

0018

C/007/005 Incoming #3504



Canyon Fuel Company, LLC. Skyline Mine

A Subsidiary of Arch Western Bituminous Group, LLC

Gregg Galecki, Environ. Engineer
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Helper, UT 84526
(435) 448-2636 - Office
(435) 448-2632 - Fax

Q

March 24, 2010

Mr. Daron R. Haddock
Division of Oil, Gas, and Mining
1594 West North Temple
Salt Lake City, Utah 84114-5801

RE: Response to Task ID #3463, Winter Quarters Ventilation Facility (WQVF), Canyon Fuel Company, LLC, Skyline Mine, C/007/005,

Dear Daron:

Attached to this letter is pertinent information in response to the Technical Analysis for Winter Quarters Ventilation Facility, Task #3463. The complete application package has been resubmitted with recommended modifications identified in Task #3463 addressed. For technical review convenience, a Deficiency Response document is attached. This document cites the regulation listed in the 'Summary of Permit Deficiencies' from Task #3463, summarizes how the deficiency has been addressed, and specifies the location (M&RP section and page) of the modification. Please note that all text (including M&RP modifications and independent reports) is located in Volume 1 of 2, while all M&RP plates are located in Volume 2 of 2 of the submitted application binders.

Skyline Mine formally (but respectfully) opposes the Division's intention to process the current application as a Significant Revision instead of a minor permit modification. Per Utah Administrative Code R645-303-224, the application **does not** increase the size of the disturbed area by > 15 percent; engage in operations outside of the cumulative impact area; engage in operations in hydrologic basins other than those authorized in the approved permit; nor involve a insurance or performance bond discrepancy. We are concerned this establishes a precedent of publishing a Public Notice to solicit public comment when it is not necessary nor supported by the due-process of the regulations.

Attached to this cover letter are completed C1 and C2 (two-pages) forms, three (3) copies of redline/strikeout text of the M&RP modified information, numerous plates and independent reports, and one (1) Compact Disc (CD) containing the complete submittal package. One copy of the submittal was delivered directly to the Price Field Office.

If you have any questions regarding this information, please give me a call at (435) 448-2636.

Sincerely:

Gregg A. Galecki
Canyon Fuel Company, LLC.
Environmental Engineer – Skyline Mines

Enclosures

RECEIVED

MAR 23 2010

DIV. OF OIL, GAS & MINING

File in: C/007/005 2010 Incoming

Refer to:

Confidential

Shelf

Expandable

Date: 032409 for additional information

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Canyon Fuel Company, LLC

Mine: Skyline Mine

Permit Number: C/007/005

Title: Winter Quarters Ventilation Facility

Description, Include reason for application and timing required to implement:

Response to Task #3463. Information submitted to acquire approval to construction ventilation pad in 2010.

Instructions: If you answer yes to any of the first eight questions, this application may require Public Notice publication.

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 1. Change in the size of the Permit Area? Acres: <u>7.93</u> Disturbed Area: <u>7.93</u> <input checked="" type="checkbox"/> increase <input type="checkbox"/> decrease. |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 2. Is the application submitted as a result of a Division Order? DO# _____ |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 4. Does the application include operations in hydrologic basins other than as currently approved? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 6. Does the application require or include public notice publication? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 7. Does the application require or include ownership, control, right-of-entry, or compliance information? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 9. Is the application submitted as a result of a Violation? NOV # _____ |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 10. Is the application submitted as a result of other laws or regulations or policies? |

Explain: _____

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 11. Does the application affect the surface landowner or change the post mining land use? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2) |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 13. Does the application require or include collection and reporting of any baseline information? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 15. Does the application require or include soil removal, storage or placement? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 16. Does the application require or include vegetation monitoring, removal or revegetation activities? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 17. Does the application require or include construction, modification, or removal of surface facilities? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 18. Does the application require or include water monitoring, sediment or drainage control measures? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 19. Does the application require or include certified designs, maps or calculation? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 20. Does the application require or include subsidence control or monitoring? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 21. Have reclamation costs for bonding been provided? |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 23. Does the application affect permits issued by other agencies or permits issued to other entities? |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | 24. Does the application include confidential information and is it clearly marked and separated in the plan? |

Please attach three (3) review copies of the application. If the mine is on or adjacent to Forest Service land please submit four (4) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Wesley K Sovinson GM 3/23/10 Wesley K Sovinson
 Print Name Position Date Signature (Right click above choose certify then have notary sign below)

Subscribed and sworn to before me this 23rd day of March, 2010

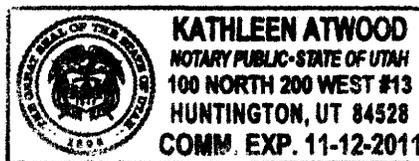
Notary Public: Kathleen Atwood, state of Utah.

My commission Expires: 11-12-11

Commission Number: 571837

Address: 100 N. 200 W. #13

City: Huntington State: UT Zip: 84528



For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining <div style="text-align: center; font-weight: bold; font-size: 1.2em;">RECEIVED</div> <div style="text-align: center; font-weight: bold; font-size: 1.2em;">MAR 23 2010</div> DIV. OF OIL, GAS & MINING
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APPLICATION FOR COAL PERMIT PROCESSING

Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Canyon Fuel Company, LLC

Mine: Skyline Mine

Permit Number: C/007/005

Title: Response to Task#3463 Winter Quarters Ventilation Facility (1 of 2)

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 1; pages 1-30, 1-34, 1-37, 1-38, 1-39, ADD 1-39a
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.1; pages 2-4c1, 2-4d
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.2; pages 2-21(a), 2-21(b)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.3; pages 2-30 (j), 2-30(j1), 2-35c, 2-36, 2-36a, 2-36b, 2-38
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.4; pages 2-43a, 2-43b 2-44a
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.5; pages 2-51d 2-51g
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.7; page 2-63
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.8; pages 2-67, 2-68, 2-71a, 2-71b, 2-72a
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.9; pages 2-104(j), add 2-104 (j1)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.10; page 2-111(b)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.11; page 2-120(c)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.12; pages 2-125, 2-127, 2-128
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 2.14; page 2-161
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 3.2; REPLACE pages 3-15, 3-23, 3-23(a), 3-31, 3-72(b); ADD pages 3-31(a), 3-31(b), 3-63(i), 3-63(j), 3-72(c), Figures 3.2.4a and 3.2.4b
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 3.4; page 3-83
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.1; page 4-3(a)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.3; Bond Summary, Demolition summary, Earth summary, Revegetation costs
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.3; WQ Demolition, WQ Earth, WQ Revegetation
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.4; pages 4-28, 4-29(a), 4-30
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.6; pages 4-34(a), 4-35, 4-38(c), 4-38(d), 4-41(e)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.7; pages 4-50(a), ADD 4-58(a), ADD 4-58(b), ADD 4-58(c)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.9; page 4-62(a), ADD Fig. 4.9-B, ADD Fig. 4.9-C,
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.11; pages 4-68, 4-69, 4-71, 4-72
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.12; pages 4-75, 4-78(a), 4-81
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.13; pages 4-82, 4-82(a), 4-83
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.14; page 4-84
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.16; page 4-90
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.18; page 4-103(b)

Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

Three (3) redline-strikout copies of the submittal. Two (2) hard copies and one (1) CD to the Salt Lake Office, and one (1) hard copy to the Price Field Office.

Received by Oil, Gas & Mining

RECEIVED

MAR 23 2010

DIV. OF OIL, GAS & MINING

APPLICATION FOR COAL PERMIT PROCESSING

Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Canyon Fuel Company, LLC

Mine: Skyline Mine

Permit Number: C/007/005

Title: Response to Task # 3463 - Winter Quarters Ventilation Facility (2 of 2)

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.19; page 4-110,
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Section 4.20; 4-114(a)
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plates 1.6-1, 1.6-2, 1.6-3, 2.2.1-1, 2.2.7-1, 2.2.7-2, 2.2.7-3, 2.2.7-4, 2.2.7-7, 2.3.4-2, 2.3.5.1-1, 2.3.5.2-1, 2.3.6-1, 2.3.6-2, 2.7.1-1a, 2.7.1-1b, 2.8.1-1, 2.12.1-1, 3.1.8-2, 3.3-2, 4.17.3-1A, 4.17.5-1
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Plates 3.2.4-3A through 3.2.4-3G, 4.4.2-3A through 4.4.2-3B
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-1, Vol.2; Clements Geophysical report - Seismic Refraction
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-2, Vol.2; NRCS Production Estimates
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-2, Vol.2; Canyon Environmental, Soil Survey
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-2, Vol. 2; Vegetation Sampling and Sensitive Species at the Ventilation Shaft Site (revised) - Mt. Nebo Scientific
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-3, Vol.2; Wildlife Studies Summary 2006-2008, Tetra Tech
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-3, Vol.2; Winter Quarters Wildlife survey, 2009, Western Land Services, Inc.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Engineering Calculations Vol.5, Vol. 2 - Section 24; Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report - EarthFax Engineering, Inc.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	CONFIDENTIAL FILE; Drill log 08-1-5
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	CONFIDENTIAL FILE; A Cultural Resource Inventory of the Proposed Winter Quarters Ventilation Facility, In Winter Quarters Canyon, Skyline Mine, Carbon County, Utah (Located in CONFIDENTIAL INCOMING FILE 2009)
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	CONFIDENTIAL FILE; Cultural Resource Addendum Report of the Proposed Ventilation Facility in Winter Quarters Canyon, Skyline Mine, Carbon County, Utah - Canyon Environmental (Located in CONFIDENTIAL INCOMING FILE 2010)
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-1, Volume 2, EarthFax Engineering, March 16, 2010 letter outlining FlowMaster numeric hydrologic model for Winter Quarters Creek.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-3, Vol.2, Western Land Services, Mace Crane email indicating golden eagle habitat does not exist in the area.
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix A-3 Vol.2, Western Land Services, Winter Quarters Canyon Subsidence and Pad Disturbance Areas – Report Addendum
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Engineering Calculations Vol. 5, Vol. 2 – Section 24 Winter Quarters Ventilation Shaft Pad Slope Stability Analysis – EarthFax Engineering, Inc. January 2010
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Volume 1, Appendix 118-A, Legal Notice
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Volume 1, Appendix 118-A, Carbon County Conditional Use Permit application
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix 118A – Public Notice
<input checked="" type="checkbox"/> Add	<input type="checkbox"/> Replace	<input type="checkbox"/> Remove	Appendix 118A – Carbon County Conditional Use Permit application
<input type="checkbox"/> Add	<input checked="" type="checkbox"/> Replace	<input type="checkbox"/> Remove	Replace Table 4.4.2; REMOVE pages 4-8 through 4-11; ADD Deleted page insert

Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

Three (3) redline-strikout copies of the submittal. Two (2) hard copies and one (1) CD to the Salt Lake Office and one (1) hard copy delivered to the Price Field Office.

Received by Oil, Gas & Mining

DEFICIENCY RESPONSE
TASK #3463

The following is intended to serve as a guide for the technical reviewer to help identify how deficiencies identified in Task #3463 were addressed. The regulation and deficiency identified in Task #3463 is follow with an italicized response.

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]

Canyon Fuel Company is currently negotiating an arrangement with the respective landowner. Skyline Mine is hoping to proceed with the technical review and receive 'Conditional Approval' until this document is filed with the plan. Skyline commits to providing this information

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

Skyline Mine submitted a Conditional Use Permit application with Carbon County on 3/22/10. The Carbon County Planning Commission will review the information on 4/6/10. A copy of the application is provided. We anticipate the application will forward an approval recommendation to the County Commission for final approval in late April 2010. Skyline commits to providing this information.

A public notice for DOGM's use has also been provided if the application is processed as a Significant Revision. As stated in the cover letter, Skyline respectfully disagrees that the current application qualifies as a Significant Revision.

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]

The Reclamation Plan has been modified with the openings to the underground being sealed. Perpetual discharge from the site is no longer anticipated. See Section 4.9 Opening and Sealing Plan for details.

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]

Skyline Mine – Winter Quarters Ventilation Facility
Deficiency Response Task 3463

This sentence has been clarified to indicate, “Quarterly samplings will continue to be analyzed according to Tables 2.3.7-1 and 2.3.7-2 during the postmining period.” The last sentence was deleted.

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]

The paragraph has been clarified, addressing first surface water sites, then the one (1) groundwater well, followed by a brief explanation of Spring WQ1-1 and how it monitors groundwater south and east of the WQVF pad area.

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]

Section 2.3.4.4 was clarified to indicate, “The site is located on a dry, south-facing slope. Page 2-35c was clarified indicating, “Spring WQ1-1 is located on a north-facing slope, is approximately 1/4 –mile east of the WQVF pad and monitors near surface groundwater south and east of the WQVF site.”

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]

The Map reference on page 4-83 was changed to 3.2.4-3D. Page 1-37 (117.07acres) is correct. Section 3.4 (page 3-83) has been modified for accuracy. Pages 2-30(j) and 2-35c have been modified (see above deficiencies)

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]

The following sentence has been added to the bottom of page 4-34(a), “Once stockpiled, two composite samples of the salvaged topsoil will be collected and analyzed for phosphorus and potassium.”

Skyline Mine – Winter Quarters Ventilation Facility
Deficiency Response Task 3463

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]

The leases have been added to the map, the Adjacent Area line has been modified to include a ½ mile buffer around permitted/disturbed areas, and a comment referring to the CHIA map for water resources was added.

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]

The text for raptor surveys conducted in 2005, 2007, and 2008 was clarified to reflect, "The raptor surveys are located with the respective exploration permits for each year." The summary report for those years is (will be) included in Appendix A-3, Volume 2.

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]

Based on consultation with Dr. Shiozawa, director of the Skyline macroinvertebrate monitoring program, the section of stream in the vicinity of the WQVF is not conducive to macroinvertebrate monitoring due to low gradients and accumulation of fine sediment. He has recommended electro fishing as the best aquatic indicator in this situation. Text has been modified in Section 2.8.1 Aquatic Monitoring Program, pages 2-71a and 2-71b to reflect this discussion. Table 2.8-1a has been modified to include testing of fish populations on a three-year interval based on his recommendation.

Table 2.8a has been updated as requested to reflect other future monitoring.

Skyline Mine – Winter Quarters Ventilation Facility
Deficiency Response Task 3463

The effects from increased water discharge on stream morphology are addressed in a letter from Earthfax dated March 16, 2010 which will be located in Appendix A-1, Volume 2. The letter outlines a 'FlowMaster' modeling study that was conducted to determine at what mine discharge rate combined with a natural maximum flow rate did the flow velocity become erosive. The modeling study determined a maximum non-erosive (5 fps) mine discharge rate of approximately 6,200 gpm. Discharge rates higher than 6,200 gpm would require additional armoring of the creek to reduce the velocity below 5 fps. Comments addressing the affects to the stream flow and the numeric model study are addressed in Section 2.4.2- Flow Characteristics page 2-43a, and Section 2.5.2- Mining Impacts on Water Quantity page 2-51d

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]

A commitment to control noxious weeds on the permitted area of WQVF was made both in Section 4.18 page 103B and Section 4.7.9 page 4-50a.

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

Table 4.2-1 has been updated; not only to include the WQVF, but to better reflect current conditions throughout the site.

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]

Based on further research, the pond will be removed during reclamation as originally planned. Primarily because any storm runoff will not be concentrated, nor directed to the pond. Sediment control at reclamation, while vegetation is being established will be through a combination of pocking, silt fences, and/or straw bales where necessary.

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

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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]

Western Land Services has provided an addendum report based on the revised pad location. The addendum indicates, “the new pad disturbance area does not exhibit suitable habitat characteristics which support elk calving.” This report will be added to Appendix A-3, Volume 2.

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]

Plate 1.6-3 identifies 7.93 permitted acres, which is correct. The 1.6 acres that was referenced did not include the topsoil pile area. Table 2.12.2-1 has been modified to include a disturbed area of approximately 2.36 acres, which includes the new access road, WQVF pad, sediment pond, and topsoil pile. The AUM unit (and correspondingly the AU) was modified based on the productivity of 1300 lb/ac cited in the NRCS report.

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]

Capping of airshaft was modified to include backfilling from the bottom of the shaft to the surface. Figures 4.9-B and 4.9-C illustrate the sealing and backfilling with text modifications in Section 4.9 page 4-62.

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]

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Section 3.2 page 3-31a and Figure 4.9-B have been modified to reflect a 20-ft and 8-ft diameter shafts. Appropriate maps will be certified when the application is approved and clean copies are provided.

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]

As discussed with Mr. Peter Hess and defined in 527.200 designs, useage, maintenance and reclamation pertains to roads in the proposed permit area. Road designs for the ancillary road to be constructed within the permit area are illustrated on Plates 3.2.4-3B and 3.2.4-3E. Reference to road designs and plates 3.2.4-3B and -3E are made in Section 3.2 page 3-31a, and Section 4.20.5 page 4-114(a). Skyline is currently formalizing agreements with both the private landowner and Scofield City to use their existing roads during construction. These use-agreements will be added to Chapter 1, Appendix 118-A once finalized.

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]

The commitment to backfill the vertical mine openings is addressed in Section 4.9, page 4-62(a) with an illustration on Figure 4.9-2B.

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

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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]

Section 4.9, page 4-62(a) and Figure 4.9-2B have been modified to adequately address reclamation standards. The shaft(s) backfilling is fully-designed, and as an additional measure to accommodate any additional settling it is proposed the shaft(s) are mounded with excess material for approximately one (1) year to allow for any additional compaction prior to fully reclaiming the WQVF pad site.

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]

During exploration drilling, typically only the coal seam itself is chemically analyzed and no analysis is currently available. However, as stated in Section 4.4.5 page 4-30 and Section 4.16.2 page 4-90, waste rock generated from the either the shafts or slope that will be stored on the surface will be analyzed at a rate of one sample per 2,000 tons testing for acid-toxic-forming potential to determine whether special handling is necessary.

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]

The reclamation of the shaft(s) has been modified to include backfilling from the coal seam to the surface. Engineering designs include an engineered fill, seal/cap, and excess material to be placed over the shaft(s) for a period of approximately one year to allow for additional settling prior to complete reclamation of the pad. See Section 4.9 page 4-62(a) and figures 4.9-B and 4.9-C for details.

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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]

The effects from increased water discharge on stream morphology are addressed in a letter from Earthfax dated March 16, 2010 which will be located in Appendix A-1, Volume 2. The letter outlines a 'FlowMaster' modeling study that was conducted to determine at what mine discharge rate combined with a natural maximum flow rate did the flow velocity become erosive. The modeling study determined a maximum non-erosive (5 fps) mine discharge rate of approximately 6,200 gpm. Discharge rates higher than 6,200 gpm would require additional armoring of the creek to reduce the velocity below 5 fps. Comments addressing the affects to the stream flow and the numeric model study are addressed in Section 2.4.2- Flow Characteristics page 2-43a, and Section 2.5.2-Mining Impacts on Water Quantity page 2-51d

R645-301-731.221, -731.222, CS-24 is near the midpoint of the WQVF 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. [JDS]

Based on consultation with Mr. James Smith, CS-24 will be moved downstream approximately 500 feet to be positioned below the topsoil pile. This new location will now include an additional small tributary draining approximately 80 acres located south of the WQVF pad site.

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]

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During exploration drilling, typically only the coal seam itself is chemically analyzed and no analysis is currently available. However, as stated in Section 4.4.5 page 4-30 and Section 4.16.2 page 4-90, waste rock generated from the either the shafts or slope that will be stored on the surface will be analyzed at a rate of one sample per 2,000 tons testing for acid-toxic-forming potential to determine whether special handling is necessary. As stated on page 4-30, "Analyses of potential toxic or acid forming materials will follow the parameter list and will use the methods outlined on Table 6 of the Division's approved Soil and Overburden Handling Guidelines."

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]

The reclamation of the mine openings has been redesigned so that no water will discharge at reclamation. See Section 4.9 page 4-62(a) for reclamation details.

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]

To accommodate a variance to operate within the Stream Buffer Zone, and preventing violation of applicable water quality standards and adverse impacts to the water quantity and quality the following measures have been incorporated into the plan:

- *The disturbed area activities (pad, sediment pond, topsoil pile) have been designed to stay a minimum of two stream widths away from the stream, thus not requiring a stream alteration permit*
- *The undisturbed upper road ditch located uphill of the pad site has been improved to minimize drainage reporting to the site*
- *The sedimentation pond has been designed to treat storm water runoff once the pad is fully constructed*
- *ASCAs 37 and 38 use silt fencing and/or straw bales to treat any affected water entering the disturbed area during construction of the site until the pond is fully operational and any interim re-vegetation is established*

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In Section 2.4.3(page 2-43b) – Surface Water Hydrology, Sediment Yield a discussion has been added to specifically discuss the requested Stream Buffer Zone variance.

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]

Stream monitoring site CS-24 and Groundwater monitoring site WQ1-1 are being or have been monitored for baseline parameters. WQ1-1 was modified to monitor only field parameters in 3rd Quarter 2009. Well W08-1-5 monitors water level only. We will insure the data has been provided in the DOGM database.

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]

No discharge is anticipated at reclamation to warrant additional monitoring past the normal post-mining period. Section 2.4.4 (page 2-44a) Surface Water Hydrology, Monitoring Program states, “Sampling will continue at all surface water stations throughout the post-mining period and until the reclamation effort is determined successful by the regulatory authority. Samples will also continue to be analyzed for the parameters outlined in Tables 2.3.7-1, 2.3.7-2, and 2.3.7-3A throughout the post-mining period, unless deletions in the list of parameters is determined to be appropriate.” This information currently in the M&RP adequately addresses the post-mining water monitoring requirements.

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]

The “Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report” written by EarthFax Engineering included in this application (and to be added to Volume 5, Section 24 - Engineering Calculations of the currently approved M&RP), outlines the sediment control designs that have been implemented to demonstrate the discharge/outfall velocities are not erosive and appropriate engineering is proposed. Chapter 4 – Sediment Control Design of the EarthFax report outlines the Outflow Erosion Protection, Erosion Protection for Runoff Conveyance System, and Runoff Conveyance System Details. In all outfall cases, the drop location has been armored with rip rap independent of whether the discharge is erosive (>5 fps). Tables 4 and 5 (pages 22 and 23) of the same report provide a summary of the velocity, riprap sizing, and flow depth information.

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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]

The “Winter Quarters Ventilation Shaft Pad Runoff and Sediment Control Design Report” written by EarthFax Engineering included in this application (and to be added to Volume 5, Section 24 - Engineering Calculations of the currently approved M&RP), provides this information.

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]

ASCA 39 was apparently not included in the application packet reviewed by Mr. Smith – as always great care will be used when compiling all five (5) review packets to insure they are all the same.

The ASCA 37 boundary line has been redrawn on Plate 3.2.4-3A to include the entire topsoil pile.

Te ASCA 38 boundary line has been redrawn on Plate 3.2.4-3A to include the outslope of the Sedimentation Pond. As outlined in the M&RP, ASCA 38 will be removed once vegetation is established.

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]

The cover page(s) of the EarthFax report(s) will be certified when the amendment is approved and clean copies are provided.

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]

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Drawing 4.4.2-3A no longer needs modification due to the redesigned reclamation details outlined in Section 4.9 that no longer anticipates discharge at reclamation.

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]

All plates requiring certification, including WQVF Plates 3.2.4-3A through 3.2.4-3G once the amendment is approved and clean copies of the application information is provided.

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]

Table 5 (page 23) of the EarthFax report summarizes freeboard amounts while Attachment A of the same report provides the FlowMaster version 6.0 Worksheets (calculation information). Once approved this report will be added to Volume 5, Section 24 - Engineering Calculations of the approved M&RP.

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]

Figure 4.9-D is no longer needed due to the redesigned reclamation details outlined in Section 4.9 that no longer anticipates discharge at reclamation.

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]

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Additional information has been provided in the Bond Calculation sheets for the WQVF.

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]

The effects from increased water discharge on stream morphology are addressed in a letter from Earthfax dated March 16, 2010 which will be located in Appendix A-1, Volume 2. The letter outlines a 'FlowMaster' modeling study that was conducted to determine at what mine discharge rate combined with a natural maximum flow rate did the flow velocity become erosive. The modeling study determined a maximum non-erosive (5 fps) mine discharge rate of approximately 6,200 gpm. Discharge rates higher than 6,200 gpm would require additional armoring of the creek to reduce the velocity below 5 fps. Comments addressing the affects to the stream flow and the numeric model study are addressed in Section 2.4.2- Flow Characteristics page 2-43a, and Section 2.5.2-Mining Impacts on Water Quantity page 2-51d. Both sections include the following commitment, "In the event discharge from Outfall 004 routinely exceeds 6,200 gpm additional armoring to the outfall location, and investigation of the impacts to Winter Quarters creek will be initiated."