

STATEMENT OF BASIS

GROUND WATER DISCHARGE PERMIT UGW170004

Dalton Finisher Farm
2.6 miles South of Circleville
Garfield County, Utah

January 2017

Introduction

The Division of Water Quality (DWQ) under the authority of the Utah Ground Water Quality Protection Rules¹ (Ground Water Rules) issues ground water discharge permits to facilities which have a potential to discharge contaminants to ground water². As defined by the Ground Water Rules, such facilities include mining operations.³ The Ground Water Rules are based on an anti-degradation strategy for ground water protection as opposed to non-degradation; therefore, discharge of contaminants to ground water may be allowed provided that current and future beneficial uses of the ground water are not impaired and the other requirements of Rule 317-6-6.4.A are met.⁴ Following this strategy, ground water is divided into classes based on its quality⁵; and higher-quality ground water is given greater protection⁶ due to the greater potential for beneficial uses.

Under Rule 317-6, Dalton Finishing Farm has requested a ground water discharge permit (Permit). DWQ has developed permit conditions consistent with R317-6 and appropriate to the nature of the operations, maintenance, best available technology⁷ (BAT) and the hydrogeologic and climatic conditions of the site, to insure that the operation would not contaminate ground water.

Basis for Permit Issuance

Under Rule 317-6-6.4A, DWQ may issue a ground water discharge permit if:

- 1) The applicant demonstrates that the applicable class TDS limits, ground water quality standards protection levels and permit limits established under R317-6-6.4E will be met;
- 2) The monitoring plan, sampling and reporting requirements are adequate to determine compliance with applicable requirements;
- 3) The applicant is using best available technology to minimize the discharge of any pollutant; and
- 4) There is no impairment of present and future beneficial uses of ground water.

Purpose

¹ Utah Admin. Code Rule 317-6

² https://deq.utah.gov/ProgramsServices/programs/water/groundwater/docs/2008/08Aug/GWQP_PermitInfo.pdf

³ Utah Admin Code Rule 317-6-6.1A

⁴ Preamble to the Ground Water Quality Protection Regulations of the State of Utah, sec. 2.1, August, 1989

⁵ Utah Admin. Code Rule 317-6-3

⁶ Utah Admin. Code Rule 317-6-4

⁷ Utah Admin. Code Rule 317-6-1(1.3)

Dalton Finisher Farm will construct and operate one farm site comprised of 4 barns with 8800 total hogs and a single, 3.7 million gallon containment basin for the barns South of Circleville in Garfield County, UT. The containment basin will receive waste water from swine production operations and is sized to hold accumulated discharge from barn operations temporarily. Manure will be removed annually from the containment basins and used for land application and fertilization of nearby agricultural acreage.

The Dalton Finisher Farm has been granted a construction permit and a ground water discharge permit for operation of the containment basin. This Ground Water Discharge Permit will require ground water and process water compliance monitoring. The water must be land applied in accordance with a comprehensive nutrient management plan (CNMP)

Potential Impacts to Ground Water

The containment basins will be constructed with an HDPE liner to minimize discharge to the subsurface. Ground water quality monitoring of the shallow aquifer downgradient of the basins will be conducted to determine if ground water quality has been impacted by basin discharges.

Hydrogeology

The basin is located in the Upper Sevier River Valley with the nearby Tushar Mountains approximately 3.5 miles to the west. Rocks in the area range in age from Triassic, Jurassic, Cretaceous, Tertiary and Quaternary. The valley fill material of Circle Valley consists of alluvial deposits of silt, clay, sand and gravel size materials. The thickness of valley fill deposits may be up to 680 feet in thickness in the vicinity of the farm site. Ground water in the Circle Valley occurs in mostly unconsolidated and semi-consolidated alluvial deposit and flows to the northwest generally in the direction of the Sevier River which is approximately 7500 feet to the northwest from the proposed site.

Ground Water Quality

The site is likely situated over Class IA Pristine Ground Water. Class I Pristine Ground Water has the following characteristics: 1) total dissolved solids concentrations less than 500 mg/L; and 2) No contaminants that exceed Utah ground water quality standards.

Class I ground water will be protected to the maximum extent feasible from degradation due to facilities that discharge or would probably discharge to ground water. Up-gradient and down-gradient monitoring wells will be installed and sampled prior to operation and for a final determination of site specific ground water quality and classification.

Compliance Monitoring Program

A compliance groundwater monitoring program will commence when the containment basin are constructed. Upgradient and downgradient monitoring wells will be installed prior to operation of the basins. Background conditions will be determined from the up-gradient well in accordance with R317-6-6.10 and compliance limits for the downgradient wells will be set according to R317-6-4.

The following key parameters were selected for compliance ground water monitoring based on their concentrations in the process water compared to concentrations in shallow ground water:

- TDS

- Chloride
- Nitrate + Nitrite
- Ammonia as N
- Bicarbonate

Following collection, evaluation, and statistical analysis of eight quarterly ground water samples, the interim compliance limits in Table 2 of permit UGW170004 will be modified.

Best Available Technology

The containment basin will be lined with a single, 60 mil HDPE flexible membrane installed and constructed in accordance with the concurrently issued ground water permit.