



June 6, 2018
Submitted

Electronically

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

**Subject: Amendment to Cottonwood/Wilberg Mine MRP, PacifiCorp,
Wilberg/Cottonwood Mine C/015/0019, Emery County, Utah.**

PacifiCorp, by and through its wholly-owned subsidiary, Interwest Mining Company, "Interwest", as mine operator, hereby submits an amendment to amend the Cottonwood/Wilberg Mine MRP, to reflect hydrologic monitoring transitioning from post mine closure to reclamation:

- Volume 1, Part 2 Environmental Resources, Appendix A (replace entire section including Map HM-1B)
- Volume 9, Hydrologic Section Appendix A-2 (replace entire section including Map HM-1B)

PacifiCorp completed the final phase of reclamation on March 22, 2018. Final phase included complete land restoration of the Grimes Wash mine site, including removal of the sediment ponds and complete land restoration of the Old Waste Rock Storage Site.

This submittal includes revision to Volume 1, Part 2, Appendix A and Volume 9 Hydrologic Section Appendix A-2. The required C1/C2 forms are also included with this submittal.

If you have any questions concerning this submittal, please contact Dennis Oakley at 435-687-4825.

Sincerely,

Kenneth Fleck
Geology and Environmental Affairs Manager

Cc: file

Encl. Volume 1, Part 2, Appendix A
 Volume 9 Hydrologic Section Appendix A-2
 C1/C2 Forms

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: PacifiCorp

Mine: Wilberg/Cottonwood Mine

Permit Number: C/015/0019.

Title: Amendment to Cottonwood/Wilberg Mine MRP, PacifiCorp, Wilberg/Cottonwood Mine C/015/0019, Emery County, Utah.

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

Reflect hydrologic monitoring transitioning from post mine closure to reclamation

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

- Yes No 1. Change in the size of the Permit Area? Acres: _____ increase decrease.
- Yes No 2. Is the application submitted as a result of a Division Order? DO# _____
- Yes No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- Yes No 4. Does the application include operations in hydrologic basins other than as currently approved?
- Yes No 5. Does the 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: _____
- 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 the 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 calculation?
- Yes No 20. Does the application require or include subsidence control or monitoring?
- Yes No 21. Have reclamation costs for bonding been provided?
- Yes No 22. Does the 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?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

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

Kenneth Fleck
Print Name

Kenneth S. Fleck
Sign Name, Position, Date

Manager of Environmental Affairs JUNE 6, 2018

Subscribed and sworn to before me this 06th day of June, 2018

Miranda Lofley
Notary Public

My commission Expires: Utah 03-26, 2022 } ss:
Attest: State of _____ }
County of Emery



For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	Received by Oil, Gas & Mining
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Form DOGM - C2 (Revised March 12, 2002)

PACIFICORP
ENERGY WEST MINING
HYDROLOGIC MONITORING PROGRAM
COTTONWOOD-WILBERG MINE

SURFACE HYDROLOGY - OPERATIONAL SAMPLING (Table 1)

<u>Drainage System</u>	<u>Drainage</u>	<u>Location</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
<i>Cottonwood Creek Drainage System</i>	<i>Cottonwood Canyon Creek</i>	CCC01	Flow	Flow	Field									
	<i>Grimes Wash</i>	GWR01	Flow	Flow	Operational									
		GWR02	Flow	Flow	Operational									
		GWR03	Flow	Flow	Operational									

GROUNDWATER HYDROLOGY - OPERATIONAL SAMPLING (Table 2)

<u>Groundwater Type</u>		<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
<i>Springs</i>	N/A												
<i>In-Mine</i>	N/A												
<i>Wells</i>	N/A												

UPDES SAMPLING - (Table 1)

			<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
<i>Mine Water Discharge</i>	<i>Cottonwood</i>	TMA	Operational											
<i>Sediment Pond Discharge</i>	<i>Cottonwood</i>	1-Outfall	Operational											

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SURFACE HYDROLOGY - BASELINE SAMPLING (Table 1)

2021

<u>Drainage System</u>	<u>Drainage</u>	<u>Location</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
	<i>Cottonwood Canyon Creek</i>	CCC01	Flow	Flow	Field									
<i>Cottonwood Creek Drainage System</i>	<i>Grimes Wash</i>	GWR01	Flow	Flow	Baseline									
		GWR02	Flow	Flow	Baseline									
		GWR03	Flow	Flow	Baseline									

GROUNDWATER HYDROLOGY - BASELINE SAMPLING (Table 2) - 2011

<u>Groundwater Type</u>		<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
<i>Springs</i>	N/A												
<i>In-Mine</i>	N/A												
<i>Wells</i>	N/A												

UPDES SAMPLING - (Table 1)

			<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
<i>Mine Water Discharge</i>	<i>Cottonwood</i>	TMA	Operational											
<i>Sediment Pond Discharge</i>	<i>Cottonwood</i>	1-Outfall	Operational											

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SURFACE HYDROLOGY - RECLAMATION SAMPLING (Table 1)

<u>Drainage System</u>	<u>Drainage</u>	<u>Location</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Cottonwood Creek Drainage System	Cottonwood Canyon Creek	CCC01			Field			Field			Field			Field
	Grimes Wash	GWR01			Operational			Operational			Operational			Operational
		GWR02			Operational			Operational			Operational			Operational
		GWR03			Operational			Operational			Operational			Operational

GROUNDWATER HYDROLOGY - RECLAMATION SAMPLING (Table 2)

<u>Groundwater Type</u>		<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Springs	N/A												
In-Mine	N/A												
Wells	N/A												

UPDES SAMPLING - (Table 1)

			<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Mine Water Discharge*	Cottonwood	TMA	As Needed Basis According to UPDES Permit Stipulations											
Sediment Pond Discharge	Cottonwood	1 Outfalls	As Needed Basis According to UPDES Permit Stipulations											

* After Portal Sealing, PacifiCorp Will Monitor Down Dip For Development Of Groundwater Seeps/Springs Until Bond Release

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HYDROLOGIC MONITORING PROGRAM
WILBERG/COTTONWOOD MINE

I. MONITORING LOCATIONS – WILBERG/COTTONWOOD MINE

A. Surface Water Hydrology (for maps refer to Deer Creek, Wilberg/Cottonwood Mine: Volume 9 Map HM-1B)

1. Cottonwood Creek Drainage System

a. ~~Cottonwood Canyon Creek~~ (refer to Deer Creek and Wilberg/Cottonwood Mine: Volume 9 Map HM-1B)

(1) ~~CCC01 USGS Flume:~~

~~(Approximately 7800 feet downstream from the outlet culvert for the disturbed area.) 1500 feet North, 200 feet East of the Southwest corner of Section 31, Township 17 South, Range 7 East.~~

b. **Grimes Wash** (refer to Deer Creek and Wilberg/Cottonwood Mine: Volume 9 Map HM-1B)

(1) GWR01 - Right Fork:

(Approximately 1500 feet upstream of **reclaimed drainage**~~the inlet culvert for the disturbed area.~~) 550 feet North, 1500 feet West of the Southwest corner of Section 22, Township 17 South, Range 7 East.

(2) GWR02 - Left Fork:

(Approximately 50 feet upstream of the **reclaimed drainage**~~inlet culvert for the disturbed area.~~) 200 feet South, 2350 feet East of the Northwest corner of Section 27, Township 17 South, Range 7 East.

(3) GWR03 - Below the mine:

(Approximately 500 feet downstream of **reclaimed drainage**~~the outlet culvert below the disturbed area.~~) 1770 feet South, 1820 feet West of the Northeast corner of Section 27, Township 17 South, Range 7 East.

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WILBERG/COTTONWOOD MINE

2. **Reclamation Monitoring:** Following final reclamation, backfilling and grading monitoring will be conducted at points immediately above and below the reclaimed site.

~~B. Groundwater Hydrology~~

~~1. Piezometric Data~~

~~The Wilber/Cottonwood Mine has been sealed since 2001. There are no accessible in-mine sampling locations.~~

~~2. In-Mine Water Locations~~

~~The Wilber/Cottonwood Mine has been sealed since 2001. There are no accessible in-mine sampling locations.~~

~~3. Waste Rock Wells (None)~~

C. UPDES Monitoring Locations

- a. *Wilberg/Cottonwood Mines*
UPDES UT0022896
001- Mine Discharge @ Cottonwood Canyon (TMA)
~~003- Sediment Pond @ Mine Facilities~~

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WILBERG/COTTONWOOD MINE

II. MONITORING SCHEDULE *(see enclosed monitoring schedules for operational, baseline, and reclamation monitoring)*

A. Field Measurements

Field Measurements collected during quality sampling: Listed below are the sites which will be monitored by PacifiCorp - Energy West in accordance with the guidelines established by DOGM; i.e.

- Date and Time
- Flow
- pH
- Temperature
- Conductivity
- Dissolved oxygen (perennial streams only)

Surface Monitoring

Surface monitoring locations will be field monitored quarterly for all field parameters; ~~except Indian Creek—monitoring to be conducted during baseflow only.~~

1. Cottonwood Canyon Creek

a. ~~Cottonwood Canyon Creek~~

~~(1) CCC01—USGS Flume~~

b. Grimes Wash

(1) GWR01

(2) GWR02

(3) GWR03

~~Groundwater Monitoring~~

~~There is only one groundwater monitoring site for the Wilberg/Cottonwood Mine.~~

UPDES Monitoring

1. Wilberg/Cottonwood

UPDES sites 001 ~~and 003~~, will be monitored as specified in the individual permits.

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WILBERG/COTTONWOOD MINE

Reclamation Monitoring

Surface Water Resources: (see enclosed summary of operational, baseline, and reclamation monitoring schedules)

Surface monitoring locations will be field monitored monthly for flow and all field parameters quarterly until bond release.

Ground Water Resources: (N/A)

UPDES: Sites will be monitored as specified in the individual permits.

B. Quality Sampling (Laboratory Measurements)

1. Surface Water Hydrology: Water samples will be collected and analyzed quarterly (one sample at low flow and high flow) during the first or second week of the quarter. Parameters analyzed are those listed in the DOGM Guidelines for Surface Water Quality (see Table 1-Surface Water Quality Parameter List). Quarterly sampling was initiated during March 1988 and will continue throughout the year; i.e., June, September, and December. Baseline analysis was performed in 2011 and will be repeated every five years there-after.

a. Cottonwood Creek Drainage

~~(1) Cottonwood Canyon Creek~~

~~—— (a) CCC01 — USGS Flume~~

(2) Grimes Wash

(a) GWR01

(b) GWR02

(c) GWR03

Reclamation Monitoring - Surface Water Hydrology: Water samples will be collected and analyzed quarterly (one sample at low flow and high flow) during the first or second week of the quarter. Parameters analyzed are those listed in the DOGM Guidelines for Surface Water Quality (see Table 1-Surface Water Quality Parameter List). Sampling will be conducted on a quarterly basis until bond release. Baseline analysis will be performed on the 5th and 9th years following reclamation. In no case

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WILBERG/COTTONWOOD MINE

will baseline sampling time frame exceed 5 years converting from operational to reclamation monitoring.

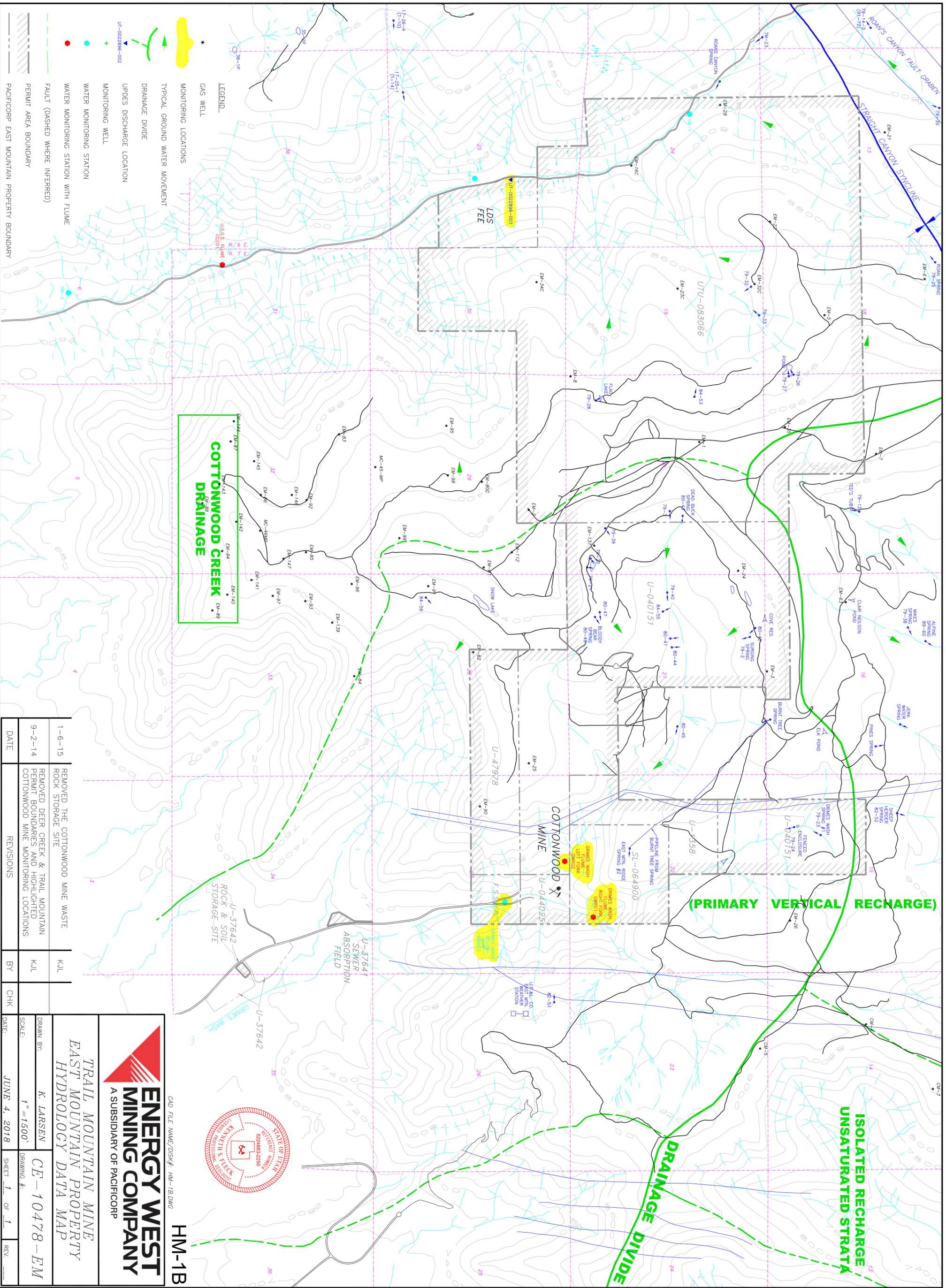
2. UPDES Monitoring Sites

- a. Wilberg/Cottonwood Mines

UPDES sites will be monitored as specified in the individual permits.

III. ANNUAL REPORTS

All data collected regarding the hydrology of East Mountain will be summarized by the applicant in an annual Hydrologic Monitoring Report. Copies of the report will be submitted to the Utah State Division of Oil, Gas and Mining. In addition, any raw data collected will be submitted to the Utah State Division of Oil, Gas and Mining on a quarterly basis.



COTTONWOOD CREEK DRAINAGE

(PRIMARY VERTICAL RECHARGE)

ISOLATED RECHARGE UNSATURATED STRATA



**TRAIL MOUNTAIN MINE
EAST MOUNTAIN PROPERTY
HYDROLOGY DATA MAP**

DATE:	JUNE 4, 2018	SHEET:	1	OF:	1	REV.	---						
SCALE:	1" = 1500'	DRAWING #:	CE-10478-EM										
BY:	KIL	CHK:											
REVISIONS:	<table border="1"> <tr> <td>1-6-15</td> <td>REMOVED THE COTTONWOOD MINE WASTE ROCK STORAGE SITE</td> <td>KIL</td> </tr> <tr> <td>9-2-14</td> <td>REMOVED DEER CREEK & TRAIL MOUNTAIN PERMIT BOUNDARIES AND HIGHLIGHTED COTTONWOOD MINE MONITORING LOCATIONS</td> <td>KIL</td> </tr> </table>							1-6-15	REMOVED THE COTTONWOOD MINE WASTE ROCK STORAGE SITE	KIL	9-2-14	REMOVED DEER CREEK & TRAIL MOUNTAIN PERMIT BOUNDARIES AND HIGHLIGHTED COTTONWOOD MINE MONITORING LOCATIONS	KIL
1-6-15	REMOVED THE COTTONWOOD MINE WASTE ROCK STORAGE SITE	KIL											
9-2-14	REMOVED DEER CREEK & TRAIL MOUNTAIN PERMIT BOUNDARIES AND HIGHLIGHTED COTTONWOOD MINE MONITORING LOCATIONS	KIL											



HM-1B

- LEGEND**
- * GAS WELL
 - MONITORING LOCATIONS
 - TYPICAL GROUND WATER MOVEMENT
 - DRAINAGE DIVIDE
 - UPDES DISCHARGE LOCATION
 - MONITORING WELL
 - WATER MONITORING STATION
 - WATER MONITORING STATION WITH FLUME
 - FAULT (DASHED WHERE INFERRED)
 - PERMIT AREA BOUNDARY
 - PACIFICORP EAST MOUNTAIN PROPERTY BOUNDARY

DATE:	1-6-15	REVISIONS:	REMOVED THE COTTONWOOD MINE WASTE ROCK STORAGE SITE	BY:	KIL
	9-2-14		REMOVED DEER CREEK & TRAIL MOUNTAIN PERMIT BOUNDARIES AND HIGHLIGHTED COTTONWOOD MINE MONITORING LOCATIONS		KIL

CAD FILE NAME/DISK#: HM-1B.DWG