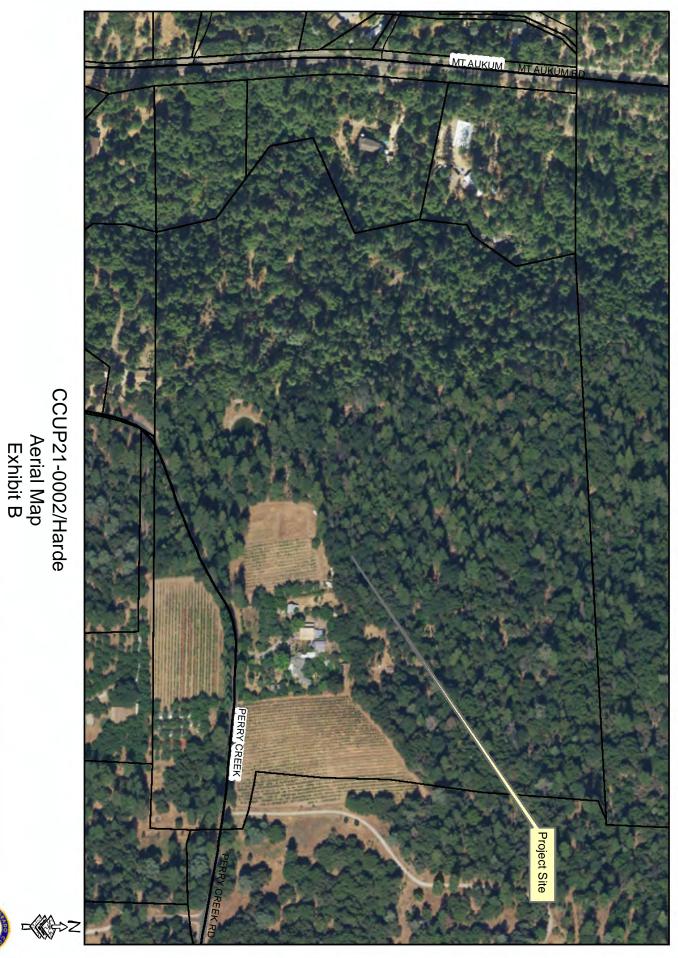


<sup>24-0275</sup> F 1 of 88



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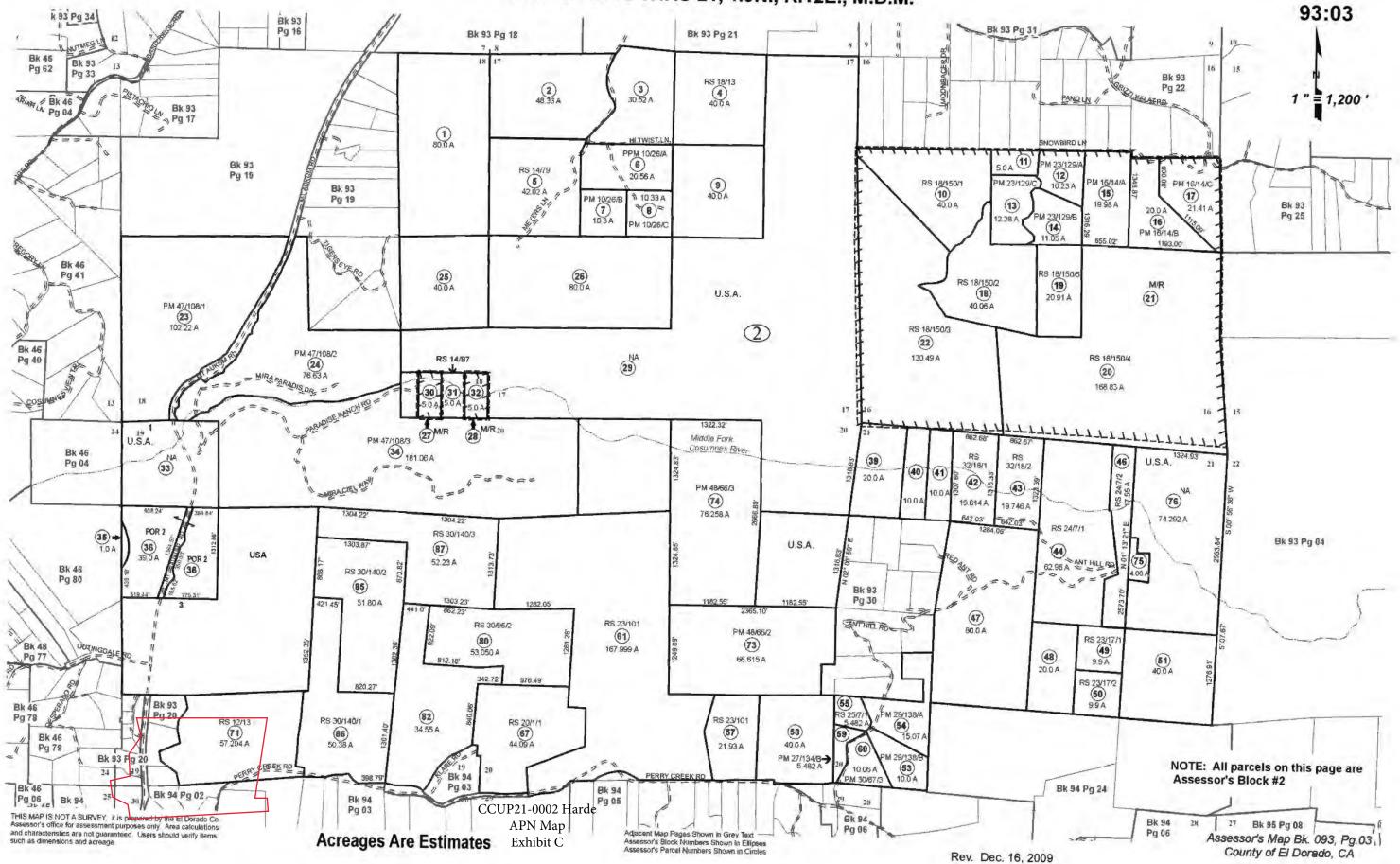
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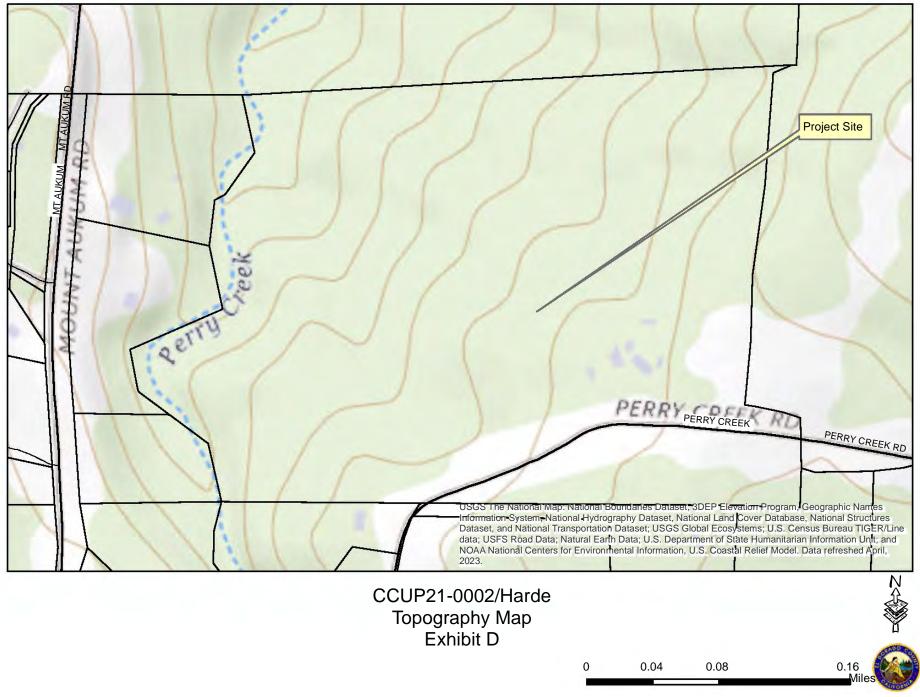
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<sup>24-0275</sup> F 2 of 88

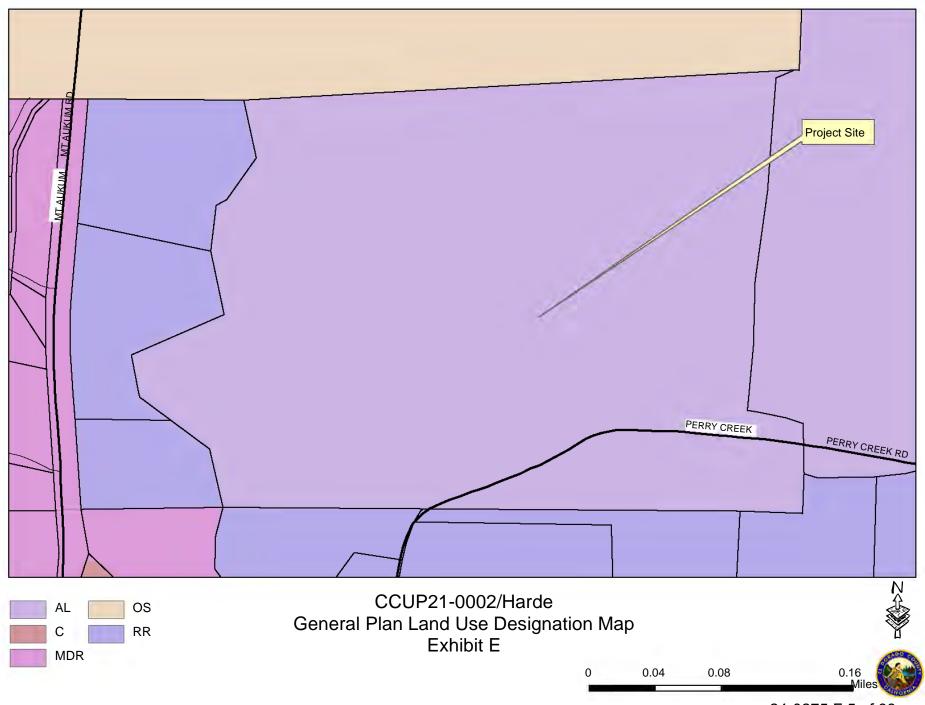
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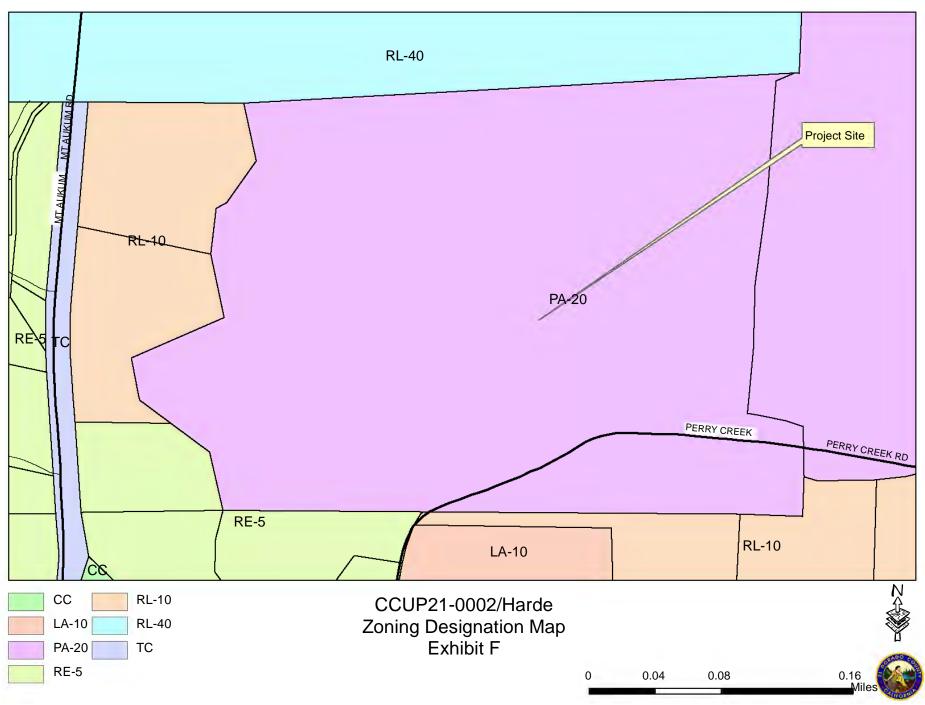
24-0275 F 3 of 88



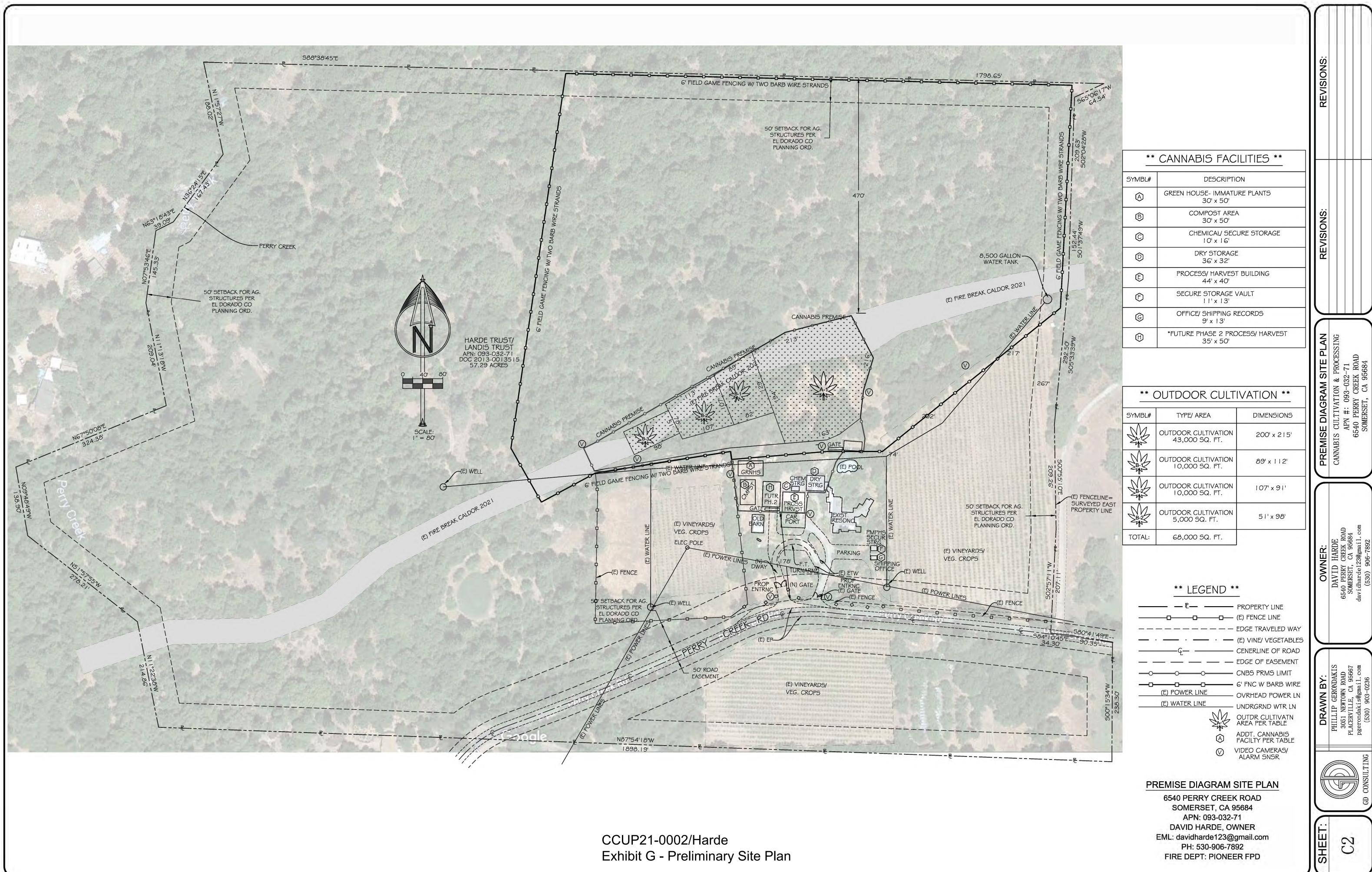
<sup>24-0275</sup> F 4 of 88



<sup>24-0275</sup> F 5 of 88



<sup>24-0275</sup> F 6 of 88





## **REVISED TECHNICAL MEMORANDUM**

To: David Harde

From: Ray Kapahi Ray Kapahi Tel: 916-687-8352 *Tel: 916-687-8352 E-Mail: <u>ray.kapahi@gmail.com</u>*  **Date:** October 18, 2022

**Copies:** Arron Mount El Dorado County Planning

Subject: Analysis of Odor at the Proposed Outdoor Cannabis Cultivation Located in Somerset (El Dorado County), California

#### **INTRODUCTION AND SUMMARY**

Environmental Permitting Specialists (EPS) has completed its review of potential odors at your proposed outdoor cultivation premises in Somerset. The site is located at 6540 Perry Creek Road, in Somerset.

The maximum area for outdoor cultivation is approximately 1.5 acres (68,560 square feet). The distance between the cultivation areas and the property lines varies between 1,650 feet to 20 feet. The nearest home is located 650 feet East of the property. A site map showing the cultivation areas and distances to the property lines is shown in Figure 1.

EPS used an air dispersion model, 1 year (2019) of hourly wind and temperature data at Somerset and on-site measurements of odor intensity at other locations to conduct this analysis. Data from 4 other outdoor cannabis and hemp cultivation facilities and one Tedlar bag sample were reviewed as part of the current analysis. Odor measurements taken at 0.75 acre outdoor cultivation site in Yolo County were used as baseline odors to predict odors at the property lines.

The results of our analysis indicate that maximum odor intensity along the property lines would range from 2.73 to 21.08 DT. Since there is a potential for odor intensity exceeding El Dorado

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County's limit of 7 DT, EPS recommends the installation of an odor control system along a portion of the Eastern property line to mitigate the odors. See Figure 8.

This Technical Memorandum presents the methodology, data and assumptions used in this analysis. These are described in detail below. A description of the recommended odor control system is attached.

#### SCOPE AND METHODOLOGY OF ODOR ANALYSIS

The overall methodology used in this analysis is to use an atmospheric dispersion model to predict the dilution of odors as they migrate away from the outdoor cultivation area. By calculating the relative concentration of odors adjacent to the cultivation area and at the property line(s), we can determine the dilution ratio defined as odor concentration at the cultivation area divided by concentration at the property line(s).

For example, if the maximum concentration at the cultivation area is 5,000 micrograms per cubic meter (ug/m3) and the relative concentration at the property line 2,000 ug/m3, the dilution ratio would equal:

Dilution Ratio = <u>5,000 ug/m3</u> = 2.5 2,000 ug/m3

In other words, the odors would be dilution by a factor of 2.5 as they migrate from the cultivation area towards the property line.

The dilution factor is used along with measurements at other outdoor cannabis cultivation sites to predict odor intensity at property lines. This methodology was reviewed by the staff at El Dorado County Air Quality Management District (AQMD) to confirm that this approach would be acceptable. The District agreed with this approach as noted in their August 28, 2020 letter to Aaron Mount at El Dorado County Planning.

#### **Modeling Methodology**

We used the EPA and AQMD recommended AERMOD dispersion model (Version 19191) along with one year (2019) of hourly wind data for Somerset. The data (known as MM5) is derived from weather satellites to calculation winds and other parameters for all locations in the continental US. The data used was prepared by Lakes Environmental (Waterloo, Canada)<sup>1</sup>.

The main cultivation site was modeled as a single ground based area source. Concentration were calculated using a 20 meter grid using an emission rate of  $1.00 \times 10^{-4}$  grams/sec-square meter. See Figure 7.

<sup>&</sup>lt;sup>1</sup> Lakes Environmental. Waterloo, Canada. Information on the development of local wind data based on the MM5 for Somerset can be found at: https://www.weblakes.com/services/met\_data.html#aermetmm5

The model results are concentrations in terms of micrograms per cubic meter at each grid location averaged over 1-hour. These concentrations are meaningful only in a relative sense to help establish the dilution pattern. It is recognized that the averaging time for odors is a few minutes, not 1 hour. Typically, peak concentrations over a few minutes are many times greater than those over 1 hour. However, the ratio of concentrations and the dilution factor will remain the same whether averaged over a few minutes or 1 hour averaging time.

Finally, we note that the maximum predicted concentration varies with both the distance and the direction from the cultivation site. Generally, the concentration decreases with distance from the cultivation site, however, since the canopy is modeled with a release height of 2 meters, the peak concentration occur some distance from the canopy. Figures 4 and 5 illustrate the spatial distribution of 1-hour relative concentration. These figures show an East-West alignment of maximum odors.

#### **Baseline Odor Used in the Analysis**

We used odor measurements taken at a Yolo County outdoor cannabis site. This outdoor site covers 0.75 acres and is located at 22945 County Road 23, Esparto. At the time the measurements were taken, the plants were 2 weeks away from harvesting. Odor measurements were taken September 22, 2020 that indicated odor intensity of 15 DT. However, we noted that there were brief periods when odor intensity was above 15 but were not fully captures by the Nasal Ranger. We estimated the odor intensity to be closer to 20 DT and this is the value used in the current analysis. A complete documentation of the September 22<sup>nd</sup> odor survey is attached.

#### **CALCULATION OF ODOR INTENSITY AND RESULTS**

The calculation of odor intensity at the property lines is as follows:

Odor Intensity at Property Line = <u>Baseline Odor Intensity (DT)</u> Dilution Factor

For example, the odor intensity at the Eastern property line (Figure 6) would equal:

The results for the closest property lines is summarized on the next page.

3

Location	Distance to P	roperty Line	Maximum Conc.	Conc. At Property Line	Lowest Dilution Ratio	Fenceline DT		
	(ft)	(m)						
Eastern Property Line	20	6.1	1,764	1,640	1.08	18.59 (uncontrolled)		
						4.1 (controlled)		
North Property Line	550	167.7	17,617	3,619	4.87	4.11		
Western Property Line	1250	381.1	17,617	3,926	4.49	4.46		
Southern Property Line	250	76.2	17,617	2,407	7.32	2.73		
Nearest Home	650	198.2	17,617	367	48.1	0.42		
Baseline DT	20							

The odor intensity at the Eastern property line would exceed the County's threshold of 7. As a result, odor mitigation along this property line is required. A misting system that dispenses a fine atomized mist containing an odor neutralizer will be used to control odors. Information about the odor control system is attached.

#### **Effectiveness of Proposed Odor Mitigation**

EPS has coordinated the measurements of odors<sup>2</sup> with and without odor mitigation using a misting system. A three-day odor survey was conducted on October 1-3, 2019 to measure the intensity of odors near greenhouses equipped with an odor neutralizing misting systems. The greenhouses were located in Chico, CA. A copy of the odor assessment report is attached.

Odor intensity was measured using a Nasal Ranger near the exhaust vents, at the property lines and at off-site locations with and without mitigation. Each greenhouse has several hundred cannabis plants that were approaching the harvest stage (See Figures 8 to 11). This is the stage when the maximum odors are known to occur.

To simulate the effectiveness of the odor control system, odors were allowed to accumulate overnight in the greenhouses with no ventilation. Then in the morning, exhaust fans were turned on and the intensity of odors were measured with and without the misting system in operation. See Figure 9. These measurements were repeated over 3 days to verify the effectiveness of the odor control system. See Test Rounds 1,2,6 and 7 on pages 8-10 in the attached odor assessment report.

The results of the survey indicated that odors declined from 7 DT to below 2 DT when the odor misting system was employed. Since the lowest odor intensity that can be measured with a Nasal

<sup>&</sup>lt;sup>2</sup> Odor Assessment Study. Bosarge Environmental, LLC. November 1, 2019. Copy of report attached.

Ranger is 2 DT, it is not possible to distinguish odors that are 1 or 2 DT. If you assume odors were reduced to 1 DT, then that equates to a 86% reduction in odors. If the odors were reduced to 2 DT, then the reduction in odors is 71%. EPS assumed an average reduction in odors of 78% resulting in an odor intensity of 4.1 along the Eastern property line.

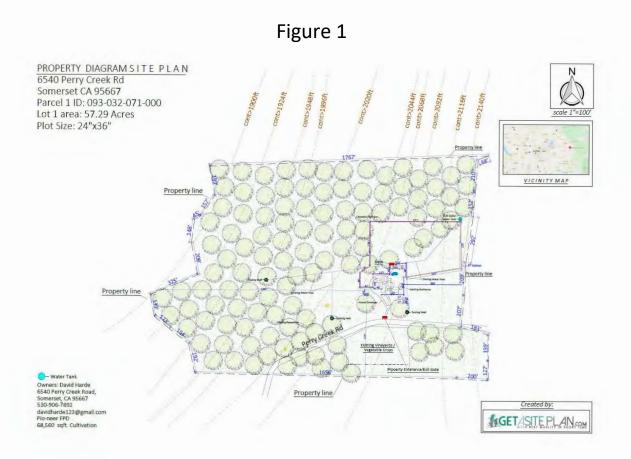
Once a permit has been issued and cannabis cultivation proceeds, EPS staff will be available to conduct odor monitoring at your property to confirm the effectiveness of the odor control system and that odors do not exceed the County limit of 7 DT.

As a way of comparison of odors that are associated with other industries, the following table lists typical odor intensities within 500 feet from each industry. EPS has been involved in several studies related to odor measurements at different industries.

Industry	Type of Odor	Odor Intensity (DT)
Meat Rendering	Rotting Animal Smell	Above 180
Pulp and Paper	Sulfur Compounds	Above 180
Wastewater Treatment Plants	Hydrogen Sulfide	60 to 120
Dairies	Rotten Egg	120+
Landfills	Rotten Egg	60+
Composting Facilities	Ammonia/sulfur	60+

#### FIGURES

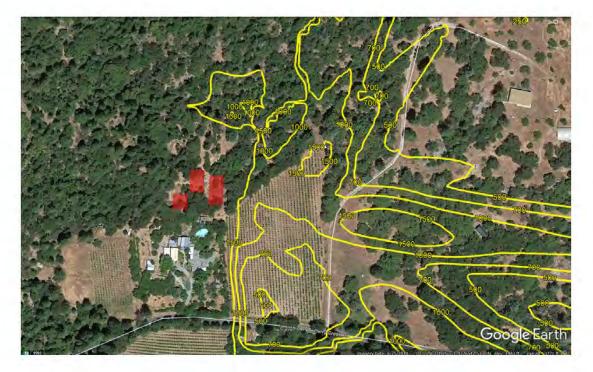
- Figure 1: Site Map
- Figure 2: Modeling Grid
- Figure 3: Contours of Relative Concentrations
- Figure 4: Contours of Relative Concentration (close-up)
- Figure 5: Display of Numerical Concentration
- Figure 6: Calculation of Dilution Factor
- Figure 7: Summary of Results and Recommended Mitigation
- Figures 8-11: Odor Assessment October 1-3, 2019 Chico, CA



## Modeling Grid



#### Contours of Relative 1-Hour Concentrations



## Contours of Relative Concentration (close-up)

Showing Location of Nearby Home



#### Numerical Values of Relative Concentration

											700		700	580			700	620	700	640	700	660			70	0700
			1000				-3.4	1			1237	1118				3526	1783	781	881	963	1016	1088			766	
991	2904	2761	2609	2487	2399	2325	2242	2137	2007	1855	1683	1534	1285	1093	1402	3405	723	826	902	969	1050	1134	1180	990	990	
181	3264	3223	3075	2883	2720	2617	2551	2485	2394	2272	2123	1947	1843	1866	4733	1074	783	875	945	1030	1158	1277	1053	1250	1109	
997	3288	3495	3553	3435	3201	2974	2834	2769	2720	2645	2530	2377	2196	2639	2042	1181	845	926	1012	1144	1324	1331	1593	1368	1066	-
305	3095	3253	3597	3802	3774	3527	3229	3038	2960	2930	2869	2752	2629	5637	1955	1055	911	1003	1136	1297	1392	1764	1640	1300	958	
546	3376	3172	3040	3469	3806	3873	3651	3366	3165	3084	3074	3013	3010	3514	1926	1124	1040	1148	1255	1415	1651	1711	1545	1178	1049	
468	3355	3203	3014	2793	3083	3452	3526	3381	3206	3073	3078	3069	3373	3289	1568	1133	1168	1187	1386	1522	1553	1545	1407	1179	1003	
295	4148	3969	3759	3516	3249	2975	2870	3023	2964	2847	3144	2847	3600	2653	1361	1177	1104	1310	1390	1394	1370	1345	1372	1093	858	
310	4655	4463	4238	3985	3709	3415	3111	2804	2498	2590	2422	3075	3008	2021	1146	1038	1193	1254	1239	1197	1246	1269	1240	979	842	1
341	4711	4541	4332	4095	3842	3572	3270	2939	2589	2220	1833	1664	2522	1403	1141	1011	1083	1060	1106	1122	1113	1102	1141	1070	1189	
308	4222	4105	3957	3780	3576	3338	3059	2737	2380	2002	1690	1567	4891	1395	1110	960	936	973	1001	1054	1094	1110	1148	1308	1446	
351	3301	3232	3139	3062	3068	3016	2904	2744	2493	2152	1750	1970	Imi	1373	1104	956	918	950	987	991.	968	1057	1237	1418	1590	
544	3684	3707	3719	3712	3663	3521	3310	3000	2599	2148	1976	3308	5333	1321	1076	1045	992	970	979	948	884	971	1128	1278	1414	
235	4261	4269	4241	43		100	-		100	1949	2587	16508	2130	1227	1141	1002	925	872	810	7.51	701	729	754	859	962	
543	4615	4535	4385	4151	3827	3416	2934	2407	18-2	1640	3659	10800	1797	949	812	756	722	739	698	665	664	706	755	779	782	
539	4468	4222	3896	3492	3020	2500	191	1685	15	1527	5999	7912	1767	932	682	671	644	764	770	723	680	700	725	718	740	
D Vere	ion 1919	1	0000	2625	2444	geet.	0050	4075	4.675	24.46	7705	C4 AE	1755	040	606	500	555	200	796	794	200	640	.00.1	750	750	
	522 991 81 805 646 468 295 310 341 808 851 643 643 643 643	522  2495    991  2904    181  3264    197  3288    107  3288    108  3376    108  3375    104  4148    101  4655    101  4655    130  4655    141  4711    1308  4222    151  3301    144  3684    1255  4261    134  3681    143  4615    144  4615	22  2495  2372    290  2904  2761    281  3264  3223    997  3288  3495    305  3095  3253    306  3095  3253    306  3376  3172    408  3355  3203    309  4148  3099    310  4655  4463    401  4711  4541    308  4222  4105    310  3684  3707    321  3064  3704    325  3261  3705    326  4261  4263    327  3684  3707    328  4264  3684    3404  5684  3707	522  2495  2372  2270    522  2495  2371  2609    191  2904  2761  2609    181  3264  3223  3075    197  3298  3495  3553    197  3298  3495  3563    196  3376  3172  3040    168  3376  3172  3040    168  3376  3172  3041    168  3553  3203  3014    168  3455  3203  3014    168  3456  4463  4238    160  4554  4632  4339    161  4511  4541  4332    162  4201  3252  3139    154  3601  3252  3139    154  3641  3707  3179    153  4261  4269  4241    154  4535  4355    154  4615	222  2495  2372  2270  2495    2904  2761  2609  2487    281  3204  2223  3075  2893    297  3288  3495  3553  3435    290  3076  3553  3597  3692    305  3025  3553  3597  3692    466  3376  3172  3040  3499    468  3376  3172  3040  3499    4148  3099  3759  3516  3195    410  411  4541  4332  4095    410  4541  4332  4095  3164    411  4541  4332  4095  3164    411  4541  4332  4095  3162    411  4541  4332  4095  3164    411  4541  4334  4095  3164    411  4545  4241  4114    412  <	522  2405  2372  2270  2165  2100    901  2904  2761  2609  2487  2399    181  3264  3223  3075  2883  2720    907  3288  3495  3553  3435  3201    905  3095  3253  3697  3802  3774    506  3095  3253  3697  3802  3774    506  3075  3172  3040  3469  3806    608  3355  3203  3014  2793  3083    610  4656  4463  4238  3955  3709    611  4711  4541  4332  4095  3842    612  301  3223  3159  3063  3646    613  4221  4105  4952  3063  3646    614  4214  4332  4095  3646  3646    614  3614  3624  3641	322  2495  2372  2270  2485  2100  2003    991  2904  2761  2609  2487  2399  2325    181  3204  2223  3075  2883  2720  2161    907  3288  3495  3553  3435  3201  2974    907  3288  3495  3553  3435  3201  2974    905  3253  3597  3802  3774  3527    905  3253  3697  3602  3774  3527    906  3376  3172  3040  3489  3695  3703    908  3355  3203  3014  2793  3083  3452    907  4463  4238  4995  3709  3416    910  4654  4332  4095  3642  3574    911  4541  4332  4095  3643  3614    912  4165  3637  3780	522  2405  2372  2270  2185  2100  2033  1886    991  2904  2761  2609  2487  2399  2325  2242    181  3264  3223  3075  2983  2720  2161  2651    997  3288  3495  3553  3435  3201  2974  2839    905  3095  3253  3597  3080  3774  3527  3289    906  3076  3172  3040  3469  3606  3873  3651    908  3375  3014  2793  3083  3452  3562    905  4148  3969 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3040  3469  3066  3873  3651  3266  3165    468  3355  3203  3014  2793  3083  3452  3261  3266  3166    416  4664  4238  3969  3709  3111  2804  2498    411  4114  4332  4095  3642  3617  3111  2809	522  2495  2372  2270  2185  2100  2003  1896  1749  1549  1422    991  2904  2761  2609  2487  2399  2325  2242  2137  2007  1855    181  3204  2223  3075  2883  2720  2617  2651  2485  2394  2272    907  3288  3495  3563  3435  3201  2974  2834  2769  2720  2645    3005  3253  3597  3802  3774  3527  3288  2960  2930    466  3376  3172  3040  3469  3606  3673  3651  308  2960  2930    4188  3969  3759  3516  3249  2970  3023  2964  2847    410  4654  4238  4995  3769  3415  3111  2804  2498  2500    411  4114  4332	522  2405  2372  2270  2185  2100  2003  1866  1749  1541  1422  1237    901  2904  2761  2609  2487  2999  2325  2442  2137  2007  1855  1683    181  3264  3223  3075  2883  2720  2617  2551  2485  2394  2272  2133    907  3288  3495  3553  3435  3201  2974  2834  2769  2702  2645  2500    3055  3263  3567  3697  3774  3527  3229  3038  2960  2930  2869    466  3376  3172  3040  3469  3063  3651  3366  3165  3064  3074    418  3969  3759  3616  3629  3626  3616  3111  2608  3062  3642    4161  4164  4332  4055  3676  3316	Nor-each  Topol-abor  Topol-abo	1704-66  700-80	522  2495  2372  2270  2185  2100  2003  1886  1749  1591  1422  1237  1118  954  1475    991  2904  2761  2609  2487  2399  2325  2422  2137  2007  1855  1683  1634  1265  1093    181  3264  2323  3075  2883  2702  2617  2665  2492  2123  1947  1843  1866    907  3288  3495  3553  3435  201  2974  2834  2769  2720  2645  2530  2377  2196  2639    3005  3025  3597  3020  3774  3527  3289  2080  2990  2990  2990  2975  2639  5637    4065  3172  3040  3469  3605  3671  3681  3061  3074  3078  3069  373  3289    416  4168  423	1704-66  700-60  700-50	1700-460  7700-80  <	1000000000000000000000000000000000000	1700-660  7000-80  1110  9540  1040	verse  verse <th< td=""><td>1794-80  1796-80  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## Sample Calculation of Dilution Factor at Eastern Property Line

## Distance to Property Line 20 feet (6.1meters)

											UTM	East [m]										
	10480		0500	70	0520	70	B540		0560	706	580		0600	70	0620	70	0640	70	0660	70	0680	70
75	2883	2720	2617	2551	2485	2394	2272	2123	1947	1843	1866	4733	1074	783	875	945	1030	1158	1277	1053	1250	1109
53	3435	3201	2974	2834	2769	·2720	2645	2530	2377	2196	2639	2042	1181	<b>.</b> 845	926	1012	·1144	1324	2831	1693	1368	1066
07197	3802	3774	3527	3229	3038	2960	2930	2869	2752	2629	5637	1955	1055	911	1003	1138	1297	1392	1764	1640	1300	958
40	3469	3806	3873	3651	3366	3165	3084	3074	3013	3010	3514	1926	1124	1040	1148	1255	1415	1651	1711	1545	1179	1049
mps/74	2793	3083	3452	3526	3381	3206	3073	3078	3069	3373	3289	1568	1133	1168	1487	1386	1522	1553	1545	1407	1179	1003
59	3516	3249	2975	2870	3023	2964	2847	3144	2847	3600	2653	1361	1177	1104	1310	1390	1394	1370	1345	1372	1093	858
17.038	3985	3709	3415	3111	2804	2408	2590	2422	3075	3008	2021	1148	1038	1193	1254	1239	1197	1246	12 20	perty L feet fro canopy	ine om edge	842
32	4095	3842	3572	3270	2939	2589	2220	1833	1664	2522	1403	1141	1011	1083	1060	1106	1122	1113	1102	1141	1070	1189
ness/21	3780	3576	3338	° <sup>1</sup> 3059	2737	2380	2002	1690	1567 g	4891	1395	1110	960	<b>.</b> 936	973	1001	1054	1094	1110	1148	1308	1446
39	3062	3068	3016	2904	2744	2493	2152	1750	1970	17617	1373	1104	956	918	950	987	991	968	1057	1237	1418	1590
19	3712	3663	3521	3310	3000	2599	2148	1976	3308	5333	1321	1076	1045	992	970	979 Dilution	948	884	971	1128	1278	1414
41		3988	3729	3371	2929	2439	1949	2587	16508	2130	1227	1141	1002	925		Odor Ini		1,640			859	962
0759/74	4151	3827	3416	2934	2407	1870	1640	3659	10800	1797	949	812	756	722	739			1.08			779	782
96	3492	3020	2500	1961	1685	1501	1527	5999	7912	1767	932	682	671	644	764	·770	723	680	700	725	718	740
- <												10										

### Summary of Results and Recommended Mitigation

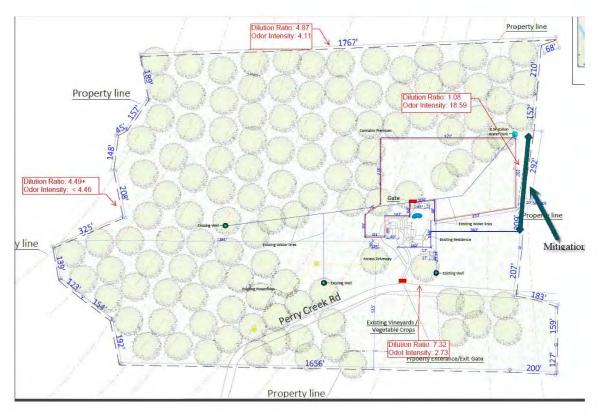


Figure 8 Overview of Greenhouses Used in the Odor Neutralizer Assessment

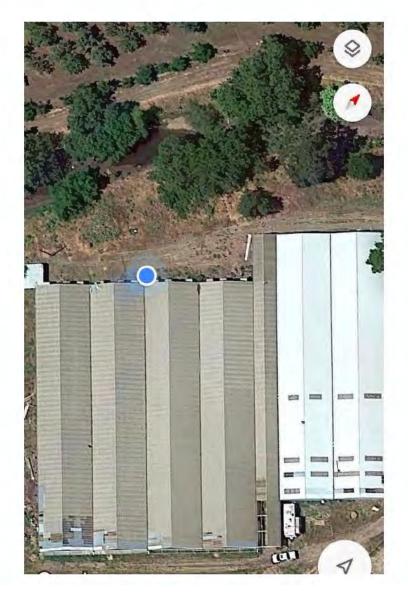


Figure 9 Interior of Greenhouses Used in the Odor Neutralizer Assessment





Figure 10 Details of Odor Control Misting Nozzles



#### Figure 11 Field Measurements of Odor Intensity Using Nasal Ranger Oct 1-3, 2019



Description of Odor Mitigation System

Approximately 350 feet along the Eastern portion of the property require odor mitigation. This was shown in Figure 7.

There are two option for mitigating odors:

- 1. Use a misting system that sprays the odor neutralizer across the property line.
- 2. Use a fan that blows the neutralizer across and towards the canopy.

Information about these systems is attached.

Given the relatively small portion of the property that requires mitigation, the fan based mitigation is recommended. Three to six fans would be mounted along the Eastern portion of the property line. The amount of neutralizer that would be dispensed is adjusted to ensure that odors are neutralized. The effectiveness of the system will be confirmed by measuring the odor intensity using the Nasal Ranger olfactometer.

# Sample Misting Systems that Spray Odor Neutralizer Mixed with Water

CCUP21-0002 Harde Odor Study Exhibit H

24-0275 F 27 of 88

Misting System by NCM

http://www.ncmodorcontrol.com/



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Commercially Available Odor Neutralizer



#### **Odor Control Concentrate**



CCUP21-0002 Harde Odor Study Exhibit H

24-0275 F 31 of 88

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With precision control and variable output (0-10 oz/min), the Micro-Jet DM can handle both oil- or water-based solutions. It is easily calibrated in the field to accommodate differences in solution viscosity and density. Application sites include waste treatment plants, paper mills, parks, warehouses, and food storage centers.

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with controlled flow and particle size.

Motor 1 Hp., 120VAC 50/60Hz, 8.0 amp. Optional: 240VAC, 4.0 amp **Fogging Nozzle** High-shear, vortex design nozzle Particle Size 7-30 micron VMD, adjustable Chemicals Water- and oil-based solutions 0-10 oz/min [0-300 ml/min], adjustable **Liquid Flow Rate** Nine-turn vernier control valve, memory lock Capacity Mounts to chemical drum (not included) Power head, drum adapter - aluminum Tubing - fuel and oil resistant vinyl Materials of Control valve - glass filled nylon, stainless stem, Viton® seal Construction Fittings - brass Nozzle - Celcon H x L x Dia: 15.4 x 12.5 x 8.6 in [39 x 32 x 22 cm] Dimensions **Shipping Weight** 12 pounds

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### We Are:



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All GOC products are completely biodegradable

## A

GOC does not neutralize or mask odors: rather, we utilize chemical decomposition, addition, PH, and ionic reaction for the reduction and elimination of odor production.

# ø

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Odor Assessment Report

Bosarge Environmental, LLC

October 1 to 3, 2019



November 1, 2019

Fulcrum Enterprises, LLC 390 Main Street Great Barrington, MA 01239

RE: Odor Assessment Study

#### Introduction

Fulcrum Enterprises, LLC, (Fulcrum) retained Bosarge Environmental, LLC, as a third-party Odor Expert, to analyze the cannabis odor impact of a facility in California that is similar to a project Fulcrum is proposing for approval in Great Barrington, MA. The California facility is much older, but very similar in building size and plant production, of the proposed new facility. The Fulcrum design incorporates the same measures for odor control as the California facility. Fulcrum plans to present this odor study of an existing operational facility as a model for permitting the new facility.

Ms. Melanie Bosarge conducted ambient odor surveys the three days of October 1- 3, 2019. This time frame was selected because the operation was in full flowering stage. During this period, the greenhouses would have a crop of fully formed flowering cannabis plants at the stage when terpene odor is the greatest, creating a "worst-case-scenario" of odor for the facility.

Ms. Bosarge is a Chemical Engineer and Owner/Manager of Bosarge Environmental, LLC. She has represented St. Croix Sensory (St. Croix) as a certified instructor and provided client training and odor assessment services, as an independent contractor, since 2002. For more than thirty-five (35) years, St. Croix has been assisting facility owners, consulting engineering firms, and regulatory agencies to quantify odors from a variety of industrial, agricultural, and municipal operations, including wastewater treatment, landfills, composting, and manufacturing in both field and laboratory settings. St. Croix manufactures and markets state-of-the-art odor sampling and measurement equipment, including the Nasal Ranger Olfactometer. St. Croix's "ODOR SCHOOL"® is an internationally recognized program to prepare inspectors to conduct field evaluations of ambient odors.

# **Ambient Odor Assessment Methodology**

Odor surveys were conducted using a newly calibrated Nasal Ranger field olfactometer to quantify odor strength when odor was noticed at each monitoring location. The Calibration Certificate appears in the Appendix as *Exhibit 1*. Prior to odor observations, an inspector breathes through carbon cartridges for approximately one minute to "zero" nose to 100%. Upon arrival at each separate location, ambient odor is assessed with the "naked nose". If no odor is detected, the current time and "non-detected" (ND) is recorded. If an odor is detected, a reading is then taken with Nasal Ranger Olfactometer.

Using the Nasal Ranger, odor strength is measured as dilution ratios, reported as Dilution-to-Threshold (D/T) values. The Nasal Ranger Dilution-to-Threshold odor measurement is an "instantaneous" measurement, which is a recognition threshold. For example, a 4-D/T is the dilution ratio of 4-volumes of carbon filtered odor free air mixed with one-volume of ambient (odorous) air that makes the ambient odorous air "just-barely-recognizable" as an odor.

The D/T dilution ratio steps of the Nasal Ranger olfactometer used for the odor surveys were 2, 4, 7, 15, 30, and 60. If an odor is detected with the "naked nose" at a location, a measurement is taken with the Nasal Ranger. An odor in the air that is not measured at the 2-D/T dilution ratio is reported as less than 2-D/T (<2). The absence of ambient odor is reported as "non-detected" (ND).

*Figure 1 – Nasal Ranger Olfactometer* is a photograph taken during an odor survey at a cannabis growing operation in Colorado.

Figure No. 1 – Nasal Ranger Olfactometer



# **Building and Odor Control Specifications**

NCM Environmental Solutions (NCM) constructed the odor neutralizing mist system for the California facility and currently provides the odor neutralizing agent and ongoing maintenance of the system. The California facility is much older, but very similar in building size and plant production, of the proposed new Fulcrum facility. Fulcrum plans to incorporate the same measures for odor control as the California facility. Consequently, one of the objectives of this odor study was to evaluate the efficiency of the exhaust and odor neutralizing system.

The cannabis growing area is made up of seven (7) greenhouses, two hundred (200) feet in length and forty-two (42) feet in width. Each greenhouse has three (3) rows of four hundred (400) plants, totaling twelve hundred (1,200) plants per greenhouse. The greenhouses have multiple holes on the siding and roof, as shown in pictures in *Exhibit 2*.

NCM system specifications include an electric 1 HP system with a 1.75 GPM high pressure atomizing pump, operating at 800 PSI. During the odor study, the chemical injection pump was not automated. It was adjusted by hand using two knobs, as shown in photographs in *Exhibit 2*.

The exhaust vents are fifty-five inches, square shaped, and powered by a 1-HP motor. Each exhaust vent has three (3) NCM 1.9 GPH nozzles. The nozzles are located on the exhaust vents, centered and positioned in a straight line. The California facility maintains the odor neutralizer injection pump at their preferred setting of 1000:1 dilution ratio. This set dilution ratio achieves the level of odor control needed and works within operations budget. Growers have determined that the facility has low levels of cannabis odors without the system on; therefore, the 1000:1 dilution ratio is sufficient for that site.

# **Odor Survey – Introduction and Mapping**

Upon arrival at the facility on the afternoon of October 1, 2019, Ms. Bosarge was taken on an extensive tour of the site. Each step of the odor control system was identified and explained. A plan of action was developed and coordinated. The first odor survey was performed to test the efficiency of the odor control system. After concluding the onsite test, Ms. Bosarge investigated the area within the security fence, and along accessible residential, commercial and agricultural areas throughout neighborhood. Meteorological conditions were recorded and several locations were mapped and designated as survey locations. No odors were detected past the perimeter of the property during this initial investigation.

After the initial tour and first round of controlled test measurements of the odor neutralizer, Ms. Bosarge continued independently to develop a monitoring plan and complete several additional surveys during the three-day odor assessment study. Sixteen (16) onsite locations within the fenced area of the property and twelve (12) locations in the surrounding community were designated and mapped by recording latitude and longitude coordinates at each location. Unique identification codes were assigned to each location. The onsite locations were designated as Locations A through P. The offsite locations were designated as Locations 1 through 12. The center point of the cannabis greenhouses was designated as Location X. Latitude and longitude coordinates for each location were entered into Odor Tracker software to produce Google Earth Maps of the areas within the property and the surrounding community.

*Table No. 1 Cannabis Facility Odor Monitoring Locations* lists the center of the cannabis facility as Location X, along with twenty-eight (28) ambient odor survey locations. The table specifies an identification number, the latitude and longitude coordinates for each location and whether each location is onsite or offsite.

Loc #		Name	Latitude	Longitude
1	Offsite			
2	Offsite			
з	Offsite			
4	Offsite			
5	Offsite			
6	Offsite			
7	Offsite	54		
8	Offsite			
9	Offsite			
10	Offsite			
11	Offsite			
12	Offsite	-		
A	Onsite	Test Area 6 Ft from Exhaust		
В	Onsite	Test Area 12 FT From Exhaust		
С	Onsite	Test Area 24 Ft From Exhaust		
D	Onsite	West Corner of Greenhouses		
E	Onsite	South Corner of Greenhouses		
F	Onsite	South Midpoint of Greenhouses		
G	Onsite	East Corner of Greenhouses		
н	Onsite	East Corner of Whse		
1	Onsite	East Midpoint of Whse		
1	Onsite	North Corner of Whse		
K	Onsite	North Corner of Greenhouses		
L	Onsite	North Center of Greenhouses		
м	Onsite	Front Gate To Froperty		
N	Onsite	Post by Dumpster		
0	Onsite	Post Behind House		
р	Onsite	On Hill Behind House		
х	Onsite	Reference Center of Facility		

Table 1 - Cannabis Facility Odor Monitoring Locations

*Figure No. 2 - Odor Inspection Locations Full View* identifies the center of the cannabis facility as Location X and each of the twenty-eight (28) monitoring locations on a Google Earth map. The offsite Locations 1 through 12 are featured in this figure.



Figure No. 2 - Odor Inspection Locations Full View (Google Earth Map)

*Figure No. 3 - Onsite Odor Inspection Locations* identifies the center of the cannabis facility as Location X, and each of the sixteen (16) onsite monitoring Locations A through P on a Google Earth map.



Figure No. 3 - Onsite Odor Inspection Locations (Google Earth Map)

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## **Odor Survey – Discussion**

Fourteen (14) ambient odor surveys were conducted during the three-day study. Seven (7) of the rounds were performed offsite, in the surrounding community, and seven (7) rounds were conducted onsite. Two (2) of the onsite rounds, referred to as Test Rounds, included locations on the side of the greenhouses where the odor control system is installed. The objective of these Test Rounds was to evaluate the efficiency of the exhaust and odor neutralizing system.

For the Test Rounds, Locations A, B and C were designated at points six feet, twelve feet and twenty-four feet away from the exhaust fan of the greenhouses with the most mature plants. The exhaust fan, when operational, was blowing from the greenhouses at approximately sixteen MPH. The Test Rounds were performed under different scenarios to test the efficiency of the exhaust and odor neutralizing system.

Five (5) additional odor surveys were conducted onsite, within the facility property over the three-day odor study. During each survey, the date, time, odor reading and meteorological conditions, including temperature, humidity, precipitation, sky conditions, wind speed and wind direction were recorded at each location. Each survey was recorded separately and odor survey data reports appear in the Appendix as *Exhibit 3*.

Approximately one hundred and sixty-eight (168) odor observations were recorded during the three-day study. During those days, seven offsite odor surveys were completed and seventy-nine (79) offsite observations were recorded. No cannabis odor was detected offsite at the property perimeter or in the community during those three days. The meteorological conditions, time of day and level of odor treatment varied between each offsite survey. Based on the results of the Odor Study, cannabis odor from the cultivation process does not leave the property.

During the same three-day timeframe, seven (7) onsite odor surveys were conducted and eightynine (89) onsite observations were recorded. No cannabis odor was detected during fifty-two (52) of those observations. Cannabis odor was detected at <2 D/T during twenty-three (23) observations and 2 D/T during nine (9) observations. Cannabis odor was detected at a level of 4 D/T during three (3) observations and 7 D/T during two (2) observations. During each observation of 4 D/T and 7D/T, the exhaust system had just been activated without odor neutralizer treatment, after cannabis odors had built up over night in the greenhouses. Those values returned to 2 D/T or less, within minutes after the greenhouses were properly vented and/or treated. These levels are extremely low for onsite operations.

Meteorological data and odor observation readings, from each Round, were loaded into the Odor Tracker software. *Exhibit 3* displays the results of each of the fourteen (14) Rounds. *Exhibit 4* contains several Maps that were created by the Odor Tracker Software, utilizing the entered data.

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## **Odor Rounds Summary**

# Test Round 1 - Onsite

On the first afternoon, Test Round 1 was conducted from approximately 2:45 PM until 3:30 PM. In *Exhibit 3*, the Round 1 Onsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 30%, and the temperature was 74 degrees F. The wind was moderate and blowing from the west northwest. Prior to the odor observations, the exhaust and odor neutralizer systems were turned off. Cannabis odors were allowed to accumulate within the greenhouses. At 2:45 PM, the ventilation and exhaust system was turned on, without engaging the mist system. Measurements were taken at the three locations A, B and C, as the exhaust fans were turned on, but with no water mist or odor neutralizer. A reading of 7 D/T was taken at Location A with the Nasal Ranger. Within two minutes, a reading of 4 D/T was taken at Location B. Within two more minutes, a reading of 2 D/T was taken at Location C. These readings are higher than normal, because of the accumulation of cannabis odors, with an outdoor temperature of 74 degrees F and without any consistent ventilation in the greenhouses.

The next test was performed with the exhaust fans on and water mist only. After the system was on for approximately five minutes, a reading of 4 D/T was taken at Location A. Within two minutes, a reading of 2 D/T was taken at Location B. Within two more minutes, a reading of <2 D/T was taken at Location C. The lower readings were due to a combination of additional venting time and the water mist.

The odor control system was fully operational for the third and fourth set of readings. Each survey was within five to eight minutes of each other and results were identical at Locations A, B and C. A reading of  $\leq 2$  D/T was taken at Locations A and B. At Location C, no odor was detected. From these test results, it appears that a fully operational odor control system lowers the odor intensity readings from 7 D/T to  $\leq 2$  D/T, at six to twelve feet from the greenhouse ventilation fan. At twenty-four feet, the odor intensity goes from 2 D/T to non-detected.

#### Round 2 - Onsite

Several more onsite locations were designated and observed that afternoon, during Round 2, from 3:36 PM until 4:11 PM. The sky was sunny with no precipitation. The humidity was 20%, and the temperature was 74 degrees F. The wind was moderate and blowing from the northwest. The odor control system was fully operational. Odor was observed at <2 D/T at Locations D, E and G. No odors were detected at Locations M or K.

#### Round 3 - Offsite

After the initial onsite investigation, several offsite locations were designated and observed during Round 3, from approximately 4:13 PM until 5:06 PM. In *Exhibit 3,* the Round 3 Offsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 19%, and the temperature was 74 degrees F. The wind was moderate and blowing from the west northwest. The odor control system was fully operational. No odors were detected.

#### Round 4 - Offsite

On the second day of the odor study, a few more offsite locations were designated and observed during Round 4, from approximately 9:56 PM until 10:30 PM. In *Exhibit 3*, the Round 4 Offsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 51%, and the temperature was 55 degrees F. The wind was calm and blowing from the north. The odor control system was not operational yet. No odors were detected.

#### Test Round 5 - Onsite

Several more onsite locations were designated and observed during Round 5, from approximately 11:00 AM until 11:45 AM. In *Exhibit 3*, the Round 5 Offsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 30 - 36%, and the temperature was 63 - 64 degrees F. The wind was light and variable. The odor control system had been during the night and had not been turned on yet. Odor was detected at a level of 2 D/T at Location O. At that moment, this location was downwind of greenhouses. Odor was detected at a level of <2 D/T at Locations A, B and F. No odors were detected at the other onsite locations.

#### Test Round 6 - Onsite

On the second day, Test Round 6 was conducted from approximately 11:40 AM until 12:24 PM. Additional onsite Locations L & K were incorporated into Test Round 6. In *Exhibit 3*, the Round 6 Onsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 30%, and the temperature was 64 degrees F. The wind was light and blowing from the north. Prior to the odor observations, the exhaust and odor neutralizer systems were still turned off. Cannabis odors were accumulating within the greenhouses, but appeared to be staying within the greenhouses. Readings were taken at Locations A and B at a level of <2 D/T. No odor was detected at Locations C or L. At approximately 11:45 PM, the ventilation and exhaust system was turned on, without engaging the mist system and allowed to vent for ten minutes. A reading of 2 D/T was taken at Locations A, B and C, within two minutes of each other. Within five to six more minutes, a reading of <2 D/T was taken at Locations L and K. These readings are higher than the first set of readings, because of the discharge of accumulated cannabis odors in the greenhouses.

The odor control system was fully operational during the next set of readings. The system was allowed to operate for fifteen minutes before odor was measured. A reading of <2 D/T was taken at Locations A, B and C. At Locations L and K, no odor was detected. From these test results, it appears that a fully operational odor control system, operated for fifteen to twenty minutes, lowers the odor intensity readings to non-detectable up to <2 D/T, at six to twenty-four feet from the greenhouse perimeter.

#### Round 7 - Onsite

After Test Round 6, one more set of observations were taken onsite, from approximately 12:26 PM until 12:51 PM. In *Exhibit 3*, the Round 7 Onsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 25%, and the temperature was 70 degrees F. The wind was light and blowing from the north. The odor control system was fully operational for approximately twenty to forty-five minutes. No odors were detected. This onsite round indicates that under the circumstances stated above, the odor control system, when operated consistently for less than one hour, reduces all onsite cannabis odor to zero.

#### Round 8 – Offsite

Offsite locations were observed during Round 4, from approximately 12:58 PM until 1:28 PM. In *Exhibit 3*, the Round 8 Offsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 24%, and the temperature was 72 degrees F. The wind was light and blowing from the north. The odor control system was fully operational. No odors were detected.

#### Round 9 - Offsite

Offsite locations were observed during Round 9, from approximately 6:09 PM until 6:34 PM. In *Exhibit 3*, the Round 9 Offsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 21%, and the temperature was 72 degrees F. The wind was moderate and blowing from the south southwest. The odor control system was not fully operational. The ventilation and exhaust system were operating; however, due to an issue with a pump, the odor neutralizer was not being used. No odors were detected.

#### Round 10 – Offsite

On the third day of the odor study, offsite locations were observed during Round 10, from approximately 9:42 AM until 10:09 AM. In *Exhibit 3*, the Round 10 Offsite Data Sheet displays the test data. The sky was mostly cloudy and foggy. The humidity was 51%, and the temperature was 59 degrees F. The wind was moderate and blowing from the south. The ventilation exhaust and odor control system were not in operation. No odors were detected.

# Round 11 – Onsite

The next round was conducted from approximately 10:11 AM until 10:35 AM. In *Exhibit 3*, the Round 11 Onsite Data Sheet displays the test data. The sky was partly cloudy with no precipitation. The humidity was 37%, and the temperature was 60 degrees F. The wind was light and blowing from the north. Prior to the odor observations, the exhaust and odor neutralizer systems were still turned off. Cannabis odors had been accumulating within the greenhouses overnight.

At approximately 10:29 AM, the ventilation and exhaust system turned on automatically, because it was set to activate based on temperature in the greenhouses. The readings prior to the system coming on were relatively low. Readings at Locations J, O and K were <2 D/T. No odor was detected at any other locations before the system engaged. Once the ventilation and exhaust system turned on, a reading of 7 D/T was taken at Location A. A reading of 4 D/T was taken at Location B. A reading of 2 D/T was taken at Locations C and L. These readings are high and consistent with values obtained in Test Round 1, on the first day of the odor study, when the exhaust system was turned on, without the odor neutralizer. The elevated values are because of the discharge of accumulated cannabis odors in the greenhouses.

# Round 12 - Onsite

After Round 11, one more set of observations were taken onsite, from approximately 11:20 AM until 11:50 AM. In *Exhibit 3*, the Round 12 Onsite Data Sheet displays the test data. The sky was partly cloudy with no precipitation. The humidity was 28%, and the temperature was 67 degrees F. The wind was light and blowing from the north. The ventilation and exhaust system had been operational for approximately fifty minutes to one hour and twenty minutes. The odor neutralizing system was still down because of the pump malfunction. Odors were detected at a level of 2 D/T at Location A. Odor was detected at a level of <2 D/T at Locations B, C, L and K. No odors were detected at any other locations. This onsite round indicates that under the circumstances stated above, the ventilation and exhaust system operating alone reduces the odor level onsite to a level of 2 D/T or less, when operated consistently.

#### Round 13 – Offsite

Offsite locations were observed during Round 13, from approximately 12:00 PM until 12:20 PM. In *Exhibit 3*, the Round 13 Offsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 26%, and the temperature was 68 degrees F. The wind was light and blowing from the north. The odor control system was not fully operational. The ventilation and exhaust system were operating; however, due to an issue with a pump, the odor neutralizer was not being used. No odors were detected.

# Round 14 - Offsite

Offsite locations were observed during Round 14, from approximately 3:40 PM until 4:10 PM. In *Exhibit 3*, the Round 14 Offsite Data Sheet displays the test data. The sky was mostly sunny with no precipitation. The humidity was 16%, and the temperature was 77 degrees F. The wind was moderate and blowing from the south southeast. The odor control system was not fully operational. The ventilation and exhaust system were operating; however, due to an issue with a pump, the odor neutralizer was not being used. No odors were detected.

#### **Odor Survey Conclusions**

No odors were detected at any of the designated locations throughout the California Community, during the three-day Odor Study. Seven (7) offsite surveys were conducted under three different operational conditions including 1) ventilation fan exhaust and odor neutralizer treatment 2) ventilation fan exhaust and no odor neutralizer treatment and 3) no ventilation fan exhaust and no odor neutralizer treatment. Based on these findings, this facility or one similar in size, construction, cultivation and basic odor control measures, should not adversely affect the surrounding community, even in times when odor control equipment is out-of-service for maintenance or not working properly.

In each case of onsite odor detection, where proper ventilation, exhaust and odor neutralizer treatment was in place, the odor was faint and intermittent at each location where <2 D/T was recorded. These locations were along the exhaust side of the greenhouses and either next to the greenhouses or directly downwind of the exhaust fans. This value indicates a barely discernible odor with the "naked nose", but under the threshold to be considered a recognizable odor with the Nasal Ranger Olfactometer on the lowest setting of 2-D/T.

Based on the findings in this Odor Study, Bosarge Environmental, LLC, concludes that "no discernible cannabis odor" was detected outside of this facility and is barely recognizable within 25 to 100 feet of the greenhouses. Consequently, this cannabis operation or one similar in size, construction, cultivation and odor control measures, should not adversely affect the surrounding community.

Submitted by,

Melanie Bosarge

Melanie Bosarge Bosarge Environmental, LLC

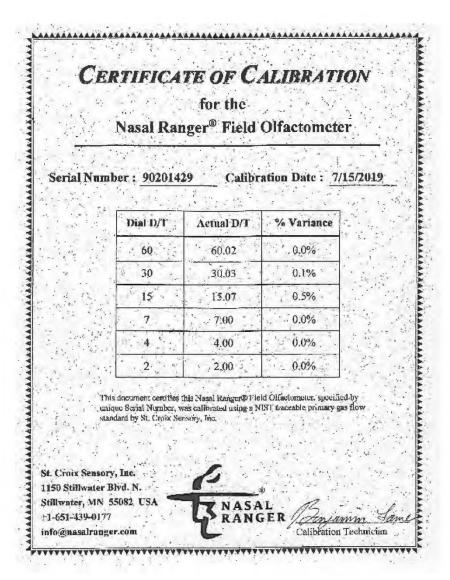
# APPENDIX

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# EXHIBIT 1

Nasal Ranger Olfactometer Calibration Certificate

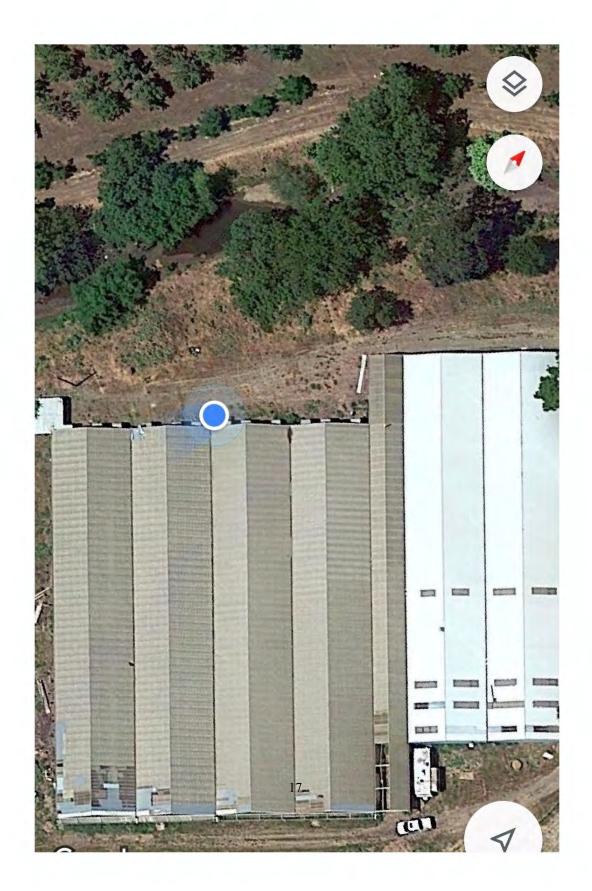
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# Exhibit 2

Photographs from the California Property

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# Exhibit 3

**Onsite and Offsite Odor Survey Data Sheets** 

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ROUND 1	- ONSITE
10/1/19	2-50 PM - 3-26 PM

Date	Loc #	Location	р/т	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
			1.1				mph	F	%	InHg
10/1/2019 15:26	с	Test Area 24 Ft From Exhaust	ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:24	в	Test Area 12 FT From Exhaust	Q	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:22	A	Test Area 6 Ft from Exhaust	Q	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:20	с	Test Area 24 Ft From Exhaust	ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:17	в	Test Area 12 FT From Exhaust	2	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:14	A	Test Area 6 Ft from Exhaust	2	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:06	c	Test Area 24 Ft From Exhaust	2	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:04	в	Test Area 12 FT From Exhaust	2	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 15:02	A	Test Area 6 Ft from Exhaust	4	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 14:54	c	Test Area 24 Ft From Exhaust	2	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 14:52	в	Test Area 12 FT From Exhaust	4	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92
10/1/2019 14:50	A	Test Area 6 Ft from Exhaust	7	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	30	29.92

ROUND 2 - ONSITE 10/1/19 3:36 PM - 4:11 PM

Date	Loc #	Location	<b>D/T</b>	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
	1						mph	F	%	InHg
10/1/2019 16:11	м	Front Gate To Property	ND	Mostly Sunny	None	NW	Moderate Wind (5-15 mph)	74	20	29.95
10/1/2019 15:53	E	South Corner of Greenhouses	Q	Mostly Sunny	None	NW	Moderate Wind (5-15 mph)	74	20	29.95
10/1/2019 15:49	G	East Corner of Greenhouses	2	Mostly Sunny	None	NW	Moderate Wind (5-15 mph)	74	20	29.95
10/1/2019 15:44	к	North Corner of Greenhouses	ND	Mostly Sunny	None	NW	Moderate Wind (5-15 mph)	74	20	29.95
10/1/2019 15:36	D	West Corner of Greenhouses	2	Mostly Sunny	None	NW	Moderate Wind (5-15 mph)	74	20	29.95

ROUND 3 - OFFSITE 10/1/19 4:13 PM - 5:06 PM

Date	Loc #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
	1					1	mph	F	96	InHg
10/1/2019 17:06	6		ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mpn)	74	19	29.94
10/1/2019 17:02	10		ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mpt)	74	19	29.94
10/1/2019 16:59	11		ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	19	29.94
10/1/2019 16:56	12		ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	19	29.94
10/1/2019 16:24	9		ND	Musliy Sunny	None	WNW	Moderate Wind (5-15 mpn)	74	19	29.94
10/1/2019 16:20	8		ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mph)	74	19	29.94
10/1/2019 16:13	1		ND	Mostly Sunny	None	WNW	Moderate Wind (5-15 mpt)	74	19	29.94

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ROUND 4	- OFFSITE
10/2/19	9:56 AM - 10:30 AM

Date	Loc #	Location	ד/מ	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
	1.1					1. 1. 1. 1.	mph	F	%	InHg
10/2/2019 10:30	1		ND	Mostly Sunny	None	N	Caim (<1 mph)	55	51	30.07
10/2/2019 10:28	2		ND	Mostly Sunny	None	N	Caim (<1 mph)	55	51	30.07
10/2/2019 10:24	3		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 10:21	6		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 10:19	4		ND	Musliy Sunny	None	N	Caim (<1 mph)	55	51	30.07
10/2/2019 10:17	5		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 10:15	7		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 10:12	8		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 10:08	9		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 10:04	10		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 10:00	11		ND	Mostly Sunny	None	N	Calm (<1 mph)	55	51	30.07
10/2/2019 9:56	12		ND	Mostly Sunny	None	N	Caim (<1 mph)	55	51	30.07

Date	Loc #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
							mph	F	96	InHg
10/2/2019 11:45	L	North Center of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:43	с	Test Area 24 Ft From Exhaust	ND	Mostly	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:42		Test Area 12 FT From Exhaust	Q	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:40	A	Test Area 6 Ft from Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:38	D	West Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:36	0	Post Behind House	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:33	Р	On Hill Behind House	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:31	N	Post by Dumpster	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:27	E	South Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:26	F.	South Midpoint of Greenhouses	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:24	G	East Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:22	н	East Corner of Whse	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:20		East Midpoint of Whse	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:18	à	North Corner of Whse	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:15	ĸ	North Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:00	M	Front Gate To Property	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05

ROUND 5 - ONSITE

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ROUND 6	- ONSITE
10/2/19	11:40 AM - 12:24 PM

Date	Loc #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
							mph	F	%	InHg
10/2/2019 12:24	A	Test Area 6 Ft from Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 12:23	в	Test Area 12 FT From Exhaust	<2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 12:22	с	Test Area 24 Ft From Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 12:21	L	North Center of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 12:19	ĸ	North Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 12:05	K	North Corner of Greenhouses	Q	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 12:05	к	North Corner of Greenhouses	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 12:04	L	North Center of Greenhouses	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:59	c	Test Area 24 Ft From Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:57	в	Test Area 12 FT From Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:55	A	Test Area 6 Ft from Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:45	ι	North Center of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	63	36	30.05
10/2/2019 11:43	с	Test Area 24 Ft From Exhaust	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:42	в	Test Area 12 FT From Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05
10/2/2019 11:40	A	Test Area 6 Pt from Exhaust	2	Mostly Sunny	None	N	Light Breeze (1-5 mph)	64	30	30.05

ROUND 7	- ONSITE
10/2/19	12:26 PM - 12:51 PM

Date	Loc #	Location	р/т	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
		-	3,10				mph	F	%	InHg
10/2/2019 12:51	E	South Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:50	F	South Midpoint of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:48	G	East Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:47	н	East Corner of Whse	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:46	1	East Midpoint of Whse	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:44	N	Post by Dumpster	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:43	M	Front Gate To Property	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:42	P	On Hill Behind House	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:41	0	Post Behind House	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:40	1	North Corner of Whse	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:33	к	North Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:30	ι	North Center of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03
10/2/2019 12:26	D	West Corner of Greenhouses	ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	70	25	30.03

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ROUND 8	- OFFSITE
10/2/19	12:58 PM - 1:28 PM

Date	Loc #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
						1.1	mph	F	%	InHg
10/2/2019 13:28	11		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:25	12		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:21	10		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:19	8		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:18	9		ND	Musuly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:16	7		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:14	6		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:12	5		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:10	4		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:06	3		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 13:04	2		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02
10/2/2019 12:58	1		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	72	24	30.02

ROUND 9	- OFFSITE	
10/2/19	6:09 PM - 6:34 PM	

Date	Loc #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Тетр	Humidity	Pressure
	1.11					· ·	mph	F	%	InHg
10/2/2019 18:34	12		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mpn)	72	21	29.95
10/2/2019 18:31	11		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mpn)	72	21	29.95
10/2/2019 18:29	10		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mph)	72	21	29.95
10/2/2019 18:27	9		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mph)	72	21	29.95
10/2/2019 18:25	8		ND	Musliy Sunny	None	22M	Moderate Wind (5-15 mpn)	72	21	29.95
10/2/2019 18:22	7		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mpt)	72	21	29.95
10/2/2019 18:20	6		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mpt)	72	21	29.95
10/2/2019 18:18	5		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mph)	72	21	29.95
10/2/2019 18:16	4		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mpt)	72	21	29.95
10/2/2019 18:14	3		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mpt)	72	21	29.95
10/2/2019 19:12	2		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mph)	72	21	29.95
10/2/2019 18:09	1		ND	Mostly Sunny	None	SSW	Moderate Wind (5-15 mpt)	72	21	29.95

ROUND 1	0 - OFFSITE
10/3/19	9:42 AM - 10:09 AM

Date	Loc #	location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
					1.000	1	mph	F	%	InHg
10/3/2019 10:09	1		ND	Mostly Cloudy	Fog	5	Moderate Wind (5-15 mpn)	59	51	30.00
10/3/2019 10:08	2		ND	Mostly Cloudy	Fog	5	Moderate Wind (5-15 mpn)	59	51	30.30
10/3/2019 10:07	3		ND	Mostly Cloudy	Fog	s	Moderate Wind (5-15 mph)	59	51	30.00
10/3/2019 10:06	4		ND	Mostly Cloudy	Fog	s	Moderate Wind (5-15 mph)	59	51	30.00
10/3/2019 10:05	5		ND	Mustly Cloudy	Fog	2	Moderate Wind (5-15 mpn)	59	51	30.00
10/3/2019 10:04	6		ND	Mostly Cloudy	Fog	5	Moderate Wind (5-15 mph)	59	51	30.00
10/3/2019 9:56	12		ND	Mostly Cloudy	Fog	s	Moderate Wind (5-15 mps)	59	51	30.00
10/3/2019 9:54	11		ND	Mostly Cloudy	Fog	5	Moderate Wind (5-15 mph)	59	51	30.00
10/3/2019 9:50	10		ND	Mostly Cloudy	Fog	5	Moderate Wind (5-15 mpt)	59	51	30.00
10/3/2019 9:46	9		ND	Mostly	Fog	5	Moderate Wind (5-15 mpt)	59	51	30.00
10/3/2019 9:44			ND	Mostly Cloudy	Fog	5	Moderate Wind (5-15 mpt)	50	51	30.00
10/3/2019 9:42	7	14	ND	Mostly	Fog	5	Moderate Wind (5-15 mph)	59	51	30.00

ROUND 1	1 - ONSITE
10/3/19	10:11 AM - 10:35 AM

Date	LOC #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
							mph	F	%	InHg
10/3/2019 10:35	с	Test Area 24 Ft From Exhaust	2	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:34	B	Test Area 12 FT From Exhaust	4	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:33	A	Test Area 6 Ft from Exhaust	7	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:31	D	West Corner of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:29	ι	North Center of Greenhouses	2	Partiy Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:27	ĸ	North Corner of Greenhouses	Q	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:25	0	Post Behind House	Q	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:23	р	On Hill Behind House	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:21	1	North Comer of Whse	Q	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:19	1	East Midpoint of Whse	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:17	E	South Corner of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:16	F	South Midpoint of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:15	G	East Corner of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:14	н	East Corner of Whse	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:13	N	Post by Dumpster	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00
10/3/2019 10:11	м	Front Gate To Property	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	60	37	30.00

ROUND	12 - ONSITE	
10/3/19	11:20 AM - 11:50 AM	

Date	Loc #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
							mph	F	%	InHg
10/3/2019 11:50	м	Front Gate To Property	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:45	A	Test Area 6 Ft from Exhaust	2	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:44	в	Test Area 12 FT From Exhaust	Q	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:43	c	Test Area 24 Ft From Exhaust	Q	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:41	D	West Corner of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:39	ι	North Center of Greenhouses	Q	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:38	к	North Comer of Greenhouses	Q	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:35	P	On Hill Behind House	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:34	0	Post Behind House	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:32	a	North Comer of Whse	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:29	N	Post by Dumpster	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:27		East Midpoint of Whse	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:25	н	East Corner of Whse	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:23	G	East Corner of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:21	F	South Midpoint of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99
10/3/2019 11:20	E	South Corner of Greenhouses	ND	Partly Cloudy	None	N	Light Breeze (1-5 mph)	67	28	29.99

ROUND 13 - OFFSITE
10/3/19 12:00 PN - 12:20 PM

Date	Loc #	Location	р/т	Weather Condition	Precip	Wind Direction	Wind Speed	Temp	Humidity	Pressure
	1.1						mph	F	%	InHg
10/3/2019 12:20	12		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:18	11		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:15	10		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:12	9		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:10	8		ND	Musly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:08	7		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:06	6		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:05	5		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:04	4		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:03	3		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:02			ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98
10/3/2019 12:00	1		ND	Mostly Sunny	None	N	Light Breeze (1-5 mph)	68	26	29.98

40

ROUND 1	4 - OFFSITE
10/3/19	3:40 PM-4:10 PM

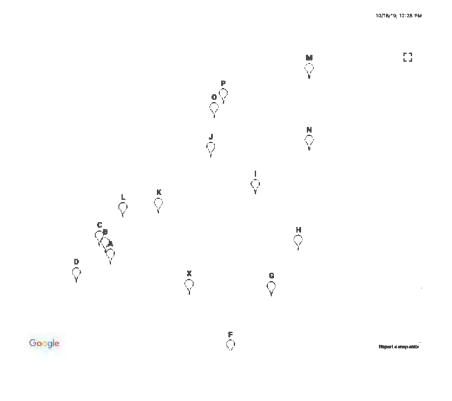
Date	Loc #	Location	D/T	Weather Condition	Precip	Wind Direction	Wind Speed	Тетр	Humidity	Pressure
							mph	F	%	InHg
10/3/2019 16:10	1		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mpn)	77	16	29.90
10/3/2019 16:08	2		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mpn)	77	16	29.90
10/3/2019 16:06	3		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mph)	77	16	29.90
10/3/2019 16:04	4		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mph)	77	16	29.90
10/3/2019 16:02	5		ND	Musliy Sunny	None	55E	Moderate Wind (5-15 mpn)	77	16	29.90
10/3/2019 16:00	6		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mpt)	77	16	29.90
10/3/2019 15:52	12		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mpt)	77	16	29.90
10/3/2019 15:50	11		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mph)	77	16	29.90
10/3/2019 15:48	10		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mpt)	77	16	29.90
10/3/2019 15:44	9		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mpt)	77	16	29.90
10/3/2010 15:42	8		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mph)	77	16	29.90
10/3/2019 15:40	7		ND	Mostly Sunny	None	SSE	Moderate Wind (5-15 mph)	77	16	29.90

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## Exhibit 4

**Onsite and Offsite Odor Data Maps** 

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http://www.odortrackr.com/LocationMap.aspa

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10/16/19, 12:29 PM



http://www.odortrackr.com/LocationMap.aspx

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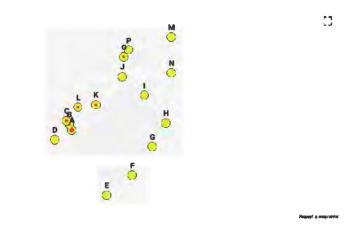


	Odo	TUTC	riteria (Eclipse Key)	Date Range: 10/1/2019 thru 10/3/2019	
Avg. Log 0.000		Avg.	Echpse Symbol	Description Full Sun	Any Time of Day Assessment Type: Inspection
0.001-0.301	<	2	۲	1/4 Eclipse	(DT)
0.301-0.845	>=	2	(10)	1/2 Eclipse	Include Non-Detect
0.846-	>=	7	٠	Full Eclipse	

tp://www.odortrackr.com/Report/ImspectionMep2.aspx

Page 1 of 1

10/16/18, 12:45 PW



0.000	= ND	(lac ay)	Full Sun	Date Range: 10/1/2019 thru 10/3/2019 Any Time of Day Assessment Type: Inspection
0.001-0.301	< 2		1/4 Eclipse	(DT)
0.301-0.845	>= 7	۲	1/2 Eclipse	Include Non-Detect
0.646-	>= 7	٠	Full Eclipse	

http://www.odortrackr.osov/Report/inspectionMap3\_aspx

Google

≫age 1 of 1

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CCUP21-0002 Harde Odor Study Exhibit H

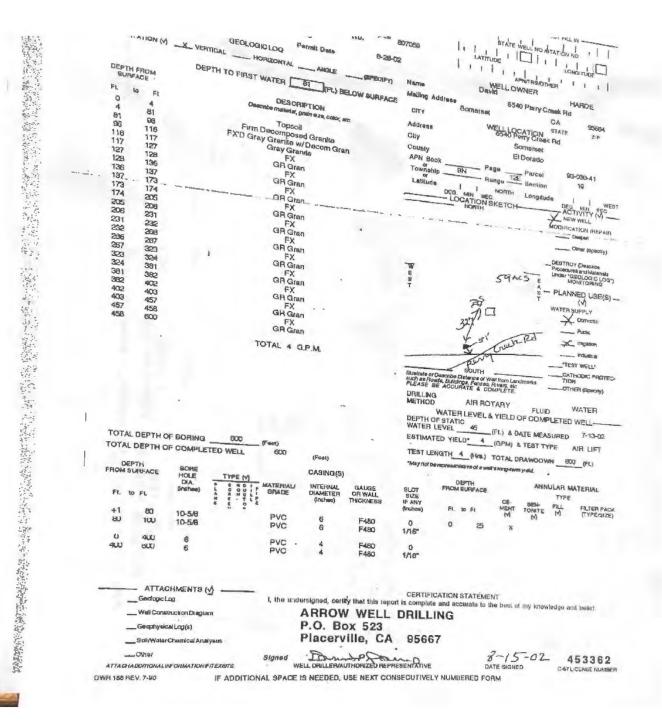
24-0275 F 81 of 88

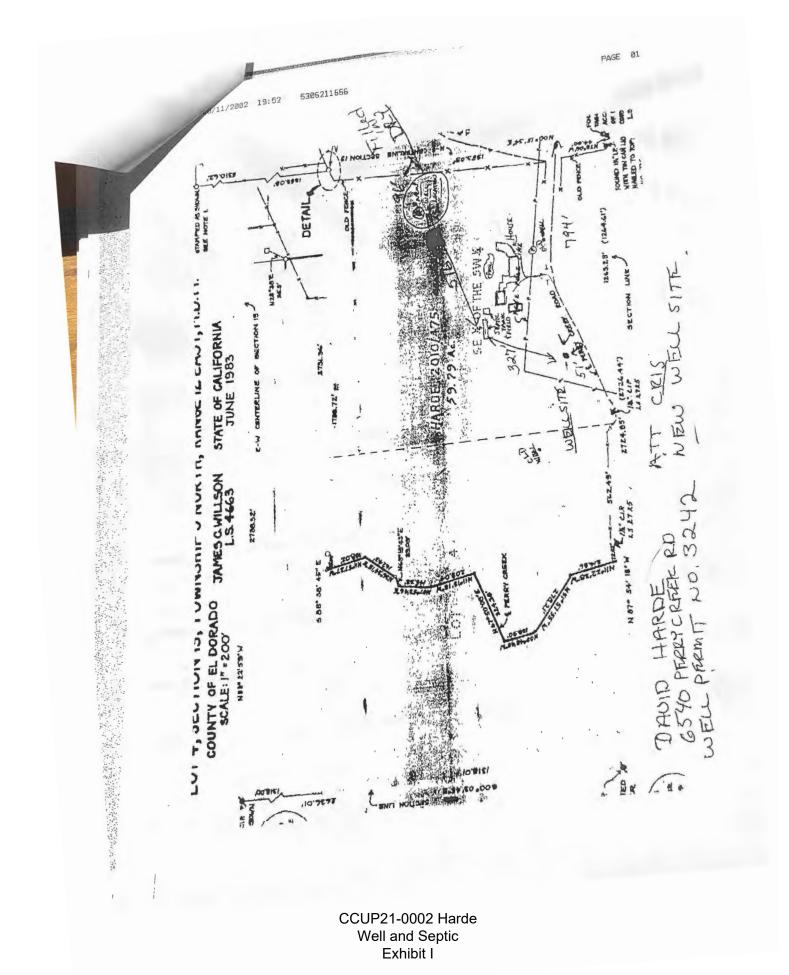


	Oder DT C	riteria (Eclipse Key)	Date Range: 10/1/2019 thru 10/3/2019	
Avg. Log 0.000	Avg. = ND	Echpse Symbol	Description Full Sun	Any Time of Day Assessment Type: Inspection
0.001-0.301	< 2	۲	1/4 Eclipse	(DT)
0.301-0.845	>= 2	1	1/2 Eclipse	Include Non-Detect
0.846-	>= 7	٠	Full Eclipse	

http://www.odortrackr.com/Report/InspectionMap2.aspx

Page 1 of 1





PC 58358 EL DORADO COUNTY DIVISION OF ENVIRONMENTAL HEALTEL DORADO COUNTY e Placerville, CA 95667 (916) <del>626-2411</del> 360 Fair Lane RECEIVED 621-5300 NOV 1.0 1988 COMMUNITY OTVILOPMENT REPORT OF WELL PRODUCTION DEPARTMENT AUTA D. Harde Owner of Property: Cuck 6540 Yerry Address of Owner: Vomerse. Location of Property: Ascessor's Parcel Number: 093-030-44 Builder: \*\*\*\*\*\*\*\*\* TO BE COMPLETED BY WELL DRILLER kesults of four (4) hour well production test: GPM Date Performed 10-10-8% Depth of well 220 Static water level ft. 11 'x 4" in. Diameter of well casing 48 × 6 220 + I HEREBY CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. flease complete poth sides of this form and returns in the exclosed onesign Test Performed by: State License Number: 37



------74-17 ~~· ~ JOB.

SHEET NO. CALCULATED BY\_

SCALE .

100 % REPAIR AREA

75:1

67.5

4120 94

=/12795

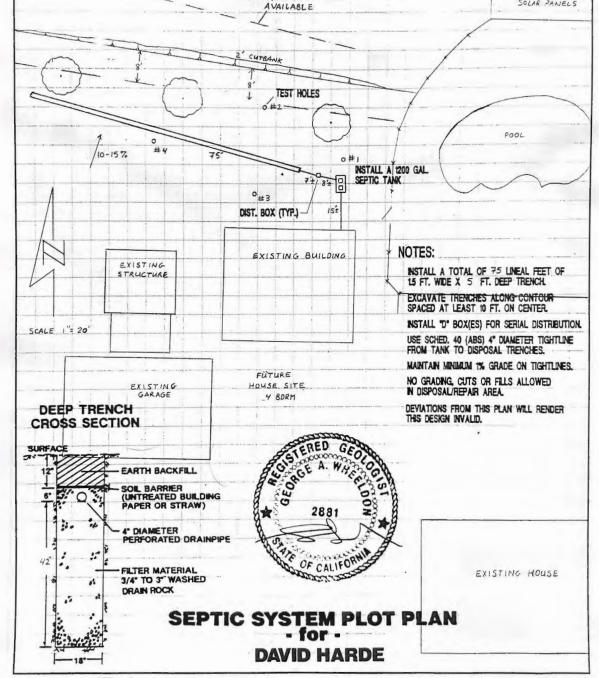
SOLAR PANELS

/" = 20'

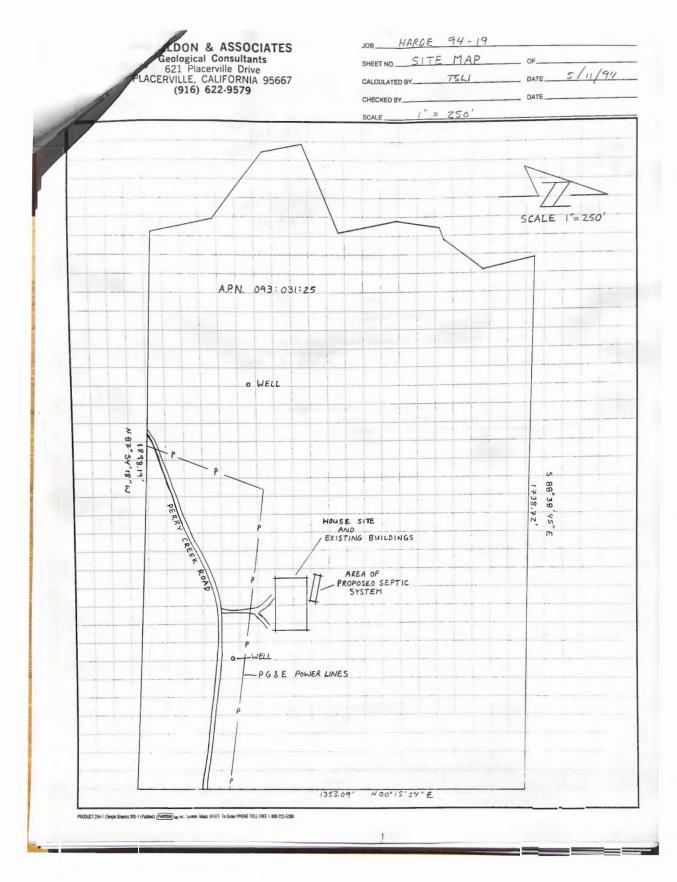
CHECKED BY.







PROBUCT 704-1 (Single Shares) 205-1 (Patcher) ARDER ( Inc. Groson, Hass. 01471. To Order PHONE TOLL FREE 1-800-225-4380



## CCUP21-0002/Harde Exhibit J - Security Plan

130.41.100.4.F.13 The security plan for the operation that includes adequate lighting, security video cameras with a minimum camera resolution of 1080 pixels and 360 degree coverage, alarm systems, and secure area for cannabis storage. The security plan shall include a requirement that there be at least 90 calendar days of surveillance video (that captures both inside and outside images) stored on an ongoing basis and made available to the County upon request. The County may require real-time access of the surveillance video for the Sheriff's Office. The video system for the security cameras must be located in a locked, tamper-proof compartment. *The security plan shall remain confidential.*