0028

Orig. File
OB 6-10-93
D. Haddock
J. Carter
L. Braxton

# CASTLE VALLEY SPECIAL SERVICE DISTRICT

P.O. BOX 877
CASTLE DALE, UTAH 84513
TELEPHONE (801) 381-5333

May 12, 1993

DORR W. HANSON
Chairman
DARREL V. LEAMASTER
Manager

RECEIVED
MAY 14 1993
DIVISION OF
OIL, GAS & MINING

James W. Carter, Director
Utah Dept of Natural Resources
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Genwall Coal Company Renewal of Mining and Reclamation Plan Permit ACT/015/032

Dear Mr Carter:

The Genwall Coal Company recently published a Legal Notice in the Emery County Progress dated March 23, 30 and April 6 and 13, 1993, to renew their Mining Permit, for the Crandall Canyon #1 coal mine. We believe that our District may be adversely affected by that mining activity and we would like to respond to the application. Our concerns are with the hydrology and its affects upon Little Bear Spring.

The Castle Valley Special Service District operates and maintains the culinary water system for the communities of Huntington, Cleveland and Elmo. The main source of water for these communities is the Little Bear Spring. The Little Bear Spring has been an important water source used by Huntington City since the early 1950's. The spring is located in Little Bear Canyon which is adjacent to and just downstream of Crandall Canyon. The spring is located about 9,000 feet from the mine portal. Please refer to the attached map, marked Exhibit A.

We have expended considerable amounts of money for the development and transmission lines to these springs. These springs are an important part of our water supply and we are vitally concerned with their future quality and quantity of flow. The value of this water source is impossible to estimate. The water they produce is of excellent quality. It has met all of the rigid MCL standards of the Safe Drinking Water Act. Every water test we have ever taken on it has met the State and Federal standards for drinking water. The attached table provides all of the pertinent flow data from the spring. Historically the Little Bear Spring has produced between 55 and 60% of our total supply.

We have reviewed the Genwall Permit; particularly Chapter 6, Geology and Chapter 7, Hydrology; and have not found any reference to this vital spring. There is no mention of possible flow or quality impacts that mining might have on the Little Bear Spring. They conclude that "The Crandall Canyon Mine should not have any adverse effects on surface or ground water in the permit area nor adjacent areas." We question this conclusion when they have not even recognized our spring or attempted to address impacts they may have on it.

The Little Bear Spring lies just outside of Genwal's study area boundary. The study area boundary follows the ridge that separates Little Bear and Crandall Canyons. We suggest that the groundwater flows are not separated by the surface topography (the ridge) and that Little Bear Spring should be included in the Study Area.

In 1992 the Castle Valley Special Service District engaged Mr. S. Bryce Montgomery, Professional Geologist, to study our springs in the Huntington Canyon Area. As part of this study Mr. Montgomery researched numerous other studies and mine permits for this area. He also has done field study and has mapped the faults and joints in the area. His report describes the nature of ground water movement as follows:

"Mapping of faults and joints present within the bedrock, observed from aerial photography and field study of rock surface outcrops, and information from mining encounters, in conjunction with groundwater discharge occurrences as spring and base-flow of streams, clearly show that the infiltrating water moves as groundwater principally through numerous, near-vertical joints and faults within the bedrock formations, but also along bedding planes and to a lesser degree through intergranular permeability in the sandstone beds. This ground water is constantly working its way downward under differential head through the various formations present. Commencing at the surface these formations are top soil, Flagstaff Limestone, North Horn Formation, Price River Formation, Castle Gate Sandstone, Blackhawk Formation, and Star Point Sandstone. Upon reaching the base of the Star Point Sandstone, the downward-moving ground water is deflected laterally upon encountering the top of the Mancos Shale which serves as an effective floor. Thus, the Star Point Sandstone and in places parts of the overlying Blackhawk Formation, depending upon the particular location and degree of water saturation, serve as the principal aquifer of the region.

In general all of the springs and the two Tie Fork flowing wells in the region are closely associated with faults and/or jointing. Down-warping of the rock strata in local areas aids in gathering and concentrating the moving ground water, especially for Little and Big Bear Springs.

Wherever coal mining operations in the region intersect the groundwater flow paths, upgradient from existing springs, wells and streams, and divert a part of the encountered ground water to their use or discharge it out of the original natural flow paths, an impact on existing water flows has and will be made."

Mr. Montgomery has identified a syncline that exists in the Little Bear Canyon area. He believes that it gathers water from the surrounding area, through faults and fractures, and discharges it at the Little Bear Spring. Mining in the up gradient areas above the spring may intercept the faults and fractures and adversely impact the spring flowrate.

In a letter dated February 10, 1993, to our District he states: "Also, from the recent map that you sent me showing the proposed expansion of the Genwal Coal Co., Inc. coal mining into Sections 1 and 2, T 16 S, R 6 E, and Secs. 31 and 32, T 15 S, R 7 E, I agree that you have just reason for concern relative to impacting Little Bear Springs. The principal groundwater recharge area for Little Bear Spring is the synclinal area of East Mountain immediately to the west, southwest, and northwest of the subject springs. Likely, ground water within the Blackhawk Formation will be encountered by the extended coal mining in the W/2 Sec. 1 and all of Sec 2, T 16 S, R 6 E. As the ground water is intercepted and conveyed out of the mine workings, and probably discharged into Crandall Canyon, it will eventually subtract from and adverse the original, natural recharge to the Little Bear Springs which are located near the center of Sec. 9, T 16 S, R 7 E."

As you can see from the above information we have ample reason to be concerned about our spring. The Genwall mining operations could easily impact the quality and/or flow to our spring. We feel that Genwal's permit is very inadequate in addressing these concerns. As a responsible corporate citizen of the area they should address these concerns and be willing to mitigate any impacts that they might cause. We specifically request the following actions be taken.

1. Genwal should increase their Hydrologic Study Area to include the Little Bear Canyon Spring Area.

2. Genwal should revise their Hydrology Section to address their probable impacts on the Little Bear Spring.

3. Genwal should enter into a contract with our District to address how they would mitigate adverse impacts on our spring caused by their mining operations.

4. DOGM require that the above actions be taken prior to approval of mining permit.

We thank you for considering our interests in this matter. We look forward to future involvement with DOGM and Genwall on these concerns.

Very truly yours,

Darrel V. Leamaster, P.E.
District Manager

cc: Genwal Coal Company
Utah Division of Drinking Water

## LITTLE BEAR SPRING AVERAGE MONTHLY FLOW (gpm)

| YEAR | JAN AVG FLOW | FEB AVG FLOW | MAR AVG FLOW | APR AVG FLOW | MAY AVG FLOW | JUN AVG FLOW | JUL AVG FLOW | AUG AVG FLOW | SEP AVG FLOW | OCT AVG FLOW | NOV AVG FLOW | DEC AVG FLOW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 | 296 | 291 | 286 | 283 | 321 | 435 | 438 | 409 | 356 | 337 | 330 | 325 |
| 1983 | 320 | 316 | 315 | 311 | 325 | 424 | 430 | 395 | 358 | 339 | 330 | 326 |
| 1984 | 325 | 326 | 322 | 324 | 368 | 423 | 409 | 377 | 352 | 340 | 335 | 332 |
| 1985 | 332 | 329 | 324 | 227 | 379 | 379 | 357 | 341 | 331 | 332 | 327 | 322 |
| 1986 | 326 | 319 | 317 | 304 | 380 | 400 | 383 | 356 | 339 | 331 | 330 | 331 |
| 1987 | 326 | 322 | 321 | 315 | 320 | 380 | 388 | 364 | 345 | 345 | 328 | 321 |
| 1988 | 313 | 311 | 309 | 304 | 308 | 327 | 340 | 327 | 345 | 366 | 366 | 307 |
| 1989 | 256 | 356 | 363 | 363 | 341 | 333 | 332 | 330 | 340 | 334 | 326 | 319 |
| 1990 | 308 | 302 | 295 | 282 | 278 | 271 | 270 | 275 | 280 | 277 | 272 | 265 |
| 1991 | 257 | 249 | 241 | 229 | 225 | 236 | 296 | 302 | 302 | 298 | 291 | 281 |
| 1992 | 270 | 260 | 251 | 229 | 216* | 223* | 243 | 252 | 247 | 252 | 246 | 237 |

Note: * Discovered a broken pipe at the lower spring which decreased the flow

ML-21569
GENWAL COAL CO. INC.

R.O.W. U-66838
GENWAL COAL CO. INC.

GENWAL COAL CO. INC.
U-54762

SL-062648
GENWAL COAL CO. INC.

SPRING LOCATION

PRIVATE
CO-(
DEVELOPMEN

FOREST

NTI-LASAL

Horse Canyon PACK TRAIL

McElprang Canyon

Vicks Canyon

Cattle Wild Ridge

Grange Hole Springs Spring

Canyon

Huntington Creek

Blindcome Hollow

Tie Fork Canyon

Crandall Canyon

Little Bear Canyon

Mill Fork Canyon

Forks of Huntington Campground

Prospect

Mines

Drill Hole

Spring

9885 Mill Fork

EXHIBIT "A"

REGIONAL MAP — LITTLE BEAR & CRANDALL CANYON AREA