

# STATE OF COLORADO

Bill Ritter, Jr., Governor  
Martha E. Rudolph, Executive Director

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4300 Cherry Creek Dr. S.      Laboratory Services Division  
Denver, Colorado 80246-1530      8100 Lowry Blvd.  
Phone (303) 692-2000      Denver, Colorado 80230-6928  
TDD Line (303) 691-7700      (303) 692-3090  
Located in Glendale, Colorado  
<http://www.cdphe.state.co.us>



Colorado Department  
of Public Health  
and Environment

July 15, 2010

Mr. Joby L. Adams, Vice President  
CGRS, Inc.  
P.O. Box 1489  
Ft. Collins, Colorado 80522

Subject: Options for WET and SAR Limitations for Intermittent Discharge to Dry Tributary  
Facility : Greenback Shaeffer Ranch Produced Water Facility (Proposed )  
Pending Permit Number : COG-840002

Dear Joby:

During our meeting on July 2, you provided additional information on the nature of this proposed discharge and inquired about the application of limitations for Whole Effluent Toxicity (WET) and Sodium Absorption Ratio (SAR).

Briefly, the key aspects you mentioned are:

- The proposed commercial disposal facility will receive only E&P waters from oil and gas operations for storage in a lined impoundment and subsequent advanced treatment, including oil/water separation, Dissolved Air Floatation (DAF), chemical precipitation, reverse osmosis (RO) and selective ion (Boron) removal.
- This offsite facility is subject to CDPHE regulations pertaining to solid waste sites and facilities possessing a Certificate of Designation (CD) from the local county and you are working with Roger Doak of the Solid Waste Unit. Per the expected terms of the CD, the incoming E&P waters will be chemically screened to preclude entrance of hazardous materials.
- The facility will provide oil and gas operations with liquids, including brines, for further use in their operations.
- The facility will employ RO to produce potable water for on-site uses which will be stored in a 4,000 gallon tank. Periodically, there may be a need to discharge some of this stored water to a nearby dry tributary that travels approximately 2 miles to Mamm Creek. The application for a permit indicates that this flow may be 45 gallons per minute, last for several hours to a few days, and may occur several times a year. If necessary, the timing and volume of the discharge can be controlled to preclude flow reaching Mamm Creek.

Since the surface water discharge will be intermittent and is unlikely to reach Mamm Creek and possesses very low salt concentrations, you inquired about the options for relief fewer than two narrative standards (i. e., WET and SAR) that had been considered for other industrial discharges under such circumstances.

Concerning WET, the Division's guidance can allow an exception (only for WET chronic) where the receiving stream has a low flow of 0 in all months, and when the discharge is intermittent. This exception is being made since a zero low flow stream will not normally contain water, and the discharge does not flow continuously: therefore, chronic conditions are not likely to occur. This exception shall be granted on a site-specific basis. The

Wet acute testing would be required on a quarterly basis with possibility of future reduction in frequency based on passing the test.

Concerning SAR, the Division, in accordance with Regulation 61.8(2)(b)(v) can develop effluent limitations as follows: "Utilizing its best engineering judgment, where subsection (b) is applicable, the Division will use a mass-balance analysis to define the effluent limitations for discharges to surface waters such that the combined concentrations of pollutants contributed by the discharger and the receiving waters upstream from the point of discharge do not exceed the water quality standards for the receiving waters, downstream of any mixing zone established by the Division for each pollutant." The Division's standard practice in evaluating the fate and transport of pollutants in point source discharges to downstream water bodies is to account for conveyance loss where adequate site-specific information is available to support such an analysis. The Division has granted this relief on a site-specific basis for an individual outfall.

The application for the permit submitted in April 2010 will have to be amended if the above options are requested. The additional information should address:

- description of the intermittent discharge as to volume, during, and timing during a representative year,
- conveyance Loss Assessment for dry tributary, and
- any management approach to control flow to preclude entrance into Mamm Creek.

Also, during the meeting, I mentioned the need for additional information on the quality of water produced by RO, specifically a detailed breakdown from similar pilot operations since your facility is not in operation.

With the prompt submittal of the amendment, we should be able to complete analysis and proceed to drafting the certification. While our workload continues to exceed staffing level, the certification should be completed well in advance of the facility's proposed start-up date (October 2010).

If you would like to discuss the above, please contact me.

Sincerely,

Gary Beers, Manager  
Groundwater, Land Application, and Industrial General Permits Unit

CC: File COG-840002