

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2017-XXXX

WASTE DISCHARGE REQUIREMENTS

FOR
J. G. BOSWELL COMPANY
CORCORAN TOMATO PROCESSING FACILITY
KINGS COUNTY

The California Regional Water Quality Control Regional Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. The J.G. Boswell Company (J.G. Boswell), a California corporation, submitted a Report of Waste Discharge (RWD) dated 1 December 2016 to update Waste Discharge Requirements (WDRs) R5-2008-0015 for the discharge of tomato processing wastewater from the J.G. Boswell Corcoran Tomato Processing Facility (Facility).
2. The Facility is at the northeast corner of Dairy Avenue (6th Avenue) and Paris Avenue in Kings County just south of the City of Corcoran. The site formerly contained an Onion Processing Plant that J.G. Boswell converted into a tomato processing facility in 2007.
3. WDRs Order R5-2008-0015, adopted by the Central Valley Water Board on 25 January 2008 prescribes requirements for the discharge. During the tomato paste processing season (typically mid-July through mid-October), Order R5-2008-0015 initially allowed a monthly average wastewater flow of up to 1.4 million gallons per day (mgd) to 540 acres of adjacent farmland owned by J.G. Boswell in Section 34 of T21S, R22E, MDB&M, as shown on Attachment A, which is attached hereto and made a part of this Order by reference. Wastewater is applied to the land application area in Section 34 using overhead pivot sprinklers.
4. On 21 April 2008, J.G. Boswell submitted an updated RWD requesting to add 510 acres and increase the total acreage available as land application areas to 1,050 acres. The added land application area is in Section 33 of T21S, R22E, MDB&M, as shown on Attachment A. The land application area in Section 33 is irrigated by flood irrigation.
5. J.G. Boswell is now proposing to add another 1,690 acres of farmlands as land application areas increasing the total acreage to 2,740 acres as shown on Attachment A. With the addition of 2,200 acres since Order R5-2008-0015 was adopted in January 2008 and changes to the type of application approved in the initial RWD (center pivot sprinklers), the existing WDRs are outdated and do not accurately represent the current operations at the Facility. Therefore, Order R5-2008-0015 will be rescinded and replaced with this Order.

Existing Facility and Discharge

6. J.G. Boswell processes about 1,900,000 pounds (950 tons) of tomato paste daily from about 6,000 tons of raw tomatoes. The processing season typically starts in mid-July and extends for about 90 days through mid-October, depending upon crop production for the given year.
7. Tomatoes enter the Facility in trucks, are weighed, and graded. The tomatoes are then unloaded and rinsed with fresh water and then conveyed in a flume using condensate water from evaporative cooling towers and fresh water to the sorting area. The tomatoes are rinsed with fresh water three times before they enter the sorting area. From the sorting area, tomatoes are delivered to the choppers for processing and then to mix tanks for further processing. Attachment B, which is attached hereto and made a part of this Order by reference, depicts the general process flow of the proposed processing plant and the discharge.
8. Tomatoes unsuitable for processing (culls) are removed and diverted for use as cattle feed or hauled offsite and used as fertilizer on adjacent cropland. The RWD indicates that approximately 116 tons of skins and peels are produced daily during the season and are either hauled off site as cattle feed or used as fertilizer on adjacent cropland.
9. The RWD indicates the discharge is comprised of the following waste streams as shown in Table 1.

Table 1 - Sources of Wastewater

<u>Waste Source</u>	<u>Percentage</u>
Distilled water from evaporator condensate	~ 69%
Unloading water	~ 20%
Non-contact cooling water	~ 5%
Plant and equipment wash down water	~ 2%,
Tomato rinse water	~ 1.5%
Boiler feed water	~ 0.5%

The remaining percentage (two percent) is sanitary wastewater that is discharged to the City of Corcoran's wastewater treatment plant.

10. J.G. Boswell reports using various chemicals in the processing activities with the chemicals used in three general areas, the boiler, the sorting tables, and the processing equipment area. The chemicals used are summarized in Table 2.

Table 2 - Processing Chemicals

<u>Name</u>	<u>pH</u>	<u>Volume</u>
Boiler Area		
- Series 212 Return Line Treatment	12.5	990
- Series 730 Liquid Catalyzed Sulfate	5.5	3,245
- Series 418 Boiler Water Treatment	10.0	4,620
- Series 708 Caustic Sludge Conditioner	11.1	495
Sorting Table		
- Cleaner L-130	12 (7.5) ¹	3,420
Processing Equipment		
- Cleaner L-145	~ 8.0 – 9.0 ²	3,300
- Cleaner L-175	~ 8.0 – 9.0 ²	35

1. The cleaner mixes with wash water and has a pH of about 7.5 when discharged to the holding pond

2. Following the cleaning of the processing vessels, the vessels are filled to capacity with clean water and triple rinsed. The pH is about the same as the source water which ranges from about 8.0 to 9.0 standard pH units.

11. J.G. Boswell may discharge up to 1.4 million gallons per day (mgd) of process wastewater and up to 4.5 mgd of total discharge during the processing season which includes fresh water and process wastewater blended onsite. All discharges from the Facility are combined in a collection sump inside the Facility where it is blended at a minimum of 1 to 1 with fresh water (required by Discharge Specification C.4 of WDRs Order R5-2008-0015), and then discharged from the sump through a pipeline to a clay-lined retention pond located in the center of the Section 34 land application area.
12. In 2016, the average daily discharge of process wastewater was 0.45 mgd with a daily maximum of 0.81 mgd, well below the 1.4 mgd limit. In 2016, about 824 acre-feet of irrigation water including facility tomato processing wastewater (effluent) was applied to 684 acres for an average application of 1.20 feet of irrigation water. The average daily flow of effluent plus the blended water discharged from the Facility was 2.9 mgd and the maximum amount of effluent plus the blended water on any single day was 3.45 mgd. The blending ratio of fresh water to plant effluent was 5:1, which is more than the minimum of 1:1 blending.
13. Effluent results from the 2014 through 2016 Annual self-monitoring reports are summarized in Table 3. Effluent results are from the blended water (irrigation and wastewater) samples. The results of select constituents of concern sampled during the 2014, 2015, and 2016 processing seasons are presented in the following table. The biochemical oxygen demand (BOD) and electrical conductivity (EC) results are from

54 sampling events. The total nitrogen, total dissolved solids (TDS), and fixed dissolved solids (FDS) results are from 13 sampling events. The average is shown first, with the range of detections shown in parentheses below.

Table 3 - Facility Effluent Results

Biochemical Oxygen Demand mg/L ¹	Electrical Conductivity umhos/cm ²	Total Nitrogen mg/L ¹	Total Dissolved Solids mg/L ¹	Fixed Dissolved Solids mg/L ¹
347 (110 - 940)	670 (486 - 1090)	27 (8 - 56)	491 (350 - 1000)	260 (150 - 360)

1. mg/L = milligrams per liter.

2. umhos/cm = micromhos per centimeter.

14. Additional effluent results from samples collected during the 2014 and 2015 processing seasons are discussed below.

- The pH of the discharge ranged from 5.4 to 7.4 standard pH units in 54 samples collected during the 2014, 2015, and 2016 processing seasons.
- Chloride averaged 42 milligrams per liter (mg/L) in three samples (annual sampling) collected in 2014, 2015, and 2016.
- Sodium averaged 73 mg/L in three samples (annual sampling) collected in 2014, 2015, and 2016.
- The BOD cycle averages in 2016 for individual parcels were less than 100 pounds per acre per day (lbs/ac/day) with a maximum loading of 45 lbs/ac/day.
- Nitrogen loading in 2016 was about 118 pounds per acre per year (lbs/ac/yr). The land application areas are cropped with Sudan grass that can utilize up to 180 lbs/ac/yr. The crops grown in the land application areas will require additional nitrogen to maximize the crop yield.
- Salt loading in 2016 averaged 886 lbs/ac/yr.

Other Considerations for Food Processing Waste

15. Excessive application of food processing wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and unreasonably degrade underlying groundwater. It is reasonable to expect some attenuation of various waste constituents that percolate below the root zone within the vadose (unsaturated) zone. Specifically, excess nitrogen can be mineralized and denitrified by soil microorganisms, organic constituents (measured as both BOD and volatile dissolved solids) can be oxidized, and the cation exchange capacity of the soil may immobilize some salinity constituents.

16. Irrigation with high strength wastewater can result in high BOD loading on the day of application. If the rate of oxygen transfer into the soil is not adequate, anaerobic or reducing conditions may result and lead to nuisance conditions. In addition, anaerobic conditions in soil can cause dissolution and leaching of some metals and increases in groundwater alkalinity. The maximum BOD loading rate that can be applied to land without creating the conditions described above can vary significantly depending on soil conditions and operation of the land application system.

Proposed Changes

17. J.G. Boswell is proposing to add 1,690 acres of land contained in all of Sections 31 and 32 of T21S, R22E, MDB&M and the western two thirds of Sections 30 of T21S, R22E, MDB&M, increasing the total acreage of the land application areas to 2,740 acres. J.G. Boswell is not requesting to increase the amount of wastewater discharged to the land application areas.
18. The RWD include a 2017 simulation of the discharge to the increased acreage. Nitrogen loading is estimated to be about 45 lbs/ac/yr, which is the same as the nitrogen loading in 2016. The land application areas are to be cropped with Sudan grass that can utilize up to 180 lbs/ac/yr of nitrogen, which is greater than the amount of nitrogen provided by the blended tomato processing wastewater.

Site-Specific Conditions

19. The land surface in the vicinity of the Facility is relatively flat with a very slight natural slope to the southwest. The elevation at the Facility and land application areas ranges from about 195 feet at the northeast corner of Section 34 to about 185 feet at the southwest corner of Section 31 four miles to the west. The Sweet Canal is present along the northern boundaries of the land application areas in Sections 33 and 34 of T21S, R22E, MDB&M. The East Branch of Cross Creek is found between the land application areas in Sections 33 and 32 of T21S, R22E, MDB&M, and the Middle Branch of Cross Creek cuts across the land application area in Section 32 of T21S, R22E, MDB&M and forms the eastern boundary of the land application area in Section 30 of T21S, R22E, MDB&M.
20. The Facility and Land application areas are within a 100-year floodplain according to Federal Emergency Management Agency (FEMA) maps (Map Nos. 06031C0525C and 06031C0500C). However, the Facility was designed with building pads above the estimated flood plain elevation of 292 feet above mean sea level (MSL) and has a flood plain certification from the FEMA National Flood Insurance Program indicating the base of all structures will be constructed at an elevation of no less than 295 feet MSL. Additionally, discharge does not occur to the land application areas during the rainy season (November through April) and all drainage is contained on-site. The retention pond within the Land application area Section 34 was designed so that no offsite runoff will enter the pond (embankments 9 feet above existing grade).

21. According to the Web Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service, area soils at the land application areas are primarily the Armona loam and the Vanguard sandy loam with lesser amounts of the Homeland fine sandy loam and the Gepford loam. These soils are all listed as poorly drained and are saline to alkaline. The soils are known to have high pH and are typically treated with soil amendments (gypsum, sulfur, and acid forming fertilizers) to improve drainage, salinity, and excess alkali conditions. The Section 34 land application area is underlain with subsurface (tile) drains to intercept irrigation water before it percolates to the shallow groundwater table. The intercepted tile drainage discharges into an evaporation pond operated by the Tulare Lake Drainage District and regulated by WDR Order No. 93-136.
22. J.G. Boswell conducted a soils investigation in Sections 33 and 34 in 2006 by advancing 12 soil borings to depths ranging from 50 of 75 feet bgs and six test pits were excavated to depths of 10-feet bgs. The boring/test pit logs indicate the soils consist of thin layers of silt, clay and sand, with silt and clay the predominant soil types.
23. The Facility is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual precipitation and pan evaporation rates in the discharge area are about 7.4 inches and 63 inches, respectively, according to information published by the California Department of Water Resources (DWR).
24. Land use in the vicinity is primarily agricultural and some urban industrial and urban commercial properties between the Facility and the City of Corcoran. According to DWR land use data for Kings County published in 2010, the primary crops grown in Kings County include pasture crops such as alfalfa; field crops such as onions, garlic, cotton, and corn; orchard crops such as pistachios, almonds, other deciduous tree crops, and vineyards. Several parcels east of the Facility are listed as containing native vegetation or as being water surfaces. The water surface designations are due to the high groundwater table and the poor permeability and drainage of the regional soils.

Groundwater Conditions

25. Regional groundwater is contained generally in two aquifers, the Lower Confined Aquifer and the Upper Unconfined Aquifer. The two aquifers are separated by a confining layer (Corcoran Clay or E Clay) present beneath the land application areas at about 450 to 500 feet below the ground surface (bgs) and is reported to be 80 to 100 feet thick in this area. Although hydraulic continuity between aquifers is restricted, some agricultural wells within the vicinity are likely screened within the upper and lower aquifers to maximize well production. The potential exists for hydraulic continuity between the two aquifers resulting in lower quality water from the uppermost aquifer to migrate into the higher quality aquifers just above and below the E-clay.

26. J.G. Boswell collected shallow groundwater samples from seven soil borings (prior to discharging wastewater to the land application areas) advanced within Sections 34 and 33 of the land application areas and from the tile drain that intercepts irrigation water. The analytical results for the shallow groundwater are summarized in the following table.

Table 4 - First Encountered Groundwater Quality

Well ID	Electrical Conductivity umhos/cm ¹	Total Dissolved Solids mg/L ²	Nitrate as Nitrogen mg/L ²	Total Kjeldahl Nitrogen mg/L ²	Total Nitrogen mg/L ²	Sulfate mg/L ²	Chloride mg/L ²
34-1	1,041	883	27.6	10.0	38	330	17
34-2	7,780	5,195	12.9	23.7	37	1,909	769
34-3	2,732	2,123	57.9	3.1	61	967	88
34-4	1,840	1,990	10.7	6.9	18	418	242
34-5	3,754	3,043	6.3	18.6	25	1,599	202
Drain	3,628	2,078	18.6	0.5	19	1,038	319
33-4	6,140	3,855	102	13.0	115	2,022	272
33-5	5,440	3,405	71	5.0	76	1,875	238

1. umhos/cm = micromhos per centimeter.

2. mg/L = milligrams per liter.

27. The data indicates the general poor quality of the perched groundwater or first encountered groundwater beneath the Facility and the land application areas. All EC, sulfate, and TDS results exceed the recommended secondary maximum contaminant limits (MCLs) for each constituent.
28. Groundwater quality data for the region can be found on the Water Quality Portal web site, a cooperative service provided by the United States Geological Survey (USGS), the Environmental Protection Agency, and the National Water Quality Monitoring Council. Six USGS wells are reported to be within a three mile radius of the Facility and the record included the results of 7 sampling events conducted from July of 1958 through April 2015. One well was sampled in 1959 and again in 1979. The results of the Water Quality Portal search are summarized in the following table.

Table 5 - Regional Groundwater Results

Well Number	Date	Well Depth feet bgs ¹	Electrical Conductivity umhos/cm ²	Total Dissolved Solids mg/L ³	Chloride mg/L ³	Sulfate mg/L ³	pH s.u. ⁴	Boron ug/L ⁵
360502119351001	7/30/58	180	1,110	643	140	nd ⁶	8.1	400
360537119355301	8/5/60	1,864	350	224	21	6.2	7.9	nr ⁷

Well Number	Date	Well Depth feet bgs ¹	Electrical Conductivity umhos/cm ²	Total		pH s.u. ⁴	Boron ug/L ⁵	
				Dissolved Solids mg/L ³	Chloride mg/L ³			
360159119341701	8/10/59	1,494	392	255	24	1.0	7.4	200
Same as above	8/23/79	1,494	283	177	12	4.3	8.0	140
360442119341701	6/9/89	21	1,340	846	69	150	8.3	370
360500119330001	2/25/15	210	1,220	823	212	0.2	7.8	196
360200119320001	4/29/15	255	1,410	782	278	6.2	7.7	344

1. bgs = below the ground surface.
2. umhos/cm = micromhos per centimeter.
3. mg/L = milligrams per kilogram.
4. s.u. = standard pH units.
5. ug/L = micrograms per liter.
6. nd = not detected.
7. nr = not reported.

The data further indicates the difference in water quality in wells screened above or below the Corcoran Clay. The shallow wells set above the Corcoran Clay have water qualities that exceed the recommended Secondary MCLs for EC and TDS, while the EC and TDS values in the deeper wells are less than the respective MCLs.

29. The Facility will have three sources of supply water: City of Corcoran municipal supply groundwater wells, JG Boswell groundwater wells, and irrigation water from nearby canals. City of Corcoran municipal supply wells extract water from below the E-clay. Water quality data from the City wells in 2015 had the following characteristics.

Table 6 - City of Corcoran Water Supply Results

<u>Constituent</u> ¹	<u>Average</u>	<u>Range</u>
Arsenic (ug/L)	3.9	nd – 11
Boron (ug/L)	87.5	nd ² – 200
Chloride (mg/L)	25	8 - 63
Electrical Conductivity (umhos/cm)	408	210 - 680
Nitrate as nitrogen (mg/L)	3.2	2.2 – 4.6
Sodium (mg/L)	65	44 – 93
Sulfate (mg/L)	30	2 – 100
Total Dissolved Solids (mg/L)	262	150 – 440

1. ug/L = micrograms per liter, mg/L = milligrams per liter, umhos/cm = micromhos per centimeter.
2. nd = Not detected above the laboratory method detection limit.

30. J.G. Boswell has two water/irrigation supply wells designated the North and South wells. Table 7 depicts the results of samples collected from the North and South wells on 21 July 2015.

Table 7 - J.G. Boswell Supply Well Water Quality

Well	Electrical Conductivity umhos/cm ¹	Nitrate as Nitrogen mg/L ²	Total Kjeldahl Nitrogen mg/L ²	Total Nitrogen mg/L ²	pH s.u. ³
North	387	nd	5.1	5.1	8.24
South	241	nd	1.3	1.3	9.05

1. umhos/cm = micromhos per centimeter.
2. mg/L = milligrams per liter.
3. S.u. = Standard pH units.

31. J.G. Boswell will use canal water to irrigate some of the land application areas. The following table depicts the results of two samples of canal water collected in July and October, 2015.

Table 8 - Canal Water Quality

Date	Electrical Conductivity umhos/cm ¹	Nitrate as Nitrogen mg/L ²	Total Kjeldahl Nitrogen mg/L ²	Total Nitrogen mg/L ²	pH s.u. ³
7/21/15	266	0.07	1.2	1.3	8.68
10/19/15	348	0.15	0.8	1	8.81

1. umhos/cm = micromhos per centimeter.
2. mg/L = milligrams per liter.
3. s.u. = Standard pH units.

32. The EC of the source waters ranges from 241 to 408 micromhos per centimeter (umhos/cm) and the flow weighted average in 2016 was 337 umhos/cm. The EC of the wastewater ranged from 486 to 1,090 umhos/cm, with an average of 670 umhos/cm. At the upper concentrations, the EC of the discharge could exceed the effluent limit from the Basin Plan of source water EC plus 500 umhos/cm. However, with the source water having a flow weighted average of 337 umhos/cm and the average EC of the wastewater was 670 umhos/cm, the discharge meets the Basin Plan EC effluent limit of the EC of the source water plus 500 umhos/cm and is significantly less than the average EC of shallow groundwater that averages about 3,400 umhos/cm.
33. Groundwater elevation data obtained from the soil borings advanced around the perimeter and within the land application area indicated water was encountered at depths from three to seven feet bgs. Water depths within the Section 34 land application area were greater than five feet bgs due to the presence of the tile drains.

Basin Plan, Beneficial Uses, and Regulatory Considerations

34. The Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2015 (the "Basin Plan") designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State of California Water Quality Control Board. In accordance with Water Code section 13263(a), these waste discharge requirements implement the Basin Plan.
35. The Facility and land application areas are in Detailed Analysis Unit (DAU) No. 241 within the Tulare Lake Basin hydrologic unit. The Basin Plan designates the beneficial uses of groundwater in this DAU as municipal and domestic supply, agricultural supply, and industrial process and service supply.
36. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that that the Regional Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
37. The Basin Plan establishes narrative water quality objectives for chemical constituents, taste and odors, and toxicity. The toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
38. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 umhos/cm. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 umhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
39. The Basin Plan also states that the water quality objectives contained therein do not require improvement over naturally occurring background groundwater quality. The baseline for determining background water quality is generally the quality as of 1968 or the highest quality since 1968 if better. If background water quality exceeds the numeric objectives, then background water quality becomes the objective.

40. Many surface waters and local groundwater supplies have been degraded with salt. In some areas, the high salinity is naturally occurring, but in many areas it is due to the acts of man. In 2006, the Central Valley Water Board, the State Water Board, and stakeholders began a joint effort to address salinity and nitrate problems in the region and adopt long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program.
41. The list of crops in Finding 24 is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but it is representative of current and historical agricultural practices in the area.

Antidegradation Analysis

42. State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (*State Antidegradation Policy*) was adopted by the State Water Board in October 1968. The *State Antidegradation Policy* limits the Board's discretion to authorize the degradation of "high-quality waters." This policy has been incorporated into the Board's Basin Plans. "High-quality waters" are defined as those waters where water quality is more than sufficient to support beneficial uses designated in the Board's Basin Plan.
43. The *State Antidegradation Policy* generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:
 - The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and
 - The degradation is consistent with the maximum benefit to the people of the state.

If the activity will not result in the degradation of high quality waters, the *State Antidegradation Policy* does not apply. However, the Board will still require that a discharger employ "best efforts" to minimize water quality degradation.

44. Constituents of concern that have the potential to cause degradation of high-quality waters include, in part, organics, nutrients, and salts. However, the discharge is not expected to cause any significant degradation of groundwater quality because:
 - a. Organic loading rates of the existing discharge are low (maximum cycle average BOD loading rate in 2016 was 45 lbs/ac/day) and the discharge is not anticipated to degrade groundwater due to organic loading. The cycle average BOD loading

is less than 100 lbs/ac/day with varied resting periods depending upon the method of application (flood irrigation or center pivot sprinklers). The discharge with a BOD loading rate of less than 100 lbs/ac/day is anticipated to prevent organic overloading of the land application areas such that the discharge authorized should not contribute to underlying groundwater degradation from organic loading.

- b. For nitrogen, this Order limits the application of wastewater to be consistent with crop demand for both nutrient and hydraulic loading. Total nitrogen loading estimates indicate the discharge will add about 45 lbs/ac/yr to the land application areas (farmlands) used to grow crops such as Sudan grass that has the potential to utilize up to 180 lbs/ac/yr of nitrogen. The crops grown in the land application areas will require additional nitrogen fertilizer to grow the crop. The discharge, if applied consistently with crop demands, should not contribute to an increase of nitrogen in groundwater.
- c. For salinity, the Basin Plan effluent limit for industrial discharges limits the increase in EC of a point source discharge to 500 umhos/cm (source average 337 umhos/cm in 2015, resulting limit would have been 837 umhos/cm). The average EC of the effluent in 2015 and 2016 was 634 and 670 umhos/cm, respectively, both of which are less than the limit. Another method of estimating the salinity of a discharge is to estimate the salt load in the discharge. In 2016, salt loading was estimated to be 886 lbs/ac/yr, which is below 2,000 lbs/ac/yr that is used as a typical guideline for salt loading. Considering the poor quality of the first encountered groundwater, the application of wastewater consistent with crop demand, and the potential uptake of crops grown in the land application areas, the discharge at the concentrations proposed is unlikely to degrade the underlying groundwater.

46. J.G. Boswell provides treatment and control of the discharge that incorporates:

- a. Removal of solids at the plant and in the retention pond before discharge to the land application areas. Solids will be hauled offsite and used as cattle feed or land applied as fertilizer;
- b. Application of wastewater lower than plant uptake rates for nitrogen and low organic loading;
- c. Application of wastewater at rates that will not allow wastewater to stand for more than 48 hours;
- d. Resting periods between wastewater applications;
- e. At least daily inspection of the land application areas during times of discharge of blended wastewater and/or irrigation water;
- f. Blending of wastewater with freshwater to meet the crop demands for crop growth; and

- g. Annual reporting requirements that measure the salt, BOD, and nitrogen loadings to the land application areas.

The Board finds that these Treatment and Control Practices are reflective of BPTC of the wastes in the discharge.

- 47. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State. J.G. Boswell contributes to the economic prosperity of the region by directly employing 181 workers at the Facility during the processing season and 32 workers in the offseason, provides incomes for numerous surrounding tomato growers and associated trucking firms, agricultural service firms, and provides a tax base for local and county governments. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State.
- 48. Thought the Board does not anticipate that the discharges regulated by these WDRs will result in any significant water quality degradation, to the extent that any limited degradation of high-quality waters may occur, such degradation would be consistent with the *State Antidegradation Policy* since; (a) the limited degradation allowed by this Order will not result in water quality less than water quality objectives, or unreasonably affect present and anticipated beneficial uses, (b) the Discharger has implemented BPTC to minimize degradation, and (c) the limited degradation is of maximum benefit to people of the State.

Other Regulatory Considerations

- 49. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
- 50. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
 - a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
 - b. Category B complexity, defined as: "Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units."
- 51. California Code of Regulations, title 27 (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are

exempt from Title 27 pursuant to a provision that exempts wastewater under specific conditions. This exemption, found at Title 27, section 20090, is described below:

- (b) Wastewater – Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:
- (1) The applicable regional water quality control board has issued WDRs, reclamation requirements, or waived such issuance;
 - (2) The discharge is in compliance with applicable water quality control plan; and
 - (3) The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

52. The discharge authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:
- a. The Central Valley Water Board is issuing WDRs,
 - b. The discharge is in compliance with the Basin Plan, and;
 - c. The treated effluent discharged to the land application areas does not need to be managed as hazardous waste.

53. Water Code section 13267(b) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2017-XXXX are necessary to ensure compliance with these waste discharge requirements. J.G. Boswell owns and operates the facility that discharges the waste subject to this Order.

54. In 2006, to fulfill requirements imposed by the California Environmental Quality Act (“CEQA”)(Pub. Resources Code, § 21000 et seq.), the Kings County Planning Agency prepared and circulated an Initial Study and Mitigated Negative Declaration that contained an analysis of the potential for the construction of the Corcoran Tomato Processing Facility and the discharge/recycling of wastewater to land application areas to result in significant environmental effects. The Board, acting as a responsible agency, was consulted during the development of these documents.
55. The Board’s action of prescribing these WDRs, which impose regulatory requirements on the existing discharge in order to ensure the protection of groundwater resources, is

exempt from the provisions of the CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the “operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features” from environmental review. Discharges from the existing facility to the expanded land application areas described in these WDRs are consistent with existing land uses.

56. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

57. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
58. J.G. Boswell and interested agencies and persons have been notified of the Central Valley Water Board’s intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
59. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order R5-2008-0015 is rescinded and J.G. Boswell, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of hazardous wastes, as that term is defined in California Code of Regulations, title 22, section 66261.1 *et seq.*, is prohibited.
3. Bypass of untreated wastes or partially treated wastes, except as allowed by Provision E.2 of Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, is prohibited.
4. Discharge of wastewater in a manner or location other than that described in the report of waste discharge and herein is prohibited.
5. The discharge of wastewater not authorized by this Order, other than domestic wastewater to a septic system, is prohibited.

6. Discharge of toxic substances into the wastewater treatment system or land application areas such that biological treatment mechanisms are disrupted is prohibited.
7. Discharge of domestic wastewater to the wastewater pond, land application area, or any surface waters is prohibited.
8. Discharge of process wastewater to the domestic wastewater treatment system (septic system) is prohibited.

B. Effluent Limitations

1. During the processing season (typically mid-July through mid-October), the monthly average discharge flow of process wastewater blended with freshwater to the lined retention pond shall not exceed 4.5 mgd. The process wastewater may not comprise more than 1.4 mgd of the total flow. The volume shall be determined at DIS-01 as described in Monitoring and Reporting Program R5-2017-XXXX.

C. Discharge Specifications

1. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
2. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
3. Wastewater shall be blended with irrigation water (i.e., well water or canal water) at a minimum freshwater to wastewater ratio of 1:1.
4. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of groundwater limitations.
5. The treatment, storage, and disposal areas shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
6. Objectionable odors shall not be perceivable beyond the limits of the Facility and/or the land application areas at an intensity that creates or threatens to create nuisance conditions.
7. J.G. Boswell shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured

vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, J.G. Boswell shall install and maintain in each pond calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

8. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. J.G. Boswell shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

D. Solids Disposal Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid organic matter removed from wastewater treatment, settling, and storage vessels or ponds. Solid waste refers to solid inorganic matter removed by screens and soil sediments from washing of unprocessed fruit or vegetables. Except for waste solids originating from meat processing, residual solids means organic food processing byproducts such as culls, pulp, stems, leaves, and seeds that will not be subject to treatment prior to disposal or land application.

1. Sludge and solid waste shall be removed from screens, sumps, and ponds as needed to ensure optimal operation and adequate storage capacity.
2. Any handling and storage of solids and sludge shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations of this Order.
3. Sludge and residual solids may be discharged to land in accordance with the Land Application Area Specifications of this Order.

E. Land Application Area Specifications

1. Application of waste constituents to the land application areas shall be consistent with crop demands to preclude creation of a nuisance or unreasonable degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of

the land application areas, including the nutritive value of organic and chemical fertilizers and of the wastewater shall be consistent with crop demand.

2. Wastewater shall not be discharged to the land application areas in a manner that causes wastewater to stand for greater than 48 hours after irrigation ceases.
3. The cycle average BOD loading to the land application areas shall not exceed 100 lbs/acre/day, over the course of any discharge cycle (i.e., the time between successive applications).
4. Wastewater shall be applied to the land application areas with appropriate resting periods.
5. Any irrigation runoff shall be confined to the land application areas and shall not enter any surface water drainage course or storm water drainage system.
6. The perimeter of the land application areas shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties not owned or controlled by J.G. Boswell.
7. Hydraulic loading of wastewater and supplemental irrigation water including precipitation shall be at reasonable rates designed to:
 - a. Maximize crop nutrient uptake;
 - b. Maximize breakdown of organic waste constituents in the root zone; and
 - c. Minimize the percolation of waste constituents below the root zone.
8. The irrigation with wastewater and irrigation water shall be managed to minimize erosion within the land application areas.
9. The land application areas shall be managed to prevent breeding of mosquitoes. In particular:
 - a. All applied irrigation water must infiltrate completely within 48 hours;
 - b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store wastewater.
10. No physical connection shall exist between wastewater and any domestic water supply or domestic well, or between wastewater piping and any irrigation well that does not have an air gap or reduce pressure principle device.

F. Groundwater Limitations

Release of waste constituents from any treatment unit, storage unit, delivery system, or land application area associated with the Facility shall not cause or contribute to groundwater containing concentrations of constituents identified below, or natural background quality, whichever is greater.

- a. Nitrate as nitrogen of 10 mg/L.
- b. For constituents identified in Title 22, the MCLs quantified therein.

G. Provisions

1. J.G. Boswell shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991 (Standard Provisions), which are a part of this Order.
2. J.G. Boswell shall comply with Monitoring and Reporting Program (MRP) R5-2017-XXXX, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. J.G. Boswell must at all times properly operate and maintain its respective facilities and systems of treatment and control (and related appurtenances) that are installed or used to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed only when the operation is necessary to achieve compliance with the conditions of the Order.
4. All technical reports and work plans required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of a person registered to practice in California pursuant to California Business and Professions Code Sections 6735, 7835, and 7835.1. As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work. All reports required herein are required pursuant to Water Code section 13267.
5. J.G. Boswell must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, J.G. Boswell shall submit to the Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when J.G. Boswell will be in compliance. J.G. Boswell shall notify the Central Valley Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or

court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

6. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by J.G. Boswell, J.G. Boswell shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
7. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B. 3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
8. J.G. Boswell shall submit the technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate.
9. As described in the Standard Provisions, J.G. Boswell shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
10. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.
11. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objectives are to be interpreted for the protection of agricultural use. If new information or evidence indicates that groundwater limitations different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.
12. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

13. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, J.G. Boswell fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on XX June 2017.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A. Site Location Map
- B. Process Flow Diagram

Monitoring and Reporting Program No. R5-2017-____

Information Sheet

Standard Provisions (1 March 1991) (separate attachment to the Discharger only)