

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

JK

January 12, 2007

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *pgl*

FROM: *SK* Steve Christensen Environmental Scientist II

RE: 1st North Federal Lease Boundary Addition, CONSOL Energy Company, Emery Deep Mine, C/015/0015, Task ID # 2646

SUMMARY:

On September 12th, 2006, the Division of Oil, Gas and Mining (the Division) received an application from CONSOL Energy Company (the Permittee) outlining the addition of 160 acres to the current Emery Deep Mine permit area. The incidental boundary change (IBC) constitutes a significant mine plan revision and as such, requires Federal mine plan approval. On December 15th, 2006, the Permittee amended the application to reflect full extraction mining within the 160-acre addition. The Bureau of Land Management required the Permittee to revise their mining technique in order to achieve maximum economic recovery. In addition, the Permittee submitted an up-dated Probable Hydrologic Consequences Determination (PHC) document to reflect the proposed full-extraction mining impacts.

The proposed IBC area lies directly adjacent to the approved Emery Deep Mine permit area; specifically in the SW1/4 NW1/4, NW1/4 SW1/4, NE1/4 SW 1/4 and SE1/4SW1/4 of Section 22, T 22S, R 6E. It is located within the Christiansen Wash watershed, which is a perennial tributary to Quitchupah Creek. No definitive stream channels exist within the proposed IBC area. The underlying Ferron Sandstone member contains the coal horizon to be mined. The complete thickness of the Ferron Sandstone member is saturated with ground water.

The following is a hydrologic technical analysis as it relates to the State of Utah R645-Coal Mining Rules.

The proposed IBC amendment has not addressed the hydrologic regulations as outlined in the aforementioned rules and should not be adopted. Prior to Division approval, the Permittee must address the following deficiencies:

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R645-301-121.200: Clear and Concise

- The Permittee should address the discrepancy from the applications C2 form and the submitted pages. The C2 form states that pages 168a through 168e of the revised PHC should be added to the MRP. However, the text on pages 168a through 168e is struck out.
- The Permittee should address the discrepancy of Plate V-20 and page 4 of the submitted Chapter XIII. Page 4 of the submitted Chapter XIII states, "Based on data provided on Plate V-20 of the approved MRP, approximately 300 to 500 feet of overburden overlies the IJ zone within the IBC area". Upon inspection of the plates, Plate V-20 depicts the overburden of the UI zone. Plate V-19 depicts the J seam geology. As the application has stated, the mining will occur within the "IJ seam" and it appears that there is no IJ geology seam plate depicting the overburden in the IBC area.
- The Permittee should address the discrepancy on page 162 of the submitted Chapter XIII. In the 5th complete paragraph on page 162, the Permittee states, "Average inflow to the Emery Mine during the period of 1979 through 2005 is shown in Figure VI-20A (see also Appendix VI-9). Figure VI-20A on the following page depicts the average mine water discharge.

R645-301-726, The Permittee should commit to providing the Division with the MODFLO modeling results and calculations upon its completion.

R645-301-728, The Permittee needs to further discuss/analyze the potential impacts from full extraction mining and subsidence on both ground and surface water resources within the IBC area as well in areas adjacent to the proposed mine expansion (i.e. impacts and/or changes to groundwater levels, flow directions, hydrologic balance, base flow contributions to surface water etc...). See attached technical memo for further discussion in PHC section.

645-301-722.100, The Permittee should provide the Division with the location and extent of subsurface water, if encountered, within the proposed IBC and adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

R645-301-722.200, The Permittee should provide the Division with the locations of water-supply intakes for current users of surface waters flowing into, out of, and in the proposed IBC area, as well as the location of surface water bodies such as streams, stock watering ponds, springs, constructed or natural drains, and irrigation ditches within the proposed permit expansion and adjacent areas.

- R645-301-525.12**, The Permittee needs to provide a narrative indicating whether subsidence, if it occurs, could contaminate, diminish or interrupt State-appropriated water supplies in the proposed IBC area as required by R645-301-525.120.
- R645-301-525.480**, The Permittee needs to provide the Division with a description of the measures to be taken to replace adversely affected State-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land in the proposed IBC as required by R645-301-525.480.
- R645-301-731.530**, The Permittee needs to provide a commitment to promptly replace any State-appropriated water supply that is contaminated, diminished or interrupted by underground coal mining and reclamation activities in the proposed IBC area as required by R645-301-731.530.
- R645-301-731**, The Permittee needs to discuss and analyze the irrigation networks that are utilized within the proposed IBC area as well as the adjacent areas by providing information regarding their sources, uses, locations relative to coal mining operations etc.
- R645-301-731.210**, In light of the amount of ground water located within the proposed IBC area and the planned utilization of full extraction mining techniques, the Permittee needs to discuss why additional ground water monitoring is not necessary within the proposed IBC area.
- R645-301-731.220**, Given the existing pastureland and irrigation ditch network located within the proposed IBC area, the Permittee needs to discuss why additional surface water monitoring is not necessary within the proposed IBC area.
- R645-301-731.300**, The Permittee should discuss the potential for acid- or toxic-forming materials to be produced within the proposed IBC area or provide a link to the approved MRP where this area is discussed.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

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Analysis:

The application does not meet the General Content requirements for Permit Application Format and Contents as provided in R645-301-120. R645-301-121.200 requires the submitted application to be "clear and concise".

Findings:

The information provided does not meet the hydrology requirements for Permit Application Format and Contents as provided in the R645-State of Utah Coal Mining Rules. The Permittee should address the following deficiencies prior to Division approval:

R645-301-121.200:

- The Permittee should address the discrepancy from the applications C2 form and the submitted pages. The C2 form states that pages 168a through 168e should be added to the MRP. However, the text on pages 168a through 168e is struck out.
- The Permittee should address the discrepancy of Plate V-20 and page 4 of the submitted Chapter XIII. Page 4 of the submitted Chapter XIII states, "Based on data provided on Plate V-20 of the approved MRP, approximately 300 to 500 feet of overburden overlies the IJ zone within the IBC area". Upon inspection of the plates, Plate V-20 depicts the overburden of the UI zone. Plate V-19 depicts the J seam geology. As the application has stated, the mining will occur within the "IJ seam" and it appears that there is no IJ geology seam plate depicting the overburden in the IBC area.
- The Permittee should address the discrepancy on page 162 of the submitted Chapter XIII. In the 5th complete paragraph on page 162, the Permittee states, "Average inflow to the Emery Mine during the period of 1979 through 2005 is shown in Figure VI-20A (see also Appendix VI-9). Figure VI-20A on the following page depicts the average mine water discharge.

ENVIRONMENTAL RESOURCE INFORMATION

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

HYDROLOGIC RESOURCE INFORMATION

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

Analysis:

Modeling

The application does not meet the Environmental Resource Information requirements for Modeling as provided in R645-301-726. Per conversations with John Gefferth, Environmental Engineer with Consolidation Coal Company, a MODFLO model is currently being developed. The Permittee should commit to providing the Division with the MODFLO modeling results and calculations upon their completion.

Probable Hydrologic Consequences Determination

The application does not meet the Environmental Resource Information requirements for Probable Hydrologic Consequences Determination (PHC) as provided in R645-301-728.

The Permittee submitted an up-dated PHC along with Chapter XIII to account for full extraction mining in the IBC as well as in the remaining coalfields in the existing permit area. The submitted PHC provides a thorough discussion of the hydrogeologic setting. The Permittee discusses the Ferron Sandstone layers in detail including discussion as to the recharge and discharge areas of the geologic unit.

In addition, the revised PHC provides a thorough discussion as to the mine water discharge calculations that were performed in an effort to estimate future mine water discharge rates, taking into account full extraction mining. Two methods were utilized in an attempt to provide this estimate: the Freeze and Cherry equation and the Hantush equation. The Freeze and Cherry equation assumes that the mine acts as an infinitely long tunnel in a homogenous, isotropic porous medium. The Hantush equation assumes that the aquifer is homogenous, isotropic, pumped at a constant rate and is applied to large underground openings. The equations were utilized in an effort to provide estimates of the vertical mine-water inflow. By utilizing measured mine water discharge rates (See Figure VI-20A. Average Mine Water Discharge by Year), and assuming that water discharged from the mine during the shutdown period between 1991 and 2001 was equal to the amount of predominantly horizontal inflow to the mine, the Permittee estimated a value of 0.40 cfs for in-mine water usage. This value was calculated by taking the difference between average mine water discharges during the shutdown period (1991-2001) and the period following where mining resumed with two continuous miners (2002-2005). The Hantush equation estimates produced a much better correlation with measured mine-water discharge rates (See Table VI-23A). Calibrating the Hantush equation with measured discharge rates derived hydraulic conductivity rates for the aquifer. Based on the Hantush equation, and accounting for mine-water inflow and usage as discussed above, the Permittee has predicted mine-water discharge rates through the period of the current mine plan (2013). The results are summarized in Table VI-23B with an average predicted discharge rate of 1.50 cfs. The Division

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finds that these calculations and inherent assumptions are reasonable in predicting mine water discharge rates.

Chapter XIII discusses the surface water in the area of the IBC on page 7. Water quality and quantity discussion of the Christiansen Wash is provided.

However, the Permittee needs to further discuss/analyze the potential impacts from full extraction mining and subsidence on both ground and surface water resources within the IBC area as well in areas adjacent to the proposed mine expansion (i.e. impacts and/or changes to groundwater levels, flow directions, hydrologic balance, base flow contributions to surface water etc...).

The submitted Chapter XIII and revised PHC do not adequately address these potential impacts. In light of the coal seam thicknesses to be mined (20' according to Appendix VI-9, Mine-Water Discharge Calculations) and the amount of overburden (300-500 feet), the potential exists for subsidence related impacts on surface and ground water resources in the area of the IBC and surrounding areas.

GROUND WATER

As stated above, the revised PHC thoroughly discusses the mine-water discharge calculations, but there is little discussion/analyses as to what impacts may be brought about by full extraction mining and subsidence on ground water resources. The Permittee states on page 8 of the Chapter XIII submittal that probable hydrologic consequences of mining in the IBC area will be 1) Changes to the potentiometric surface of the Ferron Sandstone (particularly the upper portion) due to mine dewatering activities and 2) changes in the quality and quantity of surface water in the area due to the discharge of intercepted mine water (See Surface Water discussion below). On page 162 of the submitted PHC document, the Permittee states, "The flow patterns of the Ferron Sandstone aquifer are caused by the creation of mine ward gradients brought about by inflow of water to the mine. The inflow of water to the mine in turn produces ground water level declines not only in the mined area, but in the surrounding area as well". Further discussion and analyses should be included (relative to full extraction mining) in both the revised PHC as well as Chapter XIII as to what impacts these changes in potentiometric surface of the Ferron Sandstone aquifer and mine inflows could have on ground water resources in the IBC as well as in adjacent areas. The discussion should include potential impacts produced from the cone of depression created by full extraction mining or provide a link to where that information can be found in the approved MRP as well as discussion as to impacts to base flow on surface features in the area.

Page 5 of the submitted Chapter XIII indicates that the Ferron Sandstone discharges by "wells, by dewatering of the Emery Mine, by seepage into Quitcupah Creek and Christiansen Wash, and by leakage into the Bluegate and Tununk Shales". Discussion of potential full

extraction mining and subsidence related impacts on baseflow to the Christiansen Wash, Quitchupah Creek and other surface water features in the area should be more thoroughly analyzed. Page 8 of the submitted Chapter XIII states that information contained in Section VI.A.7 of the approved MRP estimates that 0.1 cfs of ground water that normally would seep into the Quitchupah Creek is intercepted in the Emery Mine and prevented from naturally discharging to the creek, but that the reduction in surface water flow is offset by discharging approximately 1.0 cfs of ground water intercepted in the mine. Upon review of the revised PHC, that information is unclear, particularly in light of proposed full extraction mining.

In general, more information is required to adequately assess the impacts that full extraction mining and subsidence will have on the ground water resources in the IBC and adjacent areas. Cross sections depicting the IJ coal seam and potentially affected potentiometric surfaces would be helpful. In addition, the Permittee should expand on what impacts (if any) would be seen by full extraction mining on baseflow contributions from the Ferron Sandstone aquifer on the areas surface water features.

SURFACE WATER

As stated above, page 8 of the Chapter XIII submittal states that probable hydrologic consequences of mining in the IBC area could include "changes in the quality and quantity of surface water in the area due to the discharge of intercepted mine water". Plate V-3 of the approved MRP depicts an irrigation network extending throughout the middle portion of the IBC area. In addition, Chapter XIII Figure XIII-1 depicts designated prime farmland in areas of the IBC and Photos 4-8 depict Pasture land both dry and irrigated. In light of the relatively small amount of overburden in the area of the IBC, the average thickness of the IJ coal seam being approximately 20 feet and the use of full extraction mining techniques, there is a potential for these pasture lands to be impacted by subsidence. The Permittee needs to discuss potential impacts to these pasture lands (worst case scenario) in the event that subsidence induced fracturing were to reach the surface.

In addition, the Permittee should address what potential impacts could arise from full extraction mining and subsidence related fracturing on base flows to the surface water features in the IBC and in adjacent areas. Plate VI-3 of the approved MRP depicts what appear to be ponds or springs in the area of the IBC. The Permittee should identify the nature of these water bodies and the potential for them to be impacted.

Findings:

The information provided does not meet the hydrology requirements for Hydrologic Resource Information as provided in the R645-State of Utah Coal Mining Rules. The Permittee should address the following deficiencies prior to Division approval:

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R645-301-121.200:

- The Permittee should address the discrepancy from the applications C2 form and the submitted pages. The C2 form states that pages 168a through 168e should be added to the MRP. However, the text on pages 168a through 168e is struck out.
- The Permittee should address the discrepancy of Plate V-20 and page 4 of the submitted Chapter XIII. Page 4 of the submitted Chapter XIII states, "Based on data provided on Plate V-20 of the approved MRP, approximately 300 to 500 feet of overburden overlies the IJ zone within the IBC area". Upon inspection of the plates, Plate V-20 depicts the overburden of the UI zone. Plate V-19 depicts the J seam geology. As the application has stated, the mining will occur within the "IJ seam" and it appears that there is no IJ geology seam plate depicting the overburden in the IBC area.
- The Permittee should address the discrepancy on page 162 of the submitted Chapter XIII. In the 5th complete paragraph on page 162, the Permittee states, "Average inflow to the Emery Mine during the period of 1979 through 2005 is shown in Figure VI-20A (see also Appendix VI-9). Figure VI-20A on the following page depicts the average mine water discharge.

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.

Analysis:

Subsurface Water Resource Maps

The application does not meet the Environmental Resource Information requirements for Subsurface Water Resource Maps as provided in R645-301-722.100. The Permittee should provide the Division with the location and extent of subsurface water, if encountered, within the proposed IBC and adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

Cross sections depicting the IJ coal seam and the potentiometric surface to be impacted within the Ferron Sandstone would be helpful in the Division's analysis of the proposed IBC expansion.

Surface Water Resource Maps deficient

The application does not meet the Environmental Resource Information requirements for Surface Water Resource maps as provided in R645-301-722.200. The Permittee should provide the Division with the locations of water-supply intakes for current users of surface waters flowing into, out of, and in the proposed IBC area, as well as the location of surface water bodies such as streams, lakes, ponds, springs, constructed or natural drains, and irrigation ditches within the proposed permit and adjacent areas need to be depicted as well.

Findings:

The information provided does not meet the hydrology requirements for Hydrologic Resource Information as provided in the R645-State of Utah Coal Mining Rules. The Permittee should address the following deficiencies prior to Division approval:

R645-301-722.100, The Permittee should provide the Division with the location and extent of subsurface water, if encountered, within the proposed IBC and adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

R645-301-722.200, The Permittee should provide the Division with the locations of water-supply intakes for current users of surface waters flowing into, out of, and in the proposed IBC area, as well as the location of surface water bodies such as streams, lakes, ponds, springs, constructed or natural drains, and irrigation ditches within the proposed permit and adjacent areas need to be depicted as well.

OPERATION PLAN

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-731.

Analysis:

Subsidence Control Plan

The application does not meet the Operational Plan requirements for Subsidence Control Plan as provided in R645-301-525.120, -525.480, -731.530.

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The submitted Chapter XIII discusses subsidence control on page 10. The application states "Subsidence control, monitoring and mitigation with the IBC area will occur as indicated in Section V.B of the approved MRP". As the approved MRP did not take into account full extraction mining, the Permittee will need to update the pertinent sections of the MRP that pertain to subsidence related impacts.

The Permittee needs to provide a narrative indicating whether subsidence, if it occurs, could contaminate, diminish or interrupt State-appropriated water supplies in the proposed IBC area as required by R645-301-525.120.

The Permittee needs to provide the Division with a description of the measures to be taken to replace adversely affected State-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land in the proposed IBC as required by R645-301-525.480.

The Permittee needs to provide a commitment to promptly replace any State-appropriated water supply that is contaminated, diminished or interrupted by underground coal mining and reclamation activities in the proposed IBC area as required by R645-301-731.530. On pages 7 and 8 of the Chapter XIII submittal, the Permittee discusses the water replacement efforts for the Bryant well and Lewis well. The Permittee states at the bottom of page 7, "Consol has also committed to drill new wells if needed to replace these water supplies". On page 8 the Permittee states, "However, the above commitment to provide alternative sources of water, if necessary, remains in effect for mining activities in the IBC area". Upon reading this language, it is the understanding of the Division that the Permittee is providing a commitment to replace impacted water to the Bryant and Lewis wells. The Permittee should provide a commitment to replace any State-appropriated water that is impacted by mining activity.

Findings:

The information provided does not meet the hydrology requirements for Subsidence Control Plan as provided in the R645-State of Utah Coal Mining Rules. The Permittee should address the following deficiencies prior to Division approval:

R645-301-525.120, The Permittee needs to provide a narrative indicating whether subsidence, if it occurs, could contaminate, diminish or interrupt State-appropriated water supplies in the proposed IBC area as required by R645-301-525.120.

R645-301-525.480, The Permittee needs to provide the Division with a description of the measures to be taken to replace adversely affected State-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land in the proposed IBC as required by R645-301-525.480.

R645-301-731.530, The Permittee needs to provide a commitment to promptly replace any State-appropriated water supply that is contaminated, diminished or interrupted by underground coal mining and reclamation activities in the proposed IBC area as required by R645-301-731.530.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

The application does not meet the Operational Plan requirements for General Hydrologic information as provided in R645-301-731.

The Permittee provides surface and ground water information on pages 5-7 of the submitted Chapter XIII. The coal to be mined is located within the upper portion of the Ferron Sandstone. The Permittee states the "complete thickness of the Ferron Sandstone is probably saturated within the IBC area, normally under confined conditions". Figure XIII-2, Upper Ferron Sandstone Potentiometric Surface, 2004/05 on page 6 of Chapter XIII does depict the potentiometric surface of the Upper Ferron Sandstone layer equal to or above the topographic surface within a portion of the proposed IBC area. The Permittee discusses the recharge and discharge areas of the Upper Ferron Sandstone layer and indicates that the dewatering of the Emery Mine represents the largest anthropogenic discharge of groundwater from this geologic unit. Groundwater chemistry is discussed on page 5 of the submitted Chapter XIII.

On page 7 of the submitted Chapter XIII, the Permittee discusses the surface water within the IBC area. Flow characteristics of the Christiansen Wash are discussed. In addition, the water chemistry of Christiansen Wash is presented on page 7 as well.

The Permittee needs to discuss and analyze the irrigation networks that are utilized within the proposed IBC area as well as the adjacent areas by providing information regarding their sources, uses, locations relative to coal mining operations etc. The Permittee states, "The only

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surface water courses within the IBC area are small ephemeral rills. No definitive stream channels exist within the IBC area". The Division recognizes that naturally formed channels may in fact not exist within the IBC area, with the exception of small ephemeral drainages, however; Plate V-3 of the approved MRP depicts a network of drainage ditches within the proposed IBC area. The submittal should expand on their current usage.

Groundwater Monitoring

The application does not meet the Operational Plan requirements for Groundwater monitoring as provided in R645-301-731.210. The Permittee does not propose any additional ground water monitoring within the proposed IBC area. The Permittee needs to further discuss and analyze the ground water system within the proposed IBC area. As stated on page 5 and presented in Figure XIII-2 of Chapter XIII, the upper Ferron Sandstone layer within the proposed IBC is essentially saturated with ground water. In light of the amount of ground water located within the proposed IBC area and the planned utilization of full extraction mining techniques, the Permittee needs to discuss why additional ground water monitoring is not necessary within the proposed IBC area.

Surface Water Monitoring

The application does not meet the Operational Plan requirements for Surface Water monitoring as provided in R645-301-731.220. The Permittee does not propose any additional surface water monitoring within the proposed IBC area. Given the existing pastureland and irrigation ditch network located within the proposed IBC area, the Permittee needs to discuss why additional surface water monitoring is not necessary within the proposed IBC area.

Acid- and Toxic-Forming Materials and Underground Development Waste

The application does not meet the Operational Plan requirements for Acid- and Toxic-Forming Materials and Underground Development Waste as provided in R645-301-731.300. The Permittee should discuss the potential for acid- or toxic-forming materials to be produced within the proposed IBC area or provide a link to the approved MRP where this is discussed.

Findings:

The information provided does not meet the hydrology requirements for Hydrologic Information as provided in the R645-State of Utah Coal Mining Rules. The Permittee should address the following deficiencies prior to Division approval:

R645-301-731, The Permittee needs to discuss and analyze the irrigation networks that are utilized within the proposed IBC area as well as the adjacent areas by

providing information regarding their sources, uses, locations relative to coal mining operations etc.

R645-301-731.210, In light of the amount of ground water located within the proposed IBC area and the planned utilization of full extraction mining techniques, the Permittee needs to discuss why additional ground water monitoring is not necessary within the proposed IBC area.

R645-301-731.220, Given the existing pastureland and irrigation ditch network located within the proposed IBC area, the Permittee needs to discuss why additional surface water monitoring is not necessary within the proposed IBC area.

R645-301-731.300, The Permittee should discuss the potential for acid- or toxic-forming materials to be produced within the proposed IBC area or provide a link to the approved MRP where this area is discussed.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The application meets the Reclamation Plan requirements for General Requirements as provided in R645-301-760. Page 10 of the submitted Chapter XIII discusses the reclamation plan for the proposed IBC area. The proposed IBC expansion plan does not propose any new surface disturbances as a result of mining. As such, no additional land reclamation will be required.

Findings:

The information provided meets the hydrology requirements for Reclamation Plan as provided in the R645-State of Utah Coal Mining Rules.

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CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

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

Analysis:

The application meets the Reclamation Plan requirements for General Hydrologic information as provided in R645-301-731. Page 10 of the Chapter XIII submittal discusses the cumulative hydrologic impact assessment. The proposed IBC area lies within the existing cumulative hydrologic impact assessment area associated with the Emery mine.

Findings:

The information provided meets the hydrology requirements for Cumulative Hydrologic Impact Assessment as provided in the R645-State of Utah Coal Mining Rules.

RECOMMENDATIONS:

The submittal should not be approved at this time.

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