This document is intended to assist the Water Board in addressing changes requested by Reynolds during review of the draft permit. The document proceeds from Form 2C (1) to BOD5 (2a) to Temperature Study (2b). Requested deletions are in RED. Requested additions and insertions are in BLUE.

1. Form 2C
    a. Pg. 9, Table A Row 6, Effluent columns.

        Change Maximum Daily Discharge
        FROM 1.27 MGD
        TO 1.84 MGD
        Change Long-Term Average Daily Discharge
        FROM NA
        TO 1.3 MGD
        Change Number of Analyses
        FROM 1371
        TO 1827
        1. These calculations are based on operating records from 2016 to 2020.

2. Draft National Pollution Discharge Elimination System (NPDES) CA0004821 Order R5-2023-XXXX
    a. BOD5
        1. Table edits for concentration change. IV. A.1.a. Table 4 Page 5. Row: Biochemical Oxygen Demand…Column: Maximum Daily.

            Change

            FROM 11.4 mg/L

            TO* 22.4 mg/L

            *Calculation is based on the Long-Term Average Flow of 1.3 mgd.

            - 11.4 also occurs on:
                a. Table F-2, pg. F-6
                b. Table F-7 pg. F-15
                c. Table F-13 pg. F-40

    b. Temperature Study

        1. Text edits for clarification V. A.16.Pg. 8

        Change

        FROM **Temperature.** The natural temperature to be elevated by more than 5 degrees Fahrenheit or to be increased above 56 degrees Fahrenheit during periods when temperature increases will be detrimental to the fishery, whichever is more restrictive.

        TO **Temperature.** The natural temperature to be increased by more than 5 degrees Fahrenheit or to be increased above 56 degrees Fahrenheit by the discharge during periods when temperature increases will be detrimental to the fishery, whichever is more restrictive. Compliance is to be determined based on the difference in temperature at monitoring locations RSW-001 and RSW-002 given appropriate averaging. Specific limitations are to be determined in accordance with Section VI C. 2. e.

2. Submittal Schedule and Specific Language VI.C.2.e.Pg. 16

   Change

   FROM **Temperature Study Update.** **Within 1 year of the effective date of the permit**, a Temperature Study Update shall be submitted to the Central Valley Water Board for review. The scope and objective of the Temperature Study Update are detailed in Fact Sheet section VI.B.2.e.

   TO **Temperature Study Update**. **Within 30 days of the effective date of the permit,** Reynolds shall provide state and federal agencies (yet to be named) a copy of the existing Temperature Study for their review and comment. All agencies receiving a copy of the Temperature Study will have 60 days to review and comment on the Temperature Study. After state and federal agency review (60 days), if the comments require further sampling, Reynolds will develop a work plan for additional sampling and provide that work plan to the Central Valley Water Board for review and approval within 120 days of the completion of the state and federal agency reviews and comments. Reynolds will implement tasks summarized in the approved work plan within 120 days of the Central Valley Water Board approval.

   If state and federal agencies require a desk top study in order for the updated Temperature Study to gain approval, Reynolds will complete a desk top study within 120 days of state and federal agency comment and review. The state and federal agency reviewed updated Temperature Study will then be submitted to the Central Valley Water Board for their review.

   If the approved updated Temperature Study demonstrates a reasonable likelihood that Reynolds is causing a violation of the Basin Plan Water Quality Objectives regarding temperature, Reynolds will analyze alternatives for temperature control and recommend a solution as well as proposed permit restrictions within 180 days of receiving Central Valley Water Board approval of the updated Temperature Study. If further sampling is necessary, the schedule will depend upon the sampling requested by the agencies (e.g., year-round or just summer months). Upon completion of the sampling, Reynolds will provide an addendum to the updated Temperature Study and propose any appropriate permit restrictions for review by agencies within 180 days of the completion of the proscribed sampling period. The scope and objective of the Temperature Study are detailed in Fact Sheet section VI.B.2.e.

3. Delete Text VI.C.2.f.Pg. 16

   Change

   Delete f. in its entirety.

4. Text edits for clarification VIII B.7.d. Pg. E-27

   Change

   FROM **Temperature Receiving Water Limitations**. The Discharger shall

calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002. Additional monitoring of temperature impacts may be required based on implementation of the Compliance Schedule included in this Order.

TO **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002. Additional monitoring of temperature impacts may be required following implementation of the updated Temperature Study.

a. Text edits Submittal schedule VII.D.4. Table 10-E Row: Report #16
Column: Due Date Pg 30
Change
FROM Within 12 months following effective date of Order.

TO Within 120 to 180 days, or more if further sampling is required, after receipt of comments from other state and federal agencies on the Temperature Study.

5. Delete Text VII.D.4. Pg 30 Table 10-E
Change
Delete ROW 17 in its entirety.

6. Text edits for clarification IVC.2.a. Pg F-17
Change
FROM Receiving Water and Beneficial Uses. The Facility discharges to the Sacramento River via a 24-inch diameter steel pipe at Discharge Point 001. Discharge Point 001 is located just upstream of Red Bank Creek and approximately one-quarter mile upstream of the Red Bluff Diversion Dam.
The Sacramento River, downstream of Discharge Point 001, is an important migratory corridor for California Endangered Species Act and Federal Endangered Species Act listed adult and juvenile salmonids including: winter and spring-run Chinook salmon (Oncorhynchus tshawytscha) and Central Valley steelhead (O. mykiss). It is also a spawning and migratory area for fall and late fall-run Chinook salmon (O. tshawytscha), as well as home to numerous other native and non-native fish species. Listed species are actively migrating, spawning, and/or rearing in all months of the year in this area of the Sacramento River.

TO Receiving Water and Beneficial Uses. The Facility discharges to the Sacramento River via a 24-inch diameter steel pipe at Discharge Point. Discharge Point 001 is located just upstream of Red Bank Creek and approximately one-quarter mile upstream of the Red Bluff Diversion Dam.

The Sacramento River, downstream of Discharge Point 001, is an important migratory corridor for California Endangered Species Act and Federal Endangered Species Act listed adult and juvenile salmonids including: winter and spring-run Chinook salmon (Oncorhynchus tshawytscha) and Central Valley steelhead (O. mykiss). It is also a spawning and migratory area for fall and late fall-run Chinook salmon (O. tshawytscha) downstream of RSW-002, as well as home to numerous other native and non-native fish species. Listed species are actively migrating, spawning, and/or rearing in all months of the year, downstream of RSW-002, in the Sacramento River.

7. Text edits for clarification IVC.2.c.i Pg F-18

Change

FROM

The Discharger has not provided an updated mixing zone study or requested mixing zones be granted in this Order.

TO

The Discharger has not provided an updated mixing zone study or requested any other mixing zones be granted in this Order.

8. Text edits for clarification IVC.3.d.i.(a) Pg F-30

Change

From WQO. The Basin Plan requires that the temperature of COLD or WARM intrastate waters shall not be increased more than 5°F above natural receiving water temperature. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that the temperature not be elevated above 56°F during periods when temperature increases will be detrimental to the fishery. The Basin Plan specifies that the more stringent objective shall apply to the extent of any conflict with these objectives.

TO WQO. The Basin Plan requires that the temperature of COLD or WARM intrastate waters shall not be increased more than 5°F above natural receiving water temperature. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that the temperature not be increased above 56°F during periods when temperature increases will be detrimental to the fishery given appropriate averaging. The Basin Plan specifies that the more stringent objective shall apply to the extent of any conflict with these objectives.

9. Text edits for clarification IVC.3.d.i.(b) Pg F-31

Change

From Upstream receiving water temperature ranged from 45.5 ºF to 65 ºF based on weekly receiving water temperature collected from April 2017 through February 2022. Upstream receiving water temperature exceeded 56 ºF on 115 occasions during the weekly sampling events. Receiving water temperatures exceeding 56 ºF were observed in all months except for December, January, February, and March. On approximately 10 occasions, where the upstream receiving water temperature was greater than 56 ºF, the downstream receiving water temperature was measured 1 ºF higher than the upstream temperature. These occasions were observed in the following months: April, May, June, July, August, and September. The upstream receiving water monitoring location (RSW-001) is located immediately upstream of the discharge and the downstream receiving water monitoring location (RSW-002) is located approximately 75 feet below the discharge location. A determination on the reasonable potential for the effluent to cause an exceedance in the temperature water quality objectives cannot be made at this time. Additional information on the applicable time periods when temperature increases will be detrimental to the fishery must be verified with appropriate resource agencies. This Order requires a Temperature Study Update to gather the necessary information for a reasonable potential analysis on temperature to be conducted on the discharge. This Order may be reopened in accordance with Special Provision VI.C.1.g. and modified by adding an appropriate temperature effluent limitation.

TO Natural upstream receiving water temperature ranged from 45.5 ºF to 65 ºF based on weekly natural receiving water temperature collected from April 2017 through February 2022. Upstream natural receiving water temperature exceeded 56 ºF on 115 occasions during the weekly sampling events. Natural receiving water temperatures exceeding 56 ºF were observed in all months except for December, January, February, and March. On approximately 10 occasions, where the upstream receiving water temperature was greater than 56 ºF, the downstream receiving water temperature was measured 1 ºF higher than the upstream temperature. These occasions were observed in the following months: April, May, June, July, August, and September. The upstream receiving water monitoring location (RSW-001) is located immediately upstream of the discharge and the downstream receiving water monitoring location (RSW-002) is located approximately 75 feet below the discharge location.

A determination on the reasonable potential for the effluent to cause an exceedance in the temperature water quality objectives cannot be made at this time. Additional information on the

applicable time periods when temperature increases will be detrimental to the fishery must be verified with appropriate resource agencies. This Order requires a Temperature Study Update to gather the necessary information for a reasonable potential analysis on temperature to be conducted on the discharge given appropriate averaging. This Order may be reopened in accordance with Special Provision VI.C.1.g. and modified by adding an appropriate temperature effluent limitation.

10. Text edits for clarification VA.1.c. Pg F-43

Change

From Temperature. The Basin Plan requires that the temperature of COLD or WARM intrastate waters shall not be increased more than 5°F above natural receiving water temperature. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that the temperature not be elevated above 56°F during periods when temperature increases will be detrimental to the fishery. The Basin Plan specifies that the more stringent objective shall apply to the extent of any conflict with these objectives. Consistent with the Basin Plan and Order No. R5-2017-0014, this Order requires that the discharge shall not cause the normal ambient temperature to be increased more than 5°F, or higher than 56°F when such an increase will be detrimental to the fishery, whichever is more restrictive.

TO Temperature. The Basin Plan requires that the temperature of COLD or WARM intrastate waters shall not be increased more than 5°F above natural receiving water temperature. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that the temperature not be increased above 56°F during periods when temperature increases will be detrimental to the fishery given appropriate averaging. The Basin Plan specifies that the more stringent objective shall apply to the extent of any conflict with these objectives. Consistent with the Basin Plan and Order No. R5-2017-0014, this Order requires that the discharge shall not cause the normal ambient temperature to be increased more than 5°F, or higher than 56°F when such an increase will be detrimental to the fishery, whichever is more restrictive.

11. Text edits for clarification VI.B.2.e. Pg F-46

Change

FROM Temperature Study Update. Within 1 year of the effective date of the permit, a Temperature Study Update shall be submitted to the Central Valley Water Board for review. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City, which are applicable to the discharge, and requires that the temperature not be elevated above 56°F during periods when temperature

increases will be detrimental to the fishery. This Order requires that the discharge shall not cause the normal ambient temperature to be higher than 56°F when such an increase will be detrimental to the fishery.

TO Temperature Study Update. Within 30 days of the effective date of the permit, Reynolds shall provide state and federal agencies (yet to be named) a copy of the existing Temperature Study for their review and comment. All agencies receiving a copy of the Temperature Study will have 60 days to review and comment on the Temperature Study. After state and federal agency review (60 days), if the comments require further sampling, Reynolds will develop a work plan for additional sampling and provide that work plan to the Central Valley Water Board for review and approval within 120 days of the completion of the state and federal agency reviews and comments. Reynolds will implement tasks summarized in the approved work plan within 120 days of the Central Valley Water Board approval.
If state and federal agencies require a desk top study in order for the updated Temperature Study to gain approval, Reynolds will complete a desk top study within 120 days of state and federal agency comment and review. The state and federal agency reviewed updated Temperature Study will then be submitted to the Central Valley Water Board for their review.

If the approved updated Temperature Study demonstrates a reasonable likelihood that Reynolds is causing a violation of the Basin Plan Water Quality Objectives regarding temperature, Reynolds will analyze alternatives for temperature control and recommend a solution as well as proposed permit restrictions within 180 days of receiving Central Valley Water Board approval of the updated Temperature Study. If further sampling is necessary, the schedule will depend upon the sampling requested by the agencies (e.g., year-round or just summer months). Upon completion of the sampling, Reynolds will provide an addendum to the updated Temperature Study and propose any appropriate permit restrictions for review by agencies within 180 days of the completion of the proscribed sampling period.
Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City, which are applicable to the discharge, and requires that the temperature not be increased above 56°F during periods when temperature increases will be detrimental to the fishery. This Order requires that the discharge shall not cause the normal ambient temperature to be higher than 56°F when such an increase will be detrimental to the fishery given appropriate averaging.

12. Text edits for clarification VI.B.2.e. Pg F-47

Change
FROM this area of the Sacramento River. Compliance with the Basin Plan objective is necessary to protect these sensitive aquatic life species. Furthermore, effluent temperatures can be highly elevated at times relative to the receiving water temperature (e.g., 112°F). Such

temperatures, especially for a side-bank discharge that may have little immediate mixing, can impact the immediate area around the outfall and along the shoreline of the riverbank. Water temperature is a pollutant, and elevated temperature can affect the survival and growth rates of aquatic life in waterways. The observed range in effluent temperatures during the past permit term indicate that temperature control measures at the Facility may be limited and unable to maintain a temperature range that is protective of the beneficial uses of the receiving water.

TO this area of the Sacramento River. Compliance with the Basin Plan objective downstream of RSW-002 is necessary to protect these sensitive aquatic life species. Furthermore, effluent temperatures can be highly elevated at times relative to the receiving water temperature (e.g., 112°F). Such temperatures, especially for a side-bank discharge that may have little immediate mixing, can impact the immediate area around the outfall and along the shoreline of the riverbank. Water temperature is a pollutant, and prolonged elevated temperature can affect the survival and growth rates of aquatic life in waterways. The observed range in effluent temperatures during the past permit term indicate that temperature control measures at the Facility may be limited and unable to maintain a temperature range that is protective of the beneficial uses of the receiving water.

13. Delete VI B.2.f. Pg. F-47

Change

DELETE f. Alternatives Analysis…Entire paragraph.