



567 West Shaw Avenue Suite B  
Fresno CA 93704  
P 559.497.2880  
F 559.497.2886  
www.bskassociates.com

January 6, 2011

BSK E04.125.02F

Mr. Dale Harvey  
California Regional Water Quality  
Control Board  
Central Valley Region  
1685 E Street  
Fresno, California 93706-2020

**SUBJECT: Review of Tentative Waste Discharge Requirements  
Caruthers Raisin Packing Company  
12797 South Elm Avenue, Caruthers, California**

Dear Mr. Harvey:

BSK Associates has reviewed a copy of the Tentative Waste Discharge Requirements (WDRs), dated December 6, 2010, for the Caruthers Raisin Packing, Co. facility located at 12797 South Elm Avenue in Caruthers, California. On behalf of Caruthers Raisin, BSK requests that the following comments be reviewed and considered for the final WDRs.

Text from the tentative WDRs is presented in italics. Changes required by Caruthers Raisin follow:

***1. Existing Facility and Discharge Item No. 7, Order Section B.1: The average monthly flow to the Land Application Are (LAA) shall not exceed 0.13 mgd and the total annual flow to the LAA shall not exceed 25 million gallons:***

Measured wastewater flows from 2010 indicated the possibility of a monthly average in excess of the proposed effluent limitation during certain times throughout the year. The average monthly flow measured in May 2010 was 0.148 mgd. The projected annual flow for 2010, using 2010 data through November and estimated flows based on December 2009, was 26.4 million gallons; also in excess of the proposed limitation.

**We request that the allowed monthly and annual wastewater volume limitations be increased to 0.16 mgd and 30 million gallons, respectively.** A water balance indicates that the fields are hydraulically capable of accepting the proposed flows without flooding (Table 1). While it is understood that BOD loading rates are also a consideration of the flow limitation, the volume limitations themselves may limit future growth of the facility even if decreased BOD concentrations are attained.

***2. Land Application Area Requirements No. 4:*** *The monthly average BOD loading to the Land Application Area as determined by the method described the attached Monitoring and Reporting Program, shall not exceed 125 lbs/acre/day July through October and 50 lbs/acre/day November through June.*

The California League of Food Processors' *Manual of Good Practice for Land Application of Food Processing/ Rinse Water* (Manual) states that sprinkler application allows for equal distribution of reuse water on the land application area and is more conducive to re-oxygenation of the soil than flood irrigation. Table 7-5 of the Manual allows for a 150 lbs/acre/day BOD loading rate for a Risk Category 2 using sprinkler application on well-drained soils. Site-specific data was also used to determine the ultimate BOD loading rate using Category 3 equations of the Manual, which was calculated as 170 lbs/acre/day. The equations indicate that an ultimate BOD loading rate of approximately 150 lbs/acre/days would still be equal to or below the available oxygen supply in the subsurface. **Therefore, it is requested that the peak season BOD loading rate be increased to 150 lbs/acre/day.**

The de-minimus loading rate for Risk Category 1 in Table 7-5 of the Manual is 50 lbs/acre/day with a 50% increase for sprinkler application and well drained soils (75 lbs/acre/day). The Tentative Order states that the off-season loading rate would be limited to 50 lbs/acre/day. The reuse water is applied through sprinkler application regardless of peak season or off season. **Therefore, it is requested that the off-season loading rate for BOD be increased to 75 lbs/acre/day.**

Although the peak raisin packing season is typically July through October, this past year the facility began processing as early as April to meet USDA export demands. In a typical year the USDA export program runs from June through November. In addition, during rainy years additional processing is required to remove excess sand from the raisins. The excess sand removal process may run from September through January.

The crop cycle consists of Sudan grasses planted in March/April and harvested in October/November and a winter wheat/oat plant that is cultivated between October/November through March/April. Sprinkler irrigation is used regardless of crop or period. Neither crop usage nor reuse water application methods change between March/April and October/November. Rainfall between June and November is typically negligible. **Therefore, it is requested that the peak season loading rate limitation be applied from June through November to accommodate anticipated peak packing periods.**

***3. Quarterly Groundwater Monitoring Frequency:***

The Tentative Order proposes groundwater monitoring on quarterly basis. It is requested that the monitoring frequency be reduced to semi-annual sampling after two years of quarterly sampling, or until eight (8) groundwater sampling events are conducted, unless groundwater quality indicates there is a continued need for quarterly sampling.

**4. Antidegradation Analysis Item Nos. 42a, 44b, Order F. Groundwater Limitations 1a:**  
*Groundwater down-gradient of the discharge does not and will not exceed the MCL for NO<sub>3</sub>-N [nitrate] of 10 mg/L.*

As is noted in several sections within the Tentative WDRs, groundwater concentrations of nitrate up-gradient of the Caruthers Raisin Facility typically contains nitrate in excess of the Maximum Contaminant Level (MCL) for nitrate of 10 mg/L. The Tentative Order states "Release of waste constituents...shall not cause or contribute to groundwater: a. Containing concentrations in excess of [10 mg/L] or natural background quality, whichever is greater." While the Order takes the background concentrations into consideration, the Findings do not. The Findings should be updated to consider background conditions.

We appreciate your time reviewing our permit application and your review of the above comments. Please feel free to contact our office at (559) 497-2880 with questions or comments regarding this project.

Sincerely,  
**BSK ASSOCIATES**

  
Noelle A. Willbanks, P.E.  
Project Engineer

  
Amer A. Hussain, P.E.  
Regional Manager

NAW/AAH/mlt

Attachments: Table 1 – Water Balance

Distribution: Mr. Dale Harvey, CRWQCB (1 original)  
Don Kizirian, Caruthers Raisin Packing Co. (1 original)  
BSK File (1 original + Scan)

TABLE 1

WATER BALANCE

Caruthers Raisin Packing Facility - Fresno, California

		<sup>1</sup> DWR Website - Precipitation Averages		RWOCB fax		<sup>2</sup> CUP Plus-M Version		Difference between	
		Average		Average		Average		Difference	
2010 Actual	Average Monthly Wastewater Discharge (Gallons per Acre of Discharge Area per month)	83,158	0.11	1.08	2.32	63,095	5.82	158,027	0
2010 Actual	Average Monthly Wastewater Discharge (gal)	2,245,261	0.15	0.28	0.60	16,359	7.53	204,458	0
		2,951,285	0.12	0.07	0.15	4,090	9.20	249,802	0
		2,282,757	0.15	0.00	0.00	0	8.87	240,842	0
		2,997,634	0.14	0.02	0.04	1,169	8.05	218,577	0
		2,689,555	0.11	0.15	0.32	8,764	6.41	174,047	0
		2,095,230	0.11	0.48	1.03	28,044	4.68	127,073	0
		2,206,285	0.10	1.11	2.39	64,852	1.23	33,397	104
		1,980,987	0.13	1.76	3.79	102,829	1.64	44,530	155
		1,378,243	0.09	2.01	4.32	117,435	1.52	41,272	139
		1,731,173	0.09	2.08	4.48	121,525	0.89	24,166	161
		1,736,568	0.11	1.85	3.98	108,087	3.75	101,822	83
		2,082,092	1	10.89	23.43	636,248	59.59	1,618,012	642
<b>Annual</b>		<b>20,827,237</b>	<b>1,023,082</b>						<b>2,978</b>
					<b>2,1516</b>				<b>8,16</b>
<b>Multipliers</b>									
April								(11,774)	245
May								(78,792)	253
June								(161,166)	245
July								(129,818)	253
August								(117,795)	253
September								(87,682)	245
October								(17,315)	253
November								104,825	245
December								155,499	253
January								140,281	253
February								161,677	228
March								83,380	170
<b>Annual</b>								<b>41,319</b>	<b>2,336</b>

Discharge Area= 27 Acres

Abbreviations:

gal - gallons  
acre-in - acre-inch

<sup>1</sup>Department of Water Resources, Precipitation Averages  
<sup>2</sup>DWR CUP Plus - M Version (Using Sorghum and Oat/Wheat grass)(Sorghum will be planted in March and Harvested in October and Oat/Wheat grass will be planted in October and Harvested in March)

<sup>3</sup> Soil Infiltration was measured at 0.34 inch per hour using a dual ringed infiltrometer test



TABLE 1

WATER BALANCE  
Caruthers Raisin Packing Facility - Fresno, California

		1DWR Website - Precipitation Averages		RWQCB fax		CUP Plus-M Version				Difference between Drainage Available and Excess Water (Positive Number Indicates No Ponding or Flooding)	
Estimated Monthly Wastewater Discharge (gal)	Estimated Daily Wastewater Discharge (Gallons per Acre of Discharge Area per month)	Average Monthly Wastewater Discharge (acre in per month)	Average Monthly Rainfall (acre-in per month)	Multiplication Factor for 100- year Return (acre in per month)	100 Year Monthly Rainfall (Gallons per Acre of Discharge area per month)	Monthly Evapo- transpiration Rate (ET) (Gallons per Acre of Discharge Area per month)	Monthly Evapo- transpiration Rate (ET) (Gallons per Acre of Discharge Area per month)	Net Water Without Infiltration (Gallons per Acre of Discharge Area)	Excess Water (acre-in)	Drainage Available <sup>2</sup> (acre-in)	
				<b>2.1516</b>						<b>8.16</b>	
<b>Multipliers</b>											
April	2,200,000	81,481	0.11	2.32	63,095	158,027	5.82	(13,451)	0	245	245
May	2,200,000	81,481	0.11	0.60	16,359	204,458	7.53	(106,617)	0	253	253
June	2,200,000	81,481	0.11	0.15	4,090	249,802	9.20	(164,231)	0	245	245
July	3,080,000	114,074	0.16	0.00	0	240,842	8.87	(126,768)	0	253	253
August	3,080,000	114,074	0.16	0.04	1,169	218,577	8.05	(103,334)	0	253	253
September	3,080,000	114,074	0.16	0.32	8,764	174,047	6.41	(51,209)	0	245	245
October	3,080,000	114,074	0.16	1.03	28,044	127,073	4.68	15,045	0	253	253
November	3,080,000	114,074	0.16	2.39	64,852	33,397	1.23	145,529	145	245	100
December	2,200,000	81,481	0.11	3.79	102,829	44,530	1.64	139,780	139	253	114
January	2,200,000	81,481	0.11	4.32	117,435	41,272	1.52	157,645	157	253	96
February	2,200,000	81,481	0.11	4.48	121,525	24,166	0.89	178,841	178	228	51
March	2,200,000	81,481	0.11	3.98	108,087	101,822	3.75	87,747	87	253	166
<b>Annual</b>	<b>30,800,000</b>				<b>656,248</b>	<b>1,618,012</b>	<b>59.59</b>	<b>158,977</b>	<b>706</b>	<b>2,978</b>	<b>2,273</b>

Discharge Area= 27 Acres

Notes:

<sup>1</sup>Department of Water Resources, Precipitation Averages

<sup>2</sup> Soil Infiltration was measured at 0.34 inch per hour using a dual ringed infiltrometer test

Abbreviations:

gal - gallons  
acre-in - acre-inch