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SUBJECT: Genwal Coal Company Crandall Canyon Mine - Permit #015-032.
1988 and 1991 Permit Versions of Chapter 7 - Hydrology.
1990 Permit Modifications to Chapter 13 - Right-of-Way.

Dear Daron:

As per your request, please find enclosed changes to Genwal Coal Company's Crandall Canyon Mining and Reclamation Plan, made to Chapter 7 (hydrology) between the dates of February 1988 and February 1991. Also enclosed are those changes made to Chapter 13 (right-of-way) between the summer and September 25, 1990. A list of these changes was requested during a meeting at DOGM's offices in SLC on December 12, 1991 attended by Genwal (Jay Marshall, Randal and Tawna Ralphs), EarthFax (Brent Bovee), and DOGM personnel (Daron Haddock, Rick Summers, Sharon Falvey).

Listed below are changes made to Chapters 7 and 13. The motivation for making these permit modifications are found in the description of each permit change.

CHAPTER 7 - HYDROLOGY

Changes made to Chapter 7 between 1988 and 1991 are listed below. Copies of those pages that contain changes in the 1988 and 1991 permit versions are found in Appendices 1 and 2, respectively.

1/ Page 7-29
1988 & 1991 versions

The 1988 version states that the water source associated with WUC 93-1407 had not been found, and was therefore surmised to exist as only a seep, not a major water source.

The 1991 version states that spring SP-47a (WUC 93-1407) had been found. Prior to the fall of 1990 SP-47a had not been found and WUC 93-1407 could not be monitored.

This permit change was made to bring the permit up to date with newly found hydrologic resources.

2/ Page 7-36
1988 & 1991 versions

The 1988 version commits to sampling selected springs during the months of June through September.

The 1991 version commits to sampling the springs quarterly.

This change was made to bring the times during the year when the springs are to be sampled in agreement with the sampling schedule of the in-mine sampling points. Bringing these sampling schedules in agreement was done to alleviate confusion of when sampling was required to be performed.

3/ Page 7-37
1988 & 1991 versions

The 1988 version commits to sampling spring SP-30 every fifth year (1990, 1995, etc.) during the low-flow period of the year (normally October), and analyze the sample according to Table 7-5.

The 1990 version commits to the identical analysis procedure (Table 7-5) and sampling frequency, but commits to having the sample analyzed according to Table 7-5 be the sample collected in the fourth quarter rather than that collected in October.

This change was done to standardize the sampling schedules.

The 1988 version commits to performing an inventory of the active portions of the mine to detect mine inflow in January, April, July, and October. Selected inflow points are to be monitored and sampled quarterly. Fifth-year samples, analyzed according to Table 7-5, are to be normally collected in October.

The 1991 version commits to performing both the mine inventories, sample collection, and fifth-year analyses (Table 7-5), quarterly.

This change was done to standardize the sampling schedules.

4/ Page 7-40
1988 & 1991 versions

The 1988 version states that Genwal is applying for a modification to their NPDES permit.

This paragraph is deleted in the 1991 edition.

This paragraph was deleted to bring the permit up to date with current mining plans. If a

modification to the NPDES permit is desired, a modification will be submitted at that time.

The 1988 version states that the water source for water right WUC 93-1407 was not found, and was thus surmised to exist as only a seep, and hence did not warrant monitoring.

The 1991 edition states that WUC 93-1407 has been found and monitoring has been committed to.

This change was made to bring the permit up to date with changes in the groundwater monitoring plan.

The 1988 permit states that the groundwater monitoring wells will be drilled, completed, and tested.

The 1991 version brings the permit up to date by saying the wells were drilled, and gives drilling, completion, and testing information.

These changes were made to bring the permit up to date with past drilling activity.

5/ Page 7-41
1988 & 1991 versions

The 1988 version states that water level measurements and water quality samples will be collected from the monitoring wells quarterly. Analyses will be conducted according to Table 7-5 for a period of two years following completion, and at 5-year intervals.

The 1991 version states that water level measurements and water quality samples will be collected from the monitoring wells quarterly. Analyses will be conducted according to Table 7-5 for a period of two years following completion, in the years 1990, 1995, 2000, and in 5-year intervals thereafter.

This change was made to standardize the monitoring and sample collection schedules.

6/ Page 7-42

This page in the 1991 version was submitted due to changes in pagination that resulted from test changes in page 7-41. As a result of Daron Haddock's suggestion, future submittals will be

numbered alphanumerically and dated, rather than submitting new pages with no text changes.

7/ Page 7-81
1988 & 1991 versions

The 1988 version states that two 36-inch Parshall Flumes were installed in Crandall Creek.

The 1991 version states that two 36-inch Parshall Flumes, and a 12-inch flume were installed in Crandall and Blind Creeks, respectively.

This change was made to bring the permit up to date with the surface water monitoring plan.

8/ Pages 7-81 & 7-88
1988 Version

The 1988 version states that flume water quality samples will be collected quarterly (normally January, April, July, and October). Every fifth year (1990, 1995, etc.). The samples collected during the low-flow period (normally October) will be analyzed according to Table 7-9.

Pages 7-81 & 7-89
1991 Version

The 1991 submittal states that samples from the flumes will be analyzed quarterly. In the years 1990, 1995, 2000, and every fifth year thereafter the samples collected during the low-flow period (normally the fourth quarter) will be analyzed according to Table 7-9. Sampling and analysis will be conducted quarterly until the surface areas are reclaimed, at which time sampling will be conducted semiannually until the surety bond is released.

This submittal was made to: 1) allow collection of the fourth quarter sample during other fourth quarter months than October, if the sites are inaccessible during October due to weather and/or ground conditions, and 2) clarify what sampling frequency is to be conducted following cessation of mining operations.

9/ Pages 11 & 13
Apx. 7-7, 1988 Version

The 1988 submittal shows calculations used to justify use of an 18-inch pipe to control flow from WS-3.

Pages 11, 13, & 13a
Apx 7-7, 1991 Version

The 1991 version contains calculations showing use of a 12-inch pipe is adequate to handle flow from the regulated storm event.

This submittal was made at a time when the 18-inch pipe was in need of repair/replacement. A 12-inch pipe was designed to bring the diversion into compliance with the most current mining regulations.

CHAPTER 13 - RIGHT-OF-WAY

Changes made to Chapter 13 between the summer of 1990, when this chapter was initially submitted, and September 25, 1990 are listed below. Copies of those pages that contain changes in the summer 1990, and September 1990 permit versions are found in Appendices 3 and 4, respectively.

1/ Page 13-10
Both Versions

The summer 1990 version states that the water source associated with WUC 93-1407 was not found during any of the seep and spring inventories. This water source was hence assumed to exist as only a seep, and thereby does not warrant monitoring.

The September update states the water source associated with WUC 93-1407, spring SP-47a was found on September 20, 1990

This permit modification was made to bring the permit up to date with the most current hydrologic resources.

2/ Page 13-13
Both Versions

The summer 1990 version commits to mitigating diminution or interruption of water flows that result from mining activity, with the use of a guzzler, on a case-by-case basis.

The September 1990 version commits to replacing the water resources in quality and quantity on a case-by-case basis.

This permit modification was made in response to a letter dated July 31, 1990 from the Manti-LaSal Forest to Dianne Nielson.

The original Chapter 13 does not commit to monitoring WUC 93-1407 (SP-47a) since it had not been found at this time.

The September 25, 1990 version commits to monitoring WUC 93-1407 (SP-47a) for quality and quantity, as outlined in section 7.1.6.

This permit modification was made to bring the permit up to date with the most recent monitoring plans for the known hydrologic resources present in the right-of-way area.

If you have any questions or comments please contact either myself (561-1555),
or Jay Marshall (687-9813) of Genwal Coal Company.

Sincerely,

A handwritten signature in cursive script that reads "Brent Bovee". The signature is written in black ink and is positioned above the typed name and title.

Brent K. Bovee
Geologist