
June 01st, 2020



T.O ENGINEERS

1998 W. Judith Lane
Boise, Idaho 83705
Phone (208) 433-1900
Fax (208) 433-1901
www.to-engineers.com

City of Oxnard
Technical Services Program Source Control
P.O. Box 6986
Oxnard, CA 93031-6986

Re: Wastewater Pretreatment – New Arctic Cold / Ventura Pacific Site
Industrial Wastewater Discharge Permit No. 29679 (*transfer or reissue*)

To Whom it May Concern:

This letter is intended to accompany a planning submittal detailing the new Arctic Cold site development which will include Ventura Pacific Company's lemon processing and freezing facility. Ventura Pacific previously operated a wastewater pretreatment system discharging according to Industrial Wastewater Discharge Permit No. 29679 at a different location, 245 E Colonia Road. Wastewater at the previous site was pretreated through a process train consisting of primary screening, an aerated flow equalization basin, two aeration tanks in series, and a final clarifier prior to flowing through a sample location and into the City of Oxnard's central trunk line.

It is Ventura Pacific's intention to continue to provide effective pretreatment meeting all industrial wastewater city ordinance and permit requirements and conditions prior to discharge to the City of Oxnard POTW at the new site as described below.

Future Wastewater Discharge Permit

It is anticipated that the permit associated with the new wastewater pretreatment facility for the Arctic Cold / Ventura Pacific Company plant will be processed by the City of Oxnard as an update to the existing site's permit based upon City review and acceptance of the preliminary design of the pretreatment system.

Future Design Criteria – Estimated Flow & Loading

The lemon processing and packaging wastewater from the new facility is anticipated to be similar to existing flow and loading. The anticipated wastewater flow and loading prior to pretreatment is presented in Table 1 and is based on monthly wastewater monitoring data gathered at the current processing site from 2016-2018 and grab samples obtained in July 2018 for high and low loading days. Lemon harvest and processing operations are variable by season, with flow and BOD/TSS loading typically peaking from May to August.

The seasonality of the processor will result in variable process wastewater discharge flow and loading to the pretreatment system. The flow and loading during the more intensive harvest season will be used as design criteria for the proposed treatment system. Flexibility (i.e. turndown) in the operational capability of the treatment system as well as active management of the process will be required to manage seasonality of all processor operations, particularly if a biological treatment method is pursued.

The owner/tenant has indicated they anticipate improved solids removal from entering the wastewater pretreatment system in the new facility due to the new modern floor and trough drainage system with basket strainers and strict standard operating procedures that will be observed by operations and maintenance personnel. Prevention of entry of large solids such as bad fruit is anticipated to greatly reduce overall sugar (BOD) loading to the wastewater system compared to the sample data from older plants used to produce original design criteria.

Table 1 – Lemon Processing Wastewater Flow and Loading Design Criteria – Pretreatment System Influent

PARAMETER	VALUE	UNIT
Flow	40,000 - 60,000	GPD
	28 - 42	GPM
BOD	1,200	mg/L
	600	lbd
TSS	720	mg/L
	360	lbd
FOG	30	mg/L
	15	lbd
TP	30	mg/L
	15	lbd
TKN	75	mg/L
	38	lbd

Proposed Treatment Options & Anticipated Effluent Quality

Preliminary treatment design includes an updated process train that will provide similar or better treatment capability in a smaller footprint compared to the old site. The pretreatment system will be designed for removal of soluble BOD, TSS, and FOG, as well as pH neutralization. The pretreatment process will consist of coarse screening, flow equalization, and pH neutralization at a minimum. The final proposed treatment has not yet been selected; however, the following treatment processes are under consideration:

- 1. Treatment Option #1: Primary Treatment** – Coarse screening, EQ/pH neutralization, primary DAF or Microscreen system or other primary separation technology
- 2. Treatment Option #2: Primary + MBBR / Secondary Separation** – Coarse screening, EQ/pH neutralization, moving bed biofilm reactor (MBBR) and secondary DAF or clarifier or other secondary separation technology.
- 3. Treatment Option #3: Primary Treatment / SBR** – Coarse screening, EQ/pH neutralization, primary DAF or Microscreen system or other primary separation technology, activated sludge sequencing batch reactor (SBR).

All options will require storage tanks for primary sludge and secondary sludge if biological treatment is performed. The options vary in treatment capability, capital cost, and O&M effort required. Additional details including equipment listing and estimated sizing appear in Table 2.

Table 2 - Preliminary Equipment Listing and Estimated Sizing by Option

TREATMENT	OPTION #1 <i>Primary Treatment</i>	OPTION #2 <i>Primary + MBBR / Sec. Separ.</i>	OPTION #3 <i>Primary + SBR</i>
PRIMARY			
Screen Feed Pump/LS	Duty + Standby Pumps	Duty + Standby Pumps	Duty + Standby Pumps
Coarse Screen	External Rotary Drum or HydraSieve	External Rotary Drum or HydraSieve	External Rotary Drum or HydraSieve
Flow Equalization	Bolted Steel Tank - 20' dia x 24'SWH	Bolted Steel Tank - 20' dia x 24'SWH	Bolted Steel Tank - 20' dia x 24'SWH
EQ Mixing System	Aspirating chopper pump / jet mix	Aspirating chopper pump / jet mix	Aspirating chopper pump / jet mix
pH Neutralization	EQ Tank Recirc Pump System w/ Acid and Caustic Dosing Pumps	EQ Tank Recirc Pump System w/ Acid and Caustic Dosing Pumps	EQ Tank Recirc Pump System w/ Acid and Caustic Dosing Pumps
Transfer System	Duty + Standby Pumps	Duty + Standby Pumps	Duty + Standby Pumps
Primary Separation Technology	DAF / Microscreen / Clarifier	Direct Feed MBBR	DAF / Microscreen / Clarifier, chemical dosing as required
Separated Sludge Pump	AOD Sludge Pump	AOD Sludge Pump	AOD Sludge Pump
Primary Sludge Storage	Storage Tank - 15' dia x 24'SWH	-	Storage Tank - 15' dia x 24'SWH
SECONDARY			
Secondary Feed Pump/LS	-	Duty + Standby Pumps	Duty + Standby Pumps
Secondary Treatment System	-	(2) MBBR Tanks w/ Media - 20' dia x 24' SWH ea.	(2) SBR tanks - 20' dia x 24' SWH ea

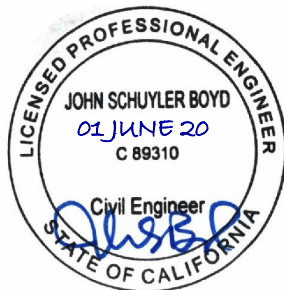
Secondary Chemical Feed	-	Antifoam and nutrient chemical feed pumps	-
Diffused Aeration System	-	MBBR Eqmt Package	SBR Eqmt Package
Blowers	-	Duty + Standby	Duty + Standby
DO Probe & Controller	-	MBBR Eqmt Package	SBR Eqmt Package
Controls / Electrical	-	MBBR Eqmt Package	SBR Eqmt Package
Secondary Solids Separation	-	DAF w/ DAG pump & polymer dosing system	SBR Settling Cycle / SBR Eqmt Package
Floating Decanter	-	-	SBR Eqmt Package
Secondary Sludge Pump	-	AOD Sludge Pump	WAS Duty + Standby Pumps
Secondary Sludge Storage	-	Storage Tank - PE 12' dia x 22'SWH	Same as primary sludge or separate tank
MISCELLANEOUS			
Air Compressor	for DAF / Screen blow down	for DAF / AOD pumps	for DAF / AOD pumps
Yard piping / valves	WW area only	WW area only	WW area only
Equipment Pad	20'x40'x8"	20'x40'x8"	20'x40'x8"
Equipment Canopy	<i>Optional</i>	<i>Optional</i>	<i>Optional</i>

The options will be further investigated as final discharge permit requirements are confirmed.

Please respond with any questions or comments at your earliest convenience.

Sincerely,

John Boyd, P.E.
T-O Engineers
(208) 433-1900
jboyd@to-engineers.com



CC: Clayton Dragoo (Fisher Construction Group)
Juan Ozuna (Fisher Construction Group)

Attachments / References:

1. Ventura Pacific Co. Lemon Processing Wastewater Flow and Loading Reference Data – Oxnard, CA Site

ATTACHMENT #1 - Ventura Pacific Co. Lemon Processing Wastewater Flow & Loading Reference Data (Oxnard, CA)

DATE / STAT	FLOW (gal/mo)	FLOW (GPD)	BOD (mg/L)	TSS (mg/L)	pH (S.U.)
AVE	1,183,234	39,441	560	151	7.50
MAX	1,711,349	57,045	1,820	872	8.65
90% / pH min	1,476,021	49,201	1,196	346	6.10
1/31/2016	1,012,119	32,649	136	29	8.00
2/29/2016	1,383,725	47,715	120	168	8.10
3/31/2016	1,472,588	47,503	353	47	7.90
4/30/2016	1,434,365	47,812	935	92	7.55
5/31/2016	1,435,562	46,308	870	87	7.35
6/30/2016	1,711,349	57,045	358	38	7.55
7/31/2016	1,484,930	47,901	740	79	6.90
8/31/2016	1,341,463	43,273	1,175	170	6.35
9/30/2016	1,079,588	35,986	1,695	327	6.10
10/31/2016	927,744	29,927	92	41	8.30
11/30/2016	820,257	27,342	515	84	7.55
12/31/2016	965,668	31,151	148	40	7.75
1/31/2017	835,217	26,942	168	57	7.85
2/28/2017	1,008,603	36,022	350	70	7.25
3/31/2017	1,308,850	42,221	520	85	7.75
4/30/2017	1,413,944	47,131	655	145	7.35
5/31/2017	1,382,828	44,607	1,020	82	6.80
6/30/2017	1,484,032	49,468	1,245	182	6.65
7/31/2017	1,254,246	40,460	575	68	6.65
8/31/2017	1,193,060	38,486	815	228	6.55
9/30/2017	895,506	29,850	700	190	6.90
10/31/2017	919,068	29,647	120	66	7.90
11/30/2017	936,870	31,229	77	50	7.90
12/31/2017	928,343	29,947	145	42	8.15
1/31/2018	1,115,717	35,991	113	72	8.65
2/28/2018	1,124,618	40,165	230	62	8.30
3/31/2018	1,152,668	37,183	435	237	7.85
4/30/2018	1,243,999	41,467	335	75	7.75
5/31/2018	1,335,330	43,075	625	150	7.75
6/30/2018	1,445,734	48,191	1,160	390	6.40
7/31/2018	1,255,742	40,508	1,820	705	6.80
8/31/2018	1,309,598	42,245	1,170	872	6.90
9/30/2018	886,604	29,553	410	162	7.25
10/31/2018	912,485	29,435	124	87	8.20
11/30/2018	1,065,750	35,525	40	35	8.50
12/31/2018	1,118,260	36,073	169	115	8.65

MONTH	FLOW AVE (Gal/mo)	AVE FLOW % OF ANNUAL	FLOW AVE (GPD)	BOD AVE (mg/L)	TSS AVE (mg/L)	pH AVE
AVE	1,183,234	-	38,937	560	151	7.50
MAX	1,547,039	-	51,568	1,053	423	8.18
90% / pH min	1,498,299	-	49,739	1,051	382	6.60
Jan	987,684	6.96%	31,861	139	52	8.17
Feb	1,172,315	8.26%	41,868	233	100	7.88
Mar	1,311,369	9.24%	42,302	436	123	7.83
Apr	1,364,103	9.61%	45,470	642	104	7.55
May	1,384,573	9.75%	44,664	838	106	7.30
Jun	1,547,039	10.90%	51,568	921	203	6.87
Jul	1,331,639	9.38%	42,956	1,045	284	6.78
Aug	1,281,374	9.02%	41,335	1,053	423	6.60
Sep	953,899	6.72%	31,797	935	226	6.75
Oct	919,766	6.48%	29,670	112	65	8.13
Nov	940,959	6.63%	31,365	211	56	7.98
Dec	1,004,090	7.07%	32,390	154	66	8.18

LEMON PROCESSING WASTEWATER - GRAB SAMPLING

Pollutant	Units	7/12/2018	7/26/2018	7/3/2019	7/31/2019	Mo Ave
BOD	mg/L	1480	2160	147	350	1034.25
TSS	mg/L	800	610	49	52	377.75
O&G	mg/L	12.2	6.3	5.4	5.8	7.425
H2S	mg/L	-	0.032	-	-	-
pH	sv	6.7	6.9	7.8	7.2	7.15
TDS	mg/L	-	-	1110	-	1110