COOLEY RANCH 401 WATER QUALITY CERTIFICATION MITIGATION AND MONITORING PLAN

The Mitigation and Monitoring Plan for the Cooley Ranch Project, prepared for the US Army Corp of Engineers, In Support of the Klein Foods, Inc. Water Rights Applications 31301, 31362, and 31362, dated March 2007, is amended as follows:

1) 1.0 INTRODUCTION

Page 1, below paragraph 1, add new paragraph:

Concurrently with the adoption of this amended Mitigation and Monitoring Plan, the State Water Resources Control Board (State Water Board) has issued a Water Quality Certification pursuant to section 401 of the Clean Water Act for the Cooley Ranch Project. Application processing indicated that an increase in the total acreage to 3.15 acres for the newly created wetlands; an increase annual wetland monitoring up to 10 years; and an increase in the setback to 100-feet for equipment staging and soil stockpiling was needed to provide adequate mitigation of impacts from the proposed project activities. The State Water Board has adopted an amended March 2007 Mitigation and Monitoring Plan that contains these changes.

2) 3.0 PROJECT REQUIRING MITIGATION

3.3.1, Jurisdictional Areas

Page 9, paragraph 1, modify paragraph and add paragraph:

… part of mitigation in a ratio of ~~1:1~~ **1.5:1** created versus lost. Preservation will occur at a ratio of 3.5:1 preserved versus impacted. Stream impacts will be mitigated by preservation and enhancement of existing streams at a ratio of 3:1 preserved and enhanced versus impacted streams. The streams will be enhanced through planting and caging of trees, as well as exotic vegetation removal and trash and litter collection, which will also act as mitigation for tree removal due to dam construction at a ratio of 3:1 planted versus removed trees.

The federal and state goals of "no net loss" of wetlands are established in 40 CFR parts 230-233 (404 (b)(1) guidelines)[1] and in State of California, Executive Department, Executive Order W-59-93, respectively. A state-wide evaluation of compensatory mitigation projects revealed that the majority of projects that met or exceeded acreage mitigation requirements had an overall mitigation ratio of 1.9:1[2]. Establishing a mitigation ratio of 1.5:1, an additional 1.05 acres above the 2.1 acres impacted due to construction will assure "no net loss" of wetland acreage. The total of created wetlands will be 3.15 acres.

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[1] 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources issued by the US Army Corp of Engineers (ACOE) and Environmental Protection Agency.

[2] "An Evaluation of Compensatory Mitigation Projects Permitted Under Clean Water Act by the California Water Resources Control Board, 1991-2002", R. F. Ambrose, J. C. Callaway and S. F. Lee, August 2007.

3.3.1, Jurisdictional Areas

Page 9, below paragraph 2, add new paragraph:
Unless other runoff controls are implemented, a larger setback of 100 feet is needed for the equipment staging areas and sediment stockpiles during construction activities due to the project topography and the proximity of these areas to existing streams and drainages. A setback of 100 feet to any watercourse will be maintained for all excavated sediment, debris and trash during construction activities. A 50-foot setback will be implemented when containment and/or cover equipment are used to control runoff during rainfall events.

3) 4.0 MITIGATION DESIGN

4.1 Location
Page 15, paragraph 1, modify paragraph:
Proposed mitigation is to be implemented on-site at POU 4N, the site's largest wetland complex and most profound water source. **Additional wetland mitigation may also be created in the drainage channels downstream of the Reservoir 2W and/or Reservoir 2N having designated bypass flows** . Mitigation for stream and tree impacts will **also** occur on Snow Creek and an Unnamed Stream (hereafter referred to as "Unnamed Stream"). Refer to Section 11.3 for a discussion on protection of the mitigation site, Section 3.1 for a description of the location and Figures 1 and 2 for maps of the location.

4.2 Basis for Design
Page 15, paragraph 1, modify paragraph:
The wetland areas to be impacted by the project are seeps. In order to mitigate "in-kind" for the impacted wetlands, the existing seep area will be expanded to create ~~2.1~~ **3.15** acres of new wetland, ensuring similar functions and values to the ones that will be impacted. The created wetland will be located adjacent to existing seeps, which are fed by springs and rainwater**,** and/**or drainage channels downstream of the Reservoir 2W and/or Reservoir 2N. The new wetlands** will be created at a ratio of ~~1:1~~ **1.5:1** new wetlands versus lost wetlands. Natural hydrology, wildlife habitat value, and soil characteristics are the criteria used in choosing the mitigation sites. Trees removed or impacted by the project will be mitigated in at least a 3:1 ratio of planted versus lost. Mitigation for tree impacts will coincide with the enhancement of streams through planting of trees along Snow Creek and the Unnamed creek. A total of 13,500 linear feet of these two streams will be preserved and enhanced for a ratio of 3:1 to offset impacts due to the project. These two streams support strong populations of the FYLF. Three standpipes are proposed for construction as part of the mitigation plan to enhance the flow into the Unnamed tributary to Lake Sonoma.

4.2.1 Natural Hydrology

Page 16, paragraph 1, modify paragraph:

Wetland mitigation will be accomplished through a combination of creation and preservation. The mitigation site was chosen due to the presence of an existing high-quality wetland complex and existing springs adjacent to a proposed reservoir site, 2N. This same wetland complex is the headwaters for an Unnamed Stream that is inhabited by FYLFs and is one of the stream courses chosen for mitigation and enhancement for impacts to channels (other waters of the U.S.). The existing wetlands form the largest wetland complex (7.35 acres) in the Cooley Ranch Project Area. These wetlands are fed by a combination of rainwater and a series of springs, which in turn form the headwaters of the Unnamed Stream. The presence of these springs, combined with rainfall, will provide sufficient natural water for creation of **at least** an additional 2.1 acres of wetland. ~~The creation of 2.1 acres of wetland will mitigate for wetland loss due to the project with creation at a 1:1 (acre:acre) ratio.~~ **An additional 1.05 acres to the proposed 2.1 acres of newly created wetland will assure "no net loss" of wetland acres due to construction. If there is not sufficient water supply to support creation of these additional acres in/or adjacent to the existing wetland complex, this additional acreage may be constructed adjacent to the drainage channels downstream of Reservoir 2W and/or Reservoir 2N having designated bypass flows. The total of created wetlands will be 3.15 acres.** Existing wetlands ~~at the location~~ **in the Cooley Ranch Project Area** will ~~also~~ be preserved**.**~~, resulting in a~~ Preserved ~~preserved~~ **or created wetlands will total** ~~wetland complex totaling 9.45~~ **10.5** acres.

4.4.1 Location

Page 21, paragraph 1, modify paragraph:

Proposed mitigation includes wetland mitigation and drainage mitigation (Figure 4). Wetland mitigation, **including at least 2.1 acres of created wetland mitigation,** will occur adjacent to Wetlands B and C. This area is in and adjacent to POU 4N, in Study Area 1N and within Cooley Ranch property limits. **An additional 1.05 acres of mitigation wetlands may be created in this area and/or adjacent to the drainage channels downstream of Reservoir 2W and/or Reservoir 2N having designated bypass flows.** Stream mitigation will occur on two intermittent drainages within Cooley Ranch. One drainage, the Unnamed Stream, is born at the wetland mitigation site. This stream forms a contiguous corridor from the wetland mitigation site to the Cooley Ranch Property boundary. The second drainage is Snow Creek, located on Cooley Ranch (see Figure 5) northeast of the wetland mitigation site. Both streams were chosen because they contain significant populations of FYLF and therefore are ideal preservation sites.

4.4.3 Jurisdictional Areas

Page 22, paragraph 1, modify paragraph:

The mitigation will expand Wetlands B and C, which compose a combined 7.35 acres. Wetland mitigation will expand the~~se~~ wetlands by ~~2.1~~ **3.15** acres **in Wetlands B and C and/or land adjacent to the drainage channels downstream of Reservoir 2W and/or Reservoir 2N**. A 50-foot upland buffer will be placed

around the new ~~9.45~~ **10.5**-acre ~~preservation~~ **wetland complex** ~~area~~. Figure 7 shows existing wetlands, proposed wetland creation/expansion areas, and upland buffer. Both streams designated for mitigation are jurisdictional waters of the U.S.

4.4.9 Present and Proposed Uses of All Adjacent Areas
Page 22, below paragraph 1, add new paragraph:
During construction activities, 100-foot setback is needed for the equipment staging areas, sediment stockpiles, and construction trash and debris due to the project topography and the proximity of these areas to existing streams and drainages. A 50-foot setback will be implemented if containment and/or cover equipment are used to control runoff during rainfall events.

4.5.1 Compensation Ratios
Page 23, Table 4, Row 1, Mitigation (Acres) column, modify acreage:
~~2.1~~ **3.15**.

4.5.1 Compensation Ratios
Page 23, Table 4, Row 1, Mitigation Ratio column, modify ratio:
~~1:1~~ **1.5:1**.

4) 5.0 SUCCESS CRITERIA AND MONITORING

5.1 Success Criteria
Page 25, Table 5, modify Table 5 title:
SUCCESS CRITERIA AT THE END OF A ~~5~~ **10**-YEAR MONITORING PERIOD

5.1 Success Criteria
Page 25, Table 5, Row 3, Success Criteria column, modify year:
By monitoring Year 3, total plant cover within the constructed wetlands shall be at least 70%. By monitoring Year ~~5~~ **10**, total plant cover within the created wetlands and protective buffer area shall be 95%.

5.2.2 Monitoring Schedule
Page 26, Table 6, Row 3, Schedule column, modify years:
Between March 1 and May 1 of Monitoring Years 1-~~5~~ **10**.

5.2.2 Monitoring Schedule
Page 26, Table 6, Row 4, Schedule column, modify years:
August for Monitoring Years 1-~~5~~ **10**.

5) 6.0 IMPLEMENTATION

6.2.1 Planting Plan
Page 29, paragraph 3, modify paragraph
Plugs will be planted in rows that will be spaced 5 feet apart. Within each row, plugs will be planted at 5-foot intervals. There will need to be approximately 1,740 plants

per acre and a total of approximately ~~3,560~~ **5,480** plants required in order to plant ~~2.1~~ **3.15** acres of created wetlands. The designated plug plants will be *Juncus effusus* and *Deschampsia caespitosa* (Table 7).

6.2.1 Planting Plan

Page 29, paragraph 4, modify paragraph:

Seeds will be distributed evenly over the ~~2.1~~ **3.15** acres of created wetland. Each acre of created wetland will receive 1-to-2 pounds of seed. Seed will follow the mix designated in Table 7. All seeds will be mixed together in one container to create a homogenous seed mixture. Transects across created wetlands will be established at approximately five meter intervals. Small aliquots (one-to-three handfuls) will be taken of the seed mix and dispersed while walking transects. To reduce the chance that seeds will be swept away, the created wetland will be raked following seed dispersal. Raking will be done using a York rake, or other type of landscape rake or harrow, pulled by a tractor. If tractor access is not feasible, the areas may be raked by hand using garden rakes.

Page 30, Table 7, Species *Deschampsia caespitosa,* Quantity column, modify quantity of plants:

~~1,780~~ **2,740**

Page 30, Table 7, Species *Juncus effusus,* Quantity column, modify quantity of plants:

~~1,780~~ **2,740**

6) 8.0 PROPOSED MONITORING REPORTS

8.3.2 Contents

Page 35, paragraph 1, modify paragraph:

Annual reports following each year of full monitoring will follow the monitoring report outline presented in Appendix C to the *Special Public Notice: Mitigation and Monitoring Proposal Guidelines* (USACE, 2004). This monitoring report outline is included as Appendix A to the present Plan. Years of partial monitoring are not anticipated to be necessary. The final monitoring report will comprise the information normally contained in an annual report, as well as a delineation of created wetlands to ensure the ~~1:1~~ **1.5:1** mitigation ratio of created versus impacted is met. The tree mitigation (3:1 ratio) will be considered successful when at the end of the 5-year period the tree plantings have achieved a 75% success rate and the mitigation sites have achieved a 35% to 50% cover of woody vegetation. If survival of the plantings is determined to be below 75% after any of the monitoring events, additional plants shall be planted in order to maintain a 75% success rate.

7) 11.0 LONG-TERM MANAGEMENT

11.3 Site Protection

Page 40, paragraph 2, modify paragraph:

The wetland mitigation area is defined as ~~2.1~~ **3.15** acres of created wetlands, 7.3 acres of preserved wetlands, and a 50-foot upland buffer surrounding the combined created and preserved wetlands. The stream mitigation area is defined as the channel and 100-foot buffers surrounding the portion of Snow Creek within Township 11N, Range 11W, Section 16; and the Unnamed Stream from its headwaters downstream to the Cooley Ranch property boundary (Figure 4). The wetland and stream mitigation areas are currently designated as "Unlimited Agriculture." To protect the mitigation site long-term, wetland and stream mitigation areas will be transferred to "Forever Wild" designation.

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