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STEPHEN K. BUTLER

February 10, 2020

VIA EMAIL AND HAND DELIVERY
CHRISTA.SHAW@SONOMA-COUNTY.ORG

Christa L. Shaw
Deputy County Counsel
Office of the County Counsel
County of Sonoma
575 Administration Drive, Rm. 105A
Santa Rosa, CA 95403

Re: *VJB Winery/Request to Recirculate Mitigated Negative Declaration and
Continue the March 12, 2020 Hearing Date*

Dear Ms. Shaw:

Please find enclosed two septic reports, one prepared by Steven Brown, dated February 5, 2020 and one prepared by Ted Park, dated February 4, 2020. These reports were prepared using actual septic generation numbers associated with VJB Winery over the years. It is our belief that these numbers present a much more accurate picture of both the impacts of the project and any needed mitigation.

The use of historic and future septic demand is much more reliable than the speculative numbers reflected in the Mitigated Negative Declaration ("MND"). The figures projected by the MND are opinions not supported by facts and historical data. Calculation of the septic demand as set forth in the reports of Mr. Brown and Mr. Park, is permissible, as stated in Mr. Brown's report, under the County septic regulations. The reports conclude that the proposed design capacity of 1,500 gallons per day is adequate to handle the peak demand for the peak number of guests provided by the applicant.

For the reasons set forth above, we are requesting that the MND be revised and recirculated with appropriate revisions made to the analysis of septic demand and any needed mitigation. We are also requesting that the March 12, 2020, hearing date be continued in order to allow sufficient time for the applicant and members of the public to comment on the revised MND. Last, we are requesting a meeting with you, Milan and Nathan to discuss any questions that you may have about the enclosed reports and to determine whether senior staff agrees with

Christa L. Shaw
Deputy County Counsel
February 10, 2020
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the information and analysis set forth in our most recent septic reports. We would also like to touch upon the Highway 12 mitigation with you and Milan as well.

I was hoping to have the enclosed information to you earlier in the week of February 3rd, but Mr. Brown's report was not concluded until after the close of business on Thursday, February 6th. I attempted to get this information to you on Friday, February 7, 2020, but your email response indicated that you were not in the office.

Accordingly, this material is delivered to you this morning, February 10th. Also enclosed are copies of my cover letter and both reports for Tennis, Milan, Nathan and Blake. I will also send you an electronic copy of my cover letter, together with the two reports in the event that you wish to transmit the reports to PRMD electronically.

Thank you all for your consideration of the requests set forth herein.

Very truly yours,



STEPHEN K. BUTLER

SKB/pd
enclosures
c(w/enc.): Tennis Wick
 Director, PRMD *via email*
Milan Nevajda *via email*
 Deputy Director, Planning, PRMD
Nathan Quarles *via email*
 Deputy Director Engineering Construction, PRMD
Blake Hillegas *via email*
 Supervising Planner, PRMD
client

February 5, 2020

VJB Cellars
60 Shaw Avenue
Kenwood, CA 95452

Att: Henry Belmonte

Site Address: 60 Shaw Avenue, APN 050-275-028
Job Number: 20028

Dear Mr. Belmonte:

At your request we have reviewed County records for your septic system at 60 Shaw Avenue and the proposed wastewater disposal system plans and calculations prepared by Dimensions 4 Engineering. The purpose of our review was to evaluate wastewater design flows proposed for the existing commercial development.

The current Sonoma County Onsite Wastewater Disposal Manual was adopted August 15, 2019. Under Section 4.5 - OWTS Sizing Criteria Wastewater Flows, subsection C, there is an allowance to estimate wastewater design loading based upon "documented wastewater flow monitoring data for a comparable facility". This section allows for flexibility in estimating design loading for a system as an alternative to Table 11.1 which provides a guideline for design flows, or "appropriate literature references" such as the US EPA Manual.

In your case the existing facility is served by an onsite wastewater disposal system under an operational permit with Sonoma County and any inconsistencies with "comparable facilities" is eliminated. Additionally, the commercial development has been operating since its opening with all of the amenities in operation (tasting, market, deli, and BBQ). The existing Tasting Room and Market is served by a pressure distribution system that was installed in 2011 for a design capacity of 607 gallons per day. A recent plumbing survey conducted by Advanced Septic Services concluded that all of the commercial plumbing fixtures are routed to the pressure distribution system except for one service sink in the Gelato Bar. Monitoring records on file for the system at Permit Sonoma begin with a self-monitoring report filed June 11, 2013 and include data from each successive year through the report filed October 31, 2019. The monitoring data shows the growth of flow to the system that is consistent with the establishment of the business and includes all of the plumbing fixtures and amenities proposed for continued use including the deli counter and outdoor covered barbeque. Reported design flows averaged in the range of 200 to 300 gallons per day in the monitoring period from May 9, 2012 through January 10, 2018, when Advanced Septic was engaged to do the system service and monitoring. Beginning January 2018 the reported dose volume changed from 102 gallons per dose to 180 gallons. We presume this was a result of system maintenance and resetting the float switch. From January 10, 2018 through October 31, 2019 the average flow to the system was in the range of 278 to 453 gallons per day. Dimensions 4 Engineering reports that the float setting of the pressure distributions system was

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checked on February 4, 2020, by Sakai General Engineering and found to be approximately 220 gallons. They have used this information to adjust the reported average flows to the system. Taking the two year average flow from period of March 15 to October 31, 2019, the peak average flow is documented to be 554 gallons.

With a documented average flow of 554 gallons we need to evaluate the relationship to peak loads. Different types of commercial uses can be expected to have varied peak and average flows. A commercial office or manufacturing facility with a relatively constant number of employees will have a smaller peak factor where a visitor service facility is likely to be subject to larger swings in peak and average flows to a system. We will commonly express to commercial clients that the average flow to a private sewage disposal system should be on the order of 50 to 70 percent of the peak daily design flow. That provides for a peak factor of 2.0 to 1.4, depending upon the type of business. Dimensions 4 calculations applying the total system flow to only the three busiest days of the week, Friday – Sunday, results in a peak factor of 2.3 over the average measured flow. This appears to be a conservative peak factor to be applied. If that peak factor were to be applied to the highest measured period of flow to the existing system the peak design flow would be estimated to be approximately 1275 gallons per day (554×2.3). These measured flows include waste flows generated by all of the employees on site as well as visitors and kitchen waste. If the peak employee count on site is 16 we can reduce the peak flows associated with the visitors and kitchen to 1035 gallons ($1275\text{gpd} - 16 \text{ emp} \times 15 \text{ gpd}$) and 1055 if we add the estimated flow from the gelato sink. Allocating this remaining flow amongst the peak visitorship estimated by the owners (300) the calculated peak load per visitor comes to 3.51 gallons per person, regardless of whether they are tasting wine, picnicking in the courtyard with a sandwich or grill offering, or just stopping by to pick up a sandwich to go.

Dimensions 4 Engineering has prepared a new drip system to support this project. The design accounts for a peak design flow of 1500 gallons per day. They have accounted for the peak daily employees at the standard 15 gallons per person and split the visitors with 153 calculated tasting room visitors at the standard 3 gallons per person, and 160 visitors at 5 gallons per person, to project the capability of the system to accommodate this peak loading. This approach to design flow results in an average flow allocation of 4.0 gallons per visitor which compares favorably with the calculations above.

To further evaluate the projected design flows we have reviewed the standardized design tables that are used in the Sonoma County OWTS Manual and US EPA. The design flows that have been estimated for the project are consistent with the Sonoma County Design flow rates under Table 11.1 with the exception of the flows associated with the food service. The closest comparison from Sonoma County Table 11.1 would be to allocate 3 gallons per meal served (disposable utensils). US EPA includes a design table where a similar allocation for meals served references an estimated range of 2-4 gallons per meal with a typical of 3 gallons. Another design table in EPA for recreational facilities includes a category of "Cafeteria" which estimates a range of 1 to 3 gallons per customer with a typical flow allocation of 2 gallons. It appears there is room in the EPA design tables to interpret flows associated with meals that would be consistent with the Dimensions 4 estimate. We have enclosed copies of the three design tables referenced.

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In order to better evaluate the project and the methods of food preparation and service we visited the site to understand the operation. The wine tasting bar is consistent with any other tasting room and contains wash sinks and a dishwasher for glassware which is common to design flows of 3 gallons per tasting room visitor. The gelato bar has a small wash sink and a three compartment sink for washing the gelato serving utensils. The three compartment sink has a total volume of approximately 17 gallons and an operating volume of about 13 gallons. The shop is run with one employee and the wash sink is filled once at the end of the day for wash up. This is in line with the Dimensions 4 estimate of 20 gallons per day for the gelato shop. The flow for the gelato shop employee is captured in the pressure distribution system flows. The outdoor Barbeque has a corner wash sink that can be used for hand washing and equipment wipe down at the end of the day. The gas stove top is used to prepare potatoes and pastas for salads that are made in the deli kitchen and displayed for sale in the deli case. There is a grill that is used to roast vegetables for the salads and deli preparations as well as meats that are made to order to the visitors. Finally the outdoor space has a pizza oven that will bake pizza on a made to order basis. The pizza dough is made daily in the deli kitchen and the individual pizzas are hand made and baked outdoors. In the deli kitchen there is a larger three compartment sink, a hand wash sink, a dishwasher and a mop sink. The three compartment sink has a full capacity of approximately 45 gallons and an operating volume of about 36 gallons. The owner estimates the three compartment sink is cycled two times per day typically and three times per day at the busier times. The dishwasher is generally run once per day to wash utensils used in the grill and deli kitchen. There is a preparation surface for sandwich making where bins of ingredients are set to make sandwiches in a batch fashion for display in the deli cooler. Additional sandwich batches are made as needed through the day based upon demand. Utensils for sandwich making are stored in the ingredient bins throughout the day and washed after closing. The preparation area is also used to assemble meat and cheese trays for display and sale. The deli display case also contains salads not made on site, and meats and cheeses that are custom cut, wrapped and sold. The market also has display space for prepackaged goods and beverages that do not create any impact on wastewater generation. All of the food service is done with disposable utensils and all of the food preparation employees use disposable plastic gloves as they prepare foods.

In total the food service at VJB seems similar to a cafeteria with various options for food products. Some items are made to order but the kitchen preparation areas are not operated in a way that would be considered a “conventional restaurant kitchen” or even totally “short order”. It is clear in comparing the EPA design tables with the County Table 11.1 that Sonoma County has taken the high end of the EPA ranges. It does not seem to be out of the ordinary to accept the waste flows associated with the food service at VJB to fall into the low end of the “meals served” range (2 gallons) and the typical flow for the customer in the Bar/cocktail lounge category. The meal estimate would also be consistent with the typical flow associated with a cafeteria customer. With the strong documentation of measured wastewater flows from the on site system serving this establishment I believe it is justified to use the estimate of 3 gallons per tasting room visitor and 5 gallons per meal service visitor.

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One additional aspect of the proposed system upgrade proposed by Dimension 4 Engineering is the capability of the drip system to buffer peak flows to the system. Because this type of system is set up to dose the drip field at specified volumes during the course of a 24 hour day, the system can be set to discharge no more than the 1500 gallon per day peak capacity. If a peak discharge from the facility exceeds 1500 gallons the system is capable of storing the excess flow to be discharged during the subsequent 24 hour cycles. With documentation of measured average flows to the existing system over the past eight years, and particularly the past two, we would not expect the buffering capacity to be used regularly, but it is available to protect the disposal field if needed. As with the current pressure distribution system, the drip system will fall under an operational permit and require monitoring reports of discharge on a semi annual basis. This provides County oversight to confirm that design flows are not exceeded or provide documentation if corrective action is needed.

Please review this information and provide written comments for our files.

Signed:

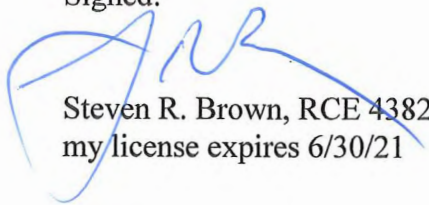

Steven R. Brown, RCE 43825
my license expires 6/30/21



Table 11.1 – Multiunit and Non-Residential Design Flow Rates

TYPE OF OCCUPANCY	GALLONS PER DAY
Airports	5 per passenger
Campgrounds with central comfort station	35 per person
Campgrounds with flush toilet, no showers	25 per person
Day Camps (no meals)	15 per person
Luxury Camp, private bath	100 per person
Summer and seasonal	50 per person
Churches (sanctuary)	5 per seat
With kitchen wastes	7 per seat
Country Club	125 per person
Factories	35 per person per shift
Hospitals	250 per bed space
Kitchen waste only	25 per bed
Laundry waste only	40 per bed
Hotels/Motels with private bathroom (no kitchen waste)	60 per two-person room
Hotels/Motels without private bathroom (no kitchen waste)	50 per two-person room
Hotel/Motel with private bath and kitchen	75 gallons per person
Institutions other than hospitals	125 per bed space
Movie Theaters	5 per seat
Offices	20 per employee
Picnic parks with toilets and showers	10 per person
Picnic parks with toilet waste only	5 per person
Resort camps with limited plumbing	50 gallons per person
Restaurants with Kitchen waste (multi-use utensils)	5 per meal served
Restaurants with Kitchen waste (disposable utensils)	3 per meal served
And add the following for type of facility present:	
Conventional sit down	10 per person
Short Order	8 per person
Bar and Cocktail	3 per person
School (non-boarding)	20 per student
With gym and showers add	5 per student
With cafeteria using disposable utensils	3 per meal served
Self-service laundries	50 gallons per waste
Service station	10 gallons per vehicle served
Retail stores	20 per employee
For public restrooms add	1 per 10 square feet
Swimming pools and bathhouses	10 per person
Tourist camps or mobile home parks with individual bath units	100 per person
Tourist camps or trailer parks with central bathhouse	75 per person
Work or construction camps (semi-permanent)	50 per person
Wine tasting facility (no meals served)	3 per person
Employee	15 per employee

Table 3-4. Typical wastewater flow rates from commercial sources^{a,b}

Facility	Unit	Flow, gallons/unit/day		Flow, liters/unit/day		
		Range	Typical	Range	Typical	
Airport	Passenger	2-4	3	8-15	11	
Apartment house	Person	40-80	50	150-300	190	
Automobile service station ^c	Vehicle served	8-15	12	30-57	45	
	Employee	9-15	13	34-57	49	
Bar	Customer	1-5	3	4-19	11	
	Employee	10-16	13	38-61	49	
Boarding house	Person	25-60	40	95-230	150	
Department store	Toilet room	400-600	500	1,500-2,300	1,900	
	Employee	8-15	10	30-57	38	
Hotel	Guest	40-60	50	150-230	190	
	Employee	8-13	10	30-49	38	
Industrial building (sanitary waste only)	Employee	7-16	13	26-61	49	
Laundry (self-service)	Machine	450-650	550	1,700-2,500	2,100	
	Wash	45-55	50	170-210	190	
Office	Employee	7-16	13	26-61	49	
Public lavatory	User	3-6	5	11-23	19	
Restaurant (with toilet)	Meal	2-4	3	8-15	11	
	Conventional	Customer	8-10	9	30-38	34
	Short order	Customer	3-8	6	11-30	23
	Bar/cocktail lounge	Customer	2-4	3	8-15	11
Shopping center	Employee	7-13	10	26-49	38	
	Parking space	1-3	2	4-11	8	
Theater	Seat	2-4	3	8-15	11	

^a Some systems serving more than 20 people might be regulated under USEPA's Class V Underground Injection Control (UIC) Program. See <http://www.epa.gov/safewater/uic.html> for more information.

^b These data incorporate the effect of fixtures complying with the U.S. Energy Policy Act (EPACT) of 1994.

^c Disposal of automotive wastes via subsurface wastewater infiltration systems is banned by Class V UIC regulations to protect ground water. See <http://www.epa.gov/safewater/uic.html> for more information.

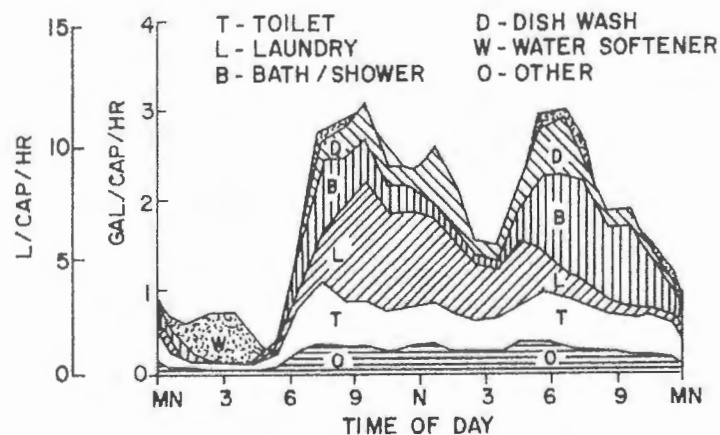
Source: Crites and Tchobanoglous, 1998.

3.3.3 Variability of wastewater flow

Variability of wastewater flow is usually characterized by daily and hourly minimum and maximum flows and instantaneous peak flows that occur during the day. The intermittent occurrence of individual wastewater-generating activities can create large variations in wastewater flows from residential or nonresidential establishments. This variability can affect gravity-fed onsite systems by potentially causing hydraulic overloads of the system during peak flow conditions. Figure 3-3 illustrates the routine fluctuations in wastewater flows for a typical residential dwelling.

Wastewater flow can vary significantly from day to day. Minimum hourly flows of zero are typical for

Figure 3-3. Daily indoor water use pattern for single-family residence



Source: University of Wisconsin, 1978.

Table 3-6. Typical wastewater flow rates from recreational facilities^a

Facility	Unit	Flow, gallons/unit/day		Flow, liters/unit/day	
		Range	Typical	Range	Typical
Apartment, resort	Person	50–70	60	190–260	230
Bowling alley	Alley	150–250	200	570–950	760
Cabin, resort	Person	8–50	40	30–190	150
Cafeteria	Customer	1–3	2	4–11	8
	Employee	8–12	10	30–45	38
Camps:					
Pioneer type	Person	15–30	25	57–110	95
Children's, with central toilet/bath	Person	35–50	45	130–190	170
Day, with meals	Person	10–20	15	38–76	57
Day, without meals	Person	10–15	13	38–57	49
Luxury, private bath	Person	75–100	90	280–380	340
Trailer camp	Trailer	75–150	125	280–570	470
Campground-developed	Person	20–40	30	76–150	110
Cocktail lounge	Seat	12–25	20	45–95	76
Coffee Shop	Customer	4–8	6	15–30	23
	Employee	8–12	10	30–45	38
Country club	Guests onsite	60–130	100	230–490	380
	Employee	10–15	13	38–57	49
Dining hall	Meal served	4–10	7	15–38	26
Dormitory/bunkhouse	Person	20–50	40	76–190	150
Fairground	Visitor	1–2	2	4–8	8
Hotel, resort	Person	40–60	50	150–230	190
Picnic park, flush toilets	Visitor	5–10	8	19–38	30
Store, resort	Customer	1–4	3	4–15	11
	Employee	8–12	10	30–45	38
Swimming pool	Customer	5–12	10	19–45	38
	Employee	8–12	10	30–45	38
Theater	Seat	2–4	3	8–15	11
Visitor center	Visitor	4–8	5	15–30	19

^aSome systems serving more than 20 people might be regulated under USEPA's Class V UIC Program.

Source: Crites and Tchobanoglous, 1998.

pollutants, the strength of residential wastewater fluctuates throughout the day (University of Wisconsin, 1978). For nonresidential establishments, wastewater quality can vary significantly among different types of establishments because of differences in waste-generating sources present, water usage rates, and other factors. There is currently a dearth of useful data on nonresidential wastewater organic strength, which can create a large degree of uncertainty in design if facility-specific data are not available. Some older data (Goldstein and Moberg, 1973; Vogulis, 1978) and some new information exists, but modern organic strengths need to be

verified before design given the importance of this aspect of capacity determination.

Wastewater flow and the type of waste generated affect wastewater quality. For typical residential sources peak flows and peak pollutant loading rates do not occur at the same time (Tchobanoglous and Burton, 1991). Though the fluctuation in wastewater quality (see figure 3-5) is similar to the water use patterns illustrated in figure 3-3, the fluctuations in wastewater quality for an individual home are likely to be considerably greater than the multiple-home averages shown in figure 3-5.



ANALYSIS
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February 4, 2020

County of Sonoma
Department of Permit and Resource Management
2550 Ventura Avenue
Santa Rosa, Ca 95403

Subject: Septic System and Water Usage Observations

Worksite: VJB Vineyard & Cellars
60 Shaw Ave., Kenwood, CA
APN 050-275-028

Henry and Vittorio,

Per your request, Dimensions 4 Engineering has reviewed the water usage based on the monitoring reports of the non-standard pressure distribution system. We have compared the water usage to the proposed 1500 gallons per day capacity of the new subsurface drip system. Our finding and conclusions are as follows:

The property and facilities are currently being served by two septic systems with a total capacity of 840 gallons per day. The pressure distribution system has a design capacity of 607 gallons per day and currently has a dose setting of 220 gallons. We have reviewed the self-monitoring forms from the past 2 years by Sakai General Engineering (03/18) and Advanced Septic (10/18, 3/19, and 10/19).

The proposed subsurface drip system will have a capacity of 1500 gallons per day, an increase in capacity of 79% over the two existing systems combined. The monitoring forms provide data from 1/10/18 to 10/31/19 for the pressure distribution system. The highest flow average occurred in the monitoring period between 3/15/19 to 10/31/19 for an average of 554 gallons per day. The daily average flow was calculated at 490 gallons per day over the 2 year period, utilizing approximately 80% of the pressure distribution system capacity. The outlet flows were confirmed by Sakai General Engineering on 2/4/20 and confirmed that all flows lead to the Pressure Distribution system apart from one sink fixture located in the gelato bar. This sink is the only connection to the existing standard system, only contributing a minimal amount of flow.

The gelato bar has a daily flow of 20 gallons per day using the commercial flow numbers for a retail store. This was calculated using 1 employee and with confirmation that the bathrooms are connected to the PD system. No extra flows are created as the gelato shop uses disposable items to serve its customers.

Using the average flow of 510 gallons per day (490+20), VJB Vineyard & Cellars will only be using 34% of their proposed daily septic capacity. In addition, using the peak value of 574 gallons per day only accounts for 38% of the proposed 1500 gallon system. Using a conservative approach of flows only occurring on the weekends (fri-sun), we are estimating 1163 gallons per day or only 78% of the system capacity. The proposed 1500 gallon system has more than enough capacity to support daily operations and surge volumes.

The proposed subsurface drip system will consist of three main tank components; main septic tank, grease trap, and an Orenco AX-MAX75 pretreatment unit. The proposed 5000 gallon septic tank alone will be able to hold over 3 days of the maximum calculated 1500 gallons per day flow. This provides VJB Vineyard and Cellars ample time to address any septic issues that may arise during operations without posing as an environmental hazard to its surroundings.

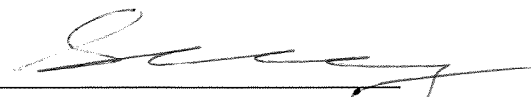
Customers partake mainly in wine tasting with an option to order food items from a limited menu. Due to the pre-prepped nature of the food served from their facilities and the usage of disposable utensils, we believe a 5 gallons per day per customers ordering food is more than adequate for septic usage calculations. Looking through sales records and receipts on their busiest days of the season (early September) we concluded that less than half the guests order prepared food. The rest of the guests are there strictly for wine tasting which is calculated at 3 gallons per day. With a peak employee count of 16 calculated at 15 gallons per day (240 gallons total), 1260 gallons remain for customer use. With assumptions of 160 guests ordering food (800 gallons) and 153 guests strictly wine tasting (460 gallons), we conservatively calculated that the facilities will be able to serve a total of 313 guests per day.

The business hours for VJB are from 10AM -4PM daily, for a total of 6 hours per day. We can interpolate the daily guest capacity of 313 guests to approximately 52 guests per hour over the 6 hour window. The 87 parking spaces in the proposed parking expansion and existing parking lot is fully capable of providing parking spaces for guests at any given time. Assuming 2.5 guests to a car, the 87 spaces should provide enough parking spaces for 217 guests at any given time to account for any potential surges during peak hours.

The proposed septic upgrades should be more than adequate to handle current loads and operations with enough capacity to absorb any additional loads and peak demands should it be necessary in the future.

Sincerely,

DIMENSIONS 4 ENGINEERING, INC.

By: 
Seung Jun Park (Ted), RCE 89409



cc: File