MEMORANDUM

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DATE: **November 18, 2026**

SUBJECT: **Industrial Reuse Permit No. I-264-01, True West Beef LLC, Staff Analysis Supporting Reuse Permit Modification 2**

Executive Summary

True West Beef LLC (TWB) owns and operates an industrial beef processing facility in Jerome, Idaho, that harvests and processes beef cattle. TWB treats the industrial process wastewater onsite, and land applies the treated recycled water to agricultural fields. TWB currently applies industrial recycled water year-round to approximately 683.3 acres of agricultural fields, managed as ten separate management units (MUs).

Reuse Permit No. I-264-05 (Permit) authorizes TWB for flows and constituent loading originally projected for 600 head per day (hd/day) of cattle, with the intention of future expansion. TWB has recently determined through biological simulation software that a single sequencing batch reactor (SBR) can accommodate flows up to 800 hd/day (HDR 2024a). TWB currently processes approximately 700 hd/day and expects to reach approximately 800 hd/day by the end of 2024 (HDR 2024a).

TWB is applying for a permit modification to expand operations to accommodate production of 1000 hd/day. As part of this expansion, TWB proposes adding 261.2 acres of agricultural land to the Permit through two additional MUs: MU-264-11 (TWE-7), at 137.0 acres, and MU-264-12 (TWE-8), at 124.2 acres. TWB plans to begin applying recycled water to these expansion fields in spring/summer 2027 (HDR 2025d). Because the expansion will occur close to the current Permit expiration date of January 1, 2028, DEQ recommends extending the Permit expiration date by three (3) years to support the compliance activities introduced by this modification.

Based on projected production of 1,000 hd/day, TWB is expected to generate approximately 222 million gallons annually (MGA) of treated recycled water. After accounting for anticipated

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evaporative losses of 26 MGA, approximately 196 MGA of recycled water is expected to be land applied to the permitted MUs (HDR 2025a).

TWB currently maintains a 13.8-MG storage lagoon (LG-264-03, West Storage Lagoon) and a 54.8-MG storage lagoon (LG-264-04, East Storage Lagoon). TWB proposes to add a 34.2-MG storage lagoon (LG-264-05, Far East Storage Lagoon) and to expand the East Storage Lagoon to 58.2 MG. Total available recycled water storage under the modification would be 106.2 MG (HDR 2025b).

DEQ recommends the issuance of draft Permit Modification 2, incorporating constituent limits and establishing monitoring and reporting requirements to evaluate system performance, environmental impacts, and permit compliance discussed in this staff analysis and draft permit.

1 Introduction

The purpose of this memorandum is to support the modification of True West Beef, LLC Industrial Reuse Permit No. I-264-01. This memorandum satisfies the requirements of the "Recycled Water Rules" (IDAPA 58.01.17.400) for issuing reuse permit modifications. The principal facts and significant questions considered in preparing the draft permit modification and a summary of the basis for the modification are provided.

TWB is applying for a permit modification to land apply additional recycled water associated with the increased production of approximately 1,000 hd/day. TWB has submitted a reuse application for permit modification along with a preliminary technical report (PTR) seeking to increase the land application acreage available for reuse of industrial recycled water under the Permit (HDR 2024a). TWB is requesting to expand the site by 261.2 additional acres identified as MUs, MU-264-11 (137.0 acres) and MU-264-12 (124.2 acres). TWB is also requesting to update the acreages of MU-264-06, MU-264-07, MU-264-08, MU-264-09, and MU-264-10 based on satellite imagery and modelling techniques using both AutoCAD Civil 3D and a Geographic Information System (GIS) while verifying the acreages using field surveys in the PTR (HDR 2024a, Table 2-2, p. 2-1; HDR 2025b). Based on updated information in the PTR for the existing management units an additional 5.6 acres is requested to be added to the Permit. When adding the proposed MU acreage (261.2 acres) to the updated existing MU acreage (688.9 acres) the total land application site increases to 950.1 acres.

In addition to expanding the land application site, TWB is also requesting an additional storage lagoon (Far East Storage Lagoon) to be added to the Permit. TWB currently maintains a 13.8 MG storage pond (West Storage Pond) and a 54.8 MG storage pond (East Storage Pond) to store recycled water. TWB is proposing to additionally maintain a 34.2 MG storage pond (Far East Storage Lagoon) and to expand the capacity of the East Storage Lagoon to 58.2 MG totaling 106.2 MG of total storage.

The "Recycled Water Rules" (IDAPA 58.01.17.700.03) considers this request as a major permit modification and the permitting procedures must be the same as those for a new reuse permit.

The history of the modification and reuse permit renewal process are as follows:

1. On January 1, 2023, the current reuse permit, I-264-01 was issued to True West Beef, LLC for a 5-year term (DEQ 2022a).
2. On January 30, 2024, Modification 1 was added to the reuse permit to update facility personnel, extend compliance activity, CA-264-04, groundwater monitoring plan, and update locations of flow meters (DEQ 2024a).
3. A Pre-Application Conference with DEQ staff and TWB representatives was held on May 10, 2024.
4. A Letter of Needs for Modification 2 was issued on June 5, 2024 (DEQ 2024b)
5. On November 21, 2024, TWB submitted a reuse application and PTR in response to the Letter of Needs requested from DEQ (HDR 2024a; HDR 2024b).
6. On December 5, 2025, DEQ sent the draft permit modification and staff analysis to the facility for review.
7. On January 28, 2026, the facility submitted comments on the draft permit modification and staff analysis to DEQ and requested that the permit modification be placed on hold.
8. On August 26, 2026, the facility notified DEQ that it would like to proceed with the draft permit modification.

2 Site Location and Ownership

The TWB industrial wastewater treatment plant (IWWTP) and reuse facility is located approximately 4.5 miles northeast of the city of Jerome, Idaho. TWB owns and controls the beef packing facility, land application sites and storage lagoons. TWB has contracted with Driscoll Bros. Farms for field management on the True West West (TWW) and True West East (TWE) sites (HDR 2024a). TWB currently operates ten MUs for land application of recycled water. The existing reuse management units are located adjacent to the IWWTP to the west and east. According to the staff analysis of the Permit, surrounding land usage is mainly agricultural with some rural residential (DEQ 2022b). A vicinity map of the existing reuse site and surrounding area is shown in Figure 1.

TWB is proposing to add an additional two MUs (TWE-7 and TWE-8) located between the permitted TWW and TWE reuse sites shown in Figure 2, which are on the east side of U.S. Highway 93, 6.7 miles north of the Twin Falls exit off Interstate 84. TWB has purchased this property (DPV Property) as a new addition to the TWE facility operation site (HDR 2024a).

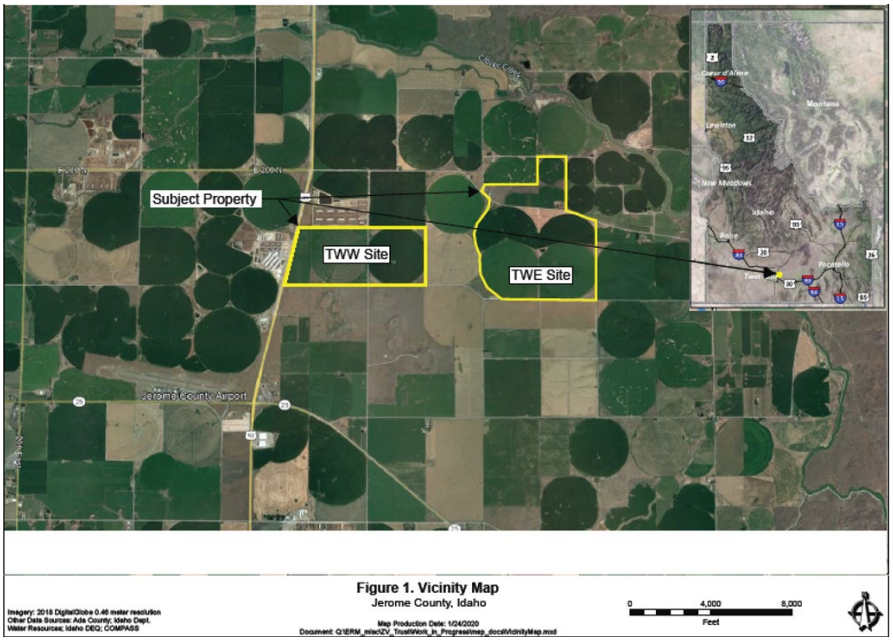

Figure 1. Existing area site map and surrounding area (DEQ 2022b)

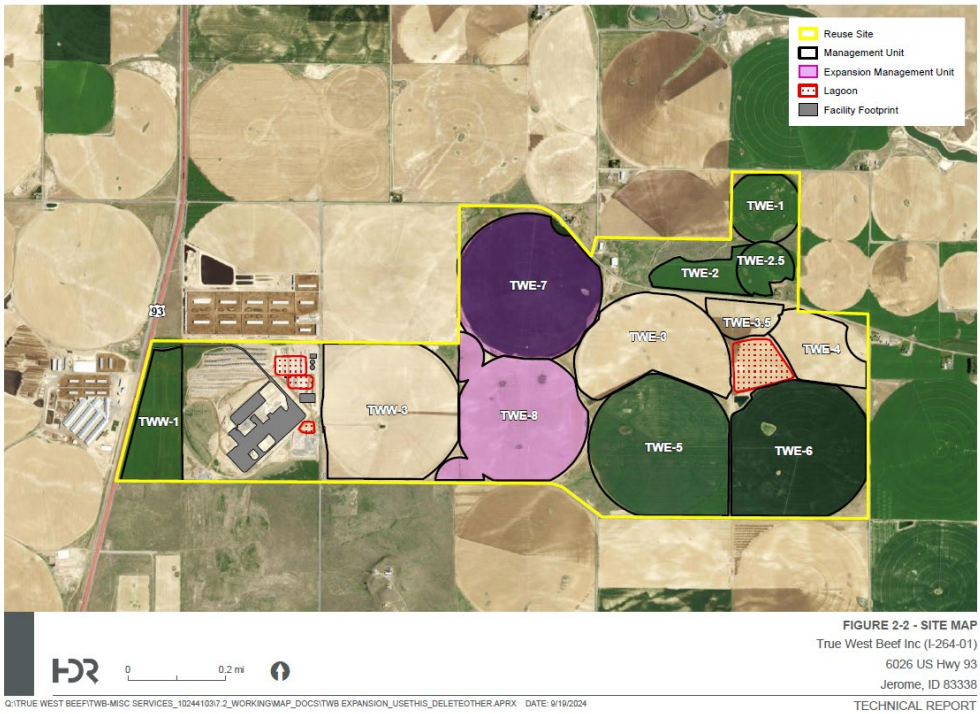

Figure 2. Proposed area map and surrounding area (HDR 2024a, Figure 2-2)

3 Process Description

TWB will produce various beef products including sub-primal portions, as well as various byproducts such as oils, bone meal, dried blood, and cured hides (HDR 2024a, Section 3). Industrial wastewater is generated from byproducts processing, equipment cleaning, and processing floor wash-down. Blood is recovered by coagulation and process water separated from this procedure is sent to the industrial process wastewater stream. Industrial process wastewater is treated with the following processes: primary screening, dissolved air flotation (DAF), covered anaerobic lagoon (CAL), and sequencing batch reactor (SBR).

Primary screening of the liquid process wastewater stream consists of three internally fed wedge-wire drum screens for solids removal, vortex separators for grit removal, and a dissolved air flotation (DAF) unit for fat, oil, and grease removal (HDR 2024b).

The anaerobic treatment system consists of a 9.1-million-gallon (MG) low-rate CAL, a CAL solids pump, biogas blowers, and a biogas flare (HDR 2024b, Section 1; HDR 2025b). The CAL was designed to provide flow equalization and biological oxidation demand (BOD) reduction. Biogas generated from the CAL is collected and burned at an onsite flare. CAL effluent is treated in a sequencing batch reactor (SBR).

The existing secondary treatment system consists of a 1.05 MG SBR, blowers for aeration, a floating mixer, and decanter system (HDR 2024b, Section 1). The SBR serves for additional BOD removal as well as nitrogen removal by oxidizing ammonia from the CAL into nitrate (nitrification) and converting the nitrate to nitrogen gas (denitrification). The SBR normally discharges into the 13.8-MG West Storage Lagoon (HDR 2025b). Further details can be found in the *Preliminary Engineering Report*: *Process Wastewater Treatment Expansion, True West Beef LLC* (HDR 2024b).

TWB is proposing to upgrade the IWWTP and reuse facility such that approximately 1000 hd/day for approximately 266 days each year can be processed. TWB is proposing expansion of the SBR system, reuse storage ponds, east reuse pumping station, concrete paunch stacking pad, and management units. This proposal will result in a production day average flow of 0.608 million gallons per day (MGD) where 195.9 MGA will be available for land application, 26 MGA is expected to be evaporated from the storage ponds, which would bring the total volume required for the storage ponds to 221.9 MGA (HDR 2024a, Section 3). This treated recycled water is expected to flow into two existing storage lagoons, East Storage Lagoon (58.2 MG) and West Storage Lagoon (currently 13.8 MG). TWB is proposing a third storage lagoon, Far East Storage Lagoon (34.2 MG), to be included in this major permit modification which will increase the facility's total recycled water storage capacity to 106.2 MG.

LG-264-01 (Brine Evaporation Lagoon) is a 1.58 MG lagoon used to evaporate brine waste from the hide brining process. Spent brine water from hide processing is sent to an onsite Brine Evaporation Lagoon. It is estimated that the evaporative capacity for the Brine Evaporation Lagoon is 1,484 gallon per day (GPD; HDR 2024a). TWB does not currently have a flow meter that

monitors the flow to the Brine Evaporation Lagoon. However, TWB will monitor the water level to confirm evaporation exceeds inflow as the production rate increases (HDR 2024b, Table 2-2).

According to the staff analysis of the Permit, sanitary wastewater is collected, treated, and disposed of entirely separate from all process industrial wastewater (DEQ 2022b). DEQ approved plans and specifications for construction of a Large Soil Absorption System to treat the sanitary wastewater on March 7, 2022. Any run-off or run-on water is managed through the facility's updated Run-Off Management Plan and addendum which was submitted to DEQ on February 5, 2025 and accepted on October 23, 2025.

A proposed flow diagram for the industrial process wastewater treatment system and reuse facility are shown in Figure 3.

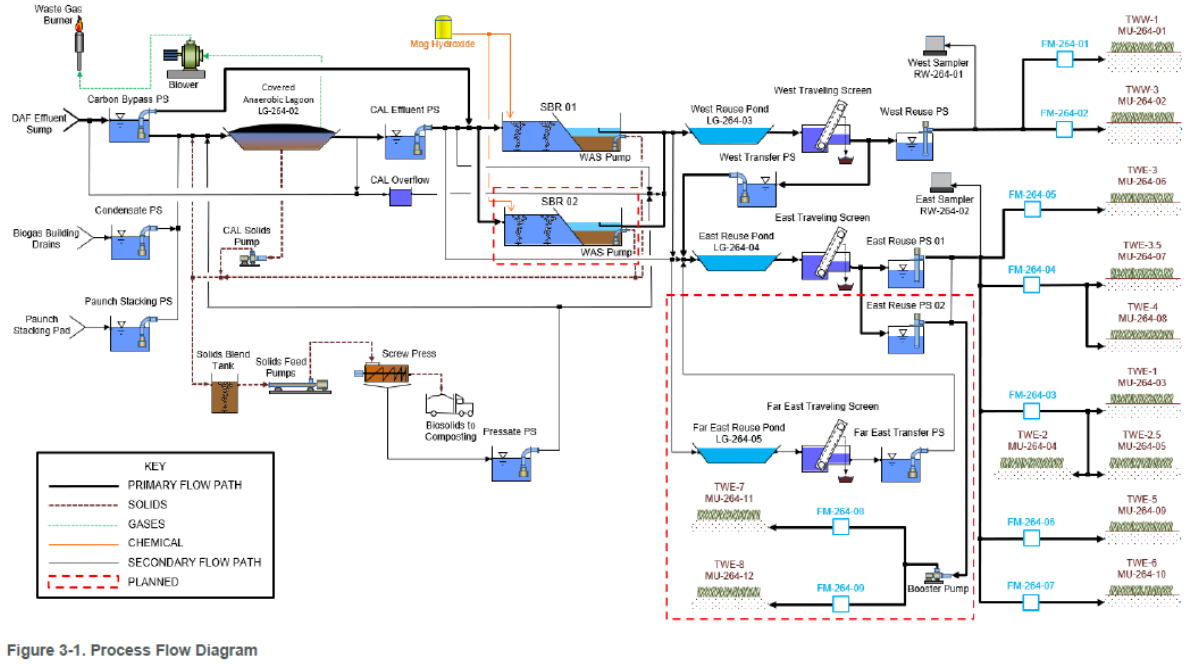

Figure 3-1. Process Flow Diagram

Figure 3. Proposed process flow diagram (HDR 2024a, Figure 3-1).

TWB has three existing onsite irrigation groundwater wells (Irrigation Well A, B, and C) dedicated to the reuse facility (see Figure 4 below), one irrigation groundwater well, Irrigation Well E that came with the additional MUs, and two constructed industrial groundwater wells (Well #1 and Well #2; see Figure 4 below). TWB's existing reuse site and irrigation systems are divided into western and eastern zones (Figure 1) and implement the following Field ID notation: True West West (TWW) and True West East (TWE). A dedicated reuse pump station at each storage lagoon delivers recycled water to the irrigation systems at the two existing land application farms (TWW and TWE). A second reuse pump station will be added to the East Storage Lagoon to deliver recycled water to TWE-7 and TWE-8. Additionally, the Far East Reuse Lagoon will be constructed to store recycled water to meet expansion land application requirements. The Far East Storage Lagoon will receive recycled water transferred from the existing and future East Storage Lagoon

recycled water pumps and will include a transfer pump station to transfer recycled water back to the East Storage Lagoon for land application distribution. Irrigation Well A will pump groundwater into Irrigation Pond A providing supplemental irrigation water to the TWW fields. Irrigation Well B and Well C will pump groundwater into Irrigation Pond B providing supplemental irrigation water to the TWE fields. Supplemental irrigation water will be provided to TWE-7 and TWE-8 via Irrigation Well E (HDR 2024a). Irrigation Well E will pump to Irrigation Pond B prior to delivery to the MUs and will have no connection to reuse mains (HDR 2024a, Table 5-1).

The existing and proposed reuse fields, also known as management units (MU), are summarized in Table 1.

Table 1. Management unit descriptions.

Field ID	Management Unit	Irrigation type	Existing Acreage[1]	Proposed Acreage[2]
TWW-1	MU-264-01	Hand and wheel lines	45.3	45.3
TWW-3	MU-264-02	Pivot with end gun and hand/wheel lines	138.4	138.4
TWE-1	MU-264-03	Pivot with end gun	33.3	33.3
TWE-2	MU-264-04	Hand and wheel lines	22.9	22.9
TWE-2.5	MU-264-05	Pivot with end gun and hand lines	18.7	18.7
TWE-3	MU-264-06	Pivot with end gun	95.9	99.0
TWE-3.5	MU-264-07	Pivot with end gun	19.2	18.9
TWE-4	MU-264-08	Pivot with end gun and hand lines	46.6	40.8
TWE-5	MU-264-09	Pivot with end gun and hand lines	134.3	137.3
TWE-6	MU-264-10	Pivot with end gun and hand lines	128.7	134.3
TWE-7	MU-264-11	Pivot with end gun	-	137.0
TWE-8	MU-264-12	Pivot with end gun	-	124.2
		Total	**683.3**	**950.1**

[1]*Source: HDR 2021b, Table 2-1, Figure 2, and Figure 3*
[2]*Source: HDR 2024a, Table 2-2, Figure 2-2*

4 Site Characteristics

4.1 Site Management History

According to the staff analysis to the Permit, before the beef processing plant was built the site was irrigated farmland (DEQ 2022b). Plans and specifications for construction of the site were approved by DEQ. The Permit's effective date was January 1, 2023. The reuse site has been in operation since January 1, 2023.

Since 2023, the facility has grown alfalfa, field corn, and triticale on the management units (HDR 2023d, HDR 2024e, HDR 2025c) Supplemental irrigation water from the existing irrigation wells and recycled water has been used to meet agronomic requirements. Crops planted at TWE-7 and TWE-8 are anticipated to be similar to those planted at the already permitted TWB MUs (HDR 2024a, Section 6).

4.2 Climatic Characteristics

The climatic characteristics are described in detail in Section 4.2 of the Preliminary Technical Report submitted with the permit application (HDR 2024a, Section 4.2). The data is taken from the Jerome weather station (104670) located in Jerome, ID. The average annual precipitation is 9.78 inches per year, of which 5.5 inches occur during the NGS (November 1 through March 31). The annual average maximum temperature is 63.2 °F and annual average minimum temperature is 35.8 °F. Additional meteorological data can be found at the Western Regional Climate Center website: *http://www.wrcc.dri.edu/summary/climsmid.html.*

The wind direction is predominantly from the west/southwest at Jerome airport which is near the reuse site. This data was located at the following website: *https://windhistory.com/.*

Crop evapotranspiration, the process where soil water is lost to the atmosphere from surface evaporation and plant transpiration, greatly influences the amount of irrigation water required during the growing season. Crop evapotranspiration data for this location was taken from the ET_{IDWR} website, using the Jerome station data, located at: *https://et-idwr.idaho.gov/*. Crop evapotranspiration is further discussed in Section 4.6.2.

4.3 Soils

Soil types present on the reuse site are described in detail in Section 4.3 of the Preliminary Technical Report (HDR 2024a, Section 4.3). Predominant soil types are deep, silt loams with 4 to 8 percent slopes, suitable for agricultural production. Additional soil information for the reuse site can be found in the Natural Resource Conservation Service (NRCS) soil survey for Jerome County.

TWB has collected some preliminary soil samples for the proposed management units (HDR 2024a, Table 4-3 and 4-4). The DEQ *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater* (Reuse Guidance) provides typical soil values for various parameters (DEQ 2007, Section 2.5.1).

Table 2 classifies the preliminary soil sampling data based on the typical soil parameter ranges provided in the DEQ Reuse Guidance. DEQ recommends TWB monitor nitrogen and phosphorus loading in order to maintain or reduce current soil levels, but the soil appears appropriate for reuse and farming activities.

Table 2. Soil parameters classified by the DEQ Reuse Guidance (0 to 3 feet depth).

Parameter	Sample Results	Classification
pH	7.1-8.3	High
Salts	0.8-2.9 mmhos/cm	Medium
Sodium	0.3-1.4 meq/100g	Medium
CEC	15.1-19.8 meq/100g	High
Lime	0.2-17.9%	Ranges from low at the surface to very high at three feet
Organic Matter	1.0-2.5%	Medium
Nitrate-nitrogen	3-39 ppm	Medium to high
Phosphorus	5-57 ppm	Medium to high
Potassium	5-444 ppm	Medium
Calcium	10.3-13.0 ppm	High
Magnesium	3.1-5.9 meq/100g	High
Sulfur	13-196 ppm	Very high
Zinc	0.3-9.9 ppm	Medium to very high
Iron	5.4-14.5 ppm	High
Manganese	3.0-12.1 ppm	Medium to high
Copper	0.7-3.1 ppm	Medium to high
Boron	0.53-11.10 ppm	Medium to high

The management unit soil available water holding capacity (AWHC) calculations for the existing management units are based on the staff analysis of the Permit and values presented in Appendix B of the Preliminary Technical Report (HDR 2021a, Appendix B). The management unit soil available water holding capacity (AWHC) calculations for the proposed MUs are presented in Appendix F of the Preliminary Technical Report (HDR 2024a, Appendix F). The AWHC for the existing MUs and the proposed AWHC for the new MUs are shown in Table 3.

Table 3. True West Beef management unit available water holding capacity.

Field ID	Management Unit	AWHC (inches)[1]	Proposed AWHC (inches)[2]
TWW-1	MU-264-01	3.74	-
TWW-3	MU-264-02	11.5	-
TWE-1	MU-264-03	8.27	-
TWE-2	MU-264-04	6.47	-
TWE-2.5	MU-264-05	6.47	-
TWE-3	MU-264-06	9.58	-
TWE-3.5	MU-264-07	6.55	-
TWE-4	MU-264-08	7.4	-
TWE-5	MU-264-09	11.55	-
TWE-6	MU-264-10	10.81	-
TWE-7	MU-264-11	-	8.09
TWE-8	MU-264-12	-	9.05

[1]*Source: HDR 2021b, Table 4-7*
[2]*Source: HDR 2024a, Table 4-5*

4.4 Surface Water

The staff analysis of the Permit states the Snake River is located approximately 9 miles south of the southern property boundary (DEQ 2022b). The entire site is outside of the 100-year flood plain.

The North Side Main Canal that flows near TWE-2 and TWE-2.5 has been abandoned by the canal company and no longer carries water with several farmers reclaiming their land by filling in sections of the abandoned canal (HDR 2024a). According to the staff analysis of the Permit, connecting branches run adjacent to the east property (DEQ 2022b). The closest active branch to the reuse site is 0.36 miles northeast of the eastern management units (DEQ 2022b).

4.5 Groundwater/Hydrogeology

The proposed management units, TWE-7 and TWE-8, are located adjacent to the existing MUs and no differences in site hydrogeology are expected. Groundwater and hydrogeology are described in detail in Section 4.7 of the Preliminary Technical Report associated with the staff analysis of the Permit and are summarized here (DEQ 2022b). The area is part of the Eastern Snake River Plain aquifer. The top of the aquifer is located approximately 350 to 550 feet below the site and flows southwest. The aquifer consists of layered basalts with fractured rubble and sediment between layers.

Regional geology includes clay, sand, silt, gravel, and basalt flows, leading to the formation of shallow groundwater deposits, particularly near canals and streams (DEQ 2022b). However, no shallow groundwater has been identified in the vicinity of the proposed reuse site (DEQ 2022b).

TWB submitted a Groundwater Monitoring Plan on January 31, 2024 and DEQ approved the plan on May 29, 2024 (HDR 2024c; DEQ 2024c). TWB's Groundwater Monitoring Plan has proposed adding three new monitoring wells to the site. Currently, the Groundwater Monitoring Plan serves to address the requirements in compliance activity, CA-264-04 of the Permit and upon approval, is incorporated into the Permit by reference. TWB scheduled the drilling of the monitoring wells and planned to submit a Final Monitoring Well Construction Report documenting well installation to DEQ within 60 days of completion (HDR 2024a, Section 4.7.5). A Final Monitoring Well Construction Report was submitted by TWB on March 14, 2025 and approved by DEQ on May 5, 2025 completing compliance activity, CA-264-04.

Since the new groundwater monitoring wells have been installed they will be added in this permit modification along with the monitoring requirements listed in the Groundwater Monitoring Plan. In the Letter of Needs, DEQ requested discussion on the adequacy of the groundwater monitoring well network for the proposed MUs (DEQ 2024b). TWB proposed to first obtain a full year of data to accurately depict flow direction at the reuse site before making the decision to add an additional monitoring well (HDR 2024a). A compliance activity will be included in this permit modification to address if additional monitoring wells are needed in the groundwater monitoring network.

DEQ recommends that the following language be incorporated into the compliance activity to evaluate the groundwater monitoring network:

1. Within 90 days of completing the first year of data collection at the monitoring wells, TWB will submit a groundwater network evaluation plan.

2. The plan must characterize flow direction and seasonal variations to allow TWB to determine optimal placement if additional monitoring wells are required following expansion.

3. The plan must determine if an updated Well Location Acceptability Analysis (WLAA) is needed when characterizing the flow direction and seasonal variations for Well #13 (further discussion on Well #13 can be observed below).

If the Ground Water Network Evaluation Plan results in the permitee requiring additional groundwater monitoring wells, the permittee must provide the following information to DEQ for each well:

- A determination of groundwater depth and flow direction.
- A description of the hydrogeologic setting and aquifer properties.
- Plans and specifications for a groundwater monitoring well network that will provide sufficient groundwater quality data to characterize the impacts of reuse activities and lagoon seepage.
- Proposed groundwater monitoring including parameters, analytical methods, and frequency.
- An implementation schedule for the additions to the groundwater monitoring well network.

Once approved, the permittee must provide the following information to DEQ for each well within 60 days of completing the installation of the monitoring well network approved in the Plan:

- Monitoring well location coordinates.
- A monitoring well network map.
- Well construction details for each well.
- Depth to groundwater and groundwater elevation in each well.
- Initial groundwater quality monitoring results from each well.

DEQ recommends a new compliance activity to evaluate the groundwater monitoring network, with a total estimated duration of 15 months required to complete the evaluation and submit the technical report/plan. Because facility expansion is not anticipated until 2027 and the current Permit expires in 2028, it is necessary to extend the Permit by three (3) years to accommodate the additional compliance activity to obtain the data from the evaluation prior to permit renewal.

All wells identified within a quarter mile of the plant are shown in Figure 5. All wells used by the facility are in Figure 4.

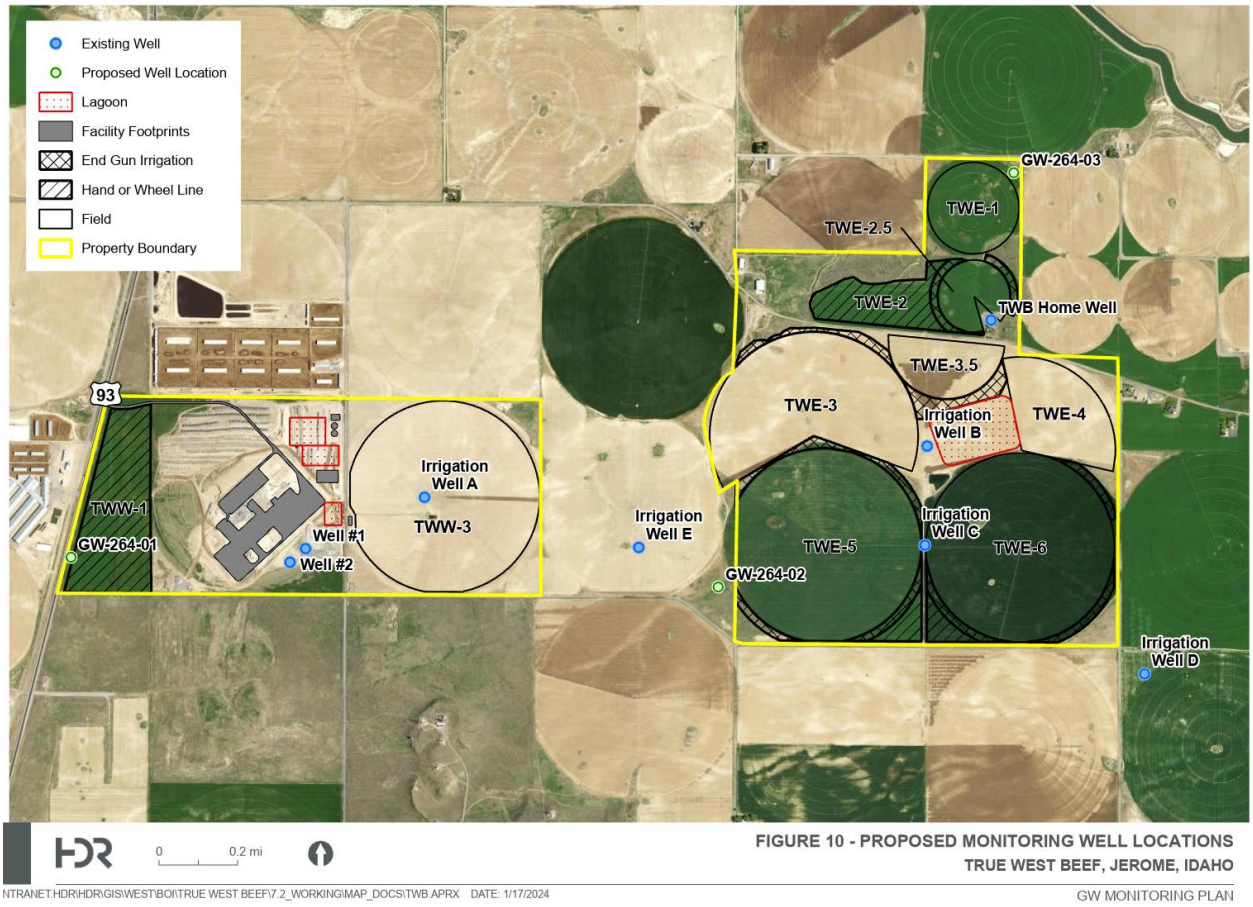

Figure 2. Proposed groundwater monitoring and irrigation well location map. (HDR 2024d, Figure 10).

TWB has conducted preliminary groundwater sampling (HDR 2024a, Appendix H) for existing wells on the TWW and TWE farms (HDR 2024a, Table 4-8, Table 4-9). TWB has also continued to monitor the existing groundwater monitoring wells as documented in their annual reports (HDR 2023d, HDR 2024e, HDR 2025c). Groundwater in the irrigation wells depicted in Figure 4 currently meets Idaho *Ground Water Quality Rule* standards (IDAPA 58.01.11.200).

An updated WLAA was submitted to DEQ on November 21, 2024. There are several private wells located around the TWB reuse facility in Figure 5 which were identified in the updated WLAA. The updated WLAA identified a domestic well (#18/#19) downgradient of Fields TWE-1 and TWE-2.5 (MU-264-03 and MU-264-05). HDR identified that Well #18/19 was found to be within 50 feet of TWE-2.5 (approximately 16 feet). The updated WLAA states that TWB's recycled water land application design uses pivots equipped with a global positioning system (GPS) so recycled water will not be applied within 50 feet of the well (HDR 2024d, Section 3.2.1). TWB also owns this well and the house that it serves. TWB has monitored and will continue monitoring groundwater quality at this well and remove the well from service if required.

In the updated WLAA it was concluded that Well #15, Well #22, Well #23, and Well #27 are not within the capture zone of the adjacent MUs which indicates that these wells are at an acceptable distance from the adjacent MUs. Well #13, however, is within the capture zone of TWE-1 (note that this well is over a quarter mile away from TWE-1) but not within the capture zone of proposed TWE-7. Therefore, a mixing zone analysis was conducted for Well #13 from TWE-1 (HDR 2024d, Section 3.2.3).

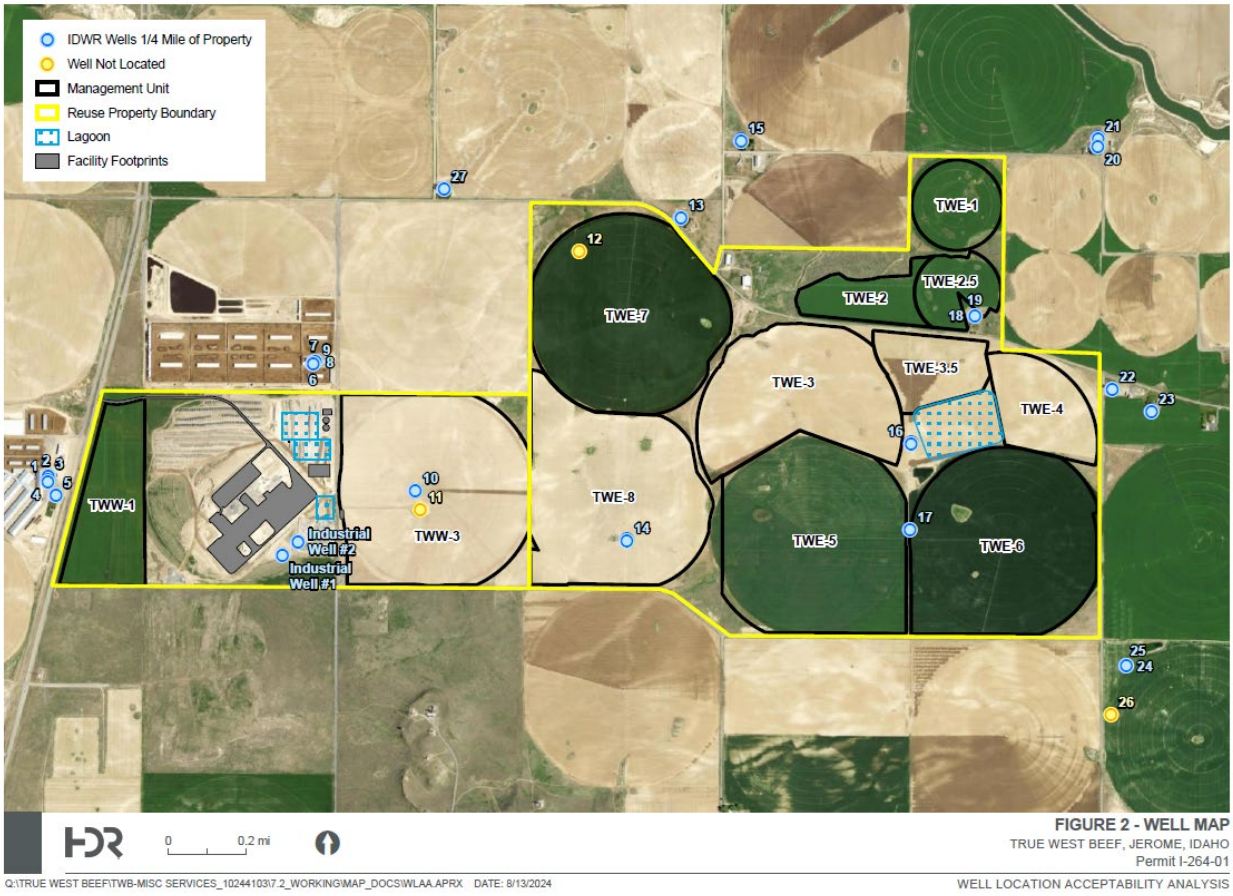

Figure 5. Well location map. (HDR 2024d, Figure 2).

Well #13 and Well #22 are both located less than 500 ft from the edge of the reuse site, which is the Permit requirement for private water supplies (DEQ 2022a, Section 4.4, p. 14). It was stated in the WLAA that Well #22 is not within the capture zone. However, Well #13 was reported to be within the capture zone but it was observed to be over ¼ mile away from the facility (HDR 2024d). TWB must maintain the 300ft buffer distance for the residence at Well #13 and therefore, TWB has stated that recycled water will not be applied on proposed TWE-7 within approximately 340 ft of Well #13. Additionally, TWB has elected to keep the 500 ft buffer zone from Well #22 at TWE-4. TWB has stated that the proposed 950.1 total acres account for the acreage reduction from TWE-4 (HDR 2024a).

For Well #13, TWB proposes to revisit this WLAA after implementation of the Groundwater

Monitoring Network Evaluation, which will include groundwater monitoring and better defining of groundwater flow direction at the reuse site. DEQ is recommending a compliance activity to evaluate the Groundwater Monitoring Network and determine if an updated WLAA is needed.

4.6 Recycled Water Characterization and Loading Rates

4.6.1 Recycled Water Characterization

Table 5 shows the proposed design of recycled water characteristics based on 1000 hd/day production and additional proposed treatment compared to average data submitted in the 2024 annual report (HDR 2025c). As stated in the 2024 annual report the facility is processing on average 750 hd/day which has increased constituent concentrations. The proposed recycled water design characteristics are based on updated SBR effluent constituent concentration modelling obtained using the SUMO biological simulation software (HDR 2024a).

Table 2. Design water quality, mg/L.

Media	Total Nitrogen	Total Phosphorus	NVDS	COD
Recycled Water[1]	43	16	1002	143
Proposed Recycled Water[2]	60	29	1100	90

Note: COD = Chemical Oxygen Demand, NVDS = Non-Volatile Dissolved Solids
[1]Source: HDR 2025
[2]Source: HDR 2024a

4.6.2 Hydraulic Loading Rates

TWB anticipates producing 195.9 MGA of recycled water after accounting for evaporative losses in the storage lagoons. Applied over the entire proposed 950.1-acre reuse site, this would result in an annual hydraulic loading of 7.59 acre-inches per acre.

The irrigation water requirement (IWR) of a crop is any combination of recycled water and supplemental irrigation water applied at rates commensurate with the moisture (consumptive use) requirements of the crop. The IWR is based on the irrigation water demand of a specific crop for specific conditions (climate and soil conditions) and the method of applying the irrigation water. The IWR is defined by Equation 1 where P_{def} is the precipitation deficit and E_i is the irrigation efficiency of the irrigation system.

$$IWR = \frac{P_{def}}{E_i}$$

Equation 1. Calculation of the irrigation water requirement.

P_{def} is defined as the amount of water the plant requires less than the amount in the root zone and less than the effective precipitation. P_{def} values for this site were obtained from the ET_{IDWR} website using the Jerome (104670) weather station as described in Section 4.2. P_{def} and IWR values for alfalfa (frequent cuttings), field corn (moderate season length), and winter grain (irrigated) are presented in Table 6.

Table 6. Growing season precipitation deficit (P_{def}) and irrigation water requirement (IWR) values for primary crops at the reuse site, inches.

Month	Alfalfa – Frequent Cuttings		Field Corn – Moderate Length		Winter Grain- irrigated	
	P_{def}[a]	IWR[b,c]	P_{def}[a]	IWR[b,c]	P_{def}[a]	IWR[b,c]
April	3.6	4.8	0.04	0.05	3.7	4.9
May	6.3	8.4	0.5	0.7	6.7	8.9
June	7.0	9.3	3.3	4.4	8.6	11.5
July	8.1	10.8	8.7	11.6	3.6	4.8
August	6.7	8.9	8.4	11.2	0.3	0.4
September	4.8	6.4	3.8	5.1	0.0	0.0
October	3.0	4.0	0.4	0.5	0.02	0.0

a. These data were obtained from the IDWR's ETIdaho 2023 date website, using the Jerome station.
b. IWR was calculated using Equation 1, assuming an Ei of 0.75 for a pivot irrigation system.
c. For compliance purposes, the method for calculating the IWR for each management unit must be specified in the PO.

The hydraulic loading limit for slow rate land application reuse sites is established at the IWR for the following reasons:

- Irrigating considerably below the IWR could lead to poor plant growth, causing inadequate nutrient uptake in the plants, potentially leading to infiltration of more recycled water nutrients past the root zone, which could then infiltrate deeper into the soil and potentially pollute the ground water and surface water; and,
- Conversely, applying water to MUs at rates considerably greater than the IWR could lead to the water that is in excess of the quantity necessary for crop growth to infiltrate past the root zone, carrying with it excess nutrients deeper into the soil, which could potentially pollute the groundwater and surface water.

TWB currently has one irrigation well at the TWW site and two irrigation wells at the TWE site (HDR 2021a, Table 5-1). Supplemental irrigation water is proposed to be provided to TWE-7 and TWE-8 via Irrigation Well E as can be seen in Figure 4. Irrigation Well E will pump to Irrigation Pond B prior to delivery to the MUs and will have no connection to reuse mains (HDR 2024a, Table 5-1). TWB's water supply for irrigation at the DBV Property is permitted under Idaho Department of Water Resources' (IDWR) water right #36-16952. The water right allows an additional 5.34 cfs (2,397 gpm) and 1,151.2 acre-feet to be diverted to Irrigation Well E for irrigation of 287.8 acres of the DBV Property. As supplemental irrigation water is available at this site, DEQ recommends requiring that TWB hydraulically load the management units substantially at the IWR shown in Table 6. TWB currently possesses water rights for 704 MGA of supplemental irrigation water. The design water balance shows a requirement of 807 MGA of supplemental irrigation water (HDR 2024a, Section 5.1.2). However, TWB stated that the design supplemental irrigation water requirement (IWR) is based on an average IWR across the three different crops in Table 6. TWB stated that based on their experience the IWR for alfalfa is overestimated in the region (HDR 2024a, Section 5.1.2).

The hydraulic loading limit proposed in the Preliminary Technical Report (HDR 2024a, Section 4.3.3) appears to be calculated based on Equation 2 below.

$$\mathbf{HLR_{ngs} = AWHC + ET_{act} - PPT_{ngs}}$$

Equation 2. Nongrowing season hydraulic loading rate.

where:

HLR_{ngs} = nongrowing season hydraulic loading rate
AWHC = available water-holding capacity of the soil
ET_{act} = actual evapotranspiration (evaporation) during the nongrowing season
PPT_{ngs} = gross precipitation in the nongrowing season

DEQ NGS hydraulic loading limit calculations used the average of the actual evapotranspiration (ET_{act}) for the crops grown to account for the stubble in the fields, resulting in an NGS ET_{act} value of 5.44 inches.

DEQ recommends establishing the NGS hydraulic loading permit limits based on DEQ calculations shown in Table 7. Regardless of the limit, TWB is responsible for monitoring weather conditions and ensuring that NGS application does not lead to ponding, runoff, or ice accumulation.

Table 3. DEQ recommended nongrowing season hydraulic loading limits.

Field ID	Management Unit	AWHC (inches)	ET (inches)	PPT (inches)	NGS Loading Limit (inches)
TWW-1	MU-264-01	3.74	5.44	5.5	3.68
TWW-3	MU-264-02	11.50	5.44	5.5	11.43
TWE-1	MU-264-03	8.27	5.44	5.5	8.21
TWE-2	MU-264-04	6.47	5.44	5.5	6.41
TWE-2.5	MU-264-05	6.47	5.44	5.5	6.41
TWE-3	MU-264-06	9.58	5.44	5.5	9.52
TWE-3.5	MU-264-07	6.55	5.44	5.5	6.49
TWE-4	MU-264-08	7.40	5.44	5.5	7.34
TWE-5	MU-264-09	11.55	5.44	5.5	11.49
TWE-6	MU-264-10	10.81	5.44	5.5	10.75
TWE-7	MU-264-11	8.09	5.44	5.5	8.03
TWE-8	MU-264-12	9.05	5.44	5.5	8.99

4.6.3 Constituent Loading Rates

TWB's anticipated constituent loading rates resulting from the combination of recycled water and supplemental irrigation water application assuming even distribution over the entire 950.1-acre site are shown in Table 8.

Table 8. Projected constituent loading rates, pounds per acre (lb/acre).

Total Nitrogen	Total Phosphorus	NVDS	COD
110.1	49.9	3,614	<1 (lb/acre/day)

Note: COD = Chemical Oxygen Demand, NVDS = Non-Volatile Dissolved Solids
Source: HDR 2024a, Table 5-3, Table 5-4

4.6.3.1 Nitrogen Loading

TWB is proposing a nitrogen loading limit of 150% of typical crop uptake (HDR 2024a, Section 5.1.7). On reuse sites, efforts must be made to control the leaching and runoff losses of nitrogen. Water movement occurs through the root zone via preferential flow paths, such as macropores or earthworm burrows or old root channels, or through the porous matrix of the soil itself. Excess hydraulic loading to soils can mobilize nitrate and increase levels in groundwater. Avoiding excessive irrigation by irrigating at the crop IWR, as well as scheduling irrigations with consideration to soil type, can minimize leaching of nitrogen. Nitrogen leaching losses may also be reduced by using crops that will retain or use the nitrogen. This helps to prevent excess nitrate accumulation in the soil.

Nitrogen loading rates to a reuse site depend on climate, available soil nitrogen, crop type, and yield goal. To protect groundwater quality, a design nitrogen loading rate should be established. Equation 3 shows how design nitrogen loading rates are calculated using an uptake efficiency factor (e_f). Crop uptake efficiency factors (e_f) of 0.60 for annual crops and 0.75 for perennial crops are typically used in Equation 3 as determined for conditions in the northwest United States.

$$N_{LR} = \frac{N_{uptake}}{e_f}$$

Equation 3. Nitrogen loading rate determined by crop uptake and an uptake efficiency factor, e_f.

where:

N_{LR} is both the nitrogen loading rate required for the crop as well as the nitrogen loading that DEQ would allow dependent upon crop uptake, typically in units of pounds per acre (lb/ac).

N_{uptake} is the nitrogen uptake of the harvested portion of the crop, typically in units of lb/ac.

e_f is the nutrient uptake efficiency factor.

Based on Equation 3, DEQ has determined a standard nitrogen loading limit of 150% of crop nitrogen content (assuming an e_f of 0.67) using the median of the previous three years the crop was grown. This approach allows for a 33% loss of nitrogen through various pathways including volatilization, denitrification, microbial and biomass fixation, and leaching.

As stated in the DEQ Reuse Guidance, “alfalfa presents a unique problem when making required nitrogen calculations since it is able to fix atmospheric nitrogen in addition to its ability to take up plant available nitrogen (nitrate, ammonia) from the soil” (DEQ 2007, Section 4.2.2.4.2, p. 4-26). If TWB grows alfalfa, it is recommended that loading limits on fields with alfalfa account for nitrogen fixation. Equation 4 should be used when calculating nitrogen loading limits for management units where alfalfa is grown:

$$N_{LR} = \frac{N_{crop} \cdot \left(1 - N_{fixation}\right)}{e_f}$$

Equation 4. Nitrogen loading rates accounting for nitrogen fixation.

where:

N_{crop} is the crop nitrogen content, including nitrogen uptake and nitrogen fixed from the atmosphere, typically in units of lb/ac.

$N_{fixation}$ is the proportion of N_{crop} estimated to be fixed from the atmosphere.

Equation 4 provides a more realistic estimate of nitrogen uptake as a portion of nitrogen content in legumes is derived from the atmosphere. DEQ recommends assuming 20% of crop nitrogen content is fixed from the atmosphere for legumes ($N_{fixation}$).

DEQ recommends a nitrogen loading limit of 150% of typical crop uptake, with a correction for alfalfa that crop uptake is assumed to be 80% of crop nitrogen content (1-$N_{fixation}$).

4.6.3.2 Phosphorus Loading

TWB is not proposing a phosphorus loading limit (HDR 2024a, Section 5.1.7).

Phosphorus (P) is a required nutrient for crop growth. It is also a major contributor of pollution to streams, causing algae blooms, low dissolved oxygen, undesirable plant growth, and fish kills. Phosphorus can reach streams by runoff from sites or inflow from aquifers that provide baseflow to streams and rivers. Phosphorus has been implicated in the pollution of surface waters throughout the U.S., including Idaho. Phosphorus leaching from reuse sites may present a risk of contamination to surface water depending on site-specific hydrologic conditions. To protect surface waters from the effects of excess phosphorus, surface runoff and deep percolation of phosphorus must be controlled.

Phosphorus applied to the soil surface can be stored in the soil profile by precipitation and adsorption to soil particles. Eventually, with significant phosphorus loading, phosphorus can migrate to lower soil levels and even below the root zone. DEQ does not anticipate that the proposed phosphorus loading will be significant enough to cause breakthrough to groundwater. However, the draft permit requires monitoring of phosphorus levels in the recycled water, applied loadings, soil, and groundwater. DEQ does not recommend a phosphorus loading limit be included in the draft modification at this time.

4.6.3.3 Chemical Oxygen Demand Loading

TWB is proposing a chemical oxygen demand (COD) limit of 50 pounds per acre per day (lb/acre/day) for the growing season and NGS (HDR 2024a, Section 5.1.7).

Soil has long been identified as a good medium for the assimilation of the organic material in recycled water. A common measure of organic material is COD. This is a particularly useful measurement when considering factors influencing the soil chemical environment. The degree of oxygen demand imposed upon the soil system is an important factor in determining to what degree the soil is aerobic or anaerobic, and what chemical processes would be taking place in the system.

Soil clogging associated with high COD loadings, can severely limit the function of a site to further treat recycled water. The conditions that could cause such a problem should be evaluated in order to understand the capacity of the soil for recycled water treatment. Clogging can result from biochemical reactions, excessive loading of organic and inorganic materials (both dissolved and particulate), accumulation of microbial tissues in soil pore spaces, excessive hydraulic loading, poorly designed sprinkler systems, and impaired physical properties at and below soil surfaces.

Clogging generally occurs in the top few inches of soil. This can be seen as an organic mat that is largely independent of the coarseness of the soil. The continued existence of anaerobic conditions in the soil surface layer can lead to clogging. Anaerobic conditions result in a low rate of biological activity. This can result in sludge accumulation and production of ferrous sulfide.

In most cases, the organic material content of municipal recycled water will not be the limiting factor in their rates of application. Industrial recycled water such as from food processing may, however, have a COD content sufficiently high to become a limiting factor. With the application of high strength recycled water, oxygen may be quickly depleted. If the soil pores have been clogged by wastes or are waterlogged, the diffusion of air is restricted, the rate of decomposition is lowered, and the chemical end products will differ. Some of these by-products cause nuisance odors. Odors can be controlled, however, by maintaining conditions favorable to aerobic (oxygen present) waste decomposition. Under anoxic (oxygen absent) conditions, some elements within the soil, such as iron and manganese, can be reduced to soluble and mobile forms.

TWB plans to treat the industrial wastewater with a DAF, CAL, and two SBRs, and it is estimated that the recycled water is unlikely to have high COD concentrations. However, to help maintain aerobic conditions within the soil and to prevent associated problems, the seasonal average organic loading rate should not exceed 50 lb of COD/acre/day.

DEQ recommends a COD limit of 50 lb/acre/day for the growing season and NGS.

4.6.3.4 Non-Volatile Dissolved Solids Loading

The estimated annual non-volatile dissolved solids (NVDS) loading for the entire reuse site is 1,892 lb/acre for recycled water and 1,723 lb/acre for groundwater irrigation (HDR 2024a, Table 5-3). The combined annual NVDS loading is projected to be 3,614 lb/acre. TWB's updated

WLAA and mixing zone analysis submitted to DEQ shows minimal impacts to groundwater total dissolved solids (TDS) (HDR 2024d, Section 3.2.3). NVDS loading limits are typically only issued as part of an NVDS management plan for facilities with elevated groundwater TDS concentrations. As stated in Section 4.5, TWB conducted preliminary groundwater sampling (HDR 2024a, Appendix H) for existing wells on the TWW and TWE farms (HDR 2024a, Table 4-8, Table 4-9). Groundwater in the irrigation wells depicted in Figure 4 currently meet Idaho *Ground Water Quality Rule* standards (IDAPA 58.01.11.200). DEQ recommends that TWB monitor groundwater TDS and calculate NVDS loadings to the management units but does not recommend an NVDS loading limit at this time. Salt management is discussed further in Section 5.8.

5 Site Management

5.1 Buffer Zones

Buffer zones for protection of surface water, ground water, drinking water supplies, and the public are required by IDAPA 58.01.17.604. The DEQ Reuse Permit Writer's Manual provides recommended buffer distances for various reuse scenarios (DEQ 2024c). For this permit modification, the following scenario was selected in determining buffer distances and is unchanged from Permit I-246-01: industrial, rural location, sprinkler application. A summary of buffer zones is shown in Table 9.

Table 9. Buffer zones, feet.

Object/Parameter	Proposed Permit Buffer Requirements[a]	DEQ Guidance Buffer Requirements[b]	TWB Actual Reuse Area[c]
Nearest Inhabited Residence	300	300	≥300 from MU-264-07 and MU-264-08
Nearest Public Water System	1,000[d]	1,000	>1/4 mile
Nearest Private Water Supply	500[d]	500	<50 feet
Areas Accessible to the Public	50	50	≥50
Nearest Surface Water	100	100	9 miles south
Nearest Irrigation Ditches/Canals	50	50	0.36 mile
Fencing	Not required	Not required	Two strand barbed wire around lagoons
Posting	Not required	Not required	Around the lagoons

a. Proposed buffer zones in preliminary technical report (HDR 2024a, Table 7-2).
b. The DEQ *Reuse Permit Writer's Manual* provides recommended buffer distances for various reuse scenarios. For this permit, the following scenario was used for determining buffer distances: industrial, rural location, sprinkler application.
c. Distances provided in the response to completeness determination (HDR 2021d). Updated distances for private water supply (TWB 2022).
d. Unless a Well Location Acceptability Analysis (WLAA) approved by DEQ indicates an alternative buffer zone is acceptable.

As shown in Table 9, the nearest private water supply is the only buffer zone that does not satisfy the buffer zones proposed in DEQ guidance. However, TWB updated their WLAA to reflect new information TWB has discovered regarding nearby wells. The updated WLAA states

all locations as acceptable. Buffer zones were incorporated when determining the acreage for TWE-7 and TWE-8 (HDR 2024a, Section 5). Figure 6 below depicts the buffer zones for groundwater wells within ¼ mile of the facility.

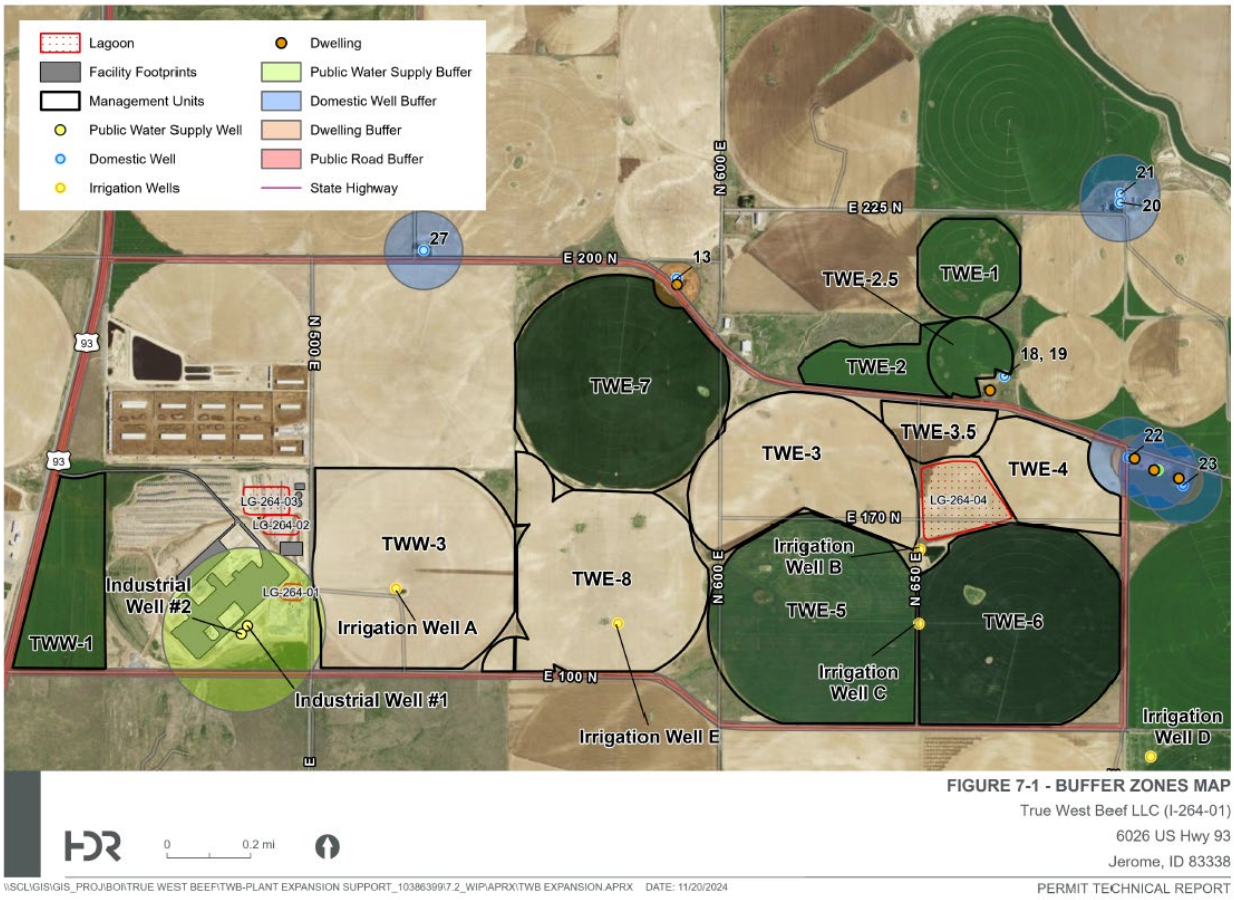

Figure 6. Buffer zones for groundwater wells within ¼ mile of the facility (HDR 2024a, Figure 7-1).

5.2 Runoff

The facility submitted an updated Run-Off Management Plan and addendum to DEQ on February 5, 2025 and DEQ accepted the plan on October 23, 2025. TWB proposes to manage runoff with berms throughout the site as well as by scheduling irrigation according to weather conditions and crop needs.

5.3 Seepage Rate Testing

TWB previously constructed four lagoons including the brine lagoon, CAL, and two recycled water storage lagoons. The updated maximum operating volumes, MG and surface areas are based on “as built” plans and specifications (HDR 2025b). The facility is proposing to add a fifth storage lagoon, Far East Storage Lagoon. The properties of each lagoon are provided in Table 10.

Table 10. Lagoon information.

Serial number	Description	Surface Area, acres	Maximum Operating Volume, MG	Liner Type
LG-264-01	Brine Evaporation Lagoon	1.2	1.58	60-mil HDPE
LG-264-02	Covered Anaerobic Lagoon	2.9	9.1	60-mil HDPE
LG-264-03	West Storage Lagoon	4.2	13.8	60-mil HDPE
LG-264-04	East Storage Lagoon	15.9	58.2	60-mil HDPE
LG-264-05	Far East Storage Lagoon	10.9	34.2	60-mil HDPE

To assess liner integrity, DEQ recommends that all proposed new lagoons or lagoons where the liner is damaged are required to be seepage tested before being put into service. DEQ recommends a maximum allowable seepage rate of 0.125 inches per day for all lagoons.

The procedures for performing a seepage test must be approved by DEQ. Test procedures for completing seepage tests are recommended to be submitted for DEQ review and approval at least 45 days prior to the planned seepage test. Information on seepage testing procedures is located at: *https://www.deq.idaho.gov/water-quality/wastewater/wastewater-treatment-and-collections/*

5.4 Waste Solids, Biosolids, Sludge, and Solid Waste

A waste solids management plan (WSMP) was approved by DEQ on October 16, 2024 (DEQ 2024c). The WSMP practices were developed with the intent of the facility processing 1000 hd/day of cattle. In the WSMP, TWB describes in detail the waste solids management practices of the waste solids streams of grit solids, paunch solids, DAF solids, CAL solids, and SBR solids. The industrial waste solids are generated from their respective process streams (Plan of Operation (PO); HDR 2023c), blended, dewatered and treated on the concrete paunch stacking pad, and land applied to the facility's management units as a final end use in accordance with the Permit.

5.5 Nuisance Odors

TWB submitted a Nuisance and Odor Management Plan to DEQ on December 6, 2023. TWB anticipates the Nuisance and Odor Management Plan will require an update in the PO as a compliance activity in the modified permit. DEQ will include a compliance activity in the permit modification that updates the Nuisance and Odor Management Plan in the facility's PO.

5.6 Cropping Plan

TWB submitted a Cropping Plan in the PO (last submitted with 2023 Annual Report in February 2024; HDR 2023a) and submitted the 2023 Cropping Plan to DEQ on February 18, 2023. The 2023 Cropping Plan was reviewed and approved by DEQ on March 30, 2023. DEQ will include a

compliance activity in the permit modification that updates the Cropping Management Plan in the facility's PO incorporating MU-264-11 and MU-246-12.

5.7 Grazing

TWB does not anticipate grazing the reuse site (HDR 2024a, Section 7.3.2). A DEQ-approved grazing management plan is required prior to any grazing.

5.8 Salts

The accumulation of salts in reuse site soils may potentially impact plant growth and result in leaching to ground water. The monitoring of electrical conductivity and sodium adsorption ratio (SAR) or exchangeable sodium percentage (ESP) in soils and TDS in groundwater may be used to determine salt impacts to a reuse site. The *Ground Water Quality Rule* (IDAPA 58.01.11.200.01.b) secondary constituent standard for TDS is 500 mg/L.

Salts in recycled water may be measured in a variety of ways including analyzing for NVDS or total dissolved inorganic solids (TDIS). The TDS in food processing industrial recycled water may include not only the salt content of the recycled water but significant levels of soluble organic constituents as well. The inorganic fraction of TDS is called NVDS. The assumption for this is that the volatile fraction represents the organic constituents, and the difference between TDS and volatile dissolved solids (VDS) represents the inorganic or salt fraction. But this is only a general assumption, since decomposition, volatilization, and oxidation of some mineral salts does occur. TDIS measurement involves the summing of individual ions, such as chloride, sulfate, carbonate/bicarbonate, potassium, calcium, sodium, magnesium, and other inorganic constituents (DEQ 2007, Section 3.4.5, p. 3-6).

In the Permit, total dissolved inorganic solids (TDIS) is monitored in the recycled water semiannually in the second and fourth year of the permit to characterize the inorganic salts in the recycled water and evaluate the relationship between NVDS and TDIS at the beginning and end of the permit cycle. The collected TDIS data will help identify the dominant salts in the recycled water and, in addition, TDIS data will be useful for evaluating potential soil and groundwater impacts resulting from salt loading.

TWB does not expect salt (NVDS or TDIS) loadings to result in significant groundwater degradation (See Section 4.6.3; HDR 2021b, Section 7.3.5; HDR 2021b, Section 5.1.7). DEQ does not recommend requiring a salt loading management plan at this time. Section 5 discusses all recommended monitoring requirements for the draft permit.

6 Monitoring

A detailed discussion and summary of the monitoring requirements are outlined in Section 6 of the staff analysis issued with the Permit (DEQ 2022b). TWB has stated that monitoring

parameters and protocol for recycled water, soils, crops, and supplemental water will be conducted in accordance with the Permit and will be the same for the additional MUs. DEQ does not, therefore, intend to alter monitoring parameters issued in the Permit for recycled water, soils, crops, and supplemental water. However, TWB has proposed additional flow meters and constituent monitoring requirements in the Groundwater Monitoring Plan that will be updated in this permit modification.

6.1 Wastewater/Recycled Water Monitoring

6.1.1 Flow Monitoring

TWB proposes to add nine new flow meters, FM-264-13 through FM-264-21, to the Permit. Table 11 summarizes the comprehensive flow monitoring proposed in the draft major permit modification. Due to the expansion, several existing flow meter entries have been updated to reflect the current flow diagram in Figure 3 (DEQ 2024a):

- **Updated Sample Description Only:** FM-264-04, FM-264-05, FM-264-06, FM-264-07, and FM-264-08.
- **Updated Location and Sample Description:** FM-264-09, FM-264-10, FM-264-11, FM-264-12, and FM-264-22.

Table 11. Updated flow monitoring requirements for Reuse Permit No. I-264-01

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Parameters, each MU or FM
FM-264-01 Flow meter at LG-264-03 pump station	Recycled water flow from LG-264-03 to MU-264-01	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-02 Flow meter at LG-264-03 pump station	Recycled water flow from LG-264-03 to MU-264-02	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-03 Flow meter at LG-264-04 irrigation manifold	Recycled water flow from LG-264-04 to MU-264-03 MU-264-04 MU-264-05	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-04 Flow meter at LG-264-04 irrigation manifold	Recycled water and supplemental irrigation water to MU-264-04	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Parameters, each MU or FM
FM-264-05 Flow meter at LG-264-04 irrigation manifold	Recycled water flow from LG-264-04 to MU-264-07 and MU-264-08	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-06 Flow meter at LG-264-04 irrigation manifold	Recycled water flow from LG-264-04 to MU-264-06	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-07 Flow meter at LG-264-04 irrigation manifold	Recycled water flow from LG-264-04 to MU-264-09	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-08 Flow Meter at LG-264-04 irrigation manifold	Recycled water flow from LG-264-04 to MU-264-10	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-09 Flow meter at LG-264-04 irrigation manifold	Recycled water flow from LG-264-04 to MU-264-11	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-10 Flow meter at LG-264-04 irrigation manifold	Recycled water flow from LG-264-04 to MU-264-12	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-11 Flow meter at Irrigation Well A	Supplemental irrigation water to Irrigation Pond A	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-12 Flow meter at Irrigation Well B	Supplemental irrigation water to Irrigation Pond B	- Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-13 Flow meter at Irrigation Well C	Supplemental irrigation water to Irrigation Pond B	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-14 Flow meter at TWW-2 pivot	Supplemental irrigation water to MU-264-01	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-15 Flow meter at LG-264-04 irrigation manifold	Supplemental irrigation water to MU-264-03 MU-264-04 MU-264-05	Daily meter reading - Monthly compilation of data	- Volume (MG/month)

FM-264-16 Flow meter at LG-264-04 irrigation manifold	Supplemental irrigation water to MU-264-06	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-17 Flow meter at LG-264-04 irrigation manifold	Supplemental irrigation water to MU-264-07 and MU-264-08	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-18 Flow meter at LG-264-04 irrigation manifold	Supplemental irrigation water to MU-264-09	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-19 Flow meter at LG-264-04 irrigation manifold	Supplemental irrigation water to MU-264-10	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-20 Flow meter at LG-264-04 irrigation manifold	Supplemental irrigation water to MU-264-11	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-21 Flow meter at LG-264-04 irrigation manifold	Supplemental irrigation water to MU-264-12	Daily meter reading - Monthly compilation of data	- Volume (MG/month)
FM-264-22 Flow meter at Irrigation Well E	Supplemental irrigation water to Irrigation Pond B	Daily meter reading - Monthly compilation of data	- Volume (MG/month)

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Parameters, each MU or FM
MU-264-01 MU-264-02 MU-264-03 MU-264-04 MU-264-05 MU-264-06 MU-264-07 MU-264-08 MU-264-09 MU-264-10 MU-264-11 MU-264-12	Recycled water flow to each management unit	- Use of flow totalizer, pivot speed, and nozzle package to calculate flow - Monthly and annual compilation of data	- Volume (MG/month) - Application depth (inches/month)
MU-264-01 MU-264-02 MU-264-03 MU-264-04 MU-264-05 MU-264-06 MU-264-07 MU-264-08 MU-264-09 MU-264-10 MU-264-11 MU-264-12	Supplemental irrigation water flow to each management unit	- Use of flow totalizer, pivot speed, and nozzle package to calculate flow - Monthly and annual compilation of data	- Volume (MG/month) - Application depth (inches/month)

6.2 Soil Monitoring

TWB has stated that monitoring parameters and protocol for soils will be conducted in accordance with the Permit and will be the same for the additional MUs. DEQ does not, therefore, intend to alter monitoring parameters issued in the Permit soils.

6.3 Groundwater Monitoring

TWB submitted a Groundwater Monitoring Plan on January 31, 2024 and DEQ approved the plan on May 29, 2024 (HDR 2024c; DEQ 2024c). TWB's Groundwater Monitoring Plan has proposed adding three new monitoring wells to the site. Currently, the Groundwater Monitoring Plan serves to address the requirements in compliance activity, CA-264-04 of the Permit and is incorporated into the Permit by reference. DEQ will incorporate the monitoring requirements from the Groundwater Monitoring Plan into the permit modification.

7 Quality Assurance Project Plan

The QAPP outlines the procedures used by the permittee to ensure the data collected and analyzed meets the requirements of the permit.

To support its mission, DEQ is dedicated to using and providing objective, correct, reliable, and understandable information. Decisions made by DEQ are subject to public review and may at times, be subject to rigorous scrutiny. Therefore, DEQ's goal is to ensure that all decisions are based on data of known and acceptable quality.

The QAPP is a permit requirement and must be submitted to DEQ as a stand-alone document for review and acceptance. The QAPP is used to assist the permittee in planning for the collection, analysis, and reporting of all monitoring data in support of the reuse permit and explaining data anomalies when they occur.

DEQ does not approve QAPPs, but reviews them to determine if the minimum EPA guideline requirements are met and that the reuse permit requirements are satisfied. DEQ does not approve QAPPs because the responsibility for validating of the facility's sampling data lies with the permittee's quality assurance officer and not with DEQ.

The format of the QAPP should adhere to the recommendations and references in the Quality Assurance Project Plan section of DEQ guidance (DEQ 2024c) and EPA QAPP guidance documents https://www.epa.gov/system/files/documents/2025-10/qapp-guidance_dtd_10012025_1.pdf.

TWB's QAPP was received by DEQ on December 6, 2023 (HDR 2023b). This major permit modification includes altering of acreage and addition of a lagoon and flow meters. DEQ recommends a compliance activity to update the facility's QAPP.

8 Site Operation and Maintenance

The current Chief Financial Officer of TWB will be the Responsible Official for the reuse Permit and plant operations. The current General Manager of TWB will be the permit Authorized Representative and is responsible for environmental regulations at the plant (TWB 2024).

Driscoll Brothers Farms will manage farming operations. TWB is the permittee and is ultimately responsible for reuse permit compliance. A lease agreement between TWB and Driscoll Brothers Farms was provided to DEQ (HDR 2024a). DEQ recommends TWB coordinate with the third-party farmer regarding irrigation and supplemental fertilizer application to ensure compliance with the permitted loading limits.

9 Compliance Activities

The following sections discuss the status of compliance activities in the current permit and itemize those compliance activities included in the draft permit.

9.1 Status of Compliance Activities in Current Permit

Table 12 shows the compliance activities required by Reuse Permit No. I-264-01 (DEQ 2022a) and their current statuses.

Table 12. Reuse permit I-264-01 compliance activities and statuses for TWB

Compliance Activity	Description	Due Date	Status
CA-264-01	Plan of Operation (PO)	January 1, 2024	Received: December 8, 2023 DEQ Review: Pending
CA-264-02	Quality Assurance Project Plan (QAPP)	January 1, 2024	Received December 4, 2023 DEQ Review: Pending
CA-264-03	Seepage Testing	As Specified	Completed: LG-264-01 - November 2022 LG-264-02 - November 2022 LG-264-03 - November 2022 LG-264-04 – October 2023
CA-264-04	Groundwater Monitoring Plan	February 1, 2024	Accepted: May 29, 2024
CA-264-05	Pre-Application Workshop	January 1, 2027	Pending
CA-264-06	Renewal Permit Application	July 1, 2027	Pending

9.2 Compliance Activities Required in Modified Permit

TWB is currently in compliance with all existing compliance activity requirements; however, this major permit modification necessitates the inclusion of several new compliance activities. These required compliance activities include seepage testing for the expansion of the East Storage Lagoon and the new Far East Storage Lagoon, a compliance activity to update the facility's Plan of Operation (PO) and Quality Assurance Project Plan (QAPP), and a dedicated compliance activity to evaluate the adequacy of the Groundwater Monitoring Network. All three of these activities will be formally incorporated into this major permit modification.

10 Recommendations

DEQ Staff recommend the draft major permit modification be issued. The permit specifies hydraulic and constituent loading limits and establishes monitoring and reporting requirements to evaluate system performance, environmental impacts, and permit compliance.

11 References

HDR. 2025. *True West Beef 2024 Annual Report. True West Beef.* Permit I-264-01. (HDR 2025a).

HDR. 2025. *Correspondence on Volumes/Surface Areas of Lagoons and Updated Acreages for Modification 2. True West Beef.* Permit I-264-01. (HDR 2025b).

HDR. 2025. *True West Beef 2024 Annual Report. True West Beef.* Permit I-264-01. (HDR 2025c).

HDR. 2025. *True West Beef, LLC Schedule Change for Reuse Expansion. True West Beef.* Permit I-264-01. (HDR 2025d).

HDR. 2024. *Technical Report: DBV Property Reuse Permit Modification.* Permit I-264-01. True West Beef LLC. (HDR 2024a).

HDR. 2024. *Preliminary Engineering Report: Process Wastewater Treatment Expansion. True West Beef.* Permit I-264-01. (HDR 2024b).

HDR. 2024. *Groundwater Monitoring Plan. True West Beef.* Permit I-264-01. (HDR 2024c).

HDR. 2024. *Updated Well Location Acceptability Analysis. True West Beef.* Permit I-264-01. (HDR 2024d).

HDR. 2024. *True West Beef 2023 Annual Report. True West Beef.* Permit I-264-01. (HDR 2024e).

HDR. 2023. *Quality Assurance Project Plan. True West Beef.* Permit I-264-01. (HDR 2023b).

HDR. 2023. *Plan of Operation. True West Beef.* Permit I-264-01. (HDR 2023c).

HDR. 2023. *True West Beef 2022 Annual Report. True West Beef.* Permit I-264-01. (HDR 2025d)

HDR. 2021. *Technical Report: Industrial Wastewater Permit .* Permit I-264-01. True West Beef LLC. (HDR 2021a).

Idaho Department of Environmental Quality (DEQ). 2024. *Industrial Recycled Water Permit No. I-264-01: Modification 1.* Permit I-264-01. True West Beef LLC. (DEQ 2024a).

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Idaho Department of Environmental Quality (DEQ). 2024. *DEQ Reuse Permit Writer's Manual*. (DEQ 2024c).

Idaho Department of Environmental Quality (DEQ). 2024. *Groundwater Monitoring Plan Acceptance Letter.* Permit I-264-01. True West Beef LLC. (DEQ 2024c).

Idaho Department of Environmental Quality (DEQ). 2024. *Waste Solids Management Plan – Approval Letter.* Permit I-264-01. True West Beef LLC. (DEQ 2024d).

Idaho Department of Environmental Quality (DEQ). 2022. *Industrial Recycled Water Permit No. I-264-01.* Permit I-264-01. True West Beef LLC. (DEQ 2022a).

Idaho Department of Environmental Quality (DEQ). 2022. *Staff Analysis for Industrial Recycled Water Permit No. I-264-01.* Permit I-264-01. True West Beef LLC. (DEQ 2022b).

Idaho Department of Environmental Quality (DEQ). 2007. *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater.* (DEQ 2007).

True West Beef. 2024. *Recycled Water Reuse Permit Application*. Permit I-264-01. True West Beef LLC. (TWB 2024).

True West Beef. 2022. *RE: True West Beef LLC comments on Draft Reuse Water Permit No. I-264-01*. True West Beef LLC. (TWB 2022).

Idaho Department of Water Resources (IDWR). 2024. ET_{Idaho} 2023. *https://et-idwr.idaho.gov/* (IDWR 2024).

Appendix A. Site Maps

