch diameter decant pipe (Section 3.2.1).

Impoundments

The Sedimentation pond is to be a temporary impoundment. It will not meet the size or other criteria of 30 CFR Sec. 77.216(a) nor be located where failure would be expected to cause loss of life or serious property damage. The design is in the *Sediment Control Design Report*. Section 3.2.1 states that an engineer's certification to meet requirements of R645-301-743-110 and R645-301-514 is located on all necessary designs and calculations for the ponds in the appropriate appendices and inspection reports: no such certification for the WQVF sedimentation pond is found in the *Sediment Control Design Report*.

Drawing 3.2.4-3D indicates a 1.45-foot freeboard above the primary spillway elevation; however, the calculations or other design information used to determine that this freeboard is sufficient to prevent overtopping by waves or sudden increases in storage volume could not be found in the submittal.

Stability of the foundations and abutments for the sedimentation pond is addressed in Attachment C of the. The Winter Quarters Ventilation Facility pond embankment is to be built according to designed specifications. Engineering Calculations are located in the *Sediment Control Design Report*, Volume 5, Section 24 and illustrated on Map 3.2.4-3h (Section 4.13.1). The sedimentation pond relies primarily on storage to control the runoff from the applicable design precipitation event, but has a combination of principal and emergency spillways. Design of the spillway is discussed above.

The four sediment ponds are to be inspected, at a minimum, once each calendar quarter for structural weakness, erosion, and other hazardous conditions, and any deficiencies found are to be reported to DOGM. Reports are to be kept at the mine office and to be available upon request (Section 4.13.1).

Ponds, Impoundments, Banks, Dams, and Embankments

The amendment and MRP contain hydrologic and geologic information required to assess the hydrologic impact of the sedimentation pond. Attachment A of Vol. 5 - Section 24; *Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report* contains

information on storm frequency and duration, hydrographs for the watersheds, and hydrology-soil groups. Chapter 2 of Attachment C contains a brief statement on the geology of the Ventilation Shaft pad. The same geologic and hydrogeologic conditions are anticipated to occur in the North Lease as occurred in the northern portion of the existing permit area (p. 2-51g). Geologic Resource Information is in the current MRP.

The sedimentation pond does not meet the size of other criteria of 30 CFR Sec. 77.216(a) and is located where failure would not be expected to cause loss of life or serious property damage. All embankments surrounding the pond have been evaluated for slope stability. They have been designed with a minimum factor of safety of 1.3 against rotational shear failure when the pond is filled to capacity (Attachment C of the *Sediment Control Design Report*). Coal processing waste will not be used in construction of the sedimentation pond or embankments.

Chapter 5 of the *Sediment Control Design Report* describes reclamation of the sedimentation pond, topsoil sediment trap, and ASCA. Drawings 4.4.2-3A and 4.4.2-3B show the reclamation layout and cross sections.

The Sedimentation Pond, Topsoil Sediment Trap, and ASCA are described in Chapter 4 of the *Sediment Control Design Report*. Drawings 3.2.4-3A and 3.2.4-3B show the locations of the sedimentation pond and ASCAs. Drawing 3.2.4-3D shows the plan of the sedimentation pond, including cross sections, and Drawing 3.2.4-3F shows details for silt fencing, catch basins, and sediment traps used for the ASCAs. The drawings are certified by Richard White, PE, but the *Sediment Control Design Report* itself is not certified.

The area under the sedimentation ponds, including the WQVF pond, will not be subsided (Section 4.13.1). No subsidence is anticipated in the area that could impact the groundwater resources in the area of the WQVF (Section 2.3.4.4).

Findings:

R645-301-731.221, -731.222, CS-24 is near the midpoint of the WQVF pad, not downstream of it, and it is upstream of the Topsoil Pile Sediment Trap (Drawings 2.3.6-1 and 3.2.4-3B). The Permittee needs to either move CS-20 farther downstream or add another surface-water monitoring point that is unquestionably downstream of the WQVF.

R645-301-121.200, The double description of the groundwater monitoring well on page 2-35c is confusing, giving the impression that there are two wells, 08-1-5 and a "deep groundwater well" mentioned in the last sentence. The Permittee needs to clarify the language on page 2-35c to indicate there is one groundwater-monitoring well.

R645-301-121.200, The amendment states on page 2-35c that spring WQ1-1 monitors near-surface groundwater in the vicinity of the WQFV. On the other hand, Section 2.3.4.4 states that no springs are located in the immediate vicinity of the WQVF. The Permittee needs to clarify where spring WQ1-1 is in relation to the WQFV and what information it will provide on groundwater at the WQVF.

R645-301-725.200, (See previous deficiency under Baseline Cumulative Impact Area Information).

R645-301-731.520, In order for the Division to allow gravity discharges of water from an underground mine, the Permittee must **demonstrate** that the discharge complies with the performance standards of R645-301 and R645-302 and any additional UPDES permit requirements. Because this discharge is likely after reclamation, when no treatment will be possible, the Permittee must demonstrate that untreated water will meet these standards. The Division cannot approve the plan as presented until this information is provided.

R645-3012-731.600, Before the Division can authorize coal mining and reclamation operations within the Stream Buffer Zone, the Permittee must provide a plan to prevent violation of applicable water quality standards and adverse impacts to the water quantity and quality or other environmental resources of Winter Quarters Creek from runoff from the outslope of the Sedimentation Pond and Topsoil Pile berm and the outfall from the Topsoil Sediment Trap and Upper Road ditch and culvert.

R645-301-742.120, ASCAs 37, 38, and 39 are shown on Drawing 3.2.4-3A.

- Discussion for ASCAs 37 and 38 have been added to pages 3-72(b) and 3-72(c), but the Permittee needs to discuss ASCA 39.
- Drawing 3.2.4-3A indicates ASCA 37 covers only a small corner of the Topsoil Storage Pile, but the description on page 3-72(b) indicates the entire pile is included in the ASCA. The Permittee needs to clarify this.
- Sediment control on the outslope of the Sedimentation Pond, either as an ASCA or Exempt Area, must be included in the plan.

R645-301-742.111, -112, 113, The outfalls for the ASCA 39 culvert and Upper Road culvert are shown on Drawing 3.2.4-3A and detailed on Drawing 3.2.4-3E, but the Permittee needs to design a means to convey the water from the outfall to the stream in order to minimize erosion and contributions of sediment to the stream.

R645-301-742.111, -112, 113, The Sedimentation Pond primary and secondary spillways are shown on Drawing 3.2.4-3A and detailed on Drawing 3.2.4-3D, but the Permittee needs to design a means to convey the water from the end of the

spillways to the stream in order to minimize erosion and contributions of sediment to the stream.

R645-301-742.112, The Permittee must provide a plan to continue monitoring of the discharge from the mine to Winter Quarters Canyon after reclamation is completed.

R645-301-743.120, The Sedimentation pond design is in the *Sediment Control Design Report*. Section 3.2.1 states that an engineer's certification to meet requirements of R645-301-743-110 and R645-301-514 is located on all necessary designs and calculations for the ponds in the appropriate appendices and inspection reports: no such certification for the WQVF sedimentation pond is found in the *Sediment Control Design Report*. The Permittee must provide the required certification for the sedimentation pond design.

R645-301-743.120, Drawing 3.2.4-3D indicates a 1.45-foot freeboard above the primary spillway elevation; however, the calculations or other design information used to determine that this freeboard is sufficient to prevent overtopping by waves or sudden increases in storage volume could not be found in the submittal.

A sediment pond will be located at the east end of the Winter Quarters Ventilation facility site. The pond is designed to treat the approximately 3.69 acres of disturbed and undisturbed area associated with the facility. The area under the pond is not expected to subside. The pond will be operated in accordance with WPDES Discharge Permit Conditions. Engineering design specifications for the Winter Quarters Ventilation Facility pond were included with the application. Within Attachment C, the permittee has submitted settling pond design considerations that reference the calculation and analysis of an adequate safety factor (1.3) as per R645-301-533. Soil properties were used as input criterion for *Slide 5.0*, a computer program created by RocScience. Safety factors were calculated through *Slide*'s utilization of Bishop's Simplified Method of Slices. The expected minimum safety factor of the proposed sediment pond is 2.75. It is expected that the pond embankment will be stable under anticipated operating conditions. Tables within Attachment C include the geotechnical data as required by R645-301-533.712.

Findings:

In terms of engineering and design specifications, the application meets the Hydrologic Information requirements of the State of Utah R645-Coal Mining Rules.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Monitoring and Sampling Location Maps

Drawing 2.3.6-1 shows the locations of monitoring sites.

Certification Requirements

The MRP states on page 3-15: "An engineer's certification to meet requirements of R645-301-743-110 and R645-301-514 is located on all necessary designs and calculations for the ponds in the appropriate appendices and inspection reports. A copy of this certification will be retained at the minesite." The calculations and designs in Engineering Calculations Vol. 5 - Section 24; *Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report* by EarthFax Engineering are not certified.

Drawings 3.2.4-3D, Sedimentation Pond Plan; 3.2.4-3E, Road and Drainage Details; 3.2.4-3F, Drainage and Retaining Wall Details; and 3.2.4-3G, Operational Watersheds are certified by Richard White, PE.

Findings:

R645-301-742.224, The calculations and designs in Engineering Calculations Vol. 5 - Section 24; *Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report* by EarthFax Engineering are not certified.

RECLAMATION PLAN

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The proposed postmining land use for the ventilation facility is listed on table 4.12-1 on page 4-75 of section 4.12. The proposed postmining land use is listed as grazing and wildlife. The table also lists that the Capacity to support the proposed use is adequate. The capacity of the land to support the land use argument is on page 2-63 of Section 2.7. This is summarize in the previous section of this menu, "land use Resource Information".

Page 4-81 of section 4.12 includes a narrative regarding the postmining land use of the ventilation facility. The premining land uses of private native rangeland habitat will be restored with reclamation. *Note: postmining land use of wildlife habitat requires that the Division and DWR set a standard of success for the woody stems density. This will be discussed in the section under revegetation.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

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

Analysis:

All highwalls and cutslopes will be reclaimed using geotechnically stable fill slopes with surfaces that have been sufficiently roughened with deep gouging. The pad will be graded back to the approximate original contour at a 2:1 slope. Slope stability and failure calculations and analyses are included in Attachment C of the application package.

Findings:

In terms of engineering and design specifications, the application meets the requirements of the State of Utah R645-Coal Mining Rules.

CASING AND SEALING OF UNDERGROUND OPENINGS

Regulatory Reference: 30 CFR Sec. 75.1711-1; R645-301-551, -301-631.

Analysis:

The proposed Winter Quarters ventilation facility is located in T13S R6E Section 1 and will consist of an additional disturbance of 7.93 acres added to the permit area. A 20-foot diameter vertical shaft advanced to a depth of 300 feet and/or a decline-slope portal advanced to a total depth of approximately 900 feet where it will intersect with the mine workings, and an 8-inch diameter escape shaft are proposed for installation. The purpose of vent shaft and decline slope is to provide intake air for ventilation and an emergency escape route for mine personnel.

The Permittee states on page 2-21(b) and Section 4.9 of their amendment application that the reclamation plan for the shaft will be to seal and effectively cap, backfill, or otherwise properly manage as required by the Division. The plan indicates that the cap on the shaft will reportedly be a minimum 6-inch concrete or equivalent seal equipped with a vent pipe with a minimum of 2 inches in diameter and extend for a distance of 15 feet above the surface of the shaft.

The Permittee states on page 2-21(b) and Section 4.9 of their amendment application that the reclamation plan for the decline-slope portal will be to seal the entry from at least 25 feet inside the portal and backfill to the surface with solid, substantial, incombustible material such as concrete block, bricks or tile entry, or completely filled with incombustible material.

Reclamation drawings detailing the shaft and slope sealing were provided as Drawings 4.9-B, 4.9-C, 4.9-D.

Findings:

The CFR 30 regulations state that a shaft opening must be "effectively capped *or* filled". If the filling option were selected, then the entire shaft "is required to be backfilled and, for the first 50 feet from the bottom of the coal bed" (it should be noted that the well log indicated that the coal seam was encountered at approximately 279.95 feet below ground surface in the vicinity of the ventilation pad area). The Permittee appears to have selected the alternate option, which is to install a 6-inch cap with the required 2-inch sized vent pipe and the required 15-foot minimum distance above the surface of the shaft. However, Division guidelines 645-301.551 are more

RECLAMATION PLAN

stringent and mandate that casing and sealing of underground openings will be capped, sealed *and* backfilled or otherwise properly managed as required by the Division and consistent with MSHA and 30 CFR 75.1711. The Permittee has also reported that a gravity discharge of mine water from the underground opening is a possibility at reclamation.

Given that a mine water discharge is possible at reclamation, it is the opinion of the Division that the vertical shaft requires a stable, backfill material in addition to the 6-inch cap. This measure would provide the necessary stability to seal the shaft. Additionally, materials have the propensity to settle in underground openings, especially when compounded in with an underground source of water expected to discharge from the sealed openings. This mine water discharge has the potential to soften and undermine the backfill material, which can contribute to material settling. Please address the type of material that will be used to backfill the shaft and a plan to monitor and prevent any potential settling of the shaft.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

When sealing at reclamation, the shaft(s) per 30 CFR Part 75.1711-1 and R645-301-551 will be fitted with a minimum 6-inch thick cement cap, encased in an approximately 5-foot thick collar, vented with a 2-inch diameter pipe extending a minimum of 15-feet above the cap and backfilled to the surface. When sealing the slope, sealing will consist of solid, substantial, incombustible material for a distance of at least 25 feet into the opening. Permanent closure measures will be designed to prevent access to mine workings by people, livestock, fish and wildlife to keep acid or other toxic drainage from entering groundwater or surface waters.

Findings:

R645-301-551, R645-553.260, R645-536 through R645-536.200, R645-536.210, As per R645-301-551, the two shafts described/referenced in Section 2.2.12, Section 4.1.2, and Section 4.9 of the application, must be capped and backfilled. Filling details are not sufficient for compliance with Coal Mining Rules requirements. The above-mentioned sections (including the drawings, plans, and cross-sections within Section 4.9) of the application must be edited to include specifications, details, drawings, cross sections, etc. for filling the shafts, as per 30 CFR Part 75.1711-1 and R645-301-551. Filling shall be for the entire depth of the shaft, and for the first 50 feet from the bottom of the coal bed, the fill shall be of incombustible material. The applicant must also demonstrate that the shaft fill will be stable and include a description of the measures to be used to backfill the shaft. In Section 4.16, pg 4-90, the applicant states, "At reclamation, the developmental waste will

be used in backfilling of the Declined Slope, the vertical shafts and attaining (AOC).” According to R645-553.260, disposal of underground development waste will be in accordance with R645-536 through R645-536.200, wherein the applicant is required to demonstrate that disposal facility (the shaft) will be designed using prudent engineering practices. According to R645-536.210, the applicant must ensure mass stability and prevent mass movement during and after construction. Capping details are adequate and comply with 30 CFR Part 75.1711-1 and R645-301-551. Details included for sealing the slope entry are also sufficient to satisfy Coal Mining Rules requirements.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Salvaged topsoil will be redistributed to a depth of 12 inches over 1.6 acres of the 8 acre disturbed area (Table 4.6-4 on p. 4-38c). The remaining disturbed area is either roadway, ditch and catch basin above the site that will not be reclaimed or 0.67 acre of topsoil storage area or undisturbed buffer zone between the site and Winter Quarters Creek.

The plan describes construction of a pad with underground development waste and the possibility of storing excess underground development waste on the pad (p. 3-31a). Reclamation of the site to approximate original contour will require removal of the retaining wall and fill (p. 4-3a). No analysis of the strata has been provided to indicate the chemical characteristics of the material to be stored on site and that may be within the surface four feet of the final reclaimed surface.

As stated in Sec. 4.4.6, pg 4-41e track equipment with low ground pressure will be used to replace topsoil and to roughen the surface. Plate 4.4.2-3A represents the reclamation contours and Dwg 4.4.2-3B shows the cross sections. The cross sections describe a 2h:1v slope.

Findings:

R645-301-731.311, R645-301-624.200, R645-301-553.300, The plan describes construction of a pad with underground development waste and storage of excess underground development waste on the pad (p. 3-31a). The plan describes using this fill to achieve AOC, but does not provide chemical analysis of the strata or overburden to be stored on the surface. To ensure an adequate rooting zone beneath the one foot topsoil cover, the plan should either provide the chemical analysis of the borehole cores so that potential acid/toxic issues can be evaluated or commit to the sampling and analysis of the

RECLAMATION PLAN

overburden stored on site and within the crib wall during construction or commit to the sampling of the final regraded fill for acid/toxic parameters prior to topsoil replacement. The suggested list of analytes are outlined in Tables 3 and 7 of the Division Guidelines for Topsoil and Overburden Handling and include: pH, EC, SAR, Se, B, and Acid Base Potential.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

(Section 3.2, pg. 3-63(i)) Access is via an existing road up Winter Quarters Canyon. A road approximately 300 feet from the existing road will be constructed to access the pad site. Construction will include an access road from the existing road to access the Winter Quarters Ventilation Facility (WQVF) pad site. (Section 4.4, pg. 4-30) Waste material generated from the Winter Quarters Ventilation Facility to create the facility pad. In the event there is an excess of material that cannot be stores on site, the material will be transported to the Scofield Waste Rock site. (Section 4.20, pg 4-114(a)) The pre-existing road in Winter Quarters Canyon has been classified as an ancillary road, and a "450 foot" access road is referenced.

Findings:

R645-301-527, R645-301-534, The applicant must include a section, or edit a section of the application to include a more detailed description of each road. All roads intended for use must be classified and specifications for each road must be included in terms of usage, maintenance, possible damage, improvements, alterations, construction, design, location, reclamation, etc. If waste material is to be transported to the Scofield Waste Rock site, details must be included in terms of transportation method and road adequacy. Detailed plans, maps, cross-sections, etc. for all roads must also be included.

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:

Hydrologic Reclamation Plan

The Monitoring Program is discussed in Section 4.11.2 of the MRP. Throughout the mining and reclamation operations, surface water monitoring will continue according to the monitoring schedule in Sections 2.3.7 and 2.4.4. Postmining data collection will continue at each of the stations until the reclamation effort is determined successful by the regulatory authority. Quarterly samplings will continue to be analyzed according to Table 2.3.7-1 during the postmining period.

The amendment includes a statement on page 4-78(a) that the WQVF sedimentation pond will be removed during early Phase I reclamation and alternate sediment control measures such as silt fences, straw bales and check dams will be used until the area is vegetated and runoff meets applicable standards. The Coal Mining Rules R645-301-356.300 and -763.100 specify that sedimentation ponds can be removed no sooner than 2 years after the last augmented seeding, which would not allow removal as part of Phase I reclamation. The Permittee needs to clarify that the sedimentation pond will remain until at least 2 years after the last augmented seeding.

The amendment states on page 4-62(a) that gravity discharge from the WQVF is possible at reclamation. To accommodate this discharge, an 8-inch (minimum) stainless steel pipe will extend from inby the seal down to the creek. On the inby side of the pipe, a trash-rack will be fitted onto the pipe to eliminate any clogging of the pipe. The pipe will be buried, daylighting at creek level at a location where the creek is well armored to accommodate the flow. Figure 4.9-D is a conceptual drawing of this drain, but the amendment contains no design details or sizing calculations for this culvert or for the armoring of the stream.

In Section 4.11.9, the Permittee estimates Winter Quarters Creek could receive 500-600 [gpm?] from the gravity discharge from the reclaimed WQVF, with an estimated TDS concentration in the range of 500-700 mg/L. Flow data for CS-20 in the Division's database show an average flow of 614 gpm in Winter Quarters Creek, with 2,800 and 108 gpm being the measured maximum and minimum. Based on this limited knowledge of the creek, adding 500 to 600 gpm of sediment-free water to this stream will have the potential to markedly change its character. The Reclamation Plan must address how flooding and streamflow alteration from this significant inflow in Winter Quarters Creek will be mitigated at reclamation.

Findings:

R645-301-750, -752.250, To accommodate the possible 500 to 600 gpm gravity discharge from the WQVF at reclamation, the Permittee is planning for an 8-inch (minimum) stainless steel pipe to extend from inby the slope portal seal down to the creek, with a trash-rack on the inby end. The pipe will be buried, daylighting at creek level at a location where the creek is well armored to accommodate the flow. Figure 4.9-D is a conceptual drawing of this drain, but the amendment contains no design details or sizing calculations for this culvert or for the armoring of the stream.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General

The operator plans to remove all topsoil from the entire surface disturbance site and stockpile it until reclamation. At reclamation, the entire site will be reclaimed including soil distribution and revegetation. During operations, the topsoil stockpile will be revegetated and erosion control will be achieved by using sediment ponds. Therefore, all reclamation work will occur at one time at the end of the site use and no contemporaneous reclamation is planned.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Revegetation: General Requirements

Section 2.7 and Appendix A-2 contain a discussion for the vegetation of the proposed ventilation facility. The interim and final revegetation seed mixes are listed in Tables 4.7-8A through table 4.7-8C.

Table 4.7-8A lists the Interim revegetation seed mix for the proposed ventilation facility. The mix contains the following: thickspike wheatgrass, western wheatgrass, slender wheatgrass, northern sweetvetch and Kentucky bluegrass. The seed mix will be broadcast seeded.

Table 4.7-8B lists the Final Revegetation Seed mixture for the riparian community at the proposed ventilation facility. The mix contains multiple forb and grass species. The table also

indicates that willows will be planted from containerized, bare root or local cuttings in a staggered or clumped fashion at a rate of one plant per 10 linear feet of streambank.

Table 4.7-8C lists the final revegetation seed mix for the sagebrush/ grass community at the proposed ventilation facility. The list contains multiple species of shrubs, forbs, and grasses, which will be broadcast, seeded at final reclamation.

The permittee intends to establish a vegetative cover on all regraded and other disturbed areas by using the interim and final revegetation seed mixes.

Revegetation: Timing

Page 4-3(a) of section 4.1 includes the reclamation plan for the winter quarter's ventilation facility. It states that the site will be reseeded as outlined in Section 4.7 of the M&RP. Page 4-42 of Section 4.7 states that planting and revegetation of all disturbed areas will take place following grading and topsoil redistribution in the fall. The reclamation timetable is listed on page 2-6 of section 4.2. The winter quarter's canyon ventilation facility is not listed on the timetable.

Revegetation: Mulching and Other Soil Stabilizing Practices

No mulching or other soil stabilizing practices are listed in the revegetation section. However, section 4.3 lists bonding calculations including a mulch of hay and hydroseeding equipment.

Revegetation: Standards For Success

Reclamation area standards are located in the Mt. Nebo Report in appendix A-2. The revegetated areas must meet the ground cover, production and stocking density standards. The Division in consultation with the DWR will set the woody density standard.

Findings:

The information provided in the application is not considered adequate to meet the minimum regulatory requirements for this section. Prior to approval, the applicant must provide the following in accordance with:

R645-301-354: Please update table 4.2-1 to include the winter quarter's ventilation facility.

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:

Reclamation Monitoring and Sampling Location Maps

Drawing 2.3.6-1 shows the locations of monitoring sites. Postmining data collection will continue quarterly at each of the stations until reclamation is determined successful by the regulatory authority (Section 4.11.2).

Reclamation Treatments Maps

According to the information in the amendment, the ditch along the road above the WQVF and the culvert that carries water from the ditch to the creek are to be considered permanent and left after reclamation. They are shown on Drawing 4.4.2-3A. However, this drawing does not give the location for the stainless steel pipe designed to carry water from the sealed slope portal to Winter Quarters Creek; this pipe location needs to be added to Drawing 4.4.2-3A.

The application package included maps, plan, profiles, cross sections, etc. for the proposed facilities for the ventilation shaft pad, access roads, operational surfaces, sediment ponds, road and drainage details, retaining walls, and proposed reclamation surfaces.

Findings:

R645-301-521, 521.180, In Section 3.2, 3-31, the applicant states: "the 28-ft vertical shaft will be approximately 300 feet deep and constructed using one of two methods". Also, the shaft depicted with the drawing titled: *Winter Quarters Ventilation Shaft Proposed Abandonment* appears to be a 28-ft vertical shaft. These details are inconsistent with Section 2.2, 2-21(a), where it states that there will be one 20-ft shaft and one 8-ft shaft. The above-mentioned sections must be edited to clarify and include how many shafts are proposed and their specifications, details, drawings, cross sections, etc. Details should clearly define the proposed shaft(s) specifications. The map entitled *Winters Quarters Ventilation Shaft Pad Proposed Facilities Plan* appears to have the details of two separate shafts. References to a 28-ft shaft must be eliminated if no such shaft will be sunken or raised. Also, all maps, plans, cross sections, etc. must be stamped/certified by a licensed professional engineer.

R645-301-356.300, -763.100, The amendment includes a statement on page 4-78(a) that the WQFV sedimentation pond will be removed during early Phase I reclamation and

alternate sediment control measures such as silt fences, straw bales and check dams will be used until the area is vegetated and runoff meets applicable standards. The Coal Mining Rules specify that sedimentation ponds can be removed no sooner than 2 years after the last augmented seeding, which would preclude removal as part of Phase I reclamation. The Permittee needs to clarify that the sedimentation pond will remain until at least 2 years after the last augmented seeding.

R645-301-742.313, -742.314, -761, Drawing 4.4.2-3A does not give the location for the stainless steel pipe designed to carry water from the sealed slope portal to Winter Quarters Creek; the Permittee needs to add this pipe location to Drawing 4.4.2-3A.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

Form of Bond

The current bond held by the Division to ensure the reclamation of the Skyline Mine is a surety bond issued by the St. Paul Fire and Marine Insurance Company. The current bond amount is \$ 5,137,000.00. The A.M. Best rating of the surety is "A+" as of December 31, 2009.

Determination of Bond Amount

The Permittee has submitted preliminary cost sheets for the demolition, earthwork and re-vegetation costs for the 7.93 acres of disturbance associated with the Winter Quarters Ventilation Facility.

The Permittee anticipates that it will cost \$52,888.00 to demolish and dispose of the proposed surface facilities at Winter Quarters.

The Permittee anticipates that it will cost \$21,781.00 to perform the backfilling and grading. This includes \$11,876 for backfilling and grading and \$9,900 to re-topsoil the disturbed area.

The Permittee has not provided soil volumes in the calculations for backfilling and grading of the surface disturbed area to approximate original contour. The Permittee **needs to** explain the calculations for the Earthwork Costs submitted with the bond estimate calculation.

Section 2.2.12 Winter Quarters Ventilation Facility application, page 2-21(b) contains the following; “when sealing at reclamation, the shaft(s) per 30 CFR Part 75.1711-1 and R645-301-551 will be fitted with a minimum 6-inch thick cement cap, encased in an approximately 5-foot thick cement collar, vented with a minimum 2-inch diameter pipe extending a minimum of 15-feet above the cap and backfilled to the surface.”

The submitted drawing depicts a two-inch vent pipe extending 15 feet above the concrete shaft cap. Fill is depicted as being placed over the cap, leaving a stub length of pipe out of the fill. The pipe must extend 15 feet above the land surface elevation making it very difficult for an ignition source to be presented to the venting pipe opening. The vent pipe must be re-drawn and re-submitted.

The design submitted within this text is not clear; the Permittee must submit a cross-section, which shows the elevation of the concrete cap in relation to the elevation of the final surface configuration of the land. The cross-section must show that the 20-foot and the 8-foot diameter shafts are backfilled from the bottom of the coal seam to the surface.

The Division estimates that it will take a minimum of 4,100 CY of material to backfill the 20-foot diameter shaft, 2,160 CY of material to backfill the 8-foot diameter shaft and 225 CY to backfill the slope outby the seal.

The backfill cost estimate submitted does not include the cost to backfill the above soil volume (6485 cubic yards (4100 + 2160 + 225)) associated with the three mine openings.

Findings:

R645-301-551, Casing and Sealing of Underground Openings. The Permittee must commit to backfilling the two vertical mine openings associated with this permit amendment from the bottom of the coal seam to the surface. The Division considers complete backfilling to be the method necessary to permanently close the mine openings, in accordance with R645-301-529.100. The Division is authorized to properly manage the closure methods for these mine openings.

R645-301-513.500, the capping, sealing and backfilling of the Winter Quarters airshafts must meet the requirements of 30 CFR 75.1711-1. See R645-301-551.

R645-301-830.140, the Permittee must provide supporting calculations for the backfilling and grading and topsoiling costs submitted as part of the Task ID # 3463 application. The numbers utilized in the submitted application must be justified in order that the review of the submitted figures can be determined as accurate.

The Permittee must provide supporting calculations to show how the time requirements were determined for the trackhoe, dozer and pickup crew 4 X 4 for the backfilling and topsoiling costs for the pad area.

Terms and Conditions for Liability Insurance

The Permittee maintains a general liability insurance policy (policy # GLO93-61-11) through the National Union Fire Insurance Company, Pittsburgh, Pa. The insurance company has an A.M. Best rating of "A". The current policy period remains in effect through July 31, 2010. Coverage for damage from the use of explosives is provided. The information as listed is current within the Division, as of December 31, 2009.

Findings:

The Permittee must address the aforementioned deficiencies before receiving a recommendation for approval.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

When the current CHIA was prepared, there was no planned disturbance for Winter Quarters Canyon; therefore, the Division will need to update the CHIA. Additional information is needed to do this. Deficiencies in other sections of this Tech Memo identify the needed information.

Findings:

The Division will update the CHIA when adequate information is available.

O:\007005.SKY\FINAL\WG3463\TA02182010.doc