CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2017-0079

WASTE DISCHARGE REQUIREMENTS
FOR
MONARCH NUT COMPANY, LLC
AND LAND APPLICATION AREA OWNERS
PISTACHIO AND BLUEBERRY PROCESSING FACILITY
TULARE COUNTY

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

1. On 7 December 2014, Monarch Nut Company, LLC submitted a Report of Waste Discharge (RWD) that describes an existing pistachio and blueberry processing facility in Delano, Tulare County. Addenda to the RWD were submitted on 24 February 2014 and 16 December 2014.

2. Monarch Nut Company, LLC owns and operates the facility that generates the waste and some of the land application areas (LAAs) (see the table below), and is responsible for compliance with these Waste Discharge Requirements (WDRs). Monarch Nut Company, LLC and the LAA property owners are referred to as Discharger.

3. The facility is located at the Southwest Corner of Avenue 8 and Road 188 near the Richgrove Community Service District (Section 34, T24 South, R26 East, MDB&M), as presented on Attachment A, which is attached hereto and made part of this Order by reference. The facility occupies Assessor's Parcel Numbers (APN) No. 338-030-019. The LAA parcels, used with the property owners' permission, are listed in the table below and shown on Attachment B, which is attached hereto and made part of this Order by reference.

Field Number	APN	Owner	Crop Type	Acres
Wastewater Used for Irrigation and Dust Control				
S4	338-230-027	Baldev Krishen Munger	Almond	40 155
S6	338-020-019 338-020-016 338-020-029	Kewel & Janie Munger	Pistachio	148.7
S10	338-230-014	Baldev K Munger	Almond	155.9
S12	338-250-015	Munger Bros. LLC	Pistachio	78.8
S13	338-040-010	Munger Bros.	Pistachio	50.7

Field Number	APN	Owner	Crop Type	Acres
		LLC		
North Half of S1	338-230-029	Baldev Krishen Munger	Pistachio	144.0
D6	338-220-027	Baldev K Munger	Almond	79.1
D7	338-220-027	Baldev K Munger	Almond	37.6
			Total	**889.8**
Wastewater Used for Dust Control [1]				
S11	338-030-006	CRMX 142 Inc.	Blueberry	94.8
S9	338-030-020	Baldev Krishen Munger	Blueberry	73.2
S2	338-240-005	Toni Earlene Ray	Blueberry	145.3
S5	338-230-021	Kewel & Janie Munger	Blueberry	63.5
S7	338-010-030	Kewel & Janie Munger	Blueberry	98.8
S8	338-220-026	Kewel & Janie Munger	Blueberry	107.6
D4	338-010-029	Baldev Krishen Munger	Pistachio	37.3
D5	338-010-029	Baldev Krishen Munger	Pistachio	9.8
South Half of S1	338-230-030	William Anthony Burum	Almond	144.0
			Total	**774.5**

[1] Acreage shown for the areas to receive wastewater for dust control is the acreage for the crops. Generally, only the roads around and in these crops will receive wastewater. Approximately 20 miles of roads, approximately 12 feet wide, will receive the wastewater.

4. WDRs Order 92-190, adopted by the Central Valley Water Board on 25 September 1992, prescribes requirements for the discharge. Order 92-190, which covered the pistachio processing, allows a monthly average wastewater flow of up to 800,000 gallons per day (gpd). Since the adoption of Order 92-190, the Discharger has changed some of the facility's processes, including adding blueberry processing and improving the wastewater treatment system. Therefore, Order 92-190 no longer represents current facility operations and will be rescinded and replaced with this Order.

Existing Facility and Discharge

5. Monarch Nut Company is located in a primarily agricultural area and has operated as a pistachio processing facility for over 25 years. In 2005, blueberry processing was added to the facility but discharges of wastewater from blueberry processing are not covered under the existing WDRs. Site features are shown on Attachment C, which is attached hereto and made part of this Order by reference.

6. The Discharger uses various chemicals during pistachio and blueberry processing. Chemicals used are listed below.

Chemical	Area Used	Use
Chlorine Dioxide	Pistachio, Blueberry RTE, IQF, Infusion	Sanitation
Citric Acid	Blueberry RTE, Infusion	Ingredient
Surfactant	Blueberry RTE	Sanitation
Sodium Hypochlorite	Blueberry IQF - Infusion Cooling Tower	Sanitation, Water Treatment
Acid Sanitizer	Blueberry Infusion - CIP	Sanitation
Acid Cleaner (Nitric, Phosphoric)	Blueberry Infusion – Evaporator	Sanitation
Alkali	Blueberry Infusion – Processing Room	Sanitation
Potassium Hydroxide	Blueberry Infusion	CIP
Metal Acetate	Blueberry Infusion – Cooling Tower	Water Treatment
Sodium Hydroxide	Blueberry Infusion – Cooling Tower	Water Treatment

7. Two source water wells are used by the facility; one located near the northwest corner of the pistachio processing plant and one located in the southeastern corner of LAA S9. Depth to groundwater in the wells ranges from approximately 200 to 250 feet below ground surface (bgs). Concentrations of constituents detected in groundwater samples collected from the source wells are shown below.

Constituent	Units	Northwestern Well [1]	Southeastern Well [2]	WQO
EC	umhos/cm	654	548	900 [3]
TDS	mg/L	463	320	1,000 [4]
pH	pH units	8.0	6.9	--
Nitrate as N	mg/L	**86**	**31.1**	10 [5]
Boron	mg/L	NA	0.03	--
Calcium	mg/L	54.6	6.0	--
Chloride	mg/L	34.9	34	500 [6]
Iron	mg/L	0.12	ND	0.3 [7]
Magnesium	mg/L	8.1	ND	--
Manganese	mg/L	<0.01	ND	0.05 [7]
Sodium	mg/L	69.4	120	69 [8]
Sulfate	mg/L	72.6	37	500

Notes:
[1] Sample results for EC, TDS, and nitrate are from a sample collected on 17 April 2013 and the mineral results are from a sample collected on 14 December 2010.
[2] Sample taken on 10 April 2013.
[3] Secondary Maximum Contaminant Level for taste and odor threshold.

[4] Upper Secondary Maximum Contaminant Level. Lower Level for TDS = 500 mg/L.
[5] Primary Maximum Contaminant Level
[6] Upper Secondary Maximum Contaminant Level. Lower Level for Chloride = 250 mg/L.
[7] Secondary Maximum Contaminant Level
[8] Lowest Agricultural Water Quality Goal
-- not established
BOLD = concentrations exceed a WQO
EC = electrical conductivity
mg/L = milligrams per liter
ND = not detected
TDS = total dissolved solids
umhos/cm = micromhos per centimeter
WQO = water quality objective

8. Pistachio harvest and processing typically lasts for approximately 5 weeks each year beginning in early September. Pistachios are delivered to the Facility in trailers and unloaded to the Facility's conveyance system. On the conveyor, the pistachios pass through pre-cleaner where sticks, leaves, dirt, and grit are removed. The pistachios then pass through a huller where the outer hulls are removed. In 2014, the Discharger began to convert to a dry-hulling process, which has greatly reduced the volume of wastewater generated.

9. Wastewater generated during pistachio processing and associated equipment washing is discharged to a concrete vault (Vault 1). At Vault 1, solids are removed from the wastewater with series of screens and then sold as cattle feed. The wastewater from Vault 1 is discharged to a lined Wastewater Lagoon, located in northeastern portion of the facility. A pistachio wastewater flow schematic is shown on Attachment D, which is attached hereto and made part of this Order by reference.

10. The Wastewater Lagoon was constructed in 2015, which replaced three lined wastewater ponds. The Wastewater Lagoon is 335 feet long and 205 feet wide, extends to a depth of 23 feet bgs, and has berms up to 3 feet above existing ground surface. The design capacity of the lagoon is 6.5 million gallons (MG). The lagoon is double lined with High Density Polyethylene (HDPE) geomembrane with a drainage layer consisting of a 160-mil HDPE geonet located between the primary and secondary layers. A Leakage Collection and Return System (LCRS) was also installed between the layers to collect and remove wastewater in the event of leakage through the primary liner. The LCRS consists of a perforated pipe running down the length of the bottom of the pond that drains into a sump at the low point of the pond. Access to the sump is through a 12-inch diameter sump access pipe.

11. A pan lysimeter is located directly beneath the LCRS sump. The lysimeter has its own dedicated 12-inch diameter schedule 40 PVC access pipe and is underlain by a 60-mil smooth HPDE sheet. Geocomposite vent strips are underneath the secondary liner to allow any gasses that form from biodegradation of organic material in the subsurface soils and from rising water levels to vent above the high water line of the

pond. Geonet material between the two layers of liner provides any needed venting with the liners.

12. In 2005, blueberry processing began at the facility and consists of four processing plants, as described below. A blueberry wastewater process flow schematic is shown on Attachment E, which is attached hereto and made part of this Order by reference.

Plant	Description	Wastewater
Fresh Pack (Fresh Plant)	This facility was added in 2005 and expanded in 2008	Does not generate any wastewater
Ready-to-Eat (RTE)	The plant is intended to run throughout the year, depending on consumer demand and fruit availability.	Minimal amounts of wastewater are generated from blueberry and equipment washing. Wastewater is discharged to concrete Vault 5 and then to Vault 1.
Infusion Plant	Blueberries are soaked in a solution, usually sugars mixed with water or fruit juices, for a specific amount of time. The sugars force the water out of the blueberries, with the sugar replacing the water. After soaking, the blueberries are then dried to the desired moisture level and bulk packaged.	Wastewater is generated from blueberry and equipment washing, boiler blow down, and evaporator condensate. Wastewater flows to concrete Vault 4 and then to Vault 1.
Individually Quick Frozen Blueberries (IQF)	The plant is intended to run seasonally.	Wastewater is produced from blueberry washing and defrosting. Wastewater flows to concrete Vaults 3 and 4 and then to Vault 1.

13. All wastewater from the blueberry processing is discharged to Vaults 3, 4, and 5 then to Vault 1 for solids screening, and finally discharged to the Wastewater Lagoon.

14. A lined blending pond (Pond 7) is located adjacent to the Wastewater Lagoon. The pond was previously used to blend wastewater and irrigation water. This pond is not in use and no longer receives wastewater. The Discharger plans to decommission and backfill this pond.

15. The Facility typically generates an organic liquid wastewater stream, composed primarily of suspended and dissolved materials in water. The soluble components include sugars, organics, inorganics, and a minimal amount of cleaning agents. The organic substance in the wastewater tends to be low in oils and fats, but high in macronutrients such as potassium. To characterize wastewater quality, grab samples were collected from Vault 1 and the results are shown below.

Constituent	Units	Pistachio Processing (2013)	Blueberry Processing (2013)	Combined Flow (2014) [1]	Combined Flow (2015) [1]	Combined Flow (2016) [1]
pH	pH Units	4.6-7.6	4.5-5.3	4.1-6.9	5.2-6.8	5.2-7.3
EC	µmhos/cm	1,810	830	2,423	2,085	3,029
HCO^3	mg/L	233	--	205	285	349
Sulfate	mg/L	163	--	231	250	419
Nitrate as N	mg/L	5	**33**	**12**	**14**	**15**
TKN	mg/L	209	6	177	229	299
BOD_5	mg/L	2,714	1,930	4,123	3,945	5,207
TDS	mg/L	**4,349**	1,313	**3,619**	**3,749**	**5,203**
FDS	mg/L	1,410	411	859	822	1,588
Chloride	mg/L	52	--	51	66	68
Potassium	mg/L	409	--	490	524	746

Notes:
[1] Combined flows include pistachio and blueberry wastewater flows during the pistachio processing season only; monthly flow weighted average
Concentrations in **BOLD** exceed a WQO
TDS = 1,500 mg/L
Nitrate = 10 mg/L

16. Prior to 2015, wastewater flow rates were measured by a McCrometer propeller flow meter prior to discharge to the three former lined ponds. In 2015, a Seametrics 10-inch magnetic flow meter replaced the propeller flow meter. Flow rates are measured prior to discharge to the Wastewater Lagoon. Flow rates are measured daily during the pistachio processing season, which typically begins in early September and lasts approximately 5 weeks.

Flow (MG)	2007	2008	2009	2010	2011	2012	2013	2014	2015
Season Total	44.44	39.3	41.74	30.85	27.21	45.27	39.64	41.94	23.65
Avg per Day	0.839	0.854	0.928	0.717	0.633	0.854	0.592	0.591	0.333
Daily Maximum	1.704	1.658	1.621	1.582	1.606	2.039	2.427	1.4	0.57
Daily Minimum	0.425	0.416	0.415	0.012	0	0.027	0.015	0.06	0.01

Notes:
Avg = average
MG = million gallons

17. From 2007 through 2015 seasons, the total annual flow ranged from 44.44 MG to 23.65 MG. The average daily flows ranged from 0.839 to 0.33 million gallons per day (mgd). Flow rates have decreased significantly since the conversion to a dry hulling facility in 2014.

18. Approximately 889.8 acres are used as LAAs. Wastewater is used for irrigation on approximately 422.2 acres of pistachio orchards and 467.6 acres of almond orchards. LAA fields S6, S1, D6, D7, S12, and S13 will be the primary recipients of the wastewater. Irrigation water from Delano Earlimart Irrigation District is used to supplement the wastewater and provides nutrients to the crops. The wastewater and supplemental irrigation water are applied via micro-irrigation (drip irrigation).

19. A water balance was included in the RWD Addendum, dated 16 December 2014. Based on a 100-year return period 365 day precipitation event, the water balance demonstrates that the total crop demand exceeds the amount of wastewater generated, and therefore, supplemental irrigation water is needed to sustain the almond and pistachio orchards.

20. Wastewater is used for dust control over approximately 20 miles of roads in and around blueberry fields and pistachio and almond orchards.

21. Loading rates for BOD, nitrogen, and salts were calculated and presented in RWD. Approximately 5 pounds per acre per day (lbs/ac/day) of BOD, 0.3 lbs/ac/day for nitrogen, and 2 lbs/ac/day of salt will be applied to the almond and pistachio orchards.

22. Facility storm water is captured in Vaults 2 and 3 and an on-site storm water ditch. Vault 2 collects storm water and defrost water from the Blueberry Fresh and RTE Plants, which is then discharged to unlined Pond 4. Defrost water is considered high quality water that poses little threat to groundwater quality and can therefore be discharged straight to land without treatment, along with the commingled storm water. Storm water captured in Vault 3 is commingled with facility wastewater from the IQF Plant, which eventually discharges to the Wastewater Lagoon. Storm water is also collected in an unlined storm water ditch located west of the RTE Plant.

23. Two unlined ponds (Ponds 3 and 4) are irrigation ponds only. Wastewater is not discharged to these ponds.

24. The Friant Kern Canal runs approximately half mile northwest of the Facility and LAAs. No wastewater or storm water drains off-site and there are no surface water bodies in the vicinity that would receive storm water drainage or run-off from the LAAs.

25. In August 2014, six soil borings were drilled and sampled and results were documented in a *Pond Integrity and Groundwater Assessment Report*, dated September 2014. Prior to the installation of the Wastewater Lagoon, four borings were located within the footprint of the former three lined ponds and two boring were

placed away from pond to evaluate background soil concentrations. Soil samples were analyzed for metals, nitrate as nitrogen, and total Kjeldahl nitrogen. When comparing background concentrations in soil to the pond sample concentrations in soil, there are no significant differences in concentrations. Slight increases in wastewater constituent concentrations were noted in fine grained soil types, but this also occurred in fine grained soils in background samples. Generally, concentrations decrease with depth, with the exception of sodium. Given that groundwater is deeper than 200 feet bgs, the constituents in soil will likely attenuate before 200 feet and therefore pose a low threat to groundwater quality.

26. On 29 May 2002, a Cleanup or Abatement Order (Order R5-2002-0715) was issued to the Discharger. The Order was issued due to violations of the existing WDRs, including complaints from a nearby property owner, potential impacts to groundwater from high strength wastewater in previously unlined ponds, and incomplete monitoring reports. In addition, operational changes and changes to the wastewater system were made without notifying the Central Valley Water Board. The Order prohibited discharges of waste from the facility and required the Discharger to submit several technical reports. All requirements of Order R5-2002-0715 have been met, with the exception of installing a groundwater monitoring network. Upon evaluation of improvements to the wastewater treatment system, the depth to groundwater in the area (>200 feet bgs), increase in LAAs, and poor quality groundwater in the area, groundwater monitoring is not required at this time.

Site-Specific Conditions

27. The facility is located in the central portion of the San Joaquin Valley. The valley is a northwest-southeast trending structural basin. The Sierra Nevada to the east, the Coast Ranges to the west, the Tehachapi Mountains to the south, and the Sacramento Valley to the north border the San Joaquin Valley. The structural floor of the valley is asymmetrical, sloping westward towards the western valley margins. Ground surface elevation in the vicinity of the facility is approximately 450 feet above mean sea level.

28. There are no known faults crossing the site. The San Andreas Fault, located approximately 55 miles southwest of the facility, is the nearest active fault.

29. The FEMA Flood Zone map shows that the Facility is located outside the 100-year and 500-year flood zones. LAAs S12 and S13 are located within the 100-year flood zones. However, irrigation of these fields will primarily occur during the late spring to fall, when flooding is generally not a concern.

30. In 2014, prior to the installation of the Wastewater Lagoon, six exploratory test borings were drilled within the footprint of the lagoon. Borings were drilled to approximately 50 feet below ground surface (bgs). Soils beneath the lagoon are composed of alternately layers of decomposed granite, clayey sand, and silty sand, as noted on the borings logs included in the Lagoon Design Report dated 28 January 2015. Some soil

layers, including the decomposed granite, are up to 15 feet thick. Based on a USDA/NRCS Soils Map of the area, shallow soils consist mainly of sandy loam, fine sandy loam, and loam from the surface to approximately 6 feet bgs.

31. Normal-year rainfall for this area is 7.23 inches and 15.7 inches for the 100-year rainfall, based on the RWD. Surface water drains as sheet flow to the west. The site lies within the Tule Delta hydrologic area (No. 558.20), as depicted on the interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

32. Local land use in the area around the facility is mixed farming, including orchards and vineyards.

33. The Facility is within the Delano Earlimart Irrigation District. Friant Kern Canal, located approximately 1.7 miles west of the site, is the closest surface water to the facility.

Groundwater Conditions

34. In the vicinity of the site, groundwater exists in unconfined conditions, although there may be some localized areas of perched groundwater during periods of intense or prolonged rainfall. Based on the most recent information available from the California Department of Water Resources website, groundwater varies from depths between 115 feet to 241 feet in the general area of the facility. Recent ten year averages range from 183.8 to 193.8 feet bgs. Regional groundwater flow is generally to the west.

35. The facility has three existing groundwater monitoring wells, MW1, MW2, and MW4, installed in 2003 (MW3 was never constructed). The wells range in depth from 178 feet to 205 feet bgs. MWs 1 and 2 are located on-site and MW4 is located approximately 2 miles southeast of the facility and was designated as an upgradient well. Based on the *Work Plan for Monarch Nut Company Phase 2*, dated 5 April 2004, groundwater samples were not collected from MW4 because the well failed to produce any groundwater. After the 2005 sampling event, MW1 was not accessible due to debris in the well. During the 2014 and 2015 monitoring events, all three wells were dry.

36. Prior to MW1 being damaged and MW2 going dry, groundwater samples were collected in 2003, 2005, 2007, 2008, 2009, and 2011. The results are shown below.

Constituent (mg/L)	MW1		MW2						WQO
	8/28/03	9/15/05	8/28/03	9/15/05	9/19/07	9/30/08	9/22/09	1/12/11 [5]	
pH [1]	7.6	7.8	7.9	7.4	7.6	7.7	7.1	7.5	--
EC [1]	1409	753	781	1375	1,290	1,340	1,260	1,420	900 [4]
HCO_3 as CO_3	527	283	291	532	451	460	498	483	--
Chloride	91.5	41.3	37.2	119	112	122	123	131	500 [2]

Constituent (mg/L)	MW1		MW2						WQO
	8/28/03	9/15/05	8/28/03	9/15/05	9/19/07	9/30/08	9/22/09	1/12/11 [5]	
Sulfate	87.1	46.9	42.6	55.0	89.4	96.1	71.2	66.5	250 [4]
Nitrite as N	0.1	<0.1	<0.1	1.9	<0.1	<0.1	<0.1	<0.1	10 [2]
Nitrate as N	**12.5**	**8.2**	**8.8**	5.8	**19.1**	**22**	**10.4**	**12.1**	10 [2]
Total TKN	0.5	<1	0.1	<1	<1	3.6	2.2	16.6	--
BOD_5	<5	ND	<5	ND	100	<5	13.9	35.9	--
TDS	890	483	500	875	900	920	870	650	1,000 [5]
Potassium	NA	NA	NA	NA	8	7.3	9.6	6.6	--
Boron	1.1	0.1	1.3	0.0	0.03	0.02	<0.01	<0.1	--
Calcium	114	44.2	48.5	113.4	115	117	120	105	--
Magnesium	31.8	11.2	13.2	31.2	31.4	32	33.3	28.5	--
Sodium	172	109	125	167	143	147	156	149	69 [3]
Iron	4.2	0.2	**1.7**	**1.3**	<0.01	<0.01	**1.96**	<0.01	0.3 [4]
Manganese	0.2	<0.1	0.1	<0.1	<0.01	<0.01	0.03	<0.01	0.05 [4]
Aluminum	**11.8**	<0.1	**5.3**	<0.1	<0.05	**3.11**	<0.05	**6.6**	1 [2]

Notes:
BOLD = concentrations exceed a WQO
BOD_5 = 5-day biochemical oxygen demand
EC = electrical conductivity
NA = not analyzed
ND = not detected
TDS = total dissolved solids
TKN = Total Kjeldahl Nitrogen
WQO = water quality objectives
-- = not established
[1] pH data in pH units; EC data in µmhos/cm
[2] Primary Maximum Contaminant Levels
[3] Lowest Agricultural Water Quality Goal
[4] Upper Secondary Maximum Contaminant Level for taste and odor threshold.
[5] Upper Secondary Maximum Contaminant Level. Lower level for TDS = 500 mg/L.
[6] In January 2011, the depth to groundwater in MW2 was 201 feet below the top of the well casing.

37. Nitrate was detected at concentrations greater than WQOs and sodium, iron, and manganese were detected greater than water quality goals in groundwater samples from the monitoring wells.

38. From 2000 to 2015, elevated concentrations of nitrate as nitrogen (110 to 150 mg/L, which exceeds the WQO) were detected in samples from a domestic well that serves Rodriguez Labor Camp near the Facility, as shown on Attachment B. The log for this well indicated the well is 600 feet deep and screened from 320 to 590 feet bgs.

39. On 20 May 2014, Central Valley Water Board staff collected groundwater samples from six domestic/other production wells in the area for laboratory analysis to characterize groundwater in the area. Wells 1 and 2 are located just south of the Facility; Wells 3 and 4 are approximately one half mile north of the Facility; Well 5 is approximately one quarter mile northeast; and Well 6 is approximately one half mile

east, as shown on Attachment B. The analytical results for select constituents are summarized below.

	Domestic Well Numbers						
	1	**2**	**3**	**4**	**5**	**6**	**WQOs**
Well Depth (ft bgs)	NA	NA	500	NA	700	1,200	
Well Type	Dom/Bus	Dom/Bus	Irr/Dom	NA	Dom	Irr/Dom	
EC [1]	750	670	880	780	380	780	1,600 [3]
Nitrate as N	**11**	**15**	**18**	**20**	6.6	**22**	10 [2]
Nitrite as N	ND	ND	ND	ND	ND	ND	10 [2]
Sulfate	68	71	76	68	27	110	250 [3]
TDS	500	450	580	510	230	490	1,000[3]
Potassium	4	3.5	3.9	3.8	0.59J	2.6	--
Sodium	**98**	**80**	**74**	**71**	61	**120**	69 [4]

Notes:
Units are milligrams per liter (mg/L), except where noted.
Concentrations in BOLD exceed a WQO
[1] Units are miro ohms per centimeter (µmhos/cm)
[2] Maximum Contaminant Level
[3] Secondary Maximum Contaminant Level
[4] Lowest Agricultural Water Quality Goal
-- = not established
bgs = below ground surface
J = estimated concentrations
NA = not available
ND = not detected
TDS = total dissolved solids
WQO = water quality objective

Basin Plan, Beneficial Uses, and Regulatory Considerations

40. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2015* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.

41. Local surface water drainage is to the west. The beneficial uses of surface water as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; groundwater recharge; fresh water replenishment; navigation; hydropower generation; water contact recreation; non-contact water recreation; commercial and sport fishing; warm freshwater habitat; cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; spawning, reproduction, and/or early development.

42. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.

43. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.

44. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.

45. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley 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.

46. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.

47. 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. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.

48. 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 µmhos/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 µmhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

49. The list of crops on the table in Finding 3 is not intended as a definitive inventory of crops that are or could be grown in the area receiving the discharge.

50. Some salts are plant macronutrients (e.g., nitrogen, potassium, and phosphorus) and the threat to groundwater quality posed by these salts can be minimized through

controlled use to irrigate crops at agronomic rates for these nutrients. Because nitrate and nitrate precursors are common constituents in food processing wastewater, either treatment to reduce the nitrogen content or reuse for crop irrigation are important methods to prevent exceedance of the water quality objective for nitrate in groundwater.

51. For some industrial wastewaters, particularly food processing waste, sodium concentrations may be reduced or controlled by changing from sodium-based cleaning solutions (such as sodium hydroxide) to potassium-based solutions (such as potassium hydroxide). Because potassium is a plant nutrient, land application systems can be designed maximize potassium uptake by the crop.

52. Chloride is an anion that moves readily through the soil column with percolation. It will not adsorb to soil as sodium can, and crop uptake of chloride is minimal for most crops. However, plants do take up chloride and excessive chloride in the soil and/or irrigation water can be toxic to crops. Crop sensitivity to chloride varies greatly, but leaching is often used to control chloride to keep crop land in production. Leaching, whether intentional or not, can degrade groundwater quality and may cause water quality objectives for chloride to be exceeded.

53. Excessive application of high organic strength wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater with nitrogen species and metals, as discussed below. Such groundwater degradation can be prevented or minimized through implementation of best management practices which include planting crops to take up plant nutrients and maximizing oxidation of BOD to prevent nuisance conditions.

54. Unless groundwater is very shallow, groundwater degradation with nitrogen species such as ammonia and nitrate can be prevented by minimizing percolation below the root zone of the crops and ensuring that the total nitrogen load does not exceed crop needs over the course of a typical year. Where there is sufficient unsaturated soil in the vadose zone, excess nitrogen can be mineralized and denitrified by soil microorganisms.

55. With regard to BOD, excessive application can deplete oxygen in the vadose zone and lead to anoxic conditions. At the ground surface, this can result in nuisance odors and fly-breeding. When insufficient oxygen is present below the ground surface, anaerobic decay of the organic matter can create reducing conditions that convert metals that are naturally present in the soil as relatively insoluble (oxidized) forms to more soluble reduced forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If the reducing conditions do not reverse as the percolate travels down through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Many aquifers contain enough dissolved oxygen to reverse the process, but excessive BOD loading over extended periods may cause beneficial use impacts associated with these metals.

56. Typically, irrigation with high strength wastewater results in high BOD loading on the day of application. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or leaching of metals can vary significantly depending on soil conditions and operation of the land application system.

57. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency, cites BOD loading rates in the range of 36 to 600 lb/acre-day to prevent nuisance, but indicates the loading rates can be even higher under certain conditions. The studies that supported this report did not evaluate actual or potential groundwater degradation associated with those rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have been done are not readily adapted to the varying soil, groundwater, and climate conditions that are prevalent throughout the region.

58. The California League of Food Processors' *Manual of Good Practice for Land Application of Food Processing/Rinse Water* proposes risk categories associated with particular BOD loading rate ranges as follows:

    a. Risk Category 1: (less than 50 lb/ac/day; depth to groundwater greater than 5 feet) Indistinguishable from good farming operations with good distribution important.

    b. Risk Category 2: (less than 100 lb/ac/day; depth to groundwater greater than 5 feet) Minimal risk of unreasonable groundwater degradation with good distribution more important.

    c. Risk Category 3: (greater than 100 lb/ac/day; depth to groundwater greater than 2 feet) Requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

    The *Manual of Good Practice* recommends allowing a 50 percent increase in the BOD loading rates in cases where sprinkler irrigation is used, but recommends that additional safety factors be used for sites with heavy and/or compacted soils.

59. Although it has not been subject to a scientific peer review process, the *Manual of Good Practice* provides science-based guidance for BOD loading rates that, if fully implemented, are considered a best management practice to prevent groundwater degradation due to reduced metals.

60. This Order sets an irrigation cycle average BOD loading rate for the LAAs of 100 lb/acre cycle average consistent with Risk Category 2 in the *Manual of Good Practice* for discharges using drip line application to land with well drained soils.

61. The Central Valley Water Board is developing amendments to the Basin Plan to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley. Strategies currently under consideration may:

    - Alter the way the Board calculates available assimilative capacity for nitrate, which could result in new or modified requirements for nitrate management;
    - Require dischargers to implement actions identified under an interim salinity permitting approach; and/or
    - Establish alternate compliance approaches that would allow dischargers to participate in efforts to provide drinking water to local communities in consideration for longer compliance time schedules.

    Should the Board adopt amendments to the Basin Plan to effectuate such strategies, these waste discharge requirements may be amended or modified to incorporate any newly-applicable requirements.

62. The stakeholder-led Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative has been coordinating efforts to implement new salt and nitrate management strategies. The Board expects dischargers that may be affected by new salt and nitrate management policies to coordinate with the CV-SALTS initiative.

Antidegradation Analysis

63. State Water Resources Control Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (*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:

    a. 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;
    b. The degradation will not unreasonably affect present and anticipated future beneficial uses.
    c. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and
    d. The degradation is consistent with the maximum benefit to the people of the state.

64. Degradation of groundwater by some of the typical waste constituents associated with discharges from a nut processor, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The Discharger's operation provides year-round employment. The economic prosperity of valley communities and associated industry is of maximum

benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.

65. The Discharger has been monitoring groundwater quality at the site since 2003. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this facility must be based on existing background groundwater quality.

66. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS, sodium, and chloride), and nitrate as nitrogen, as shown below:

Constituent	Concentrations (mg/L)				
	Influent to Wastewater Lagoon [1]	**On-site Monitoring Wells [2]**	**Up-gradient Wells [3]**	**Down-gradient Well [4]**	**Water Quality Objective**
TDS	650	761	490	475	1,000 [5]
Nitrate as Nitrogen	**13.6**	**12.4**	**22**	**13**	10 [6]
Sodium	NA	**146**	**120**	**89**	69 [7]
Chloride	8.49	97	67	38.5	500 [8]

Notes:
BOLD = Concentration exceeds a Water Quality Objective or water quality goal.
[1] Flow weighted average for 2016.
[2] Average concentrations between MW1 and MW2 from 2003 to 2011.
[3] Average concentrations between Domestic Wells 5 and 6.
[4] Average concentrations between Domestic Wells 1 and 2.
[5] Upper Secondary Maximum Contaminant Level. Lowest level for TDS = 500 mg/L.
[6] Primary Maximum Contaminant Level.
[7] Lowest Agricultural Water Quality Goal.
[8] Upper Secondary Maximum Contaminant Level. Lowest level for chloride = 250 mg/L.
NA = not analyzed

a. **Total Dissolved Solids.** This order uses TDS in groundwater to generally represent FDS in the wastewater discharge. The flow weighted average wastewater TDS concentration is 650 mg/L, based on the average concentration reported in the 2016 Annual Monitoring Report. TDS concentrations in the on-site monitoring wells and up- and down-gradient domestic wells are relatively equivalent (within the same order of magnitude). While discharges from the facility to prior unlined ponds may have previously contributed to groundwater pollution prior to the facility upgrades, the analytical data do not conclusively demonstrate the source of the groundwater pollution.

Based on several factors, including recent upgrades to the wastewater system, the expansion of LAAs, and the depth of groundwater (>200 feet bgs), impacts to groundwater from facility discharges are unlikely. However, due to wastewater constituent concentrations (prior to discharging to the Wastewater Lagoon), this

Order includes a Provision that requires the Discharger to complete a Salinity and Nutrient Management Plan.

b. **Nitrate as Nitrogen**. For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality; crop uptake; and the ability of the vadose zone below the LAAs to support nitrification and denitrification to convert the nitrogen to nitrogen gas before it reaches the water table. Background/up-gradient groundwater quality is poor with respect to nitrate and exceeds the WQO of 10 mg/L. The poor quality background groundwater is likely due to the predominantly long-term agricultural land use in the area. Nitrate concentrations in groundwater downgradient of the facility and LAAs are less than the up-gradient concentrations, which further supports the conclusion that regional groundwater has been impacted by long-term agricultural use of the area. The expanded LAA system will maximize nitrogen uptake by crops and minimize the potential for nitrate to migrate to groundwater. Therefore, this Order requires that nutrients associated with the wastewater and other sources, including irrigation water, be applied to the LAAs at rates consistent with crop demand.

c. **Sodium.** The process wastewater is currently not monitored for sodium, but sodium is known to be a key salinity constituent in nut huller wastewater and facilities with boilers. Sodium concentrations in groundwater samples collected from on-site monitoring wells exceed the lowest agricultural water quality goal for sodium (69 mg/kg). However, sodium concentrations in up- and down-gradient wells are less than concentrations in the on-site groundwater samples but still exceed the lowest agricultural water quality goal for sodium, indicating poor quality groundwater in the area. Although discharges from the facility may have contributed to the groundwater pollution prior to the wastewater system upgrades and LAA expansion, facility discharges are not the sole source of pollution. Due to high concentrations of sodium in groundwater, this Order includes a Provision that requires the Discharger to complete a Salinity and Nutrient Management Plan.

d. **Chloride**. The average wastewater chloride concentration is 8.49 mg/L, based on the flow weighted average concentration calculated using data in the 2016 Annual Monitoring Report. Background/up-gradient chloride concentrations are higher than concentrations in the down-gradient wells. Concentrations of chloride in the effluent are less than the up-gradient concentrations. This indicates that groundwater impacts are likely due to the long-term agricultural use of the area and not from facility discharges. Based on the upgraded wastewater system, expansion of the LAAs, and the depth to groundwater (>200 feet bgs), chloride impacts to groundwater are unlikely. This Order includes a Provision that requires the Discharger to complete a Salinity and Nutrient Management Plan.

67. The Order establishes protective discharge requirements 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.

68. The Discharger provides treatment and control of the discharge that incorporates:

    a. An upgraded wastewater treatment system;
    b. Removal of all unlined wastewater ponds;
    c. Screening of solids prior to discharge to the Wastewater Lagoon;
    d. Expansion of LAAs; and
    e. Reduction in water usage due to the conversion to a dry hulling process.

    The Water Board finds that the preceding treatment and control measures represent best practicable treatment or control (BPCT) for this discharge.

69. This Order is consistent with the *Antidegradation Policy* since: (a) the Discharger has or will implement BPCT to minimize degradation, (b) the limited degradation allowed by this Order will not unreasonably affect present and anticipated future beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the state.

Other Regulatory Considerations

70. 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 groundwater underlying the discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

71. 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.”

72. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated

by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090 states in part:

> The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:
>
> (…)(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 RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
>
> (2) the discharge is in compliance with the 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.
>
> (f) Soil Amendments - Use of nonhazardous decomposable waste as a soil amendment pursuant to applicable best management practices, provided that RWQCBs may issue waste discharge or reclamation requirements for such use.(…)

73. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:

    a. Discharges to the LAAs are exempt pursuant to Title 27, section 20090(b) because they are discharge of wastewater to land and:

        i. The Central Valley Water Board is issuing WDRs.

        ii. The discharge is in compliance with the Basin Plan, and;

        iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.

    b. Discharge of food processing residual solids to the LAAs is exempt pursuant to Title 27, section 20090(f) because it constitutes use of nonhazardous decomposable waste as a soil amendment and this Order requires implementation of applicable best management practices.

74. The U.S. EPA published *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (hereafter "Unified Guidance") in 2009. As stated in the Unified Guidance, the document:

> …is tailored to the context of the RCRA groundwater monitoring regulations … [however, t]here are enough commonalities with other regulatory groundwater monitoring programs … to allow for more general use of the tests and methods in

> the Unified Guidance… Groundwater detection monitoring involves either a comparison between different monitoring stations … or a contrast between past and present data within a given station… The Unified Guidance also details methods to compare background data against measurements from regulatory compliance points … [as well as] techniques for comparing datasets against fixed numerical standards … [such as those] encountered in many regulatory programs.

The statistical data analysis methods in the Unified Guidance are appropriate for determining whether the discharge complies with Groundwater Limitations of this Order.

75. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial discharges. All storm water from the facility is allowed to percolate on-site and does not discharge into water of the United States. The Discharger is therefore not required to obtain coverage under the NPDES General Permit CAS000001.

76. Water Code section 13267(b)(1) 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 having discharged or discharging, or who proposes to discharge waste 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 R5-2017-0079 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

77. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

78. Tulare Environmental Health Services had previously determined that the operation of this facility does not require the County to undertake a discretionary approval under

the California Environmental Quality Act ("CEQA")(Pub. Resources Code, § 21000 et seq.). All wastewater management systems at the facility have already been installed and are currently in use. This Order places additional requirements on the continued operation of the facility in order to ensure the protection of waters of the state. The issuance of this Order is therefore exempt from the provisions of 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.

79. 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

80. 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.

81. The Discharger 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.

82. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order 92-190 and Cleanup and Abatement Order R5-2002-0715 are rescinded and Monarch Nut Company LLC, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, 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 waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

3. Discharge of waste classified as 'designated', as defined in CWC Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

4. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard*

Provisions and Reporting Requirements for Waste Discharge Requirements.

5. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.

6. Discharge of toxic substances into any wastewater treatment system or land application area such that biological treatment mechanisms are disrupted is prohibited.

7. Discharge of domestic wastewater to the process wastewater treatment system is prohibited.

8. Discharge of process wastewater to the domestic wastewater treatment system (septic system) is prohibited.

9. Discharge of domestic wastewater to the process wastewater ponds, land application area, or any surface waters is prohibited.

B. Flow Limitations

1. **Effectively immediately**, influent flows to the wastewater treatment system shall not exceed the following limits:

Flow Measurement	Flow Limit
Total Annual Flow [1]	98 MG
Maximum Daily Flow [2]	1.5 MGD

[1] As determined by the total flow for the calendar year.

[2] As determined by the total flow during the calendar month divided by the number of days in that month.

C. Effluent and Mass Loading Limitations

1. The blend of treated wastewater, storm water, and supplemental irrigation water applied to the LAAs shall not exceed the following effluent and mass loading limits:

Constituent	Units	Daily Maximum	Annual Maximum
BOD Mass Loading	lb/ac/day	100	--
Total Nitrogen Mass Loading	lb/ac/year	--	Crop Demand

Application of wastewater and waste constituents to the land application areas shall be at reasonable agronomic rates to preclude creation of a nuisance and

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 and nutrients in applied irrigation water and available in the root zone, shall not exceed the annual crop demand.

Compliance with the above requirements shall be determined as specified in the Monitoring and Reporting Program.

D. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.

2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.

3. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.

4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.

5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. Objectionable odors shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions.

7. The Discharger 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, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

8. Wastewater treatment, storage, and disposal ponds or structures 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.

9. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.7 and D.8.

10. 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. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

11. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

12. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds at least every **five years** beginning in **2022,** and shall periodically remove sludge as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of sludge in the reservoir exceeds five percent of the permitted reservoir capacity, the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.

13. Storage of residual solids, including pomace and/or diatomaceous earth on areas not equipped with means to prevent storm water infiltration, or a paved leachate collection system is prohibited.

E. Groundwater Limitations

Release of waste constituents from any treatment, storage, delivery system, or land application area associated with the discharge shall not cause or contribute to groundwater to contain constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater. Release of waste constituents from any portion of the facility shall not cause groundwater to:

1. For constituents identified in Title 22, contain constituents in concentrations that exceed either the Primary or Secondary MCLs established herein.

2. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

F. Land Application Area Specifications

1. Crops [or other vegetation (which may include pasture grasses, native grasses and trees, and/or ornamental landscaping)] shall be grown in the LAAs.

2. Land application of wastewater shall be managed to minimize erosion.

3. The LAAs shall be managed to prevent breeding of mosquitoes or other vectors.

4. Irrigation of the LAAs shall occur only when appropriately trained personnel are on duty.

5. LAAs shall be inspected periodically to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Discharger shall temporarily stop discharging wastewater from the Facility immediately and implement corrective actions to ensure compliance with this Order.

6. Spray irrigation with wastewater is prohibited when wind speed (including gusts) exceeds 30 mph.

7. Any irrigation runoff (tailwater) shall be confined to the LAAs or returned to the Wastewater Lagoon or concrete vaults and shall not enter any surface water drainage course or storm water drainage system.

8. Discharge of storm water runoff from the LAAs to off-site land or surface water drainage courses is prohibited.

9. All storm water runoff from the use areas shall be captured and recycled for irrigation or allowed to percolate within the use areas.

G. 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, ponds, and clarifiers as needed to ensure optimal operation and adequate storage capacity.

2. Any handling and storage of sludge, solid waste, and residual solids shall be 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 the 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.

4. If removed from the site, sludge, solid waste, and residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for reuse as animal feed, or land disposal at facilities (i.e., landfills, composting facilities, soil amendment sites operated in accordance with valid waste discharge requirements issued by a Regional Water Board) will satisfy this specification.

5. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

H. Provisions

1. The following reports shall be submitted pursuant to CWC section 13267 and shall be prepared as described in Provision H.4:

    a. By **1 December 2017**, the Discharger shall submit a *Best Practicable Treatment or Control Workplan* that evaluates options for further salinity reduction and nutrient management. The workplan shall include the following:

        i. A *Salinity Reduction Workplan* that describes specific salinity reduction activities performed to date, includes flow estimates and laboratory characterization of all current contributing waste streams (including seasonal variation), evaluates the feasibility of additional salinity control measures, specifies those measures that will be implemented, and presents an implementation schedule. Estimates of capital and operation/maintenance costs for each option shall be provided. Full

implementation shall be achieved no more than 3 years from the date of this Order.

The workplan shall present updated flow rates and salinity concentrations from the waste stream prior to entering the Wastewater Lagoon.

ii. The *Nutrient Management Workplan* shall evaluate the nutrient load to each land application area and develop pollution prevention management practices to restrict nutrient loading necessary.

2. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.

3. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

4. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.

5. The Discharger shall comply with Monitoring and Reporting Program Order **R5-2017-0079**, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.

6. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

7. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date,

the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing 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.

8. The Discharger shall 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 includes 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 when the operation is necessary to achieve compliance with the conditions of this Order.

9. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.

10. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.

11. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."

12. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

13. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

14. In the event of any change in control or ownership of the facility, the Discharger must 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.

15. To assume operation as Discharger 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 name and 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 CWC. 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.

16. 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.

17. 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 limitation different that those prescribed herein area appropriate, this Order will be reopened to incorporate such limits.

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

If, in the opinion of the Executive Officer, the Discharger 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 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 9 June 2017.

-- original signed by Andrew Altevogt for --

PAMELA C. CREEDON, Executive Officer

Order Attachments:

A Site Location Map
B Land Application Areas
C Facility Site Features
D Pistachio Wastewater Flow Schematic
E Blueberry Wastewater Flow Schematic
F Wastewater Flow Schematic to Land Application Areas and Storm Water Flow Schematic

Monitoring and Reporting Program R5-2017-0079
Information Sheet
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2017-0079

FOR

MONARCH NUT COMPANY, LLC
MONARCH NUT COMPANY
TULARE COUNTY

This Monitoring and Reporting Program (MRP) incorporates requirements for wastewater discharge monitoring for Monarch Nut Company. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All wastewater samples shall be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Field test instruments (such as pH, electrical conductivity, and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field 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.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA);
- *Test Methods for Evaluating Solid Waste* (EPA);
- *Methods for Chemical Analysis of Water and Wastes* (EPA);
- *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA);
- *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and
- *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125).

Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program (ELAP). The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

FLOW MONITORING

Hydraulic flow rates shall be measured at the flow meter location specified in this MRP and depicted on Attachment F in the WDRs. Central Valley Water Board staff shall approve any proposed changes to flow monitoring location prior to implementation of the change. All flow monitoring systems shall be appropriate for the conveyance system (i.e., open channel flow or pressure pipeline) and liquid type. Unless otherwise specified, the flow meter shall be equipped with a flow totalizer to allow reporting of cumulative volume as well as instantaneous flow rate. The flow meter shall be calibrated at the frequency recommended by the manufacturer; typically at least once per year and records of calibration shall be maintained for review upon request. Flow rates to the Wastewater Lagoon shall be monitored as follows:

Parameter	Units	Type of Measurement	Sampling Frequency	Reporting Frequency
Influent Flow Meter (to Wastewater Lagoon)	Gallons	Meter Reading	Daily	Quarterly

INFLUENT WASTEWATER MONITORING

Wastewater samples shall be collected at a point after solids screening in Vault 1 and prior to discharging to the Wastewater Lagoon and shall be considered representative of wastewater quality. Sampling shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Nitrate as Nitrogen	mg/L	Grab	Monthly	Quarterly
Total Nitrogen	mg/L	Grab	Monthly	Quarterly
BOD_5 [1]	mg/L	Grab	Monthly	Quarterly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Quarterly
pH	Standard	Grab	Monthly	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Monthly	Quarterly
Metals/Inorganics [2]	µg/L	Grab	Annually	Annually

[1] Five-day, 20º Celsius biochemical oxygen demand.

[2] All samples shall be filtered prior to preservation. Metal/Inorganics analyses include, at a minimum, the following: calcium, chloride, potassium, dissolved iron, dissolved magnesium, dissolved manganese, sodium, and sulfate.

WASTEWATER LAGOON MONITORING

The Wastewater Lagoon shall be monitored as specified below:

Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Presence/Absence of Water	--	Observation	Weekly	Quarterly
Presence of leachate in LCRS	--	--	Weekly	Quarterly
Volume of leachate removed	gallons	Measurement	Weekly	Quarterly
Freeboard [1]	0.1 feet	Measurement	Weekly	Quarterly
Dissolved Oxygen	mg/L	Measurement	Weekly	Quarterly
Odors	--	Observation	Weekly	Quarterly
Berm condition	--	Observation	Weekly	Quarterly

[1] Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet.
LRCS = Leakage Collection and Return System

In addition, the Discharger shall inspect the condition of the lagoon once per every two weeks and document visual observations. Notations shall include observations of:

- Presence of weeds in the water or along the berm;
- Accumulations of dead algae, vegetation, scum, or debris on the pond surface;
- Animal burrows in the berms;
- Evidence of seepage from the berms or downslope of the ponds;

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the land application areas year-round and shall submit the results in the corresponding monthly monitoring reports. Monitoring of the land application areas shall include the following:

Constituent	Units	Type of Sample	Monitoring Frequency	Reporting Frequency
Total Acreage Applied [1]	Acres	Estimated	Monthly	Quarterly
BOD Loading Rate [2]	lbs/ac/day	Calculated	Monthly	Quarterly
Nitrogen Loading Rate [3]	lbs/ac/mo [4]	Calculated	Monthly	Quarterly
Flow Weighted FDS Loading Rate	lbs/ac/mo [4]	Calculated	Monthly	Quarterly
LAA Soil Condition [5]	NA	Inspection	Monthly	Quarterly
Crop Type	NA	Inspection	Annually	Annually
Condition of Containment Berms	NA	Inspection	Monthly	Quarterly

Constituent	Units	Type of Sample	Monitoring Frequency	Reporting Frequency
Nuisance Conditions	NA	Inspection	Monthly	Quarterly
Evidence of Erosion	NA	Inspection	Monthly	Quarterly
Any Corrective Action Taken (based on observations)	NA	Inspection	Monthly	Quarterly

[1] If only a portion of the LAA is used, then the application acreage shall be estimated.
[2] Calculate the cycle average application rates, based on the most recent BOD influent results.
[3] Total nitrogen applied from all sources, including wastewater fertilizers, compost, and supplemental irrigation water if used.
[4] Report monthly total and cumulative annual to date.
[5] LAA soil conditions (saturated or unsaturated) shall be determined prior to wastewater application.

At least **once per week** during the processing season when wastewater is being applied to the land application areas, the entire application area shall be inspected to identify any equipment malfunction or other circumstance that might allow irrigation runoff to leave the area and/or create ponding conditions that violate the Waste Discharge Requirements. A log of these inspections shall be kept at the facilities and be submitted with the monthly monitoring reports. If wastewater was not applied to the land application area, then the monthly monitoring reports shall so state.

SOLIDS MONITORING

The Discharger shall monitor the solids generated and disposed of on a monthly basis. The following shall be monitored and reported monthly:

1. Volume of solids generated. Solids may include pomace, seeds, stems, diatomaceous earth, screenings, and sump/clarifier solids, or other material.
2. Volume disposed of on- and off-site. Describe the location the solids are stored, disposal method (e.g. animal feed, land application, off-site composting, landfill, etc.), the amount disposed (tons), the name of the hauling company, and the location where the material was transported.

EFFLUENT AND MASS LOADING CALCULATIONS

The mass of BOD applied to each LAA as an irrigation cycle average shall be calculated using the following formula:

$$M = \frac{8.345(CV)}{AT}$$

Where:

M	=	mass of BOD applied to an LAA in lb/ac/day
C	=	concentration of BOD in mg/L based on the most recent monitoring result
V	=	total volume of wastewater applied to the LAA during the irrigation cycle, in millions of gallons
A	=	area of the LAA irrigated in acres
T	=	irrigation cycle length in days (from the first day water was applied to the last day of the drying time)
8.345	=	unit conversion factor

The mass of total nitrogen applied to each LAA on an annual basis shall be calculated using the following formula and compared to published crop demand for the crops actually grown:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x)}{A}$$

Where:

M	=	mass of nitrogen applied to LAA in lb/ac/yr
C_i	=	monthly average concentration of total nitrogen for month *i* in mg/L
V_i	=	volume of wastewater applied to the LAA during calendar month *i* in million gallons
A	=	area of the LAA irrigated in acres
i	=	the number of the month (e.g., January = 1, February = 2, etc.)
M_x	=	nitrogen mass from other sources (e.g., fertilizer and compost) in pounds
8.345	=	unit conversion factor

The mass of wastewater fixed dissolved solids applied to the LAA on an annual basis shall be calculated using the following formula and compared to the FDS loading rate limit:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i)}{A}$$

Where:

M = Mass of FDS applied to LAA in lbs/ac/yr
C_i = Monthly average concentration of FDS for month in i in mg/L
V_i = Volume of wastewater applied to the LAA during the calendar month in i in million gallons
A = Area of LAA irrigated in acres
i = The number of the month (e.g., January – 1, February = 2, etc.)
8.345 = Unit conversion factor

REPORTING

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50 MB should be emailed to: centralvalleyfresno@waterboards.ca.gov.

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email:

Attention: Compliance/Enforcement Section
Monarch Nut Company
Tulare County
Place ID: 241216

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
ECM Mailroom
1685 E Street
Fresno, CA 93706-2020

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any correspondence used to transmit documents to this office:

Facility Name: Monarch Nut Company, Tulare County		
Program: Non-15	Order: R5-2017-0079	CIWQS Place ID: 241216

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., wastewater monitoring, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations

specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, all Monitoring Reports shall be prepared under the direct supervision of a Registered Professional Engineer or Geologist and signed by the registered professional.

A. Quarterly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in quarterly monitoring reports. Monthly reports shall be submitted to the Central Valley Water Board on the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by 1 May). At a minimum, the reports shall include:

1. Tabulated wastewater flow monitoring data for each month of the calendar year, including average daily flow, cumulative flow to date, and comparison to the Flow Limitations of the WDRs;
2. Results of Wastewater Lagoon monitoring. If any water is shipped off-site due to a lack of capacity, such as the LAA is saturated, the volume of water and receipts from the licensed receiving facility shall be included in the monthly reports;
3. Results of Land Application Area Monitoring when land applying, and include:
    a. Calculated irrigation cycle average BOD loading rate for each LAA and irrigation cycle;
    b. Type of crop planted and harvest dates; and
    c. Crop nitrogen demand and amount of supplemental nitrogen applied to the LAA.
4. Results of Solids Monitoring;
5. Discharge specifications and an explanation of any violation of those requirements;
6. For each discrete LAA, a comparison of monitoring data to the loading rate limitations and discharge specifications and an explanation of any violation of those requirements;
7. If requested by staff, copies of laboratory analytical report(s); and
8. Copies of current calibration logs for all field test instruments.

B. Annual Monitoring Reports

An Annual Monitoring Report shall be submitted to the Central Valley Water Board by **1 February** each year. The Annual Monitoring Report shall include the following:

1. Calculation of the annual average wastewater monitoring results for all monitored wastewater constituents.
2. Calculated total nitrogen and FDS loading rates for the LAA.
3. Results of the supplemental irrigation water monitoring.

4. A detailed description of any operational changes, new water treatment systems that might affect the character of the wastewater, and changes to the equipment cleaning process.
5. If requested by staff, tabular and graphical summaries of all data collected during the year with data arranged to confirm compliance with the WDRs.
6. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
7. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.
8. Whether any expansion of the water treatment plant's capacity is planned or anticipated in the next calendar year.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facilities 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 transmittal letter shall contain a statement by the Discharger, or the Discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: __*-- original signed by Andrew Altevogt for --*

PAMELA C. CREEDON, Executive Officer

20 June 2017
(Date)

DMC: 060917

INFORMATION SHEET

ORDER R5-2017-0079
MONARCH NUT COMPANY, LLC

WASTE DISCHARGE REQUIREMENTS
TULARE COUNTY

Facility Description

Monarch Nut is a pistachio and blueberry processing facility (Facility) that has been in operation for over 25 years. The Facility is located at Southwest Corner of Avenue 8 and Road 188 near the Richgrove Community Service District in Tulare County. The Facility consists of one pistachio processing plant and four blueberry processing plants. Blueberry processing occurs year round and pistachio processing generally occurs annually during an approximate five week period beginning in September.

Discharges from the Facility are regulated under WDRs Order 92-190, which was adopted on 25 September 1992. In 2014, the Facility began upgrading the wastewater system. All unlined wastewater ponds were removed and a large, double lined "Title 27" like pond, referred to as the Wastewater Lagoon, was constructed. In addition, the Facility converted the pistachio hulling system to a dry hulling process which significantly reduced the volume of wastewater generated. All wastewater is discharged to the new Wastewater Lagoon and then used for pistachio and almond orchard irrigation and dust control over 1,664 acres of land application areas (LAAs).

Wastewater Process

All wastewater is captured in concrete vaults and discharged to the Wastewater Lagoon located in northeastern portion of the Facility. Storm water and defrost water from two of the four blueberry plants are collected in a concrete vault, which does not receive wastewater, and is then discharged to an unlined pond and storm water ditch. Maximum daily wastewater flow rates measured between 2007 and 2015 ranged from 0.57 to 2.42 million gallons.

Groundwater Quality

The Facility has three groundwater monitoring wells (MW1, MW2, and MW4) ranging in depths from 178 to 205 feet bgs. In recent years, groundwater levels have lowered by at least 30 feet, resulting in the wells going dry. MW4 went dry in 2003 and MW1 and MW2 have been dry since 2005 and 2011, respectively. Prior to the wells going dry, groundwater samples from MW1 and MW2 contained concentrations of nitrates and aluminum greater than WQOs and sodium at concentrations exceeding the lowest water quality goal. Regional groundwater data compiled from on-site source wells and seven irrigation/source water wells located around the Facility identified nitrate as nitrogen and sodium concentrations exceeding the nitrate WQO and the lowest agricultural water quality goal for sodium. A comparison of groundwater data from on-site monitoring wells and nearby water supply wells demonstrates uniform levels of nitrate as nitrogen and sodium pollution both in source water and groundwater beneath the area surrounding the Facility. It is unclear if the Facility has contributed to nitrate as nitrogen pollution prior to recent wastewater system upgrades, but it can be concluded that if wastewater discharge from the Facility impacted groundwater, it is not the sole source of groundwater pollution.

Antidegradation

TDS, sodium, and chloride in wastewater have the potential to degrade groundwater. However, the wastewater system at the Facility was upgraded in 2015 and all unlined wastewater ponds were removed and a new double lined Wastewater Lagoon was constructed. Groundwater beneath the Facility is over 200 feet deep and any constituents in soil will likely attenuate before reaching groundwater and therefore, pose a low threat to groundwater quality. Groundwater impacts from the upgraded wastewater system are unlikely.

Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations

The Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.

Flow and Effluent Limitations

Effectively immediately, the maximum annual flow limit is 98 million gallons, with a daily maximum of 1.5 million gallons per day. Daily maximum loading rate limit for BOD_5 is 100 lb/ac/yr.

Groundwater Limitations

Continued groundwater monitoring is not required at this time. However, release of waste constituents from any treatment, storage, delivery system, or land application area associated with the discharge shall not cause or contribute to groundwater to contain constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater. Release of waste constituents from any portion of the facility shall not cause groundwater to:

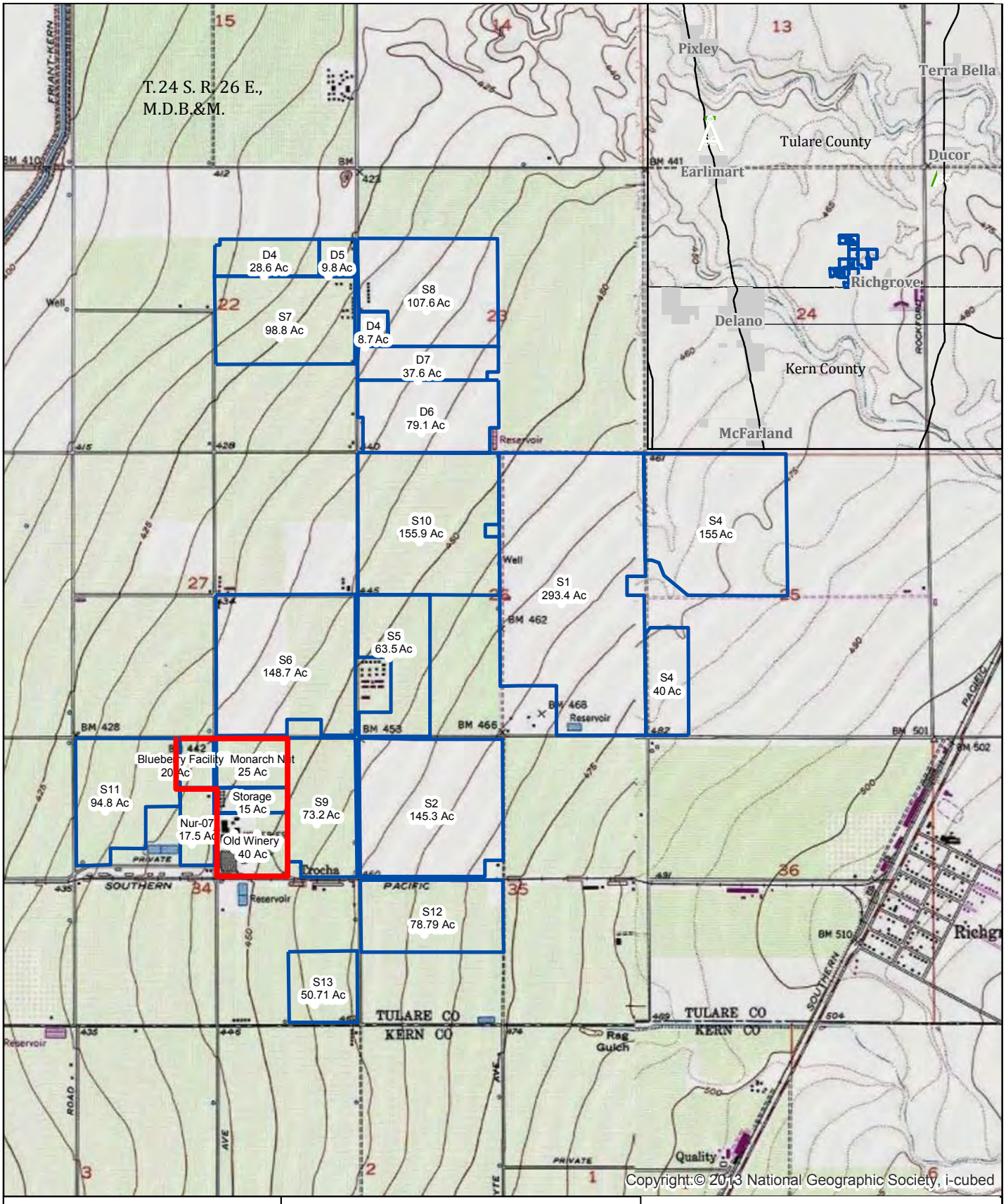
1. For constituents identified in Title 22, contain constituents in concentrations that exceed either the Primary or Secondary MCLs established herein.

2. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

Provisions

By 1 December 2017, the Discharger shall submit a Best Practicable Treatment or Control Workplan that evaluates options for further salinity reduction and nutrient management.

The Monitoring and Reporting Program is designed to verify compliance with effluent limitations and operational requirements of the WDRs.



0 2,500 ft

Monarch Nut Facility

Drawing Reference:
Monarch Nut RWD, 2014

N
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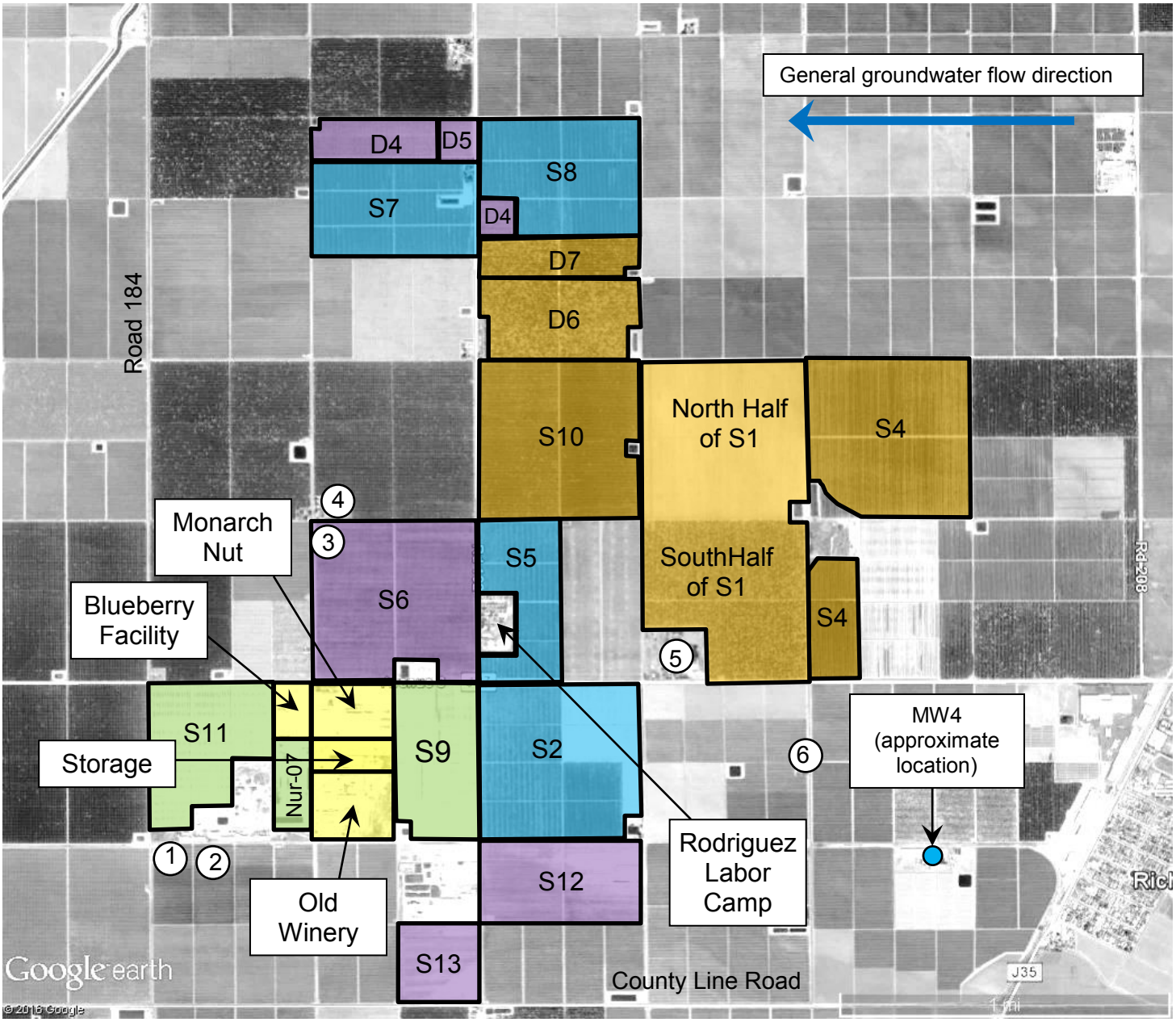
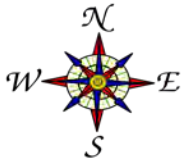
SITE LOCATION MAP

MONARCH NUT COMPANY
TULARE COUNTY



Legend

- Pistachios
- Blueberries
- Almonds
- Blueberries - Organic
- (2) Domestic Wells (approximate locations)

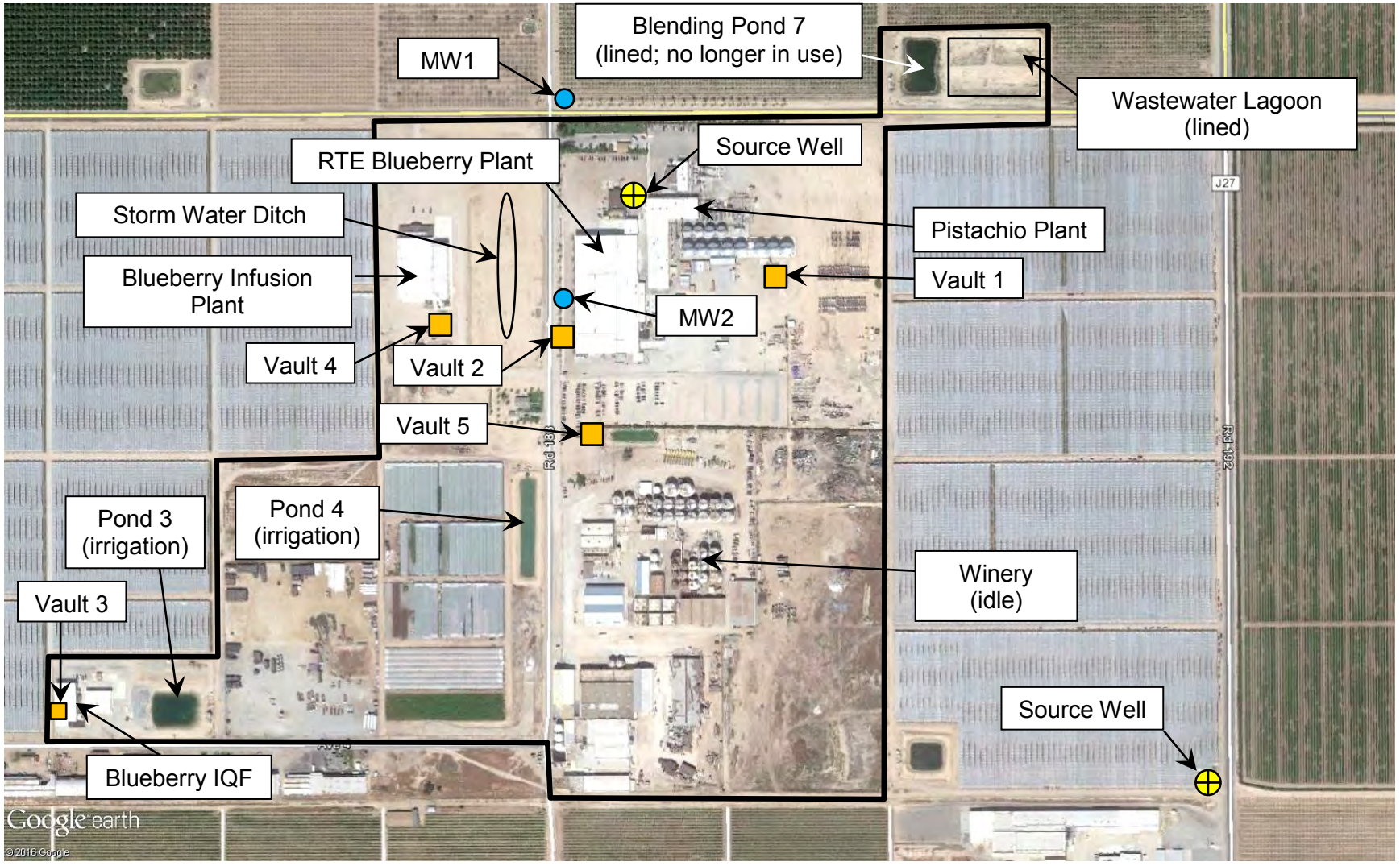


Approximate Scale
1 inch = ½ mile

Drawing Reference:
Google Earth 2016 &
Monarch Nut RWD, 2014

LAND APPLICATION AREAS

MONARCH NUT COMPANY
TULARE COUNTY



Acronyms
IQF = individual quick frozen
MW = monitoring well
RTE = ready to eat

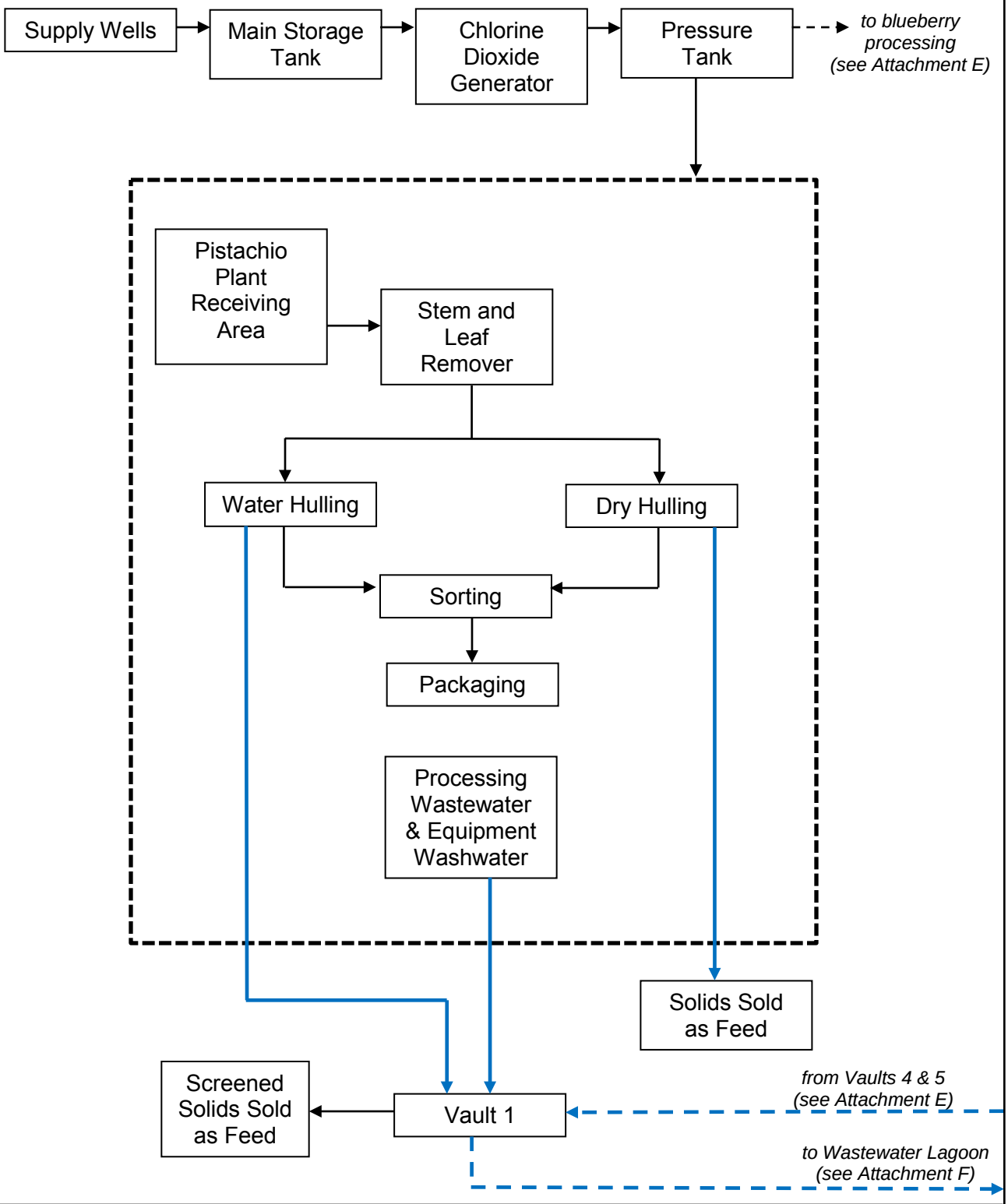
Figure Reference:
Google Earth, 2016 &
Monarch Nut RWD, 2014

N
W E
S

Approximate Scale
1 inch ~ 880 feet

FACILITY SITE FEATURES

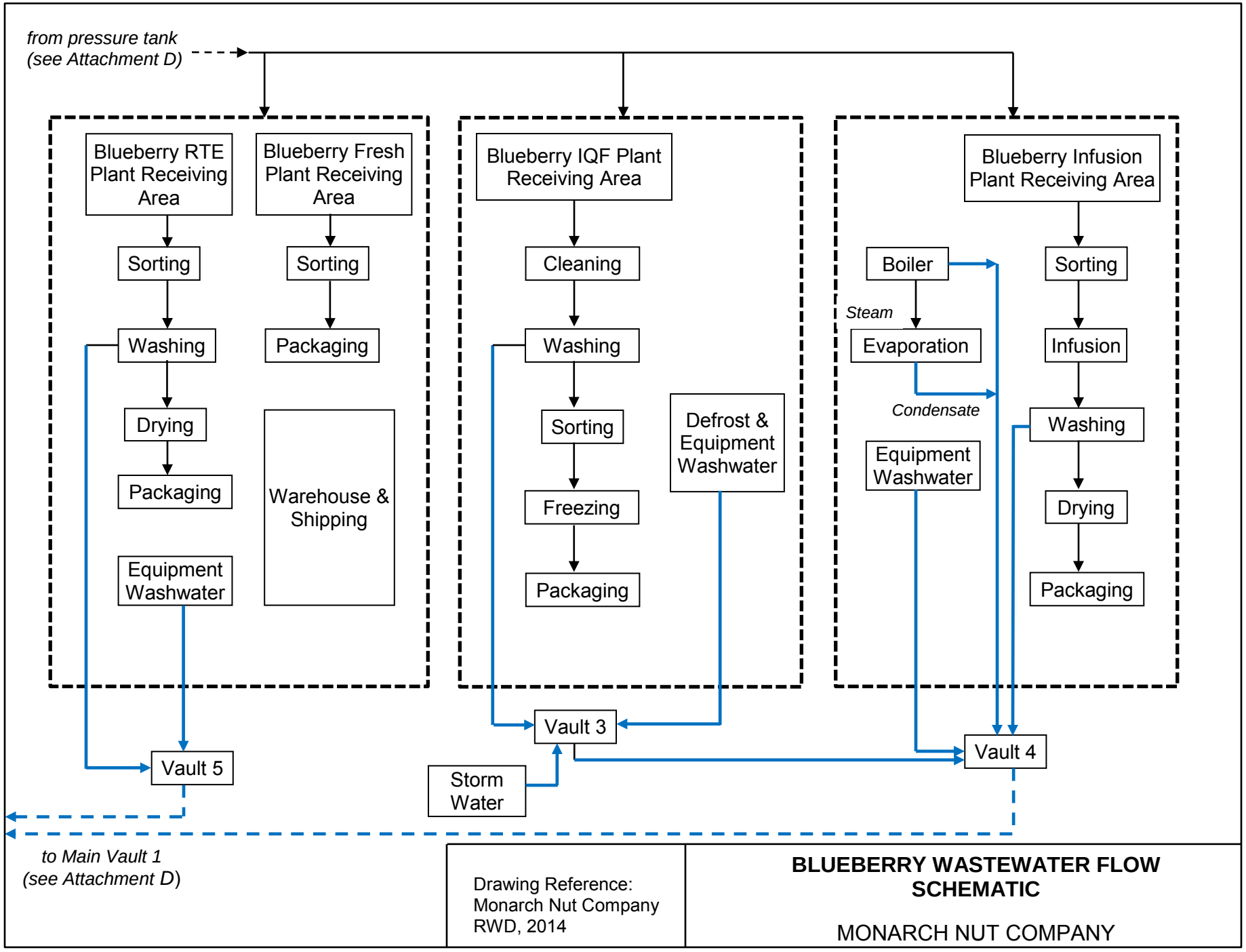
MONARCH NUT COMPANY
TULARE COUNTY

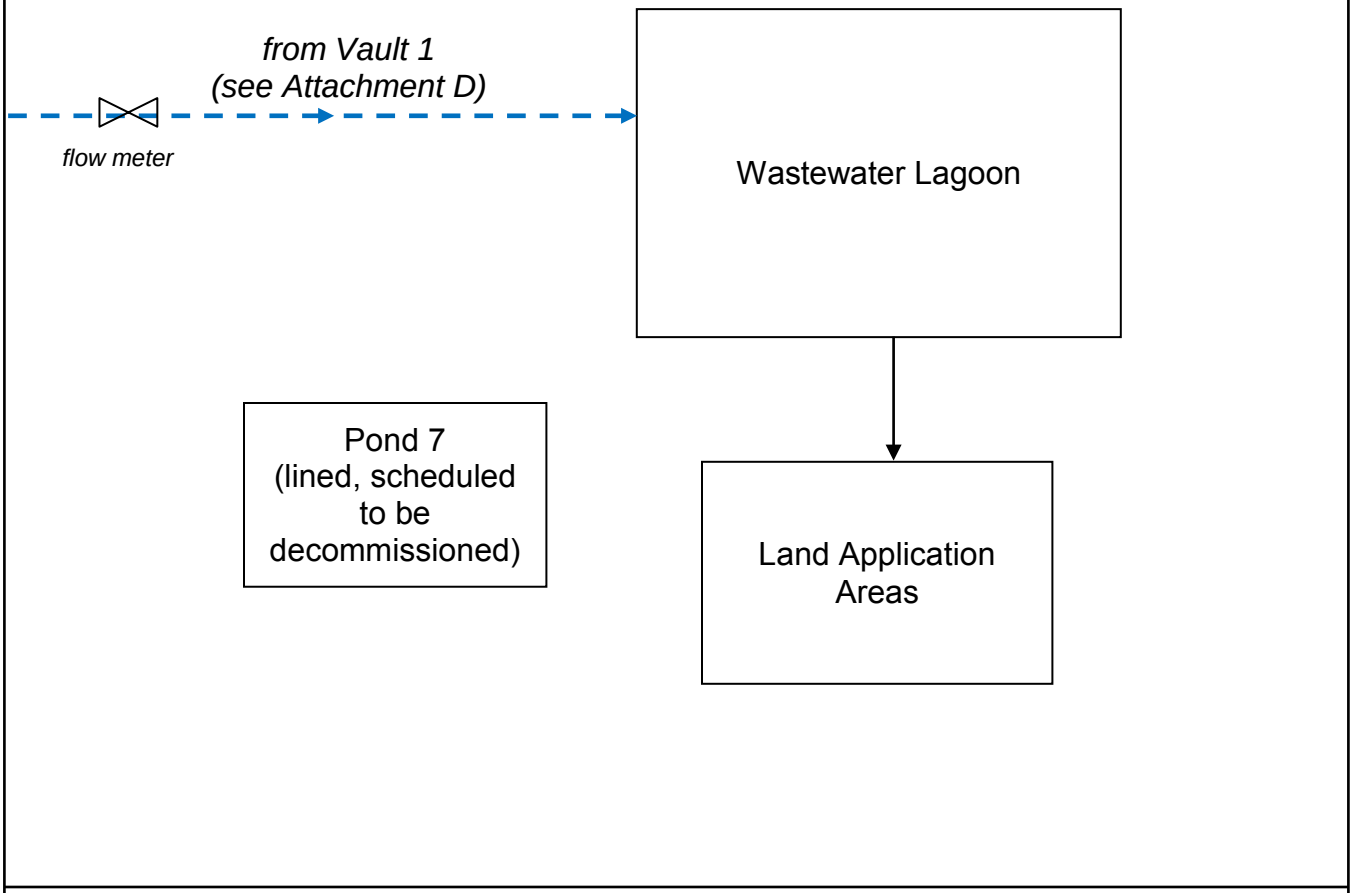


PISTACHIO WASTEWATER FLOW SCHEMATIC

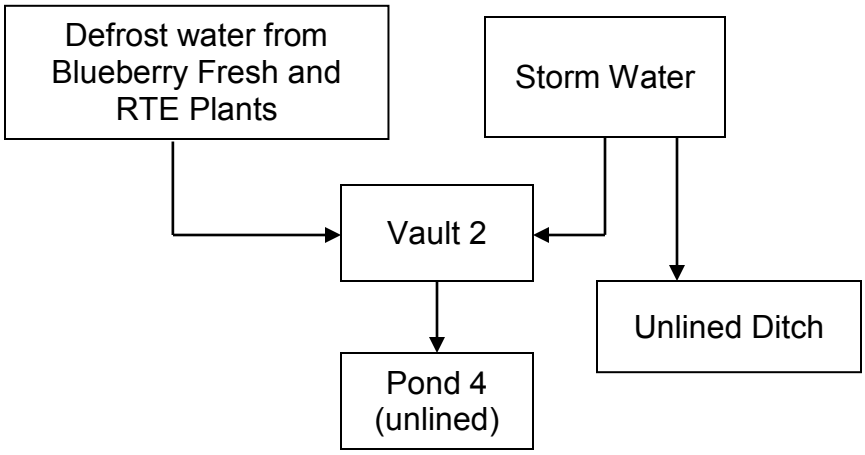
MANARCH NUT COMPANY
TULARE COUNTY

Drawing Reference:
Monarch Nut Company RWD, 2014


from pressure tank
(see Attachment D)
Blueberry RTE Plant Receiving Area
Sorting
Washing
Drying
Packaging
Equipment Washwater
Blueberry Fresh Plant Receiving Area
Sorting
Packaging
Warehouse & Shipping
Blueberry IQF Plant Receiving Area
Cleaning
Washing
Sorting
Freezing
Packaging
Defrost & Equipment Washwater
Blueberry Infusion Plant Receiving Area
Boiler
Steam
Evaporation
Condensate
Equipment Washwater
Sorting
Infusion
Washing
Drying
Packaging
Vault 3
Vault 4
Vault 5
Storm Water
to Main Vault 1
(see Attachment D)
Drawing Reference:
Monarch Nut Company
RWD, 2014
BLUEBERRY WASTEWATER FLOW SCHEMATIC
MONARCH NUT COMPANY



Storm Water Flow Schematic



Drawing Reference:
Monarch Nut RWD,
2014

WASTEWATER FLOW SCHEMATIC TO LAND APPLICATION AREAS AND STORM WATER FLOW SCHEMATIC

MONARCH NUT COMPANY
TULARE COUNTY