



**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

September 28, 2018

Attn: Daron Haddock  
Permit Supervisor

Re: West Ridge Mine C/007/041  
Request to Reduce Bond

Dear Mr. Haddock,

Please find the attached request to amend the West Ridge Mine C/007/041 MRP to adjust one culvert on the property. The reasoning for this amendment is to replace the 3 six inch culverts that ran underneath the road to the crusher building access road into the loadout area (DC-8AR). These 3 culverts are a continuous maintenance issue due to the fact that they are too small and over time, the road has settled and they were no longer at the appropriate grade and sediment overwhelms one or all of the inlets. We will be replacing the 3 small culverts with one 18" culvert. The repair will handle the same amount of water that is calculated to move through the watershed, but the grade and size will be fixed to minimize or eliminate future plugging.

During this amendment, I noticed that culvert DC-8A was replaced by culvert DC-8AR in approximately 2008, however the MRP was never changed to reflect this, and it has gone unnoticed. This amendment describes these changes and associated calculations. Please note that the Culvert Design Summary tables located in Appendix 7-4 show that DC-8AR was originally put in to be a relief culvert for DC-8A, and the calculations showing that DC-8AR is capable of receiving more water than DC-8A, so the table, information, and maps are now accurate. The calculations also include any additional potential mine discharge water. Please refer to the text on page 1a for a full description. Sorry about the confusion with this amendment.

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

Sincerely,

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Karin Madsen  
Environmental Engineering Tech  
UtahAmerican Energy, Inc.

# APPLICATION FOR PERMIT PROCESSING

<input checked="" type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/007/41
Title of Proposal: WR 18-003 Culvert Replacement						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

<input type="checkbox"/> Yes	<input type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres Disturbed Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input type="checkbox"/> No	2. Is the application submitted as a result of a Division Order? DO # _____
<input type="checkbox"/> Yes	<input type="checkbox"/> No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	4. Does application include operations in hydrologic basins other than as currently approved?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	6. Does the application require or include public notice/publication?
<input 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 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 type="checkbox"/> No	9. Is the application submitted as a result of a Violation? NOV # _____
<input type="checkbox"/> Yes	<input type="checkbox"/> No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: Midterm
<input 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 type="checkbox"/> No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
<input type="checkbox"/> Yes	<input type="checkbox"/> No	13. Does the application require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	15. Does application require or include soil removal, storage or placement?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does the application require or include construction, modification, or removal of surface facilities?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	18. Does the application require or include water monitoring, sediment or drainage control measures?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	19. Does the application require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	20. Does the application require or include subsidence control or monitoring?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	21. Have reclamation costs for bonding been provided for?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
<input type="checkbox"/> Yes	<input type="checkbox"/> 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.

[Signature] / Kern Madsen / Engineering Tech. / 9-24-18  
Signed - Name - Position - Date

Subscribed and sworn to before me this 24<sup>th</sup> day of September, 2018.

[Signature]  
Notary Public  
My Commission Expires: March 27, 2021  
Attest: STATE OF Utah  
COUNTY OF Carbon



**LINDA KERNS**  
**NOTARY PUBLIC**  
**STATE OF UTAH**  
**COMMISSION # 693708**  
**COMM. EXP. 03-27-2021**

Received by Oil, Gas & Mining

ASSIGNED TRACKING NUMBER



- e) **During active mining, some water is** discharged from the mine. Before the mine was sufficiently developed to provide large settling sumps, the water was pumped into the upper cell of the sediment pond, for settling prior to discharge. At that time, calculations were updated to show the affected disturbed ditches and culverts were adequate to carry an additional 0.51 cfs or 230 gpm of mine water.

Under the present scenario, large sumps are generally made available underground to provide adequate settling to allow the mine water to be discharged directly into the bypass culvert UC-EE at the UPDES 002 outfall, as shown on Map 7-2. The bypass culvert calculations have also been upgraded to reflect the potential flow increase from this mine water; however, since this is clean water and does not have to flow through the ditches for disturbed area culverts, the calculations reflect a higher potential of up to 2.0 cfs for direct discharge water.

In the event mine water would still have to be routed through the sediment pond, the flow from the mine would not exceed the 0.51 cfs as previously approved. In this case, mine water will be discharged from a 6" pipe into ditch DD-4A, to culvert DC-4A to ditch DD-5 to culvert DC-6 to culvert DC-6 to ditch DD-6 to culvert DC-7, to ditch DD8A, to culvert **DC-8AR**, to ditch DD-11, to culvert DC-11, to culvert DC-13 and into the upper cell (A) of the sediment pond.

When mine water is determined to meet UPDES discharge standards, it may be discharged directly into the bypass culvert from the mine. In this case, up to 2.0 cfs of mine water would flow into the bypass culvert UC-EE via a 10" pipe. The water would flow from UC-EE through sections UC-GG, UC-LL, UC-NN, and exit through UC-OO, as shown on Map 7-2.

- f) **In 2003, DC-8AR was designed and installed to serve as a relief culvert to DC-8A due to its continual maintenance issues. In 2008 it was determined that DC-8A was poorly designed and was ultimately installed in a location which was hindering mining operations, and so it was removed. DC-8AR is now used in place of DC-8A.**

**All affected culverts and ditches have been sized to adequately carry the required 10 year- 24 hour runoff, plus the mine water if necessary.**

precipitation events and all trash, branches and other obstructions will be removed.

The outlet of the main canyon bypass culvert (UC-OO) has been equipped with an adequately sized rip-rap apron to slow the outlet velocity sufficiently to prevent erosional damage to the natural downstream channel. (See Figure 6).

It should be noted that all undisturbed area culverts are adequately sized to handle the expected runoff from a 100 year - 6 hour event for maximum protection of the mine area, sediment pond and undisturbed drainage. This is well in excess of the 10 year - 6 hour event required by the regulations and is proposed as an extra measure of safety.

Disturbed area culverts and ditches are shown on the Minesite Drainage Plan, Map 7-2. Culverts carrying disturbed drainage are designated with a DC-number (i.e. DC-1). Calculations for all disturbed area culverts and ditches are also included with this report, along with design criteria. Disturbed drainage areas draining to culverts and ditches are marked with a DA-number (i.e. DA-1).

**DC-8AR was added to replace DC-8A. (See page 1a and Table 15)**

Undisturbed drainage areas report to undisturbed area drainage culverts with corresponding subscripted letters; for example undisturbed drainage area UA-FF reports to undisturbed area drainage culvert UC-FF. Other undisturbed drainage areas, subscripted with numbers, report to disturbed drainage area ditches with corresponding subscripted numbers; for example undisturbed drainage area UA-3 reports to disturbed area drainage ditch DD-3.

Design detail for all undisturbed drainage culverts is shown on the Undisturbed Drainage Culvert Profile, Map 5-8.

Culverts will be inspected regularly, and cleaned as necessary to provide for passage of design flows. Inlets and outlets shall also be maintained so as to prevent plugging or undue restriction of water flow.

**TABLE 10 (Continued)**  
**DRAINAGE STRUCTURES**

DC-2	DD-2 + DD-3	
DC-4a	DD-4a	
DC-5	DA-5, UA-5	
DC-6	DD-5	
DC-7	DD-6, DD-8	
DC-8	DA-8	
DC-8ar	DD-8a	
DC-9	DD-9	To Upper Pond
DC-10	DA-10	
DC-10A	DD-10	
DC-11	DD-11	
DC-12	DD-12	To Lower Pond
DC-13	DD-11, DD-13	To Upper Pond

**TABLE 11 (Continued)**  
**DRAINAGE STRUCTURE FLOW SUMMARY**

<b>Structure</b>	<b>10/6 Cfs</b>	<b>10/24 Cfs</b>	<b>25/6 Cfs</b>	<b>100/6 Cfs</b>	<b>Flows To:</b>
DC-2	5.01	19.65	9.61	16.96	Sediment Pond
DC-4a	5.08	18.32	9.24	15.83	Sediment Pond
DC-5	0.57	1.25	0.82	1.18	Sediment Pond
DC-6	1.26	2.81	1.84	2.68	Sediment Pond
DC-7	7.88	24.55	13.32	21.75	Sediment Pond
DC-8	0.62	1.37	0.89	1.27	Sediment Pond
DC-8ar	7.3	23.43	12.51	20.6	Sediment Pond
DC-9	1.26	2.86	1.88	2.75	To Upper Pond
DC-10	2.58	7.44	4.09	6.52	Sediment Pond
DC-11	7.58	24.05	12.92	21.18	Sediment Pond
DC-12	4.11	13.51	6.99	11.62	To Lower Pond
DC-13	7.86	24.66	13.32	21.74	To Upper Pond

**TABLE 14  
DISTURBED CULVERT DATA**

<b>Culvert ID</b>	<b>Length</b>	<b>Slope %</b>	<b>Manning's No.</b>
DC-2	45	2.0%	0.020
DC-4A	170	6.0%	0.020
DC-5	25	2.0%	0.020
DC-6	80	2.0%	0.020
DC-7	50	2.0%	0.020
DC-8	50	10.0%	0.020
<b>DC-8AR</b>	<b>40</b>	<b>16.0%</b>	<b>0.020</b>
DC-9	120	25.0%	0.020
DC-10	85	25.0%	0.020
DC-10A	60	20.0%	0.020
DC-11	60	5.0%	0.020
DC-12	75	10.0%	0.020
DC-13	65	5.0%	0.020

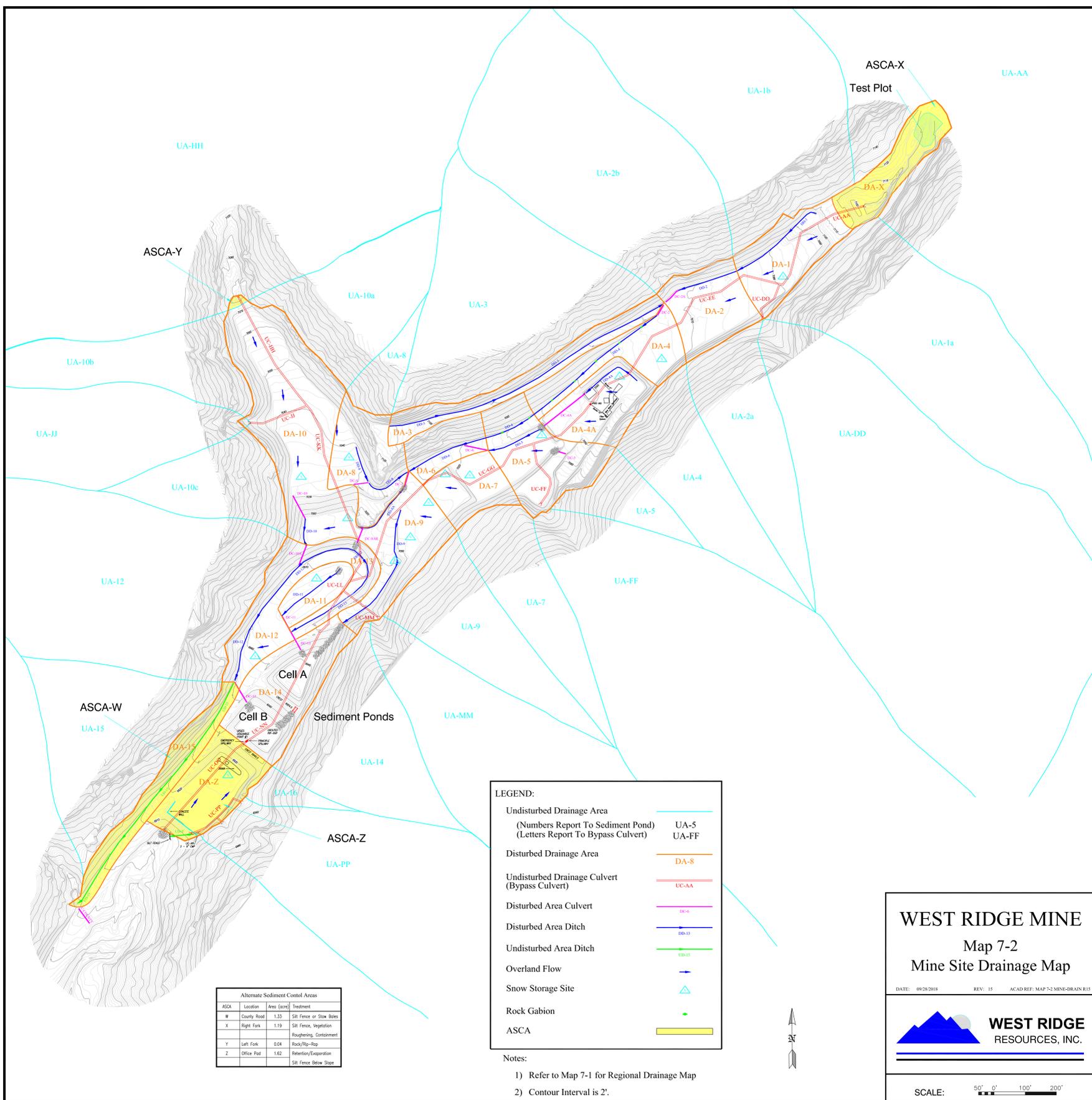
**DC-8A replaced by DC-8AR**

**TABLE 15  
DISTURBED CULVERT DESIGN SUMMARY**

Culvert	10 yr - 6 hr Event 1.30"			10 yr - 24 hr Event 2.00"			Recommended Construction Diameter (ft.)	Flow Capacity (cfs)	Rip-Rap Req'd Y/N	Rip-Rap D <sub>50</sub>
	Peak Flow Cfs	Velocity fps	Min. Diam. Req'd ft.	Peak Flow Cfs	Velocity fps	Min. Diam. Req'd ft.				
	DC-2	4.40	4.49	1.12	16.82	6.28				
DC-4A	0.69	4.27	0.45	1.56	5.23	0.62	1.5	16.72	N	-
DC-5	0.57	2.69	0.52	1.25	3.28	0.70	1.5	9.66	N	-
DC-6*	1.77	3.58	0.79	3.32	4.18	1.01	1.5	9.66	N	-
DC-7*	7.81	5.18	1.39	23.94	6.86	2.11	2.0	20.80	Y	0.50
DC-8	0.62	5.03	0.40	1.37	6.13	0.53	1.5	21.59	Y	0.50
DC-8AR*	7.81	11.30	0.94	23.94	14.95	1.43	1.5	27.31	Y	1.20
DC-9	1.26	8.47	0.44	2.86	10.39	0.59	1.5	34.14	Y	0.75
DC-10	2.58	10.13	0.57	7.44	13.20	0.85	1.5	34.14	Y	1.00
DC-10A	2.58	9.32	0.59	7.44	12.14	0.88	1.5	30.53	Y	1.00
DC-11*	8.09	7.37	1.18	24.56	9.73	1.79	2.0	32.88	Y	0.50
DC-12*	4.62	8.31	0.84	14.02	10.97	1.28	1.5	21.59	Y	0.75
DC-13*	8.37	7.43	1.20	25.17	9.79	1.81	2.0	32.88	Y	0.50

\* Includes 0.51 cfs Mine Water.

\*\* Mine Water Only.



Alternate Sediment Control Areas			
ASCA	Location	Area (acre)	Treatment
W	County Road	1.33	Silt Fence or Slow Boies
X	Right Fork	1.19	Silt Fence, Vegetation
Y	Left Fork	0.04	Rocks/Rip-Rap
Z	Office Pad	1.62	Retention/Evaporation Silt Fence Below Steps

**LEGEND:**

- Undisturbed Drainage Area  
(Numbers Report To Sediment Pond)  
(Letters Report To Bypass Culvert)
  - UA-5
  - UA-FF
- Disturbed Drainage Area
  - DA-8
- Undisturbed Drainage Culvert  
(Bypass Culvert)
  - UC-AA
- Disturbed Area Culvert
  - UC-6
- Disturbed Area Ditch
  - DD-13
- Undisturbed Area Ditch
  - UD-15
- Overland Flow
  - Blue arrow
- Snow Storage Site
  - Blue triangle
- Rock Gabion
  - Green diamond
- ASCA
  - Yellow shaded area

**Notes:**

- 1) Refer to Map 7-1 for Regional Drainage Map
- 2) Contour Interval is 2'.

**WEST RIDGE MINE**  
 Map 7-2  
 Mine Site Drainage Map

DATE: 09/28/2018    REV: 15    ACAD REF: MAP 7-2.MINE-DRAIN R15

**WEST RIDGE**  
 RESOURCES, INC.

SCALE: 50' 0' 100' 200'