

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2008-0067

WASTE DISCHARGE REQUIREMENTS
FOR
J.G. BOSWELL TOMATO COMPANY
BUTTONWILLOW TOMATO PROCESSING FACILITY
KERN COUNTY

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

1. The J.G. Boswell Tomato Company—Kern, LLC (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 3 June 2005 for the discharge of tomato processing wastewater from its Buttonwillow Tomato Processing Facility (Facility). The J.G. Boswell Tomato Company was formerly known as the Rio Bravo Tomato Company. The Executive Officer conditionally waived waste discharge requirements for the discharge under Resolution No. 82-036 and also issued Monitoring and Reporting Program No. 5-00-827 (MRP). On 1 January 2003, the Waiver expired.
2. The Facility is at the southwest corner of Interstate 5 and Highway 58 in Kern County approximately three miles east of the City of Buttonwillow, as shown on [Attachment A](#), which is attached hereto and made a part of this Order by reference. The proposed discharge area (Use Area) is within the northeast quarter of Section 20, Section 21, and the northwest quarter of Section 22 in T29S, R24E, MDB&M, as shown on [Attachment B](#), which is attached hereto and made a part of this Order by reference.
3. During the processing season, the Discharger typically processes about 1,050 tons of tomato paste daily from about 6,600 tons of raw tomatoes. The processing season typically starts in the last week of June and extends through the third week of October, depending upon crop production for the given year. Operating for up to 120 days, the Facility produces about 125,000 tons of tomato paste from about 790,000 tons of tomatoes annually. The Discharger discharges up to 7.6 million gallons of wastewater per day (mgd) and recycles it on about 618 acres of agricultural land (Use Area) that is adjacent to the Facility on the west, south, and east.
4. Tomatoes enter the Facility in trucks and are weighed and graded. The tomatoes are initially rinsed and conveyed from trucks on an elevated unloading area with wastewater from the Facility. Before being delivered to the hand-sorting area, the tomatoes are further rinsed with well water and separated from other matter. From the sorting area, tomatoes are delivered to the choppers for processing and then to mix tanks for further processing. [Attachment C](#), which is attached hereto and made a part of this Order by reference, depicts the general process flow of the processing plant and the discharge.
5. Tomatoes unsuitable for processing (culls) are removed and diverted for use as cattle feed. The Discharger estimates approximately 152 tons of tomato skins and peels are produced

daily during the processing season. Seeds and peels are separated from the wastewater by screens and diverted to trucks for use as cattle feed.

6. The RWD presents information on site conditions, wastewater streams and characteristics, and the design of the Facility.

7. Estimates indicate the discharge is comprised of non-contact cooling water (5%), boiler feed water (0.5%), raw product washout wastewater (90%), plant and equipment wash down (2%), irrigation and lawn watering return (1%), and other sources, e.g. flume makeup water (1.5%).
8. The Discharger 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 processing equipment is cleaned before and after the processing season, and once every 40 days during the processing season. Following the cleaning of processing vessels, the vessels are filled to capacity with clean water and triple rinsed.
9. Based on data from 2005 through 2007, the average reported flow rate was about 5.7 million gallons per day (mgd) during the processing season. All discharges from the Facility are combined into the main pond. The discharge is pumped from the main pond through a pipeline to the irrigation standpipe located adjacent to the Use Area. The Discharger reports estimated total daily wastewater flow as the volume of wastewater pumped from a central sump plus the volume of water pumped from the two onsite water supply wells. This method is conservative in that it likely double-counts some of the flows. The process flow diagram attached to this Order in [Appendix C](#) identifies the central sump. The table below summarizes reported flows for the 2005 through 2007 seasons:

Facility Supply Water	mgd	3.9	1.6 - 5.3
Central Sump Wastewater	mgd	1.8	0.3 - 3.0
Estimated Total Discharge	mgd	5.7	3.5 - 7.6

10. The Discharger has submitted Self Monitoring Reports (SMRs) since 2000. The data below summarizes effluent quality from 2005 through 2007. Some effluent samples in the lower ranges may have been diluted with clean water in the irrigation standpipe.

Ammonia	mg/L	3.8	0.044 - 8
Biochemical Oxygen Demand	mg/L	340	23 - 1000
Boron	mg/L	< 0.1	< 0.1 - 0.1

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Chemical Oxygen Demand	mg/L	420	38 - 1400
Chloride	mg/L	70	56 - 83
Conductivity	umhos/cm	680	300 - 1200
Nitrate	mg/L	< 0.2	< 0.2
Total Kjeldahl Nitrogen	mg/L	21	0.67 - 110
Total Nitrogen	mg/L	21	0.67 - 110
pH	Std. Units	5.6	3.7 - 7.3
Sodium	mg/L	70	70
Total Dissolved Solids	mg/L	460	260 - 870
Total Fixed Dissolved Solids	mg/L	320	260 - 410

11. The Discharger recycles wastewater as irrigation water for the 618-acre Use Area to irrigate a variety of crops. Typical crops include, but are not limited to, alfalfa, sudan grass, cotton, and wheat.
12. Wastewater pumped from the main pond into the irrigation standpipe is mixed with irrigation water according to crop requirements. The discharge is blended with a combination of supply water from two onsite supply wells. The blended wastewater is then applied to the Use Area using flood irrigation.
13. The main pond was constructed above grade and is approximately 150 feet by 200 feet. The volume of the pond is reported to be 280,000 cubic feet (approximately 2.1 million gallons). The construction details of the main pond are uncertain. It reportedly has a compacted clay or soil liner, but no information is available on its engineering design or construction, particularly regarding permeability. Soils underlying the area of the pond are classified as Panoche series clay-loam by the National Resource Conservation Service. Panoche series loams are typically described as well-drained, deep soils, but a clay-loam may contain from about 25 to 40 percent clay. A well-compacted liner of sufficient thickness constructed from such soils would have relatively low permeability.
14. Blended wastewater is applied to the 618-acre Use Area during the tomato processing season, which lasts approximately 120 days. The contract farmer reportedly applies approximately 4 inches of blended wastewater to approximately 40 acres per day by flood irrigation, with a resting period of 14 days between applications to the same area. On a given day, the BOD loading (instantaneous loading) is approximately 230 lb/acre. Including the resting period, the average BOD loading rate (cycle average loading) is approximately 15 lb/acre/day. Nitrogen from the discharge is applied at a rate of approximately 90

lb/acre/yr. The Discharger typically plants Sudan grass that, according to the Western Fertilizer Handbook, has annual nitrogen uptake rates of 325 lb/acre. The table below presents loading estimates based on Facility monitoring data from 2005 through 2007.

Daily Discharge Area	acres	42	20 - 60
BOD Loading			
Instantaneous	lbs/acre	230	9.4 - 720
Cycle Average	lbs/acre/day	15	12 - 17
Nitrogen Loading			
Effluent	lbs/acre/year	90	56 - 140
Fertilizer	lbs/acre/year	150	66 - 290
Total	lbs/acre/year	250	120 - 430
TDS Loading			
Effluent	lbs/acre/year	1,800	1,400 - 2,300
Fertilizer	lbs/acre/year	2,400	1,400 - 3,600
Total	lbs/acre/year	4,300	2,800 - 5,400

15. The Facility and Use Area are in an arid climate characterized by hot, dry summers and mild winters.
16. 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 in the discharge area is about 5.3 inches, according to information published by the National Weather Service. Average annual evaporation (from a Class 'A' pan in irrigated pasture environments near Bakersfield) is 122 inches, according to information published by the California Department of Water Resources (DWR).
17. Soils in the Use Area are Milham sandy loam, Garces silt loam, Panoche clay loam, and Kimberlina fine sandy loam according to the USDA Natural Resources Conservation Service. These soils are all listed as well drained. Annual soil sampling since 2002 has shown soils to have high pH. Alkalinity and bicarbonate concentrations have decreased significantly since initial sampling.
18. US Geological Survey Professional Paper 1401-C lists Holocene flood basin deposits of clay, silt, and sand underlie the Facility. According to logs of soil borings completed in the Use Area, soils underlying the site are primarily silty sand and poorly graded sand to a depth of approximately 150 feet below ground surface (bgs).

19. The Facility and Use Area are not within a 100-year floodplain according to Federal Emergency Management Agency (FEMA) maps (Map No. 0600750975B). Ground surface at the Facility is approximately 290 feet in elevation.
20. Land use in the vicinity is primarily agricultural with the exception of some urban commercial properties across Interstate 5 from the Facility. According to DWR land use data for Kings County published in 1998, the primary agricultural products within five miles of the Use Area include grain and hay, field crops, and deciduous fruits and nuts. Significant area northeast of the Facility are listed as containing native vegetation.
21. Regional groundwater is contained generally in two aquifers: the Lower Confined Aquifer and the Upper Unconfined Aquifer. According to the 1981 map *Depth to the Top of Corcoran Clay* from the Department of Water Resources, the two aquifers are separated by a confining layer (Corcoran Clay or E Clay) present beneath the Use Area at about 350 to 400 feet bgs. Driller's logs for onsite wells note a 25-foot thick clay layer at an approximate depth of 290 feet bgs. First-encountered groundwater is approximately 125 feet bgs (165 feet elevation above mean sea level).
22. The Discharger has collected groundwater samples on a quarterly basis from three monitoring wells advanced within the Use Area since 2002. The general trend in groundwater quality has been relatively poor quality on the west side of the Facility (MW-1) to relatively good quality on the east side of the Facility (MW-3). The constituent concentration gradients do not coincide with the direction of reported groundwater surface elevation gradient. The following table summarizes groundwater monitoring analytical results from 2005 through 2007.

		2005	2006	2007	2008	2009	2010
Ammonia	mg/L	< 0.1	< 0.1	< 1.0	< 1.0	< 1.0	< 1.0
Boron	mg/L	3.2	0.8 - 18	0.3	0.15 - 0.9	1.2	0.54 - 1.4
Chloride	mg/L	350	280 - 430	270	120 - 440	100	60 - 120
Conductivity	umhos/cm	2,300	2200 - 2500	1,600	800 - 2500	1,100	900 - 1100
Nitrate as Nitrogen	mg/L	24.6	19 - 29	6.9	< 1.0 - 22	13.8	12 - 15
Nitrite as Nitrogen	mg/L	0.50	< 0.1 - 0.5	0.88	< 1.0 - 2.6	< 1.0	< 1.0 - < 1.0
Total Kjeldahl Nitrogen	mg/L	0.53	< 0.1 - 0.66	1.14	< 1.0 - 5.4	0.64	< 1.0 - 1.8
pH	Std. Units	7.6	5.1 - 8	7.6	6.1 - 8.23	8.0	7.97 - 8.1
Sodium	mg/L	280	19 - 350	190	110 - 330	150	130 - 160
Total Dissolved Solids	mg/L	1,600	1500 - 1700	1,000	450 - 1700	700	590 - 750

23. Facility supply water is produced from two onsite wells, called the South Well and North Well. The South Well is screened from approximately 320 feet to 635 feet bgs and the North Well is screened from approximately 215 feet to 245 feet bgs. From 2005 to 2007, the average ratio of flow from the South Well to flow from the North Well was approximately 2:3. The table on the following page presents water quality data from annual monitoring since 2002.

Ammonia	mg/L	< 1.0	< 1.0	< 1.0	< 1.0
Boron	mg/L	0.11	0.1 - 0.13	0.11	0.1 - 0.12
Chloride	mg/L	33	27 - 36	75	69 - 83
Conductivity	umhos/cm	290	280 - 300	520	480 - 580
Nitrate as Nitrogen	mg/L	0.47	0.2 - 1	1.6	0.45 - 5
pH	Std. Units	8.9	8.8 - 9.1	8.9	8.7 - 9
Sodium	mg/L	55	54 - 58	92	88 - 95
Total Dissolved Solids	mg/L	183	170 - 190	320	300 - 340

24. The conductivity (EC) of the source water ranges from about 280 to 580 micromhos per centimeter (umhos/cm), with a flow-weighted average of about 430 umhos/cm. The EC of the wastewater ranges from about 300 to 1,200 umhos/cm, with an average of about 600 umhos/cm. At the highest conductivities, the EC of the discharge could exceed the water quality objective from the Basin Plan of source water EC plus 500 umhos/cm.

25. From 2000 to 2007, the average EC recorded in the groundwater monitoring wells has declined at a rate of approximately 60 umhos/cm per year.

26. Onsite groundwater monitoring has consistently shown a very steep (6 to 7 feet per hundred feet) groundwater gradient to the northwest. Such a steep gradient might be caused by natural conditions, such as regional hydrogeology or extensive pumping, or it could indicate a problem with well design or construction. There is no record on file of an investigation or explanation of why the calculated gradient should be so steep.

27. The *Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition*, (hereafter Basin Plan) designates beneficial uses, establishes numerical and narrative 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 Water Board. Pursuant to Section 13263(a) of the California Water Code (CWC), these waste discharge requirements implement the Basin Plan.

28. Water in the Tulare Lake Basin is in short supply, requiring importation of surface water from other parts of the State. The Basin Plan encourages recycling on irrigated crops wherever feasible and indicates that evaporation of reclaimable wastewater will not be an acceptable permanent disposal method where opportunity exists to replace an existing use or proposed use of fresh water with reclaimed water.
29. The Facility and Use Area are in Detailed Analysis Unit (DAU) No. 254 within the Kern County Basin hydrologic unit. The Basin Plan designates the beneficial uses of groundwater in this DAU as municipal and domestic supply, agricultural supply, industrial service and industrial process supply, water contact and non-contact water recreation supply, and wildlife habitat supply.
30. The Basin Plan includes a water quality objective for chemical constituents that 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 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.
31. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Tastes 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.
32. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until a valley wide drain is constructed to carry salts out of the basin. Until the drain is available, the Basin Plan establishes several salt management requirements, including:
- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - b. Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.

These effluent limits are considered best practicable treatment or control (BPTC).

33. Title 22 in Table 64449 B establishes recommended, upper, and short-term ranges for EC, TDS, chloride, and sulfate. The recommended and upper ranges are 900 and 1,600 umhos/cm for EC, 500 and 1,000 mg/L for TDS, and 250 and 500 mg/L for chloride and sulfate, respectively.
34. The lists of crops in [Finding 20](#) is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but are representative.
35. State Water Resources Control Board Resolution No. 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
- The degradation is consistent with the maximum benefit to the people of the State;
 - The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; and
 - The discharger employs BPTC to minimize degradation.
36. In general, first encountered groundwater exceeds Water Quality Objectives for EC and TDS. For most constituents, including chloride, sodium, EC, and TDS, concentrations in background groundwater ([Finding 22](#)) are elevated compared to the effluent ([Finding 10](#)). The concentration of total nitrogen in the effluent is less than in the upgradient monitoring well and nitrogen is applied at well below the agronomic rate for the crops grown. The discharge of tomato processing wastewater from the Facility is not expected to degrade the beneficial uses of groundwater beneath the Use Area because the wastewater is typically of higher quality than first encountered groundwater.
37. The proposed discharge described in [Findings 11 through 14](#), provides treatment and control of the discharge that incorporates:
- Removal of solids at the Facility before discharge to the Use Area. Screened solids will be hauled offsite and used as cattle feed;
 - Application of wastewater lower than plant uptake rates for nitrogen and low organic loading;
 - Application of wastewater at rates that will not allow wastewater to stand for more than 48 hours;

- d. Blending of wastewater with freshwater to meet the agronomic requirements for crop growth; and

38. This Order establishes groundwater limitations for the Facility that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.

39. According to Pollution Abatement in the Fruit and Vegetable Industry, published by the United States Environmental Protection Agency (US EPA Publication No. 625/3-77-0007) (hereafter Pollution Abatement), in applying food-processing wastewater to land for biological treatment, the loading rates for biochemical oxygen demand (BOD) shall not exceed 100 pounds per acre per day.

40. State Water Board Resolution No. 77-1, Policy with Respect to Water Recycling in California, encourages recycling projects that replace or supplement the use of fresh water, and the Water Recycling Law (California Water Code Section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.

41. The Basin Plan encourages recycling on irrigated crops wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.

42. CWC Section 13173 defines designated waste as either:

- a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
- b. Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions as a waste management unit, could be released in concentrations exceeding applicable water quality objectives or could reasonably be expected to affect beneficial uses of the waters of the state contained in the appropriate state water quality control plan.

43. Release of designated waste is subject to full containment pursuant to the requirements of Title 27, CCR, Section 20005 et seq. (hereafter "Title 27"). Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards provided the following conditions are met:

- a. The applicable regional water board has issued waste discharge requirements, or waived such issuance;
- b. The discharge is in compliance with the applicable basin plan; and
- c. The waste is not hazardous waste and need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

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44. On 15 March 2000, the Kern County Planning Commission approved the Initial Study and adopted Negative Declaration EA LO 1-00 for Lot Line Adjustment No. 137-99 and Zone Variance No. 21, Map No. 99 for the construction of the Buttonwillow Tomato Processing Facility and the discharge/recycling of wastewater to an approximately 458-acre disposal area. Regional Water Board Staff reviewed and commented on the Negative Declaration.
45. This Order implements measures necessary to mitigate any adverse impacts to groundwater from operation of the Facility to less than significant levels, including:
- a. [Effluent Limitation B.1](#), which restricts average daily flow to 4.8 mgd;
 - b. [Discharge Specification C.3](#), which stipulates the wastewater constituent loading cannot exceed reasonable agronomic uptake rates; and
 - c. [Discharge Specification C.4](#), which stipulates waste constituents cannot be released or discharged in a concentration or mass that causes violation of the Order's groundwater limitations.
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46. Pursuant to CWC 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.
47. The Regional Water Board will review this Order periodically and will revise requirements when necessary.
48. California Water Code Section 13267(b) states that: "In conducting an investigation specified in subdivision (a), the Regional Water Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need

for the report and the benefits to be obtained from the reports. In requiring those reports, the Regional Water 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.”

49. The technical reports required by this Order and the attached Monitoring and Reporting Program No. [R5-2008-0067](#) are necessary to assure compliance with these waste discharge requirements. The Discharger operates the Facility that discharges the waste subject to this Order.
50. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81 (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to California Water Code Section 13801, apply to all monitoring wells.
51. 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.
52. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
53. All comments pertaining to the discharge were heard and considered in a public meeting.

that, pursuant to Sections 13263 and 13267 of the CWC, J.G. Boswell Tomato Company, LLC and its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by [Provision E.2](#) of Standard Provisions and Reporting Requirements, is prohibited.
3. Discharge of waste classified as ‘hazardous’, as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as ‘designated,’ as defined in California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

4. Application of treated wastewater in a manner or location other than that described herein is prohibited.

1. The monthly average discharge flow shall not exceed 4.8 mgd.
2. Average BOD loading to the Use Area shall not exceed 100 lbs/acre/day, both long-term and over the course of any discharge cycle (i.e., the time between successive applications).
3. The seasonal flow-weighted average EC of the discharge shall not exceed the flow weighted average EC of the source water plus 500 umhos/cm, or a maximum of 1000 umhos/cm, whichever is less.
4. The annual average chloride concentration of the discharge shall not exceed 150 mg/L.

1. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
2. Objectionable odors shall not be perceivable beyond the limits of the Use Area property at an intensity that creates or threatens to create nuisance conditions.
3. Application of waste constituents to the designated Use Area shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the designated Use Area, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.
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.

1. The perimeter of the Use Area shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties not owned or controlled by the Discharger.
2. No physical connection shall exist between tomato processing 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.

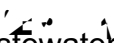
3. The Use Area shall be managed to prevent breeding of mosquitoes. More specifically:
 - a. All applied irrigation water must infiltrate completely within a 48-hour period;
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.

1. Any handling and storage of solids and sludge at the Facility or in the Use Area 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.
2. Collected screenings, sludge, and other solids removed from the liquid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
3. Any proposed change in solids use or disposal practice shall be reported to the Executive Officer at least 90 days in advance of the change.

1. Release of waste constituents from any treatment or storage component associated with the Facility shall not cause or contribute to groundwater:
 - a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater.
 - (i) Nitrate as nitrogen of 10 mg/L;
 - (iii) For constituents identified in Title 22, the MCLs quantified therein.
 - b. Containing taste or odor-producing constituents, or toxic substances, or any other constituents, in concentrations that cause nuisance or adversely affect beneficial uses.

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as Standard Provisions(s).
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. [R5-2008-0067](#), which is part of this Order, and any revisions thereto as adopted by the Regional Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger self-monitoring reports.
3. The Discharger shall keep at the Facility a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger 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 by the Discharger only when the operation is necessary to achieve compliance with the conditions of the Order.
5. 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 persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). 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.
6. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Regional 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 the

Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

7. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger 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 appropriate Regional Water Board office.
8. 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 Regional 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 Regional Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
9.  - -▼, the Discharger shall submit a performance demonstration for the main wastewater pond to address the lack of specific design details discussed in Finding 13. At a minimum, the performance demonstration shall include estimates of wastewater infiltration rates and demonstrate that the pond is protective of groundwater quality and that seepage from the ponds shall not contribute to constituents in groundwater exceeding groundwater limitations.
10. The pH of the discharge shall not be less than 4.5 or greater than 10 pH units for more than three consecutive 24-hour composite sampling events. In the event that the pH of the discharge is outside of this range for more than three consecutive sampling events, the Discharger shall submit a technical evaluation in its monthly SMRs documenting the pH of the blended discharge to the Use Area, and if necessary demonstrate that the effect of the discharge on soil pH will not exceed the buffering capacity of the soil profile.
11.  - -▼, the Discharger shall develop and implement a salinity source control plan. The plan shall assess salinity sources and identify potential salt control and reduction measures. The assessment shall, at a minimum, evaluate:
 - industrial salt sources, salt loading estimates for identified sources, and potential salinity reduction measures for these sources;

- in-plant treatment processes and their effect on conductivity.

The plan shall identify salinity control and reduction measures and include a time schedule for their implementation.

12. If the Regional 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.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 25 April 2008.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

Monitoring and Reporting Program

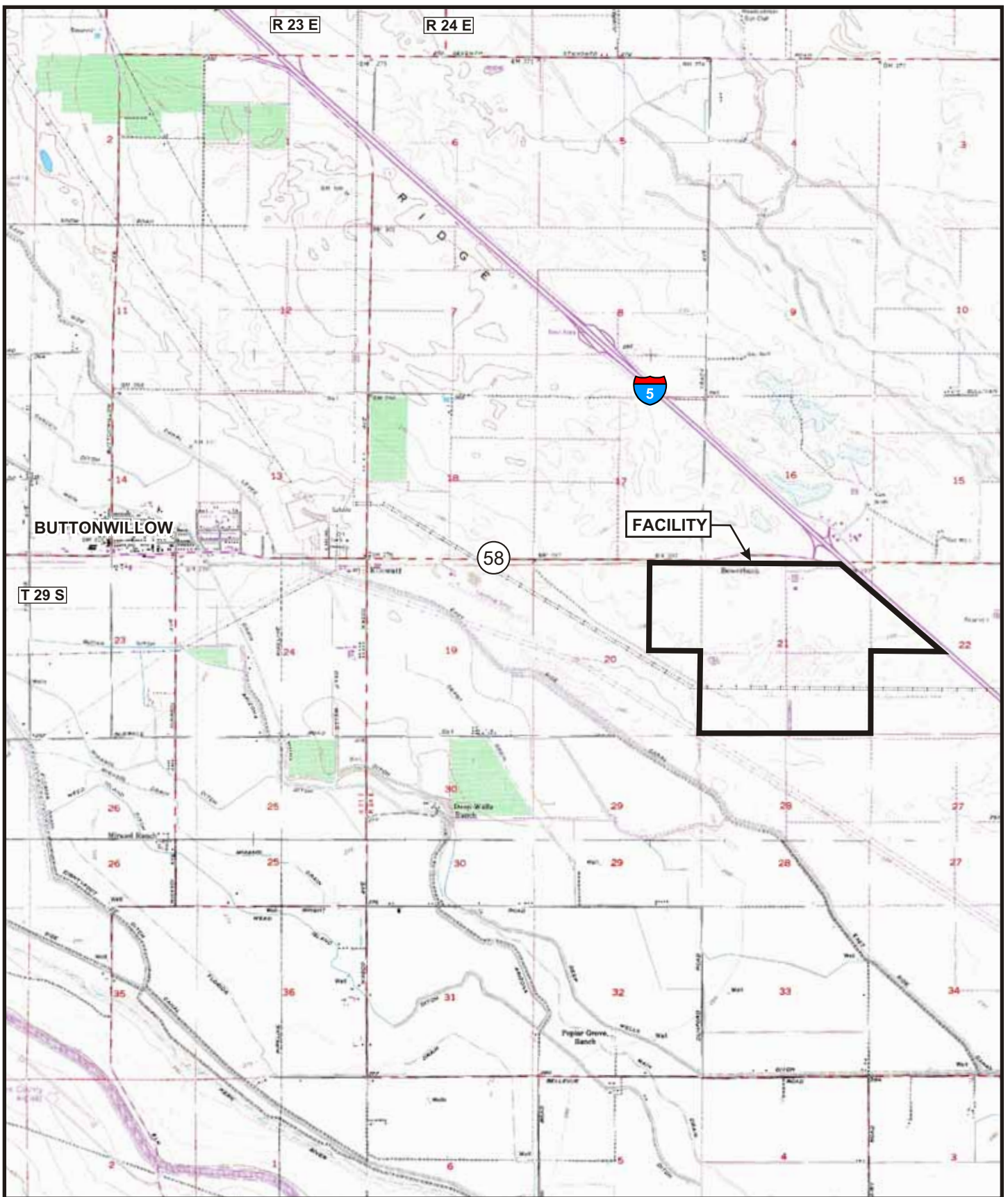
A. Location Map – J.G. Boswell Tomato Processing Facility, Buttonwillow

B. Facility Map – J.G. Boswell Tomato Processing Facility, Buttonwillow

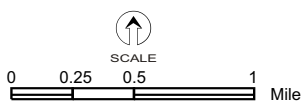
C. Process Flow Diagram – J.G. Boswell Tomato Processing Facility

D. Standard Provisions (1 March 1991) (separate attachment to Discharger only)
Information Sheet

SJP: 04/25/08



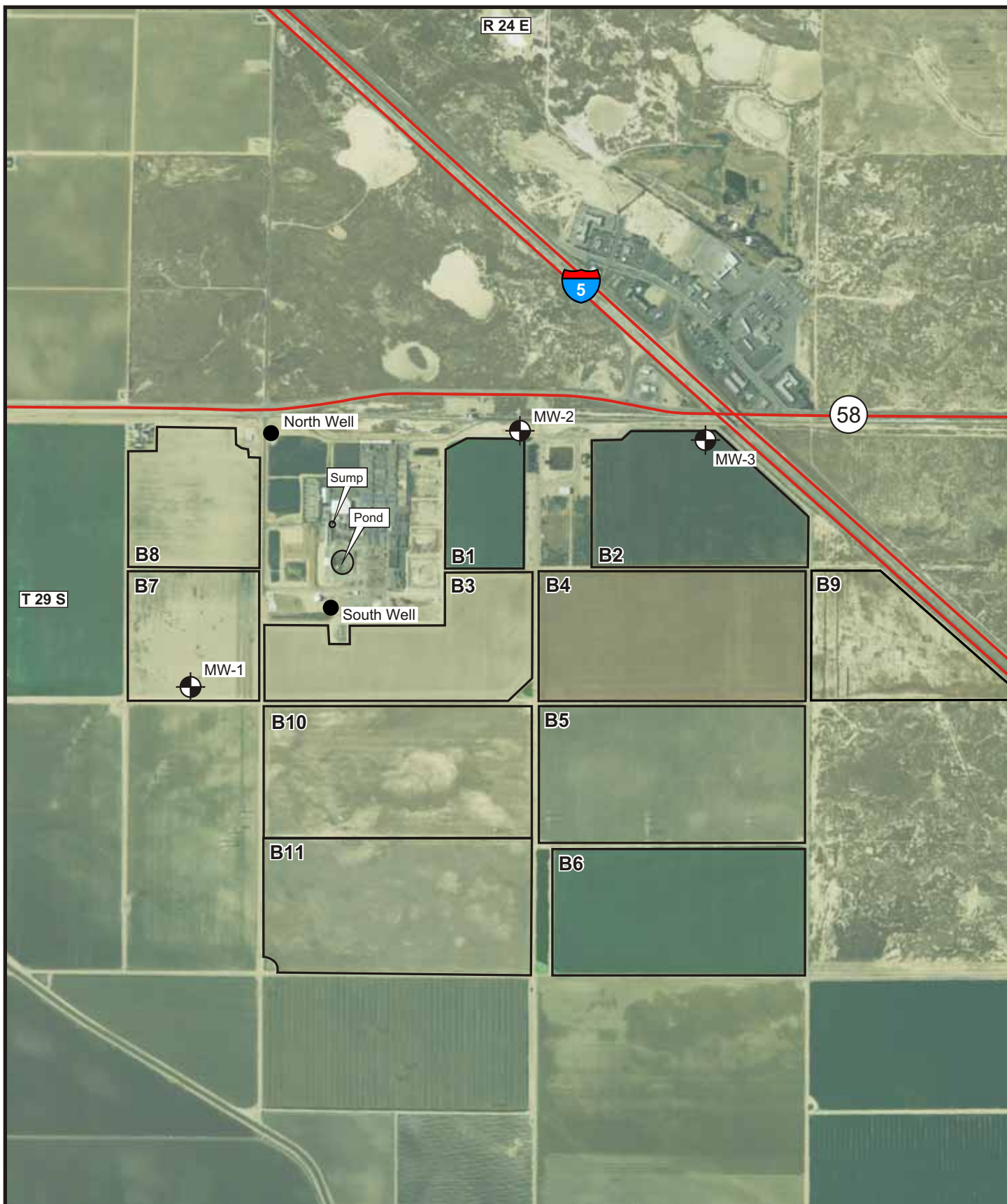
Map Source:
 BUTTONWILLOW 7.5 Minute USGS Quadrangle
 Sections 20, 21, & 22, T29S R24E, MDB&M



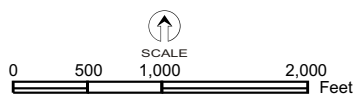
LOCATION MAP
 ORDER NO. R5-20080067
 WASTE DISCHARGE REQUIREMENTS
 FOR

J. G. BOSWELL TOMATO CO.
 BUTTONWILLOW TOMATO PROCESSING FACILITY
 KERN COUNTY

ATTACHMENT A

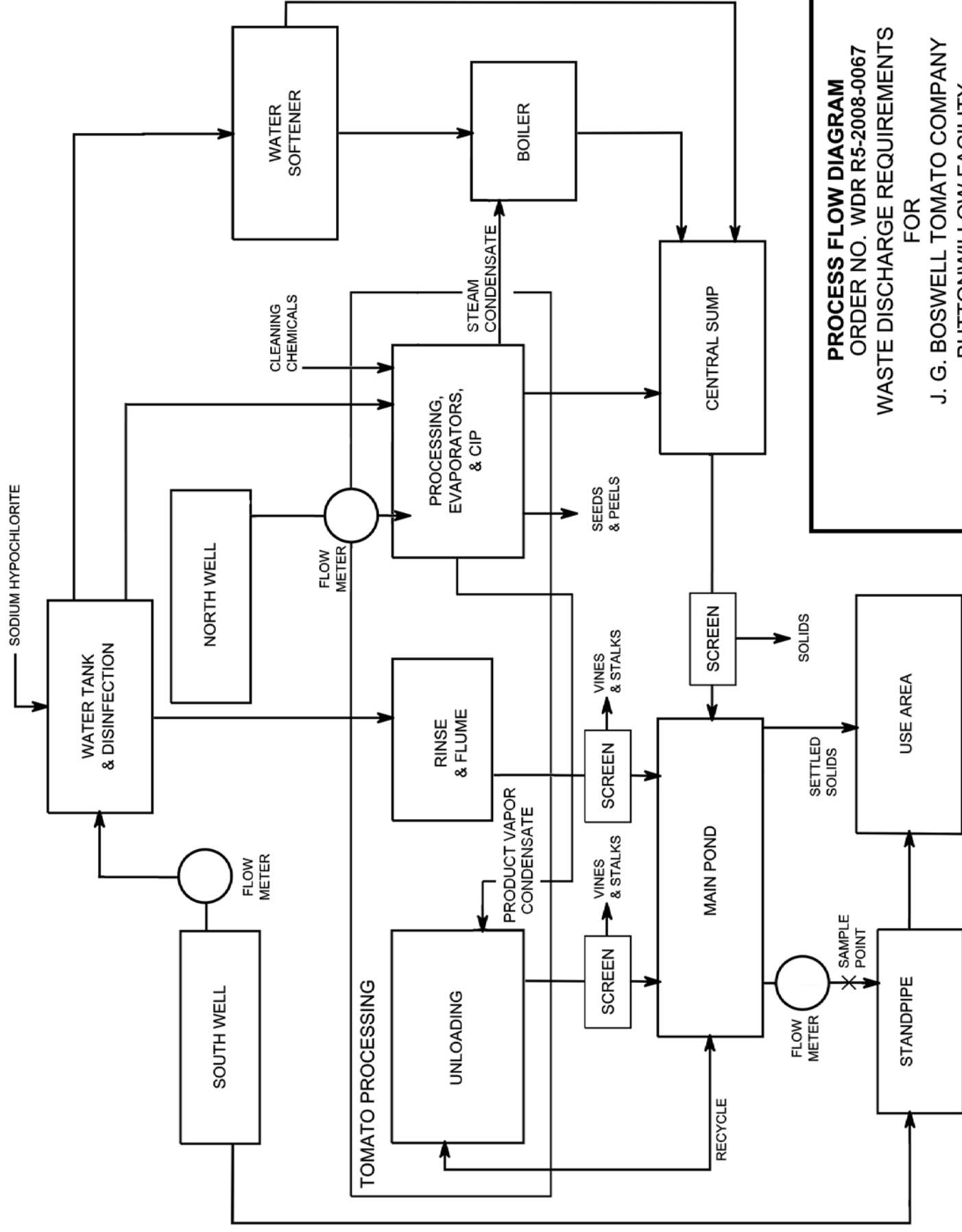


Map Source:
NAIP Aerial Photograph (2005)
Sections 20, 21, & 22, T29S R24E, MDB&M



FACILITY MAP
ORDER NO. R5-2008-0067
WASTE DISCHARGE REQUIREMENTS
FOR
J. G. BOSWELL TOMATO CO.
BUTTONWILLOW TOMATO PROCESSING FACILITY
KERN COUNTY

ATTACHMENT B



PROCESS FLOW DIAGRAM
 ORDER NO. WDR R5-2008-0067
 WASTE DISCHARGE REQUIREMENTS
 FOR
 J. G. BOSWELL TOMATO COMPANY
 BUTTONWILLOW FACILITY
 KERN COUNTY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2008-0067
FOR

J.G. BOSWELL TOMATO COMPANY
BUTTONWILLOW TOMATO PROCESSING FACILITY
KERN COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Regional Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Regional Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991. The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in this MRP, shall be reported to the Regional Water Board and used in determining compliance.

Field test instruments (such as pH) may be used provided that:

1. the operator is trained in the proper use of the instrument;
2. the instruments are calibrated prior to each use;
3. instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. field calibration reports are submitted as described in the "Reporting" section of this MRP.

Each laboratory report shall clearly identify the following:

1. analytical method;
2. measured value;
3. units;
4. what constituent a value is reported as;
5. method detection limit (MDL);
6. reporting limit (RL) (i.e., a practical quantitation limit or PQL);
7. documentation of cation/balance for general minerals analysis of supply water and groundwater samples.

All laboratory results shall be reported down to the MDL. Non-detect results shall be reported as less than the MDL (<MDL). Results above the MDL, but below the concentration of the lowest calibration standard for multipoint calibration methods or below the reporting limit for other methods, shall be flagged as estimated.

Analytical procedures shall comply with the methods and holding times specified in: *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, 1983); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA/600/R-93/100, 1993); *Standard Methods for the Examination of Water and Wastewater, 20th Edition* (WEF, APHA, AWWA); and *Soil, Plant and Water Reference Methods for the Western Region, 2003, 2nd Edition* (hereafter Western Region Methods).

If monitoring consistently shows no significant variation in magnitude of a constituent concentration after at least 12 months of monitoring, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

‘ N ‘ N N,

The main pond for the facility shall be monitored until dry as follows. Time of collection of a grab sample shall be recorded:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Freeboard	feet ¹	Observation	Daily
Dissolved Oxygen ²	mg/L	Field	Daily
Electrical Conductivity	µmhos/cm	Field	Daily
pH	s.u.	Field	Daily

¹ Freeboard shall be monitored to the nearest tenth of a foot.

² DO samples should be collected opposite the pond inlet between the hours of 0800 and 0900. To minimize the potential for the creation of objectionable odors, the DO content in the upper zone (one foot) of any wastewater ponds should not be less than 1.0 mg/L.

‘ N ‘ N,

The Discharger shall collect wastewater samples at a point in the system following the processing of tomatoes and prior to blending with irrigation water. Effluent monitoring shall include the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Flow ¹	gal/day	Continuous	Daily
EC	µmhos/cm	24 hr – Composite ²	Weekly
pH	pH units	24 hr – Composite ²	Weekly
BOD ₅ ³	mg/L	24 hr – Composite ²	Weekly
Total Suspended Solids	mg/L	24 hr – Composite ²	Weekly
Total Kjeldahl Nitrogen	mg/L	24 hr – Composite ²	Weekly
See footnotes on the following page.			
Ammonia	mg/L	24 hr – Composite ²	Weekly

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Nitrate as Nitrogen	mg/L	24 hr – Composite ²	Weekly
Total Nitrogen	mg/L	24 hr – Composite ²	Weekly
Inorganic TDS ⁴	mg/L	24 hr – Composite ²	Monthly
General Minerals ⁵	mg/L	24 hr – Composite ²	Annually

- ¹ Flow shall be measured using a magnetic or ultrasonic flow meter.
- ² Unless otherwise approved, 24-hour composite samples shall be collected using a composite wastewater sampler synchronized with a flow meter to take flow proportional (volumetric) samples. While being composited, samples shall be refrigerated at 4 °C (39.2 °F).
- ³ Five-day, 20°C biochemical oxygen demand (BOD₅)
- ⁴ Inorganic TDS, as used in this MRP, shall be determined using EPA Test Method No. 160.4, or equivalent test method.
- ⁵ General Minerals, as referenced in this MRP, shall include the constituents in the General Minerals Analyte List below.

Alkalinity (as CaCO ₃)	Carbonate (as CaCO ₃)	pH
Arsenic	Chloride	Potassium
Bicarbonate (as CaCO ₃)	EC	Sodium
Boron	Hardness (as CaCO ₃)	Sulfate
Calcium	Magnesium	TDS ²

- ¹ General Minerals Analyte lists may vary depending on the laboratory, but for the purpose of this MRP, shall include at least the above analytes and properties. An anion cation balance shall accompany results.
- ² Total dissolved solids (TDS) referenced hereafter in this program shall be determined using voluntary consensus standards body (VCSB) Standard Method (SM) 2540C for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS, or equivalent analytical procedures.

The Discharge shall inspect the Use Area at least weekly during the processing season. Observations, including crop details, ponding, and odors, shall be recorded in a bound logbook. A **summary** of observations from the log shall be included in monthly reports. During the processing season (July through October), the Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area. Off-season fertilizer nutrient loading (e.g., nitrogen and inorganic TDS) shall be recorded. Data shall be collected and submitted annually:

MONITORING AND REPORTING PROGRAM NO. R5-2008-0067
J.G. BOSWELL TOMATO COMPANY
BUTTONWILLOW TOMATO PROCESSING FACILITY
KERN COUNTY

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<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Wastewater application field number		Observed	Daily
Wastewater application area	acres	Estimated	Daily
Wastewater flow	mgd	Continuous	Daily
Wastewater loading	inches/day/acre ³	Calculated	Daily
Precipitation	inches ¹	Rain gauge ²	Daily
Supplemental irrigation flow	mgd	Estimated	Daily
Supplemental irrigation flow	inches/day/acre ³	Calculated	Daily
Total hydraulic loading rate ⁴	Inches/day/acre ³	Calculated	Daily
BOD ₅ loading rate ⁵			
on application day ⁶	lbs/acre	Calculated	Daily
averaged over application cycle ⁷	lbs/acre/day	Calculated	Daily
Monthly nitrogen loading rates ⁸			
from wastewater	lbs/acre	Calculated	Monthly
from fertilizers	lbs/acre	Calculated	Monthly
Cumulative Annual nitrogen loading rate ⁹	lbs/acre	Calculated	Monthly
Monthly inorganic TDS loading rates ¹⁰			
from wastewater	lbs/acre	Calculated	Monthly
from fertilizers	lbs/acre	Calculated	Monthly

¹ Report to the nearest 0.1 inch.

² National Weather Service data from the nearest weather station is acceptable.

³ Report to the nearest 0.01 inch.

⁴ Includes total liquid application (i.e., precipitation, wastewater, and irrigation water).

⁵ BOD₅ loading rates shall be calculated using the applied volume of wastewater, actual application area, and the average of the three most recent results of wastewater BOD₅.

⁶ Application day, as referred to in this MRP, shall be defined as a 24-hour period.

⁷ Application cycle, as referred to in this MRP, shall be defined as the period (in days) of wastewater application followed by resting interval until next wastewater application.

⁸ Wastewater nitrogen loading rates shall be calculated using the applied volume of wastewater, actual application area, and the wastewater total nitrogen.

⁹ Starting as zero each January 1

¹⁰ Inorganic TDS loading rates shall be calculated using the applied volume of water/wastewater, actual application area, and the average of the three most recent results of water/wastewater inorganic TDS.

The supply water for the facility shall be monitored as follows. Time of collection of a grab sample shall be recorded:

<u>Constituent</u>	<u>Units</u>	<u>Measurement</u>	<u>Frequency</u>
General Minerals	mg/L	Grab ¹	Annually ²

¹ Shall be reported as a flow-weighted average from all facility supply wells. Include copies of supporting calculations with monitoring reports.

² In July.

Representative sampling locations shall be established with Regional Water Board staff concurrence prior to soil profile sampling. Sample times and locations should be consistent with locations monitored in the past:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Nitrate-Nitrogen	mg/kg	Grab, to 6 feet ¹	Annually ²
Kjeldahl-Nitrogen	mg/kg	Grab, to 6 feet ¹	Annually ²
Total Nitrogen	mg/kg	Grab, to 6 feet ¹	Annually ²
Soil pH	pH units	Grab, to 6 feet ¹	Annually ²
Buffer pH	mg/kg as CaCO ₃	Grab, to 6 feet ¹	Annually ²
Total Alkalinity	mg/kg as CaCO ₃	Grab, to 6 feet ¹	Annually ²
Electrical Conductivity	µmhos/cm	Grab, to 6 feet ¹	Annually ²
Total Organic Carbon	% by dry weight	Grab, to 6 feet ¹	Annually ²

¹ Samples shall be collected at 6 inches, 2 feet, 4 feet, and 6 feet.

² In July or August.

Representative samples shall be collected from solids disposed of in the Use Area (including solids used as a soil amendment). Samples shall be collected at least annually, or each time solids are removed from the pond for disposal, but need not be sampled more frequently than monthly.

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>
Nitrate-Nitrogen	mg/kg	Composite ¹
Kjeldahl-Nitrogen	mg/kg	Composite ¹
Total Nitrogen	mg/kg	Composite ¹

¹ Analyses shall be performed on a composite from at least four representative subsamples.

MONITORING

Concurrently with groundwater quality sampling, the Discharger shall measure the water level in all monitoring wells in its network as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundreds above mean sea level). The horizontal geodetic location of each monitoring well shall be provided where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum.

After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall include in its submittal of groundwater elevation data, a contour map based on said data showing the gradient and direction of groundwater flow under/around the facility and effluent disposal area(s). The groundwater contour map shall also include the location of the monitoring wells and active storage and land disposal areas (i.e., areas receiving treated effluent).

Samples shall be collected from the approved monitoring wells and analyzed for the following constituents and frequencies specified below:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Depth to groundwater	Feet ¹	Measured	Quarterly ²
Groundwater elevation	Feet AMSL ³	Calculated	Quarterly ²
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly ²
Ammonia	mg/L	Grab	Quarterly ²
Nitrate as Nitrogen	mg/L	Grab	Quarterly ²
Total Nitrogen	mg/L	Grab	Quarterly ²
General Minerals	mg/L	Grab	Annually ⁴

¹ To the nearest hundredth of a foot.

² January, April, July and October.

³ Above mean sea level.

⁴ In July.

1.1.1.1

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions.

Monitoring data and/or discussions submitted concerning the quality of the discharge must also be signed and certified by the chief plant operator. When reports contain laboratory analyses performed by the Discharger and the chief plant operator is not in the direct line of supervision of the laboratory, reports must also be signed and certified by the chief of the laboratory.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the discharge monitoring report.

1.1.1.2

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly monitoring reports shall be submitted to the Regional Board (i.e., the August Report is due by 1 October). At a minimum, the reports shall include:

1. Results of effluent and use area (land application) monitoring;
2. Calculated Monthly Average Daily Flow;
3. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
4. Copies of laboratory analytical reports; and
5. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

1.1.1.3

Daily, weekly, monthly, and quarterly monitoring data shall be reported in quarterly monitoring reports. Quarterly monitoring reports shall be submitted to the Regional Water Board (i.e., the 3rd Quarter Report is due 1 November). The monthly and quarterly reports shall be

combined in months where both reports are due. At a minimum, the quarterly reports shall include:

1. Results of discharge, and use area monitoring;
2. Calculated Monthly Average Daily Flow;
3. Daily, Monthly, and Average loading calculations;
4. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
5. Copies of laboratory analytical reports; and
6. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

An Annual Report shall be prepared as a fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly schedule plus the results of any annually sampled constituents (e.g., general minerals, selected metals, etc). The Annual Report shall be submitted to the Regional Board.

In addition to the data normally presented, the Annual Report shall include the following:

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal;
2. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations;
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (standard Provision C.4);
4. The most recent water supply report including laboratory data;
5. A summary of solids monitoring, including:
 - a. Annual solids production in dry tons; and
 - b. A description of the disposal methods used at the facility. If more than one method is used, include the percentage of solids production disposed of by each method.

6. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

All technical reports required herein must be overseen and certified by a California registered civil engineer, certified engineering geologist, or certified hydrogeologist in accordance with California Business and Professions Code, sections 6735, 7835, and 7835.1. All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

A transmittal letter shall accompany each self-monitoring report. The letter shall discuss any violations during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by:

PAMELA C. CREEDON, Executive Officer

25 April 2008

(Date)

SJP: 4/25/08

INFORMATION SHEET

ORDER NO. R5-2008-0067
J.G. BOSWELL TOMATO COMPANY
BUTTONWILLOW TOMATO PROCESSING FACILITY
KERN COUNTY

J. G. Boswell Tomato Company, LLC (Discharger) operates a tomato processing facility at the southwest corner of Interstate 5 and State Route 58 in Kern County, approximately three miles east of the town of Buttonwillow, formerly Rio Bravo Tomato Company. Seasonally, the facility processes approximately 6,600 tons of tomatoes per day to produce about 1,050 tons of tomato paste product. Primary sources of wastewater generated at the facility include wastewater from conveying tomatoes, tomato rinsing processes, and general cleaning and rinsing of equipment. The processing season falls between June and October, averaging about 90 days per season, during which the Facility operates 24 hours per day and seven days per week.

The Executive Officer conditionally waived waste discharge requirements for the discharge under the General Low-Threat Waiver, Resolution No. 82-036 (the Waiver), and also issued Monitoring and Reporting Program No. 5-00-827 (MRP). The facility was constructed and began processing tomatoes in 2000. On 1 January 2003, the Waiver expired. The Discharger submitted a revised Report of Waste Discharge (RWD) in 2005. The facility complied with the conditions of the expired waiver and the issued MRP until the 2006 processing season. The facility currently operates according to the latest RWD, and adheres to MRP No. 5-00-827.

Before the 2006 processing season, wastewater was discharged to a 458-acre Use Area adjacent to the Facility. Since 2006, the Facility has discharged to a 618-acre Use Area, as proposed in the 2005 RWD. Wastewater is screened before discharge. The Discharger has reported an estimated average daily flow of about 5.7 million gallons per day (mgd) during the processing season (July through October). This flow estimate is conservative, as the same volume of water may be counted twice using the current method of estimation. Estimating the discharge by summing the supply water usage and the water extracted from the tomatoes (also conservative) yields an estimate closer to 5.2 mgd. Discharge flow from the facility in the off-season has not been reported but should be minimal.

The current sampling setup at the site does not ensure representative samples of wastewater. Though water use records provided by the Discharger show that the affect may be insignificant, past samples may underestimate constituent concentrations because they are collected from a standpipe where fresh well water is sometimes added. The discharge is not of particularly poor quality because roughly two-thirds of the wastewater comes from conveying and rinsing the tomatoes. Biochemical oxygen demand (BOD), total nitrogen, and electrical conductivity are in the range of 350 milligrams per liter (mg/L), 20 (mg/L), and 700 micromhos per centimeter (umhos/cm), respectively.

All wastewater generated at the Facility passes through the main pond. The main pond construction details, including material used and compaction achieved, are unknown. The

Discharger has suggested that the pond may have been constructed with a compacted clay liner. Soils underlying the area of the pond are classified as Panoche series clay-loam by the National Resource Conservation Service. Panoche series loams are typically described as well-drained, deep soils, but a clay-loam may contain from about 25 to 40 percent clay. A well-compacted liner of sufficient thickness constructed from such soils would have relatively low permeability.

The underlying principle of land application is to beneficially reuse wastewater and the plant nutrients that it contains. However, in order to ensure that this beneficial reuse complies with State Water Board Resolution No. 68-16, land application may not cause unreasonable degradation of groundwater quality. Under ideal circumstances, soils within the land application area provide a matrix for biodegradation of the organic components of the wastewater (measured as BOD), create conditions conducive for transformation of organic nitrogen to plant available nitrate, create conditions conducive for denitrifying excess nitrate so that it does not percolate to the water table, provide pH buffering, and attenuate inorganic waste components (salts and metals).

Waste applications must be balanced to provide adequate plant nutrients and water while minimizing nuisance potential and percolation of waste constituents to the water table. The chemical and biological reactions that take place are interrelated and require that constituent loadings and wetting and drying cycles be optimized.

A contract farmer irrigates the Use Area with wastewater and, as needed, facility supply water. The irrigation cycle is generally a 14-day period of irrigating approximately 40 acres per day with about four inches of water, consistent with agronomic rates. Crops include sudan grass, wheat, and cotton.

Tomatoes unsuitable for processing are removed and diverted as cattle feed. Seeds and peels are also separated and diverted to the cattle feed line. The Discharger estimates about 152 tons of these solids are generated per day, for a total of 18,000 tons over a 120-day season. Solids in the waste stream settle out when they reach the holding pond. On an annual basis, approximately 28,000 cubic feet of sediment is removed from the pond and land applied as fertilizer to rotating 20-acre portions of the Use Area.

Regional groundwater is contained generally in two aquifers, the Lower Confined Aquifer and the Upper Unconfined Aquifer. According to the 1981 map *Depth to the Top of Corcoran Clay* from the Department of Water Resources, the two aquifers are separated by a confining layer (Corcoran Clay or E Clay) present beneath the Use Area at about 350 to 400 feet below ground surface (bgs). Driller's logs for onsite wells note a 25-foot thick clay layer at an approximate depth of 290 feet bgs. It is unclear whether this is the Corcoran or E Clay, or if

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BUTTONWILLOW TOMATO PROCESSING FACILITY
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there is a second confining layer. First encountered groundwater is approximately 125 feet bgs (165 feet elevation above mean sea level).

The Facility supply water is produced from two onsite wells, called South Well and North Well. South Well is screened from a depth of approximately 320 feet to 635 bgs (below the reported confining layer). North Well is screened from a depth of approximately 215 feet to 245 feet bgs (above the reported confining layer). The conductivity (EC) of the source water ranges from about 280 to 580 umhos/cm, with an average of about 430 umhos/cm.

The Discharger installed three groundwater monitoring wells in 2000. There are no groundwater monitoring wells downgradient of the concrete wastewater sump or the main wastewater pond. The Discharger has performed quarterly monitoring since 2002, including analysis for typical food processing waste constituents and general minerals. The EC of first encountered groundwater from 2000 to 2007 has been recorded as low as 800 umhos/cm. Though the EC recorded in MW-1 and MW-2 have fluctuated widely, the overall annual average EC recorded in the groundwater monitoring wells has declined at a rate of approximately 60 umhos/cm per year. The EC in MW-3 (the highest quality of the monitoring wells) has consistently declined at a rate of approximately 30 umhos/cm per year.

On the west side of the site, groundwater chloride, EC, and TDS exceed Maximum Contaminant Limits (MCLs) for drinking water, and boron exceeds California Notification Levels. However, because groundwater on the east side of the site is of fairly good quality, discharge of food processing wastewater is a potential threat to groundwater.

From the period of 2000 to 2003, the facility operated under the Waiver and MRP No. 5-00-827. When the Waiver expired in 2003, the Discharger continued to monitor and submit reports as before. The Discharger submitted a revised RWD in 2005 and since then has submitted reports according to the MRP, including a statement certifying that the Facility has operated as described in the revised RWD.

At least since 2004, the Discharger has submitted detailed monthly monitoring reports and an annual report. In general, reports have been submitted complete and in a timely manner. Regional Water Board staff have not issued a Notice of Violation to the Discharger. The Discharger has taken initiative to develop and implement nutrient management.

The Basin Plan indicates the greatest long-term problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. The Regional Water Board encourages proactive management of waste streams by dischargers to control addition

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J.G. BOSWELL TOMATO COMPANY
BUTTONWILLOW TOMATO PROCESSING FACILITY
KERN COUNTY

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of salt through use, and has established an incremental EC limitation of 500 umhos/cm as a measure of the maximum permissible addition of salt constituents through use.

Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.

The antidegradation directives of State Water Board Resolution No. 68-16 (Resolution 68-16), "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policy and procedures for complying with this directive are set forth in the basin plan.

The tomato processing facility and discharge area are in Detailed Analysis Unit (DAU) No. 254 within the Kern County Basin hydrologic unit. The Basin Plan designates the beneficial uses of groundwater in this DAU as municipal and domestic supply, agricultural supply, industrial and industrial process supply, water contact and non-contact recreation, and wildlife habitat supply. Beneficial use exclusions listed in the Basin Plan for this DAU do not apply to the Facility.

The Facility provides treatment and control of the discharge that incorporates:

- a. Removal of solids at the plant before discharge to the Use Area. Solids are 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; and
- d. Blending of wastewater with freshwater to meet the agronomic requirements for crop growth.

Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

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BUTTONWILLOW TOMATO PROCESSING FACILITY
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Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards provided the Regional Water Board has issued waste discharge requirements or waived such issuance; the discharge is in compliance with the Basin Plan; and the waste need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

Accordingly, the discharge of effluent and the operation of treatment or storage facilities associated with a food processing facility can be allowed without requiring compliance with Title 27, provided the resulting degradation of groundwater is in accordance with the Basin Plan.

On 15 March 2000, the Kern County Planning Commission approved the Initial Study and adopted Negative Declaration EA LO 1-00 for Lot Line Adjustment No. 137-99 and Zone Variance No. 21, Map No. 99 for the construction of the J. G. Boswell Tomato Processing Facility and the discharge/recycling of wastewater to an approximately 458-acre disposal area. Regional Water Board Staff reviewed and commented on the Negative Declaration.

The proposed Order prohibits discharge to surface waters and water drainage courses.

The proposed Order would set a monthly average daily discharge flow limitation of 4.8 mgd. The proposed flow limitation is meant to prevent nuisance conditions and loading of the Use Area beyond agronomic requirements. The selected flow limitation comes from 4 inches of irrigation on 618 acres with an irrigation cycle of 14 days, which is in the range of evapotranspiration rates for crops grown, and should infiltrate within 48 hours after discharge to prevent nuisance conditions.

The proposed Order would set an Effluent Limitation on BOD loading of 100 lbs/acre/day, seasonally and over any particular discharge cycle. Based on the 14-day cycle time, the 4.8-mgd wastewater application rate, and a BOD concentration of 350 mg/L, the Discharger should be able to comply with these limits without further treatment.

Significant infiltration from the pond to groundwater may occur during the process season, which constitutes a discharge to the waters of the State of California. The proposed order would address potential impacts due to infiltration from the pond by requiring a pond liner performance demonstration. The performance demonstration is to include estimates of wastewater infiltration rates and demonstrate that the pond is protective of groundwater quality

and that seepage from the ponds shall not contribute to constituents in groundwater exceeding groundwater limitations.

The proposed Order would require the Discharger to submit a Salinity Control Plan that will detail measures taken to reduce the salinity of the discharge and document that all feasible salinity reduction measures have been implemented.

The proposed WDRs would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedance of these objectives or natural background water quality, whichever is greatest.

Section 13267 of the CWC authorizes the Regional Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years there has been an increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment of civil administrative liability where appropriate.

The proposed Order includes pond monitoring, effluent monitoring requirements, Use Area monitoring, soils monitoring, water supply monitoring and groundwater monitoring. The sampling frequencies and constituents monitored were selected based on trends identified in previous monitoring data. The monitoring is necessary to evaluate groundwater quality and the extent of the degradation from the discharge.

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.