BILL EMLEN
Director

TERRY SCHMIDTBAUER
Assistant Director

MIKE YANKOVICH
Planning Services Manager

DEPARTMENT OF RESOURCE MANAGEMENT

SOLANO COUNTY

675 Texas Street, Suite 5500
Fairfield, CA 94533-6342
(707) 784-6765
Fax (707) 784-4805

www.solanocounty.com

Planning Services Division

Agenda Item No. 2

To: Solano County Zoning Administrator

From: Nedzlene Ferrario, Senior Planner

Subject: Recology Hay Road Odor Management Compliance Review U-11-09
October 2017 – May 2018
October 2018 – May 2019

Date: August 15, 2019

A. Recommendation: Recommend that the Zoning Administrator receive and file the report without modifications to the conditions of approval of Land Use Permit U-11-09.

Background:

As a measure to manage the odorous issues at Jepson Prairie Organics, the land use permit approval requires Recology to submit odor compliance reports on an annual basis and, schedule public review and input every two years before the Zoning Administrator. The requirement for review is specified in condition of approval number 12(c). The first compliance review was conducted in August 2014, and because the number of complaints dropped during the 2012 -2014 period, the permit was approved without modifications. The second odor compliance review covered the period between October 2015 - May 2017. Numerous complaints were received during October 2015 - May 2016; however, the complaints dropped during October 2016 – May 2017. Approval was granted on December 7, 2017.

Discussion:

Review of the reports by the Local Enforcement Agency (LEA) staff indicated that a total of 16 complaints were received between October 2017 - May 2019. None were verified or confirmed. Copies of the Odor Management Reports & Investigation Reports are attached.

Conclusion:

Modifications to conditions of approval are not required.

Attachments:
Odor Management Compliance Report Oct 2017-May 2018
Odor Management Compliance Report Oct 2018-May 2019

Recology
Jepson Prairie Organics
WASTE ZERO

June 28, 2018

Nedzlene Ferrario, Senior Planner
Solano County Department of Resource Management
675 Texas Street, Suite 5500
Fairfield, CA 94533

Re: 2017-2018 Odor Management Compliance Report, Jepson Prairie Organics, Vacaville, CA

Dear Ms. Ferrario,

Enclosed with this letter, please find the annual 2017-2018 Odor Management Compliance Report (OMCR) for Jepson Prairie Organics, addressing condition 12C of the Land Use Permit U-11-09.

If you have any questions please call Ms. Danielle Lowther at (707) 678-4718, ext 26 or email dlowther@recology.com.

Sincerely,

Greg Pryor
General Manager
Jepson Prairie Organics, Recology

Cc: Marcy Hannum, Solano County

Attachment: 2017-2018 Odor Management Compliance Report

2017-2018 ODOR MANAGEMENT COMPLIANCE REPORT

Jepson Prairie Organics

SOLANO COUNTY, CALIFORNIA

June 2018

Prepared By:
Jepson Prairie Organics
6426 Hay Road
Vacaville, CA 95687

2017-2018 Odor Management Compliance Report
Table of Contents

Permit Compliance

The 2017-2018 Odor Management Compliance Report addresses condition 12C of the Land Use Permit No. U-11-09 for Recology and Jepson Prairie Organics.

> **12C. The permitted operation shall submit an Odor Management Compliance Report covering the operations of Jepson Prairie Organics. The report shall be submitted annually by June 30, covering the period from October through May of the prior period.**
>
> **The Odor Management Compliance Report shall address the following items at minimum:**
>
> - **Odor sources and sensitive receptors.**
> - **Complaints and violations and description of how the complaints were resolved.**
> - **Odor control strategies implemented and proposed.**

Odor Sources and Odor Control Strategies

Odor sources and control strategies to minimize odors at Jepson Prairie Organics (JPO) are as follows:

Feedstock Receiving Area – Incoming feedstock can generate odors if stored for excessive periods of time prior to being incorporated into windrows. Feedstock left unprocessed at the site can also generate significant odors. The goal of the facility is to process food waste material as it is delivered. Under normal circumstances, this material is processed and covered within 24 hours. All green waste materials will be scheduled for processing within seven (7) days. High odor content deliveries will be targeted for immediate processing, or alternatively, may be redirected to the landfill for disposal. Odor minimization will be accomplished by daily cleaning of the feedstock receiving area, periodic use of the pressure washer, application of lime on areas of nutrient rich process water and covering any food waste left unprocessed at the end of the day with ground greenwaste.

Aisles between Windrows – Windrow aisles can be sources of odor if raw, uncomposted material is left for an excessive amount of time without being exposed to the high temperatures of composting. JPO will practice good housekeeping methods, which include regular patrolling of windrow aisles and the use of a pressurized water broom to clean any

spilled materials. The facility is performing wash down of the areas between the ECS zones, between the zones and the asphalt berms, and between the concrete push walls using a high-pressure washer and water truck. The high pressure washer will minimize water during conveyance of the liquid-by-product to the drainage ditches, sump, and into the aerated pond treatment system (or Baker tanks). Clogging of the underground drainage system can generate odors. Clogs are systematically purged to prevent blockage and reduce potential odors. Windrow aisles can also be a source of odor if stormwater or process water is allowed to pond in potholes or other pad depressions. Any standing water discovered will be treated with lime, odor control agent and/or absorbed with ground greenwaste and depressions will be filled.

Windrows / ECS Zones – Odors emanating from windrows or ECS zones typically indicate problems in the initial feedstock mix, blending, turning frequency, pile porosity and/or moisture content of the pile. JPO builds its initial zones with appropriate carbon to nitrogen levels, assures adequate porosity and initial mixing, and maintains adequate moisture within the piles. Weather patterns will be continuously monitored for inversion layers and processing schedules (i.e., turning, grinding, etc.) will be adjusted and communicated to employees to minimize odor-generating activities. To manage the potential generation of liquids from the zones, a portion of the woody fraction of finished screened overs material is being incorporated into the feedstock and is being used as plenum layer prior to the placement of the feedstock into the first zone. This process reduces the moisture content of the feedstock, increases porosity, promotes aerobic microbial activity, and helps absorb liquid that may be produced by the feedstock.

Biofilters – Biofilters are absorbent beds of porous organic materials that support microorganisms capable of breaking down volatile compounds in the air-stream flowing through them. Common biofilter media includes mature compost, shredded bark, and hard wood chips used individually or in mixtures. Compost air pulled through the ECS zones has elevated levels of volatile organic compounds and odor producing constituents. By directing this air-stream through the biofilters, these compounds are significantly reduced.

Biofilters are resilient in various environmental conditions (hot or cold temperatures; humid or dry environments). Adequate moisture is applied to the biofilter media to maintain moisture content between 50% to 70%. Temperature, moisture and pH are monitored and adjustments made as needed. Over time, the hard wood material breaks down and affects the proper function of the biofilters. To maintain proper functioning of the biofilters and reduce odors, the hard wood material is removed and replaced as needed, typically annually.

Finished Product Material – Finished material has completed pathogen reduction and meets metal concentration requirements, but may generate odors if it is unstable. Finished compost

product is stored in windrows to allow turning and moisture conditioning when necessary. Finished material which has stabilized can be stored in larger piles, and can be turned occasionally.

Ponds – The lined ponds (Pond A and Pond B) can cause odors if overloaded with sediment or nutrients or not properly aerated. The lined ponds are equipped with aeration systems as an odor abatement measure. In addition, both ponds can be periodically dosed with compounds that deactivate odorous molecules.

A number of Best Management Practices (BMPs) are implemented to minimize the nutrient and sediment loads discharged to the respective ponds. These provisions include: processing of liquid byproduct from the compost processing area through the Aerobic Pond Treatment System (Pond A) prior to discharge to the retention storage pond (Pond B); building pads of ground greenwaste under tipped and pre-processed food material deliveries and compost windrows to absorb excess moisture; use of wattles; periodic street sweeping; use of odor control agents and lime; and periodic pond maintenance. Additional controls have included periodic addition of fresh water to the pond to dilute nutrients, adjusting pH, and increasing dissolved oxygen (DO) for re-use of the water on-site.

Monitoring for DO is currently conducted weekly and reported to the LEA on a monthly basis. The YSI meter used for these measurements is calibrated and certified on a monthly basis by an external contractor.

Odor Monitoring – To ensure the effectiveness of the odor mitigation efforts, odor monitoring is performed at various proximities to the composting area. This multi-distance monitoring program facilitates the early detection of possible odor issues and remediation of any contributing operational activities. The Odor Monitoring Checkpoint list, provided as Attachment A, is utilized by site staff. The Odor Descriptor Wheel, provided as Attachment C, is utilized to designate the odor descriptor for the Odor Monitoring Checkpoint list.

Sensitive Receptors

Sensitive receptors are represented in the Odor Monitoring Checkpoint list, provided as Attachment A and the Daily Odor Checkpoints Map, provided as Attachment B.

Complaints and violations and description of how the complaints were resolved

Odor complaints are received by Solano County Department of Resource Management Local Enforcement Agency (LEA) and forwarded to JPO. A representative from the LEA and JPO meet at the residence(s) of the complainant(s) to determine if odors can be indentified and quantified. If no compost odors are present, the odor complaint is determined to be unverified or unconfirmed. If compost odors are present, the investigators quantify the odors by utilizing an olfactory meter, called the Nasal Ranger. Using the Nasal Ranger, odors are detected at a Dilution to Threshold (D/T); the lowest reading registered as a D/T of 2 and the highest as a D/T of 60. If odors are detected at the residence(s) of the complainant(s), the odor investigation protocol requires the investigators to confirm the source of the odors by tracing the odors to the source.

Jepson Prairie Organics received no verified odor events during October 2017 to May 2018. According to LEA records, there were 21 calls to report odor complaints between October 2017 and May 2018. According to facility records, there were 15 calls to report odor complaints which resulted in odor investigations to occur. The 7 calls that were not investigated were due to not getting the call within a reasonable time to perform an investigation and/or at the request of the complainant. Of the 15 calls, there were 5 known complainants and 1 unknown complianant. There were 11 odor complaint events that occurred which resulted in an Odor Investigation Report to be submitted to the LEA. Of the 11 odor complaint events, there were no Areas of Concern (AOC) or Violations (V) issued. A summary of the odor complaints made from October 2017 to May 2018 can be found in Attachment D.

Latest odor control strategy

A Permit to Operate was issued on September 19, 2014 by the Yolo-Solano Air Quality Management District to allow for modification of the previous ECS system to generate additional aeration of the compost material. The design changes included installing HDPE perforated collection pipes in replacement of the compost vaults and using a biocover in replacement of the tarps. One of the two additional biofilters and blowers has been installed. The additional section of the system would be installed to accommodate additional material. Following the implementation of these changes, investigations have showed that there has been a considerable drop in on-site odors.

The facility continues to monitor odors and make on-site improvements to reduce potential odor generating scenarios. Pad improvement efforts are continuously executed to reduce potential odor. Biofilter change out frequency has been increased to ensure effective odor reduction. As new odor control strategies are developed, the site will investigate applicability of the strategies to the site. Jepson Prairie Organics is dedicated to reduce and minimize off-site odor migration.

Attachment A

JPO Odor Monitoring Checkpoint List

Date : _____ JPO monitoring technician: _____

Wind direction: _____ Wind speed: _____mph Weather conditions (circle): Sun/part sun

Temperature: _____ Overcast Light rain Heavy rain

Off Site

Time	Location/Description	Direction/Distance from JPO	D/T	Descriptors	Notes
	1. Hay Road at JPO Front Gate	Northwest – 600 feet			
	2. Hay Road - Due North	Due North – 200 feet			
	3. Hay Road - Northeast	Northeast – 500 feet			
	4. Hay Road/Hwy 113	East/Northeast – 3,000 feet			
	5. Hwy 113 East - 500 feet south of Hay Road intersection	Due East – 1/2 mile			
	6. Brown Road/Hwy 113	Southwest – 1/2 mile			
	7. Pedrick Road – 1,000 feet north of Maine Prairie Road	Northeast – 2 miles			
	8. Binghamton Road East of Hwy 113 – 2,250 feet east of Hwy 113	North/Northeast – 3 miles			Sensitive Receptor
	9. Hawkins Road approx. 1/2 mile West of Hwy 113	Due North – 3 miles			Sensitive Receptor
	10. Circle C Lane – 1,250 feet west of Clark Road	North/Northwest – 3.5 miles			Sensitive Receptor
	11. Clark Road/Kozy Lane	North/Northwest – 3 miles			Sensitive Receptor
	12. Fry Road/Clark Road	Northwest – 2 miles			
	13. Fry Road - Due North	Due North – 1.6 miles			
	14. Fry Road/ Hwy 113	Northeast – 1. 7 miles			
	15. Dally Road - 1,000 feet south off Hay Road	Due West – 2 miles			

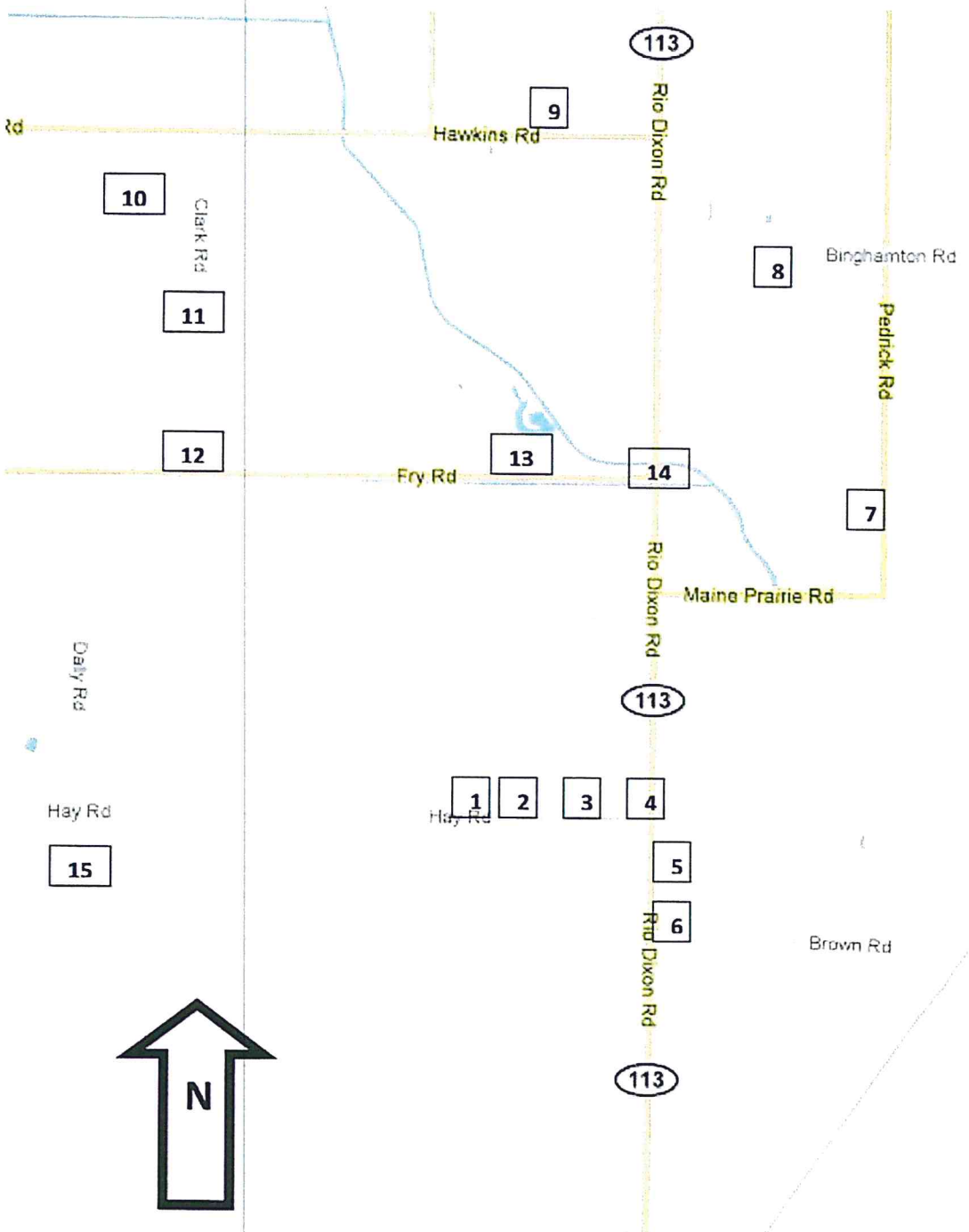
On Site

Time	Location	D/T	Descriptors	Notes
	1. Office parking lot			
	2. Preprocessing area			
	3. Active composting			
	4. Biofilter 1			
	5. Biofilter 2			
	6. Curing area			
	7. Retention pond			
	8. Biosolids storage area			

Attachment B

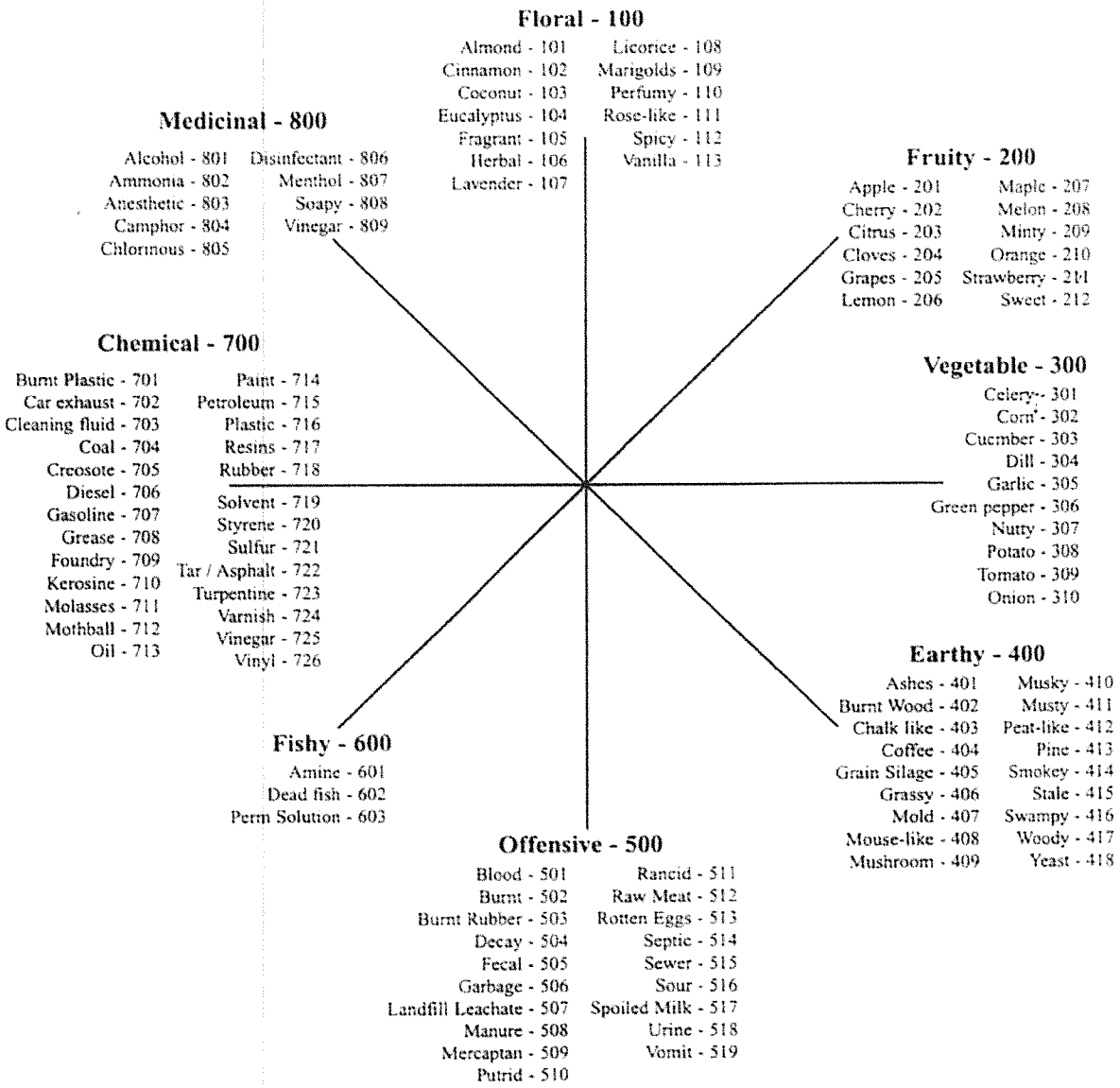
Jepson Prairie Organics

Daily Odor Checkpoints Map



Attachment C

Odor Descriptors



Attachment D

ODOR COMPLAINT INVESTIGATION SUMMARY

October 2017 - May 2018

Date	Time	Complainant	Address	Wind Direction	Wind MPH	LEA Rep	V/UV/AOC	Notes: (Odors detected, duration)
2017.10.03	8:46 p.m.	Rosie Enriquez	6107 Clark Road	SSE	1-11 MPH	Jeffrey Bell	UV	No odors detected.
2017.11.02	9:10 p.m.	John Dannenberg	6465 Hawkins	SSE	1-4 MPH	Jahniah McGill	UV	No compost odors detected. Slight grassy odor.
2017.12.28	9:10 a.m. 9:15 a.m.	Glenda Stormont Rosie Enriquez	6161 Circle C 6107 Clark Road	NA	0 MPH	Marcy Hannum	UV	No odors detected.
2018.01.03	3:15 p.m.	Rosie Enriquez	6107 Clark Road	ESE	1-5 MPH	Marcy Hannum	UV	No odors detected.
2018.01.05	9:44 a.m.	Janet Nixon	6156 Circle C	SE	4-9 MPH	Dave Weiss	UV	No odors detected.
2018.01.09	5:43 p.m.	Rosie Enriquez	6107 Clark Road	SSE	8-13 MPH	Jeffrey Bell	UV	No odors detected.
2018.01.11	8:13 a.m.	Glenda Stormont	6161 Circle C	SE	3-5 MPH	Marcy Hannum	UV	No odors detected.
2018.01.15	4:00 p.m. 4:01 p.m.	Rosie Enriquez Larry Nixon	6107 Clark Road 6156 Circle C	ESE	3-9 MPH	Aimee Austin	UV	Circle C, no compost odors detected, odors of smoke. Clark road, intermittent and faint compost odors, would not have measured on the Nasal Ranger.
2018.01.23	6:52 p.m.	Rosie Enriquez Glenda Stormont	6107 Clark Road 6161 Circle C	NA	0 MPH	Henrik Giugliano	UV	No odors detected.
2018.01.25	7:08 a.m	Rosie Enriquez	6107 Clark Road	SSE	3-6 MPH	Henrik Giugliano	UV	No odors detected.
2018.02.04	8:55 a.m. 9:07 a.m.	Rosie Enriquez unknown	6107 Clark Road Circle C	NE	0-4 MPH	Jahniah McGill	UV	No odors detected.

Wind Direction and MPH:

NA indicates wind was too low to be calculated (between 0 MPH and less than 1 MPH)

V/UV/AOC:

V: Violation UV: Unverified/Unconfirmed AOC: Area of Concern

Recology
Jepson Prairie Organics
WASTE ZERO

June 27, 2019

Nedzlene Ferrario, Senior Planner
Solano County Department of Resource Management
675 Texas Street, Suite 5500
Fairfield, CA 94533

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2018-2019 ODOR MANAGEMENT COMPLIANCE REPORT

Jepson Prairie Organics

SOLANO COUNTY, CALIFORNIA

June 2019

Prepared By:
Jepson Prairie Organics
6426 Hay Road
Vacaville, CA 95687

2018-2019 Odor Management Compliance Report
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spilled materials. The facility is performing wash down of the areas between the ECS zones, between the zones and the asphalt berms, and between the concrete push walls using a high-pressure washer and water truck. The high-pressure washer will minimize water during conveyance of the liquid-by-product to the drainage ditches, sump, and into the aerated pond treatment system (or Baker tanks). Clogging of the underground drainage system can generate odors. Clogs are systematically purged to prevent blockage and reduce potential odors. Windrow aisles can also be a source of odor if stormwater or process water can pond in potholes or other pad depressions. Any standing water discovered will be treated with lime, odor control agent and/or absorbed with ground greenwaste and depressions will be filled.

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Many Best Management Practices (BMPs) are implemented to minimize the nutrient and sediment loads discharged to the respective ponds. These provisions include: processing of liquid byproduct from the compost processing area through the Aerobic Pond Treatment System (Pond A) prior to discharge to the retention storage pond (Pond B); building pads of ground greenwaste under tipped and pre-processed food material deliveries and compost windrows to absorb excess moisture; use of wattles; periodic street sweeping; use of odor control agents and lime; and periodic pond maintenance. Additional controls have included periodic addition of fresh water to the pond to dilute nutrients, adjusting pH, and increasing dissolved oxygen (DO) for re-use of the water on-site.

Monitoring for DO is currently conducted weekly and reported to the LEA monthly. The YSI meter used for these measurements is calibrated and certified per manufacturer specifications by an external contractor.

Odor Monitoring – To ensure the effectiveness of the odor mitigation efforts, odor monitoring is performed at various proximities to the composting area. This multi-distance monitoring program facilitates the early detection of possible odor issues and remediation of any contributing operational activities. The Odor Monitoring Checkpoint list, provided as Attachment A, is utilized by site staff. The Odor Descriptor Wheel, provided as Attachment C, is utilized to designate the odor descriptor for the Odor Monitoring Checkpoint list.

Sensitive Receptors

Sensitive receptors are represented in the Odor Monitoring Checkpoint list, provided as Attachment A and the Odor Checkpoints Map, provided as Attachment B.

Complaints and violations and description of how the complaints were resolved

Odor complaints are received by Solano County Department of Resource Management Local Enforcement Agency (LEA) and forwarded to JPO. A representative from the LEA and JPO meet at the residence(s) of the complainant(s) to determine if odors can be indentified and quantified. If no compost odors are present, the odor complaint is determined to be unverified or unconfirmed. If compost odors are present, the investigators quantify the odors by utilizing an olfactory meter, called the Nasal Ranger. Using the Nasal Ranger, odors are detected at a Dilution to Threshold (D/T); the lowest reading registered as a D/T of 2 and the highest as a D/T of 60. If odors are detected at the residence(s) of the complainant(s), the odor investigation protocol requires the investigators to confirm the source of the odors by tracing the odors to the source.

Jepson Prairie Organics received no verified odor events during October 2018 to May 2019. According to LEA records, there were 8 calls to report odor complaints between October 2018 and May 2019. According to facility records, there were 5 calls to report odor complaints which resulted in odor investigations to occur. The 3 calls that were not investigated were due to the LEA not getting the call within a reasonable time to perform an investigation and/or at the request of the complainant. Of the 8 calls, there were 3 known complainants. There were 5 odor complaint events that occurred which resulted in an Odor Investigation Report to be submitted to the LEA. Of the 5 odor complaint events, there were no Areas of Concern (AOC) or Violations (V) issued. A summary of the odor complaints made from October 2018 to May 2019 can be found in Attachment D.

Latest odor control strategy

A Permit to Operate was issued on September 19, 2014 by the Yolo-Solano Air Quality Management District to allow for modification of the previous ECS system to generate additional aeration of the compost material. The design changes included installing HDPE perforated collection pipes in replacement of the compost vaults and using a biocover in replacement of the tarps. One of the two additional biofilters and blowers has been installed. The additional section of the system would be installed to accommodate additional material. Following the implementation of these changes, investigations have showed that there has been a considerable drop in on-site odors.

The facility continues to monitor odors and make on-site improvements to reduce potential odor generating scenarios. Pad improvement efforts are continuously executed to reduce potential odor. The need to conduct biofilter change is monitored to ensure effective odor reduction. As new odor control strategies are developed, the site will investigate applicability of the strategies to the site. Jepson Prairie Organics is dedicated to reducing and minimize off-site odor migration.

Attachment A

JPO Odor Monitoring Checkpoint List

Date : _____ JPO monitoring technician: _____

Wind direction: _____ Wind speed: _____mph Weather conditions (circle): Sun/part sun

Temperature: _____ Overcast Light rain Heavy rain

Off Site

Time	Location/Description	Direction/Distance from JPO	D/T	Descriptors	Notes
	1. Hay Road at JPO Front Gate	Northwest – 600 feet			
	2. Hay Road - Due North	Due North – 200 feet			
	3. Hay Road - Northeast	Northeast – 500 feet			
	4. Hay Road/Hwy 113	East/Northeast – 3,000 feet			
	5. Hwy 113 East - 500 feet south of Hay Road intersection	Due East – 1/2 mile			
	6. Brown Road/Hwy 113	Southwest – 1/2 mile			
	7. Pedrick Road – 1,000 feet north of Maine Prairie Road	Northeast – 2 miles			
	8. Binghamton Road East of Hwy 113 – 2,250 feet east of Hwy 113	North/Northeast – 3 miles			Sensitive Receptor
	9. Hawkins Road approx. 1/2 mile West of Hwy 113	Due North – 3 miles			Sensitive Receptor
	10. Circle C Lane – 1,250 feet west of Clark Road	North/Northwest – 3.5 miles			Sensitive Receptor
	11. Clark Road/Kozy Lane	North/Northwest – 3 miles			Sensitive Receptor
	12. Fry Road/Clark Road	Northwest – 2 miles			
	13. Fry Road - Due North	Due North – 1.6 miles			
	14. Fry Road/ Hwy 113	Northeast – 1. 7 miles			
	15. Dally Road - 1,000 feet south off Hay Road	Due West – 2 miles			

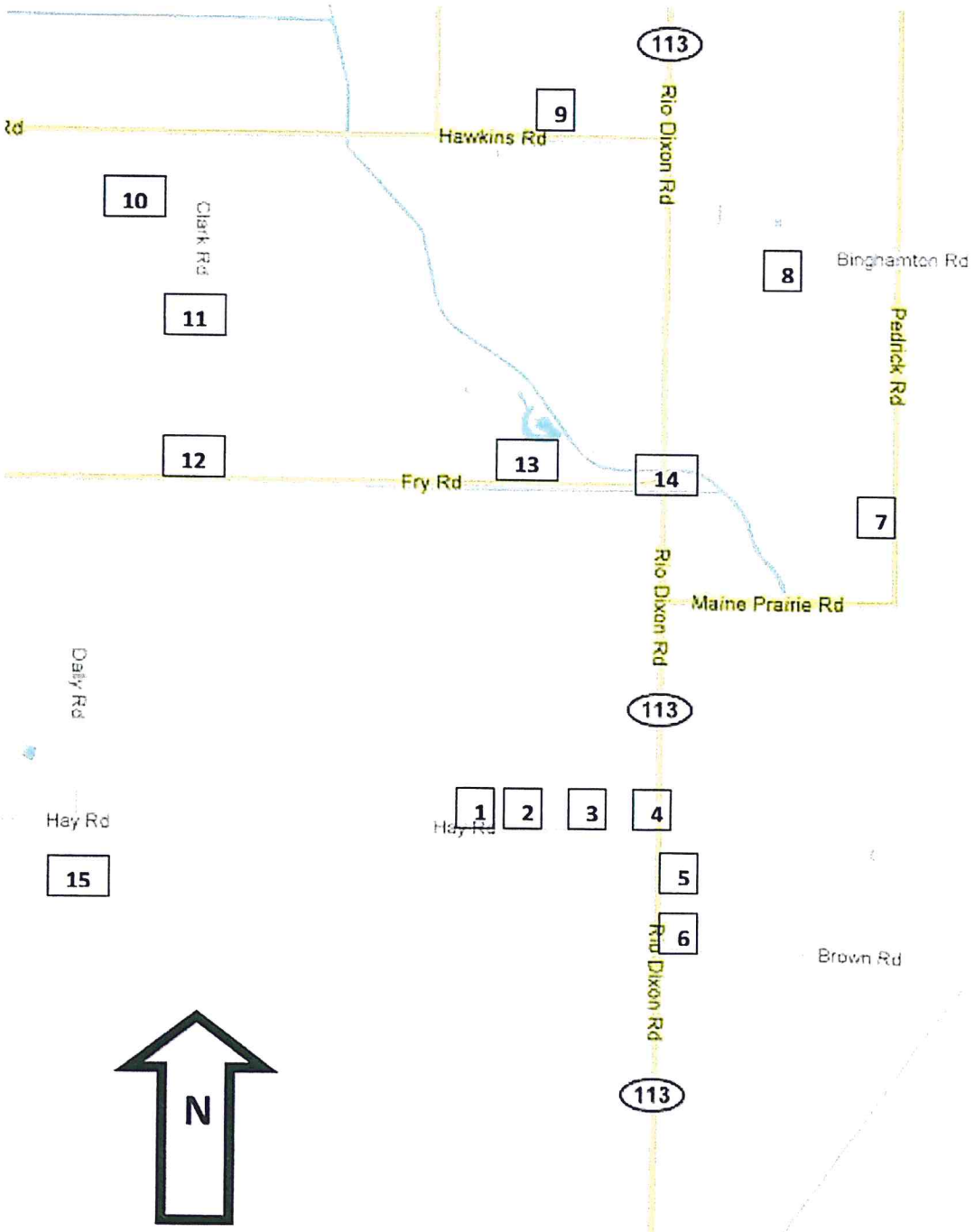
On Site

Time	Location	D/T	Descriptors	Notes
	1. Office parking lot			
	2. Preprocessing area			
	3. Active composting			
	4. Biofilter 1			
	5. Biofilter 2			
	6. Curing area			
	7. Retention pond			
	8. Biosolids storage area			

Attachment B

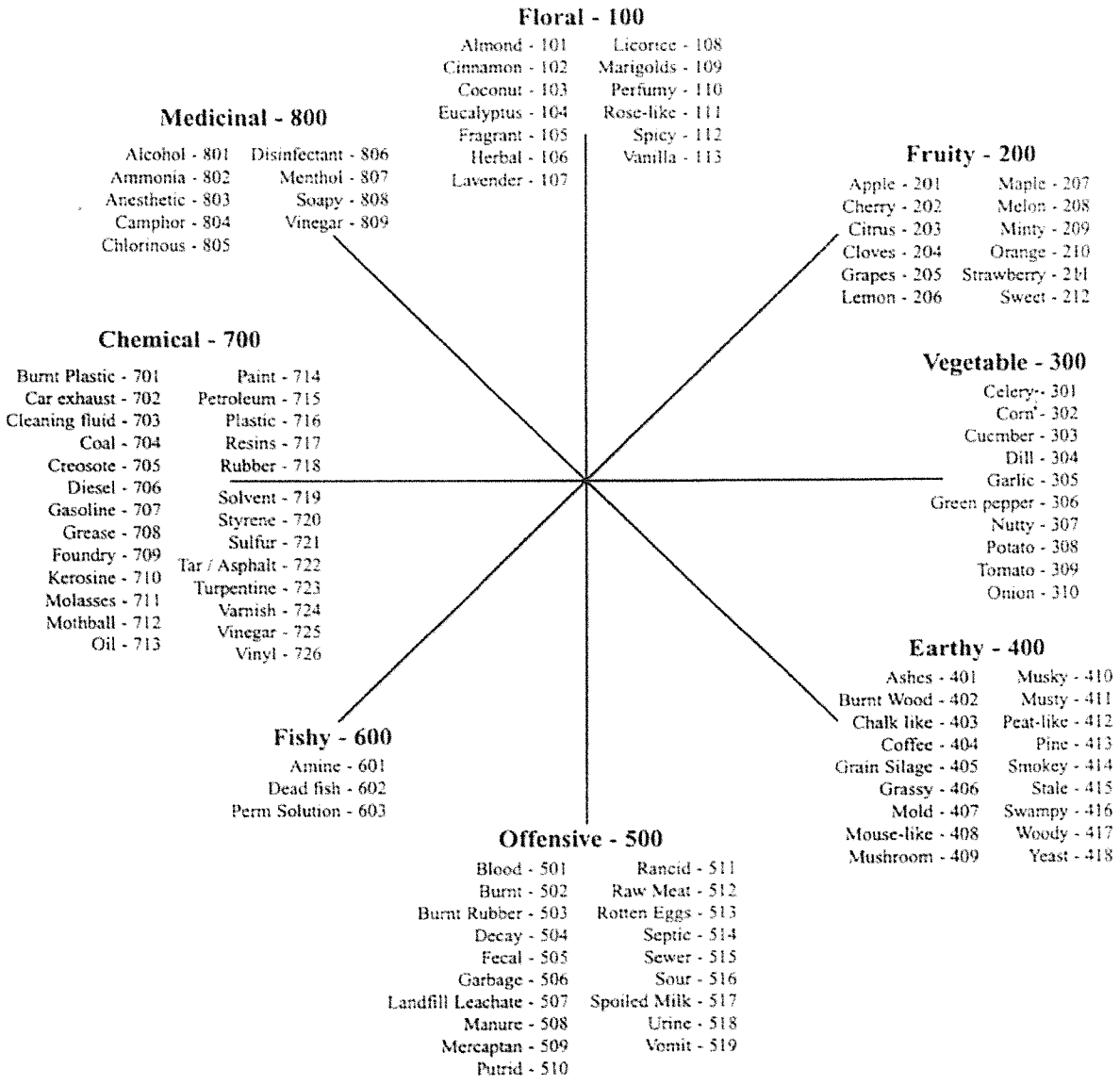
Jepson Prairie Organics

Daily Odor Checkpoints Map



Attachment C

Odor Descriptors



Attachment D

ODOR COMPLAINT INVESTIGATION SUMMARY

October 2018 - May 2019

Date	Time	Complainant	Address	Wind Direction	Wind MPH	LEA Rep	V/UV/AOC	Notes: (Odors detected, duration)
2018.11.06	6:34 p.m.	John Dannenberg	6465 Hawkins	North	0 MPH	Marcy Hannum	UV	No odors detected.
2018.11.16	4:55 a.m.	Rosie Enriquez	6107 Clark Road	E	2 MPH	Jeffrey Bell	UV	No compost odors detected. Smoke odors detected
2019.01.09	8:05 a.m.	Rosie Enriquez	6107 Clark Road	SE	9 MPH	Marcy Hannum	UV	Slight sweet compost odor detected for less than 1 minute
2019.01.16	9:06 a.m.	Rosie Enriquez	6107 Clark Road	SSE	8 MPH	Marcy Hannum	UV	No odors detected at residence.
2019.04.06	9:12 a.m.	John Dannenberg	6465 Hawkins	SSW	3-7 MPH	Marcy Hannum	UV	No odors detected.

Wind Direction and MPH:

NA indicates wind was too low to be calculated (between 0 MPH and less than 1 MPH)

V/UV/AOC:

V: Violation UV: Unverified/Unconfirmed AOC: Area of Concern