C0070041
Incoming
#5433

WEST RIDGE RESOURCES, INC.
P.O. Box 910, East Carbon, Utah 84520 794 North "C" Canyon Rd, East Carbon, Utah 84520
Telephone (435) 888-4000 Fax (435) 888-4002

Utah Division of Oil, Gas & Mining
Utah Coal Program
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

May 1, 2017

RECEIVED
MAY 04 2017
DIV. OF OIL, GAS & MINING

Attn: Daron Haddock
Permit Supervisor

Re: West Ridge Mine C/007/041
WR17-001 Seismic Monitoring Task ID# 5433

Dear Mr. Haddock,

Please find attached the Clean Copies for the above noted submittal for Grassy Trail Seismic Monitoring to be incorporated into the currently approved MRP.

If you have any questions, or need any additional information regarding this submittal, please contact me directly at 435-888-4000.

Sincerely,

Karin Madsen
Engineering Tech
UtahAmerican Energy, Inc.

APPLICATION FOR PERMIT PROCESSING

Permit Change X	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: ACT/007/41
Title of Proposal: WR 17-001 Seismic Monitoring						Mine: West Ridge
						Permittee: West Ridge Resources, Inc

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

Instructions: *If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation*

☐ Yes	☐ No	1. Change in the size of the Permit Area? _____ acres Disturbed Area? _____ acres ☐ increase ☐ decrease.
☐ Yes	☐ No	2. Is the application submitted as a result of a Division Order? DO #
☐ Yes	☐ No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes	☐ No	4. Does application include operations in hydrologic basins other than as currently approved?
☐ Yes	☐ No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes	☐ No	6. Does the application require or include public notice/publication?
☐ Yes	☐ No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes	☐ No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes	☐ No	9. Is the application submitted as a result of a Violation? NOV #
☐ Yes	☐ No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: Midterm
☐ Yes	☐ No	11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes	☐ No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
☐ Yes	☐ No	13. Does the application require or include collection and reporting of any baseline information?
☐ Yes	☐ No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes	☐ No	15. Does application require or include soil removal, storage or placement?
☐ Yes	☐ No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes	☐ No	17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes	☐ No	18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes	☐ No	19. Does the application require or include certified designs, maps, or calculations?
☐ Yes	☐ No	20. Does the application require or include subsidence control or monitoring?
☐ Yes	☐ No	21. Have reclamation costs for bonding been provided for?
☐ Yes	☐ No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes	☐ No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

X Attach 1 complete digital copy of the application.

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.

Karin Madsen / Engineering Tech. / 5-1-17
Signed - Name - Position - Date

Subscribed and sworn to before me this 1st day of May, 20 17.

Delaina Thompson
Notary Public

My Commission Expires: Aug 22, 20 17
Attest: STATE OF Utah
COUNTY OF Carbon

DELAINA THOMPSON
Notary Public
State of Utah
Comm. No. 668573
My Comm. Expires Aug 22, 2017

Received by Oil, Gas & Mining

ASSIGNED TRACKING NUMBER

Application for Permit Processing
Detailed Schedule of Changes to the MRP

WR 17-001 Seismic Monitoring	Permit Number: ACT/007/041 Mine: West Ridge Permittee: West Ridge Resources, Inc.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	☐ REPLACE	☐ REMOVE	Chapter 5 - Pages: 5-i, 5-ii, 5-v, 5-vi, Pages 5-1 through 5-12, 5-29, 5-30
☐ ADD	☐ REPLACE	☐ REMOVE	Appendix 5-13 - Pages 1-3
☐ ADD	☐ REPLACE	☐ REMOVE	Appendix 5-13a
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	

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

~WEST RIDGE MINE - PERMIT APPLICATION PACKAGE~

TABLE OF CONTENTS- CHAPTER 5
R645-301-500 ENGINEERING

REGULATION NUMBER	CONTENTS	PAGE NUMBER
R645-301-511	General Requirements	2
R645-301-512	Certification	5
R645-301-513	Compliance With MSHA Regulations And Approvals	6
R645-301-514	Inspections	7
R645-301-515	Reporting And Emergency Procedures	8
R645-301-520	Operation Plan	9
R645-301-521	General	9
R645-301-522	Coal Recovery	15
R645-301-523	Mining Methods	15
R645-301-524	Blasting And Explosives	17
R645-301-525	Subsidence	19
R645-301-526	Mine Facilities	35
R645-301-527	Transportation Facilities	43
R645-301-528	Handling And Disposal Of Coal, Overburden, Excess Spoil And Coal Mine Waste	44
R645-301-529	Management Of Mine Openings	49
R645-301-530	Operational Design Criteria And Plans	49

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

TABLE OF CONTENTS- CHAPTER 5 (CONTINUED)
R645-301-500 ENGINEERING

REGULATION NUMBER	CONTENTS	PAGE NUMBER
R645-301-531	General	49
R645-301-532	Sediment Control	49
R645-301-533	Impoundments	50
R645-301-534	Roads	51
R645-301-535	Spoil	53
R645-301-536	Coal Mine Waste	55
R645-301-537	Regraded Slopes	55
R645-301-540	Reclamation Plan	55
R645-301-541	General Information	55
	Table 5-1 Reclamation Timetable	58
R645-301-542	Narratives, Maps And Plans	59
R645-301-550	Reclamation Design Criteria And Plans	62
R645-301-551	Casing And Sealing Of Underground Openings	62
R645-301-552	Permanent Features	62
R645-301-553	Backfilling And Grading	63
R645-301-560	Performance Standards	65

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

TABLE OF CONTENTS- APPENDICES
R645-301-500 CHAPTER 5
(Continued)

APPENDIX NUMBER	DESCRIPTION
APPENDIX 5-13	Grassy Trail Dam Monitoring/Inspection Plan, Panel #7 & Panel Block #18-21
APPENDIX 5-14	Bear Canyon Gob Gas Vent Hole (GVH)
APPENDIX 5-15	Catchment Structure, C Canyon Drainage
APPENDIX 5-16	Grassy Trail Dam and Reservoir Mining-Induced Seismicity Summary Report, 2008
APPENDIX 5-17	Grassy Trail Dam and Reservoir Mining-Induced Seismicity Summary Update Report (RB&G Engineering, 2010)
APPENDIX 5-18	Subsidence Monitoring Survey Points, Right Fork of Whitmore Canyon
APPENDIX 5-19	B Canyon Re-Opening Project

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

TABLE OF CONTENTS- MAP LIST
R645-301-500 CHAPTER 5

MAP NUMBER	DESCRIPTION	SCALE
MAP 5-1	Previous Disturbance	1"=100'
MAP 5-2	Surface Ownership	1"=1000'
MAP 5-3	Sub-surface Ownership	1"=1000'
MAP 5-4A	Mining Projections	1"=1000'
MAP 5-4B	Mining Projections - Extended Reserves	1"=1000'
MAP 5-5	Surface Facility Map	1"=1000'
MAP 5-6	Mine Site Cross-Section & Profile Index Map	1"=1000'
MAP 5-6A	Mine-Site Cross-Sections	1"=50'
MAP 5-6B	Mine Site Cross-Sections	1"=50'
MAP 5-6C	Mine Site Cross-Sections	1"=1000'
MAP 5-7	Subsidence Map	1"=1000'
MAP 5-8	Undisturbed Drainage Culvert Profile	1"=100'
MAP 5-9	Mine Site Reclamation	1"=100'
MAP 5-10	Construction/Reclamation Area-Types	1"=100'
MAP 5-11	Construction Sequence	No scale
MAP 5-12	Reclamation Sequence	No Scale
MAP 5-13	Pre-construction Drainage Photos Index Map	1" = 100'
MAP 5-13(A-H)	Pre-construction Drainage Photos	No Scale
MAP 5-14	Pump House Site Map	1" = 10'
MAP 5-14A	Pump House Reclamation Map	1" = 10'
MAP 5-14B	Pump House Cross-Sections	1" = 10'
MAP 5-15	Roads Map	1" = 100'

INCORPORATED
MAY 05 2017
Div. of Oil, Gas & Mining

CHAPTER 5
R645-301-500 ENGINEERING

Historical Note 1: In the spring of 2009, and again in the summer of 2010, the company constructed small catchment structures in the C Canyon drainage below the minesite. The purpose of these structures was to contain coal-fines which had accumulated in the drainage channel as a result of non-compliance discharge water from the mine, and to assist in the subsequent clean-up project. After the unit was constructed it was determined that it should be included within the Mining and Reclamation Plan. Please refer to Appendix 5-15 for a complete description of these catchment structures, including history, location, right-of-entry, as-built design, operational criteria, and reclamation information.

Historical Note 2: In the summer of 2011 the company acquired a modification of federal lease UTU-78562 along the eastern side of the permit area. Mining in this new lease will involve development mining under the stream in the Right Fork of Whitmore Canyon which supplies most of the water to the Grassy Trail Reservoir. Due to concerns for the water rights in this area the company has agreed to collecting additional hydrologic baseline data. This data acquisition will include, but is not limited to the following:

a) Installation and/or rehabilitation of measuring flumes in the upper and lower reaches of both Right and Left Forks of Whitmore Canyon above the reservoir (total of 4 ea. flumes).

b) Installation of subsidence monitoring stations at approximate 100' intervals along the bottom of the Right Fork drainage within the permit area.

c) Installation of flow meters within the underground mine water collection/pumping system sufficient to adequately assess the quantity and location of groundwater sources encountered in the mine works in the vicinity of the Right Fork.

d) On-site location and development of selected springs in the Right Fork area subject to future monitoring, conducted in conjunction with stakeholder input.

e) Expansion of the seep and spring survey in the Right Fork to include more of the upper drainage area above longwall Panel #22.

f) Completion of a detailed gain-loss analysis of the stream flow in the Right Fork within the area of proposed development mining.

It should be noted that there will be no longwall mining under (beneath) the Right Fork of Whitmore Canyon, nor any other mining that would result in subsidence under the drainage of the Right Fork. The only mining under the Right Fork will be a limited number of development entries associated with the longwall bleeder system. All such development mining associated with Panel #22 will be conducted at depths in excess of 2600' below the Right Fork drainage.

Information regarding the subsidence monitoring points in the Right Fork can be found in Appendix 5-18.

Information regarding the underground (in-mine) flow meters can be found in Appendix 7-16.

Information regarding the expanded seep and spring survey can be found in Appendix 7-6B.

Information regarding the gain-loss analysis of the Right Fork can be found in Appendix 7-14.

INCORPORATED
INCORPORATED
MAY 05 2017
MAY 05 2017
Div. of Oil, Gas & Mining

Historical Note 3: In the spring of 2012, the company made application to re-open a sealed-up portal located in B Canyon. This portal was constructed in the early 1960's as part of an underground mine extension of the old Kaiser Mine. The portal was later reclaimed by the Utah Division of Oil, Gas and Mining's Abandoned Mine Lands (AML) Program in the summer of 1998. West Ridge Resources now needs to re-open this portal to gain access to the underground workings in order to perform safety-related work in preparation for future longwall mining in this area. A complete description of the portal re-opening project is provided in Appendix 5-19.

R645-301-511 GENERAL REQUIREMENTS

Chapter 5 contains information regarding the proposed coal mining operation and reclamation plans, a discussion of its potential impact to the environment and methods to achieve compliance with design criteria.

Reclamation plans and estimates are presented for postmining restoration of the area.

NOTE: The following discussion for the remainder of R645-301-511 applies specifically to the Gob Gas Vent Hole (GVH) installation proposed in Bear Canyon. In order to facilitate the review it is presented here in its entirety rather than interspersed throughout the chapter. A more detailed and complete discussion of the Bear Canyon GVH proposal can be found in Appendix 5-14. Unless specifically noted in this following discussion, nothing related to the Bear Canyon GVH proposal affects the contents of the existing approved MRP as described hereinafter.

The GVH facility will consist of three drillholes, four methane extractor units, and interconnecting piping. A detailed description of the drillhole installation, and the assembly and operation of the methane extractor units can be found in Attachment 7 of Appendix 5-14. The site pad will consist of a narrow strip (approximately 35' wide x 300' long) located adjacent to and parallel with the road. The drillholes will be located at the southern (down-canyon) end of the site pad. The extractor units will be located in a serial arrangement along the northern (up-canyon) end of the site pad. The total facility area will be about 0.24 acres, including the adjacent cutslopes.

Three angled holes will be drilled at angles ranging from 20 degrees to 45 degrees from vertical. Drilling will be conducted using tri-cone rotary and/or hammer. Drilling fluid will be primarily compressed air (600-800 psi) with water and Baroid Quick Foam and EZ Mud (see Attachment 15 for MSDS sheets for these products). Cuttings will pass up the annulus and be diverted to the reserve pit on the surface. Each hole will be spudded with a 19" diameter hole into which a 16" diameter conductor casing will be set and grouted to an approximate depth of 20'. Thereafter, a 12.25" hole will be drilled to within 200' of the Lower Sunnyside coal seam (an inclined depth of 200'-300'). A 9.625" T&C casing will be set and grouted to total depth of the 12.25" bore. An 8.75" bit will be tripped in to drill out the shoe and will continue about 175' to within 25' of the coal seam horizon. Sections of 7" slotted casing will be tripped in from bottom of hole to about 40' above the bottom of the

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

upper casing, but will not be grouted so that it can move with any additional subsidence.

Before construction starts identification signs will be posted at the site. These signs will list the company name as permit holder, the permit number, address and phone number. During the initial phase of construction, topsoil will be salvaged. Based on a recent Order 1 soils survey the current estimate of topsoil to be salvaged is approximately 515 cubic yds. (See Appendix 2-10 and also Attachment 2 of Appendix 5-14.). After the topsoil has been removed, the slope will be excavated back for a distance of about 20', leaving a 1:1 cutslope against the hillside. Based on current surveys it is estimated that about 1,357 total yds of material will be excavated from the bank. This includes the estimated 515 yds of topsoil, so the remaining amount of excavated material will be about 842 yds (see Cut Slope Excavation Volumes, Attachment 1 of Appendix 5-14 for details). Material excavated from the cutslope will be used to level off the area for the drillhole (for the drilling operation) and for the individual methane extractor units. Excess material may be used to raise the grade of the adjacent roadway. All fill areas will then be compacted for stability.

During the drilling phase of the GVH installation, the pad area will be used as an equipment lay-down area for drill steel, drill casing, drilling mud, concrete, etc. The pad will also be used to accommodate the mud pits needed during the drilling operation. The mud pit will measure approximately 30' long x 10' wide x 10' deep, and will be located immediately down-canyon, i.e., southwest of, the drillholes, as shown in Attachment 1. The pit will be lined with a 12 mil plastic liner, with a 20 mil felt underlayment. Based on the diameter and total combined length of the drillholes, and assuming a swell factor of 40% for the cuttings, the estimated volume of cuttings is 1283 cubic feet, or 47 yds. This would result in a total depth of cuttings remaining in the bottom of the pit of 4.28 ft. After the drillholes have been completed the remaining cuttings will be mixed with native material until it can be handled with heavy machinery. It will then be removed from the pit and hauled off-site to an approved disposal facility.. After the cuttings have been removed, the pit will be backfilled and eliminated. The site will then be cleaned up and fine-graded prior to installing the methane extractor units (see Attachments 1 and 7 of Appendix 5-14 for details).

After the cutslopes have been excavated, the slopes with be reclaimed (interim reclamation) by pocking, re-seeding and applying a layer of wood straw as described above. A disturbed area drainage ditch will be constructed along the toe of the cut. This ditch will be designed to handle the flow from the up-slope undisturbed area, the reclaimed cutslope, the drillpad, and the adjacent section of road. Runoff from the ditch will be routed through a series of sediment-control structures (silt fences, excelsior logs, etc.) to effectively remove sediment. (A more detailed description of the sediment control measures associated with the site can be found in the Chapter 7, Hydrology discussion of Appendix 5-14.)

A security fence may be installed around the perimeter of the pad between the

INCORPORATED
MAY 05 2017
Div. of Oil, Gas & Mining

facilities and the road.. The facilities will not encroach upon nor affect the road nor the road turn-around, and neither will public use of the road be affected. The Company will provide the Division with an as-built drawing of the facility upon completion of construction.

Operation of the GVH facility is expected to continue for the life of the West Ridge operation. Therefore, reclamation of the site will be done at the same time and under the same conditions as for the minesite surface facilities in C Canyon. However, if temporary cessation of mining operations occurs, the GVH well will continue to function.

Prior to final reclamation, all drillholes will be plugged and sealed in accordance with State and Federal regulations. The casings will be plugged at the bottom to hold the concrete. A lean concrete mixture will be poured into the casing until the concrete is within five (5) feet of the surface. At that time the casing will be cut off at ground level and the rest of the casing will be filled with lean concrete. The concrete will be allowed to harden before final reclamation is completed. There will be three drillholes installed and therefore plugged at reclamation. (This commitment is identical to the currenty approved plan for the Tower (Centennial, C/007/014) GVH reclamation plan.) Based on current projections the holes will be drilled at 45 degree angles into the mine, and will have individual depths (lengths) of 504', 376', and 502', for a combined total depth of 1382'. Using 9-5/8" casing for all holes, the volume of concrete needed to plug all three holes would be 26 cu. yds.

On final reclamation, the pad area and cutslopes will be backfilled to approximate original contour (see Reclamation Contours, Attachment 1 of Appendix 5-14). Fill material will be obtained from the adjacent roadway and leveling pads. This is the exact same material that was excavated from the cutslope during initial construction. The cutslope will be backfilled in 18"-24" lifts and compacted with rubber-tired vehiclesand/or vibratory mechanical equipment. The reclaimed slopes, at approximate original contour, will average about 1.5: 1, so slope stability will not be an issue. Because of the compaction in lifts, and the rocky nature of the backfill material (one and the same as the original native material), stability of the reclaimed slopes is sufficient to achieve approximate original contour and eliminate the potential for remnant cutslope exposures. A slope stability analysis prepared by Blackhawk Engineering concludes that *"calculations show safety factors well in excess of the required 1.3 for the reclaimed cut slopes of 1.5H:1V and up to 30' in height. This is not inconsistent with the natural conditions of the area, and will allow for complete reclamation of all cut slopes created by the emergency drilling pads."* (See Attachment 8 of Appendix 5-14 for the complete slope stability analysis report.) The slope will then be re-topsoiled and re-vegetated according to the same existing approved plan for the minesite in nearby Canyon, as specified in R645-301-341, and as described in the Chapter 3, Biology discussion in Appendix 5-14.

The amount of backfill material is estimated to be up to 842 cubic yards, and the amount of replaced topsoil is estimated at about 515 cubic yards. Total reclaimed

RECEIVED
MAY 05 2017
Div. of Oil, Gas & Mining

area, including both pad and cutslopes will be approximately 0.24 acres. Because the cutslopes are only about 20' maximum high, all work, both backfilling and topsoil replacement, can easily be done from the existing adjacent road-pad surface, using trackhoes with sufficient boom reach. After the reclaimed slopes have been topsoiled and reseeded, a row of excelsior logs will be installed along the full length of the toe of the slope between the slope and the remaining road. The purpose of this row of excelsior logs is to control sediment of the site until the revegetation has become established.

Bonding and reclamation costs for the Bear Canyon GVH installation can be found in Appendix 5-14 in the Chapter 8, Bonding discussion.

HISTORICAL NOTE: The preceeding discussion of the Bear Canyon GVH was approved by the Division on May 25, 2010, as was Appendix 5-14 which described the GVH installation in detail. In April, 2011 the company applied for an amendment of the MRP to add two additional GVH holes (GVH 4 and GVH 5) to the Bear Canyon GVH installation. Complete details of the GVH 4 and 5 amendment can be found in Appendix 5-14A, which is an addendum to the approved GVH Appendix 5-14.

R645-301-512 CERTIFICATION

512.100 Cross Sections And Maps

Maps, cross sections, figures and tables which require certification will be certified by a qualified, registered, professional engineer or land surveyor.

Cross sections, maps and drawings will be certified prior to determination of completeness for the permit application.

512.200 Plans And Engineering Designs

A qualified registered professional engineer will certify plans and designs for impoundments and primary roads. No excess spoil or durable rock fill designs are proposed.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

R645-301-513 COMPLIANCE WITH MSHA REGULATIONS AND APPROVALS

513.100 MSHA regulations 30 CFR 77.216-1 & 30 CFR 77.216-2 do not apply as no coal processing dams or embankments are being proposed.

513.200 MSHA regulation 30 CFR 77.216 (a) does not apply because of the restricted size of the sediment ponds and low hazard potential.

513.300 No coal processing waste is proposed to be disposed of in underground workings. Refer to R645-301-528.321.

513.400 No refuse piles are being proposed.

513.500 Upon completion of final mining activities, any shafts, drifts, exploratory holes or entryways from the surface will be capped, sealed, backfilled or otherwise properly managed consistent with MSHA, 30 CFR 75.1771. All exploration holes will be filled with concrete.

Mine portals will be sealed by constructing a concrete block stopping at least 25 feet in from the surface opening and backfilling the 25 feet of the entry from the surface opening to the stopping with incombustible earth materials. The area in front of the portal will be backfilled and graded to approximate original contour using materials stored in the mine pad fill. Topsoil will be applied on the regraded fill. The surface will then be seeded and mulched.

513.600 No discharge into an underground mine is proposed, therefore MSHA approval is not required.

513.700 No surface mining is proposed in the permit area. No surface mining is proposed for areas within 500 feet of an active underground mine.

513.800 Not applicable.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

R645-301-514 INSPECTIONS

All engineering inspections, other than those inspections to be done by a qualified person designated by the operator, will be performed by a registered, professional engineer or other qualified specialist under the direction of the professional engineer.

514.100 No excess spoil is anticipated at the proposed underground mine site. A soil scientist will be on-site during final reclamation to oversee topsoil redistribution.

514.200 No refuse piles are being proposed.

514.300 Impoundments

Properly sized sediment control facilities will be constructed below the mine yard. Inspection of the sediment ponds will be made on a regular basis by a professional engineer or specialist during construction, upon completion of construction and once per year until the structures are removed or the performance bond has been released.

A registered, professional engineer will provide a certified report to DOGM after each inspection stating if the impoundment has been constructed and maintained as designed. The report will discuss, if detected, any sign of instability, structural weakness (or other hazardous condition), depth and elevation of any impounded water, existing storage capacity, and existing or required monitoring procedures and instrumentation. A copy of the report will be kept on file at or near the mine site.

In addition to the above certified annual inspection and report, the sediment pond will be inspected on a quarterly basis by a qualified person designated by the operator. Any appearance of structural weakness or other hazards will be recorded. See R645-301-515-200 for the reporting procedures if a hazard is found. A copy of the report will be kept on file at or near the mine site.

Weekly inspection requirements of MSHA, 30 CFR 77.216 do not apply due to the size of the sediment control structures and low hazard potential. See R645-301-533-600.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

R645-301-515 REPORTING AND EMERGENCY PROCEDURES

515.100 Should a landslide occur which may have a potential adverse effect on public property, health, safety or the environment, WEST RIDGE Resources, Inc. will notify the Division by telephone and comply with required remedial measures.

515.200 Impoundment Hazards

If any examination or inspection discloses that a potential hazard exists for the sediment pond or other facilities which impound water that warrant initiation of emergency procedures, the person making the examination will promptly inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. Emergency procedures would include immediately notifying those individuals on site responsible for performing the necessary remedial action.

515.300 Procedures For Temporary Cessation Of Operations

Before temporary cessation of coal mining and reclamation operations for a period of 30 days or more, or as soon as it is known that a temporary cessation will extend beyond 30 days, WEST RIDGE Resources, Inc. will submit to the Division a notice of intent to cease or abandon operations. The notice will include: a statement of the exact number of surface acres and the horizontal and vertical extent of subsurface strata which have been in the permit area prior to cessation or abandonment; the extent and kind of reclamation of surface area which will have been accomplished; and identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures and water treatment activities that will continue during the temporary cessation.

Support and maintenance of all surface access to underground operations and surface facilities will continue. Temporary cessation will not relieve any obligation to comply with any provision of the approved permit.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

R645-301-520 OPERATION PLAN

R645-301-521 GENERAL

WEST RIDGE Resources, Inc. holds federal, state and fee coal leases SL-068754 and UTU-75862, state leases ML 47711, ML 49287 and ML 51744, and the Penta Creek fee lease, totaling 7796.7 acres in the West Ridge area of eastern Carbon County. Much of the Penta Creek Fee Lease, is not included within the permit area at this time and cannot be mined until the permit is amended. Refer to Map 5-4B, Mining Projections - Extended Reserves.

The mine, consists of one longwall and two continuous miner sections. The mining sequence is shown on Map 5-4A, Mining Projections. Initial mine production will come from reserves located in the southeastern portion of the existing lease area. Panels will be developed to the north and south of the mains, progressing in an eastward direction. With the existing leases, the projected life of the West Ridge Mine is 15 years. After the economically recoverable reserves within the permit area have been depleted, the portals would be sealed and reclamation of the surface facility area would begin unless additional leases were acquired.

Surface facilities will be located in C Canyon, where the left and right forks converge, in a previously disturbed area. The extent of the previous disturbance includes access roads, outcrop excavations and exploration drill holes. Previous disturbance at this site is estimated to be approximately 1.62 acres. The total proposed surface disturbed area, as delineated by the tan line on the maps, amounts to approximately 29 acres. Actual anticipated disturbance for surface facilities and topsoil stockpiles (within the disturbance area) is estimated at 26.02 acres. This includes approximately 0.79 acres of Carbon County road which has been included in the disturbed area down to the C Canyon gate, and 0.23 acres for the pumphouse area located below the minesite.

An alternate (substitute) topsoil borrow area would be located about 1 ½ miles to the west of the proposed mine site on a ten acre parcel of State School Trust land. This area would not be included unless needed for final reclamation. No surface disturbance would take place at this location until the time of final reclamation. No additional acreage should be required for the project as proposed in this permit application.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

521.100 Cross Sections And Maps

The lease area is located northwest of the old Sunnyside No. 1 underground mine workings. The lease was, at one time, held by U.S. Steel Corp., who authorized Kaiser Coal Company to extend a set of test entries from the Sunnyside No. 1 mine part way through the lease. These test entries were driven to the surface in B Canyon. The portal for this test entry breakout exists presently although it has been sealed. B Canyon is located approximately one mile southeast of C Canyon where the surface facilities for the West Ridge Mine are being proposed. The extent of the underground test entry development within the lease is shown on Map 5-7, Subsidence Map. The old Sunnyside Mine test entries driven north into the proposed permit area were mined in 1959 and 1960, are now inactive and sealed to prevent public access.

The proposed surface facilities are to be situated in C Canyon. north of the old underground mine workings in the Sunnyside No. 1 Mine. The location of the old workings with respect to the proposed development is shown on Map 5-4A. Map 5-1, Previous Disturbance, shows the areal extent of the previous surface disturbance in C Canyon.

521.120 Existing Surface And Subsurface Facilities And Features

No surface or subsurface features, such as commercial buildings, transmission lines, pipelines, or agricultural related features, exist in or near the proposed permit area. Refer to Map 4-1. A pre-mining (pre-subsidence) survey was conducted prior to mining operations, which included the area of lease UTU-78652. Refer to Appendix 5-8. A recreational cabin (seasonal occupation) and trailer are located in Spring Canyon in the northern part of the permit area. In this area, the depth of cover exceeds 2500'. Within 18 months prior to longwall mining in this area a pre-subsidence survey of the cabin/trailer will be conducted. The location of this cabin is shown on Map 4-1, 5-2 and 5-7.

Man-made features in or near the proposed permit area consist primarily of roads. Refer to Map 4-1. Several small roads exist within the permit area. These roads are Carbon County RS2477 roads. They are used primarily to access the top of West Ridge by ranchers in the area.

Approximately 960' of the existing Carbon County road into "C" Canyon has been added to the West Ridge Mine permit and included as disturbed area. The addition of this portion of road was necessitated by the placement of a gate (owned by Carbon County) to allow for better visibility and turnaround area for the public during those times when the gate is closed by the operator.

Roads that lie in or within 100 feet of the proposed permit area are depicted on Map 4-1.

INCORPORATED

No spoil, waste, noncoal waste, dams, embankments, sediment pond, water treatment

MAY 05 2017

...V. of Oil, Gas & Mining

or air pollution control facilities exist within the proposed permit area. A small portion of the Grassy Trail Reservoir (less than 0.6 acres) lies within a corner of the permit area.

521.130 Landownership And Right Of Entry Maps

Ownership boundaries and the names of the present owners of record for surface lands as well as underground are depicted on Maps 5-2, Surface Ownership and 5-3, Subsurface Ownership.

Map 5-4B delineates the federal coal lease SL-068754 and UTU-78562, state lease ML 47711, ML49287 and ML 51744 and the Penta Creek fee lease, totaling 7796.7 acres held by WEST RIDGE Resources, Inc., which is the area for which WEST RIDGE Resources, Inc. Resources has the legal right to enter and begin coal mining and reclamation operations. Much of the Penta Creek Fee Lease is not included within the permit area at this time.

Included in Appendix 5-2 is a letter from Carbon County granting WEST RIDGE Resources, Inc. permission to conduct mining operations within 100 feet of the Carbon County road. This would basically be that segment of road where the road enters the mine facility area.

Also included in Appendix 5-2 is an approval letter from Carbon County, allowing for the periodic closure of approximately 960' of the "C" Canyon Road from the gate to the original mine permit area. The permit area has been extended to the gate, as shown on Plate 4-1.

A public notice has been published providing for request for a public hearing as provided in R645-103-234. A copy of this notice is also included in Appendix 5-2.

521.140 Mine Maps And Permit Area Maps

The permit area proposed to be affected by the coal mining and reclamation operation is shown on Map 5-3. Permit renewals will be reapplied for on five year intervals.

521.141 The mining operation has been divided into five year mining blocks in an attempt to show future areas that will be mined under the permit renewals. The mining blocks are shown on Map 5-4B. All projections and timing are preliminary and general in nature and may change in the future depending on mining, marketing, environmental conditions and/or acquisition of additional state and federal reserves.

Surface support facilities in C Canyon will be utilized for the life of mine operations. The proposed mine surface facility area is depicted on Map 5-5, Surface Facility Map. Reclamation of the facilities will be performed following completion of mining activities and sealing of the portals.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

521.142 The surface above mined out longwall panels may be subject to conditions associated with subsidence. Subsidence may occur under the mined out area.

Map 5-7 identifies the mining area for which planned subsidence mining methods will be used. Based on experience at other nearby mines located in the Book Cliffs (i.e. Soldier Creek, Sunnyside and Andalex Tower), a conservative angle of draw of 20 degrees was used to project the maximum extent of subsidence.

521.143 No underground development waste or excess spoil will be stored at the mine site.

521.150 Land Surface Configuration Map

Map 5-1 represents the existing land surface configuration in the proposed disturbed area. Areas of previous disturbance exist within the proposed disturbed area. These are shown on Map 5-1 and involve approximately 1.62 acres. Map 5-1 extends at least 100 feet beyond the area to be disturbed. Map 5-5 depicts the disturbed area boundary with regard to the proposed structures and facilities. All previous disturbance will be included within the proposed disturbed area boundary and included within the reclamation plan. The proposed disturbed area boundary is depicted on most 1" = 100' scale drawings regardless of subject covered.

521.160 Maps And Cross Sections Of Proposed Features For The Proposed Permit Area

Buildings, utility corridors and facilities, to be constructed and used in conjunction with the mine, are shown on Map 5-5.

The proposed surface disturbance area is shown on Map 5-5. This exhibit depicts the maximum potential disturbance around the facilities that would be used for the life of the mine. The proposed maximum disturbance area amounts to approximately 29 acres. This is composed of the anticipated on-the-ground disturbance (projected at about 25 acres) plus extra buffer acreage around the perimeter of the facility which would remain undisturbed. The proposed disturbed area will be the total disturbance needed for the life of the mine. The actual disturbed area will be reclaimed following the completion of underground mining activities.

The area to be affected during the permit term according to the mining sequence is depicted on Map 5-4A.

A bond will be posted for reclamation of the disturbed area acreage depicted on Map 5-5.

The coal pile area, truck loadout and associated facilities are shown on Map 5-5.

Noncoal waste will be stored in the main storage area immediately southwest of the shop area, as shown on Map 5-5. The locations of the fuel storage facility is shown

INCORPORATED
MAY 05 2017
Div. of Oil, Gas & Mining

Resources, Inc. commits to implementing this inspection/monitoring program effective immediately upon Division approval for full extraction of Panel #7. This monitoring plan has been reduced due to the cessation of mining at West Ridge Mine (refer to Appendix 5-13 for reduced monitoring requirements and end date).

Based on subsequent approval of the mine plan, panel #7 was extracted starting in December, 2005, and completing in September 2006. Extraction closest to the Grassy Trail Reservoir occurred in March, 2006. Monitoring, as described above, was conducted continuously during the mining of panel #7. As predicted by the RB&G report, there was no mining related damage to the dam, although some slumpage of the adjacent hillside occurred, resulting in minor movement of the west abutment of the dam. There was no loss of integrity of the earthen structure of the dam. In January, 2008, after the area above and adjacent to panel 7 had completely stabilized, RB&G Engineering prepared a post-mining Summary Report of the mining-induced seismicity. This report is included in Appendix 5-16.

After panel 7 was completed, longwall mining moved to the west side of the mains near the outcrop (more than two miles distant from the dam), and then proceeded to the northeast. Also during this time, the company went to a panel-barrier system of longwall extraction, replacing the previous side-by-side panel method. This panel-barrier system leaves a 400' wide solid barrier pillar between each longwall panel, and has significantly reduced the magnitude and frequency of mining-related seismic events. During the ensuing five years of mining, the company has continued to monitor the dam and reservoir. Results of this monitoring have been provided to all the regulatory agencies and the owners of the reservoir on a regular basis. The results of this monitoring have shown that all mining-related effects on the reservoir have stabilized. RB&G Engineering then, in September, 2010, prepared a summary report of the subsequent mining-induced seismicity, and this report is included in Appendix 5-17.

On July, 21, 2010, BLM approved the R2P2 for federal lease UTU-78562 and approved mining of panels 18, 19 and 20 on the east side of the mains in the vicinity of the Grassy Trail Reservoir. In the decision document, BLM states, *"We agree with the conclusion that mining longwall panels 18 through 20 as submitted should have no adverse effects on the dam structure or reservoir. The dam structure has seen no detectable affects from the mining of panel number 7. The proposed panels are further distant from the reservoir and much further from the Grassy Trails Reservoir dam. Also, the new panel-barrier design has reduced dramatically the amount and intensity of any mining induced seismisity or subsidence. Additionally, this mining plan will comply with the lease stipulation to not subside perennial streams, unless authorized, as the Left Fork Whitmore Canyon Stream will be under a barrier pillar and no full extraction mining is planned under the stream."* A copy of the approved R2P2 for panels 18-20 is included in Appendix 5-3C. As with the previous mining of panel 7, the company commits to conducting the same level of intensive monitoring of the dam during mining of panel block 18-20, as previously approved by the regulatory agencies, as stated above. This monitoring plan has been updated for panel block 18-21, and is included in Appendix 5-13.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

As mentioned in the BLM approval letter, mining of panel block 18-20 will be further distance away from the Grassy Trail dam than with panel 7. Panel 7 mined within 995' (horizontal) from the dam, while the closest mining from Block 18-20 would be more than 3000' (horizontal) away. Also, panel 7 was about 1664' stratigraphically lower than the dam, while panel block 18-20 is located more than 2200' lower than the dam. The hypocentral distance of panel 7 was 1939' from the dam, compared to 3723' for the closest distance for panel block 18-21. Also, panel 7 was mined using side-by-side panels, whereas panel block 18-20 will be mined as panel-barrier, further reducing the potential for seismicity.

In the 2005 approval of Panel 7, BLM added a special stipulation #17 to the federal lease related specifically to the Grassy Trail Reservoir, stating, "*The Lessee is and will remain liable for any and all damages or hazardous conditions resulting from the mining operations under the lease.*" This new 2010 BLM approval for panel block 18-20 contains reference to this same lease stipulation #17. It should also be noted that, as with previous mining of panel 7, the Utah Division of Dam Safety will have authority to stop any longwall mining of panel block 18-21 if it determines that mining-related seismicity or subsidence is creating, or has created, an unacceptable level of risk to the Grassy Trail dam or reservoir, based on monitoring at the time.

On June 17, 2011, BLM approved longwall panel 23 within the Federal lease modification UTU-78562 (see Appendix 5-3D). On September 20, 2011, BLM approved extraction of longwall panel 22, also in lease modification UTU-78562 (see Appendix 5-3E). It should be noted that there will be no longwall mining under (beneath) the Right Fork of Whitmore Canyon, nor any other mining that would result in subsidence under the drainage of the Right Fork. The only mining under the Right Fork will be a limited number of development entries associated with the longwall bleeder system. All such development mining associated with Panel #22 will be conducted at depths in excess of 2600' below the Right Fork drainage. However, due to concerns for the stream-flow in the Right Fork, the company has installed survey monitoring stations at approximate 100' intervals in the bottom of the Right Fork drainage within the permit area to detect any potential vertical or horizontal movement in the area. These monitoring stations are shown in greater detail on Map 5-7 and in Appendix 5-18. These points will be monitored for at least eighteen months after the final mining in this area has been completed and the lower (northeast) half on the mine has been sealed, according to MSHA and BLM approvals, presently scheduled for March, 2013. These points will be monitored quarterly (subject to winter-time accessability) and the results will be forwarded electronically to the Division, and will also be provided in the annual reports. Again it should be emphasized that there will be no longwall mining conducted under the Right Fork drainage. The only mining will be the development entries associated with the ventilation bleeders, identical to those previously approved by the Division for similar gate roads already developed under the Right Fork for longwall panel #20. All mining in this area is under more than 2500' of cover.

In September, 2015 mining in panel #19 was completed. This was the last panel near Grassy Trail Dam. Following that, three short panels near the portals were mined out and completed in November, 2015. The portals to the mine were then sealed in February, 2016.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

GRASSY TRAIL DAM MONITORING/INSPECTION PLAN

PANEL #7 AND PANEL BLOCK #18-21

- *Prior to longwall mining of Panel No. 7 additional subsidence control monuments were established across the crest of the dam on 100' centers, across the face of the dam midway down the slope on 200' centers, and along the toe of the dam on 200' centers.*
- *Prior to longwall mining the upper hillside accelerometer was removed, recalibrated, and relocated at the dam. The dam site accelerometer was removed, recalibrated, and relocated at a new location on the hillside approximately midway between the dam and the previous upper hillside location. In 2010, the hillside accelerometer was recalibrated and relocated northwest of the reservoir in the Left Fork of Whitmore canyon.*
- *Prior to longwall mining a seepage collection system was installed at the seep area located along the east abutment of the dam. This system was designed to collect the entire flow of the seep to a common point to allow accurate measurement of the seepage flow.*
- *Prior to longwall mining a complete set of premining baseline data was established including:*
  - *-Peizometer readings.*
  - *-Accelerometer readings.*
  - *-Inclinometer readings.*
  - *-Relative elevations of all subsidence monitoring monuments located on the dam. (Absolute elevations of all monuments were surveyed before and after extraction of longwall Panel No. 7)*
  - *-Flow rates at the east abutment seep, west abutment seep, and toe drain.*
  - *-Visual inspection of the dam, seeps, and slide area.*
  - *-Electronic photographs at predetermined designated viewpoints.*

In September, 2015 mining in panel #19 was completed. This was the last panel near Grassy Trail Dam. Following that, three short panels near the portals were mined out and completed in November, 2015. The portals to the mine were then sealed in February, 2016.

Reports compiled by RB&G Engineering show Mining-Induced Seismic Activity near the Grassy Trail Dam and Reservoir between July, 2010 and January, 2017. RB&G's reports conclude there as been no adverse effect of mining-induced seismicity on the dam or reservoir, therefore all commitments by WEST RIDGE Resources have been

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

satisfied. The data concludes there is no evidence that additional monitoring would show mining related seismic events, as all mining operations within any reasonable proximity to the dam have ceased.

WEST RIDGE Resources and RB&G Engineering will continue to monitor for Seismic activity through September, 2017, where at that time the data will be reviewed by the Division of Dam Safety, Division of Oil, Gas & Mining, Bureau of Land Management, East Carbon-Sunnyside City (herein after referred to as: the designated parties), and if no significant movement has been detected which can be linked to mining-induced seismicity, WEST RIDGE Resources monitoring responsibilities will cease, and any ongoing monitoring at the Grassy Trail Dam will fall under Utah State Dam Safety Guidelines.

On or before the end of September, 2017 WEST RIDGE Resources agrees to the terms of arranging for the installation of two new inclinometers at the Grassy Trail Dam to replace Inclinometers 2 and 3.

Seismic Monitoring:

- *RB&G will be responsible for compiling and distributing the following monthly, and event-driven inspection and monitoring reports. These reports will be generated in an electronic format and emailed on a timely basis to all designated parties.*
- ***Monthly Basis:*** *After longwall mining has ceased, the following monitoring will be conducted on a monthly basis:*

-Site reconnaissance/visual inspection (inspection will be done by the same individual to ensure consistency of visual observation interpretations).

-Accelerometer readings This information will be downloaded by RB&G and attached to the monthly summary.

-Inclinometer readings (to be taken by RB&G)

-Electronic photographs from predetermined viewpoints

-Relative elevations of subsidence monitoring monuments located on the dam. These surveys will be conducted by a registered professional surveyor.

-Electronic reporting (emails) of the monthly measurements will be combined with the fourth weekly inspection report sent to the designated parties.

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining

- ***East Carbon-Sunnyside City Responsibilities:***

The following data will be collected by East Carbon-Sunnyside City, as agreed during a tele-conference held on January 23, 2017 with all designated parties, and will be shared with RB&G Engineering to be included in Monthly Report.

East Carbon-Sunnyside City personnel is to receive training from RB&G as to how to properly monitor and report seepage flows from the designated seepage collection points. A member of the Utah Dam Safety will be present at this training.

-<u>Reservoir Elevation, Piezometer readings, Seepage Collection Drains:</u>
MonthlyBasis: When the reservoir elevation is below the 7,585-foot elevation.
Weekly Basis: When the reservoir elevation is equal to or exceeds the 7,585-foot elevation
Note: This 7,585-foot elevation is equal to 7.5-feet below the spillway.

- ***Event-driven basis:*** *In addition to the weekly and monthly inspections the following measures will be taken on an event-driven basis:*

The University of Utah seismic readings will be monitored on a daily basis, if any events are recorded greater than a magnitude 3.0 within 5 miles of the dam then, within 24 hrs of such readings, a full <u>site reconnaissance</u> and visual inspection will be conducted, and <u>accelerometer readings</u> will be taken. If the accelerometer readings show any value greater than 1.2g, then <u>inclinometer readings</u>, <u>peizometer readings</u> and <u>drain-flow</u> measurements (east seep, west seep, and toe drain) will be taken at that time. The results of these measurements will be emailed immediately to all designated parties.

- *The standardized form of the inspection/monitoring reports is included in Appendix 1-17.*

INCORPORATED

MAY 05 2017

Div. of Oil, Gas & Mining