

Exhibit D

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OPERATION AND MAINTENANCE

A properly operated and maintained Sediment Basin/Pond is an asset to your farm. This sediment basin was designed and installed to remove, collect and provide temporary storage of sediment and water. The pond will reduce sediment transport and slow the transport of flow to Elkhorn Slough from adjacent organic, agricultural fields. It is also intended to maintain a 4-ft deep pool in a portion of the pond until mid-July to support amphibian breeding, to ensure the pond can be drained to control non-native predators, such as bullfrogs, and to provide shallow depth areas for amphibian egg-laying, waterfowl food sources, and a mix of open water and vegetated areas for cover from predators.

The introduction and spread of American bullfrog has led to the decline of CRLF and other amphibian populations. Bullfrogs prey on larval and juvenile frogs directly and often outcompete the native ranids for resources. Carnivorous adults prey on native amphibians, while herbivorous tadpoles outcompete native tadpoles for algal food resources. Bullfrog populations are known to exist within the dispersal distance of the project pond. By creating a seasonal wetland that dries in the summer, it is no longer ideal bullfrog breeding habitat and bullfrog larvae in the pond will be eradicated. If bullfrogs are detected in the project pond and the pond will not naturally dry by the end of summer, achieving the project objectives will be accomplished by implementing and evaluating the effectiveness of appropriate strategies of control, which may include:

- a. Fully draining the pond; and/or
- b. Direct removal of invasive species.

Monitoring will be conducted, by a qualified biologist and as authorized under the necessary permits, for both native and non-native species presence and will be accomplished primarily through annual visual and aquatic surveys (e.g. nighttime eyeshine surveys, daytime visual surveys for adults, dip net surveys for larvae, etc.).

If bullfrog larvae are detected in the pond through visual observation and/or aquatic sampling and draining of the pond is desired, a pump with a screened intake will be installed in the deepest portion of the pond once all native amphibians, if they are present, have left the pond (anticipated to be by the end of July). The pond will be drawn down entirely and will remain dry until the first winter rains.

In addition to pond dry down, other direct removal methods will occur throughout the year, as needed.

All direct capture and removal efforts will be conducted by qualified biologists with expertise in invasive and native aquatic species identification and as authorized under necessary permits. A team of two or more biologists may use a variety of standard methods to capture invasive species, including seining, dip-netting, electrofishing, or other methods outlined in recovery permits. All captured organisms will be identified and the number and location of captured individuals of each invasive species will be recorded. Invasive species will be euthanized and disposed of in accordance with applicable permit requirements. Native species, captured during direct removal efforts, will be returned to the habitat where they were captured, in compliance with the state and federal Endangered Species Act.

Maintenance of the vegetation and the pond and its components (outlet pipe, water level control structure, and lined waterway) are described below in their respective sections. In addition to these requirements, the following measures will be adhered to to protect special status species and other wildlife during these activities.

- Maintenance or repair activities within the pond are limited to September 1 to October 15 when water levels are lowest or the pond is dry and to avoid impacts to nesting birds and native amphibians, if they are present. If water is still present in the pond, a qualified biologist shall observe pond dry down, relocating any animals as necessary and consistent with the necessary permits.
- Management of the pond, i.e., the addition or removal of weir boards in the Structure for Water Control, will be completed in consultation with a qualified biologist to ensure that species are not negatively affected by the increase or decrease in water levels.
- Maintenance activities in upland habitat, such as removing woody vegetation from the lined waterway, shall be limited to the dry season. As many wildlife species can be found in burrows or under leaf litter during the summer months, care should be taken when performing such activities. If any species of concern are observed, all work shall halt until a qualified biologist can identify the species and consult with the applicable wildlife agency.

The estimated life span of this installation is at least 20 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

Periodic operation and maintenance are required to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program:

Sediment Basin/Pond

- Periodic removal of sediment is necessary to maintain the effectiveness of this installation. The cleanout intervals may vary depending upon the volume of sediment that has accumulated. As a general rule the basin will lose its effectiveness when about 50 percent of the design volume is filled with sediment.
- Periodically inspect the spillways and control gates for proper functioning for their ability to maintain the water level to design elevations. Immediately remove any blockage or obstructions in spillways.
- Maintain vigorous growth of emergent vegetation. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

Pipe

- Inspect all above ground connections, valves, gates, trash racks, rodent guards, inlets and outlets to make sure they are functioning properly. Remove any trash or debris and promptly repair if necessary.
- Maintain design depth of cover on all pipelines and structures.
- Avoid operation of tillage and subsoiling equipment that could damage any component of the system.

- Remove all foreign debris that hinders system operation.
- Limit traffic over pipeline to designated sections that were designed for traffic loads.
- Maintain vigorous growth of vegetative coverings. This includes reseeding and fertilization when necessary.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.
- Repair leaks and broken or crushed pipes to insure proper functioning of the conduit.

Water Level Control Structure

- Inspect interior of the structure and remove any debris.
- Inspect the outlet side of the structure for seepage. Some seepage may occur. Check and/or replace the O-ring on the weir board if the seepage is excessive.
- To clean, remove weir boards and grease seal with lube. Ensure there is no debris in the tracks or along the bottom of the structure. Replace weir boards after greasing, ensuring bottom of weir board is installed first.
- To minimize seepage, align weir boards firmly against one side of the track.
- To raise the water level in the pond, place the weir boards in the track and push to the bottom (ensuring the O-ring is on the bottom of the board). To lower the water level in the pond, raise the weir boards.
- Weir boards should remain in place when the goal is to hold water in the pond. The boards vary in height – either 5” or 7”. Use a combination of four (4) 5” boards and four (4) 7” boards to obtain a height of 48” (or 4-ft).
- Weir boards should be removed to allow the pond to drain when more than 3.5” of rain is predicted in any 24-hour period.

Lined Waterway (Rock Apron)

- Maintain adequate drainage of foundations.
- Maintain widths of soil berms or banks. Avoid use of tillage equipment that accelerates soil removal.
- Drain all lined waterways or outlets when not being used. Immediately repair any cracks or breaks in the lining, and if settlement is present, investigate cause before repair.
- Remove any blockage (sediments, debris, foreign material etc.) that restrict flow capacity.
- Immediately repair any vandalism, vehicular or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation and perennials from areas adjacent to lining,
- Repair or replace rusted or damaged metal and paint and apply paint as a protective coating.
- Avoid crossings of equipment or vehicles except at designated areas.

Critical Area Planting

- Maintain vegetation cover that is consistent with the approved restoration plan.
- If the area needs to be mowed, use care to maintain vegetation stems in place at a height of 3-inches (minimum).

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