

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report Proposed Rule 415 – Odors from Rendering Facilities

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Proposed Rule 415 – Odors from Rendering Facilities (PR 415) is designed to reduce impacts from odors from rendering operations. Rendering is a process that converts waste animal tissue into a variety of fat and protein commodities that are used for animal feed, fertilizer, biofuels, cosmetics, and other industries. One of the biggest challenges to the rendering industry is controlling odors from their operations. Within the South Coast Air Basin, there are five rendering facilities. Baker Commodities, Farmer John/Smithfield Foods, D & D Disposal/West Coast Rendering, and Coast Packing are located within the City of Vernon and Darling Ingredients, is located in the City of Los Angeles on the border of Vernon. Although Coast Packing does conduct rendering operations, this facility is only subject to the Best Management Practices of the proposed rule as their operations are substantially smaller than the other facilities.

Vernon is an industrial city with approximately 1,800 businesses such as manufacturing, food processors, rendering, fashion apparel manufacturers, paper product producers, and business logistics companies (City of Vernon Website) and based on the U.S. Census Bureau's latest population estimates, Vernon has a residential population of less than 115 people.¹ The residential areas most impacted by odors from the rendering facilities are Boyle Heights, Huntington Park, Maywood, Commerce, and Bell. These communities are densely populated and are predominantly Hispanic.² All of them are designated as Environmental Justice communities by SCAQMD, indicating that these areas have lower average income and worse air quality within the South Coast Air Basin, as measured by the percentage of people below the federal poverty line, their PM 2.5 exposure, and air toxic cancer risks.³

As discussed in Chapter 1, the SCAQMD is not the first agency to regulate odors from rendering facilities. The states of Utah, South Carolina, and Mississippi have rules to address odors from rendering facilities. Other jurisdictions such as Texas Commission on Environmental Quality and New York State Department of Environmental Conservation impose conditions on rendering facilities to address odors. The odor control provisions of these other jurisdictions are similar to the type of rendering odor controls under PR 415 such as building enclosures with ventilation to odor control systems for odorous operations and best management practices such as covers for trucks and trailers and time limits for moving materials during the receiving and rendering process. Although some jurisdictions have requirements to control odors from rendering operations, some rendering facilities have implemented odor control measures in the absence of rules or regulations. During the initial rule development for PR 415, Darling Ingredients in Los Angeles filed permit applications for plant modernization that included a newly constructed building that is ventilated

¹ The U.S. Census Bureau estimated Vernon's population at 113 as of July 1, 2016, based on its Annual Population Estimates.

² Based on the U.S. Census Bureau and ArcGIS data, population density in these communities are approximately 7,500 people per square mile, compared to the Los Angeles County average of approximately 2500 people per square mile. Moreover, 94 percent of their population are Hispanic, compared to the Los Angeles County average of 48 percent.

³ SCAQMD currently defines an Environmental Justice community as an area with at least 10% of the population below the federal poverty line and a PM2.5 concentration greater than 11.1 µg/m3 per year or a toxic cancer risk of greater than 894 in a million. This definition captures locations with high percentages of poverty that are also within the top 15 percent of SCAB areas in terms of mean PM2.5 concentrations and estimated toxic cancer risk.

to a room air scrubber, sized to ventilate 100,000 cubic feet per minute of airflow. Construction and commissioning of the building enclosure and odor control equipment are nearly completed and operation is expected to commence in January 2018.

Baker Commodities in Penfield New York near Rochester has implemented odor control measures similar to those required under PR 415 such as a permanent total enclosure ventilated to odor control equipment and some of the best management practices required under the proposed rule. Implementation of PR 415 would require Baker Commodities' Vernon facility, which is the headquarters for the company, to implement many of the odor control measures as its Penfield New York facility.

PR 415 was developed with input from a variety of stakeholders which included the affected facilities, other industry representatives, environmental and community representatives and other agencies. The SCAQMD staff held four Working Group Meetings beginning in July 2014 and an Informational Meeting in September 2017 on PR 415. Although PR 415 was suspended in September 2015, staff had completed the Public Workshop, circulation of the Draft Environmental Assessment, and three iterations of the proposed rule. When the Governing Board directed staff to return with a proposal for PR 415 in November 2017, staff picked up the rulemaking at the point of suspension and immediately began working with stakeholders to address remaining issues.

The provisions and cost of compliance under PR 415 are reasonable and the proposed rule includes a number of compliance options. Throughout the rulemaking, staff visited the five affected rendering facilities 15 times to understand each facility's operation. Many of the provisions in PR 415 are based on measures implemented in other jurisdictions, at rendering facilities within the South Coast Air Basin, and based on information gathered through the rulemaking process such as site visits. PR 415 allows facilities the option to implement a closed system or to install a building enclosure vented to an odor control system. PR 415 provides an adequate implementation period of 2½ to 3½ years to design, construct and commission building enclosures and odor control systems. In addition, PR 415 recognizes that, during the construction phase, there may be unforeseen issues that are out of the control of the operator and provides a one-time extension of up to 12 months provided the operator can appropriately demonstrate the need for a time extension. Provisions have also been incorporated for facilities that process small amounts of materials, alternative provisions for building enclosures, best management practices, and wastewater treatment options. To provide an additional safeguard, the proposed rule has a contingency measure for an odor mitigation plan for facilities that have on-going odor issues.

CHAPTER 1: BACKGROUND

INTRODUCTION

RENDERING OPERATIONS

REGULATORY HISTORY

INTRODUCTION

Proposed Rule (PR) 415 – Odors from Rendering Facilities is designed to reduce the impacts of objectionable odors in communities near facilities conducting rendering operations. Rendering is a process that converts waste animal tissue into stable, value-added commodities, including fat commodities such as yellow grease, choice white grease and bleachable fancy tallow, and protein commodities, such as meat and bone meal and poultry byproduct meal. Industries that use the commodities produced during rendering include animal feed, fertilizer, biofuels, cosmetics and other industries.

Development of PR 415 resulted from comments and complaints received by affected members of the public at Town Hall Meetings and other public meetings in communities surrounding Vernon. In addition, odors from the rendering facilities in Vernon were also ranked as a top 10 air quality concern by the working group members that participated in a pilot study that was part of the SCAQMD's Clean Communities Plan (CCP) in and around Boyle Heights. In November 2010, the SCAQMD Governing Board approved the 2010 CCP, which included a pilot program in the communities of Boyle Heights and San Bernardino. SCAQMD staff began implementing the CCP in the pilot study area of Boyle Heights, a community near the Vernon rendering facilities, by meeting with a stakeholder working group beginning in July 2011. The purpose of this pilot program was to work with representatives of the community to better understand air quality issues in Boyle Heights and the surrounding community and to develop solutions to those air quality issues. The prevalence of odors from rendering facilities in Vernon, south/southwest of Boyle Heights, was of great concern to the working group affecting the quality of life in the area. SCAQMD staff began rule development to address odors from rendering operations in early 2014.

Rendering Facilities in the South Coast Air Basin

There are five existing rendering facilities that conduct inedible rendering operations in the Basin. All five are located in the Vernon area in close proximity to one another. Three facilities are independent, and two are integrated with either a slaughterhouse or meat-packing plant. The differences between independent and integrated rendering facilities are described in this chapter. Two facilities use a batch rendering process, in which raw rendering materials are loaded into a cooker in discrete batches, and the other three use a continuous cooking operation. All five facilities will be subject to PR 415.

Batch rendering has greater potential for odors, since the cooker door is opened at the end of the cooking cycle, resulting in emissions of steam in addition to odors from the cooking process that must be controlled. Conversely, a continuous cooking operation is a closed process where high intensity odors are vented to odor control equipment as they are generated, and there is no direct path to the atmosphere. For this reason, continuous cooking operations have a lower potential for odors than batch cooking, but are still a source of odors.

It should be noted that 4 of the facilities render material from slaughter, meat packing, butcher shops, and grocery stores, one facility renders animals from zoos, euthanized animals from humane societies, and animals that are collected by counties and cities that died for various reasons. This rendering facility uses a batch-type cooking process.

Figure 1-1 Vernon Area Rendering Facilities

Rendering Industry Characterization

According to the National Renderers Association (NRA) in 2017, the US livestock sector slaughters more than 150 million head of cattle, calves, hogs, and sheep and more than 55 billion pounds of poultry annually¹. The rendering industry consists of more than three-dozen firms operating more than 200 plants across the US and Canada². Rendering facilities serve animal industries by using the by-products produced in these industries. By-products amount to more than half the total volume produced by animal agriculture. By weight, approximately 49% of cattle, 44% of pigs, 37% of chicken broilers and 57% of fish are not consumed by humans³. By-products from animal agriculture include hides, skins, hair, feathers, hoofs, horns, feet, heads, bones, blood, organs, glands, intestines, muscle and fat tissue, and entire carcasses. Many of these by-products are processed in rendering facilities. Organic by-products are highly perishable, and may include some laden with microorganisms that are pathogenic to humans and animals. Rendering offers a system of handling and processing of animal materials that complies with the requirements of disease control.

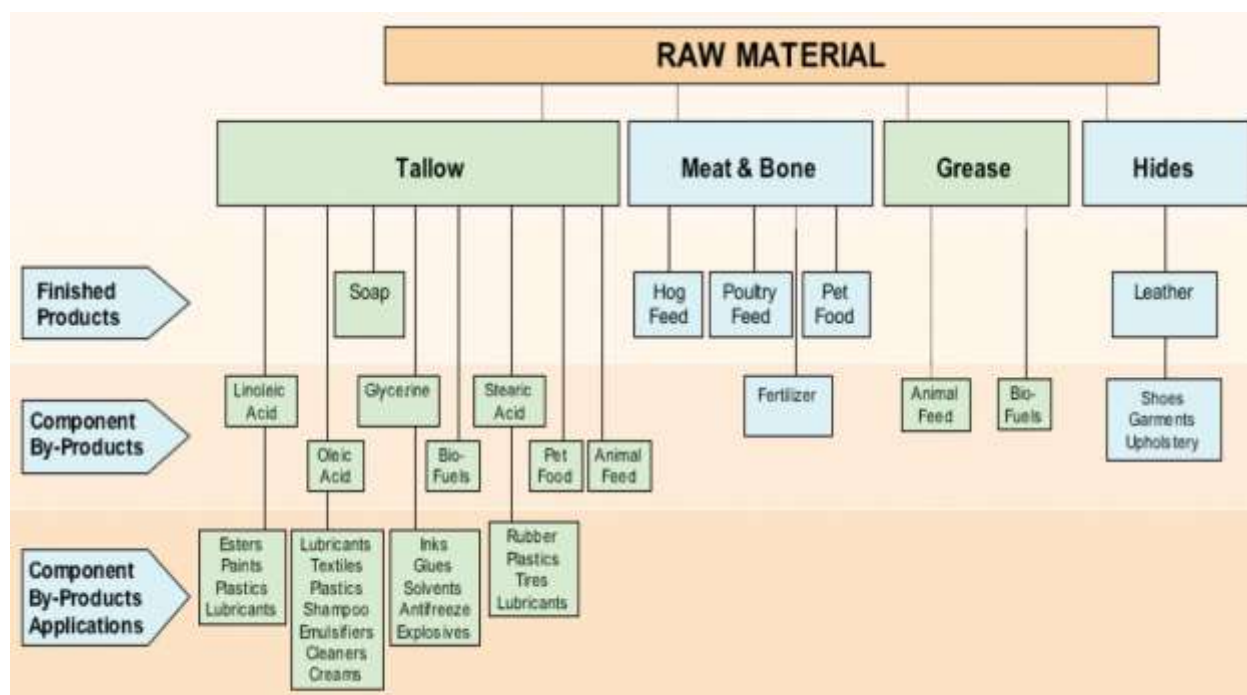
In addition to disease prevention, processing of by-products from various animal industries results in nearly 20 billion pounds of animal feed and industrial products in the form of fat and protein commodities⁴. Figure 1-1 shows the products and by-products of the rendering process.

¹ NRA Website: <http://www.nationalrenderers.org/>

² NRA Website: <http://www.nationalrenderers.org/>

³ An Overview of the Rendering Industry and its Contribution to Public and Animal Health; Meeker, Hamilton

⁴ "Survey Says: A snapshot of Rendering", Jekanowski, Render Magazine, 2011

Figure 1-1 – Products and By-products Produced During Rendering

http://www.sec.gov/Archives/edgar/data/916540/000091654010000031/ex99_1.htm

Integrated vs. Independent Rendering Facilities

Integrated plants operate in conjunction with animal slaughter and meat processing plants and handle 65%-70% of all rendered material. The estimated 95 U.S. and Canadian integrated facilities (NRA) render most edible animal byproducts (i.e., fatty animal tissue), mainly into edible fats (tallow and lard) for human consumption. Edible rendering is subject to the inspection and safety standards of USDA's Food Safety and Inspection Service (FSIS) or its state counterparts. In California, that agency is the California Department of Food and Agriculture (CDFA). These plants also render inedible byproducts (including slaughter floor waste) into fats and proteins for animal feeds and for other ingredients.

Because a meat plant typically processes only one animal species (such as cattle, hogs, or poultry), its associated rendering operations likewise handle only the by-products of that species. The inedible and edible rendering processes are segregated.

Independent operations handle the other 30%-35% of rendered material. These plants, estimated by NRA at 165 in the United States and Canada, usually collect material from other sites using specially designed trucks. They pick up and process fat and bone trimmings, inedible meat scraps, blood, feathers, and dead animals from meat and poultry slaughterhouses and processors (usually smaller ones without their own rendering operations), farms, ranches, feedlots, animal shelters, restaurants, butchers, and markets.

As a result, the majority of independent renderers are likely to handle materials from several types of animal species. Nearly all of the resulting products of the rendering process from independent facilities are intended for non-human consumption (e.g., animal feeds, biofuels, and industrial products). The U.S. Food and Drug Administration (FDA) regulates animal feed ingredients, but

its presence in rendering facilities, or in feed mills that buy rendered ingredients, is not a legal requirement if the facility does not conduct edible rendering operations.

RENDERING OPERATIONS

The Rendering Process

In most facilities, raw materials are received at the facility into a pit, which can be located in the open or under a canopy or building enclosure. Raw materials are conveyed to size reduction equipment. The raw material is ground to a uniform size and placed in cookers, which evaporate moisture and free fat from protein and bone. A series of conveyers, presses, and a centrifuge continue the process of separating fat from solids. The finished fat (e.g., tallow, lard, yellow grease) goes into separate tanks, and the solid protein (e.g., meat and bone meal, poultry meal) is pressed into cake for processing into feed. Other rendering systems may be used, including those that recover protein solids from slaughterhouse blood or that process used cooking oil from restaurants. This cooking oil is recovered (often in 55-gallon drums) for use as yellow grease in non-human food products like animal feeds.

Batch vs. Continuous Rendering

Batch Rendering

A batch cooker is designed to be loaded in discrete batches; then the raw materials are processed as a batch to a target moisture content percentage. Batch processing times vary due to moisture content of the raw material and the operator can adjust the temperature of the cooker as needed to achieve the desired moisture content at the end of the cycle. The batch is then unloaded for fat separation. A batch cooker can function as a cooker, dryer, hydrolyzer, or processor. Two of the five rendering facilities use batch cooking operations.

Continuous Rendering

In a typical continuous rendering process, raw material from receiving bins (1) is conveyed from the bins by a conveyor (2) and discharged across a magnet (3) that removes ferrous metal. A raw material grinder (4) then reduces the raw material to a uniform particle size for material handling and improved heat transfer during cooking. The ground raw material is then metered from a bin (5) at a constant rate into a continuous cooker operating at a constant temperature (6).

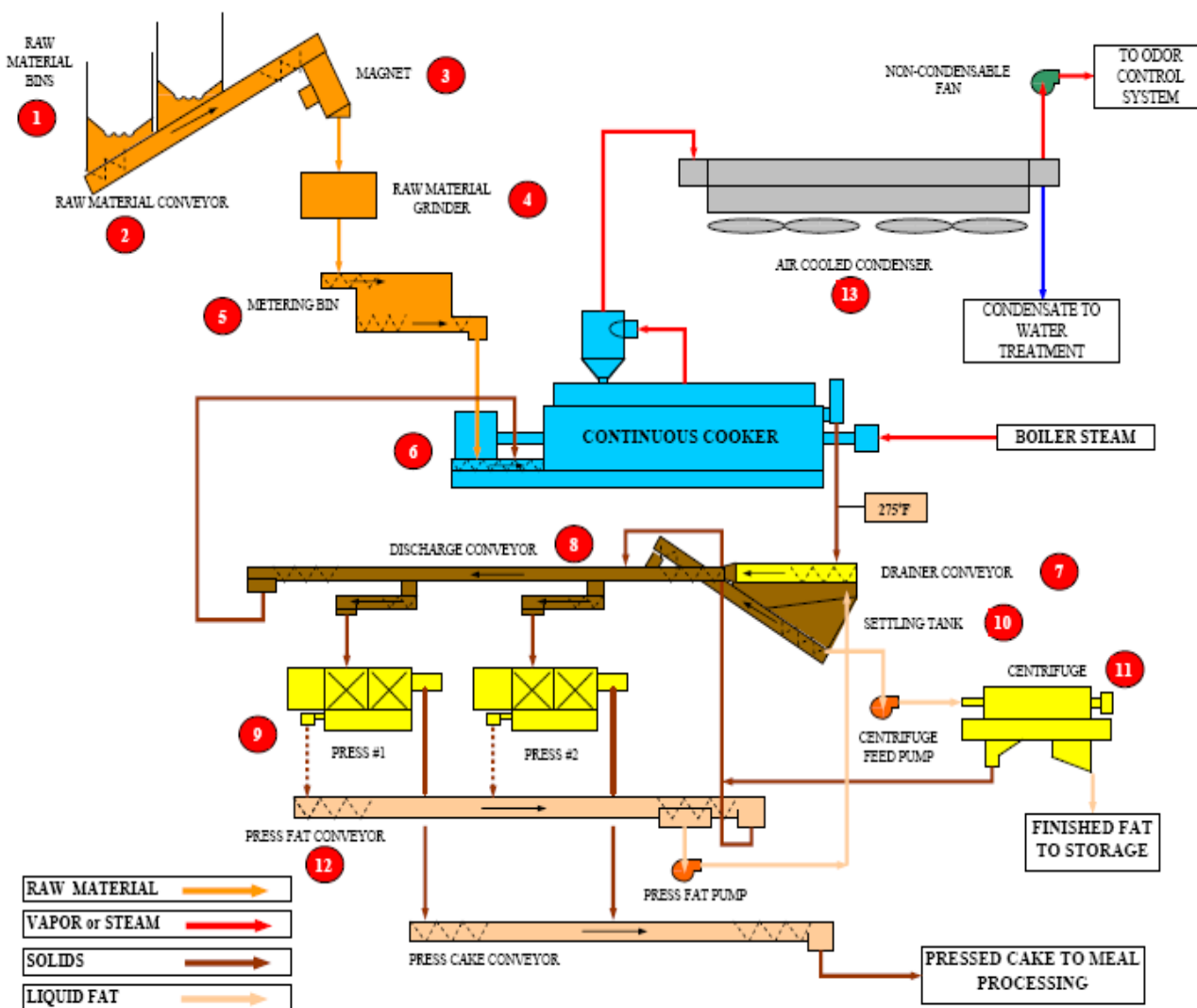
The continuous cooker is generally heated by boiler steam. The cooker brings raw material to a temperature between 240° and 290°F, evaporating moisture and freeing fat from protein and bone. A dehydrated slurry of fat and solids is discharged from the continuous cooker and transported to a drainer conveyor (7) that separates liquid fat from solids. Solids from the drainer conveyor are combined with solid discharge from the settling tank (10) and centrifuge (11) and conveyed via discharge conveyor (8) to screw presses (9), which mechanically reduce the solids' fat content. Solids discharged from the screw presses as a pressed cake (12) are further processed into meal.

The fat removed in the screw presses (9) is pumped to a settling tank (10), along with fat discharged from the drainer conveyor. In the settling tank, heavier bone and protein particles settle to the bottom. Liquid fat from the settling tank is pumped to a centrifuge (11), which removes solid impurities from the fat. The clarified fat is further processed or stored as finished fat⁵.

⁵ Essential Rendering – Rendering Operations; Anderson

Water vapor, containing significant odor potential, exits the continuous cooker (6) through a vapor duct system that generally includes an entrainment trap to separate entrained solids and return them to the cooker. A duct system then transports vapor to a condenser (13). Non-condensable gases are removed from the condenser and routed to an odor control system (not shown). Odorous gases from other parts of the process are also routed to the odor control system through a ductwork system. Figure 1-2 is a schematic diagram of a typical continuous dry rendering process.

Figure 1-3 – Schematic of Typical Continuous Dry Rendering Process



From Rendering: A Proven Disposal Technology; Hamilton, R. (2003). Kansas City, Missouri: Midwest Regional Carcass Disposal Conference.

Potential for Odors from Rendering Operations

Odor control remains one of the rendering industry's greatest challenges.⁶ Research in the early 1970s indicated that untreated rendering plant emissions could be detected up to 20 miles away from rendering plants.⁷ There are a large number of odorous compounds in rendering odors. 110 volatile compounds have been identified in rendering plant emissions, with about 25 contributing most noticeably to rendering plant odors.⁸ Most of these organic compounds are generated from the breakdown of proteins and fats during the cooking process⁹ or during decay of raw material prior to cooking.

Besides organic compounds, other odor compounds of concern from rendering operations include hydrogen sulfide and ammonia. Because of the wide variety of chemical compounds contributing to rendering plant odors, current strategies for odor control rely on controlling all volatile compounds being emitted.¹⁰

There are several operations and processes within a rendering facility that have noticeable odors associated with them. These include, in order of process flow but not necessarily odor intensity; raw material receiving, raw material size reduction, cooking, fat processing, non-condensable vapors from the condenser following the cooker, and wastewater treatment. High intensity odors from the cooker, presses and centrifuges are currently required to be incinerated at 1202°F for at least 0.3 seconds under SCAQMD Rule 472 – Reduction of Animal Matter. Incineration at this temperature is a highly effective odor control method for organic compounds making up the majority of the composition of rendering odors.

Since the high intensity odors emitted from the cooking process are already required to be controlled, the nature of odors that continue to be present at rendering facilities from the processes noted are fugitive in nature. If there is no odor containment within a building enclosure, there can be many points both in a batch cooking process as well as in a continuous cooking process where fugitive odors can become airborne, migrate offsite and impact surrounding communities. Collectively, this large number of sources of fugitive odors can create odors which are emitted from a rendering facility and can travel well beyond the facility's property line into affected communities.

Odors from Rendering Operations

Humans perceive odors when sensory neurons inside the nose are stimulated by one or more odorants. An odorant is any substance that has a noticeable odor. There are 350 possible odorant receptor genes that are responsible for the perception of odors in the neurons within the nose, and the odor receptors on each neuron are activated by one, two or more odorant compounds. The

⁶ <http://www.rendermagazine.com/articles/2012-issues/august-2012/development-of-new-odor-control-methods/>.

⁷ "Odor Controls for Rendering Plants." *Environmental Science and Technology* 7 (6):504-510. Bethea, Murthy, Carey; 1973.

⁸ "Gas Chromatography/Mass Spectrometry Identification of Organic Volatiles Contributing to Rendering Odors." *Environmental Science and Technology* 16 (12):883-886. Van Langenhove, Van Wassenhove, Coppin, Van Acker, Schamp; 1982

⁹ <http://www.rendermagazine.com/articles/2012-issues/august-2012/development-of-new-odor-control-methods/>

¹⁰ <http://www.rendermagazine.com/articles/2012-issues/august-2012/development-of-new-odor-control-methods/>

activation of multiple sensory neurons means that there are a large number of unique odors that humans can perceive¹¹. Odors can be described by several qualities, including:

- Character – the qualitative property of the odor (burnt, fishy, sweet, etc.)
- Intensity – weak, mild, strong
- Frequency – how often the odor appears
- Duration – the length of time an odor is present

Together, all of these qualities define the pleasantness or unpleasantness of the odor, or “hedonic tone”. Not everyone perceives odors the same way. Sensitivity to different odors can vary widely between people.

Table 1-1 on page 1-8 shows 25 common chemical compounds that contribute noticeably to rendering facility odors, and includes the odor detection threshold for each, if known. The odor detection threshold is a measure of the lowest concentration of an odorant that is perceptible by an average human sense of smell. This threshold is given in parts per billion (PPB). As evident from Table 1-1, some of these compounds can be detected by the human nose at very low concentrations; 1 PPB or lower.

¹¹ Characterization of Odor Nuisance; Curren, 2012

Table 1-1 – Character of Odors from Rendering Operations

Chemical Abstract Service (CAS) No.	Odorant	Chemical Formula	Comments	Odor Threshold (ppb)	Odor Character	Odor Threshold References
Aldehydes and Ketones						
75-07-0	acetaldehyde	CH ₃ CHO	Occurs naturally in coffee, bread, and ripe fruit, and is produced by plants	50	lemon, alcohol	1
16423-19-1	geosmin (trans-1,10-dimethyl-trans-9-decalol)	C ₁₂ H ₂₂ O	Earthy odor contaminant in fish, beans and water	0.1	earthy-muddy odor	2
623-37-0	3-hexenal	C ₆ H ₁₀ O	Eye irritant	0.25	horseradish, fruity, fishy, sweaty	3
557-48-2	2,6-nonadienal	C ₉ H ₁₆ O	Used to flavor water.	0.01	powerful cucumber	3
18829-56-6	2-nonenal	C ₉ H ₁₆ O	Odor is perceived as orris, fat and cucumber. Has been associated with human body odor alterations during aging.	0.1	paper odor	3
4312-99-6	1-octene-3-one	C ₈ H ₁₄ O	Odorant responsible for the typical metallic smell of metals and blood coming into contact with skin. Strong metallic mushroom-like odor with a low odor detection threshold	0.005	mushroom and musky	3
Amines (Nitrogen Compounds)						
7664-41-7	ammonia	NH ₃	Trace quantities in the atmosphere; produced from the putrefaction (decay process) of nitrogenous animal and vegetable matter.	17	very sharp, pungent	4
multiple	butyl amine	C ₄ H ₁₁ N	One of four isomeric amines of butane. Liquid having the fishy, ammonia-like odor common to amines.	1,800	fishy	5
124-40-3	dimethyl amine	(CH ₃) ₂ NH	Found widely in animals and plants; present in many foods at the level of a few mg/kg. Ammonia-like odor.	37	pungent fishy	4
75-04-7	ethyl amine	C ₂ H ₇ N	Strong ammonia-like odor.	950	fishy	6
74-89-5	methyl amine	CH ₃ NH ₂	Simplest primary amine. Has a strong odor similar to fish.	2.1	pungent fishy	4
462-94-2	cadaverine (1,5-diaminopentane)	C ₅ H ₁₄ N ₂	Toxic in large doses.	N/A	cadaver	N/A
120-72-9	indole (2,3-benzopyrrole)	C ₈ H ₇ N	Can be produced by bacteria as a degradation product of the amino acid tryptophan. Occurs naturally in human feces and has an intense fecal odor.	1.0	fecal	4
110-60-1	putrescine (1,4-diaminobutane)	C ₄ H ₁₂ N ₂	Toxic in large doses.	N/A	putrid	N/A
83-34-1	skatole (3-Methyl-1H-indole)	C ₉ H ₉ N	Mildly toxic organic compound belonging to indole family. Occurs naturally in feces (produced from tryptophan in the digestive tract); strong fecal odor	1.2	putrid, fecal	4
121-44-8	triethylamine	N(CH ₂ CH ₃) ₃	Strong fishy odor reminiscent of ammonia; smell of the hawthorn plant.	480	strong fishy	7
75-50-3	trimethylamine	N(CH ₃) ₃	Product of decomposition of plants and animals. Odor associated with rotting fish, some infections, bad breath	0.8	pungent, fishy, saline odor	8
Organic Acids						
107-92-6	butyric acid (butanoic acid)	C ₄ H ₈ O ₂	Product of anaerobic fermentation (including in the colon and as body odor). It has an unpleasant smell and acrid taste. Distinctive smell of human vomit.	1.0	sour milk, rancid butter	4
Sulfur Compounds						
109-79-5	butyl mercaptan	C ₄ H ₁₀ S	Fetid (extremely foul-smelling) odor, commonly described as "skunk" odor.	1.0	ode to skunk	9
624-92-0	dimethyl disulfide	C ₂ H ₆ S ₂	Flammable liquid with an unpleasant, garlic-like odor.	12	sour, onion like odor	10
75-18-3	dimethyl sulfide	C ₂ H ₆ S	Becomes highly disagreeable at even quite low concentrations.	1.0	cabbage like	3
75-08-1	ethyl mercaptan	C ₂ H ₆ S	Strongly disagreeable odor that humans can detect in minute concentrations. Intentionally added to butane and propane to impart an easily noticed smell to these normally odorless fuels.	1.0	sour, garlic odor	11
7783-06-4	hydrogen sulfide	H ₂ S	Often results from the bacterial breakdown of organic matter in the absence of oxygen gas, such as in swamps and sewers; process is known as anaerobic digestion.	4.7	rotten eggs	4
74-93-1	methyl mercaptan	CH ₄ S	Released from decaying organic matter.	2.2	sour, garlic odor	12
Other Compounds						
2371-42-8	2-methyl-iso-borneol	C ₁₁ H ₂₀ O	Odor detection threshold is very low. One of the chemicals with major influence on the quality of drinking water	N/A	camphoraceous odor	N/A
123-92-2	iso-amyl acetate (3-methylbutyl acetate)	C ₇ H ₁₄ O ₂	Used to confer banana flavor in foods.	25	banana-like odor	13

a. Reference: 1999 Proceeding of the Georgia Department of Agriculture Odor Control Program for Rendering Plants

N/A = Not Available

Odor Threshold References

1. Lakes Environmental Software, Air Toxics Index

<http://www.lakes-environmental.com/toxic/ACETALDEHYDE.HTML>

2. Off-flavor in Catfish Home Page, The Home Page of Dr. Peter Perschbacher

<http://www.geocities.com/CapeCanaveral/5824/geosmin.html>

3. Leffingwell & Associates

<http://www.leffingwell.com/odor.htm>

4. "Measuring Farmstead Odors", Oklahoma Cooperative Extension Services

<http://www.agweb.okstate.edu/pearl/biosystems/general/f1740.htm>

5. NIOSH OCCUPATIONAL SAFETY AND HEALTH GUIDELINES FOR CHEMICAL HAZARDS;

Supplement III-OHG 1995 DHHS (NIOSH) Publication No. 95-110

<http://www.cdc.gov/niosh/pdfs/0079-rev.pdf>

6. NIOSH/OSHA/DOE Health Guidelines

<http://www.osha-slc.gov/SLTC/healthguidelines/ethylamine/recognition.html - healthhazard>

7. Lakes Environmental Software, Air Toxics Index

<http://www.lakes-environmental.com/toxic/TRIETHYLAMINE.HTML>

8. NIOSH/OSHA/DOE Health Guidelines

<http://www.osha-slc.gov/SLTC/healthguidelines/trimethylamine/recognition.html>

9. Matheson Tri-Gas, Inc. Material Safety Data Sheet

<http://www.mathesongas.com/msds/ButylMercaptan.htm>

10. Matheson Tri-Gas, Inc. Material Safety Data Sheet

<http://www.mathesongas.com/msds/DimethylSulfide.html>

11. Matheson Tri-Gas, Inc. Material Safety Data Sheet

<http://www.mathesongas.com/msds/EthylMercaptan.htm>

12. Matheson Tri-Gas, Inc. Material Safety Data Sheet

<http://www.mathesongas.com/msds/MethylMercaptan.htm>

13. NIOSH/OSHA/DOE Health Guidelines

<http://www.osha-slc.gov/SLTC/healthguidelines/isoamylacetate/recognition.html>

REGULATORY HISTORY

Rule 402 - Nuisance

Rule 402, which mirrors state Health and Safety Code §41700, prohibits the discharge of air contaminants or other material which can cause nuisance or annoyance to any considerable number of people or to the public or which endanger the comfort or repose of any such persons, or the public. Historically, facilities within the South Coast Air Basin that emit odors causing a public nuisance have been cited for violation of Rule 402.

Under Rule 402, a Notice of Violation (NOV) for public nuisance is generally issued after the SCAQMD receives a specified number of public complaints, generally 6 or more complaints from separate households, during the same odor event. This is because the nuisance must affect “a considerable number of persons or the public.” Verification of odors from rendering facilities can be challenging, particularly when rendering facilities are clustered together. In addition, for some rendering facilities there are challenges to confirm a possible upwind source due to physical barriers in upwind locations such as railroad tracks and water channels. There are limitations with the implementation of Rule 402 in addressing odors emanating from rendering facilities. Rule 402 does not contain specific mechanisms to reduce odors from rendering facilities and does not establish minimum standards to reduce or minimize odors. Rule 402 is implemented as a reactive approach to air quality related public complaints, since SCAQMD staff needs to investigate public complaints prior to taking enforcement action. For odor events that may last minutes to hours, the unavoidable lag time between the complaint and an inspector’s attempt at verification of an odor makes it difficult to address specific odor issues. In addition, since the five rendering facilities are located in relative close proximity to one another, it can be difficult for SCAQMD inspectors to trace the odor back to an individual facility.

Regulatory Authority

The District is given broad authority to regulate air pollution from "all sources, other than emissions from motor vehicles." Health and Safety Code (H&SC) §40000. The term "air pollutant" includes odors [H&SC §39013]. Therefore, the District has the authority to pass regulations to control air pollution, including odors, from rendering facilities. The District has authority to adopt such rules as may be "necessary and proper" to execute the powers and duties imposed on the District by law. [H&SC §40702].

The District’s legal authority to adopt and enforce PR 415, establishing best management practices and requirements to reduce odors from rendering facilities also derives from H&SC §41700, which, in pertinent part, prohibits the discharge of air contaminants causing annoyance to the public. It further prohibits the discharge of air contaminants, such as odors, which “endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property.” [H&SC §41700]. The District’s authority granted by H&SC 41700 to protect the public’s comfort, repose and health provides for the regulation of facilities in order to prevent the discharge of odors before they cause nuisance or discomfort to the public.

In addition, H&SC §40001(b) authorizes the District to adopt rules and regulations and provides, in relevant part, for the prevention and abatement of air pollution episodes which cause discomfort

or health risks to a significant number of persons. PR 415 is a reasonable and proper use of the District's regulatory authority.

Findings of Public Nuisance

In order for an odor complaint to be verified by an SCAQMD inspector, the inspector performs several sequential steps, which include: respond to the odor complaint; interview the complainant; detect the same odor as the complainant describes, which are often many blocks from the complainant; and trace the odor upwind back to a specific facility. It is often difficult to complete this process during a temporary odor event. If rendering odors are still present when the inspector arrives, it is sometimes difficult to trace the odor upwind to a source due to both the impediments clustering of facilities. For example, confirm an individual facility as the source of odors. If a specific facility cannot be identified as the source or a sufficient number of complaints to represent a "public nuisance", no violation under Rule 402 can be issued.

Odor events from rendering facilities in the Vernon have rarely resulted in violations under Rule 402 and H&SC §41700. However, based on a long complaint history, comments from community members, and odor detection by SCAQMD inspectors, objectionable odors typical of rendering operations can often be detected miles away from the Vernon area rendering facilities many days out of the year. Therefore, given the difficulties of making a finding of violation under Rule 402, the low number of NOVs does not indicate a lack of impact on the surrounding homes and business.

Other SCAQMD Rules that Address Odors

As previously discussed, Rule 402 – Nuisance represents a reactive approach to odor issues. For certain source categories, it has been necessary to adopt specific requirements within a rule to address odor issues in order to be more proactive with regard to minimizing reasonably foreseeable odors from these source categories to prevent nuisance odors from occurring, or to provide a mechanism within the rule language that addresses ongoing odor issues. For example, Rule 410 – Odors from Transfer Stations and Material Recovery Facilities directly addresses odors by establishing odor management practices and requirements. These include: requiring an enclosure for certain new and existing facilities; requiring a properly-sized ventilation system for the enclosure; and requiring an Odor Management Plan with specific information on control of odors at critical locations within the facility.

An example of a rule requirement that provides a mechanism to address ongoing odor issues is found in Rule 1148.1 – Oil and Gas Production Wells, where a facility is required to submit a Specific Cause Analysis when there are three or more complaints by different individuals from different addresses, and the source of the odor is verified by District personnel. If this provision is triggered three times within a six-month period, the facility is further required to submit an Odor Mitigation Plan with specific provisions for odor monitoring and mitigation that are spelled out in the rule.

Another example of rule requirements designed to address odor issues is found in Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities. Rule 1430 establishes odor contingency measures, where a facility is required to implement either operational changes, or process-related changes, or enhance the enclosure that houses the grinding operation. Implementation of these odor contingency measures is triggered by four odor complaints within a

six month period, where the odor complaints are made by different individuals from different households, with the source of the odor having been verified by District personnel.

These three examples of regulatory approaches to odor issues for various industry categories represent a precedent for odor control that has been approved by the SCAQMD's Governing Board.

Direct Regulation of Odor Emissions in other States

In 2000, Redwine and Lacey¹² conducted a survey of states to determine regulations pertaining to odor emissions from confined animal feeding operations (CAFOs). While CAFOs are not proposed to be regulated under PR 415, the results of this study may be instructive with regard to how other states address odors in general. The study reported that ten states have regulations directly limiting odor emissions directly. Thirty-four other states were found to have some regulation designed to curtail odor emissions without explicit limitations.

Of the ten states with explicit odor limits, six specify odor limitations at some location such as the property line of the operation or the affected business or dwelling. Rhode Island and Vermont “prohibit emission of objectionable odors beyond the property line.” South Carolina states that “no producer may cause, allow or permit emission of an undesirable odor into the ambient air unless preventive measures to abate/control the odor are utilized.” Washington state requires that “any person that allows the emission of an odor must use recognized good practices to minimize the odors; masking is not allowed.” All ten states base odor limits on human perception; none have specified limits based on analytical measurement of odorous compounds. Of the 34 states with implicit odor regulations, ten employ setback distances. Distances vary from a low of 50 ft in Arkansas to a high of 16,000 ft in Kansas. Several states require odor control plans as a part of a pollution abatement permit.¹³

Regulation of Rendering Facilities by the City of Provo, UT

In 1999, the city of Provo, UT adopted an ordinance for rendering facilities located in and around Provo. The purpose of the ordinance includes the language: “. . . to not emit offensive or noxious odors that create a nuisance limiting the ability of other persons or entities to enjoy the safe, healthful, and economic use of their property.”¹⁴ The odor control provisions of the city ordinance represent the type of rendering odor control (i.e. enclosure of odorous operations; enclosure kept under negative pressure; venting enclosure to odor control system) that is proposed in PR 415. This ordinance applies to “All rendering facilities within Provo City limits and within one mile of Provo City limits”, including existing facilities.

Notable requirements in this ordinance include:

- *All storage of dead animals or renderable raw material shall be inside the rendering facility and maintained under negative air pressure at all times during storage. Finished product shall be stored inside the rendering facility. [Ch. 7.06.060(1)]*

¹² A Summary of State Odor Regulations Pertaining to Confined Animal Feeding Operations; Redwing, J.; Lacey, R., 2000

¹³ <http://www.deq.virginia.gov/Portals/0/DEQ/LawsAndRegulations/GeneralAssemblyReports/swineodor.pdf>

¹⁴ <http://www.codepublishing.com/ut/provo/mobile/index.pl?path=../html/Provo07/Provo0706.html>

- *The dead animal or renderable raw material receiving area shall be totally enclosed and maintained under negative air pressure and the exterior door must be closed when dead animals or renderable raw material are being delivered. [Ch. 7.06.060(3)]*
- *The rendering process shall be totally enclosed and maintained under negative air pressure at all times. The air evacuation rate shall be such that . . . there are a minimum of twenty-five (25) exchanges of building air per hour for all buildings required to be under negative air pressure while the rendering process is in operation, and for two (2) hours after the rendering process has ceased to operate. [Ch. 7.06.080(3)]*
- *The rendering facility shall not operate unless the odor control system is operating and in full use. [Ch. 7.06.080(4)]*
- *The odor control system shall operate in such a manner that unreasonably offensive or noxious odors are not detectable beyond the property line of the rendering facility. When . . . investigation determines that a rendering facility emitted unreasonably offensive or noxious odors, the rendering facility shall be served with a notice of violation. [Ch. 7.06.080(5)]*
- *Openings and doors to the rendering facility shall remain closed at all times, except during actual entry or exit of trucks and/or personnel. All doors shall be equipped with closers that will ensure positive door closure. [Ch. 7.06.080(8)]*
- *All delivery trucks, trailers and any attendant containers used to carry renderable raw materials or dead animals shall be covered or carried within a covered truck or trailer and all dump doors, covers and valves shall be maintained to prevent any water, blood or other material from leaking or escaping in any manner during the transport and/or delivery of raw material.*

Requirements for Permitting of Rendering Facilities in Texas

The Texas Commission on Environmental Quality (TCEQ) issues air permits for all rendering facilities in the state of Texas. For new rendering facilities, or when changes are made to existing rendering facilities that increase throughput limits, TCEQ imposes standard conditions on rendering facilities. The odor control provisions of the standard conditions imposed by the TCEQ represent the type of rendering odor control (i.e. enclosure of odorous operations; enclosure kept under negative pressure; venting enclosure to odor control system) that is proposed in PR 415. Darling Ingredients has nine rendering-related locations in Texas.

Standard conditions include many that deal with holding times, enclosure, ventilation of the enclosure, and the odor control system, as follows:

- *Unrefrigerated raw rendering materials shall enter the receiving pit within 24 hours of slaughter.*
- *Refrigerated raw rendering materials shall enter the rendering receiving pit within 48 hours of slaughter. Of the 48 hours, not more than 24 hours of that time shall be unrefrigerated.*
- *All slaughterhouse materials received on the plant site shall be placed in the rendering process receiving pit immediately upon receipt or shall be stored in trailers . . . for a period*

not to exceed 48 hours before being transferred to the rendering process receiving pit. The . . . enclosure shall be completely covered and paved with concrete.

- *All whole animal carcasses received on the plant site shall be placed in the rendering process receiving pit immediately upon receipt or shall be stored in a staging building for a period not to exceed 48 hours before being transferred to the rendering process receiving pit. The staging building shall be completely enclosed, covered, and paved with concrete. The doors to this building shall be kept closed at all times, except when loading or unloading.*
- *The raw materials with the potential to produce nuisance odor conditions and all raw materials that have exceeded 24 hours of on-site storage time shall be treated . . . with Positive Deodorant food-grade odor suppressant.*
- *At no time shall the permit holder cause or allow conditions to exist that result in noncompliance with 30 Texas Administrative Code (TAC) § 101.4 as it relates to nuisance odor conditions.*
- *All areas of the rendering building where odors can be produced shall be maintained under negative pressure during all rendering operations including the receiving of raw material, cooker operations, processing of finished product; and during any rendering equipment maintenance period which might result in odorous emissions. All doors and openings shall remain closed during rendering and drying operations, except as necessary to enter or exit the building, to receive raw materials, or conduct maintenance activities. Raw materials shall not be allowed to accumulate in a way that would prevent the closure of any doors.*
- *All plant air discharge shall be treated by a packed-bed room air scrubber before being exhausted into the atmosphere. This scrubber shall be properly installed, in good working condition, and shall achieve 30 room air changes per hour.*
- *All inedible rendering product handling areas that are not completely enclosed shall be hooded in accordance with American Conference of Governmental Industrial Hygienist standards and vented directly to the packed-bed room air scrubber. All hooding, duct, and collection systems shall be effective in capturing emissions from the intended equipment and in preventing fugitive emissions from the building. The hooding and duct systems shall be maintained free of holes, cracks, and other conditions that would reduce the collection efficiency of the emission capture system.*

Regulation of Rendering Facilities in South Carolina

South Carolina has a regulation for rendering under Chapter 22 of the South Carolina Statutes and Codes – Rendering of Livestock and Poultry Raw Material. This regulation has requirements for enclosure and odor control of rendering operations.

§47-22-60 Location and Equipment Requirements for Transfer Centers, Rendering Plants and Vehicles Used to Transfer Raw Materials.

- *Have walls, floors and ceilings made of durable, nonabsorbent materials that can be cleaned and maintained in a sanitary condition [§47-22-60(A)(3)]*
- *Utilize buildings of sufficient size and shape to accommodate all phases of actual processing [§47-22-60(B)(2)]*

- *Be operated using reasonable precautions while handling, storing, or preparing raw material to prevent objectionable odors from being discharged beyond the boundaries of the permittee's property* [§47-22-60(B)(5)]
- *Be operated using appropriate and properly-functioning rendering equipment including, but not limited to working, efficient and effective odor-control systems to prevent the emission of objectionable odors* [§47-22-60(B)(6)]

The odor control provisions of the South Carolina rendering regulation are more restrictive than those proposed in PR 415 in that they do not allow objectionable odors beyond the facility fenceline [§47-22-60(B)(5)]. This regulation requires enclosures for all phases of production, and an odor control system.

Regulation of Rendering Facilities in Mississippi

Mississippi has a regulation for rendering under Title 41, Chapter 51 of the Mississippi Code. This regulation has requirements for enclosure and setback, as follows:

- *The building must have four(4) walls complete and be provided with concrete or cement floors* [§41-51-21(a)]
- *All tanks shall be airtight except proper escapes for live steam, passing through the tanks during cooking, which steam shall be condensed by use of cold water condensers. All such equipment and other equipment which may be invented, manufactured and installed for use in disposal or rendering plants shall be so constructed and maintained as to prevent any avoidable escape of odors into the air* [§41-51-21(b)]
- *No new plant shall be located or constructed, or any discontinued plant reconstructed or reopened, at any place in this state inside of, or within two (2) miles of the nearest point of, the existing corporate limits of any municipality with a population in excess of five hundred (500) according to the latest federal census, or within one (1) mile of the nearest boundary of the lands owned or controlled in connection either with any state, county, township, city or town park, or boulevard, or of any public school or hospital, or of any charitable, religious or educational institutions* [§41-51-19]

The odor control provisions of the Mississippi rendering regulation include an enclosure for operations similar to PR 415. The setback requirements (two miles) for new and reconstructed facilities indicate the long distance rendering odors are capable of traveling.

Summary of Rendering Facility Regulations in other States

A summary of regulations in other states is presented in Appendix B. Table B-1 in Appendix B presents a summary of the requirements imposed by 16 states on rendering facilities. These state requirements are described without references to the applicable state regulations (i.e. code sections). This list should not be taken as an exhaustive list of all requirements imposed on rendering facilities in each listed state; rather, it is a brief summary of the State regulations that SCAQMD staff was able to identify.

Odor Guidance from Other Countries

The following guidance for rendering facilities is from “Review of Odour Monitoring and Control Techniques at Rendering Plants”¹⁵, a document prepared to provide additional technical advice to support practical regulation of rendering plants in the UK.

4.3.1 The need for containment

In order to minimise the release of fugitive emissions it is necessary to ensure that as much of the rendering process is carried out within a sealed containment envelope. However, simply enclosing sources of emission is generally not sufficient to ensure that offensive emissions are prevented. It is also important to consider ventilation/extraction of air, and treatment of odorous air streams.

The rate of ventilation required for effective containment of offensive odour released within a building depends mainly on how airtight the structure is. In a perfectly sealed enclosure, ventilation would only be required to dilute and remove contaminated air to ensure health and safety standards are met. However, no buildings are completely airtight. Deficiencies in the integrity of the structure and other openings such as doors, gaps around pipe work, gaps between cladding sheet etc. allow air to pass into and out of the building. The larger the gaps in the structure, the greater the rate of flow of air through the building and as a consequence the greater will be the rate of extract ventilation required to contain any offensive odour. Thus to prevent fugitive emission of offensive odour it is essential to ensure that the building integrity is as sound as practicable and that sufficient air is extracted from that building to prevent outward flow of air.

The cited text highlights the importance of good odor control practices that represent the type of rendering odor control (i.e. enclosure of odorous operations; enclosure kept under negative pressure; venting enclosure to odor control system) that is proposed in PR 415.

The following guidance for rendering facilities is from “Guidance Note on the Best Practicable Means for Rendering Works”¹⁶ issued by the Hong Kong Environmental Protection Department to provide guidance on air pollution management for rendering:

4. 5 *To prevent malodorous emissions arisen from the above rendering process from causing air pollution, suitable plant facilities and odour management measures shall be provided to contain fully the emissions from rendering works and associated processes as well as odorous plant ventilation. Properly designed operation process shall be installed and operated to contain and treat concentrated emissions, such as vapours and noncondensable gaseous products emitted directly from cookers and process air from presses. Feedstock treatment appliance(s) shall be of a totally enclosed vessel type to reduce process emissions and vented to an effective odour management system for treatment. The oily fume and odorous emissions from the cooker shall be collected and*

¹⁵ http://www.sniffer.org.uk/files/5713/6906/0202/ER32_project_report_FNL.pdf

¹⁶ http://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/air/guide_ref/files/bpm28_2b_eng.pdf

passed through a suitable oily fume and odour abatement equipment before discharging to the open air.

- 4.6 *A well designed ventilation system shall be provided and operated at the plant including, but not limited to storage, handling and processing areas to control odour emission. The ventilation system shall be capable of maintaining a reasonable negative pressure to prevent an uncontrolled escape of malodorous air to outdoors. The areas from which ventilation is provided shall be connected to suitable odour abatement plant.*
- 4.11 *For buildings in which there are possible odorous sources, they shall be designed to prevent the uncontrolled escape of odorous air from the building. Typical odour management measures may include maintaining a reasonable negative pressure and fitting self-closing doors at workplace to contain odorous emission. The odorous air shall be effectively collected and vented to suitable odour abatement equipment.*
- 4.14 *Without prejudice to the above general requirements, the following control measures shall be implemented:*
- (a) *Materials Handling and Processing*
- (i) *All raw materials should arrive at the plant in totally covered vehicles or containers designed to minimize offensive odour and spillage of any liquid or solid matter. The time interval between the materials arising and their delivery to the plant should be kept to a minimum. Raw materials should remain in lorries parked within an enclosed area on the site for as little time as possible and be kept covered until they are discharged for processing.*
- (ii) *Raw materials should be transported from the point of production to the processing plant in enclosed containers and handled in a designated work area operated under negative pressure and with extractive ventilation connected to an effective odour management system, as quickly as practicable. The design of containers shall be such as to minimize the emission of any offensive odour or spillage of any liquid or solid matter. Alternatively, enclosed conveyor system vented to the odour management system should be provided to reduce the process emission.*

The guidance from the Hong Kong Environmental Protection Department for rendering facilities represents the type of rendering odor control (i.e. enclosure of odorous operations; enclosure kept under negative pressure; venting enclosure to odor control system) that is proposed in PR 415.

Odor Complaints in Communities Surrounding Vernon

Odor complaints in the communities surrounding the Vernon rendering facilities were evaluated over a ten-year period. Complaints and NOVs were evaluated from January 2002 through October 2011. An average of 35 odor complaints per year alleged to be rendering odors were received by SCAQMD during this ten year period. Many of these complaints were not verified by an SCAQMD inspector or tracked back to a specific facility. A more recent representation of odor complaints was obtained for the time period from January 2015 through September 2017. During this 21 month period, 193 odor complaints were alleged by complainants in Vernon, Commerce,

Maywood, Bell, Boyle Heights, and Los Angeles, about odors from a rendering plant or slaughterhouse. Some complainants named a rendering facility and some complained about the odor of dead animals, rotting flesh, or putrid smells without naming a rendering facility. Many of these complaints were not verified.

SCAQMD staff has received comments in PR 415 working group meetings from the regulated industry that the number of odor complaints from areas surrounding the rendering facilities indicates that rendering odors in the community are not an issue and that therefore, the rule is unnecessary. However, given the comments SCAQMD staff has received from community members, the number of complaints may not be fully indicative of the odor impact in these areas. SCAQMD staff has received feedback that since complaints usually do not result in notices of violation, and thus may not result in a reduction in odors even after repeated complaints, complainants may become discouraged and no longer file complaints. Staff has also heard in community meetings that given the demographics of the surrounding areas, residents may be reluctant to file complaints or may be unaware of the SCAQMD complaint process.

Location of Odor Complaints

Figure 1-4 shows locations where odor complaints identifying rendering odors were received during the 5-year period from January 2006 through September 2011. Figure 1-5 shows a representation of the wind speed and direction (wind rose) at the Central Los Angeles meteorological station; the closest meteorological station to the Vernon rendering facilities. Note that Figure 1-4 only shows locations for four of the five rendering facilities. The fifth facility is located immediately adjacent to the facility at the corner of Soto St. and Bandini Blvd. Figure 1-5 shows the prevailing winds originating from the west and south, correlating with the clusters of complaints located to the north and east of the facilities. These complaints all identified the odors as being rendering-type odors.

Figure 1-4 –Odor Complaint Locations during 5-year Period: 2006 - 2011

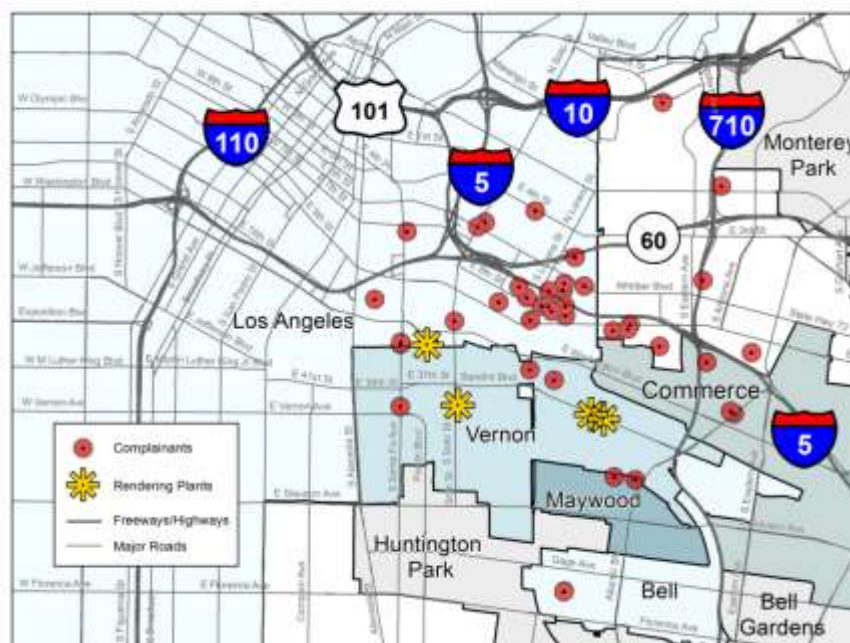
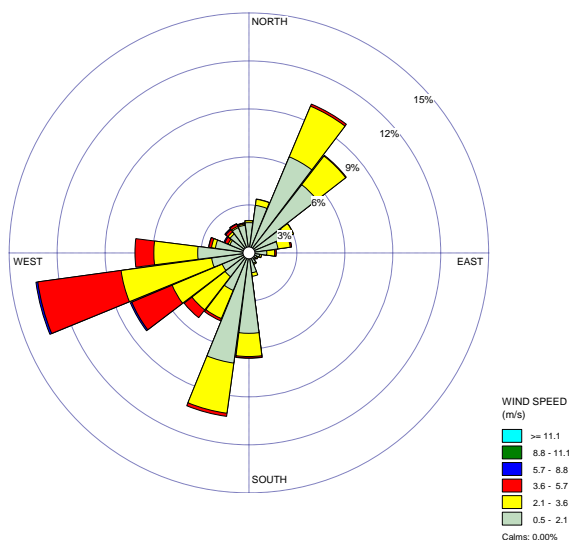


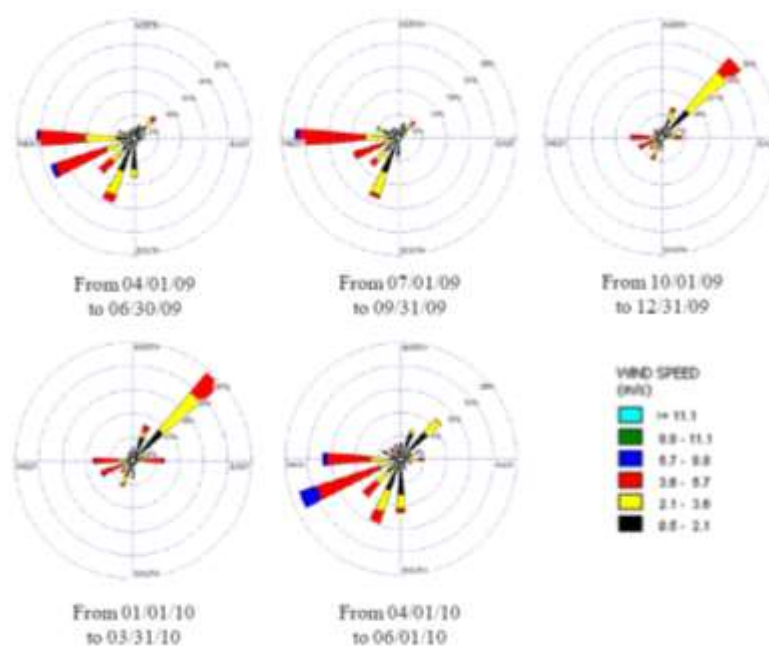
Figure 1-5 – Wind rose for Central Los Angeles Meteorological Station

Meteorological Data from Monitoring Study at Resurrection Catholic School in Boyle Heights

Beginning in 2009, SCAQMD conducted a year-long monitoring study at Resurrection Catholic School in Boyle Heights. The intent of the study was to monitor levels of air toxics in the community emitted from on-road and off-road vehicles and industrial facilities, and the potential health consequences related to exposure to such pollutants.

The study included a temporary weather monitoring station at the school which collected wind speed and direction in three-month periods. The spring (April through June) and summer (July through September) months (i.e., April through September) were characterized by predominantly westerly and west-southwesterly winds, typical of the daytime onshore sea-breezes in this part of the South Coast Air Basin. Conversely, the wind roses representative of colder fall and winter conditions show the predominance of offshore flow from the northeast. This is characteristic of cold air drainage from the mountains to the ocean and it is typically observed this time of year. The stronger northeasterly winds indicate “Santa Ana” winds where high pressure over the deserts of the Great Basin cause cold air to cross the mountains, gaining momentum and warming as it moves down-slope. Santa Ana events bring low humidity and can be warmer or cooler depending on the temperature of the air-mass over the Great Basin deserts.

Figure 1-6 shows several wind roses with three-month average wind speed and direction data from 04/01/09 to 06/01/10.

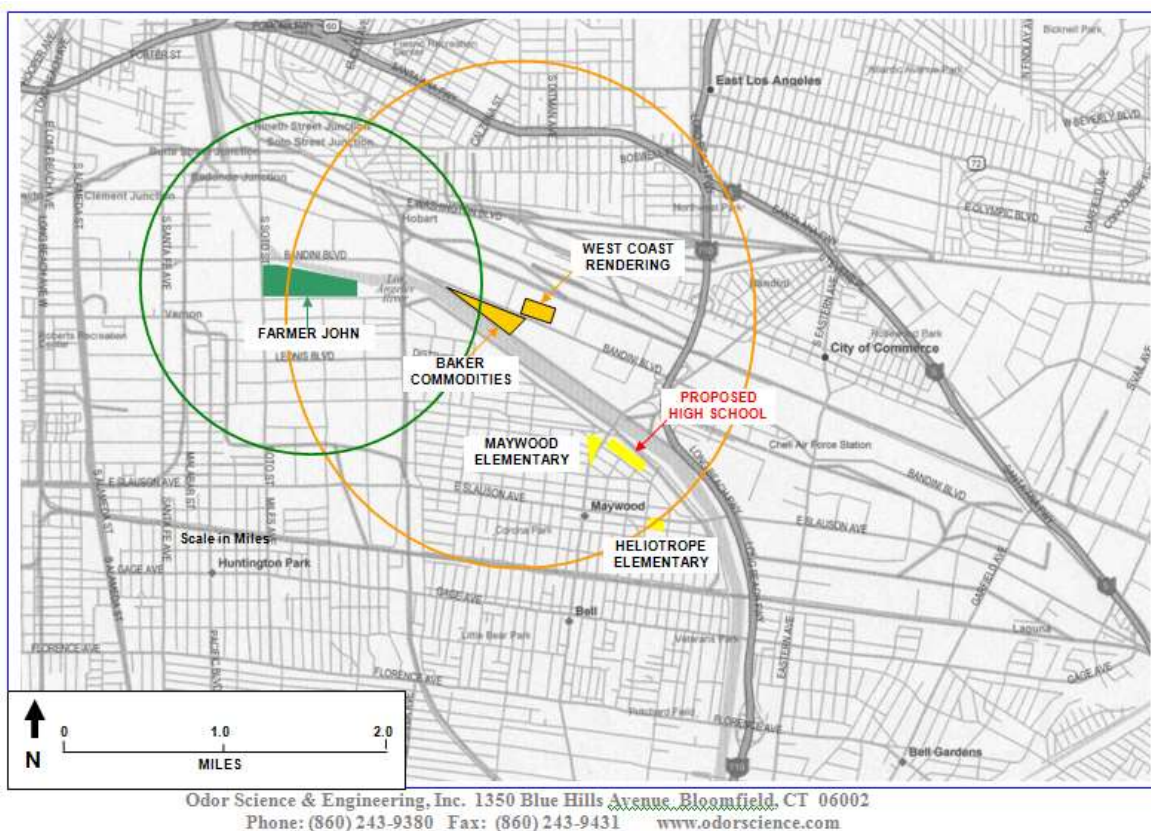
Figure 1-6 – Wind Roses From Resurrection School Monitoring Study

Field Odor Survey for South Region High School

In 2006, Odor Science and Engineering (OS&E) conducted an “Assessment of Potential Odor Impacts at the Proposed Site for the South Regional High School No. 8”¹⁷. The assessment was conducted to address concerns regarding odor impacts prompted by odor complaints from the recently opened Maywood Elementary School, located in the immediate vicinity of the proposed school site. As part of the assessment, a field odor survey was conducted. During November 2006, OS&E conducted a series of odor surveys to document the odors in the area. The “odor footprints” for several rendering facilities are shown in Figure 1-7. The footprints shown in Figure 1-7 correspond to an intensity level of 3 on the n-butanol odor intensity scale (American Society for Testing and Materials (ASTM) E544). Odors of that intensity are likely to be considered objectionable. Detectable odors would likely extend beyond the footprints shown.

¹⁷Assessment of Potential Odor Impacts at the Proposed Site for the South Regional High School No. 8, OS&E Project No. 1582-M-00, Ostijic, 2006

Figure 1-7 – Odor Footprints of Rendering Facilities Identified During Field Odor Survey for South Regional High School No. 8



The information in Figure 1-7 is presented for informational purposes. As discussed in Chapter 2, the proposed approach for PR 415 is based on addressing fugitive odors by best management practices and best available odor control methods, with no proposed provisions for odor surveys.

Odors and Potential Health Effects

The presence of odors does not necessarily indicate the presence or absence of toxic air contaminants, and odor issues are generally addressed as a public nuisance. Odor complaints, however, are often accompanied by reports of adverse effects such as headache and nausea.

The American Thoracic Society (ATS), a scientific society that focuses on respiratory and critical care medicine, published its official guidelines as to what constitutes an adverse health effect in 1985, and updated these guidelines in 1999. The statement is intended to “provide guidance to policy makers and others who interpret the scientific evidence for the purpose of risk management.”¹⁸ The statement acknowledges that there are graduations in the degree of effects and also differentiates between an effect that is adverse from an effect that is merely a physiological response. The ATS statement indicates that air pollution exposures which interfere with the quality of life can be considered adverse. Thus odor-related annoyance can be considered

¹⁸ “What Constitutes an Adverse Health Effect of Air Pollution?”, American Thoracic Society, 1999, <http://www.thoracic.org/statements/resources/archive/airpollution1-9.pdf>

an adverse effect, even if nausea or headache or other symptoms are not present. In the ATS guidelines, odors are clearly listed as an adverse respiratory health effect.

Unpleasant odors have long been considered as warning signs of potential health risks. More recently, there have been public health concerns that odor sensations themselves, or perhaps the agents responsible for odor, may in fact cause health effects¹⁹. Such odors often elicit complaints of respiratory irritation, headache, nausea and other adverse symptoms. While the mechanism for the production of these effects is not known, these effects have been noted at concentrations of substances that produce unpleasant odors. Postulated mechanisms include neurological changes in sensory nerves that could influence symptom production in the absence of other toxicological effects.²⁰

The literature describes symptoms of exposure to odor, survey results and health studies. Two examples follow. The first is an excerpt from *The “Gray Line” Between Odor Nuisance and Health Effects*:²¹

Non-specific, multi-system symptoms have been experienced in communities near industrial sites, waste water treatment plants, agricultural sites, and hazardous waste sites. Citizens frequently report that chemical odors are making them sick. These symptoms include: headaches, nausea, reflex nausea, G.I. distress, fatigue, eye irritation, throat irritation, shortness of breath, runny nose, sleep disturbance, inability to concentrate, and classical stress response.

In a survey near a waste treatment plant in 1983, one in nine respondents reported that odors had made them sick. A 1991 study of health effects from pesticides used on a potato field showed that while health effects were not related to proximity of citizens to the fields, odor perception was strongly related to the number of symptoms reported, the length of occurrence of the symptoms, and the severity of the symptoms. More recently these odor-related symptoms are being reported by large groups of citizens near agribusiness feedlots (concentrated animal confinement facilities) around the country.

A study in 1997 conducted at the University of Iowa assessed both the physical and mental health of residents near a large-scale swine operation. This pilot scale study consisted of interviewing 18 residents within two miles of the 4,000 sow facility and 18 comparable residents living near smaller swine facilities. The results indicated that the neighbors of the large swine facility reported higher rates of a variety of symptoms including respiratory problems, nausea, headaches, and irritated eyes, nose and throat.

The following text is from *Potential Health Effects of Odor from Animal Operations, Wastewater Treatment, and Recycling of Byproducts*:²²

¹⁹ “Odour Impact - Odour Release, Dispersion and Influence on Human Well-Being with Specific Focus on Animal Production”, Nimmermark, 2004

²⁰ “Science of Odor as a Potential Health Issue”, Schiffman, 2005

²¹ <http://www.fivesenses.com/Documents/Library/23%20%20Gray%20Line%20Nusance%20Health.pdf>

²² “Potential Health Effects of Odor from Animal Operations, Wastewater Treatment, and Recycling of Byproducts”, Schiffman et. al, Journal of Agromedicine, Oct 2008

The odor exposures that have received the greatest research attention are those that involve irritation. Physiological responses to irritation in the upper respiratory tract (nose, larynx) and/or lower respiratory tract (trachea, bronchi, deep lung sites) have been documented in both humans and animals. Irritation of the respiratory tract can alter respiratory rate, reduce respiratory volume (the amount of air inhaled), increase duration of expiration, alter spontaneous body movements, contract the larynx and bronchi, increase epinephrine secretion, increase nasal secretions, increase nasal airflow resistance, slow the heart rate, constrict peripheral blood vessels, increase blood pressure, decrease blood flow to the lungs, and cause sneezing, tearing, and hoarseness. Release of the potent hormone epinephrine (also called adrenalin) subsequent to nasal irritation may be a source of feelings of anger and tension that have been reported by persons exposed to odors. Epidemiological studies in communities with animal operations and municipal wastewater facilities have reported increased occurrence of self-reported health symptoms consistent with exposure to irritants.

PUBLIC PROCESS

The development of PR 415 was conducted through a public process. Through the rulemaking process, the SCAQMD staff met with a Working Group, consisting of industry, environmental and community members. During rule development, four Working Group meetings were held: in July 2014; December 2014; February 2015; and June 2015. A Public Workshop was conducted on March 5, 2015, and a Public Consultation meeting was held in June 2015.

When rulemaking was suspended in September 2015 in order to focus on other priorities, PR 415 was scheduled to be heard at the May 2015 Governing Board meeting. Much of the rulemaking process was completed which included various versions of the proposed rule, release of the Preliminary Draft Staff Report, and the CEQA document. Work on PR 415 was resumed on September 1, 2017 after the Governing Board directed staff to return to the November 2017 Board Hearing with PR 415. Staff re-initiated the rulemaking process to continue the work on PR415, which included responding to comments on the environmental assessment that had previously been circulated and preparation of the set-hearing (30-day) documents that are made available to the public in advance of a public hearing.

After rulemaking was suspended and then resumed in September 2017, staff provided an update to the Board's Stationary Source Committee and held an informational meeting on PR 415, both on September 15 2017. During all but the informational meeting, the working group participants and interested parties were invited to submit written comments. A summary of written comments received during the rule development process and responses to those comments are included in Appendix A of this staff report. Since the rulemaking resumed, staff has met with 3 of the affected rendering facilities, and will be meeting with a 4th rendering facility in the first week in October. Throughout the rulemaking process staff has visited the five affected rendering facilities many times, with most recent site visits in July, September, and October of this year to better understand specific operations that are affected by the proposed rule. The result has been additional revisions

to staff's proposal to better reflect actual conditions and odor sources, provide some alternative compliance options, and to address key issues raised by the affected facilities.

PR 415 is the result of a quality of life issue that was identified by the working group for the Clean Communities Plan (CCP) in the pilot study area of Boyle Heights. In November 2010, the Governing Board approved the CCP. SCAQMD staff began holding meetings of the stakeholder working group in July 2011 in order to identify air quality issues in Boyle Heights and surrounding communities that the working group felt should be addressed. Through eight meetings with the working group for the CCP pilot study area of Boyle Heights, and the stakeholder groups within the community listed below, staff heard that reducing odors from the rendering facilities was one of the top priorities for improving air quality in the area:

- Union de Vecinos
- Communities for a Better Environment
- East Yard Communities for Environmental Justice
- Resurrection Church
- Mothers of East Los Angeles
- Diverse Strategies for Organizing

In addition to the CCP meetings, staff also heard complaints about rendering odors from community stakeholders during rule development for Rule 1420.1 - Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities. Rule 1420.1 impacts Exide Technologies, which is located directly across Bandini Boulevard from Baker Commodities, and on the same side of Bandini as D&D Disposal/West Coast Rendering.

CHAPTER 2: CONTROL TECHNOLOGIES

CONTROL OF ODORS FROM RENDERING FACILITIES

CONTROL OF ODORS FROM RENDERING FACILITIES

Factors Affecting Odors from Rendering Facilities

The cause of offsite odors from rendering facilities is very site-specific, and depends upon a number factors, including:

- location and configuration of raw material receiving area;
- proximity of nearby receptors to facility;
- intensity and direction of prevailing winds;
- ambient temperature; and
- ambient humidity level.

The quality of raw materials when they enter the rendering facility significantly affects odors generated from the receiving area. For example, fresh material and material that has been refrigerated until delivery has a lower potential for odors than raw material that is partially decomposed when it enters the facility. An example of partially decomposed material is an animal carcass that has been deceased for a period of time before it is delivered to the rendering facility.

In addition to the quality of incoming raw materials, the current operating configuration of a facility also may have an impact on odors that can travel beyond a facility's fenceline. These include fugitive odors from grinding and conveying raw material, cooking, fat processing and wastewater. All of these sources generate fugitive odors. The control of fugitive odors at a rendering facility can mitigate against the detection of odors in the nearby community. For example, a building with large openings that houses cooking and fat processing operations may facilitate the escape of fugitive odors well beyond the rendering facility's location, where a similar process in a building with fewer or smaller openings may be better able to limit migration of odors.

Temperature and humidity also impact odors, as odors are often stronger on summer days where both temperature and ambient humidity levels are elevated, possibly due to faster decomposition of raw materials.

Two Approaches to Regulating Odors

During rulemaking for PR 415, SCAQMD staff investigated different approaches to regulating odors from rendering facilities. These approaches are described in more detail in the following sections.

First Approach - Establish Odor Surrogates

One approach initially considered by SCAQMD staff was to establish allowable odor concentrations for certain odor compounds (odorants) emitted from rendering processes. Allowable odor concentrations are the maximum level at which an odorant would be allowed. Under this approach, limits for odorants would be established by rule limits, and measured at the facility's property boundary or other location. Examples of odorant concentrations that may be limited under this approach are some or all of the 25 odorants identified in Table 1-1.

In order to establish allowable odor concentrations, it would first be necessary to establish an objectionable level for each odorant. ASTM Method E679 defines a procedure for determining

odor concentrations in a lab setting using an odor panel. A description of ASTM Method E679 can be found in “A Review of the Science and Technology of Odor Measurement”¹

To summarize ASTM E679, it requires each assessor in an odor panel to choose among three samples; one contains the diluted odor while the other two are blanks (odor-free air). The assessor acknowledges their choice as a guess, a detection or recognition. As defined by E679, a recognition response acknowledges that the sample smells like something.

This process starts with a highly diluted sample and continues with ascending odor concentration where the assessor is presented with the odor at twice the concentration as the previous sample. Under this method, detection threshold is represented by the number of sample dilutions needed to make an odor sample non-detectable. The recognition threshold represents the number of dilutions needed to make the odor sample faintly recognizable.

The odor panel used for the ASTM E679 test procedure consists of 5-12 trained and experienced individuals. The assessors are recruited from the general population and cannot have any specific hypersensitivity, or lack of sensitivity to odors. The assessors are then trained in the appropriate procedures. The odor concentration is derived from the panel of assessors’ responses to the laboratory dilution of odorous air samples.

From this summary, it is evident that while ASTM Method E679 may be useful in determining a detection threshold for each odorant in an odorous air sample, this method cannot establish odor thresholds that may be considered objectionable.

Staff then considered another ASTM method that is not limited to detection or recognition thresholds. ASTM Method E544 is a method for referencing ambient odor intensities in the suprathreshold region (i.e. a stimulus large enough to produce a reaction in excitable cells). The following description of ASTM Method E544 is from “Odor Intensity Scales for Enforcement, Monitoring, and Testing”²

Perceived odor intensity is the relative strength of the odor above the recognition threshold (suprathreshold, as defined in ASTM E544). ASTM E544-991, "Standard Practice for referencing Suprathreshold Odor Intensity", presents two methods for referencing the intensity of ambient odors: Procedure A - Dynamic-Scale Method and Procedure B - Static-Scale Method. Both methods use a series of increasing concentrations of a standard odorant, butanol. Field odor inspectors, monitors, plant operators and citizens commonly use the Static-Scale Method to reference the ambient odor intensity at a facility's fence line or at various points in the surrounding community. The odor intensity reported by the field observer is expressed in parts per million (PPM) of butanol (n-butanol or sec-butanol). The butanol "Odor Intensity Referencing Scale" (OIRS) is an objective measure of ambient odor intensity.

Note: Observed intensity values, such as the scale number or the equivalent butanol concentration, are not directly used in odor dispersion modeling.

ASTM Method E544 is a method used to characterize odor intensity through comparison of the intensity with a reference odor. While Method E544 indicates a method to characterize odor intensity through comparison of odor samples to a reference odor, it does not address odor

¹ A Review of the Science and Technology of Odor Measurement; St. Croix Sensory, Inc., 2005

² <http://www.fivesenses.com/Documents/Library/28%20%20Odor%20Intensity%20Scales.pdf>

character, which is very important to the perception of rendering odors. The use of this ASTM standard, while potentially useful as a tool for monitoring purposes, presents a limitation for incorporating into PR 415 rule development concepts.

Odor Panels

ASTM Methods E679 and E544 use an odor panel, consisting of 5-12 trained and experienced human assessors. The following description, from “A Review of the Science and Technology of Odor Measurement”³ gives more detail regarding odor panels:

The origins of sensory evaluation and nasal organoleptic testing are in the trade industry. Products such as perfumes, coffee, tea, wine, liquors, meat and fish were smelled or tasted to determine the quality of the product. Eventually, individuals became known as expert judges and were used to rate or grade products.

In the 1940s and 1950s great advancements took place in sensory testing by researchers performing sensory evaluation for developers of U.S. government war rations. Since that time, panels of trained sensory assessors have been the preferred method of evaluation sensory characteristics of products in a laboratory setting.

In the field of environmental engineering, odorous air samples can be collected from emission sources. Odor evaluation of odorous air samples is conducted under controlled laboratory conditions following standard industry practices using trained panelists known as assessors.

An odor laboratory is an odor-free, non-stimulating space. Each odor assessor, when working on odor evaluation, focuses on the task of observing the presented odor sample. Noise and distracting activities in the evaluation area can break the focus of the odor assessor. Odor panel sessions are organized and scheduled in order to maintain panel lengths not to exceed a period of 3-hours. Limiting panel length minimizes panelist fatigue.

Odor assessors are recruited from the community at large. From a pool of on call assessors, five to twelve assessors are selected for a scheduled odor panel. Odor panels consist of assessors that are selected and trained following the “Guidelines for Selection and Training of Sensory Panel Members” (ASTM Special Technical Publication 758) and EN13725 (ASTM, 1981; CEN, 2003). A person who smokes, who uses smokeless tobacco, who may be pregnant, or who has chronic allergies or asthma is excluded as a candidate for the odor panel.

Standing odor panel rules are part of the assessor’s agreement to participate in odor testing. Assessors:

- 1. Must be free of colds or physical conditions that may affect the sense of smell;*
- 2. Must not chew gum or eat at least 30 minutes prior to the odor panel;*
- 3. Must refrain from eating spicy foods prior to the odor panel;*
- 4. Must not wear perfume, cologne, or after shave the day of the odor panel;*
- 5. Must wear unscented deodorant the day of the odor panel;*
- 6. Must avoid other fragrance cosmetics, soaps, etc. the day of the odor panel;*

³ A Review of the Science and Technology of Odor Measurement; St. Croix Sensory, Inc., 2005

7. *Must have their hands clean and free of odors the day of the odor panel;*
8. *Must have their clothes odor free the day of the odor panel;*
9. *Must keep the odor panel work confidential; and*
10. *Must not bias the other panelists with comments about the observed samples.*

Each odor assessor is tested to determine their individual olfactory sensitivity using standard odorants, e.g. n-butanol and hydrogen sulfide. The assessor receives training that consists of olfactory awareness, sniffing techniques, standardized descriptors, and olfactometry responses.

As evident from the description and standing odor panel rules, an odor panel is intended as a controlled event that panelists plan for, or conversely abstain from participation if there are health or other issues.

SCAQMD staff believes an odor panel is not the ideal method of assessing the hedonic tone (pleasantness or unpleasantness), annoyance, objectionable nature and strength of odor samples obtained during an odor event, for the following reasons:

1. Odor sample degradation over time requires sample to be analyzed the same day or within 24 hours of collection⁴;
2. Odor samples will require lab work prior to analysis;
3. The need to convene an odor panel on short notice to analyze odor samples taken from a rendering facility during an odor event; and
4. Difficulty of odor panelists to plan for a hastily-convened panel. Due to these uncertainties, it may not even be possible to convene a suitable odor panel.

After detection thresholds are determined for each odorant under consideration, it would then be necessary to establish an allowable odor concentration for each odorant tested, as described previously. An allowable odor threshold is a level at which an odor would be considered objectionable by a reasonable person. Allowable odor concentrations may consist of a multiple of the detection threshold determined by the odor panel. The effort to determine the level at which an odor becomes objectionable would require further analysis by an odor panel. Analysis of this type is considered to be subjective in nature. From “A Review of the Science and Technology of Odor Measurement”:⁵

Measurable, but subjective, parameters of perceived odor are:

1. *Hedonic Tone - pleasantness vs. unpleasantness.*
2. *Annoyance - interference with comfortable enjoyment of life and property.*
3. *Objectionable - causes a person to avoid the odor or causes physiological effects.*
4. *Strength - word scales like “faint to strong”.*

These odor parameters are subjective because individuals rely on their interpretation of word scales and their personal feelings, beliefs, memories, experiences, and prejudices to report them. Written guidelines for subjective odor parameter scales assist individuals (citizens and air pollution inspectors) in reporting observed odor, however, the nature of these parameters remains subjective.

⁴ <http://www.aqmd.gov/docs/default-source/laboratory-procedures/methods-procedures/307-91.pdf?sfvrsn=2>

⁵ A Review of the Science and Technology of Odor Measurement; St. Croix Sensory, Inc., 2005

If staff followed this regulatory approach, odor concentration limits would become part of the rule proposal. To ensure these limits were not exceeded, it would be necessary to require periodic air sampling at a rendering facility's property boundary - or other location depending on the rule requirement.

For several reasons, staff did not pursue using odor surrogates as a regulatory approach. These reasons include:

1. **Appropriate surrogates.** As discussed in Chapter 1, there are over 25 compounds that have been detected in rendering odors. Establishing which of these odorants to use as surrogates to represent the strength, hedonic tone and other parameters of rendering odors, and establishing the level at which each surrogate is considered to be objectionable would be a costly, time-consuming and potentially subjective process.
2. **Odor panels.** As previously discussed, an odor panel is not ideal for situations where an odor sample needs to be assessed on short notice.
3. **Clustering of facilities.** There are two facilities located nearly across Bandini Boulevard from each other. In addition, there are two contiguous facilities located between Bandini and Vernon Avenue near Soto Street. It may be difficult to identify the source of odor samples that are collected at a facility fenceline due to this clustering.
4. **This regulatory approach would require development of new air sampling protocols and test methods for the various odorants involved.**

Second Approach - Evaluation of Best Controls in Current Use

The second approach considered by SCAQMD staff was to evaluate the state of odor controls currently utilized by well-controlled rendering facilities in California and other states; evaluate areas of a typical rendering facility that have high potential for odorous emissions, and determine the best approach to eliminate or minimize odors from these areas.

Given the issues described in the first approach, staff opted to follow a "best control" approach, as such measures have proven effective in other facility practices. Such an approach looks at controls that have been achieved in practice at rendering facilities in SCAQMD and other jurisdictions.

Examples of Controls in Current Practice

Tallowmasters, Miami, FL

In April 2014, SCAQMD staff traveled to Florida to investigate an odor control technology utilized by Tallowmasters LLC, a rendering facility in Miami. During this visit, staff discovered that odors from the rendering processes were considerably lower than the odor levels at any of the Vernon area rendering facilities. In discussions with facility personnel, it was determined that the facility has made concerted and deliberate efforts to minimize odors through a combination of odor containment by enclosure of odorous operations, new odor control technology, and work practices that minimize the potential for odors. These changes were made to address odor complaints that occurred as a result of commercial and industrial establishments that encroached upon the facility over the past 20 years.

Operating personnel followed a plan modeled on recommended industry manufacturing processes and controls. The plan was established as a guideline for every employee of the facility, and all

operating personnel were trained on the “good manufacturing practices” that ensured the quality of proteins and rendered fats produced at the facility, and promoted low odors from the facility. Some of these became Best Management Practices (BMP) for the PR 415 proposal, as outlined in Chapter 2. Notable examples of the operation and work practices at this facility follow.

Resurfaced Interior Floors – all interior floors in operational areas where water, oils, fat and other drippings could collect were resurfaced to facilitate ease of cleaning and reduce standing water. Facility personnel used large squeegees to move any water or other liquids into floor drains upon discovery. Floor drains were cleaned regularly to keep them free flowing and there was no water evident in the drains. There was very little standing water present on interior floors, and there was no oil or fat residue in the cooking and fat processing rooms, in marked contrast to facilities staff visited in the Vernon area. Facility personnel stated the practice of using high pressure washdown water and not allowing standing water contributed to a major reduction in odors. Images 2-1 and 2-2 show resurfaced floors and floor drains. Image 2-3 shows the cooker. The floor around the cooker was almost completely dry.

Image 2-1 Resurfaced Concrete Floors



Image 2-2 Floor Drains



Image 2-3 Cooker Room



Replacement of Leaking Components – One work practice employed by this facility is to promptly replace leaking components. The purpose of this company policy is to prevent leaking of materials containing bacteria that can cause odors. During the visit by staff, a leaking trough that houses a screw conveyor was observed by SCAQMD staff. Facility personnel noted that raw rendering materials are highly acidic and very corrosive to the carbon steel troughs, valves and fittings at the facility. When a component fails or begins leaking, it is replaced with a stainless steel component. While stainless steel is more expensive, the facility felt it was the better long-term solution. However, replacement with stainless steel components is a decision by this facility and is therefore not incorporated as a proposed rule requirement. Images 2-4 and 2-5 show the leaking trough, and the new stainless steel trough that was intended to replace it.

Image 2-4 Leaking Raw Material Trough Image



2-5 Stainless Steel Trough



Enclosure around Odorous Operations – The cooker and all processing equipment are housed inside an enclosure. Facility personnel felt an enclosure is crucial to odor containment. One work practice used at the facility is to train operating personnel to close all doors, including access doors and roll-up doors at the entrance to the raw material receiving pits when not in use. This work practice was also considered to be very important to odor containment.

Odor control equipment – The facility utilizes odor neutralizing equipment that produces hydroxyl radicals. Hydroxyl radicals are highly reactive in the atmosphere, and consequently very short-lived. They react with many pollutants in the atmosphere, including odorous compounds that are emitted from rendering processes. Reaction with a potent oxidizer such as hydroxyl radicals or ozone can dramatically reduce the odor potential of these odorous compounds. Tallowmasters LLC uses several of these devices to control odors inside their facility enclosure, which has allowed the facility to discontinue use of their scrubber. SCAQMD staff verified the use of this technology at the facility as being very effective in reducing odors. However, staff did not have the opportunity to test one of the units to ensure they were using the technology as claimed by the manufacturer. The State of California has established standards for indoor air cleaners, due to concerns over ozone production potential and exposure of residents to ozone. The technology used by Tallowmasters LLC would require further evaluation prior to verification and potential use under Proposed Rule 415 to ensure that it constitutes an odor control technology that is safe for worker exposure.

Darling Ingredients, Fresno, CA

Darling Ingredients operates a rendering facility on West Belgravia Road in Fresno, CA. The facility is located less than half a mile from a residential community. The facility is permitted to accept up to 850,000 lbs of raw material each day and has a main processing building to house most operations. Delivery trucks enter the main processing building to empty loads of raw material, and are rinsed and disinfected prior to exiting the building. Trucks are required to be unloaded within 2 hours after entering the facility, and raw material is required to be processed within 24 hours after receipt, according to permit conditions (San Joaquin Valley APCD).

In addition to raw material delivery, all facility operations and load-out of finished product is conducted inside an enclosure. Buildings at the facility are maintained under negative pressure, and odorous air inside the building routed to two packed-tower wet scrubbers. The main processing building doors, meal building doors, and meal load-out doors are all required to be closed, except for truck entry and exit, or during an emergency. Access openings are further required to be controlled such that the building always remains under negative pressure, which keeps odors inside the building from being released to the outside.

The facility uses a thermal oxidizer to control high intensity odors generated at the cooker, presses, condenser and centrifuge. In the case of a breakdown of the thermal oxidizer, high intensity vapors are routed to the wet scrubbers, or operations are required to be shut down.

In 2011, as a result of longstanding odor complaints, the City of Fresno and Darling entered into an Abatement Agreement, where Darling – Fresno agreed to adopt a number of additional measures to further control odors. These measures included:

- Install permanent ductwork to re-route odors from the thermal oxidizer to the wet scrubbers in the event of thermal oxidizer breakdown (temporary ductwork was previously used).
- Install ductwork and/or louvers in the boiler room to provide make-up air to the boiler.
- Install a notification system on doors that are critical to maintaining negative pressure in the building so operating personnel know when a door is open.
- Modify internal ventilation system to eliminate pockets of odorous air inside building.
- Report to the City of Fresno on emerging technologies that allow real-time detection and quantification of specified odorants that can serve as an early warning system for odor events.
- Notify the City of Fresno within 24 hours after an odor complaint is made to the facility directly.
- Comply with an Odor Control Plan.

Prior to the 2011 Abatement Agreement described above, the facility continued to be the source of odor complaints from nearby residents. This is in spite of the operating conditions at the facility and all the precautions taken to that point. This represents an example of a facility that is located near a residential community that needed to do even more than simply enclosing odorous operations in order to reduce odors from the facility to acceptable levels.

Darling Ingredients, Los Angeles, CA

Darling Ingredients operates a rendering facility in Vernon, CA that will be subject to the requirements of PR 415. In 2000, after a history of odor complaints and enforcement actions by SCAQMD, Darling constructed a permanent total enclosure over the receiving pits. The receiving area is ventilated to a packed bed scrubber. The existing odor control configuration serving the receiving area at the Darling-Los Angeles rendering facility represents the same type of control (i.e. permanent total enclosure, kept under negative pressure and vented to odor control equipment) that PR 415 will impose on other facilities in Vernon as well as any new rendering facilities.

In February 2015 during initial rule development for PR 415, Darling Ingredients filed permit applications for a plant modernization that includes a new rendering line, rendering products system, a tallow line, new storage tanks, new boiler, fat load out system, an odor control system and a scrubber. Permits to construct this equipment were issued in October 2015. Much of the new equipment is located in a newly constructed building that is ventilated to a room air scrubber, sized to ventilate 100,000 cubic feet per minute (cfm) of air flow. The scrubber has two control stages that are intended to control odors from nitrogen compounds in the first stage, and odors from sulfur compounds in the second stage. The construction and commissioning of the rendering related equipment and control equipment will be complete in late 2017, with operation of this equipment projected to commence in January 2018. Control of the new rendering equipment represents the type of control that PR 415 will impose on other Vernon rendering facilities.

Baker Commodities, Rochester, NY

Baker Commodities operates a rendering facility on Browncroft Blvd. in the town of Penfield (Rochester area), NY. The facility converts inedible meat processing animal by-products to meal, tallow, oil and grease, and also processes spent restaurant grease into a saleable product.

Equipment and operations at the plant include: a grinder to reduce material to a slurry; a steam heater cooker to break down the by-products to soluble, insoluble, and volatile components; a condenser for the water component for the volatiles; a press to aid separation of fat solids from the remaining solids; a hammer mill for meal production from the remaining solids; and a centrifuge and filter for tallow production from the separated fats. In addition, spent restaurant grease processing operations include a grease cooker, and screening, sedimentation, and centrifugation equipment, to separate the grease from the water and entrained solids.

Water from both the meat by-product and the spent grease processing operations is treated at the facility before discharge to the sanitary sewer. Non condensable volatiles from both operations are directed to thermal and chemical oxidation units for odor control.⁶

Control equipment at the Baker-Rochester facility includes three scrubbers for fugitive odor control from the plant interior, as follows:

⁶ <http://www.dec.ny.gov/dardata/boss/afs/permits/826420000300009.pdf>

- VC-10 Scrubber (35,250 CFM) treats air from the raw material receiving and main processing areas.
- VC-11 (60,000 CFM) treats air from the raw material receiving, main processing, and yellow grease areas.
- VC-12 Scrubber (60,000 CFM) treats air from the grease area, grinding floor and wastewater area.

The existing odor control configuration at the Baker-Rochester rendering facility represents the same type of control (i.e. permanent total enclosure, under negative pressure, vented to odor control equipment) that PR 415 would require on existing facilities in the Vernon area. This is an example where Baker Commodities invested in odor controls similar to those proposed in PR 415 in one of the company's other locations in the United States.

CHAPTER 3: SUMMARY OF PROPOSED RULE 415

AFFECTED FACILITIES

PUBLIC PROCESS

PROPOSED RULE 415 REQUIREMENTS

AFFECTED FACILITIES

There are currently five rendering facilities in the South Coast Air Basin. Baker Commodities, D&D Disposal/West Coast Rendering, Farmer John/Smithfield Foods, and Coast Packing are all located within the City of Vernon. Darling Ingredients is located in the City of Los Angeles, with a portion of the facility extending into Vernon.

Vernon is an industrial and commercial area. Four of the rendering facilities are located on or near Bandini Boulevard, as seen in Figure 3-1. Two adjacent railyards are located to the north of Bandini. The Burlington Northern Santa Fe (BNSF) – Hobart railyard is located in the City of Vernon, and the Union Pacific (UP) Commerce railyard is located in the City of Commerce. The community of Boyle Heights borders UP Commerce directly to the north.

The Los Angeles River is located to the south of Bandini Boulevard within the City of Vernon. The cities of Huntington Park, Maywood and Bell are located to the south of Vernon.

Figure 3-1 Location of Vernon Area Rendering Facilities



PR 415 focuses on the operations and areas most likely to contribute to offsite odors, including raw material receiving, fugitives from cooking and processing operations, and wastewater treatment.

Baker Commodities, Farmer John and Darling Ingredients all use the continuous cooking rendering process. West Coast Rendering and Coast Packing use a batch-type cooking process.

Site Visits

During this rule development process, SCAQMD staff visited all of the affected facilities on multiple occasions and interviewed facility operators to review the operating practices and equipment used for odor control. During site visits to the five Vernon facilities, it became apparent that there is a wide range of odor control efforts currently used by these facilities. These efforts are described below.

Odor Containment Procedures Currently Used by Vernon Area Rendering Facilities

The information on practices and equipment used to control odors in the sections that follow was obtained from direct observations during site visits, from permit descriptions, engineering drawings, and discussions with operations personnel at each rendering facility.

Housekeeping

Current housekeeping practices are not consistent across the Vernon rendering facilities. There are clear opportunities for improvement. For example, one facility uses uncovered totes to move raw materials into the cooking area after the size reduction operation. After the cooking cycle ends, cooked materials are again moved in uncovered totes to the pressing area. There is spillage between operations and the spilled material contributes to fugitive odors. Image 3-1 shows an example of an uncovered tote used for material transfer. This is one example of a housekeeping practice that is addressed in the best management practices (BMPs) in the staff proposal, where covered containers are required to transfer materials between enclosures.

Image 3-1 Uncovered Tote used for Material Transfer

At two of the facilities, there were pools of standing water during staff visits, partially due to clogged drains, grates or drainage channels. This standing water is generated by washdown of rendering operations, and contains organic matter that can allow the growth of odorous bacteria unless wastewater is routed to the wastewater treatment area in a timely manner. Image 3-2 shows an example of a partially clogged wastewater grate/channel. This housekeeping practice is also addressed by a BMP in the staff proposal.

Image 3-2 Clogged Wastewater Channel**Enclosures for Receiving Operations**

Containment of odorous emissions from rendering operations, including from the raw material receiving area provides the most effective means of odor control. The accepted standard for containment of these odors is an enclosure that is kept under negative pressure, to ensure air moves inward into the enclosure and odors generated within that enclosure are not allowed to escape. Only one of the five rendering facilities has a completely enclosed raw material receiving operation. The enclosed building has roll-up doors to allow delivery truck access and the doors are only open for truck access and egress. This building is kept under negative pressure and vented to odor control equipment. The enclosure and ventilation system ductwork are shown in Image 3-3.

Image 3-3 Enclosed Raw Material Receiving Area

Two rendering facilities have partial enclosures around the receiving area. One consists of a roof with three walls and the fourth wall open. The other has only a roof structure over the receiving pit.

A fourth facility has an asphalt or concrete slab, onto which raw materials are deposited directly, with no covering. This method of receiving raw material does not offer any protection from the sun or wind, allowing accelerated decomposition to occur in the sun during warm days and allowing odors from raw material decomposition to be readily transported off-site. The fifth facility is integrated with a meat packing plant and generates most of its own material. The facility on occasion receives excess material from other facilities, but it is considered a low use facility for processing the material and is less odorous than the other facilities.

Enclosures for Cooking and Fat Processing Areas

Four of the Vernon rendering facilities have at least partially enclosed cooking and fat processing areas, consisting of a roof with one or more walls. In order to meet the proposed enclosure or closed system requirements, all four facilities would need to either conduct additional construction to completely enclose these operations, or to ensure the fugitive odor sources within the processing area are sufficiently enclosed to be considered a closed system. One facility would need to replace

or repair the sheet metal sheathing on the walls and roof which contain a number of holes from oxidation.

Enclosure for Wastewater Treatment Area

One rendering facility currently has an enclosure around the wastewater treatment area. It is an older masonry building and some additional work would need to be performed for the building to be considered a permanent total enclosure to be compliant with the rule proposal. The other three rendering facilities have open wastewater treatment processes that would need to be enclosed and vented to odor control, or converted to closed systems, in order to be compliant with the rule proposal. During site visits, staff noticed some of the most offensive odors emitting from the wastewater treatment process.

Odor Control Equipment

All rendering facilities must comply with the requirements of Rule 472 - Reduction of Animal Matter to control high intensity odors from cookers. Rule 472 requires incineration of all gases, vapors and gas-entrained effluents from equipment emitting high intensity odors. Incineration must occur at a temperature of not less than 1202 degrees Fahrenheit for not less than 0.3 seconds. This temperature and residence time ensure complete thermal destruction of the odors entrained in cooking and effluent processing operations. Alternatively, a rendering facility is allowed to use a method that is equally effective, as determined by the Executive Officer. The Vernon area rendering facilities use three methods for achieving the temperature and residence time requirement in Rule 472, including routing the vapors into an afterburner, a regenerative thermal oxidizer, or into a high temperature boiler.

In addition to control of the high intensity odors, it is necessary to control fugitive odors, which are of much lower intensity. One rendering facility uses a packed-bed scrubber that controls odors from the raw material receiving building. This facility has also installed a cross-flow scrubber that will vent odors from a new cooking and processing building.

PROPOSED RULE 415 REQUIREMENTS

Purpose (Subdivision (a))

The purpose of Proposed Rule (PR) 415 is to reduce odors from facilities rendering animals and animal parts. PR 415 will establish odor control standards as well as best management practices (BMP) to prevent and minimize odors that can cause verified odor complaints and public nuisances in and around the city of Vernon.

Under Rule 402, enforcement action can only be taken after the SCAQMD receives and verifies a sufficient number of complaints. Moreover, because rendering facilities are clustered together in Vernon, in some cases it is more challenging to ascribe odors to one specific facility and contributions of the odors may be emanating from more than one rendering facility. Rule 402 does not include a mechanism to reduce odors from new and existing rendering facilities. In addition, Rule 402 does not establish minimum standards to prevent or minimize odors. Rule 402 is reactive, where PR 415 is proactive in terms of preventing and minimizing off-site odors.

Applicability and Exemptions (Subdivisions (b) and (l))

The proposed rule applies to new and existing rendering facilities that process raw rendering materials and treatment of wastewater from processes associated with rendering.

Applicability of the proposed rule is to rendering facilities that conduct inedible rendering operations, whether or not these facilities also conduct edible rendering. If a rendering facility is integrated with either a slaughter house or a meat packing house, or conducts both edible and inedible rendering operations, the edible rendering operations are not subject to the requirements of PR 415. Inedible rendering means that the products and by-products of the rendering process are not intended for human consumption.

Edible rendering processes are essentially meat processing operations; producing lard or edible tallow for use in food products consumed by humans. Edible rendering is generally carried out in a continuous process at temperatures lower than the boiling point of water. The process usually consists of heating edible fats (fat trimmings from meat cuts), followed by two or more stages of centrifugal separation. The first stage separates the liquid water and fat mixture from the solids. The second stage further separates fat from water. The solids may be used in food products or pet foods, and fat may also be used in food products, or soap making operations. Most edible rendering is done by meat packing or processing companies. Edible rendering operations are not as odorous as inedible rendering and are exempted from PR 415.

Through the rulemaking process, staff visited the five affected rendering facilities on multiple occasions. Based on staff's observations of these facilities and their operations, specific exemptions were developed as these operations or the manner in which these operations were carried out were observed to not be sources of off-site odors at rendering facilities. As a result, the proposed rule includes the following exemptions:

- Facilities conducting only edible rendering operations (producing products for human consumption) that do not also conduct inedible rendering operations or handle or process trap grease;
- Collection centers for animal carcasses and parts that do not also conduct inedible rendering operations (products not for human consumption);
- Facilities that process trap grease – odors from these facilities will be addressed under a separate rulemaking;
- Rendering facilities integrated with a slaughterhouse or meat-packing plant that process less than 130,000 pounds of inedible rendering materials per week in a batch cooking operation are not subject to the enclosure requirements of subparagraph (d)(1)(B) provided the cargo area of the vehicle that is used to store and haul materials after rendering is completely covered or fully tarped;
- Blood meal processing operations at a facility integrated with a slaughterhouse or meat-packing plant - provided the operation is conducted in a closed system and is vented to an odor control system; and
- Certain meat and bone meal operations (this exemption does not apply to press fat processing).

In addition to the facility exemptions, an exemption is provided for wastewater treatment systems from the enclosure and odor control standards in certain situations. First, the wastewater treatment operations required to be operated in a permanent total enclosure (PTE) are not applicable for a rendering facility integrated with a slaughterhouse or meat packing plant if the owner or operator

can demonstrate that each volume of rendering wastewater is diluted with more than 30 volumes of wastewater from other sources within the facility. In addition, an exemption also is allowed for an integrated facility if the owner or operator can demonstrate that after mixing with non-rendering wastewater, the average level for chemical oxygen demand (COD) is lower than 3000 mg/L for wastewater exposed to the atmosphere, based on the most recent three year average sampling data. COD is a measure of the amount of organic compounds dissolved in water. Lower COD water has less potential for odors.

PR 415 also includes an exemption for enclosure requirements for wastewater operations at non-integrated rendering facilities provided the owner or operator can demonstrate an appropriate dilution ratio at a ratio of not less than 30:1 and provided process water from other parts of the facility is used to dilute rendering wastewater, rather than clean water being used for dilution. In both cases, dilution and low COD are surrogates for low odors from the wastewater treatment process.

Based on a visit to one of the rendering facilities in September 2017, staff observed the trap grease unloading operations and provided an exemption from the requirement for PTE for this operation, provided the trap grease is unloaded only through a hose into a wastewater tank or separator with an access or viewing hatch that is not open except during unloading operations or for maintenance. Finally, forklifts are excluded from the requirements for transport vehicles.

Definitions (Subdivision (c))

Refer to the proposed rule language for definitions. Key definitions that require further explanation or discussion in this staff report are listed below.

Closed System means a system handling any combination of solids, liquids, vapor and air at a rendering facility, in which odors are contained within the system. A batch cooker is not considered a closed system. Staff recognizes that no system can contain 100% of the solids, liquids, vapors or air that passes through it and there will always be minute amounts of fugitive emission leakage. A closed system refers to a system without significant air leakage out of the system, through which potential odors can escape. For example, a piping system containing solids with well-sealed flanges and limited access ports would be considered a closed system. A dissolved air flotation (DAF) tank in a wastewater treatment process with an open top would not be considered a closed system. Standards for a closed system are identified in paragraph (f)(3). A system that meets these standards is by definition a closed system.

Confirmed Odor Event is a rendering-related odor event that has been verified as coming from a specific source by SCAQMD Compliance personnel trained in inspection techniques, after an investigation. It takes at least three complaints, verified from different physical addresses to comprise a confirmed odor event. When an investigation following three or more such complaints determines that objectionable odors are being emitted from a particular facility and travelling beyond the property boundary of the facility, that event is determined to be a Confirmed Odor Event.

Enclosure Envelope means the total surface area of a building directly enclosing rendering operations and includes the enclosure's exterior walls, floor and horizontal projection of the roof on the ground. In the case of a rectangular building, this measurement would include the area of the four walls plus the area of the ceiling (not the roof, which may be pitched). The intent of this

definition is to serve as the basis for calculating the area of routine enclosure openings as a percentage of the enclosure envelope.

Odor Control System means a device or equipment serving a permanent total enclosure that is designed to reduce odorous emissions captured in the permanent total enclosure. An example of an odor control system is a series of collection hoods and intake ports that are ducted through a ventilation system to an odor control scrubber that meets the minimum control efficiency requirements of the proposed rule. A closed system, as defined in this chapter is not considered an odor control system.

Permanent Total Enclosure (PTE) means an enclosure having a permanently installed roof and exterior walls which are constructed of solid material, and completely surround one or more odor-generating sources, such that all odors from processes conducted within the enclosure are contained therein. The intent of this provision is for a permanent total enclosure to be constructed of material that is capable of withstanding the pressure drop created by the inward face velocity requirement of the proposed rule. Examples of solid material include masonry, sheet metal, sheet plastic, wood, metal or aluminum siding, or even industrial-grade plastic flap curtains. Other materials as approved by the Executive Officer may also be used.

Receiving Area means the area, tank or pit within a rendering facility where raw rendering materials are unloaded from a vehicle or container, or transferred from another portion of the facility for the purpose of rendering these materials. In the case of an integrated facility that conducts both slaughtering and/or meat packing in addition to rendering, and has a method of conveyance to deliver animal carcasses or parts to the rendering facility other than by truck, the receiving area would be the location where animal carcasses enter the rendering process. That area would need to be enclosed or considered a closed system according to the timetable under the proposed rule.

Routine Enclosure Opening means any of the following areas that may be open during normal operations at facilities subject to this rule, and through which odors have the potential to escape from a permanent total enclosure:

- (A) Vents for natural or forced-air ventilation, including but not limited to gable vents, eave vents, wall vents and rooftop vents;
- (B) Windows, doors and doorways; and
- (C) Spaces below metal sheathing where the sheathing does not reach the foundation.

The intent of this definition is to include all areas that are usually open where air is allowed to enter a permanent total enclosure in the calculation to determine the area of routine enclosure openings as a percentage of the enclosure envelope, in order to ensure inward airflow into the permanent total enclosure so odorous, foul air cannot escape the permanent total enclosure.

Requirements for New and Existing Facilities (Subdivision (d))

Subdivision (d) of PR 415 provides core requirements that all rendering facilities must comply with, and conditional requirements for submittal of an Odor Mitigation Plan, if certain provisions are triggered. This section provides an overview of the proposed rule with the key compliance dates and key provisions. Specific provisions are provided in other subdivisions of PR 415.

Core Requirements (Paragraph (d)(1))**Odor Best Management Practices**

All facilities are required to implement Best Management Practices (BMP) for odor control. This requirement is applicable to new facilities upon startup, and to existing facilities within 90 days after rule adoption, or schedule required in the BMP. PR 415 also provides for an alternative BMP, with EO approval, provided it meets the same objective as the BMP it is replacing.

Permanent Total Enclosure or Operation in Closed System

All facilities are required to operate certain odorous processes within a permanent total enclosure or within a closed system. This requirement is applicable to new facilities upon startup and to existing facilities within 2 to 4 years after rule adoption. Existing facilities are required to submit a permit application to the SCAQMD within 12 months after rule adoption for odor control equipment, to be evaluated in combination with a permanent total enclosure. Facilities intending to operate processes affected under PR 415 in a closed system are required to notify this intention to the Executive Officer within 6 months after rule adoption.

An existing facility owner/operator may be required to submit permit applications for a closed system, if any equipment that makes up the closed system is currently permitted and requires physical modification.

The SCAQMD will issue a Permit to Construct (P/C) for a proposed total enclosure or retrofit of an existing non-compliant enclosure. The permanent total enclosure and odor control system will be evaluated together, where applicable. The timing for issuance of the P/C by SCAQMD is within 180 days after the permit application is deemed complete. A rendering facility then has up to 24 months after the date of P/C issuance to construct and commission a permanent total enclosure for a receiving or processing area, in addition to a ventilation system and odor control system, where applicable, and operate in compliance with the permanent total enclosure standards (or closed system standards, as applicable), ventilation system standards and odor control system standards. An alternative standard for a permanent total enclosure for raw materials receiving areas has been added to PR 415 that does not require ventilation with an odor control system provided other conditions are met. If a facility elects to comply with this provision, the alternative permanent total enclosure requirements must be met no later than 12 months after the date of a Permit to Construct is issued. Similarly, a rendering facility has up to 12 months after the P/C is issued to construct and operate a rule compliant permanent total enclosure for wastewater treatment facility. The implementation schedule accounts for time needed for budgeting, equipment design and procurement, and installation and testing. Staff believes this timing is reasonable for the proposed requirements.

Permanent total enclosures are required to be ventilated to odor control equipment, except those complying with the alternative standard. The purpose of this requirement is to prevent or minimize release of odorous or foul air from a permanent total enclosure directly into the environment. The timing for this requirement is the same as the timing for a permanent total enclosure – upon startup for new facilities, and 24 months after a Permit-to-Construct (P/C) is issued for the combined permanent total enclosure/odor control system for existing facilities.

Wastewater Treatment

Certain wastewater treatment processes are required to be enclosed within a permanent total enclosure (ventilated to odor control) or operated in a closed system. This includes screens, skimmers, clarifiers, including dissolved air flotation, settling tanks, sludge dewatering equipment, sludge drying equipment and the rendering facility's treated wastewater outlet to the city sewer.

This requirement is applicable to new facilities upon startup. The timing of this requirement for existing facilities is as follows. Within 12 months after rule adoption, the facility owner/operator is required to submit a permit application for necessary enclosures, to be evaluated in combination with odor control as proposed by the owner or operator. A rendering facility then has 12 months after the date of P/C issuance to construct and commission the permanent total enclosure, ventilation system and odor control system for odor control of wastewater treatment operations.

Notification of Intent to Enclose or Operate in a Closed System

The owner or operator is required to submit a letter to the Executive Officer within 6 months after the adoption of the proposed rule declaring the intent to either enclose certain odor-emitting processes and operations within a permanent total enclosure or operate these processes and operations within closed systems. A permit application is required within 12 months for new permanent total enclosures, as described earlier in this chapter. It is anticipated that a permit application may be submitted for currently-permitted equipment comprising a closed system that requires physical modification. However, for closed systems where the owner or operator may not need to submit a permit application, a mechanism to inform the SCAQMD of such intent is necessary. Therefore, this requirement will provide detailed information to SCAQMD in the absence of a permit application.

Increments of Construction Progress

PR 415 includes a provision whereby within 6 months after the date a permit to construct is issued for the permanent total enclosure, the owner or operator must show increments of progress which can include breaking ground for the new enclosure or odor control equipment and submitting a construction schedule that identifies increments of progress toward meeting the final compliance date for operating within a permanent total enclosure.

Request for Time Extension of Completing a Permanent Total Enclosure

A provision has been added to PR 415 to allow for a one-time extension of time for up to one year to complete construction of a permanent total enclosure and applicable ventilation and odor control systems for reasons beyond the control of the owner or operator. This type of provision has been included in other rules where there are substantial construction provisions such as SCAQMD Rules 1402 which implements the toxics hot spots program for implementing risk reduction plans, Rule 1420.2 for large lead melting facilities to install total enclosures and air pollution controls, and Rule 1430 for metal forging facilities for installation of total enclosures with air pollution controls. Under PR 415, a facility must submit a request for a time extension within 180 days before the permanent total enclosure deadline and must provide a description of why the extension is needed, progress to date for the construction of the enclosure, and length of time requested for the extension. The Executive Officer will approve, modify, or deny the extension based on the facility's demonstration that the specific circumstances are beyond the control of the owner or operator and based on the evidence the owner or operator provides which can include, but is not

limited to detailed schedules, engineering designs, construction plans, permit applications, and purchase orders.

Submittal of Odor Mitigation Plan (Subdivision (h))

In the case of pervasive and ongoing odorous emissions from a rendering facility, the owner or operator is required to submit an Odor Mitigation Plan (OMP). This can occur either before or after the requirement to construct an enclosure and vent that enclosure to odor control equipment within approximately 3 to 4 years after rule adoption. Submittal is required within 90 days after notification by the Executive Officer that an OMP is required. There are two situations that can trigger this requirement, as follows:

1. A Notice of Violation (NOV) is received for Public Nuisance related to rendering odors subject to Rule 402; or
2. Three or more confirmed odor events related to rendering odors are received in a consecutive 180-day period.

As described in Chapter 1, in order to receive an NOV for odor nuisance under Rule 402, generally 6 or more odor complaints must be received from separate households and verified in a short period of time to constitute a public nuisance. If this occurs for an NOV related to rendering odors, the owner or operator will be required to submit an OMP. The conditions of the OMP are distinct from any corrective action that is required under the settlement terms of the NOV.

The second trigger that can require an OMP is designed to address a long-term chronic situation, where 3 or more confirmed odor events related to rendering odors are received within a consecutive 180-day period. Although the number of complaints may not meet the criteria of a “public” nuisance, the SCAQMD is concerned about reoccurring events. A confirmed odor event is an occurrence of odor resulting in three or more complaints by different individuals from different addresses, where the source of the odor is verified by District personnel trained in inspection techniques. The verification of the odor would use the same approach used to confirm a Rule 402 odor nuisance. If a rendering facility triggered three or more confirmed odor events within a consecutive 180-day period, the owner or operator is required to take corrective actions to further minimize odors.

Content and Approval of Odor Mitigation Plan

As previously described, an Odor Mitigation Plan (OMP) may be required either prior to or after the requirement for a permanent total enclosure and odor control system is fully implemented. If an OMP is required prior to enclosure, it must include:

- Facility-specific information, as follows:
 - Facility name;
 - Location address;
 - Days and hours of operation;
 - SCAQMD facility ID number;
 - Mailing address; and
 - Title and phone number of person responsible for addressing community complaints received by the facility.
- Description of all odor emitting areas within the affected facility.

- Configuration of all odor control equipment that exists at the time of OMP submittal, and the equipment, processes and buildings or rooms it serves.
- Description of work practices that exist at the time of OMP submittal designed to minimize odors from migrating off the facility property.
- A prioritization of odor-emitting areas within the facility, in order of highest-to-lowest odor intensity.
- For each odor emitting area:
 - A description of odor mitigation activities proposed to address odors from within the area;
 - The owner or operator's intent to either enclose operations and processes within a permanent total enclosure or operate them in a closed system (for all equipment and processes that are not already within a permanent total enclosure or a closed system); and
 - A detailed construction schedule for each proposed permanent total enclosure.
- An explanation of why construction of the permanent total enclosure and odor control system cannot be expedited and completed prior to the date the enclosure standard becomes effective under the proposed rule.

An OMP submitted after the enclosure standard is fully implemented must address all of the above elements, except for the intent to enclose and detailed construction schedule.

The OMP will be approved or disapproved by the SCAQMD within 90 days. If an OMP is disapproved, it must be resubmitted within 90 days for reconsideration. The Executive Officer will approve the OMP if it is complete and the Executive Officer concurs that all odor mitigation activities proposed to address odors within the odor-emitting areas at the facility are sufficient to resolve the odor problem that triggered submittal of the OMP. Failure to have an approved OMP within 90 days after submittal of an OMP to the District is a violation of this rule. Finally, an OMP is subject to plan fees under SCAQMD Rule 306 – Plan Fees.

Specific Cause Analysis

If a facility receives a single confirmed odor event related to rendering odors, an analysis of the specific cause(s) surrounding the odor event is required to be conducted. The analysis is a process used by a facility subject to this rule to investigate the cause of a confirmed odor event, and involves a description of activities during the time of the odor event, any upset or breakdown conditions at the facility, including potential sources of odors and emission points for all equipment required to be enclosed. In addition, the analysis must identify corrective measures needed, and corrective measures taken to prevent recurrence of a similar event.

Requirements for Odor Best Management Practices (Subdivision (e))

The proposed rule identifies a number of Best Management Practices (BMP) under PR 415 that will assist in reducing odors from various points or processes within a rendering facility. These include:

1. Covering of Incoming Transport Vehicles

Transport vehicles delivering raw rendering materials to a rendering facility from offsite locations are not permitted to pass the first point of contact at the rendering facility (such as a

guard shack or weigh station) unless the cargo area of the vehicle is completely enclosed or fully tarped.

2. Delivery of Raw Rendering Materials

Raw rendering materials must be transferred directly from the delivery truck (or other means of conveyance in the case of inter-plant delivery within an integrated facility) into a permanent total enclosure or into covered containers on a continuous basis after material delivery, such that raw rendering material does not remain outside of a permanent total enclosure or covered containers for more than 60 minutes after the end of material delivery. Covered containers are permitted to remain outside of a permanent total enclosure after 60 minutes, provided raw rendering material is transferred directly into such containers or within 60 minutes after the end of delivery.

This BMP becomes effective after the effective date that a permanent total enclosure is required to be operational for the receiving area under the proposed rule. Prior to completion of a permanent total enclosure, another BMP limits the holding time of incoming raw rendering material.

3. Washing of Outgoing Transport Vehicles

Where raw rendering materials come directly into contact with a delivery truck, the cargo area of any vehicle exiting the rendering facility must be thoroughly washed prior to the truck leaving the facility. Outgoing trucks are currently required to be washed under the California Code of Regulations [3 CCR §1180.35], which states:

“Vehicles used to transport carcasses, packinghouse waste or inedible kitchen grease shall be cleaned with hot water of at least 120 degrees Fahrenheit, live steam, or other method approved by the Department. Such cleaning shall be adequate to prevent spread of disease and creation of nuisances.”

4. Washing of Drums and Containers

Open drums or containers holding raw rendering materials must be washed to remove raw rendering materials prior to leaving a rendering facility.

5. Holding Time of Incoming Raw Rendering Materials

This BMP is effective prior to the date a permanent total enclosure is required to be operational for the receiving area under the proposed rule. A time limit for incoming raw rendering material is imposed by this requirement, depending on whether the material is delivered at ambient temperature or at lower-than-ambient (i.e. refrigerated material). Within 4 hours after arrival for ambient temperature material, or 6 hours after delivery for refrigerated material, incoming raw rendering materials must be placed into the cooking process, or be staged in a permanent total enclosure or in covered containers.

6. Repair of Raw Material Receiving Area

Within 180 days after rule adoption, all areas of broken concrete or asphalt, including divots, cracks, potholes and spalling of concrete in the raw material receiving area of a rendering facility, (or the rendering portion of a facility integrated with a slaughterhouse or meat-packing plant) where raw rendering materials are unloaded and touch the ground outside of an enclosure

must be patched, repaired or repaved as necessary to prevent standing water or puddles with a surface area greater than one square foot from accumulating.

7. Holding Time of Raw Materials after Size-reduction

Within one hour after size-reduction or grinding activities, raw rendering materials at a facility utilizing a batch cooking process must enter the cooking process, or be staged in a permanent total enclosure or a covered container.

8. Holding Time of Cooked Materials

Within one hour after being removed from a batch cooker at a rendering facility subject to this rule, cooked materials must be placed in downstream processing equipment to be separated into protein and fat commodities or be placed in covered containers for temporary storage.

9. Transfer of Raw or Cooked Rendering Materials between Enclosures

Raw or cooked rendering materials must be transported between permanent total enclosures only through a closed system of conveyance, or by covered containers. If a facility transports meal or other product within the facility via transport vehicle, that intra-facility transport vehicle would qualify as a closed system of conveyance if odors are not allowed to escape during transport.

10. Washdown of Receiving Area

Walls, floors, and other surfaces of the receiving area of a rendering facility and any equipment operated in the receiving area, including screw conveyors, pumps, shovels, hoses, etc., must be thoroughly washed free of animal matter at least once each working day. This receiving area washdown frequency is already required in each affected facility's permit. This BMP formalizes this permit condition requirement into rule language for ease of enforcement.

11. Cleaning of Floor Drains

Accessible interior and exterior floor drains are to be inspected and cleaned no less than once a month.

12. Alternative Odor Best Management Practices (BMP)

An alternative BMP may be used, provided:

- A. The alternative BMP meets the same objective the BMP that it is replacing, where the objective of each Odor BMP is as defined in Table 3-1;
- B. The owner or operator of the rendering facility submits a written request to the Executive Officer stating how the alternative Odor BMP meets the same objective as the Odor BMP it is replacing; and
- C. The Executive Officer approves the alternative Odor BMP.

Table 3-1		
	Odor BMP	Odor Reduction Objective
(e)(1)	Cover Incoming Trucks	To reduce odors from incoming raw materials during transport on freeways and streets
(e)(2)	Delivery of Raw Rendering Materials	Limit the amount of time raw materials sitting in the sun (after enclosure standard is effective)
(e)(3)	Washing of Outgoing Transport Vehicles	Prevent raw materials remaining on exiting trucks
(e)(4)	Washing of Drums and Containers	Prevent raw materials remaining in drums and containers exiting the facility
(e)(5)	Holding Time of Incoming Raw Rendering Materials	Limit the amount of time raw materials sitting in the sun (before enclosure standard is effective)
(e)(6)	Repair of Raw Material Receiving Area	Remove accumulation to prevent bacteria growth from standing water resulting in odors
(e)(7)	Holding Time of Raw Materials after Size-reduction	Prevent raw materials sitting in totes at batch cooking facilities for an extended period of time
(e)(8)	Holding Time of Cooked Materials	Prevent cooked materials sitting in totes or trailers at batch cooking facilities for an extended period of time
(e)(9)	Transfer of Raw or Cooked Rendering Materials between Enclosures	Ensure materials being transferred between operations are covered
(e)(10)	Washdown of Receiving Area	Remove accumulation of animal parts in and around receiving pit and floor where incoming raw material is deposited
(e)(11)	Cleaning Floor Drains	Remove accumulation of animal matter in drains

Permanent Total Enclosure and Odor Control Standards (Subdivision (f))

Certain operations and processes at a rendering facility are required to be enclosed within a permanent total enclosure, or to be operated within closed systems under PR 415. These include:

- Conveyors associated with raw material transfer operations;
- Size reduction and conveying equipment, including but not limited to: screw conveyors, breakers, crushers, hoggers, grinders and conveyors associated with raw material sizing;
- Raw materials receiving area. In addition to meeting the requirements of either a permanent total enclosure with ventilation to an odor control system, an owner or operator may elect to meet the alternative standards for a permanent total enclosure for the raw materials receiving area as discussed below.
- Raw material cookers. Note that as described below, a batch cooker is not considered to be a closed system, due to fugitive odors escaping from the batch cooker whenever the

door is opened to load or unload material. Therefore, the option for a closed system is not available for batch cookers; and

- Process equipment for separating rendered fat from protein materials, including but not limited to: centrifuges, presses, separators, pumps, screens, tanks that aren't completely enclosed, bins and hoppers, and conveyors used to transport materials between equipment. Certain meat and bone meal operations are exempted from the rule.

A permanent total enclosure with ventilation and odor control system must meet two key requirements related to VOC capture and ventilation. These include:

- The combined area of all routine enclosure openings through which odors can escape from a permanent total enclosure must not exceed 5% of the enclosure envelope. This requirement comes from EPA Method 204, which establishes criteria for and verification of a permanent total enclosure for VOC capture efficiency; and
- A permanent total enclosure must be ventilated by a system designed and operated to maintain a minimum inward face velocity through each routine enclosure opening of at least 200 feet per minute (fpm). This requirement also comes from EPA Method 204, which establishes criteria for and verification of a permanent total enclosure for VOC capture efficiency. The exception to this requirement is that when truck access doors are open, an inward face velocity of at least 100 feet per minute is required to be maintained, with the added proviso that truck access doors are not allowed to be open except during ingress and egress of a truck.

The inward face velocity for each permanent total enclosure that is ventilated must to be measured using an anemometer, or an equivalent approved device at the center of the plane of any opening of the permanent total enclosure. Verification of inward face velocity will be done by SCAQMD staff during inspections.

In lieu of meeting the inward face velocity through enclosure openings, an alternative standard is also allowed for ventilated permanent total enclosures. Under the alternative standard, the ventilation system serving a permanent total enclosure must be designed and operated to maintain a minimum of 15 air changes per hour through the enclosure. The alternative standard requires the owner or operator to notify the Executive Officer (EO) at least 60 days before the final enclosure compliance date of the intent to meet the alternative standard and submit engineering calculations to demonstrate that the ventilation system is designed to meet the alternative ventilation system standard. The EO will approve or disapprove the request within 60 days. If the EO disapproves the request to use the alternative standard, the owner or operator of the rendering facility is required to meet the requirements for inward face velocity.

Exterior walls of a permanent total enclosure are to be constructed of material that is capable of withstanding the pressure drop created by maintaining the required inward face velocity. This pressure drop is expected to be extremely modest ($\ll 1''$ H₂O) , and a variety of materials are allowed for the exterior walls, including masonry, sheet metal, sheet plastic, wood, metal or aluminum siding, or even industrial overlapping plastic flap curtains, or other material as approved by the Executive Officer. Building materials chosen and used for construction are at the discretion of the affected facility, and SCAQMD does not endorse or advocate any building material over

another. If a certain material is not ideal for an application or is not allowed by an authority other than SCAQMD, a facility should use a material that better fits the application.

PR 415 includes an alternative standard for a permanent total enclosure for raw materials receiving. An owner or operator may elect to either install either a permanent total enclosure that is ventilated to an odor control system, or meet the following alternative standard for the raw materials receiving area for a permanent total enclosure that does not require ventilation. An owner or operator that elects to meet the alternative provisions must complete the permanent total enclosure within 12 months after a Permit to Construct is issued.

The alternative permanent total enclosure standard include: meeting enclosure opening requirements and exterior wall requirements as previously discussed above; closing all access doors except during ingress and egress of a vehicles, equipment or people; closing any openings on opposite ends of a building where air movement can pass through both openings, such that both openings are not simultaneously open for more than 5 minutes; and including one of the following for all openings for vehicles, equipment, or personnel ingress and egress:

- automatic roll-up doors with an air curtain mounted on the interior of the opening that is designed with an average velocity of 3,000 feet per minute and that is operated continuously when the door is open,
- vestibule;
- air lock system; or
- an alternative method to minimize release of odors from the building enclosure may be used if the owner or operator can demonstrate to the Executive Officer (an) equivalent or more effective method(s) to those specified.

If an unventilated permanent total enclosure meeting the alternative standard is subsequently ventilated, the ventilation system must meet the requirements for ventilation and odor control system.

A closed system must meet the following minimum requirements:

- Each component of a closed system must be maintained in a manner that minimizes leaks from occurring and prevents odors from escaping from the system, to the maximum extent possible;
- Material conveyors and troughs that are components of a closed system must be completely enclosed on all sides, except for doors or panels for maintenance and personnel access;
- Bins and hoppers that are components of a closed system must be completely enclosed on all sides, except for doors or panels for rendering material loading, and maintenance and personnel access;
- Mating metal surfaces on doors or access panels described above must be sealed with gasket material;
- Air gaps in components of a closed system must be sealed with gasket material or with caulk or sealant; and
- Each section of ductwork containing vapor within a closed system must be sealed at every connection to mating components of the closed system using best industry materials and practices.

These minimum requirements should not be considered a comprehensive list, and additional conditions may be imposed if a facility owner/operator is required to submit permit applications for modification of a piece of equipment that is currently permitted. The facility owner/operator may propose and use an alternative to these minimum requirements if that alternative is approved by the Executive Officer.

A batch cooker is not considered to be a closed system due to fugitive odors escaping from the batch cooker whenever the door is opened to load or unload material. Therefore, operation of batch cookers is only allowed inside a permanent total enclosure that is vented to odor control equipment.

An odor control system that treats fugitive odors from inside a permanent total enclosure must meet certain minimum standards. It must be designed and operated to maintain a control efficiency of not less than 70% for nitrogen compounds and not less than 70% for sulfur compounds.

As shown in Chapter 1, there may be 11 or more nitrogen compounds in rendering odors and 6 or more sulfur compounds. Testing of multiple compounds would be expensive, so PR 415 allows a marker compound to represent all sulfur compounds and a marker for nitrogen compounds as well. Markers are designated as follows:

1. Ammonia (NH₃) for nitrogen compounds; and
2. Hydrogen sulfide (H₂S) for sulfur compounds.

EPA estimates that achievable emission reductions for inorganic gases from packed-bed scrubbers are over 95%. From EPA's "Air Pollution Control Technology Fact Sheet" [EPA-452/F-03-015]¹

Achievable Emission Limits/Reductions:

Inorganic Gases: Control device vendors estimate that removal efficiencies range from 95 to 99 percent (EPA, 1993).

VOC: Removal efficiencies for gas absorbers vary for each pollutant-solvent system and with the type of absorber used. Most absorbers have removal efficiencies in excess of 90 percent, and packed-tower absorbers may achieve efficiencies greater than 99 percent for some pollutant-solvent systems. The typical collection efficiency range is from 70 to greater than 99 percent (EPA, 1996a; EPA, 1991).

The intent of using inorganic marker compounds (NH₃ and H₂S) is that they provide an indication of the control efficiency of nitrogen compounds and sulfur compounds respectively and methods for testing and analysis are readily available. Rendering odors also include VOC compounds, as shown in Table 1-1. Staff believes control efficiencies higher than 70% are achievable; however, the lower value of 70% in the literature was chosen to ensure an achievable control efficiency for organic compounds as well.

¹ <http://www.epa.gov/ttnchie1/mkb/documents/fpack.pdf>

Within 180 days after the effective date to conduct operations within a permanent total enclosure (where required by the rule), a performance test is required to be conducted by a third-party tester, to demonstrate the required control efficiency. Testing and analytical methods are as follows:

- SCAQMD Method 207.1 for ammonia; and
- SCAQMD Method 307 for hydrogen sulfide.

It should be noted that marker compounds are only used in the very limited application of a performance test demonstration to calculate control efficiency of odor control equipment. Marker compounds should not be seen as surrogates for fugitive rendering odors, and are not used or allowed in any other application under PR 415. It should also be noted that the minimum control efficiency requirements of PR 415 are not for testing of odor control equipment serving high intensity odors that are already addressed by Rule 472 – Reduction of Animal Matter. Odor control equipment serving high-intensity vapors must meet higher control efficiency.

Wastewater Treatment (Subdivision (g))

Unless specifically exempted, certain wastewater treatment processes at a rendering facility are required to be enclosed within a permanent total enclosure, or to be operated in a closed system. These include:

- Screens
- Skimmers
- Clarifiers, including dissolved air flotation
- Settling tanks
- Sludge dewatering equipment
- Sludge drying equipment, and
- The rendering facility treated wastewater outlet to city sewer.

These equipment are subject to the timing requirements of paragraph (d)(1) in PR 415, which requires permit applications to be submitted within 12 months after rule adoption, and an effective date for operation of a permanent total enclosure within 12 months after a permit-to-construct is issued by SCAQMD.

Installation of Odor Complaint Contact Sign (Subdivision (i))

All rendering facilities are required to display a sign with contact information for area residents and businesses to phone in odor complaints. This requirement is applicable upon startup for new facilities and within 6 months after rule adoption for existing facilities.

The sign must list the SCAQMD's 1-800-CUT-SMOG number as the first contact for odor complaints. The sign must also include the name of the rendering facility or integrated facility. If desired by the rendering facility owner/operator, a secondary contact at the facility may be listed on the sign. However, if the rendering facility receives an odor complaint directly, facility personnel must notify the SCAQMD by telephone at 1-800-CUT-SMOG within three hours after receiving the odor complaint or after facility personnel became aware of the complaint, or should reasonably have become aware of the complaint.

The sign must be installed within 50 feet of the facility entrance. The reason for this requirement is that some area residents and businesses may not be aware of rendering facility operations in all cases, especially where two facilities exist in close proximity.

Other requirements for the odor complaint contact sign have to do with visibility. The sign must be 4 feet square, have lettering at least 4 inches tall that contrasts with the background and be located 6 to 8 feet above grade. Finally, the sign must be unobstructed so it is clearly visible from outside the facility property.

Both Rule 403 (Fugitive Dust) and Rule 410 (Odors from Transfer Stations and Material Recovery Facilities) have a similar requirement to install a complaint contact sign, so there is precedent for this requirement.

Installation of Signage Requiring Covering of Incoming Trucks

All rendering facilities are required to display a sign at each truck entrance requiring all trucks to be enclosed or fully covered. This requirement is applicable upon startup for new facilities and within 6 months after rule adoption for existing facilities. The sign must meet all of the same sizing and visibility requirements as for the odor complaint contact sign, unless otherwise approved by the Executive Officer.

Recordkeeping Requirements (Subdivision (j))

Upon startup for a new facility, or within 30 days for an existing facility, the following records would be required to be maintained at the rendering facility:

- Records of all readings taken by anemometer to demonstrate compliance with the inward face velocity requirement of openings in a permanent total enclosure; and
- A written log of all odor complaints received by the rendering facility. The odor complaint log must contain:
 - Date and time complaint was received;
 - Date and time of alleged odors;
 - Outdoor ambient temperature at time of complaint;
 - Odor description and intensity (i.e., weak, moderate, strong);
 - Weather conditions;
 - Wind speed and direction;
 - Name and contact phone number of complainant, if provided; and
 - Determination of cause for odor emissions that generated the complaint, if found
- Weekly records of the weight of inedible raw rendering materials, for rendering operations located at integrated rendering facilities, to demonstrate compliance with the exemption for batch cookers using less than 130,000 lbs/week at integrated rendering facilities
- Records of each day of operation for low-use rendering facilities that are exempt due to operation of less than 25 days per year.

These records are required to be kept for at least 3 years and made available to SCAQMD personnel upon request.

Equipment Breakdowns and Emergency Rendering Services (Subdivision (k))

For situations where a rendering facility breaks down and another rendering facility is forced to accept additional materials, additional time for the raw rendering material to enter the raw material receiving enclosure may be necessary. Therefore, an allowance for this situation is provided in the proposal for Rule 415. The provision for additional time is conditioned upon

the owner or operator of the rendering facility that accepts additional materials not having received a Notice of Violation relating to odors or implementation of provisions of PR 415 within the most recent past 12 months.

The owner or operator of the rendering facility that accepts additional materials must comply with all provisions of the proposal, with the following allowances:

- If a permanent total enclosure is constructed, incoming raw rendering materials must be transferred into the permanent total enclosure or into covered containers within 6 hours after the end of material delivery; and
- If a permanent total enclosure is not constructed, incoming raw rendering materials must be stored in a covered container within 8 hours after delivery of material delivered at ambient temperature, or within 12 hours after delivery for materials delivered below ambient temperature.

The emergency breakdown provisions only allow additional time for raw rendering material to enter a permanent total enclosure, covered container or a cooking process that is a closed system. These provisions do not allow a rendering facility accepting additional materials to exceed any limits on raw material receiving or throughput as defined in the facility's permit. A rendering facility exceeding these limits would be required to seek a variance prior to exceeding these limits.

CHAPTER 4: IMPACT ASSESSMENT

REDUCTIONS IN ODORS

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

SOCIOECONOMIC ANALYSIS

AQMP AND LEGAL MANDATES

**DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE
40727.2, COMPARATIVE ANALYSIS**

REDUCTIONS IN ODORS

Implementation of PR 415 will require rendering facilities to implement Best Management Practices (BMP) and will require processes with the greatest potential for generation of off-site odors to be enclosed. The odor BMPs in the proposal are achieved in practice and reasonable measures that will result in odor reductions from rendering facilities. Implementation of PR 415 will minimize odors from rendering facilities through a combination of odor capture by enclosing odor-generating processes, odor control by venting odorous air from within enclosures to odor control equipment, and BMPs. Requiring affected facilities to submit a permit application for the combination of enclosure and odor control to be analyzed as a single permit unit will give a measure of assurance regarding the efficacy of an enclosure/control combination proposed by a rendering facility to effectively capture and treat odors.

Although implementation of PR 415 is expected to minimize odors from rendering facilities, there is no practical way to measure odors before and after measures are implemented; therefore, the magnitude of odor reduction is not quantifiable. However, to demonstrate the effectiveness of odor control equipment, marker compounds to represent certain classes of compounds (i.e., nitrogen and sulfur) can be used. Implementation of PR 415 provides a proactive approach to controlling odors that is expected to reduce the number of odor complaints and significantly improve the air quality for residents that live or work in the Vernon area.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

SCAQMD staff has reviewed the proposed project pursuant to CEQA Guidelines §15002 (k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA. SCAQMD staff has determined that Proposed Rule 415 is a discretionary action by a public agency, which has the potential for resulting in direct or indirect changes to the environment and, therefore, is considered a “project” as defined by CEQA. SCAQMD Staff’s review of the proposed project shows that the proposed project would not have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines § Section 15252 (a)(2)(B) since no significant adverse impacts were identified, no alternatives or mitigation measures are required. SCAQMD has prepared a draft Environmental Assessment to address the potential adverse environmental impacts associated with the proposed project which was released for a 30-day public review from July 14, 2015 to August 12, 2015. The final Environmental Assessment will accompany the final staff report for the public hearing.

SOCIOECONOMIC ANALYSIS

Staff has prepared a socioeconomic analysis of PR 415 which has been released for public review and comment in this staff report and PR 415 for a 30 day public review and comment period prior to the SCAQMD Governing Board hearing as currently scheduled for November 3, 2017. The analysis identifies affected facilities and presents the capital costs of new enclosures (specific to each affected facility, as applicable) and the capital and operating costs of ventilation systems and odor control equipment. In addition, the analysis presents the potential costs of best management practices, such as signage, covering of incoming trucks, and repair of rendering material receiving areas. The socioeconomic report also assesses the employment impacts of PR 415 on the regional economy, including the potential impacts on small businesses. The socioeconomic report is included as Chapter 5 of this staff report.

AQMP AND LEGAL MANDATES

There are no specific legal requirements for SCAQMD to propose Rule 415, and it will not be submitted into the State Implementation Plan (SIP). PR 415 is a direct result of a quality of life issue that was identified by the working group for the Clean Communities Plan (CCP) in the pilot study area of Boyle Heights. In November 2010, the Governing Board approved the CCP. SCAQMD staff began holding meetings of the stakeholder working group in July 2011 in order to identify air quality issues in Boyle Heights and surrounding communities that the working group felt should be addressed. The prevalence of odors from the five rendering facilities in Vernon, directly south of Boyle Heights was of great concern to the working group and the reduction of rendering odors a top concern. As a direct result of the CCP pilot study process, SCAQMD staff undertook rulemaking in 2014 to minimize public exposure to these distinct rendering odors.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE 40727.2, COMPARATIVE ANALYSIS

Under Health and Safety Code (H&SC) Section 40727, the SCAQMD is required to make findings of necessity, authority, clarity, consistency, non-duplication and relevance.

Necessity

A need exists to adopt PR 415 to reduce public exposure to rendering odors that have the potential to create odors in the surrounding community, especially when the odors from nearby rendering plants are combined. PR 415 is intended to reduce the potential for nuisance-level odors in the commercial and residential areas surrounding the rendering plants.

Authority

The SCAQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from California Health & Safety Code Sections 39002, 40000, 40001, 40440, 40702, and 40725 through 40728, inclusive, and 41700.

Clarity

PR 415 has been written or displayed so that its meaning can be easily understood by persons directly affected by it.

Consistency

PR 415 is in harmony with and not in conflict with or contrary to, existing statutes, court decisions or state or federal regulations.

Non-Duplication

PR 415 does not impose the same requirements as any state or federal regulations. PR 415 is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference

In adopting this regulation, the SCAQMD Governing Board will be implementing, interpreting, and making specific the provisions of the California Health & Safety Code Sections 40000 (authority over non-vehicular sources), 40001 (rules to prevent and abate air pollution episodes, and to achieve ambient air quality standards), and 41700 (public nuisance).

COMPARATIVE ANALYSIS AS REQUIRED UNDER CALIFORNIA HEALTH AND SAFETY CODE 40727.2

Under Health & Safety Code section 40727.2, the SCAQMD is also required to perform a comparative written analysis when adopting, amending or repealing a rule or regulation. The comparative analysis is relative to existing federal air pollution control requirements, existing or proposed SCAQMD rules and air pollution control requirements and guidelines which are applicable to the same equipment or source type as Proposed Rule 415. All references are to California statutory codes, unless otherwise noted.

Citations

Civil Code Section 3482.6(e)(1), includes rendering plants in its definition of “Agricultural processing activity.” Section 3482.6(e)(3), defines proper and accepted customs and standards as the compliance with all applicable state and federal statutes and regulations governing the operation of the agricultural processing activity, operation, facility, or appurtenances with respect to the condition or effect alleged to be a nuisance.

Health and Safety Code section 39011.5 states in pertinent part, “Agricultural source of air pollution” or “agricultural source” means a source of air pollution or a group of sources used in the raising of animals located on contiguous property under common ownership or control that is a confined animal facility, including, but not limited to, any structure, building, feed storage area, or system for the collection, storage, treatment, and distribution of liquid and solid manure, if domesticated animals, including, swine are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

Health and Safety Code section 39013 includes odors in its definition of an “air contaminant” or “air pollutant.”

Health & Safety Code section 41700 and SCAQMD Rule 402, both prohibit air emissions, including odors, which annoy any considerable number of persons or the public.

Health and Safety Code section 41705(a) exempts odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals from Health & Safety Code section 41700.

SCAQMD Rule 409 limits the emission of combustion contaminants from the burning of fuel.

SCAQMD Rule 472 limits the emission of air pollutants from the reduction of animal matter.

SCAQMD Rule 476 limits the emission of air pollutants from the operation of steam generating equipment.

SCAQMD Rules 1146, 1146.1, and 1146.2 limit emissions of oxides of nitrogen from large water heaters, boilers, steam generators, and process heaters.

SCAQMD Rule 1147 limits the emissions of oxides of nitrogen from miscellaneous sources.

Food and Agricultural Code section 19213 defines “Rendering” as all recycling, processing, and conversion of animal and fish materials and carcasses and inedible kitchen grease into fats, oils,

proteins, and other products that are used in the animal, poultry, and pet food industries and other industries.

Food and Agricultural Code sections 19300-19306 pertain to the California Department of Food and Agriculture's licensing requirements for rendering plant and collection center operators.

Vehicle Code section 2460(i) defines "Rendering" as all recycling, processing, and conversion of animal and fish materials and carcasses and inedible kitchen grease into fats, oils, proteins, and other products that are used in the animal, poultry, and pet food industries and other industries. Section 2460(j) defines "Collection Center" as a receiving area for the temporary storage of animal carcasses, packinghouse waste, or other products before transportation to a licensed rendering plant or pet food processor.

Title 3, California Code of Regulations, Section 1180.35, requires vehicles used to transport carcasses and packinghouse waste to be washed to prevent the spread of disease and creation of nuisances.

Title 13, California Code of Regulations, Section 2449(c), requires the reduction from oxides of nitrogen (NO_x), diesel particulate matter (PM), and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles. Equipment or vehicles used exclusively in agricultural operations are not subject to this regulation.

Title 27, California Code of Regulations, Section 20890, provides that dead animals may be landfilled if allowed by local regulations and shall be covered immediately or at a frequency approved by the Enforcement Agency. Section 20760, Title 27, California Code of Regulations, further states that each disposal site shall be operated and maintained so as not to create a public nuisance.

Section 406 of the Sanitation Districts of Los Angeles County's Wastewater Ordinance states that they have jurisdiction over wastewater as a public nuisance. Section 406 specifies, in pertinent part, that any discharge to the Sanitation Districts' sewerage systems which may otherwise endanger the public, the environment, or create a public nuisance is a violation and the discharger shall be subject to enforcement. Section 406 further specifies no person shall discharge or cause to be discharged to the Districts' sewerage systems, any wastes which adversely affect air quality, or place the Sanitation Districts in noncompliance with any standard or regulation promulgated by the SCAQMD.

Relevant Findings

With respect to the comparison of the elements of Proposed Rule 415 to the elements of existing requirements, Proposed Rule 415 establishes new control and operational requirements for equipment at rendering plants for the control of odors from rendering operations. Existing requirements either limit the quantity of specific criteria air pollutants, not odors, or they prohibit the facility from emitting such quantities of odors as to cause a nuisance.

SCAQMD Rule 472 requires operators of equipment used to reduce animal matter, not exclusively processed for human consumption, to some means of controlling high-intensity odors from cookers.

Section 406 of the Sanitation Districts of Los Angeles County's Wastewater Ordinance regulates the condition of wastewater that is discharged into the sewerage systems. This section does not, however, regulate the process of treating the water prior to meet discharge requirements, which PR 415 is designed to address odors from.

PR 415 is not changing the policy for when an odor nuisance NOV is issued; instead the rule is defining a separate and distinct “confirmed odor event.” The purpose of an Odor Mitigation Plan is to establish practices and requirements to reduce odors from rendering facilities. PR 415’s definition of a confirmed odor event does not conflict with District Rule 402; a confirmed odor event requires a lower level of impact on the community than does a nuisance and does not trigger a notice of violation. New and existing facilities will still have to implement Best Management Practices (BMP), operate in a closed system or permanent total enclosure, or install odor control equipment, regardless of a nuisance violation or “Confirmed Odor Event”.

District staff is not aware of any rendering plants operating in the South Coast Basin that are raising animals at the same location so as to be able to claim that odors from their rendering operations are exempt from Health and Safety Code section 41700 under Health and Safety Code section 41705(a).

The District’s legal authority to adopt and enforce PR 415, establishing best management practices and requirements to reduce odors from rendering facilities derives, in part, from Health and Safety Code section 41700. The District is authorized under Health and Safety Code section 41508 to adopt rules imposing requirements that are stricter than those set forth in state law, including Civil Code Section 3482.6(e)(3). PR 415’s “Rendering Facility” definition is not inconsistent with the State law definition of rendering plants.

The District’s legal authority to adopt and enforce PR 415, including requirements for wastewater associated with rendering processing derives, in part, from Health and Safety Code section 41700. SCAQMD has conducted multiple on-site inspections of rendering plants in the District and has observed through these inspections that the wastewater treatment systems at the plants are a significant source of odors. SCAQMD staff has detected rendering odors during onsite inspections at rendering plants coming from wastewater treatment systems that have the potential to create odor nuisances in the surrounding community, especially when combined with odors from other rendering operations and from nearby rendering plants.

District staff has determined that at the present time, there is not a landfill in Los Angeles County that is permitted to landfill dead animal carcasses at their site unless it is due to an emergency.

PR 415’s regulation of odors from rendering plants is not in conflict with State laws regarding rendering plant operations, and is within the SCAQMD’s authority under Health and Safety Code section 40440(a).

ALTERNATIVES ANALYSIS

Health and Safety Code Section 40440.5, subsection (c)(3) requires an analysis of alternative control measures. Staff conducted such a review. There were several key approaches considered by staff relative to the development of PR 415 that were not pursued for various technical reasons. A summary of each key approach considered relative to the development PR 415 are summarized below and the reasons for which they were not pursued.

Facility-Specific Odor Management Plan (OMP)

Submitting a facility-specific odor management plan instead of containing fugitive sources of odors and routing them to odor control equipment falls short of the steps necessary to control odors from rendering facilities and reduce odor problems in the communities surrounding Vernon. In particular, the OMP approach does not include a requirement for timely enclosure of odorous operations at a rendering facility, or operation of those odorous operations in a closed system as the staff proposal

does. SCAQMD staff believes the approach represented by the PR 415 proposal is necessary in order to ensure containment and reduction of fugitive odors from certain odorous processes at a rendering facility.

An odor management plan-first approach does not provide the same certainty as the staff proposal, which will create a level playing field among the existing Vernon rendering facilities. Staff did not pursue this OMP approach for the proposed rule in part because requiring individual plans would not allow for the discussion of requirements in a public process. The proposed rule has undergone a full public process and all stakeholder input has been considered. Staff believes an enclosure or closed system is the most effective and still reasonable method of reducing odors.

The SCAQMD Governing Board will consider the proposal and has the option to adopt the staff proposal, make modifications, or decline to take an action. Should the rule be adopted, the facilities that will be subject to the rule will have certainty as to what will be required. The process for submittal of individual plans by each facility would undergo review by staff and there could be, through the review process, some inconsistencies between requirements for different facilities.

Use of Odor Surrogates

This approach considered two ASTM methods, including ASTM E679 and E544. ASTM Method E679 is a dilution-to-threshold method that relies on an odor panel to determine a detection threshold for an odor sample. As such, its potential value would only be to establish the level at which odors from an odor sample can be detected by an odor panel – not the level at which a complainant may find an odor to be objectionable. Use of this method will not help to establish baseline conditions nor the development of minimum odor standards.

While ASTM Method E679 may be useful in determining a detection threshold for an odorous air sample, this method does not designate an odor threshold that may be considered objectionable. ASTM Method E544 is a method for referencing ambient odor intensities in the suprathreshold region (i.e. a stimulus large enough to produce a reaction in excitable cells). While ASTM Method E544 indicates a method to characterize odor intensity, through comparison of odor samples to a reference odor, it does not address odor character, which is very important to the perception of rendering odors. The use of this ASTM standard, while potentially useful as a tool for monitoring purposes, presents a limitation for incorporating into PR 415 rule development concepts.

Quantitative Approach for Establishing Minimum Standards based on Measurement/Modeling of Chemical Compounds in Odors

As discussed in Chapter 1, there are more than 100 chemical compounds that have been identified in rendering odors. Modeling requires input of an initial concentration for each chemical compound, which may not be possible to obtain. Many of these compounds do not currently have established methods for collection, speciation and analysis. Many do not currently have established odor detection thresholds. For these reasons, it is not currently possible to identify the exact chemical makeup of rendering odors using existing science and the present state of technology. It follows that it is therefore not currently possible to establish initial concentrations for modeling considering all possible compounds.

Even if the limitations in the current science can be overcome, there are multiple sources of odor that originate from rendering facilities (raw rendering material, cooking, non-condensable vapors from cooker condensate, wastewater) and therefore multiple odor profiles from the various fugitive odors at each facility. Odors may also be different at the same facility depending on the materials being

processed at the time and other factors. Processed materials may also change over time based on market demands.

Furthermore, a modeling approach may present uncertainty for two reasons. First, modeling of multiple, overlapping volume sources of fugitive odors with different odor profiles would require many simplifying assumptions to be made. Second, there is uncertainty with regard to downwind chemical reactions; that is, reactions occurring in the atmosphere before odors reach receptor locations. These uncertainties may lead to possible over-prediction or under-prediction of actual ground level concentrations at receptor locations. In summary, staff does not believe the existing science allows for the suggested modeling approach to be implemented.

In summary, staff believes the current science does not allow direct measurement of all the chemical compounds that make up odors. Therefore, setting minimum odor standards based on measurement of chemical compounds in odors is not feasible given the existing science and technology which create too many uncertainties for a regulatory approach.

COMMENTS AND RESPONSES

Comments received during the rule development process and responses to those comments are included in Appendix A.

CONCLUSIONS AND RECOMMENDATIONS

This rulemaking is the direct result of a quality of life issue that was identified by the working group for the CCP in the pilot study area of Boyle Heights. The need to address odors from the Vernon rendering facilities is a key air quality priority for the CCP stakeholders and other members in the communities where they live, work, and breathe.

As noted, the impacts of odors vary for each individual, but can lead to nuisance and health impacts. The cumulative impacts from the facilities on the surrounding communities is unacceptable and needs to be addressed. PR 415 is consistent with existing technology- and BMP-based requirements in other states and countries that were implemented to protect the public health from odors. In addition, it is reflective of existing good industry practices and is a balanced approach given the nature of the existing local rendering facility operations and as noted earlier, some of the owners/operators of the local facilities affected by the rule have other similar facility operations with odor controls that PR 415 will require. These facilities should provide the same level of public protection here in the South Coast Air Basin as is provided for other communities.

PR 415 is a pro-active approach to addressing these odors with provisions designed to reduce odors before they come to the level of a public nuisance, whereas existing statutes are solely reactive after the impact has occurred. For these reasons, PR 415 is necessary.

CHAPTER 5: SOCIOECONOMIC IMPACT ASSESSMENT

AFFECTED INDUSTRIES AND FACILITIES

COMPLIANCE COSTS

SMALL BUSINESS' SHARE OF COMPLIANCE COSTS

MACROECONOMIC IMPACTS ON REGIONAL ECONOMY

AFFECTED INDUSTRY AND FACILITIES

Based on the North American Industry Classification System (NAICS), rendering facilities are classified under the broader industry of Rendering and Meat Byproduct Processing (NAICS 311613). In the State of California, the industry provides nearly 700 jobs at a total of 18 facilities, with an estimated average annual wage of \$63,000 per job.¹ However, not all of these facilities conduct rendering operations.

Within the SCAQMD jurisdiction, there are five facilities with rendering operations in the urban portion of Los Angeles County. Therefore, they would be potentially affected by PR 415. All five facilities are clustered in close proximity, with four located in the heavily industrialized City of Vernon and one in the City of Los Angeles bordering the City of Vernon (see Figure 5-1). Facilities A, B, and C use a continuous rendering process, and each of these three facilities belongs to a nationally or internationally operated company. The remaining two facilities D and E use a batch rendering process and are much smaller in their business scales. PR 415 focuses on the operations and areas most likely to contribute to offsite odors, including raw material receiving, fugitives from cooking and processing operations, and wastewater treatment.

Figure 5-1: Locations of Affected Facilities



Source: Google Maps.

According to the City of Vernon website, the city encompasses 5.2 square miles and currently houses more than 1,800 businesses that employ approximately 55,000 people.² While there are just over 100 inhabitants within its city boundaries, City of Vernon is surrounded by many socioeconomically disadvantaged communities.³ Among the 20 census tracts immediately adjacent to the City, 13 tracts have unemployment rates above the Los Angeles County average of 10 percent, with rates as high as 29 percent; 18 out of the 20 census tracts have poverty rates above

¹ Quarterly Census of Employment and Wages, 2016 annual estimates. Data for Los Angeles, Orange, Riverside, and San Bernardino Counties are not publically available due to confidentiality requirements.

² See <http://www.cityofvernon.org/>.

³ City of Vernon had a population of 113 according to the U.S. Census Bureau's 2016 Population Estimates.

the County average of 18 percent, with rates as high as 51 percent; and compared to the County average of 26 percent, 16 out of the 20 census tracts have higher shares of children 18 years or younger living in households with annual income below the federal poverty level, with shares as high as 74 percent.⁴

Small Businesses

The SCAQMD defines a "small business" in Rule 102 for purposes of fees as one which employs 10 or fewer persons and which earns less than \$500,000 in gross annual receipts. The SCAQMD also defines "small business" for the purpose of qualifying for access to services from SCAQMD's Small Business Assistance Office (SBAO) as a business with an annual receipt of \$5 million or less, or with 100 or fewer employees. In addition to SCAQMD's definition of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 and the federal Small Business Administration (SBA) also provide definitions of a small business.

The CAAA classifies a business as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) does not emit more than 10 tons per year of either VOC or NOx, and (3) is a small business as defined by SBA. The SBA definitions of small businesses vary by six-digit NAICS codes. For NAICS 311613, a small business must have no more than 750 employees.⁵

All the definitions above apply at the firm level (i.e., not to each individual plant under the same ownership) and do not apply to the public sector. Based on the 2017 Dun and Bradstreet database and publicly available company information, none of the five facilities would be classified as small businesses under SCAQMD's Rule 102 definition. The two facilities utilizing a batch rendering process would be classified as small businesses under the SBA definition. Estimated compliance costs for these two small businesses will be discussed below.

COMPLIANCE COSTS

For each facility subject to PR 415, incremental costs were estimated for the capital outlays and related expenditures—including operations and maintenance (O&M)—that would be necessary for compliance with the proposed requirements. Incremental costs to comply with Best Management Practice (BMP) requirements were also estimated. As rule compliance was assumed, potential costs related to Odor Mitigation Plan and Specific Cause Analysis were not included in this analysis, which would only be triggered by confirmed odor event(s) and/or violation of Rule 402 as specified in paragraphs (d)(2) and (d)(3) of PR 415.

All the costs discussed in this section are expressed in 2017 dollars. For the purpose of projecting future compliance costs, it is assumed that these costs would remain the same in the foreseeable future, with any increase being a result of inflation. Additionally, while it is considered in this analysis that all estimated costs would be borne by the affected facilities, the compliance costs could potentially be passed onto downstream buyers of rendering services and products.

⁴ Based on the U.S. Census Bureau's American Community Survey, 2011-2015 five-year estimates.

⁵ See the latest SBA definition: <http://www.sba.gov/content/table-small-business-size-standards>.

It is important to note that when conducting the cost analysis, every effort was made to represent costs as realistically as possible, given that many factors would ultimately dictate what price a business will pay to implement a control. The estimated cost for each line item was either represented by an industry average or a reasonable range, based on the information and data available. The procedure and assumptions for each cost estimate are discussed below. Overall, the total annualized compliance costs for all affected facilities by PR 415 was estimated to range from \$405,000 to \$527,000 per year.

Capital and Other Related Upfront Costs

PR 415 proposes requirements for permanent total enclosures or operations in closed systems. These requirements would vent the objectionable odors collected within the enclosures to odor control equipment or contain odors within closed systems. The requirements are applicable to new facilities upon startup and to existing facilities within approximately two to four years after rule adoption, with exemptions as proposed in subdivision (I).⁶ PR 415 does include an additional compliance option for the receiving area to allow a permanent total enclosure that is not ventilated to an odor control system, provided opening are equipped with measures to ensure odors are maintained within the enclosure.

Based on information provided by the affected facilities and staff's observations during site visits, each facility was evaluated to determine its probable approach or approaches to complying with the permanent total enclosure/closed system requirements in subparagraphs (d)(1)(B) and (d)(1)(C). The range of estimated costs reflect the differences in probable approaches and the range of unit costs for various cost components.

Overall, it is expected that only three facilities (B, C, and D) would incur costs related to the permanent total enclosure/closed system requirements. Facility A would not incur additional costs as the proposed permanent total enclosure/closed system requirements have already been met within its current setup. Facility E would qualify for the proposed exemption from the permanent total enclosure/closed system requirements based on the amount of materials processed.

The cost assumptions are discussed below:

➤ *Permanent Total Enclosure/Closed System*

PR 415 would require the affected facilities to operate certain odorous processes—including raw material receiving, cooking and processing operations, and wastewater treatment—either within a permanent total enclosure or within a closed system. The associated capital cost estimates are provided in Table 5-1 below. For permanent total enclosures, they include

⁶ For existing facilities, a permit application to construct is required within 12 months after rule adoption. The requirements for permanent total enclosure or closed system and the applicable requirements for ventilation to odor control equipment shall be met by existing facilities no later than 24 months after the date a Permit to Construct is issued, except for wastewater treatment area where the same requirements shall be met no later than 12 months after the date a Permit to Construct is issued. However, it would be possible to extend the deadline for completion of permanent total enclosure pursuant to subparagraph (d)(1)(F) of PR 415.

construction and design costs, demolition costs when applicable, costs of fire suppression system, and fees to obtain permits to construct. There are separate costs estimated for closed systems or alternatives to the same effect.

Table 5-1: Incremental Capital Costs for Permanent Total Enclosure/Closed System for PR 415 Facilities

	Permanent Total Enclosure					Closed System
	Construction	Design	Demolition	Fire Suppression System	Permit Fee	
Lower Bound Estimate	\$1,977,000	\$60,000	\$13,000	\$38,000	\$14,000	\$64,000
Upper Bound Estimate	\$2,098,000	\$150,000	\$26,000	\$134,000	\$15,000	\$154,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

In general, staff used a cost estimate of \$110 per square foot (ft²) for each new enclosure, inclusive of materials, construction, and foundation. This represents the median construction cost in the Los Angeles area for a one-story industrial building.⁷ For Facility D, the lower bound estimate for capital costs are based on the enclosure design and the associated cost estimates submitted by the facility instead of using \$110/ ft². These lower cost estimates included \$91,000 to enclose Facility D's cooking area and \$73/ft² for the facility's raw materials receiving/grinding and wastewater treatment areas.⁸

Architectural design fees were included for each new enclosure or building structure modification, based on 100 hours of design time and an architect's hourly rate of \$100 to \$250, which were used for the lower and upper bound estimates.⁹ Demolition cost estimates of \$1/ft² to \$2/ft² were estimated for facilities that must remove old buildings to erect a new enclosure.¹⁰ It was additionally assumed that all permanent total enclosures would be required to install a fire suppression system. Based on Facility A's current setup which would satisfy the proposed permanent total enclosure/closed system requirements, it was assumed that water sprinkler-type fire suppression systems would be sufficient for the enclosed areas to meet the municipal

⁷ Median lump-sum construction cost for building a one-story factory in Los Angeles, assuming 10% overhead, 5% profit, and 1% bonding. The amount is rounded to the nearest tens to arrive at \$110/ft² (source: <http://www.buildingjournal.com/construction-estimating.html>).

⁸ These cost estimates reflected what was proposed by Facility D in 2015, inflated by the ratio of RS Mean's Construction Cost Index as of 2015 to the Index as of 2017 January. According to Facility D, the \$91,000 cost estimate included the capital costs of infilling existing structure with reused materials and a ventilation system with carbon odor control.

⁹ See <http://architecturalfees.com/architect-hourly-fee-rates/>.

¹⁰ See <http://buildingjournal.com/commercial-construction-estimating-demolition.html>.

fire code requirements. Such systems were estimated to cost between \$2/ft² and \$7/ft².¹¹ Finally, permit fees to obtain permits to construct from the City of Vernon were also included.¹²

For Facility B, in addition to enclosures in raw materials receiving and wastewater treatment areas, a one-time cost of \$20,000 to \$50,000 was assumed for cooking and processing areas where closed systems or their alternatives as defined in paragraph (f)(3) would be sufficient to meet the proposed rule requirements. SCAQMD Rule 301's Schedule B permit fees were included in the cost estimates for the closed systems for Facility B.¹³ Facility C is expected to continue utilizing an existing enclosed building to conduct its rendering operations with no modifications needed to the building structure. However, the building currently does not meet the definition of Permanent Total Enclosure in paragraph (c)(15) and minor improvements, assumed to cost \$20,000 to \$50,000, are expected to achieve a closed system. These minor improvements assumed for Facility C, on their own, were assumed not to result in changes in SCAQMD permit conditions, and therefore, no permit fee implications were included in the cost analysis.

➤ *Ventilation of Permanent Total Enclosure to Odor Control Equipment*

All permanent total enclosures are required to be ventilated to odor control equipment, except for the raw materials receiving areas where the affected facilities may elect to meet the proposed alternative permanent total enclosure requirements as specified in paragraph (f)(5) which does not require ventilation to an odor control system, but does have other costs associated with additional provisions for enclosure openings. The purpose of this requirement is to treat fugitive odors generated from rendering operations and collected within the permanent total enclosure prior to being released into the environment.

This cost analysis assumed that Facilities B and C would choose to comply with the proposed alternative permanent total enclosure requirements for their raw materials receiving areas; moreover, these two facilities were assumed to achieve closed systems for their processing and cooking operations as discussed above. As Facility D's raw materials receiving area is currently co-located with its grinding operations and would remain so in its proposed enclosure design, cost estimates for Facility D's ventilation systems therefore included ventilating the joint area for raw materials receiving and grinding processes. As previously discussed, Facility A and E would not incur additional costs for permanent total enclosures or associated ventilation. As a result, capital costs associated with the requirement to ventilate permanent total enclosure to odor control equipment were included for Facility B's wastewater treatment area and all of Facility D's rendering operations including receiving/grinding, cooking, and wastewater treatment.

The associated capital cost estimates are provided in Table 5-2 below. Based on a vendor quote obtained by staff, a cost of \$2.5 per cubic foot per minute (CFM) was assumed for a ventilation

¹¹ See <http://itknowledgeexchange.techtarget.com/itanswers/fire-suppression-system-for-server-room/>.

¹² Based on City of Vernon's 2017 permit fee schedule. See http://www.cityofvernon.org/images/General_Fee_Schedule_2017.pdf.

¹³ Schedule B fees are applicable to administrative changes to existing equipment permits. Two administrative changes were assumed per area, and the fee rates for Fiscal Year 2018-2019 were used.

system, including ventilation ductwork, intakes, one or more high-pressure blowers, electrical, controls and instrumentation, freight, installation of the ventilation system and start-up assistance. The cost estimates for the size of the ventilation system were based on the volume of the permanent total enclosure that it would serve. In general, the lower bound estimate assumes 15 air changes per hour, while the upper bound estimate assumes 20 air changes per hour. Note that PR 415 does not require a minimum air exchange rate for a permanent total enclosure. The assumed ventilation rates used in this cost analysis were based on good engineering practice for ventilating low concentration odors from industrial buildings.¹⁴ For Facility D, however, smaller ventilation blowers were assumed based on the enclosure design proposed by the facility.

Table 5-2: Incremental Capital Costs for Ventilation

	Ventilation System
Lower Bound Estimate	\$79,000
Upper Bound Estimate	\$112,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

➤ *Odor Control Equipment*

Odor control equipment would be required for any affected facility that does not already have existing equipment that is adequate for the size of each permanently enclosed cooking, processing, and wastewater treatment area. As previously discussed, for the receiving area, affected facilities may elect to meet the proposed alternative permanent total enclosure requirements as specified in paragraph (f)(5) which does not require ventilation to an odor control system. Similar to the assumptions for ventilation, the cost analysis for the odor control system for the receiving area assumes Facilities B and C would choose to comply with the proposed alternative permanent total enclosure requirements and Facility D comply with a permanent total enclosure with ventilation and an odor control system.

PR 415 does not specify a particular type of odor control equipment. In this cost analysis, cross-flow type wet scrubbers were assumed to be utilized by Facility B for its wastewater treatment area, and Facility D would be using carbon systems as the odor control method according to its proposed enclosure design. Other related upfront costs include a performance test cost and equipment permit fees. These capital cost estimates are provided in Table 5-3 below.

¹⁴ An air change is the length of time it takes to ventilate the volume of air within the enclosure. For example, 15 air changes per hour equates to the entire volume of air inside a permanent total enclosure being replaced within 4 minutes.

Table 5-3: Incremental Capital Costs for Odor Control Equipment

	Odor Control Equipment¹	Performance Test	Permit Fee
Lower Bound Estimate	\$216,000	\$20,000	\$25,000
Upper Bound Estimate	\$263,000	\$40,000	\$25,000

Notes: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

¹ Cost estimates reflected those for cross-flow room air scrubbers only, as capital costs associated with carbon systems were assumed to be included in the cost estimates for ventilations systems.

Wet scrubbers are commonly used in low-concentration, high flow rate applications, such as the conditions expected for control of fugitive odors in receiving, wastewater and processing areas of a rendering facility. These scrubbers consist of cylindrical or rectangular chambers in which an air stream containing odors comes into contact with liquid droplets generated by spray nozzles. Reduction of odors occurs as a result of physical and chemical interaction between odorants in the air stream and the scrubber solution. Physical absorption depends on properties of the air stream and solvent, as well as specific characteristics of the chemical compounds in the air and liquid streams (e.g., diffusivity, equilibrium solubility).¹⁵

Two types of wet scrubbers are appropriate for use in fugitive odor control at rendering facilities, including packed-bed and cross-flow room air scrubbers. Packed-bed and cross-flow type scrubbers with airflows up to 100,000 CFM, or even larger, are available commercially. An advantage of a cross-flow type scrubber is that it can have two separate stages that allow for different chemical treatments of the airstream. Another advantage is that it can often be roof mounted on a self-contained skid. A roof mounted installation typically requires less ductwork relative to a packed-bed scrubber, thereby reducing installation costs. Therefore, this analysis generally assumes a cross-flow type scrubber unless an affected facility indicated its potential use of another type of odor control equipment. Staff assumed a cost of \$4/CFM to \$9/CFM for the capital cost of a scrubber, based on data from U.S. EPA which represented the lower and upper bound estimates, accordingly.¹⁶

Based on its proposed odor control method, Facility D was assumed to utilize carbon systems instead of wet scrubbers. The majority of costs for such systems are regular replacements of carbon drums, which will be discussed in the O&M cost section below. Based on Facility D's proposed enclosure design and cost estimates, it was further assumed that the capital costs associated with carbon systems were included in the capital cost estimates for Facility D's ventilation systems.

¹⁵ See <http://www.epa.gov/ttnchie1/mkb/documents/fsprytwr.pdf>.

¹⁶ See <http://www.epa.gov/ttnchie1/mkb/documents/fsprytwr.pdf>. An inverse unit cost-to-CFM was assumed, with costs at the low end of the range being assumed for the largest scrubbers, and costs at the high end of the range assumed for the smallest scrubbers. Values between the range endpoints were linearly interpolated. Cost estimates were inflated to 2017 dollars using the proprietary Marshal and Swift Index and included sales tax, freight, instrumentation, direct installation costs (foundation & supports, handling & erection, electrical, piping, insulation, painting), and indirect installation costs (engineering, construction & field expenses, contractor fees, start-up, performance test and other contingencies).

The costs for a one-time performance test for each piece of odor control equipment, as required in subparagraph (f)(4)(D), was included and estimated to range from \$5,000 to \$10,000 per test which were used in the lower and upper bound estimates. Moreover, each piece of newly installed equipment would need to obtain a SCAQMD permit to operate. This cost analysis used the current Rule 301 Schedule D permit fee rates that will become effective in Fiscal Year (FY) 2018-2019.¹⁷

➤ *Alternative Permanent Total Enclosure Requirements for Raw Materials Receiving Area – Additional Provisions for Enclosure Openings*

For raw materials receiving areas, the affected facilities may elect to meet the proposed alternative permanent total enclosure requirements which includes more enhanced measures for enclosure openings where vehicles or equipment are accessed which includes the use of an automatic roll-up door with an air curtain, vestibule, and air lock system to minimize fugitive odors escaping through enclosure openings; the alternative requirements would also be applicable to personnel access doors (see subparagraph (f)(5)(D)). Based on staff's observations, it was assumed that multiple air curtains would be installed at the permanent total enclosures of raw materials receiving areas at Facilities B and C. (As previously discussed, Facility D's raw materials receiving area is co-located with its grinding operations, and as is, would be subject to the requirement to ventilate the permanent total enclosure to odor control equipment.) The associated capital cost estimates are provided in Table 5-4 below.

Table 5-4: Incremental Capital Costs for Secondary Odor Containment System

	Air Curtain	Permit Fee
Estimate	\$63,000	\$20,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

Costs of each air curtain was estimated based on the proposed air velocity requirement and the size of each access door using price quotes from an industrial product supplier.¹⁸ Automatic roll-up doors were assumed for truck/equipment access and hinged doors were assumed for personnel access. Additional costs were included to account for tax and shipping, installation, motor control panel, and door limit switch costs. Finally, a contingency factor of 1.3 was applied to the sum of these itemized costs to account for uncertainties, especially in the costs of installation and control (i.e., electrical hookup). As a result, cost estimates of \$4,000 to \$7,500 per air curtain were used, in addition to the SCAQMD Schedule D permit alteration/modification fees evaluated at the rates effective in FY 2018-2019. The range of unit cost reflected mainly the difference in the size of each door assumed.

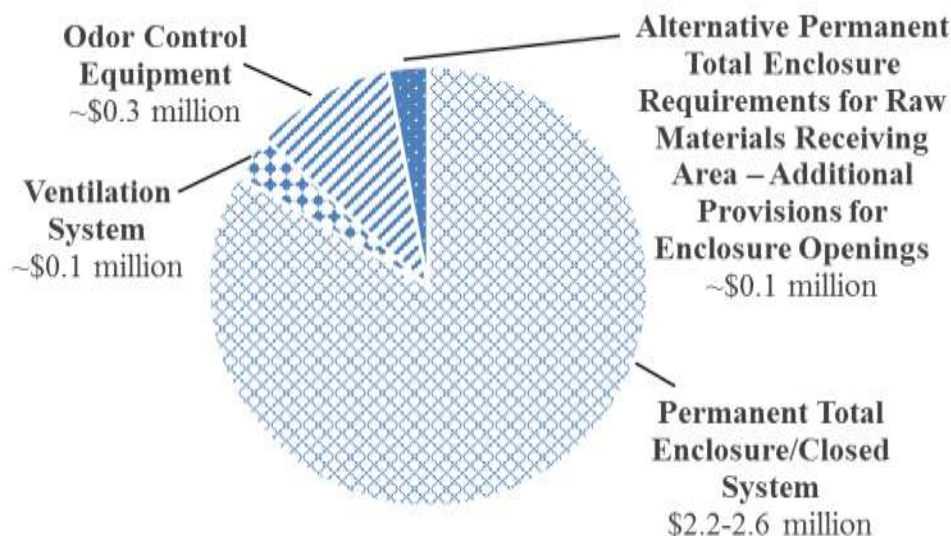
Overall, to comply with PR 415, Facilities B, C and D together would incur capital and other upfront costs totaling \$2.6 million to \$3.1 million within approximately two to four years after rule

¹⁷ Either Schedule C or Schedule D fee rates may be applicable for odor control equipment. To be conservative, the higher Schedule D rates were assumed.

¹⁸ See <https://www.grainger.com/category/air-curtains/air-curtains-and-accessories/ventilation-equipment-and-supplies/hvac-and-refrigeration/ecatalog/N-ykb#nav=%2Fcategory%2Fair-curtains%2Fair-curtains-and-accessories%2Fventilation-equipment-and-supplies%2Fhvac-and-refrigeration%2Fecatalog%2FN-ykb>.

adoption. More than 80 percent of these estimated costs are associated with expected expenditures related to the permanent total enclosure or operation in closed system requirements (see Figure 5-2). While capital financing could be potentially used by an affected facility to lessen the stress on the facility's cash flow, this analysis does not take into account financial decisions made at the facility or firm level.

Figure 5-2: Incremental Capital and Other Related Upfront Costs



Note: Numbers may not sum up due to rounding.

Annual O&M Costs of Ventilation and Odor Control Equipment

Annually, there would be additional costs associated with the operations and maintenance of ventilation systems, odor control equipment, and provisions for enclosure openings for the raw materials receiving area for alternative permanent total enclosure. As previously discussed, these costs would be incurred by Facilities B, C, and D only. The cost assumptions are discussed below:

➤ *Electrical Power Usage*

Increased electrical power usage would occur in three areas. First, increased usage would be needed to operate one or more high pressure blowers that are necessary to move sufficient air through the ventilation system to achieve the assumed air changes per hour in an enclosure. Second, increased usage would be also needed to operate one or more recirculation pumps to circulate the scrubbing solution necessary for the operation of wet scrubbers. Third, increased usage would be additionally needed to operate air curtains when the physical door(s) in raw materials receiving areas are open during ingress and egress activities.¹⁹ These O&M cost estimates are provided in Table 5-5 below.

¹⁹ As previously discussed, Facility D was assumed to use carbon systems instead of wet scrubbers as its odor control equipment. Moreover, secondary odor containment systems such as air curtains **were assumed for** Facilities B and C at their raw materials receiving areas but not assumed for Facility D. This is because Facility D's

Table 5-5: Incremental O&M Costs for Electrical Power Usage

	Ventilation Blowers	Scrubber Recirculation Pumps	Air Curtain
Lower Bound Estimate	\$29,000	\$9,000	\$1,000
Upper Bound Estimate	\$46,000	\$14,000	\$2,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

To estimate the electrical power usage for ventilation blowers, a factor of 1.5 horse power (hp) per 1,000 CFM was assumed for one or more industrial motors capable of continuous operation at the 75% utilization level to power the ventilation blower(s). To estimate the electrical power usage for scrubber recirculation pumps, a factor of 0.5 hp per 1,000 CFM was assumed for two pumps operating at the 75% utilization level at each enclosure. To estimate the electrical power usage for air curtains, a 3-hp motor was assumed for each truck/equipment access door and a 1-hp motor was assumed for each personnel access door. In all cases, it was assumed that the motors used would be operating at near-full load. Therefore, full load current was used to estimate electrical costs. This is a conservative assumption which overestimates actual usage and corresponding costs.

The operating schedule was assumed to be 24 hours per day and 365 days per year for wastewater treatment areas; 8 to 24 hours per day and 312 days per year for areas of raw materials receiving and cooking/processing operations. Two hours per day and 312 days per year of enclosure openings for ingress and egress activities were further assumed for the raw materials receiving areas at Facilities B and C.

For calculation of the cost of electrical power consumed, composite rates ranging between \$0.10/kWh and \$0.12/kWh were used. These rates were based on the City of Vernon Gas & Electric Department's current rate schedule, taking into account different rates for various seasons and peak periods.²⁰

➤ *Scrubber Chemicals*

Scrubber solution and a chemical for potential of hydrogen (pH) adjustment of the scrubbing liquor are needed to operate wet scrubbers. The associated incremental cost estimates are provided in Table 5-6 below.

raw materials receiving area would be vented to odor control equipment as the area is co-located with its grinding operations.

²⁰ City of Vernon Gas & Electric Department Schedule No. TOU-V. See: <http://www.cityofvernon.org/images/electric-rates/2017/TOUV-Large%207-1-2017.pdf>.

Table 5-6: Incremental O&M Costs for Scrubber Chemicals

	Scrubber Solution	Chemical for pH Adjustment
Lower Bound Estimate	\$11,000	\$17,000
Upper Bound Estimate	\$23,000	\$23,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

For this analysis, the scrubber solution was assumed to be sodium hypochlorite, which is a moderate-cost scrubber solution in current use for control of low-concentration fugitive rendering odors. Usage and costs of scrubber solution and a chemical for pH adjustment of the scrubbing liquor were estimated for each scrubber, based on the size of the ventilation blower/scrubber and anticipated operating schedule of the enclosure. Based on existing practices, 350 gallons of scrubber solution and 70 gallon of chemical for pH adjustment per 1,000 CFM were assumed. Typical pricing for sodium hypochlorite solution is \$0.60 to \$0.90 per gallon, which were used for the lower and upper bound estimates, whereas the chemical for pH adjustment was assumed to cost \$4.50 per gallon.

➤ *Scrubber Makeup Water*

It is necessary to provide fresh water to a scrubber continuously to maintain overflow of contaminated sump water. The volume of makeup water is small relative to the recirculation rate of the scrubber, typically a few percent of the recirculation rate. A cost for fresh makeup water was assumed for each scrubber, in addition to a cost to dispose of an equal amount of water. The associated incremental cost estimates are provided in Table 5-7 below.

Table 5-7: Incremental O&M Costs for Scrubber Makeup Water

	Makeup Water Usage	Makeup Water Disposal
Lower Bound Estimate	\$2,000	\$1,000
Upper Bound Estimate	\$3,000	\$1,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

Similar to scrubber chemicals, the volume of scrubber makeup water was estimated for each scrubber, based on the size of the ventilation blower/scrubber and anticipated operating schedule of the enclosure. The lower and upper bound estimates reflected mainly the size differences in the ventilation systems assumed. Based on existing practices, 3 gallons per hour of makeup water per 1,000 CFM were assumed. A rate of \$2.097 per 100 cubic feet of water was used to calculate the cost of scrubber makeup water.²¹ Disposal costs for wastewater were obtained from the Los Angeles County Sanitation District (LACSD) surcharge rates. LACSD District 1, which includes City of Vernon, charges \$843 per million gallons of flow, in addition to \$149 per thousand pounds of chemical oxygen demand (COD), and \$421.50 per thousand pounds of total suspended solids (TSS).²² Since TSS levels were not known to staff, a likely

²¹ City of Vernon current water rate. See http://www.cityofvernon.org/images/community-services/water/VERNON_Rate_Summary_2016.pdf.

²² See <http://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=9472>.

disposal rate could not be determined. A conservative estimate of \$1,100 per million gallons of flow was assumed for the cost analysis.²³

➤ *Carbon Drums*

It was assumed that Facility D would use carbon systems as its odor control equipment. The costs of such systems are mainly comprised of the costs of purchasing and replacing carbon drums. These incremental costs are provided in Table 5-8 below.

Table 5-8: Incremental O&M Costs for Carbon System

	Carbon Drums
Lower Bound Estimate	\$11,000
Upper Bound Estimate	\$14,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

Cost of carbon was estimated at \$665 per 55-gallon drum.²⁴ The number of carbon drums needed was estimated based on the size of each ventilation system, which provided the lower and upper bound estimates. 43.2 cubic feet of carbon was assumed to be needed per 1,000 CFM based on a vendor quote obtained by staff. Saturation of the carbon and annual replacement of all drums were further assumed in this analysis.

➤ *Other Annual O&M Costs*

Other O&M costs include the costs of labor hours associated with regular monitoring and maintenance of odor control equipment and SCAQMD permit renewal fees for the control equipment. The incremental cost estimates are provided in Table 5-9 below.

Table 5-9: Other Incremental O&M Costs

	Labor Costs	Permit Renewal Fees
Estimate	\$153,000	\$6,000

Note: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

It was assumed that Facilities B and D would hire an additional worker at a part-time and full-time basis, respectively, to conduct routine monitoring and maintenance of odor control equipment.²⁵ (As discussed below, the additional personnel could be tasked with compliance

²³ This unit cost estimate builds in ample buffer for up to 610 pounds of TSS or up to 1725 pounds of COD per million gallons of flow, the latter of which was well above the worst-case COD level known to staff among the potentially affected facilities,

²⁴ See <http://www.envisupply.com/equipment/carbon-filter-systems.htm>. Nominal disposal costs were assumed for the spent carbon as it can be transported to a local landfill.

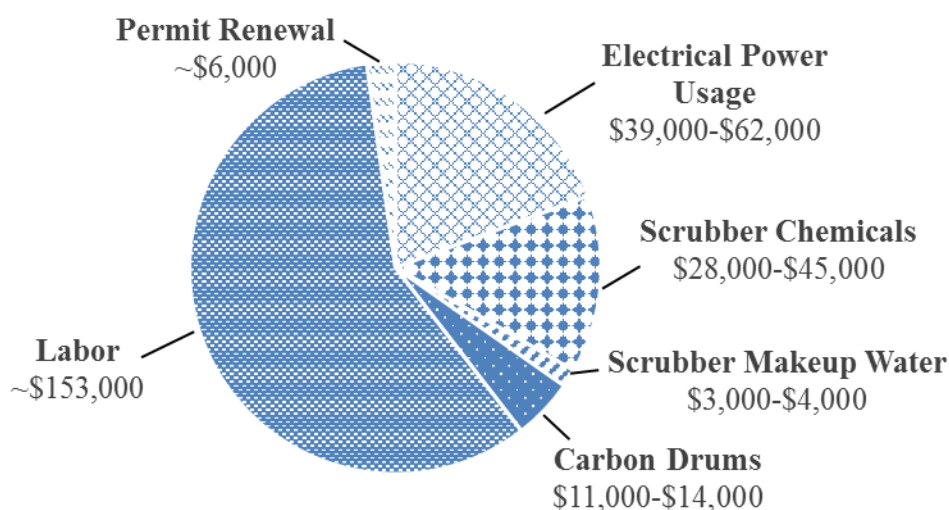
²⁵ The analysis assumed that Facilities B and C would elect to meet the proposed alternative permanent total enclosure requirements for the raw materials receiving areas and would achieve closed systems for their processing and cooking areas. Therefore, only one wet scrubber was assumed to be needed at Facility B's wastewater treatment

with Best Management Practice requirements.) The annual labor cost was estimated based on the latest wage rate for the industry of Rendering and Meat Byproduct Processing in California and assuming wage would account for two thirds of total labor cost and benefits account for the remaining one third.^{26,27} For scrubber maintenance, a semiannual internal inspection of wet scrubbers by a professional third-party was assumed at a daily rate of approximately \$220.²⁸

SCAQMD's annual permit renewal fees were included for each piece of odor control equipment, based on the current Rule 301 Schedule D permit renewal fee rate that will become effective in FY 2018-2019.

Overall, Facilities B, C and D together would incur annual costs totaling \$241,000 to \$284,000 to operate and maintain ventilation systems, odor control equipment, and secondary odor containment systems. The majority of these estimated costs are associated with additional labor assumed for the monitoring and maintenance of odor control equipment, and the remaining costs are mainly for the electricity and chemicals needed for the operation of ventilate and odor control systems (see Figure 5-3).

Figure 5-3: Incremental O&M Costs



Note: Numbers may not sum up due to rounding.

Costs of Compliance with Best Management Practice (BMP) and Signage Requirements

All potentially affected facilities would need to implement BMPs as required in paragraphs (e)(1) through (e)(12). All BMPs are applicable to existing facilities within 90 days after rule adoption

area. In comparison, Facility D was assumed to use carbon systems for three separate enclosures, and therefore, would likely need more personnel hours for odor control equipment monitoring and maintenance.

²⁶ Quarterly Census of Employment and Wages, 2017 first quarter estimates.

²⁷ See "Employer Costs for Employee Compensation" by the U.S. Bureau of Labor Statistics at <https://www.bls.gov/web/ecec/ececqrtn.pdf>.

²⁸ Based on the hourly wage rate for industrial machinery mechanics in Los Angeles County, as obtained from the 2017 first quarter Occupational Employment Statistics, and assuming eight hours per site visit.

and applicable to new facilities upon startup, as required by subparagraph (d)(1)(A). For the five existing facilities that would be affected by PR 415, many of the BMPs either do not differ from facilities' current practices (i.e., requirements (e)(3)—Washing of Outgoing Transport Vehicles, (e)(5)—Holding Time of Incoming Raw Rendering Materials, and (e)(10)—Washdown of Receiving Area) or are expected to be implemented using existing staff or additional staff assumed for odor control equipment monitoring and maintenance (i.e., requirement (e)(2)—Delivery of Raw Rendering Materials and the labor needed for requirements (e)(4)—Washing of Drums and Containers and (e)(11)—Cleaning Floor Drains). The incremental cost estimates related to implementing the remaining BMPs, together with the signage requirements as specified in subdivision (i), are provided in Table 5-10 below.²⁹

Table 5-10: Annualized Incremental Costs for BMP Implementation

	(e)(1)	(e)(4)	(e)(6)	(e)(7)-(9)	(e)(11)	(i)
Recurring Frequency	Every 5 Years	Every Year	Every 5 Years	Every 10 Years	Every Year	Every 20 Years
Annualized at 1% Real Interest Rate	\$5,100	\$100	\$400	\$500	< \$100	< \$100
Annualized at 4% Real Interest Rate	\$5,400	\$100	\$400	\$600	< \$100	< \$100

Note: Costs are expressed in 2017 dollars and rounded to the nearest '00s.

- To comply with BMP (e)(1)—Covering of Incoming Trucks, it was assumed that an average of ten trucks owned by Facilities A, B, and D would need to install truck covers that were estimated at \$2,500 per cover, inclusive of the associated hardware. (Facilities C and E do not receive raw materials from outside of their own operations.) It was further assumed that the covers would need to be replaced every five years. Additional costs may be incurred by third-party truck operators unloading raw materials at Facilities A, B, and D; however, no reasonable estimates were available to staff regarding the number of such trucks operating at these facilities.
- Additional water usage and disposal are expected for Facilities A, B, and D to comply with BMP (e)(4)—Washing of Drums and Containers and for all five existing facilities to comply with BMP (e)(11)—Cleaning Floor Drains. Ten gallons of water was estimated to be needed

²⁹ The SCAQMD has since 1987 adopted a real interest rate of four percent for the purpose of cost-effectiveness analysis. In comparison, the federal Office of Management and Budget annually updates the discount rates that are to be used for cost-effectiveness analysis of federal programs and policies. These discount rates are based on Treasury borrowing rates on marketable securities of comparable maturity to the period of analysis. The prevailing inflation-free rates in recent years are approximately one percent.

to wash each drum, and for each of the three affected facilities, an average of ten drums per day for 312 operating days per year was assumed. For cleaning of floor drains, the monthly or more frequent washdown requirement was assumed to result in additional water consumption of 660 gallons at each of the five affected facilities.³⁰ The water usage and disposal rates assumed were the same for the scrubber makeup water and discussed in the O&M cost section.

- To comply with BMP (e)(5)—Holding Time of Incoming Raw Rendering Materials, all five existing facilities are expected to incur costs related to the labor and materials for concrete paving on a continuous and needed basis. For the purpose of cost analysis, costs for one truckload (ten cubic yards) of high strength (4,500 psi) concrete and 20 hours of labor were assumed to recur on average every five years. Typical pricing of concrete was \$125 per cubic yard, and the hourly labor of \$27.51 was used in the analysis.³¹
- BMPs (e)(7)—Holding Time of Raw Materials after Size-reduction, (e)(8)— Holding Time of Cooked Materials, and (e)(9)—Transfer of Raw or Cooked Rendering Materials between Enclosures are applicable to Facilities D and E that utilize a batch rendering processes. To comply with these BMPs, lids are expected to be needed on the existing wheeled totes. An average of five totes per affected facility was assumed, and each lid was estimated at \$1,000, which would need to be replaced every ten years.
- Signage requirements in subdivision (i) would require facilities to install a sign to inform the public of how to report odor complaints to SCAQMD and another sign to be posted at each truck entrance at a facility subject to this rule requiring all incoming trucks to be enclosed or fully covered. A cost of \$500 per sign and two signs per facility were included, which were assumed to last 20 years.

Overall, the incremental annualized costs for BMP implementation and to comply with signage requirements would range from \$19,000 to \$20,000, depending on the interest rate used to amortize the costs over the respective recurring frequencies.

Total Estimated Costs to Comply with PR 415

Tables 5-11(a) and 5-11(b) summarize the lower and upper bound estimates, respectively, for the total costs of compliance for each of the five affected facilities. Overall, the total annualized compliance costs were estimated to range from \$405,000 to \$527,000 per year combined for all five potentially affected facilities. Note that capital and other related upfront costs were annualized over 20 years—which is the expected lifetime of a permanent total enclosure/closed system and

³⁰ Assume flowrate at 11 gpm, 60 psi line pressure, 200-foot hose, 3/4" nominal hose diameter, and washing of one hour.

³¹ The hourly labor rate was based on the Occupational Employment Statistics' 2017 first quarter estimate for Cement Masons and Concrete Finishers in Los Angeles County.

the related equipment—except for air curtain costs which were amortized over 10 years due to their shorter expected equipment life.

Facility B is expected to incur about two thirds of the total estimated costs, followed by Facility D which would incur the remaining one third. Facilities A, C, and E together would incur less than three percent of the total estimated compliance costs. Facilities A and E would incur BMP and signage related costs only, as Facility A has already voluntarily taken steps to implementing the proposed permanent total enclosure/closed system requirements, and Facility E is expected to be exempt from such requirements due to limited rendering operations. Facility C is expected to implement only minor changes to achieve a closed system within an existing building structure, with the use of secondary odor containment systems.

Table 5-11: Incremental Costs Associated with PR 415 by Facility**(a) Lower Bound Estimates**

	Capital and Related Costs (Present Worth Value)	Annualized Recurring Costs including O&M, BMP, and Signage² (with 1% Real Interest Rate)	Annualized Recurring Costs including O&M, BMP and Signage² (with 4% Real Interest Rate)	Total Annualized Cost Per Year³ (with 1% Real Interest Rate)	Total Annualized Cost Per Year³ (with 4% Real Interest Rate)
Facility A	\$0	\$6,000	\$6,000	\$6,000	\$6,000
Facility B	\$2,311,000	\$127,000	\$127,000	\$256,000	\$293,000
Facility C	\$44,000	\$1,000	\$1,000	\$4,000	\$5,000
Facility D	\$235,000	\$125,000	\$126,000	\$138,000	\$142,000
Facility E	\$0	\$1,000	\$1,000	\$1,000	\$1,000
Total¹	\$2,589,000	\$260,000	\$261,000	\$405,000	\$447,000

(b) Upper Bound Estimates

	Capital and Related Costs (Present Worth Value)	Annualized Recurring Costs including O&M, BMP, and Signage² (with 1% Real Interest Rate)	Annualized Recurring Costs including O&M, BMP, and Signage² (with 4% Real Interest Rate)	Total Annualized Cost Per Year³ (with 1% Real Interest Rate)	Total Annualized Cost Per Year³ (with 4% Real Interest Rate)
Facility A	\$0	\$6,000	\$6,000	\$6,000	\$6,000
Facility B	\$2,589,000	\$167,000	\$167,000	\$311,000	\$353,000
Facility C	\$74,000	\$1,000	\$1,000	\$6,000	\$7,000
Facility D	\$437,000	\$129,000	\$129,000	\$153,000	\$160,000
Facility E	\$0	\$1,000	\$1,000	\$1,000	\$1,000
Total¹	\$3,100,000	\$303,000	\$305,000	\$477,000	\$527,000

Notes: Costs are expressed in 2017 dollars and rounded to the nearest '000s.

¹ Numbers may not sum up due to rounding.

² Recurring costs were amortized over respective recurring frequencies.

³ Capital and related costs were amortized over 20 years , except for air curtain costs which were amortized over 10 years due to shorter expected equipment life

SMALL BUSINESS' SHARE OF COMPLIANCE COSTS

As discussed above, the two facilities (Facilities D and E) that utilize a batch rendering process would be classified as small businesses under the SBA definition. While Facility E is expected to incur annualized costs of \$1,000 per year to comply with PR 415, the total annualized compliance costs expected to be incurred by Facility D would range between \$138,000 and \$160,000 per year, which include capital, O&M, BMP, and signage related costs. While the compliance costs estimated for Facility D would account for about a third of the total combined compliance costs associated with PR 415, this particular facility is much smaller in its operation scale and annual revenue generated, when compared to Facility B which would incur nearly all the remaining cost impacts. Moreover, capital outlay and related expenditures estimated at \$235,000 to \$437,000 in present worth value (i.e., not annualized over equipment life) would need to be incurred by Facility D, with or without capital financing, within approximately two to four years after rule adoption. Facility D may request an extension of time pursuant to subparagraph (d)(1)(f) of PR 415.

Based on two proprietary data sources, namely the latest Dun and Bradstreet firm-level data for Facility D and the historical profit margin estimates for the industry of Rendering and Meat Byproduct Processing, which was obtained from the Risk Management Association's Annual Statement Studies, this facility's estimated annualized compliance costs could potentially account for approximately 20 to 50 percent of its pre-tax net profits when the historical range of the industry's average profit margins were used.³² Note that there are large variabilities among all companies in this industry and the profit margin estimates were not based on a representative sample. Therefore, the 20 to 50 percent share was reported for informational purposes only and was not intended as an accurate estimate for the compliance cost to net profit ratio. Moreover, it could be possible for this and other affected facilities to pass some or all of the actual compliance costs onto the upstream buyers of their rendering services, and probably to a lesser extent, onto the downstream buyers of the rendering products due to sluggish rendering commodity prices.³³

While at least part of the operations at the other four potentially affected facilities are associated with edible products or their waste, Facility D is uniquely positioned in the range of rendering services that it provides. It holds multi-year contracts with city and county agencies and public and private animal shelters throughout Southern California to process carcasses such as deceased animals on roadways or highways and euthanized animals.³⁴ Based on Facility D's own account, it is in fact the only facility offering such services south of Fresno County and north of California's border with Mexico.

³² The profit margin estimates for the Rendering and Meat Byproduct Processing industry are available up to year 2012. In year 2011-2012, the industry's average profit margin was 3.5%, down from 8.0% that was estimated for year 2007-2008.

³³ See "Market Report: Prices Are Down But Demand Remains Strong" in the April 2016 issue of the *International Magazine of Rendering* (http://pubs.rendermagazine.com/2016-04/pubData/source/Render_Apr16.pdf).

³⁴ See, for example, a sole source contract justification prepared by the County of Los Angeles in 2008 for contract renewal with Facility D at http://file.lacounty.gov/SDSInter/bos/bc/105412_BoardMemo-Contract-D&DDisposal,Inc.pdf.

MACROECONOMIC IMPACTS ON REGIONAL ECONOMY

It has been a standard socioeconomic practice that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Models Inc. (REMI)'s Policy Insight Plus Model is not used to simulate jobs and macroeconomic impacts, as is the case here. This is because the resultant impacts would be diminutive relative to the baseline regional economy.

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REFERENCES

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APPENDIX A: COMMENTS AND RESPONSES

Comments from PR 415 Stakeholders

Responses to Community Comments from Public Consultation Meeting

SCAQMD staff held a public consultation meeting on June 30, 2015 in East Los Angeles.. A number of comments were received at the meeting. Approximately 10 members of the public and environmental community provided comments at the meeting. The comments are summarized below:

1. Comment: Odor migrates into Boyle Heights from the direction of Vernon as early as 3:00 a.m. and is the smell of blood. Staff should research to control the odors. No one has done anything in the past and it affects the community. We deserve to breathe clean air.
2. Comment: When on the way to summer school in Commerce, you can smell the odors as early as 5:00 a.m. and I have to hold my breath. Please stop the odors.
3. Comment: In the last 10 years, I don't hear about complaints about the freeways, but I do hear about the complaints of smells from rendering plants. It smells like dead cows and these animals can be diseased. The community has complaint fatigue. Please do something.
4. Comment: As a resident of East Los Angeles, you can smell the odors at about 4:00 to 5:00 p.m. and in the early morning. What can be done, what technologies can be added to control the smell?
5. Comment: As a 40-year community member, the stench from rendering plants is the worst from 1:00 to 4:00 a.m. and may represent criminal activity. When awakened by the odors, I have to shut the windows and am deprived of sleep, which is affecting my health. The rendering facilities are not being good neighbors. People are afraid to call, afraid of deportation due to the language barrier. We are unfairly being punished by the facilities.
6. Comment: As a resident of Huntington Park, we experience the smells early in the morning and the odor stays for a long time. The industry is important, however the odors need to be reduced and this represents a lack of ownership by the facilities. We cannot identify a particular facility, but can smell the odors. It is an insult to the community for the facilities to say there is no smell there. The majority of the community does not have air conditioners and must keep their windows open. The community is thankful for the approach and rule.
7. Comment: I was born and raised in Boyle Heights and built my retirement home there in 1965. I cannot enjoy the gardens in my backyard because of the rendering odors. My family goes to another city for get-togethers. Why are the companies making excuses? They should take responsibility and not

say it is too much money. What about the money I have lost because I cannot enjoy my home? The city of Vernon is not a responsible city and the SCAQMD should therefore do more. Residents should be able to sue for air conditioning in all homes. Don't listen to the companies that it costs too much, we have spent a lot of money to live here too.

Response: SCAQMD staff appreciates the comments from community members and proposes a rule (PR 415 – Odors from Rendering Facilities) that is designed to address odor issues from rendering facilities with the intent of reducing odors in the communities surrounding the City of Vernon (Master Response for Comments 1 – 7).

8. Comment: Relative to enclosure, a 70% efficiency is too low and should be higher, say 95%+ based on EPA data for control equipment. Markers should be developed based on each facility to measure and control odors.

Response: SCAQMD staff believes that scrubber efficiencies for the two marker compounds addressed by the rule will be higher than 70%. As discussed in Chapter 3, EPA estimates that achievable emission reductions for inorganic gases from packed-bed scrubbers are over 95%. From EPA's "Air Pollution Control Technology Fact Sheet" [EPA-452-/F-03-015]¹

Achievable Emission Limits/Reductions:

Inorganic Gases: Control device vendors estimate that removal efficiencies range from 95 to 99 percent (EPA, 1993).

VOC: Removal efficiencies for gas absorbers vary for each pollutant-solvent system and with the type of absorber used. Most absorbers have removal efficiencies in excess of 90 percent, and packed-tower absorbers may achieve efficiencies greater than 99 percent for some pollutant-solvent systems. The typical collection efficiency range is from 70 to greater than 99 percent (EPA, 1996a; EPA, 1991).

The intent of using inorganic marker compounds (NH₃ and H₂S) is that they provide an indication of the control efficiency of nitrogen compounds and sulfur compounds respectively and methods for testing and analysis are readily available. Rendering odors also include VOC compounds, as shown in Table 1-1. Staff believes control efficiencies higher than 70% are achievable; however, the lower value of 70% in the literature was chosen to ensure an achievable control efficiency for organic compounds as well.

¹ <http://www.epa.gov/ttnchie1/mkb/documents/fpack.pdf>

Responses to Baker Commodities Comment Letters

1. Comment: Rendering protects the environment, prevents disease and provides products for other industries. Without rendering plants, diseased and rotting carcasses would cause a stench and the spread of viruses and bacteria. Inedible wastes containing carbon and nitrogen are recycled into usable materials. Without recycling, financial and environmental costs of these products would likely increase.

Response: SCAQMD staff agrees that rendering is an important industry.
2. Comment: Waste recycled by a rendering facility will not disappear if the rendering operations shut down. What does SCAQMD propose happen to these wastes in the absence of rendering operations in the South Coast Air Basin?

Response: SCAQMD staff has repeatedly said at working group meetings and other public meetings that it is not the intent of PR 415 to cause any rendering facility to shut down. Staff has worked in good faith with the commenter as well as other rendering facilities to minimize cost impacts, including making substantial changes to the scope of PR 415 from early versions of draft rule language. The commenter has not substantiated that provisions of PR 415 would require it to shut down. In fact, staff has learned that the commenter has used similar controls in other facilities it operates in the United States. The commenter's question regarding the absence of rendering operations within the SCAQMD is hypothetical and supposes every existing rendering facility will not be able to operate under the requirements of PR 415. Staff does not believe such a scenario is supported by the requirements of PR 415 or the impacts on rendering facilities.
3. Comment: SCAQMD has regulated odors since 1976 under Rule 402. Rule 402 conforms to California H&SC §41700. PR 415 is unnecessary because the SCAQMD already has Rule 402.

Response: SCAQMD staff disagrees that PR 415 is unnecessary. PR 415 intends to establish odor control standards as well as best management practices (BMP) to prevent or minimize odors that can cause verified odor complaints and public nuisances in the communities surrounding Vernon. Under Rule 402, enforcement action can only be taken after the SCAQMD receives and verifies a sufficient number of complaints. Moreover, because there are several rendering facilities located within a relatively small area, in some cases the odors cannot be ascribed to one specific facility and indeed are likely contributed to by several of the facilities. Rule 402 does not contain any mechanisms to reduce odors from new and existing rendering facilities. In addition, Rule 402 does not establish minimum standards to prevent or minimize odors. Rule 402 is reactive, where PR 415 is proactive in terms

of preventing or minimizing odors. For these reasons, SCAQMD staff feels PR 415 is necessary.

4. Comment: SCAQMD derives authority from the Legislature. SCAQMD lacks statutory authority to adopt a rule more stringent than §41700, or to regulate bacteria.

Response: The District is given broad authority to regulate air pollution from "all sources, other than emissions from motor vehicles." Health and Safety Code (H&SC) §40000. The term "air pollutant" includes odors [H&SC §39013]. Therefore, the District may regulate to control air pollution, including odors, from PR 415 sources. In addition, the District has authority to adopt such rules as may be "necessary and proper" to execute the powers and duties imposed on the District by law. [H&SC §40702].

The District's legal authority to adopt and enforce PR 415, establishing best management practices and requirements to reduce odors from rendering facilities also derives from H&SC §41700, which, in pertinent part, prohibits the discharge of air contaminants causing annoyance to the public. It further prohibits the discharge of air contaminants, such as odors, which "endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property." [H&SC §41700]. The District's authority granted by H&SC §41700 to protect the public's comfort and health and safety includes the regulation of facilities in order to prevent the discharge of odors before they cause nuisance or annoyance to the public. The District is authorized under H&SC §41508 to adopt rules imposing requirements that are stricter than those set forth in state law, including Section 41700.

In addition, H&SC §40001(b) authorizes the District to adopt rules and regulations, such as PR 415, and provides, in relevant part, for the prevention and abatement of air pollution episodes which cause discomfort or health risks to a significant number of persons. This statute, which is phrased very similarly to Section 41700, allows rules to prevent air pollution episodes caused by any type of pollutant, not just criteria air pollutants. *Ultramar v. SCAQMD* (1993) 17 Cal. App. 4th 689,707. PR 415 serves to prevent or at least reduce the likelihood of the occurrence of a nuisance through imposing reasonable odor control measures. PR 415 is a reasonable and proper use of the District's regulatory authority.

5. Comment: Not every odor constitutes a public nuisance. An odor must be substantial and unreasonable. If normal persons would not be annoyed or disturbed, an odor is not significant. Unreasonableness must compare the social utility against the harm it inflicts. SCAQMD's failure to implement Rule 402

prevents lawful consideration of laches or coming to a nuisance. Current residents knew about our facility's presence when they moved into the area.

Response: SCAQMD staff has been present at complainants' locations and agrees that in many cases, normal persons would be annoyed or disturbed by the odors. PR 415 seeks to require reasonable controls to prevent or minimize public nuisances odors from rendering operations. The doctrines of laches and coming to the nuisance do not apply to the adoption of a rule designed to prevent the occurrence of a public nuisance. The case cited regarding "coming to the nuisance", *Hellman v. La Cumbre Golf & Country Club*, (1992) 6 Cal. App. 4th 1224, involved an action for private nuisance. The case cited for the application of laches involved a unique situation where the City Board of Permit Appeals had ruled that the defendants' home was a legal use, but many years later the City sought to declare their occupancy illegal, and due to the passage of time the transcripts of the Board hearing had been lost. *City and County of San Francisco v. Pacello* (1978) 85 Cal. App. 3d 637. This is not precedent for arguing that a source of objectionable odors should not be required to minimize such odors merely because of the passage of time. SCAQMD staff believes that all residents are entitled to protection from air pollution and offensive odors regardless of where they live.

6. Comment: SCAQMD staff informed the Governing Board that public nuisance involves complaints from 6 or more households or business; odors must be confirmed by an inspector, traced back to the source and the complainant must sign a form. SCAQMD staff contends PR 415 is necessary because odors in Boyle Heights cannot be traced to a specific company. If the source cannot be traced to a facility, SCAQMD lacks authority to require the facility to comply with PR 415. SCAQMD cannot bypass Rule 402.

Response: As noted in response #4, SCAQMD has authority to adopt rules to prevent the occurrence of a nuisance, and to adopt rules more stringent than the state nuisance law. Staff has explained in the following response #7 that rendering odors are very distinctive, and staff has also experienced that all of the subject facilities, including the commenter's facility, produce objectionable odors. The difficulty in tracing the odors to a specific facility does not mean there is not a problem. Instead, the difficulty in pinpointing one source in many cases results from the fact that the rendering facilities are located relatively near one another. In many cases, it is likely that more than one facility is contributing to the odor. This creates the need to require all facilities to take reasonable measures to reduce odors emanating from their operations. In similar fashion, the SCAQMD requires many facilities to take all reasonable measures to reduce pollutants such as PM_{2.5}, even though no one facility is solely responsible for creating a violation of the National Ambient Air Quality Standards (NAAQS).

PR 415 would not bypass Rule 402. Both would be tools and approaches that would be available to staff. The rules would not be duplicative because Rule 402 does not require specific actions of the facility, and is reactive when there is a problem. PR 415 would require specific requirements that are designed to be proactive in nature, to reduce or prevent the potential for offsite odors.

7. Comment: Vernon is an industrial city, currently housing more than 1,800 businesses. Between our facility and Boyle Heights there are freeways, rail yards and other facilities that cause odors. SCAQMD has not demonstrated that odors in Boyle Heights are not caused by another use, or the effect of proximity to an industrial city. SCAQMD cannot claim that odor issues in Boyle Heights are caused by rendering facilities located miles away. There is no proof our facility is causing a public nuisance in Boyle Heights.

Response: SCAQMD staff acknowledges there may be other odorous industrial and commercial operations in Vernon in addition to rendering facilities. However, the smell of rendering is distinctive and unmistakable and SCAQMD staff does not believe odors created by rendering facilities are attributable to other sources. In particular, the odors from decaying organic raw materials, cooking of animal carcasses and parts, cooker condensate, as well as other sources of wastewater containing fats, oils and greases are distinctive, unmistakable and offensive to many in the communities surrounding the city of Vernon. SCAQMD staff disagrees with the commenter's claim that odors alleged by complainants in Boyle Heights and other communities surrounding Vernon to be from rendering facilities, are in fact from other sources.

8. Comment: PR 415 applies to all rendering plants regardless of whether the plant creates public nuisance. The definition of "confirmed odor event" requires only 3 verified complaints. This standard is inconsistent with Rule 402. Why are rendering facilities held to a different standard than other facilities?

Response: SCAQMD has found it necessary to adopt certain rules which are designed to reduce odors in specific industries. Besides PR 415, these include Rule 410-*Odors from Transfer Stations and Material Recovery Facilities*, Rule 1148.1-*Oil and Gas Production Wells* and Rule 1430 - *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities*. The commenter is correct in the assertion that rendering facilities are subject to PR 415 irrespective of whether an affected facility has received a notice of violation (NOV) for public nuisance in the past. This is true of all rules adopted by SCAQMD, including Rule 410 – *Odors from Transfer Stations and Material Recovery Facilities*. PR 415 establishes certain requirements that are applicable to all rendering facilities, and then requires an Odor Mitigation Plan if certain triggering events occur. The commenter is also correct in stating that a confirmed odor event is defined in the proposed rule

as 3 verified odor complaints by different individuals from different addresses. The purpose of defining a confirmed odor event in PR 415 is that it is one of two “triggers” for submittal of an odor mitigation plan (OMP). The number of verified complaints necessary for a confirmed odor event, while less than SCAQMD normally requires for issuing an NOV for violating Rule 402, is considered to indicate a higher potential for causing an odor nuisance. Because this rule is designed to prevent such occurrences, the threshold is intentionally lower than the typical standard for actually causing a public nuisance. A confirmed odor event is simply a measure under PR 415 whereby a facility that receives 3 confirmed odor events within a 180 day period is required to take further action to control odors from their rendering facility. As such, there is no inconsistency between a confirmed odor event and Rule 402.

9. Comment: The most sensitive person can create an odor event. An operation or process is a source if an odor ‘may’ be emitted. PR 415 mandates an on-site zero odor threshold. This standard is not reasonable and cannot be met. On-site odors may not cause migrating public nuisance level odors. PR 415 does not distinguish between local and migrating odors. PR 415 should concentrate on migrating odors. If implementation of Best Management Practices (BMP) sufficiently reduces odor at a facility, why is it necessary for an existing facility to operate in a closed system or permanent enclosure?

Response: SCAQMD staff disagrees that a single person can create a confirmed odor event, regardless of how sensitive that person is to rendering odors. A confirmed odor event is defined by 3 verified odor complaints from separate addresses. In order to be verified, the source of an alleged odor must be determined according to standard SCAQMD procedure. This involves a trained inspector tracing an odor back to a specific source. If a source cannot be determined, the odor complaint cannot be verified. The most a single person can do is call in an odor complaint to SCAQMD. A complainant cannot verify the source of that odor, no matter how sensitive they are to rendering odors. Verification requires an SCAQMD inspector. Even after a complaint is verified, a confirmed odor event requires two more verified complaints, from different addresses, following the same verification procedure as for the complaint from the highly-sensitive person.

The commenter is correct in stating that an odor generating source, as defined under paragraph (c)(13) means an operation or process from which odors may be emitted. The definition goes on to give examples of odor generating sources.

SCAQMD staff disagrees that PR 415 mandates an on-site zero odor threshold. Staff recognizes that there may still be odors at the facility even after implementation of PR 415. The intent of the rule is to minimize the likelihood that odors will travel off-site and cause an odor nuisance in the

community. If odors generate at least 3 complaints, verified by an SCAQMD inspector as previously described, and this occurs over the course of 3 separate and distinct events, these odors will trigger a requirement for a facility to submit an OMP detailing actions that a facility will take to reduce odors.

SCAQMD staff believes that while BMPs should help to reduce odors, BMPs by themselves do not represent the best control that can reasonably be achieved for odors. Staff concludes that more effective controls for odors from rendering facilities are to enclose the operations that generate odors within a permanent total enclosure, keep the enclosure under negative pressure to contain odors within the enclosure, and vent those odors to control equipment*. Staff believes that a closed system of cooking and processing equipment is an acceptable alternative to a permanent total enclosure, provided fugitive odors from that closed system do not continue to cause verified odor complaints. If these core requirements do not prevent the occurrence of an odor nuisance, or three or more confirmed odor events within 180 days, then the facility must implement an Odor Mitigation Plan.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

10. Comment: SCAQMD lacks authority to require the BMP requiring covered trucks.
- Response: SCAQMD staff disagrees with the commenter that the SCAQMD lacks authority to require the truck covering BMP or any other BMP in PR 415, for the reasons expressed in staff's response to comment #4 of this letter.
11. Comment: It has not been demonstrated that these measures will reduce odors in Boyle Heights. The Executive Officer has unfettered authority to require an Odor Mitigation Plan (OMP) and approval of that plan. SCAQMD requires a facility to do its work in investigating the cause of a confirmed odor complaint.
- Response: SCAQMD staff believes the requirement to operate odorous equipment and processes within a permanent enclosure or a closed system under PR 415, as well as requiring BMPs will result in a high level of fugitive odor control from rendering operations. Staff believes PR 415 will not only reduce odors in Boyle Heights but also in other impacted communities surrounding Vernon. The commenter's implication that the Executive Officer can require submittal of an OMP arbitrarily is not correct. Under PR 415, an OMP will be required only if a facility receives an NOV for public nuisance, or has 3 confirmed odor events within a 180 day period. Both triggers for OMP submittal are subject to odor complaint verification, requiring SCAQMD inspectors to verify 6 or more complaints in the case of an NOV,

or 3 or more complaints over the course of three separate events in the case of confirmed odor events. The standard for triggering an OMP is therefore relatively high. If an OMP is triggered under either of these scenarios, it indicates that a rendering facility either is causing a public nuisance or has a high potential for doing so, and should do more to control odors. If the facility believes its plan was improperly disapproved, or had improper conditions imposed upon it, it has the right to appeal the plan action to the Hearing Board under Rule 221(e).

Regarding the commenter's assertion that a facility is doing SCAQMD's work in investigating the cause of a confirmed odor event, SCAQMD staff feels that facility personnel are better situated than SCAQMD inspectors to determine causation for and the actual source of odors on a real-time basis after a confirmed odor event, due to complaint response lag time. In public meetings, a recurring theme heard by SCAQMD staff was that rendering facility personnel know their facility better than SCAQMD.

12. Comment: PR 415 would impose compliance costs that make Baker's operation financially infeasible. PR 415 will make it impossible for our facility to operate in the City of Vernon. When a regulation goes too far, it is taking, and the owner is afforded a remedy under the US and California Constitutions. The Fifth Amendment provides that just compensation be made for taking by the federal government. The California Constitution contains a similar requirement.

Response: The commenter has not presented evidence to show that PR415 would make it impossible for the commenter to operate in the City of Vernon. Nevertheless, staff has revised the proposed rule in an effort to address the commenter's concerns without sacrificing the primary benefits of the proposed rule. If the commenter were to make a business decision to cease its operations in Vernon, that would not turn the proposed rule into a taking under the Constitutional provisions cited. A taking will generally be found if a regulation completely deprives an owner of "all economically beneficial uses" of the property. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1004 (1992) But if a regulation is otherwise a valid exercise of the government's regulatory power, the fact that it has the effect of prohibiting a particular beneficial use to which the property has previously been put does not make it a taking. *Goldblatt v. Hempstead*, 369 U.S. 590, 593 (1962). The courts will examine the individual facts of each case, considering three basic factors: (1) the character of the government action (taking is more likely to be found for physical invasion of property)(2) the economic impact of the regulation on the plaintiff, and (3) the property owner's distinct investment-backed expectations for the use of that property. *Penn Central Transp. Co. v. New York City*, 434 U.S. 104, 124 (1978). The commenter has not presented evidence on these issues, including information on its profits, and how any expenses to comply with

the rule would affect the commenter. In addition, staff has learned that the commenter's facility in the Rochester New York area already uses similar controls as would be required under PR 415.

13. Comment: The Confirmed Odor Event standard is vague. There is no time frame in which complaints must occur. The original draft of PR 415 requiring an SCAQMD inspector to verify an odor was removed. Any untrained staff member or the Executive Officer can verify an odor event. Odor verification is at the discretion of each SCAMQD employee.

Response: A time frame is not specified for a confirmed odor event because a single event can last for an indeterminate length of time. If a time limit is specified in PR 415, SCAQMD compliance staff would be obligated to consider a new event at the conclusion of the time limit. For example, if a time limit of 24 hours is specified in the proposed rule and 3 complaints are received and verified for this time period; if the odor event continues for more than 24 hours, any complaints received and verified after this period would be counted toward another odor complaint event.

SCAQMD staff disagrees that "any untrained staff member" can verify a complaint. The rationale for the language change to "verified by District personnel" under paragraph (c)(4) was to allow an SCAQMD compliance supervisor or manager to verify a complaint. Supervisory personnel receive the same training as inspectors with regard to verifying complaints. Clarifying language has been added to paragraph (c)(4) to be: ". . . and the source of the odor is verified by District personnel *trained in odor inspection techniques*".

14. Comment: Why is a violation of an approved OMP also a violation of PR 415? How can an OMP be required when there is no violation of the rule? Public nuisance is not a prerequisite for this requirement. There are no standards for an approvable OMP. What are the standards for approving or disapproving an OMP?

Response: A violation of an approved OMP is considered a violation of PR 415 because it is necessary to make the requirements of the plan enforceable against the facility, and it is impractical to spell out the individual requirements of each facility's plan in the rule language itself. This principle is already part of District Rules. Pursuant to Rule 221, an "operation shall not be conducted contrary to any conditions specified in the approved plan" and "a violation of the plan is a violation of the rule." The requirement to submit an odor mitigation plan (OMP) by a facility subject to PR 415 is based on a facility receiving either a notice of violation (NOV) for public nuisance, or three confirmed odor events within a 180-day period, as specified in subparagraphs (d)(2)(A) and (d)(2)(B). Therefore, the commenter's statement is not correct: public nuisance is one of the triggers

for submittal of an OMP. However, the commenter is correct in stating that submittal of an OMP is not based on violation of a requirement of the proposed rule. The Executive Officer will approve or disapprove an OMP within 90 days, as stated in subparagraph (h)(3)(A). In addition, standards for approval of an OMP are addressed in subparagraph (h)(3)(C).

15. Comment: Standards for closed system, permanent enclosure and odor control equipment must be articulated in PR 415.

Response: Paragraph (f)(3) defines the minimum requirements for a closed system. Paragraph (f)(2) defines the requirements for a permanent total enclosure and a ventilation system capable of maintaining the required minimum face velocity through enclosure openings. In addition, staff has provided an alternative for an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening. Paragraph (f)(4) defines the requirements for an odor control system and associated testing requirements.

16. Comment: How will SCAQMD maintain consistency between odors from different rendering operations? How will an inspector determine whether a complainant's odor comes from a rendering facility? What methodology will SCAQMD use to determine the cause of an odor complaint? How will SCAQMD determine whether odors are escaping from individual pieces of equipment?

Response: SCAQMD compliance inspectors are trained to follow standard surveillance procedures to identify the source of an odor. Prior to conducting odor surveillance, inspectors attempt to gather information about the community impacted by the alleged emissions, along with any available information about potential odor sources in the general vicinity. These information gathering activities often involve interviews of individuals who have reported air quality complaints to SCAQMD, during which inspectors typically inquire about the character, intensity, frequency, timing, and duration of odors reported by the complainants.

During odor surveillance, the inspector periodically measures wind speed and direction using a District-issued wind meter, noting and documenting information about the character and intensity of any detectable emissions at each location where such measurements have been taken. Based on this information and/or on information from previous surveillance activities, the inspector follows a surveillance route that begins downwind of, and traces detectable emissions, if any, to their apparent source. The inspector continues along the surveillance route to a point upwind of the apparent source where the emissions are no longer detectable, then returns to a downwind location and performs repeated surveillance activities in this manner, from downwind to upwind locations, ruling out all other possible

sources, until a probable emissions source can be identified. The inspector documents these findings, and may prepare a table or map that shows the surveillance route(s) taken, wind data collected, and the character and intensity of odor emissions detected at key locations along the route. Once a probable source has been determined, the inspector typically enters to verify whether the emissions detected at that source match those described by the complainant(s) and/or detected by the inspector at locations downwind of that location, and to identify the particular equipment and/or process from which the emissions emanate.

17. Comment: Our facility should be permitted to use alternative methods to address odors when there is a violation of Rule 402. Construction of a permanent enclosure is cost-prohibitive and our facility cannot retrofit existing structures because of control system requirements.

Response: As indicated in the response to comment #6 of this letter, staff has observed objectionable odors emanating from all rendering facilities staff visited. However, in many cases it is difficult to pinpoint a particular odor nuisance as coming from one specific facility. Indeed, odors from two or more facilities may contribute to a single nuisance event. Therefore, staff believes reasonable preventative measures are necessary for all affected facilities. SCAQMD staff has worked in good faith with the commenter to modify the language and requirements of PR 415 in order to accommodate the commenter's existing facility configuration and minimize the number and size of permanent total enclosures that the commenter would need to construct under the proposed rule. Regarding the commenter's assertion of prohibitive construction costs for enclosure, SCAQMD staff is aware of other facilities subject to PR 415 where cost estimates for new permanent total enclosures are considerably lower on a per-square-foot basis than estimated by the commenter. Moreover, staff has learned that the commenter has at least one other facility that uses a similar control strategy as would be required under PR 415 in terms of enclosure of rendering operations, maintaining negative pressure on the enclosure and routing to odor control equipment.

18. Comment: We have not received an answer regarding whether our facility's existing operation complies with the closed system requirement. What standards will determine if a system is closed? Is our facility's equipment, excepting the raw material pit considered a closed system? Is a screw that is covered considered a closed system? What areas is our facility required to permanently enclose under PR 415? What parts of the trap grease process need to be enclosed? What materials should be used for the permanent enclosure?

Response: The commenter's existing operation in the main processing building is not considered a closed system. During a site visit in April 2015, SCAQMD

staff noted several pieces of equipment that are not closed, including two inclined screw conveyors as well as a hopper feeding the grinder. These would need to be enclosed in order to consider the conveying, grinding, cooking and post-cooking processing equipment in the main building a closed system. Paragraph (f)(3) defines the standards for a closed system, including sealing requirements. A screw conveyor that meets these minimum requirements would be acceptable as part of a closed system. Trap grease processing needs to be closed from the point of delivery, through separation and into wastewater treatment, or conversely, these processes need to be conducted within a permanent total enclosure. Subparagraph (f)(3)(D) defines acceptable materials from which a permanent total enclosure may be constructed. Notwithstanding the materials used in construction, the receiving area must be enclosed, including the receiving pit from which the screw conveyors move material toward processing equipment.

19. Comment: PR 415 must include language stating that our current operation fully complies with the closed system requirement and no more will be required. Why is a permit application for enclosure required if a facility complies by a closed system?

Response: PR 415 does not include language stating the existing operations at the commenter's facility or any other facility subject to PR 415 fully comply with the closed system requirements. As noted in the response to comment #18 of this letter, the facility does not currently comply with the requirements for a closed system. Under subparagraph (d)(1)(B), a permit application for a permanent total enclosure is required to be submitted within 12 months after the date of rule adoption. A permit application is required for a closed system only if modifications are made to currently permitted equipment that is part of a closed system. Otherwise, a permit application is not required for a closed system. The proposed rule has been clarified to provide that a permit application for an enclosure must be submitted only where an enclosure is required, and that a facility must give notice if it is instead intending on using a closed system.

20. Comment: What types of negative air pressure systems are acceptable? Does a closed system need a negative pressure system? Is the negative air pressure standard reasonable considering some enclosures are partially open or regularly opened?

Response: PR 415 does not specify the type of negative pressure system; only that the system is capable of meeting the inward face velocity requirements of paragraph (f)(2). A negative pressure system for a partially-open enclosure will need to be designed to maintain the required minimum inward face velocity through all openings. Likewise, a system for an enclosure with regularly opened doors will need to maintain minimum face velocity

accounting for all doors open at once. Note that subparagraph (f)(2)(A) limits the combined area of all routine enclosure openings through which odors can escape from a permanent total enclosure to 5% of the enclosure envelope. Note that an unventilated permanent total enclosure is allowed for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

21. Comment: It is not reasonable to require implementation of all BMPs within 90 days. Additional washing will generate significant wastewater and may require modification to wastewater facilities, including permitting.

Response: SCAQMD staff disagrees that BMPs, excluding paragraph (e)(6) – Repair of Raw Material Receiving Area cannot be implemented beginning 90 days after rule adoption. Staff also disagrees that the requirements of PR 415 will result in additional water usage, for reasons expressed in the response to comment #26 in this letter. However, if the commenter is required to modify its wastewater permit to comply with the requirements of subdivision (g), the timing of requirements to submit permit applications and operate within a permanent total enclosure are contained in subparagraph (d)(1)(C). If a facility is unable to meet the construction deadlines in subparagraph (d)(1)(C) due to conditions beyond its reasonable control such as delay in obtaining a permit from a wastewater agency, it may apply for a variance before the District’s independent Hearing Board.

22. Comment: What if material holding BMPs cannot be met due to breakdown or variation from standard procedure or other circumstances beyond our facility’s control? Will emergency breakdown provisions apply or an NOV be issued? What are penalties for NOV? Are penalties defined or up to SCAQMD discretion? When would a notice to comply be issued instead of an NOV?

Response: Rule 430 – *Breakdown Provisions* provides for relief from most rule requirements during breakdowns, excluding Rule 402, provided the breakdown is reported by telephone in a timely manner and a written, complete Breakdown Emissions Report is submitted in a timely manner. Penalties for violations of District rules are set forth in H&SC §§42400 et seq., and the maximum penalties vary depending on whether the violation involved excess emissions and whether the facility operator was negligent, strictly liable, operating in knowing violation, etc. In all cases a court or the District in evaluating a case must consider all relevant factors including those set forth in H&SC §42403, including the extent of harm caused by the violation, the length of time over which it occurs, the financial burden to the defendant, and any action taken by the defendant to mitigate the violation. If the facility and the District cannot agree on a settlement, then the District must prove its case in court. A notice to comply may be issued

where a minor violation may be promptly corrected, depending on factors such as the facility's prior compliance history.

23. Comment: Why is there a 3-hour deadline to contact SCAQMD when our facility receives an odor complaint? What if the complaint is made after hours or on the weekend? What if the odor is not coming from our facility?

Response: PR 415 (i)(2) requires a facility to notify SCAQMD “. . . no more than three hours after receiving an odor complaint, after facility personnel became aware of the complaint, or after facility personnel should reasonably have become aware of the complaint.” If a complaint is made directly to a facility after hours or on a weekend, and facility personnel do not become aware of the complaint until Monday morning, the SCAQMD should be advised of the complaint within 3 hours after facility personnel become aware of the complaint on Monday. This requirement is necessary to enable SCAQMD to respond to the complaint in a timely manner in the event that a complainant contacts a rendering facility directly but does not contact SCAQMD. The District's contact number (1-800-CUT-SMOG) is accessible 24-hours a day, 7 days a week in the event that the commenter receives a complaint after hours or on the weekend. The requirement to contact SCAQMD does not indicate that the commenter is the source of the odor; only that the commenter received a complaint. SCAQMD will investigate the complaint and, if possible, determine the source of the odor.

24. Comment: Why does PR 415 establish deadlines for repairing leaking components? Why is a written log of leaking valves, flanges, etc. required?

Response: The BMP to repair leaking components within 72 hours (formerly paragraph (e)(18) in the 2/18/15 rule draft) has been removed from the rule.

25. Comment: PR 415 appears to require extensive paving/repaving (perhaps entire 13 acre facility) that is not necessary for odor control. It will cost our facility about \$8.5 million to pave all of the areas required by PR 415, not including costs to repave cracks. What type of cracks and potholes need to be repaired? What are standards for maintaining facility grounds?

Response: The Repair of Raw Material Receiving Area BMP under paragraph (e)(6) has been clarified to limit repairs to the raw material receiving area where material touches the ground. Divots, cracks and potholes that hold standing water with a surface area greater than one square foot are required to be repaired under this BMP. The intent of this BMP is to prevent standing water that can allow odorous bacteria to multiply. When SCAQMD staff visited the commenter's facility in April 2015, no potholes were noted in the raw material receiving area that met the criteria in paragraph (e)(6). The concrete in the receiving area appeared to be very durable in spite of being decades-old. It is expected that the receiving area will be maintained in

similar condition. Therefore, staff assumes the commenter will not need to fill any potholes to comply with this BMP and compliance costs for this BMP will be minimal. An estimate of costs to comply with the BMP will be included as part of the socioeconomic impact assessment.

26. Comment: PR 415 requires washing of trucks, drums, containers and grounds. Washing requirements will increase standing water and wastewater.

Response: SCAQMD staff disagrees with the commenter that PR 415 requirements will increase either standing water or wastewater volume. Outgoing trucks are currently required to be washed under 3 CCR §1180.35. BMP (e)(4) for washing of drums and containers has been limited such that only drums and containers that previously contained raw rendering materials that are open upon exiting the facility are required to be washed. With regard to standing water, facility grounds at facilities that staff visited, including receiving areas appeared to be sloped to drain standing water to wastewater control. The commenter is not correct regarding a requirement to wash facility grounds. Facility grounds were not required to be washed in earlier versions of the rule. Staff believes washing with high-pressure water will decrease water usage, relative to washing with water at line-pressure. However, this BMP has been removed due to concerns expressed by industry in light of the current drought.

27. Comment: Processing material within 4 hours is unreasonable. Our facility does not receive enough material to process every 4 hours. It is not practical to wash the exterior of trucks as proposed in the rule.

Response: The BMP for holding time of incoming raw rendering materials under paragraph (e)(5) [paragraph (e)(7) in the 2/18/15 rule draft] allows for three options for handling incoming raw material, including the material entering the cooking process within the holding time limit, being staged in a permanent total enclosure, or stored in a covered container. The holding time BMP allows 6 hours holding time for material that enters the facility at lower-than-ambient (i.e. refrigerated) temperature, in addition to 4 hours holding time for material at ambient temperature as the BMP was originally proposed. It should be noted that the 4-hour or 6-hour time limit begins when material enters the facility and is deposited in the receiving area; the BMP does not require material to be processed “every 4 hours” as the commenter suggests. After an enclosure for raw material receiving is constructed, the holding time BMP is no longer effective, as facility owners/operators will be required to move material into the enclosure within 60 minutes on a continuous basis after delivery. The requirement to wash truck exteriors was removed.

28. Comment: The 30 minute time limit for cleaning spilled material is unrealistic.

- Response: The BMP to clean materials washed out of transport vehicles within 30 minutes [formerly paragraph (e)(8) in the 2/16/15 rule draft] has been removed.
29. Comment: What are standards for preventing accumulation and drippings in the plant?
- Response: The requirement for preventing accumulations of processed materials has been removed. However, staff feels it is only common sense for a facility to monitor accumulations and remove them before they create odor issues.
30. Comment: Our facility does not own or operate all trucks that enter its facility and has no control over whether trucks use tarps on public streets. If tarping requirements are limited to truck entry, the tarp would only be on the truck for a few minutes until being removed for material unloading. This requirement is not unlike currently existing requirements under Rule 1157.
- Response: Owners/operators of third-party trucks will have 6 months to become familiar with the requirements of paragraph (e)(1), Covering of Incoming Transport Vehicles. Staff feels it is not likely that after going to the trouble to make a truck compliant with the covering requirements, a third-party owner or operator would choose to wait until arriving at the commenter's facility before covering an incoming load.
31. Comment: Trucks transfer meal to the grinding department. Do these trucks need to be sealed? What is an odor tight container?
- Response: BMP (e)(9) requires cooked material to be transported between permanent total enclosures only through a closed system of conveyance, or by covered containers. An intra-facility transport vehicle would qualify as a closed system of conveyance if it was covered. Odors from a covered container should be substantially contained within the container since the cover allows minimal contact between the material and air outside the container.
32. Comment: The requirement for venting trap grease delivery vehicles is unclear.
- Response: All requirements for trap grease have been removed from the staff proposal.
33. Comment: Commenter states that CEQA requires the SCAQMD to evaluate the potential environmental impacts caused by the adoption of PR 415 in an EIR. Commenter outlines 10 specific environmental topic areas that should be evaluated further:
- Aesthetics
 - Greenhouse Gas (GHG) Emissions
 - Land Use / Planning
 - Agriculture and Forestry Resources
 - Public Services

- Solid Waste
- Transportation
- Utility/Service Systems
- Air Quality
- Hydrology/Water Quality

Response: While the California Environmental Quality Act (CEQA) requires the evaluation of potential environmental impacts caused by the proposed project, an EIR or EIR equivalent document is only required if the environmental analysis determines that significant environmental impacts could occur as a result of the proposed project. This type of document is then circulated for a 45-day public review and comment period. If no potential significant environmental impacts are expected to occur as result of the proposed project, an environmental assessment (EA) is prepared and circulated for a 30-day public review and comment period. Through the environmental analysis conducted for PR 415, it has been determined that implementation of PR 415 is not expected to significantly adversely impact any environmental topic area. Therefore, the Draft EA for PR 415 demonstrating the analysis and conclusions was prepared and circulated for a 30-day public review and comment period on July 14, 2015 and ended on August 12, 2015.

The Draft EA, which is available at <http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2015/pr-415---draft-ea-revised-062515.pdf?sfvrsn=2> analyzed 17 environmental topic areas and mandatory findings of significance. The environmental topic areas were aesthetics, agriculture and forestry resources, air quality and greenhouse gas emissions, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste, and transportation/traffic. A total of three comment letters were received during the 30-day public review and comment period. Staff is reviewing and preparing responses to the comments in accordance with CEQA and the SCAQMD's Certified Regulatory Program Guidelines. Public Resources Code Section 21080.5(d)(2)(D) and SCAQMD's Certified Regulatory Program (Codified under Rule 110) require that the final action on PR 415 include written responses to issues raised during the public process. The written responses will be made available for public review 10 days before the SCAQMD's Governing Board considers the Final EA and PR 415 for adoption on November 3, 2017 pursuant to CEQA Guidelines Section 15088. Additionally, based on the comments on the Draft EA for PR 415, staff is evaluating the environmental analysis for the 17 topic areas in the Draft EA. The SCAQMD's Governing Board will review and consider the final CEQA document for PR 415 for adoption at the same Governing Meeting on November 3, 2017.

34. Comment: SCAQMD has no evidence to support its contentions that Baker is the cause of public nuisance level odors in the Boyle Heights community. PR 415 rule-makers have presumed Baker is guilty, formed a predetermined prejudice against Baker, and as a result have targeted Baker specifically in this rulemaking.

Response: SCAQMD has conducted multiple on-site inspections of Baker and other rendering plants in the District and has observed through these inspections that the rendering plants are a significant source of odors. SCAQMD staff has detected rendering odors during onsite inspections at Baker and at the District's other rendering plants that have the potential to create odor nuisances in the surrounding community, especially when the odors from nearby rendering plants are combined. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public workshops on Proposed Rule 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

PR 415 seeks to establish standards for odor controls, including: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. Such odor control standards are reasonable and proper and well within SCAQMD's scope of authority. The commenter is incorrect in stating that SCAQMD staff has presumed the commenter's client is "guilty", that staff have "formed a predetermined prejudice" or has "targeted" the commenter's client in this rulemaking. SCAQMD staff has done no such thing, but has based this rulemaking on observations and evidence.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

35. Comment: SCAQMD has spent considerable time researching Baker's out-of-state activities, particularly for its New York and Washington state operations, even though these activities are clearly not within SCAQMD's jurisdiction.

Response: SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing

so, staff was unable to find even a single example of a rendering facility in an urban area operating an open-air rendering process such as the commenter's client currently operates within the City of Vernon. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. This same standard of operation is used in at least three of the other facilities owned by the commenter's client outside of Vernon around the nation, while the commenter's client continues to deny the same standard of operation to the communities and workers at businesses surrounding the Vernon rendering facility.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

36. Comment: The last odor-related Notice of Violation ("NOV") SCAQMD issued against Baker was on September 3, 1998 – almost 17 years ago. SCAQMD has received 69 odor complaints about Darling International, Inc. ("Darling") and issued seven (7) NOVs. SCAQMD has collected only two documents for Darling's operations elsewhere. The record does not contain information about any of the other renderers, even though some of them have received an NOV in the past.

Response: Regarding Notices of Violation received by any other facility subject to PR 415, the commenter should be aware that the purpose of an NOV as it relates to PR 415 is as one of two triggers to require submittal of an Odor Mitigation Plan under PR 415 requirements. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. This research was conducted at facilities irrespective of whether that facility received an NOV within the recent past. In doing this research, SCAQMD staff determined that other Darling facilities currently have controls that support the reasonable odor control standards recommended by SCAQMD staff in the proposal for PR 415, including: enclosure of odorous operations, (in particular, the receiving area), maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

37. Comment: SCAQMD's authority to regulate rendering-plant odors from Baker's Vernon facility is preempted by Civil Code section 3482.6. SCAQMD is also barred by Civil Code Section 3482.

Response: By its terms, Civil Code section 3482.6 would not apply to SCAQMD's adoption or implementation of PR 415. First, PR 415 falls within an exemption to section 3482.6 created by 3482.6(c). Subdivision (c) of section 3482.6 states as follows:

(c) This section does not supersede any other provision of law, except provisions of this part, if the agricultural processing activity, operation, facility, or appurtenances thereof, constitute a nuisance, public or private, as specifically defined or described in the provision.

Pursuant to subdivision (c), section 3482.6 does not preempt PR 415 because the rule: (1) is another provision of law; (2) that is not a provision of Division 4, Part 3, of the Civil Code; (3) that specifically describes rendering plants and the measures that they must undertake to avoid constituting a nuisance.

Further, 3482.6(d) exempts PR 415 from section 3482.6 preemption. Subdivision (d) of section 3482.6 states:

(d) This section prevails over any contrary provision to any ordinance or regulation of any city, county, city and county, or other political subdivision of the state, *except regulations adopted pursuant to Section 41700 of the Health and Safety Code as applied to agricultural processing activities, operations, facilities, or appurtenances thereof that are surrounded by housing or commercial development on January 1, 1993* (emphasis added).

PR 415 falls within this provision. PR 415 is based on the SCAQMD's authority to regulate nuisance under Health and Safety Code section 41700. As of January 1, 1993, the rendering plants in the City of Vernon, including Baker, were surrounded by both housing and commercial development. Thus, subdivision (d) also exempts PR 415 from preemption under section 3482.6(d).

Civil Code section 3482, which states "[n]othing which is done or maintained under the express authority of a statute can be deemed a nuisance." This statute only applies if the statutes under which Baker claims to act expressly sanction the odor complained of, and "mentions the possibility of noxious emanations from such facilities." *Varjabedian v. City of Madera* (1977) 20 Cal 3d 285, 292. Staff is not aware of any statute specifically mentioning and endorsing the noxious odors from rendering facilities. . Thus section 3482 does not apply.

38. Comment: SCAMQD lacks authority to impose Rule 415.

Response: The District is given broad authority to regulate air pollution from "all sources, other than emissions from motor vehicles." Health and Safety Code (H&SC) §40000. The term "air pollutant" includes odors [H&SC §39013]. Therefore, the District may regulate to control air pollution, including odors, from PR 415 sources. In addition, the District has authority to adopt such rules as may be "necessary and proper" to execute the powers and duties imposed on the District by law. [H&SC §40702].

The District's legal authority to adopt and enforce PR 415, establishing best management practices and requirements to reduce odors from rendering facilities also derives from H&SC §41700, which, in pertinent part, prohibits the discharge of air contaminants causing annoyance to the public. It further prohibits the discharge of air contaminants, such as odors, which "endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property." [H&SC §41700]. The District's authority granted by H&SC §41700 to protect the public's comfort and health and safety includes the regulation of facilities in order to prevent the discharge of odors before they cause nuisance or annoyance to the public. The District is authorized under H&SC §41508 to adopt rules imposing requirements that are stricter than those set forth in state law, including Section 41700.

In addition, H&SC §40001(b) authorizes the District to adopt rules and regulations, such as PR 415, and provides, in relevant part, for the prevention and abatement of air pollution episodes which cause discomfort or health risks to a significant number of persons. This statute, which is phrased very similarly to Section 41700, allows rules to prevent air pollution episodes caused by any type of pollutant, not just criteria air pollutants. *Ultramar v. SCAQMD* (1993) 17 Cal. App. 4th 689,707. PR 415 serves to prevent or at least reduce the likelihood of the occurrence of a nuisance through imposing reasonable odor control measures. PR 415 is a reasonable and proper use of the District's regulatory authority.

39. Comment: PR 415 is being developed solely because of a working group recommendation made for the Clean Communities Plan in the pilot study area of Boyle Heights. SCAQMD conducted a year-long study to measure ambient air pollutants in the Boyle Heights neighborhood, authored by Dr. Fine.

Exide Technologies as source of emissions in Boyle Heights was ruled out. Exide is closer to Resurrection School than Baker. For the same reasons SCAQMD finds it unlikely that emissions from Exide travel toward Resurrection School, emissions from Baker are unlikely to affect Resurrection School.

PR 415 targets sulfur compounds (PR 415(f)(5)(A)(ii)). However, according to the SCAQMD study, sulfur is typically generated from combustion of sulfur containing fuel. How can SCAQMD distinguish between freeway/roadway-generated sulfur compounds and industry-generated compounds, let alone compounds traced from Baker? How can SCAQMD rule out freeway/roadway-generated sulfur compounds as a problem in the Boyle Heights neighborhood?

Response: Although rulemaking for PR 415 arose from one of the recommendations from the working group for the Boyle Heights Clean Communities Plan (CCP), during rule development of PR 415, SCAQMD came to understand that the current and accepted practices for operating a rendering facility within an urban area include enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. This was verified by the operating configuration in at least 3 of the other rendering facilities operated by the commenter's client in the United States outside of the City of Vernon.

Regarding the monitoring study authored by Dr. Fine: this study was conducted to evaluate toxic air contaminant concentrations at Resurrection Church. The study was not conducted to evaluate odors, including those from rendering facilities, and any extrapolation of the study findings to odors from rendering operations are out of context with that study and are not relevant. In particular, the conclusion drawn by the commenter that odors from Baker Commodities, components of which are detectable in the parts-per-billion (PPB) range would behave in the same manner as particulate (lead) emissions from Exide misses the point.

Regarding the commenter's contention that PR 415 targets sulfur compounds, this assertion is incorrect. In fact, the current proposal of PR 415 does not target sulfur or any other compounds. Although staff believes that reduced sulfur compounds are a component of odors generated during cooking and wastewater treatment at rendering facilities, the current PR 415 proposal merely establishes hydrogen sulfide (H₂S) as one of two marker compounds that are used to evaluate the control efficiency of an odor control device. Staff has experienced odors emanating from the rendering facilities subject to this rule and found that they are distinct and different from the types of odors one experiences from diesel emissions and other roadway traffic.

Furthermore, although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted

public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

40. Comment: SCAQMD receives fewer odor complaints for rendering facilities than for other industries. SCAQMD's inability to identify and verify the source demonstrates that SCAQMD lacks data to establish a causal connection between Baker and odors complaints received by SCAQMD. In the event that the odor source is a single nuisance operation in Vernon, PR 415 would be unlawfully over-inclusive.

SCAQMD has also relied on resources that discuss odor outside of the context of animal rendering. Use of this literature is misplaced because it is aimed at exposure in the workplace, not on nuisance odors detected by a neighborhood.

Response: Regarding the number of complaints received alleging rendering odors, SCAQMD staff has long held that the number of complaints is not fully indicative of the impact on area residents for several reasons. First, stockyards, meat packing houses and slaughterhouses that supplied animal carcasses to rendering facilities have existed in the Vernon area for nearly one hundred years. As a result, odors from rendered animal carcasses have long been part of the landscape in the communities surrounding Vernon, impacting the quality of life for area residents. Furthermore, SCAQMD staff has learned from conducting community meetings in the area that proactive complainants didn't perceive a reduction in odors after repeated complaints, and became discouraged, resulting in a general sense from community members that reporting odors does not yield results. This may occur because SCAQMD staff is unable to pinpoint an individual facility as the source of the odor being complained of, as the facilities are relatively near one another and two are extremely close to each other.

Regarding the objections by the commenter about the studies cited, staff disagrees if the commenter is suggesting that health effects from odorous compounds cited in these studies are not relevant because they are targeted at workplace odors or because they arise from animal production operations rather than from rendering operations.

41. Comment: "Closed System" (c)(2) is defined as a system "in which odors are contained within the system." What does "contained" mean? Is "contained" defined

by the closed system standards in (f)(4)? If so, there is a conflict between sections (f)(4) and "odor" defined in (c)(12). Odor is defined as "the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves." Therefore, a system is only considered "closed" if a person cannot perceive a chemical substance in the air. It is left up to the complete discretion of SCAQMD staff, the majority of which are not qualified to determine if there is an odor. Renderers will not know whether their system is "closed" because SCAQMD staff with sensitive olfactory nerves may smell something the renderers or previous SCAQMD staff persons do not. What if one SCAQMD staff person does not perceive a chemical substance in the air, and a second SCAQMD staff person does? Is this a one-time test, or can SCAQMD at any point in the future declare a system not to be closed if at any time a SCAQMD staff person perceives a chemical substance in the air? SCAQMD has yet to inform Baker whether its operation is considered "closed." SCAQMD has visited Baker several times and there is no reason why SCAQMD cannot definitively inform Baker as to whether the operation complies as is with the proposed rule, or whether an enclosure is required.

Response: The definition of "closed system" in (c)(2) has been changed to clarify that a system that meets the requirements of (f)(3) is a "closed system" within the meaning of the definition. Staff recognizes that that no system can completely contain all of the solids, liquids, vapors or air that passes through it and there will always be some amount of fugitive emissions leakage. "Contained" as used in paragraph (c)(2) means air leakage from a closed system is not significant and the escape of potential odors is greatly reduced. The closed system standards in paragraph (f)(3) are the minimum requirements to minimize air leakage and contain odors within the system. SCAQMD disagrees with the commenter that there is a conflict between paragraphs (f)(3) and "odor" defined in (c)(11), in that paragraph (f)(3) describes the minimum requirements to prevent the escape of odors from a closed system and paragraph (c)(11) defines what constitutes an odor. A system is closed if air leakage from the system is insignificant and odors are contained in the system to the maximum extent possible, because the system meets the elements of paragraph (f)(3). Staff recognizes that there may still be odors at the facility even after implementation of PR 415. The intent of the rule is to minimize the likelihood that odors will travel off-site and cause an odor nuisance in the surrounding housing and commercial development areas. In order for the SCAQMD to verify an odor complaint a trained inspector must trace the odor back to a specific source according to standard SCAQMD procedure. If a source cannot be determined, the odor complaint cannot be verified. SCAQMD has conducted multiple on-site inspections of Baker and other rendering plants in the District and has advised whether the SCAQMD considers their system "closed." Within 6 months from the date of adoption of PR 415, Baker and other existing rendering plants in the

District shall submit a letter of intent to the Executive Officer to select whether they will construct permanent total enclosures or operate in a closed system.

42. Comment: "Collection Center" (c)(3) refers to a licensed rendering plant or pet food processor. What licensing is SCAQMD referring to? There is no definition of a "pet food processor." What businesses besides rendering plants is SCAQMD attempting to regulate under PR 415 by referencing "pet food processor"?

Response: The definition of "collection center" was taken from the California Vehicle Code §2460(j). Please note that certain collection centers are exempted pursuant to PR 415 (l)(1)(B). Licensing of collection centers is pursuant to Section 19300.5 of the Food and Agricultural Code. "Pet food processor" is a term used in that definition.

43. Comment: "Confirmed Odor Event" as defined in 415(c)(4) is an unlawful discretionary standard. The definition of "Confirmed Odor Event" is inconsistent with the Civil Code definition of nuisance. Any SCAQMD staff person can declare a confirmed odor event. There is no time frame for the odors making up a Confirmed Odor Event. How will SCAQMD exclude other sources of odors when determining Confirmed Odor Events? When addressing odors, SCAQMD should only use the standard for enforcing public nuisance.

Response: The comment does not identify in what regard the definition of Confirmed Odor Event is an unlawful discretionary standard. There are two possibilities, both of which will be considered. The first possibility is that the definition causes an illegal delegation of discretion from the SCAQMD Governing Board to the SCAQMD staff. In this regard, Health and Safety Code section 40482 provides:

Any power, duty, purpose, function, or jurisdiction which the south coast district board may lawfully delegate is conclusively presumed to have been delegated to the executive officer unless it is shown that the south coast district board, by affirmative vote recorded in its minutes, specifically has reserved the particular power, duty, purpose, function, or jurisdiction for its own purpose.

Therefore, PR 415 causes an illegal delegation only if it is one the Board cannot make because it is unconstitutional.

An unconstitutional delegation of legislative power occurs when a legislative body confers upon an administrative agency unrestricted authority to make fundamental policy decisions. *Golightly v. Molina* (2014)

229 Cal.App.4th 1501, 1516 (citing *Samples v. Brown* (2007) 146 Cal.App.4th 787, 804). According to the court in *Golightly*:

The nondelegation doctrine serves, “to assure that ‘truly fundamental issues [will] be resolved by the Legislature’ and that a ‘grant of authority [is] ... accompanied by safeguards adequate to prevent its abuse.’ [Citations.] This doctrine rests upon the premise that the legislative body must itself effectively resolve the truly fundamental issues. It cannot escape responsibility by explicitly delegating that function to others or by failing to establish an effective mechanism to assure the proper implementation of its policy decisions.” (*Kugler v. Yocum* (1969) 69 Cal.2d 371, 376–377.)

Golightly v. Molina, *supra* at 1516, *review denied* (Jan. 14, 2015.)

The definition of Confirmed Odor Event “means the occurrence of an odor resulting in three or more complaints by different individuals from different addresses, and the source of the odor is verified by District personnel trained in odor inspection techniques.” The definition of Confirmed Odor Event does not authorize or require SCAQMD staff to make fundamental policy decisions. The definition requires the staff to respond to odor complaints and verify the source of the odors. Although there is some discretion involved in this task, it does not involve policy choices, much less fundamental policy choices. Therefore these activities do not involve an unconstitutional delegation.

A second possibility raised by the comment that the definition of Confirmed Odor Event is an unlawful discretionary standard is that the definition is unconstitutionally vague. Since the comment does not identify a particular word or phrase that is alleged to be vague, it is assumed that the comment asserts that the definition is vague when taken in its entirety.

In a nuisance case, the California Supreme Court followed two guiding principles endorsed by the United States Supreme Court for applying the vagueness doctrine. *People ex rel. Gallo v. Acuna* (1997) 14 Cal.4th 1090, 1116-1119. The first principle is that the particular allegedly vague term must be considered in context. *Id.* at 1116. In *Acuna*, the California Supreme Court explained that:

The first principle is derived from the concrete necessity that abstract legal commands must be applied in a specific *context*. A contextual application of otherwise unqualified legal language may supply the clue to a law's meaning, giving facially standardless language a constitutionally sufficient concreteness. Indeed, in evaluating challenges based on claims of vagueness, the court has said “[t]he

particular context is all important.” (*American Communications Assn. v. Douds* (1950) 339 U.S. 382, 412, 70 S.Ct. 674, 691, 94 L.Ed. 925.)

People ex rel. Gallo v. Acuna, supra at 1116.

The second guiding principle is the notion of “reasonable” specificity or “reasonable certainty” *Id.* at 1117. (citing *Coates v. City of Cincinnati* (1971) 402 U.S. 611, 614; *People v. Victor* (1965) 62 Cal.2d 280, 300; see also *In re Marriage of Walton* (1972) 28 Cal.App.3d 108, 116 [statute will not be held void for vagueness “if any reasonable and practical construction can be given its language or if its terms may be made reasonably certain by reference to other definable sources”].) In explaining the reasonable specificity or reasonable certainty standard, the California Supreme Court quoted the United States Supreme Court decision in *Boyce Motor Lines v. United States*:

“few words possess the precision of mathematical symbols, most statutes must deal with untold and unforeseen variations in factual situations, and the practical necessities of discharging the business of government inevitably limit the specificity with which legislators can spell out prohibitions. Consequently, no more than a reasonable degree of certainty can be demanded. Nor is it unfair to require that one who deliberately goes perilously close to an area of proscribed conduct shall take the risk that he may cross the line.” (*Boyce Motor Lines v. United States* (1952) 342 U.S. 337, 340.)

People ex rel. Gallo v. Acuna, supra at 1117.

Under the two guiding principles adopted by both the California Supreme Court and the United States Supreme Court, the definition of Confirmed Odor Event is not vague. First, the definition must be placed in the context of PR 415. Under PR 415(d)(2)(B), a rendering facility must submit an Odor Mitigation Plan to SCAQMD if three Confirmed Odor Events are received regarding the facility within a 180 day period. Further, PR 415(d)(3), requires a rendering facility to submit a Specific Cause Analysis within a day of notification by the Executive Officer of the receipt of a confirmed odor event regarding the facility. In context, it is clear that a Confirmed Odor Event must involve rendering facilities and rendering odors. The context of the definition also makes it clear that the activities specified are a trigger for further regulatory action by the SCAQMD to address rendering-plant odors. Second, taken in its entirety, the definition is reasonably specific and certain. According to the definition of Confirmed Odor Event, SCAQMD must receive complaints from three different individuals at three different addresses regarding an odor from a rendering plant. The definition further requires that the SCAQMD must confirm that

the odor is caused by a particular rendering plant. The definition finally requires that the SCAQMD staff confirming the source of the odors must be trained in odor inspection techniques. Taken as a whole, the definition of Confirmed Odor Event is highly specific and not unconstitutionally vague. Regarding the definition of “Confirmed Odor Event”, see response to comment 8, selected comments from the PR 415 Working Group.

Regarding the comment that any SCAQMD staff person can declare a confirmed odor event, the definition of confirmed odor event has been modified so that only SCAQMD personnel trained in odor detection techniques can identify a Confirmed Odor Event.

Regarding the time frame for a confirmed odor event, only single odor events fall within the definition of Confirmed Odor Event. Can SCAQMD add up complaints over days, weeks, or years? The definition states that a Confirmed Odor Event “means the occurrence of *an* odor....”(Emphasis added.) Also the use of the word *Event* in the definition of Confirmed Odor Event indicates that only single events fall within the definition. Thus, a Confirmed Odor Event occurs only when three people complain about the same event giving rise to odors. It would not be allowable under the definition to string together three separate odor events to meet the three-complaint requirement. On the other hand, it is not possible to give a specific time limit for an odor event. Odor events can have very different durations. They can be very short—for example, the momentary release of odors from cooking operations. Or they can be very long—for example, open air storage of rendering materials over a weekend. See also response to comment 13 selected comments from the PR 415 Working Group.

Regarding the question of how SCAQMD will exclude other sources of odors when determining Confirmed Odor Events, according to the definition of Confirmed Odor Event, the odor must be confirmed by District personnel trained in odor inspection techniques. To constitute a confirmed odor, the odor must be traced back to its source. The training in odor inspection techniques includes the requirement that odors must be traced back to their particular source and the cause of the odors must be identified, if possible. If odors cannot be traced back to a particular source, then it is not possible for there to be a confirmed odor event for that facility. See also response to comments 7 and 16, selected comments from the PR 415 Working Group.

Regarding the comment that SCAQMD should only use the standard for enforcing public nuisance, please see the response to Comment 4, above.

44. Comment: "Odor Generating Source" (c)(13) means "an operation or process at a rendering facility from which odors *may be* emitted..." (Emphasis added.)

This should be "are" emitted, otherwise it is vague, ambiguous, and unlawfully discretionary.

Response: The intent of PR 415 is to require certain odor generating sources to be enclosed within a permanent total enclosure or closed system at all times. This includes odor generating sources that do not operate at a given time during the day but may be operated at another time (example: sources that generate odors during two shifts per day but do not generate odors during the third shift because the rendering facility is not operating). Therefore, the use of "may be" within this context is completely appropriate, and the definition of "odor generating source" is neither vague, ambiguous, nor unlawfully discretionary.

45. Comment: "Permanent Enclosure" (c)(14) requires that the enclosure contain all odors from the odor-generating sources. Odor is defined as "the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves." Therefore, a permanent enclosure is only considered as such if a person cannot perceive a chemical substance in the air. It is left up to the complete discretion of SCAQMD staff. Renderers will not know whether their enclosure is sufficient because SCAQMD staff with sensitive olfactory nerves may smell something the renderers or other SCAQMD staff do not. What if one SCAQMD staff person does not perceive a chemical substance in the air, and a second SCAQMD staff member does? Is this a one-time test, or can SCAQMD make a future determination that an enclosure does not meet the requirements if at any time any SCAQMD staff person perceives a chemical substance in the air? What happens if SCAQMD decides that an enclosure does not meet the requirements of PR 415 after it is built? This is also inconsistent with "Routine Enclosure Opening (c)(20), which properly recognizes that enclosures must have certain openings. How will SCAQMD staff determine that the allowed openings are the source of the odor and not the enclosure?

Response: See response to comment #13 in the Revised Preliminary Staff Report regarding staff discretion. Regarding the commenter's questions on enclosures, PR 415 requires a minimum inward face velocity through routine enclosure openings. The purpose of this requirement is to ensure airflow into the building and prevent odors from escaping. SCAQMD staff believes routine enclosure openings that comply with the minimum inward face velocity will not be a source of odors that remain after an enclosure is constructed. Regarding the comment about SCAQMD declaring a permanent total enclosure to be insufficient after it is built, the standards for permanent total enclosure are described in subdivision (f). During permitting of an enclosure, SCAQMD will evaluate the enclosure to determine whether it meets these standards. After the owner or operator

receives a Permit to Operate an enclosure, SCAQMD does not retain the discretion to declare it insufficient after it is built.

46. Comment: The requirements are based on the presumptions that all renderers are causing odors in the Boyle Heights community, and that enclosure is the only method of addressing the issue. There is no evidence to support these assumptions.

Response: SCAQMD disagrees with the commenter that PR 415's requirements are based on the presumptions that all renderers are causing odors in the Boyle Heights community; that enclosure is the only method of addressing the issue; and there is no evidence to support these assumptions, for the reasons expressed in staff's response to comment #7 in the June 30, 2015 PR 415 Preliminary Draft Staff Report. SCAQMD staff has detected rendering odors during onsite inspections at Baker and at the other rendering plants that have the potential to create odor nuisances in the surrounding housing and commercial development areas, especially when the odors from nearby rendering plants are combined. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding housing and commercial development areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public workshops on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other housing and commercial development areas surrounding the rendering plants.

SCAQMD staff does not presume that enclosure is the only method of addressing rendering odors. District staff evaluated the state of odor controls established and followed by rendering facilities in the City of Vernon, California, and other states. During inspections at some of the rendering plants described above, staff observed odor controls achieved in practice. At a rendering facility in Miami, Florida for example, staff saw resurfaced interior floors that promote a clean interior, prompt replacement of leaking components, enclosures around odorous operations, and odor control equipment, resulting in reduced odors during rendering processes. At a rendering facility in Fresno, staff looked at their air district permit requirement operations which included the rinsing and disinfecting of delivery trucks prior to exiting their main processing building, unloading of delivery trucks within 2 hours of entering the facility, and the processing of raw material within 24 hours of receipt at the facility. All of this facility's raw material delivery, facility operations and load-out of finished product are conducted inside an enclosure. Buildings at the facility are maintained under negative pressure, odorous air is routed to two wet scrubbers; and the

main processing doors, meal building doors, and meal load-out doors are all required to be closed, except for delivery truck traffic or an emergency. A rendering facility in the Vernon area operates their receiving pits in a permanent total enclosure ventilated to a packed bed scrubber. Baker Commodities in Rochester, New York, operates their rendering and inedible restaurant grease operations in a permanent total enclosure, under negative pressure, vented to odor control equipment. Staff has concluded that enclosure of odorous rendering operations provides the most effective means of odor control.

47. Comment: Subparagraph (d)(1)(A) requires that all applicable odor BMPs identified in subdivision (e) be implemented. Who determines whether BMPs are applicable?

Response: The qualifier “applicable” was included in subparagraph (d)(1)(A) primarily to distinguish between BMPs that are only applicable to batch cooking operations, including those in paragraphs (e)(7) and (e)(8). In addition, some facilities do not conduct operations subject to one or more BMPs.

48. Comment: SCAQMD should not interfere in operations that are regulated by the Food and Agricultural Code. There is no legal justification to require businesses to implement BMPs unless an NOV was issued for public nuisance and adjudicated.

Response: The applicability of BMPs can be determined by the language of the rule; the District is available to meet and discuss any questions the facilities may have regarding these requirements and their applicability. Regarding the legal justification for requiring rendering plants to implement Odor BMPs in the absence of a public nuisance NOV and all related appeals and judicial proceedings, please see the response to comment #4, and selected comments from PR 415 Working Group. As this response explains, the SCAQMD has the authority to regulate odors from rendering plants. There is no such authority granted by the Food and Agriculture Code.

49. Comment: Clause (d)(1)(B)(ii) requires rendering facilities to submit permit applications for an enclosure even if the facility has a closed system or it has not been the subject of an public nuisance NOV. PR 415(e)(2) assumes all raw rendering receiving locations will be enclosed, although this requirement is not part of PR 415(d)(1)(B)(ii). In short, this rule presumes every existing facility will be required to construct permanent enclosures, and that the "closed system" provisions are not really an option.

Response: Facilities that have closed systems are not required to submit applications for a total enclosure. PR 415 (d)(1)(B)(ii) states that applications for total enclosures “*required under this rule*” must be submitted. Under PR 415

paragraph (f)(1), a facility has the option of operating within a closed system or a total enclosure. The commenter is correct, however that raw rendering material receiving must be conducted within a total enclosure, or moved into a permanent total enclosure within 60 minutes after the end of material delivery. This requirement is set out in PR 415(e)(2).

50. Comment: The time frames in PR 415(d) are unreasonable for existing facilities, due to time necessary to evaluate BMPs, change business practices, obtain permits, conduct demolition activities, obtain financing, obtain inspections. The rule does not provide sufficient time to develop an effective odor mitigation plan, and does not recognize any appeal time frames for challenging "confirmed odor events." One day to conduct a specific cause analysis for a confirmed odor event is unreasonable.

Response: The time frame for construction under subdivision (d) allows between 3 and 4 years for construction of enclosures at existing facilities. SCAQMD staff believes this timing is sufficient to conduct all necessary steps to construct an enclosure. SCAQMD staff believes 90 days to develop an effective odor mitigation plan (OMP) after notification by the Executive Officer, as allowed under paragraph (d)(2) is sufficient. A facility has 30 days under paragraph (d)(3) to submit a specific cause analysis to SCAQMD. The intent of this requirement is that after a facility is notified of a confirmed odor event, facility personnel begin the analysis within a short period of time while details of the circumstances surrounding the confirmed odor event are fresh.

51. Comment: Rule 415 requires enclosures for wastewater treatment systems even though SCAQMD has no evidence that wastewater treatment systems at rendering plants are causing public-nuisance-level odors in Boyle Heights.

Response: SCAQMD has conducted multiple on-site inspections of Baker and other rendering plants in the District and has observed through these inspections that the wastewater treatment systems at the plants are a significant source of odors. SCAQMD staff has detected rendering odors during onsite inspections at Baker and at the other Vernon area rendering plants coming from wastewater treatment systems that have the potential to create odor nuisances in the surrounding community, especially when combined with odors from other rendering operations and from nearby rendering plants. Although the SCAQMD is concerned that rendering odors from wastewater treatment systems at Baker and at the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public workshops on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the

potential for nuisance-level odors not just in Boyle Heights but also in all commercial and residential areas surrounding the rendering plants.

52. Comment: What is the purpose of the odor complaint contact sign requirement in PR 415(d)(1)(E) and (i)? If there are any odors at the perimeter of the rendering operations, these would only affect persons in vehicles driving by, which does not qualify as a public nuisance and would not further any public purpose. Moreover, this requirement would impermissibly create undue and unjustified negative publicity for rendering companies, despite the fact that the companies are lawfully operating.

Response: SCAQMD has conducted public workshops on PR 415 where residents and workers from the housing and commercial development areas surrounding the rendering plants have stated that they were not aware of whom they should call if they smelled odors they believed were coming from the rendering plants.

53. Comment: There is no legal or factual basis for requiring an odor mitigation plan in PR 415(d)(2) when there is a no proven public nuisance under Rule 402. The 180-day provision for confirmed odor events conflicts with Civil Code section 3480.

Response: Please see the response to comment #3 of this letter, and selected comments from PR 415 Working Group. The commenter does not explain the purported conflict with Civil Code 3480. That section refers to a public nuisance being one which affects at the same time a considerable number of persons or the public. The commenter apparently refers to the 180-day time period in which multiple Confirmed Odor Events will trigger an Odor Mitigation Plan, and contends that these events do not occur “at the same time.” SCAQMD is not redefining a public nuisance through this rule, but instead is requiring an Odor Mitigation Plan when a series of Confirmed Odor Events (which each must have three separate verified complaints) establishes that the facility has an elevated likelihood of causing an odor nuisance. Rule 415 requires reasonable preventative measures to ensure, to the extent feasible, that such nuisances do not occur.

54. Comment: The notification requirement in PR 415(d)(1)(F) and covering requirement in Odor Best Management Practices PR 415(e)(1) are unlawful. SCAQMD has no authority to regulate whether trucks are covered on public roadways or to force a rendering operation to regulate trucks for SCAQMD under the guise of “best management practices.”

Response: SCAQMD disagrees with the commenter that the installation of an odor complaint contact sign at rendering facilities and covering of incoming transport vehicles is unlawful. Health and Safety Code section 41508, grants the District authority to regulate odors, which includes the adoption

of PR 415, which imposes requirements that are stricter than those set forth in Health and Safety Code section 41700. SCAQMD has conducted multiple on-site inspections of Baker and other rendering plants in the District and has observed through these inspections that the rendering materials at the plants are a significant source of odors. Health and Safety Code section 40000 provides the District with the primary responsibility for control of air pollution from rendering plants and all other sources except emissions from motor vehicles located in their jurisdiction. Rendering materials at the plants are a significant source of odors, and odors are an air pollutant under Health and Safety Code section 39013. PR 415's regulation of odors from raw rendering materials from trucks leaving their plants in the jurisdiction of the District is within the SCAQMD's authority both because it is a regulation of the rendering plant's operations and because odors emanating from rendering materials in trucks are not "emissions from motor vehicles" within the meaning of Section 40000, which was intended to give the Air Resources Board exclusive authority to establish standards which motor vehicle engines in California must meet. Please also see response to comment 10, selected comments from the PR 415 Working Group.

55. Comment: There is no factual evidence justifying covering of trucks. Odors from trucks are fleeting, minor, and not a nuisance. Covering trucks will not reduce odors in Boyle Heights.

Response: The commenter is correct in assuming that all trucks are required to be tarped prior to entry to the rendering facility, whether they are owned by the facility or a third-party transporter. SCAQMD staff believes that odors from trucks can be more than "fleeting, minor and not a nuisance", as suggested by the commenter. Staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. This includes covering of trucks. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

56. Comment: There is no evidence showing that the raw rendering material receiving areas are the source of odors in Boyle Heights. Paragraph (e)(2) requires an enclosure for receiving areas. The option of storing the materials in

sealed, odor tight containers on a continuous basis after material delivery is not operationally possible and thus, not a real option.

Response: The commenter is not correct in stating that PR 415 (e)(2) requires an enclosure for raw rendering materials. PR 415 (e)(2) states that after the date a permanent total enclosure is required, incoming raw rendering materials be transferred into the permanent total enclosure or into covered containers. The commenter appears to be responding to an earlier version of the rule than was available for the commenter's June 19, 2015 response. The current version of the staff proposal requires this best management practice (BMP) *after* the enclosure standard is required. Transfer of raw rendering materials is allowed under two distinct and separate scenarios: transfer into a covered container, or transfer into a permanent total enclosure.

Regarding the comment of evidence showing that the raw rendering material receiving areas are the source of odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. This includes the BMP for raw material receiving. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

57. **Comment:** The extensive washing requirements in PR 415(e)(3)-(4), (13)-(14) are inconsistent with State drought policies and Executive Orders. These requirements will generate more wastewater to be treated. Who determines how much water is needed to wash outgoing trucks in PR 415(e)(3)? How does the truck washing and drum washing requirements relate to reducing odors in Boyle Heights?

Response: The washing of trucks under PR 415(e)(3) is currently required under the permit held by the commenter's client. The washing required under PR 415 (e)(4) for open drums and containers and (e)(11) cleaning floor drains is modest and reasonable. As such it is neither extensive nor inconsistent with State drought policies and Executive Orders. It will not result in more wastewater, or changes to wastewater permits which require a considerable time to obtain under the commenter's scenario. Regarding the comment on

PR 415 (e)(14), the commenter appears to be responding to an earlier version of the rule than was available for the commenter's June 19, 2015 response.

Regarding the comment of reducing odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. This includes the BMPs for truck and container washing, most of which is already being performed by the commenter's client under the requirements of their permit. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

58. Comment: What authority does SCAQMD have to prevent track out of raw rendering materials on to public streets? What about tanker trucks that cannot be washed and do not contribute to track out of raw rendering materials on public streets?

Response: The Department of Food and Agriculture under Section 1180.35, Title 3, California Code of Regulations already requires vehicles used to transport carcasses and packinghouse waste to be washed to prevent the spread of disease and creation of nuisances. SCAQMD has conducted multiple on-site inspections of Baker and other rendering plants in the District and has observed through these inspections that the rendering materials at the plants are a significant source of odors. Health and Safety Code section 40000 provides the District with the primary responsibility for control of air pollution from all sources other than emissions from motor vehicles. The limitations on controlling air pollution from motor vehicles is a limitation on establishing motor vehicle emission standards—so-called tailpipe standards—under section 209 of the Clean Air Act. Rendering materials at the plants are a significant source of odors, and an air pollutant under Health and Safety Code section 39013. PR 415's regulation of odors from raw rendering materials from trucks leaving their plants in the jurisdiction of the District is within the SCAQMD's authority.

59. Comment: The requirements in PR 415 (e)(5) relating to holding time of raw rendering materials cannot be implemented until a permanent enclosure is constructed as the storage in a sealed, odor tight container is not an option as discussed

above. There is no evidence showing that limiting the holding time and requiring the raw materials be enclosed will reduce odors in Boyle Heights.

Response: SCAQMD has conducted multiple on-site inspections of Baker and other rendering plants in the District and has observed through these inspections that trucks transporting animal parts and products to the plants are a significant source of odors. SCAQMD staff has detected rendering odors during onsite inspections at Baker and at the other rendering plants coming from trucks transporting animal parts and products that have the potential to contribute to odor nuisances in the surrounding community, especially when combined with odors from other rendering operations and nearby rendering plants. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in all commercial and residential areas surrounding the rendering plants.

Regarding the comment of reducing odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. This includes the BMP for holding time of raw rendering materials prior to the enclosure standard becoming effective.

60. **Comment:** The requirement to repair the raw material receiving area in paragraph (e)(6) is required to reduce bacteria, in addition to preventing standing water. Not only is there no evidence that bacteria causes odors in Boyle Heights, but SCAQMD lacks authority and jurisdiction to regulate bacteria or standing water. Further, there is no evidence showing that preventing standing water will reduce odors in Boyle Heights.

Response: The requirement to repair the raw rendering material receiving area is one of a number of best management practices (BMP) that SCAQMD staff believes will reduce the potential for fugitive odors generated from the facility owned by the commenter's client. Potholes that hold standing water with a surface area greater than one square foot are required to be repaired under this BMP. The intent of this BMP is to prevent standing water that can allow odorous bacteria to multiply. When SCAQMD staff visited the commenter's facility in April 2015, no potholes were noted in the raw material receiving area that met the criteria in paragraph (e)(6). The concrete in the receiving area appeared to be very durable in spite of being

decades-old. It is expected that the receiving area will be maintained in similar condition. Therefore, staff assumes the commenter will not need to fill any potholes to comply with this BMP and the compliance costs will be minimal. Given the fact that SCAQMD staff visited the facility owned by the commenter's client in April 2015 and specifically informed the commenter as well as the commenter's clients that no pothole repairs were expected under PR 415 (e)(6). SCAQMD has authority to require rendering operations to take reasonable steps to reduce odor emissions, including those that may emanate from bacterial activity in standing water., under its authority to regulate air pollution from all sources except emissions from motor vehicles. Health & Safety Code Section 40000.

Regarding the comment of reducing odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. This includes the BMP to repair potholes. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

61. Comment: There is no evidence that bacteria from standing water at rendering plants is causing odors in Boyle Heights. SCAQMD has no authority to regulate bacteria or standing water. Is it an ongoing or one-time requirement in Rule 415(d)(5) to take steps to eliminate the causes of standing water in raw material receiving areas of rendering plants where raw materials touch the ground?

Response: With regard to the ability of bacteria to cause odors, please see Science Daily, "Bacteria Can Have a 'Sense of Smell.'" (August 17, 2010):

Bacteria are well-known to be the cause of some of the most repugnant smells on earth....²

With regard to bacteria causing odors in rendering operations, please see A.C. Stern, ed., Sources of Air Pollution and Their Control, Vol. III, Food and Feed Industries (1968):

40000.² <http://www.sciencedaily.com/releases/2010/08/100816095719.htm>

Localized odor problems of an objectionable nature are related to transportation and storage of the raw material. Bacterial decomposition of animal tissue begins at the death of the animal and putrefaction progresses rapidly with time and elevated temperatures. Just dumping of a “ripe” load of offal can create a problem.

Id. at 282.

With regard to the commentator’s assertion that there is no evidence that odors due to bacteria in standing water have reached Boyle Heights, please note that although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public workshops on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in all commercial and residential areas surrounding the rendering plants.

With regard to SCAQMD’s authority to regulate odors from bacteria and standing water, please see the response to comment #4 in this letter, selected comments from PR 415 Working Group and response to comment #27 above.

With regard to the timing of the obligation to repair conditions in raw-material receiving areas creating standing water where raw materials touch the ground, the obligation to make repairs is ongoing.

62. Comment: The requirements in PR 415(e)(9) limit transfer of raw or cooked renderings materials between enclosures to a closed system of conveyance or odor-tight drum. There is no evidence showing that transporting material between enclosures causes odors in Boyle Heights.

Response: SCAQMD disagrees with the commenter that there is no evidence showing that transporting material between enclosures causes odors in Boyle Heights. SCAQMD has conducted multiple on-site inspections of Baker and other rendering plants in the District and has observed through these inspections that rendering materials out in the open at rendering facilities are a source of odors.

Regarding the comment of material transportation causing odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the

surrounding communities. This includes the BMP for transporting materials in closed containers. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

63. Comment: The accumulation of processed materials requirements in PR 415(e)(12) are unlawfully vague and ambiguous as to time, in part because of the use of the word "accumulate." Water which is regulated by this requirement is not an accumulation of the processed materials, or within SCAQMD's jurisdiction to regulate. There is no evidence showing that regulating accumulations of processed materials will reduce odors in Boyle Heights. The requirements related to floor drains in PR 415(e)(14) suffer from the same defects. PR 415(e)(12) is also unlawfully vague and ambiguous as to the terms "grease" and "oils" because it does not state whether they are derived from the rendering process. Rendering companies may utilize other processes that generate grease and oils that are entirely unrelated to the rendering process that would not be subject to PR 415.

Response: The BMP under PR 415 (e)(10) relates to washdown of the receiving area. The commenter appears to be responding to an earlier version of the rule than was available for the commenter's June 19, 2015 response. The former requirement under the old staff proposal to clean accumulations has been removed in the current proposal. Similarly, there is no BMP under (e)(14).

64. Comment: The permanent enclosure requirements in PR 415 are not justified. There is no evidence demonstrating that constructing a permanent enclosure will reduce odors in Boyle Heights. The requirements are extremely costly. If SCAQMD is truly interested in reducing odors and had jurisdiction to impose this rule, it should focus on less costly alternatives such as masking agents. Why does PR 415 specify the materials that the enclosure can be constructed of?

Response: SCAQMD staff continues to believe, after review of rendering operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. This same standard of operation is used at least three

of the other facilities owned by the commenter's client outside of Vernon around the nation, while the commenter's client continues to deny the same standard of operation to the communities and workers surrounding the Vernon rendering facility. In a review of other rendering operations, nationally, staff was unable to find even a single example of a rendering facility in an urban area operating an open-air rendering process such as the commenter's client currently operates within the City of Vernon.

Regarding the comment of permanent total enclosures contributing to odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. This includes the enclosure standards in PR 415. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

65. Comment: Since SCAQMD approves the enclosure materials, it should bare the risk if the enclosure does not perform as required by the rule.

Response: Under section 818.4 of the Government Code, commonly referred to as the California Tort Claims Act, a public entity is not liable for an injury caused by the issuance or denial of, or by the failure or refusal to issue or deny any permit, approval, or similar authorization where the public entity or an employee of the public entity is authorized by enactment to determine whether or not such authorization should be issued or denied. *Elson v. Public Utilities Commission* (1975) 51 Cal.App.3d 577, 587-588. Thus, the decisions by SCAQMD in permitting an enclosure, including the selection of enclosure material, are immune from suit under California law.

66. Comment: The closed system requirements in PR 415(f)(4) are inconsistent with the definition of closed system in PR 415(c)(2). The use of the phrase "to the maximum extent possible" makes the requirement vague and ambiguous, and grants unlawful discretion to SCAQMD staff. Who makes the determination of whether a system is considered "closed" and when does

that determination occur? Why is there a need to close air gaps - these small gaps cannot conceivably cause odors in Boyle Heights. Where does a closed system end; which part of the process?.

Response: The definition of a closed system in (c)(2) means a system handling any combination of solids, liquids, vapors, and air at a rendering facility in which odors are contained within the system.. The closed system standards in (f)(4) are the minimum requirements for a closed system. Under (d)(1)(B) and (D) within 6 months from the date of adoption of PR 415, Baker and other existing rendering plants in the District shall submit a letter of intent to the Executive Officer to select whether they will enclose or operate in a closed system; the District will then inform the facility on whether their selection meets PR 415's standards. SCAQMD disagrees with the commenter that the use of the phrase "to the maximum extent possible" makes the requirement vague and ambiguous, and grants unlawful discretion to SCAQMD staff. It is assumed that the commenter means that District staff can determine what constitutes "to the maximum extent possible" without any standards. The District has articulated the minimum standards to minimize air leakage and contain odors in a closed system in (f)(3):

- Material conveyors and troughs that are components of a closed system must be completely enclosed on all sides, except for doors or panels for maintenance and personnel access;
- Bins and hoppers that are components of a closed system must be completely enclosed on all sides, except for doors or panels for maintenance and personnel access;
- Mating metal surfaces on doors or access panels described above must be sealed with gasket material;
- Air gaps in components of a closed system must be sealed with gasket material or with caulk or sealant; and
- Each section of ductwork containing vapor within a closed system must be sealed at every connection to mating components of the closed system using best industry materials and practices.

Health and Safety Code section 40482 provides, in relevant part, that any power, duty, purpose, function, or jurisdiction which the south coast district board may lawfully delegate is conclusively presumed to have been delegated to the executive officer unless it is shown that the south coast district board, by affirmative vote recorded in its minutes, specifically has reserved the particular power, duty, purpose, function, or jurisdiction for its own purpose. PR 415 causes an illegal delegation only if it is one the Board cannot make because it is unconstitutional. An unconstitutional delegation of legislative power occurs when a legislative body confers upon an

administrative agency unrestricted authority to make fundamental policy decisions. *Golightly v. Molina* (2014) 229 Cal.App.4th 1501, 1516 (citing *Samples v. Brown* (2007) 146 Cal.App.4th 787, 804). According to the court in *Golightly*, the nondelegation doctrine serves “to assure that ‘truly fundamental issues [will] be resolved by the Legislature’ and that a ‘grant of authority [is] ... accompanied by safeguards adequate to prevent its abuse.’ [Citations.] This doctrine rests upon the premise that the legislative body must itself effectively resolve the truly fundamental issues. It cannot escape responsibility by explicitly delegating that function to others or by failing to establish an effective mechanism to assure the proper implementation of its policy decisions.” (*Kugler v. Yocum* (1969) 69 Cal.2d 371, 376–377.)

The determination whether a closed system contains odors within the system to the maximum extent possible does not authorize or require the SCAQMD staff to make fundamental policy decisions. The definition requires the staff to evaluate whether the facility’s closed system meets the minimum standards set out in (f)(3). There is discretion involved in this task, however it does not involve policy choices, much less fundamental policy choices. Therefore these activities do not involve an unconstitutional delegation.

A “closed system” ends at the point where odorous solids, liquids or vapors contained within the closed system first come into contact with the air. If commenter’s client wishes to identify their cooking and processing equipment as a closed system, that system would end where odorous solids, liquids or vapors contained within the closed system first come into contact with the air. The commenter’s client has repeatedly told SCAQMD staff they are the rendering experts. As the rendering experts, the commenter’s client should have an excellent idea of where odorous solids, liquids or vapors contained within the closed system first come into contact with the air. In the notification required under subparagraph (d)(1)(D), the commenter’s client is expected to define the precise points where they believe their closed system begins and ends.

Regarding the comment of air gaps causing odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. This includes the closed system standards, requiring small air gaps to be sealed. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce,

Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

67. Comment: The June 3rd version of PR 415 is the first attempt by SCAQMD to apply standards to any aspect of the rule. Unfortunately, these "standards" have no scientific basis. This was especially evident at the June 4 meeting during the exchange between SCAQMD staff and a Los Angeles city employee about increasing the control efficiencies with no discussion of a basis for doing so. There is no evidence of whether nitrogen and sulfur compounds are causing odors in Boyle Heights. There is no evidence that the control efficiencies selected are achievable, cost-effective, and will reduce odors in Boyle Heights. SCAQMD needs to also address these issues in the socioeconomic analysis. The provision allowing the Executive Officer to identify other marker compounds causes these requirements to be impermissibly vague and ambiguous and an unlawful delegation of discretion. 180 days is not sufficient time to have source testing protocols approved. The testing and analytical methods are not identified and are to be determined.

Response: The commenter is incorrect in stating the June 3rd version is the first version to apply standards to any aspect of the rule. In fact, earlier versions of the rule included enclosure and ventilation system standards. Instead, the commenter appears to be referring to the very limited application of the use of the marker compounds ammonia (NH₃) and hydrogen sulfide (H₂S) under paragraph (f)(4) to represent odor control efficiency of an odor control device. SCAQMD staff made the point at the June 3 Working Group meeting that the use of these two marker compounds for the express purpose of determining odor system control efficiency should not be taken as SCAQMD allowing these marker compounds to be used as surrogates for rendering odors, which contain many more chemical compounds than NH₃ and H₂S. No assumption should be made by the commenter or the commenter's client that SCAQMD is treating these marker compound as surrogates for odors in the communities surrounding Vernon (including Boyle Heights among other communities), and therefore, any attempt by the commenter or the commenter's client to establish a linkage between other potential emitters of NH₃ and H₂S is not appropriate.

Regarding the comment of nitrogen and sulfur compounds causing odors in Boyle Heights, staff believes the requirements of PR 415, including the enclosure or closed system standards and best management practices (BMP), taken as a whole will reduce the potential for public nuisance in Vernon and the surrounding communities. Although the SCAQMD is concerned that rendering odors from Baker and the nearby rendering plants are affecting the residents of Boyle Heights, there are other surrounding

commercial and residential areas in addition to Boyle Heights that have been impacted by rendering odors. In addition to the residents of Boyle Heights, SCAQMD has conducted public meetings on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants.

SCAQMD staff believes 180 days is a sufficient time to have source testing protocols approved, as this is a standard length of time to allow under permitting for new equipment. The testing and analytical methods are specified in the staff proposal.

67. Comment: The Odor Mitigation Plan requirements in PR 415(h) presume that all existing facilities will be constructing a permanent enclosure. There are no standards governing the approval or disapproval of the Odor Mitigation Plan. This provides SCAQMD with unfettered discretion in deciding which Odor Mitigation Plan should be approved or disapproved.

Response: The commenter is not correct in stating the Odor Mitigation Plan (OMP) requirements in subdivision (h) presume an enclosure. In fact, the requirements of paragraphs (h)(1) and (h)(2) clearly bifurcate the submittal content of the OMP depending on whether an enclosure is present or not.

68. Comment: PR 415 prescribes enclosure of all rendering and wastewater treatment processes, regardless of the effectiveness of current odor control technologies in place. This measure would place a significant financial burden on Baker, whose facility has not been proven to be at fault for the odors experienced in nearby communities. There is equipment available to monitor the origin and range of odors in an area. This rule should have sound data behind it. Conduct a scientifically rigorous investigation of Vernon's odor issues that would specifically identify the sources of those traveling odors experienced in surrounding communities. Without data on the origin and extent of odors that residents are experiencing, these measures might prove ineffective at solving odor problems

Response: Regarding the comment on the source of traveling odors, as stated in Chapter 1 of the staff report, due to the very long distances rendering odors can travel and the proximity of the five Vernon area facilities relative to one another, it is often not possible to pinpoint a single facility as the source of odors. For this reason, it is often not possible to verify odor complaints, and odor events from rendering facilities in the Vernon area rarely can be attributed to a specific individual facility since the facilities are located relatively close together. This is true despite the fact that unpleasant odors typical of rendering operations can often be detected miles away from the

Vernon area rendering facilities, and odors are prevalent many days out of the year.

For these reasons, the approach taken for PR 415 was to research operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating an unenclosed rendering process such as Baker operates within the City of Vernon. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*.

Regarding the comment on monitoring the origin of odors, as discussed in the staff report, there are more than 100 chemical compounds that have been identified in rendering odors. Many of these compounds do not currently have established methods for collection, speciation and analysis. Many do not currently have established odor detection thresholds. For these reasons, it is not currently possible to identify the exact chemical makeup of rendering odors using existing science and the present state of technology.

Even if the limitations in the current science can be overcome, there are multiple sources of odor that originate from rendering facilities (raw rendering material, cooking of meat, non-condensable vapors from cooker condensate, wastewater) and therefore multiple odor profiles from the various fugitive odors at each facility. Odors may also be different at the same facility depending on the materials being processed at the time and other factors. Processed materials may also change over time based on market demands.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

69. Comment: Requiring an odor management plan (OMP) for rendering facilities is a more reasonable measure. Best management practices should be considered as elements of each facility's OMP. PR 415 should be limited to describing the OMP process, with standardized components

Response: SAQMD staff believes submitting an OMP instead of containing fugitive sources of odors and routing them to odor control equipment falls short of the steps necessary to control odors from rendering facilities and reduce odor problems in the communities surrounding Vernon. In particular, this approach does not include a requirement for timely enclosure of odorous operations at a rendering facility as the staff proposal does. SCAQMD staff

believes the approach represented by the PR 415 proposal is necessary in order to ensure containment and reduction of fugitive odors from odorous processes at a rendering facility.

An OMP-first approach does not provide the same certainty as the staff proposal. Staff did not take this approach for the proposed rule in part because requiring individual plans would not allow for the discussion of requirements in a public process. The proposed rule has undergone a full public process and all stakeholder input has been considered. Staff believes an enclosure or closed system is the most effective and still reasonable method of reducing odors.

The SCAQMD Governing Board will consider the proposal and has the option to adopt the staff proposal, make modifications, or decline to take an action. Should the rule be adopted, the facilities that will be subject to the rule will have certainty as to what will be required. The process for submittal of individual plans by each facility would undergo review by staff and there could be some inconsistency between requirements for different facilities.

70. Comment: Instead of an odor complaint sign at each facility, we propose a shared number that would instantly notify all renderers that someone has called in a complaint. We are recommending this as voluntary measure.

Response: SCAQMD staff believes the odor complaint contact sign is an important element of the proposed rule, because it allows affected workers at the commercial businesses in Vernon and community members from the communities surrounding Vernon to know where to call for nuisance odors. This is especially important for people who do not understand that SCAQMD has jurisdiction over nuisance odors. Other SCAQMD rules have similar complaint sign requirements, such as Rule 410 and Rule 403. However, since a shared sign is recommended as a voluntary measure, there is nothing that prevents the Vernon-area rendering facilities from cooperating on this approach.

71. Comment: Use confirmed violations of Rule 402 as the trigger for whether a facility needs to make changes.

Response: Under the requirements of subparagraph (d)(2)(A), verified odor complaints related to rendering odors that result in a Notice of Violation (NOV) under Rule 402 are indeed the trigger for further action under PR 415. A facility that receives an NOV under rule 402 is required to submit an odor mitigation plan (OMP) with specific content requirements as described in subdivision (h). In addition, a second trigger for submittal of an OMP is when a facility receives three confirmed odor events within a 180 day period. The intent of this second trigger for submittal of an OMP is to

prevent an odorous situation from degenerating to the point where an NOV must be issued.

72. Comment: Baker does not receive enough material to process every four hours. Material should be allowed to accumulate until there is enough to process.

Response: Under the requirements of paragraph (e)(5), until the permanent total enclosure standard is effective, a rendering facility has either 4 hours or 6 hours to handle incoming raw material, depending on whether the material is delivered at ambient temperature, or is delivered at lower than ambient temperature. Paragraph (e)(5) allows 3 options for handling of this incoming raw rendering material, including entering the cooking process, being staged in a permanent total enclosure, or being stored in covered containers. SCAQMD staff believes these options provide sufficient flexibility for facility operators to deal with incoming raw material.

73. Comment: There is no scientific basis for exemptions. SCAQMD appears to be granting favoritism.

Response: Regarding the scientific basis for exemptions, SCAQMD staff consulted with LACSD to craft the exemption for wastewater enclosure. Based on the recommendations from LACSD and combined experience of two agencies, this exemption is based on sufficient dilution of rendering wastewater with other process water such that after mixing, the chemical oxygen demand (COD) is reduced to a sufficiently low level to minimize odors. Regarding the comment about favoritism, exemptions provided under subdivision (l) are available to all facilities that qualify under the stated criteria.

Responses to Farmer John Comment Letters

1. Comment: The purpose of PR 415 is to reduce odors. 350 odor complaints related to rendering operations were received in 10 years. This number is not a sufficient measure of odor levels, as it is subjective and based on sensitivity of nearby residents.

Response: SCAQMD staff is not directly correlating the number of odor complaints that allege rendering facilities with odor levels in the community. As described in the staff report, odors from rendering plants was a key issue during discussions with residents in the Boyle Heights area during the Clean Communities Plan pilot study work. Staff has experienced the unique and unmistakable rendering odors on many occasions when in the areas in and around Vernon and the surrounding communities.

The number of complaints received is not commensurate with the frequent, pervasive odors reported by many residents and observed by SCAQMD staff. Some community members do not complain to SCAQMD for a variety of reasons, which can include not knowing this is available, not

wanting to contact a government agency, and not seeing any improvement after they complain.

2. Comment: PR 415 does not have a procedure for determining current baseline odor levels. Conduct more research, including background contribution of both freeways in the immediate vicinity, before any measures are included in this rule. Develop a procedure for measuring odor levels. There are standard methods for quantifying odor, including ASTM D1391, E679 E544 and CEN 13725.

Response: Rendering odors are a complex mixture of many compounds that may include:

“organic sulfides, disulfides, C-4 to C-7 aldehydes, trimethylamine, C-4 amines, quinoline, dimethyl pyrazine, other pyrazines, and C-3 to C-6 organic acids. In addition, lesser amounts of C-4 to C-7 alcohols, ketones, aliphatic hydrocarbons, and aromatic compounds” (AP-42 9.5.3).

Regarding the comment about established laboratory and field odor measurement procedures, ASTM Method D1391 was withdrawn by ASTM in 1986 and is no longer a valid method. ASTM Method E679 is a dilution-to-threshold method that relies on an odor panel to determine a detection threshold for an odor sample. As such its potential value would only be to establish the level at which odors from an odor sample can be detected by an odor panel – not the level at which a complainant may find an odor to be objectionable.

Regarding ASTM E544, this ASTM standard indicates a method to characterize odor intensity, through comparison of odor samples to a reference odor, but does not address odor character, which is very important to the perception of rendering odors. Therefore, the use of this ASTM standard presents a limitation for incorporation into PR 415 rule development concepts. Please see response to Farmer John comment #114 for further discussion on odor character.

SCAQMD staff believes the cost to collect and analyze odorous samples from multiple locations within a facility in order to define “baseline odor levels” as suggested by the commenter would be excessive due to the number of samples necessary and the number of chemical compounds that would need to be analyzed for each sample collected. The cost of analyzing 25 compounds may run into the tens of thousands of dollars, according to the experts SCAQMD staff has contacted. In addition, there may be issues with collection and transportation of multiple odor samples to a location where an odor panel can analyze them, due to different collection methods required. There are also timing issues involved; in order to avoid sample

degradation, certain samples would need to be assessed by an odor panel within a short period of time. Even if these technical issues can be surmounted, staff believes the value of having “baseline odor levels” is questionable, since there are no currently available objective measures to measure ‘objectionable’ odors as described above.

Therefore, in this rule development effort, staff focused on identifying the current and accepted practices around the state of California and the nation for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating an open-air rendering process such as several of the rendering facilities currently operate within the City of Vernon. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. This same standard of operation is used in other areas by at least two of the companies that operate rendering facilities within Vernon.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

3. Comment: PR 415 does not implement odor reduction requirements. There is no objective means to ensure the rule purpose is fulfilled. Incorporate odor reduction requirements into rule. Ex: 20% by 2020, or 50th percentile (average sensitivity) cannot identify odors.

Response: The rationale for not implementing quantifiable odor reduction requirements is included in the response to Farmer John comment #2. Please refer to that response.

4. Comment: Facilities may include other operations that are not related to rendering. Add clarifying language such as “rendering related”.

Response: Clarifying language has been added to indicate operations that are subject to the requirements of PR 415 are related to rendering or wastewater, where appropriate in the current language.

5. Comment: It is unclear whether wastewater stored within a tank prior to off-site wastewater treatment meets the definition of “wastewater treatment processes.” Add “capturing of rendering wastewater and treating offsite” as an exemption to wastewater requirements.

Response: PR 415 does not include a definition for wastewater treatment process. If wastewater that is stored within a tank prior to off-site wastewater treatment meets the definition of wastewater treatment, i.e. “*any chemical, biological,*

or mechanical procedure used to remove, reduce, or neutralize contaminants in water at a rendering facility from rendering- and trap grease-related operations”, it would be subject to the subject to the requirements for locating in an enclosure or a closed system under subdivision (g).

6. Comment: The phrases “odors are not allowed to escape” and “odors are contained within the system” are unclear. A perfect ‘closed system’ is unattainable. Clarify definition of closed system. The language should refer to odors that are treated with an odor control device.

Response: Clarifying language has been added to the definition of closed system, as follows: *“A system that meets the requirements of paragraph (f)(3) is a closed system.”* The definition of closed system does not refer to an odor control device, because under the requirements of PR 415, a closed system is not required to be vented to odor control equipment.

7. Comment: Definition of ‘continuous cooker’ is unclear. Does it include supporting equipment or vessels, such as entrainment tanks? Definition does not include operating scenarios that do not meet definition of ‘batch cooker’, such as varying speeds or partial interruptions. Refine definition of ‘continuous cooker’ and add definition for ‘semi-continuous cooker’.

Response: The definition of continuous cooker has been removed from PR 415. Supporting equipment or vessels such as entrainment tanks are not considered part of the cooker.

8. Comment: The definition of permanent enclosure includes materials that are “impervious to odor”. This definition has potential for high cost. Define “impervious to odor”. Define ‘odor generating source’.

Response: The definition of permanent total enclosure has been changed to remove the term ‘impervious to odor’. The definition reads: *“an enclosure having a permanently installed roof and exterior walls which are constructed of solid material, and completely surround one or more odor-generating sources such that all odors from processes conducted within the enclosure are contained therein.”*

A definition was added for ‘odor generating source’ at the commenter’s suggestion to be: *“a process at a rendering facility from which odors may be emitted, including raw material receiving, size reduction, cooking, separation and processing of cooked materials into fat commodities and protein commodities, and wastewater treatment”.*

9. Comment: Are sanitation activities included in the definition of ‘rendering operations’? Refine ‘rendering operations’ definition to limit them to “recycling, processing and conversion” activities.
- Response: There is no definition of rendering operations in PR 415. However, sanitation activities may be subject to certain provisions in the rule. For example, washdown water used for sanitation to comply with the BMPs under (e)(3) [Washing of Outgoing Transport Vehicles], (e)(4) [Washing of Drums and Containers] and (e)(10) [Washdown of Receiving Area] that is treated in the wastewater treatment plant is subject to the wastewater enclosure requirements under subdivision (g), unless specifically exempted.
10. Comment: Add definition of ‘odor’, including specific compounds related to rendering operations.
- Response: A definition of odor was added under (c)(11), as “*the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves.*” It does not include specific compounds, as these compounds may not be the same for all rendering odors. However, Table 1-1 of the staff report includes a list of chemical compounds commonly found in rendering odors.
11. Comment: SCAQMD must establish an acceptable odor level or identify odor reduction requirements.
- Response: PR 415 focuses on containment of fugitive odors via enclosure or closed system and odor control standards, as well as a number of best management practices (BMP) as a means to reduce odors from rendering facilities. SCAQMD staff believes this approach will result in odor levels being emitted from that are sufficiently reduced at the source (i.e. operation or process within a rendering facility) such that rendering odors caused by rendering operations at a rendering facility will not create a public nuisance at locations not within the rendering facility property.
12. Comment: It is unclear whether wastewater treatment processes includes water associated with wet scrubber water or air-cooled condenser water. Add definition for wastewater treatment processes. Clarify that wastewater treatment is only for rendering-related processes.
- Response: The definition of wastewater makes it specific to rendering-related and trap-grease related operations (i.e.: “*any chemical, biological, or mechanical procedure used to remove, reduce, or neutralize contaminants in water at a rendering facility from rendering- and trap grease-related operations.*”). However, if rendering wastewater is co-mingled with other wastewater in the water treatment plant (whether the other water is referred to as wastewater, process water, scrubber water, condenser water, or another

term) it is the intent of PR 415 that the entire treatment plant is subject the wastewater treatment requirements under subdivision (g) and subparagraph (d)(1)(D), unless it is exempted under paragraph (l)(2).

13. Comment: Refine requirements for direct transfer of raw rendering materials to include all operating configurations. Some facilities do not receive raw materials via transport trucks.

Response: The requirements for delivery of raw rendering materials under paragraph (e)(2) have been modified to remove the reference to a transport vehicle.

14. Comment: Standards for washing are likely to have an impact on POTW wastewater and RECLAIM air permitting. These standards will increase wastewater flow, increased energy usage to heat the water and may require a facility to obtain a portable pressure washer, increasing NOx emissions. Substantial costs would be involved to provide offsets or ERCs, and increasing water usage should be avoided during droughts.

Response: SCAQMD staff disagrees that washing standards would result in an increase in water usage. However, this BMP has been removed from the current staff proposal.

15. Comment: Holding time of incoming raw materials duration may not be appropriate. If a facility receives material right before the end of a shift, they would be required to process or store it regardless of when the next shift takes over. Receiving area is required to be vented to odor control; therefore it is unnecessary to implement a time period restriction.

Response: The holding time requirements for incoming raw rendering materials under paragraph (e)(5) are applicable prior to the enclosure standard for the receiving area becoming effective. Clarifying language has been added to paragraph (e)(5) to include: *“Prior to the date a permanent total enclosure is required . . .”* The holding time requirement after the enclosure standard becomes effective is limited to 60 minutes from the end of material delivery under paragraph (e)(2), provided material is moved into the permanent total enclosure on a continuous basis during this 60 minutes period. The commenter is correct in stating that if a facility receives material right before the end of a shift, that material must be processed or stored in covered containers within the time period allowed under paragraphs (e)(2) and (e)(5), as applicable.

16. Comment: Cleanup of spilled raw materials requirement may not be appropriate. Receiving area is required to be vented to odor control; therefore it is unnecessary to implement a time period restriction.

- Response: The BMPs for cleanup of spilled raw materials have been removed from PR 415.
17. Comment: ‘Facility grounds’ includes other areas that are not applicable for facilities that perform other operations besides rendering. Odor from standing water is required to be routed to odor control. Add clarifying language such as “rendering-related”. Define ‘facility grounds’.
- Response: The definition of facility grounds has been removed from PR 415. The BMP for repair under paragraph (e)(6) was formerly applicable to ‘facility grounds’ and a definition for facility grounds was therefore provided. However, this BMP has since been limited to the raw material receiving area only, and there is no further need to define facility grounds.
18. Comment: The time limits for: holding time limit for raw materials after size reduction; and cooked materials are not necessary for continuous cookers, because material is continuously fed. The resulting odor is required to be routed to an odor control device; therefore, it is not necessary to store in a “sealed odor-tight container”.
- Response: The requirement for holding time limits for raw material after grinding are specific to batch cooking operations, not continuous cookers. In addition, the staff proposal has been changed from the use of an “odor-tight container” to a “covered container”.
19. Comment: Clarify that trap grease delivery is applicable to “rendering-related” operations.
- Response: The requirements for trap grease have been removed from the proposal for PR 415.
20. Comment: The requirement for preventing accumulation of processed materials within enclosures is not necessary, since odors resulting from accumulation are routed to an odor control device.
- Response: The requirement for preventing accumulation was removed from the staff proposal.
21. Comment: The requirement for washdown of receiving areas once per shift is excessive and burdensome.
- Response: The washdown requirement for the receiving area under paragraph (e)(10) has been changed to “. . . *once each working day*” to mirror the frequency of the washdown requirement in the commenter’s permit and other rendering facility permits.

22. Comment: The requirement to wash floor drains is not necessary since resulting odor is required to be routed to an odor control device.
- Response: The language of the BMP for cleaning of floor drains under paragraph (e)(11) has been modified in the latest language for PR 415 to read “ . . . *Accessible interior and exterior floor drains shall be inspected and cleaned not less frequently than once per month to remove accumulation of rendering materials.*” SCAQMD staff believes this requirement is necessary since it affects both interior as well as exterior drains. Odors emanating from drains in exterior locations would not be routed to odor control equipment. In addition, odors from drains in interior locations may not be routed to odor control equipment, depending on whether a closed system is chosen to comply with the requirements of subdivision (f) instead of a permanent total enclosure.
23. Comment: The requirement for repair of leaking components is excessive and burdensome since resulting odor is required to be routed to an odor control device. A “reasonable person” is subjective and ambiguous.
- Response: The BMP to repair leaking components within 72 hours after discovery has been removed from the staff proposal for PR 415.
24. Comment: The requirement for inward face velocity through enclosure openings should be limited to “routine enclosure openings”.
- Response: The requirement for inward face velocity under subparagraph (f)(2)(B) states, “*A minimum inward face velocity of not less than 200 feet per minute shall be maintained at all times through each routine enclosure opening of a permanent total enclosure*”.
25. Comment: Include all stakeholders in the working group (including regulators, industries, citizens, environmental control equipment manufacturers, consultants and researchers) in development of PR 415.
- Response: SCAQMD staff has spoken with a variety of stakeholders during the rule development process, including industrial stakeholders (rendering facilities), odor control equipment manufacturers, consultants that are experts in rendering, rendering facility personnel, and researchers, as the commenter suggests.
26. Comment: PR 415 directly affects the economic viability of the affected facilities. If plants shut down due to the rule’s economic burden from implementing requirements such as enclosures, rendering material may be landfilled.
- Response: Section 20890, Title 27, California Code of Regulations, provides that dead animals may be landfilled if allowed by local regulations and shall be

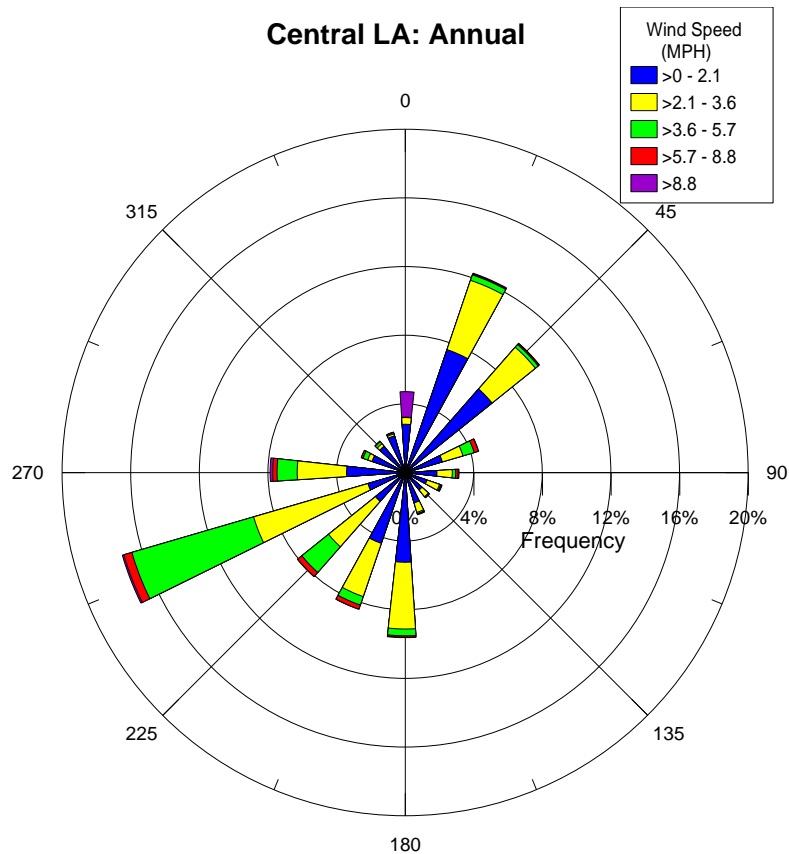
covered immediately or at a frequency approved by the Enforcement Agency. Section 20760, Title 27, California Code of Regulations, further states that each disposal site shall be operated and maintained so as not to create a public nuisance. District staff has determined that at the present time, there is not a landfill in Los Angeles County that is permitted to landfill dead animal carcasses at their site unless it is due to an emergency.

27. Comment: Exempt blood meal processing if the process is conducted in an enclosed system with negative air pressure, where all the odors are vented to an RTO.

Response: Such an exemption is included in PR 415 under paragraph (1)(4).

28. Comment: The study "*Odor Controls for Rendering Plants.*" *Environmental Science and Technology* 7 (6):504-510. Bethea, Murthy, Carey; 1973 infers that SCAQMD Headquarters, which is within 20 miles from Rendering Row in Vernon would be impacted. However, it does not appear that any SCAQMD staff ever called to complain about rendering odors.

Response: SCAQMD staff does not think that simply because rendering plant emissions could be detected up to 20 miles away means these odors necessarily create an offensive odor at that distance. Westerly winds (SCAQMD headquarters is due east of renderer's row) only blew approximately 8% of the time, as evident from the following wind rose compiled using 2005 to 2007 data from the central Los Angeles meteorological station. As can be seen in the wind rose, westerly winds were most often below 3.6 mph, requiring at least 6 hours to travel 20 miles. Staff believes there is ample opportunity for dispersion during a 6-hour, 20 mile trek.



29. **Comment:** Approximately 313,000 vehicles travel the I-5 corridor daily. Odors from rendering plants are also found in vehicle exhaust emissions (e.g. mercaptans are from the sulfur in gasoline), poor maintenance (e.g. catalytic converter, leaking oil, coolant, burning clutch and A/C) and human body odor. The majority of these vehicles are stuck in traffic, with single passenger vehicles.

Response: Regarding the commenter's suggestion that rendering odors are actually caused by mobile source emissions from passenger vehicle traffic, SCAQMD staff believes if this were the case, similar rendering odor-type complaints would be received all along the hundreds of miles of freeways in the South Coast Air Basin, many of which are subjected to daily rush hours causing slow traffic speeds similar to the speeds in the communities surrounding the Vernon rendering facilities. The same would be true for the suggestion that rendering odors are caused by human body odor from people in single-passenger vehicles.

30. **Comment:** Develop objective-based measurements instead of odor complaints as the rule's success measure. (*Note: commenter suggests this rule approach many times and provides the following reasons:*)
- a. Determine the sources of odor and how best to develop a policy strategy toward eliminating them.

- b. There are “international standards that are in place, which dictate the scientific methods and practices of odor measurement.
- c. A community may get desensitized or over sensitized to an odor. The number of complaints lodged may not correspond to the severity of an odor problem and a verification process is needed.
- d. To objectively improve quality of life.
- e. To verify that there has been a reduction of odors/air pollution in the area.
- f. To reduce the subjective nature of Rule 402.
- g. Analyze emissions levels of specific chemical odorants as a means of measuring odor that is not reliant on human sensory perception but instead is aimed at identifying chemicals that may be “surrogates” for perceived odor. Field analysis of chemical odorants and other chemical substances can be accomplished using portable analysis methods ranging from low-cost colorimetric detector tubes to higher cost portable electronic equipment. Examples of gas surrogates include hydrogen sulfide, total reduced sulfur, ammonia and volatile organic compounds.
- h. Impose ambient odor limits:
 - Odor concentration as D/T (Dilution Threshold)
 - Odor intensity as part per million butanol
- i. Impose source odor limits
 - Odor concentration as odor units per cubic meter; or
 - Odor rates as odor units per second.
- j. Establish a minimum odor standard which will aid in the identifying the cause and determining the appropriate response to odor events.

Response: A discussion of the limitations of this approach is found in response to Farmer John comment #2. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

31. Comment: Rendering plants have significantly improved their odor control performance over the past 10 years and current odor levels do not warrant rule making. Enforcement of existing rules would result in PR 415 becoming unnecessary.

Response: The rationale for the necessity of PR 415 is articulated in the staff report. Staff does not agree that current odor levels do not warrant rule making. In

working group meetings, it has been suggested that Rule 402 is sufficient to handle odors from rendering plants. While Rule 402 can be used to issue a Notice of Violation if there are a considerable number of persons that are impacted by an odor (or other problems such as dust), that is a reactive measure. PR 415 is intended to reduce odors from rendering operations, which would help avoid a public nuisance. However, the two rules are not mutually exclusive. There are many SCAQMD rules that reduce odors (e.g. Rules 410, 1148.1, 1430). Facilities subject to these rules are also subject to Rule 402.

Staff recognizes that 350 odor complaints and one NOV for odor nuisance has been attributed to rendering plants in the City of Vernon over the past 10 years. SCAQMD has conducted multiple on-site inspections of the rendering plants in the District and has observed through these inspections that the rendering plants are a significant source of odors. SCAQMD staff has detected rendering odors during onsite inspections at the rendering plants in the District that have the potential to create odor nuisances in the surrounding community, especially when the odors from nearby rendering plants are combined. SCAQMD has conducted public workshops on PR 415 where residents of Commerce, Maywood, and areas of East Los Angeles outside Boyle Heights have complained about rendering odors. PR 415 is intended to reduce the potential for nuisance-level odors not just in Boyle Heights but also in other commercial and residential areas surrounding the rendering plants. SCAQMD disagrees with the commenter that enforcement of existing rules would result in PR 415 becoming unnecessary

32. Comment: PR 415 conflicts with Health and Safety Code sections 40440(a) and 41705(a)(1), and Section 2449(c), Title 13, California Code of Regulations..

Response: SCAQMD disagrees with the commenter that PR 415 conflicts with the following State laws; Health and Safety Code sections 40440(a) and 41705(a)(1), and Section 2449(c), Title 13, California Code of Regulations. Clougherty Packing, LLC contends that since meat and bone-meal from their rendering facility is fed to pigs that they currently raise for food at another facility they own, they meet the exemption under Health and Safety Code section 41705(a)(1), which exempts odors emanating from agricultural operations that are necessary for the raising of animals. Health and Safety Code section 39011.5 states in pertinent part, “Agricultural source of air pollution” or “agricultural source” means a source of air pollution or a group of sources used in the raising of animals located on contiguous property under common ownership or control that is a confined animal facility, including, but not limited to, any structure, building, feed storage area, or system for the collection, storage, treatment, and distribution of liquid and solid manure, if domesticated animals, including, swine are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other

than grazing. Clougherty Packing, LLC is not operating their rendering facility at the same location they are raising pigs to be able to claim that odors from their rendering operations are exempt from Health and Safety Code section 41700. The purpose of Section 2449(c), Title 13, California Code of Regulations, is to reduce oxides of nitrogen (NO_x), diesel particulate matter (PM), and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles. Equipment or vehicles used exclusively in agricultural operations are not subject to this regulation. PR 415 does not regulate off-road diesel-fueled vehicles. PR 415's regulation of odors from rendering plants is not in conflict with State laws Health and Safety Code section 41705(a)(1) and Section 2449(c), Title 13, California Code of Regulations, and is within the SCAQMD's authority under Health and Safety Code section 40440(a).

33. Comment: Allow facilities to implement site-specific SCAQMD-approved OMPs and eliminate the current rule conditions that required all applicable BMPs to be implemented. Based on the current BMP implementation structure, the OMP submittal is relegated to punitive status. The OMP is the appropriate implementation approach for affected facilities and SCAQMD to reduce odors. *(Note: commenter suggests this rule approach many times and offers the following additional reasons):*
- a. Facilities should have the flexibility to choose site-specific BMPs via an OMP-based approach.
 - b. To allow facilities to determine whether a permanent enclosure is appropriate based on site-specific conditions.
 - c. To determine which BMPs are appropriate based on site-specific conditions.
 - d. Facilities would be able to be proactive and quickly implement new BMPs as needed.
 - e. To proactively reduce the potential for an odor complaint and respond to complaints.
 - f. To allow facilities to respond to drought weather conditions.
 - g. The 2004 Review of National and International Odor Policy states that "if prevention and mitigation cannot fully eliminate the need for odor emissions, then an assessment of odor impact is needed."
 - h. This approach that would take advantage, of existing resources and staff expertise.
 - i. To help identify buffer zones and other issues.
 - j. To incorporate a Corporate Social Responsibility factor.
 - k. Rule applicability and requirements are dependent on throughput rate and proximity to residential areas..
 - l. To include setback requirements in lieu of prescriptive approach.
 - m. To implement rule applicability thresholds.
 - n. A facility specific Odor Management Plan is needed for bad actors. An OMP levels the playing the field.

Response: SCAQMD thanks the commenter for suggesting an alternative approach to the staff proposal. Unfortunately, SCAQMD staff believes the commenter's proposal to submit a plan instead of containing fugitive sources of odors and routing them to odor control equipment falls short of the steps necessary to control odors from rendering facilities and reduce odor complaints in the communities surrounding Vernon. In particular, the alternative proposal does not include a requirement for timely enclosure and containment of odorous operations at a rendering facility as the staff proposal does. As the commenter is aware, having participated in numerous discussions during the rule development process, the approach PR 415 has taken involves establishing equipment and operational standards SCAQMD staff believes represent the best and most reliable way to control odors from rendering operations. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating unenclosed rendering processes, as the commenter's facility and other rendering facilities currently operate within the City of Vernon. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

34. Comment: Remove waste water requirements for facilities that have dilution factors of 30% or less.

Response: An exemption under paragraph (1)(2) specifically exempts wastewater operations that meet certain criteria.

35. Comment: Remove the contact sign requirement. Our facility has been the subject of animal rights protests. These protests could use the contact sign to interrupt facility operations by making unsubstantiated claims of odor.

Response: Under the odor complaint contact sign content requirements of paragraph (i)(1), a facility is obligated only to specify 1-800-CUT-SMOG as the primary contact for odor complaints. A facility contact is optional. If the commenter is concerned about disruption of operations during animal rights protests, the odor complaint contact sign need not specify a facility contact. The requirements for the odor complaint contact sign, as required under subparagraph (i)(1) stand as written.

36. Comment: Amend Rule 1173 to include rendering processes. Rule 1173 addresses leaks from components and releases from processes.
- Response: Rule 1173 is specific to components at petroleum facilities and chemical plants. SCAQMD staff does not believe the suggested approach is appropriate due to the requirements of PR 415 that do not involve leaks and releases from components; namely the permanent total enclosure, ventilation, closed system and odor control standards under subdivision (f).
37. Comment: Provide an exemption for meat and bone meal activities. Add a definition of where meat and bone meal activities begin.
- Response: An exemption is provided for meat and bone meal activities under subdivision (l). The exemption describes in general terms where in the process the exemption from enclosure requirements for meat and bonemeal activities begin.
38. Comment: Use ASTM standard definitions. Per ASTM E253, an odorant is a “Substance that stimulates the olfactory receptors” (i.e. a chemical gas).
- Response: PR 415 does not include a definition for odorant. However, it does include a definition for odor, as “*the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves*”, which is similar to the standard ASTM E253 definition for aroma: “*Perception resulting from stimulating the olfactory receptors.*” The ISO 5492 definition for odor is: “*Organoleptic attribute perceptible by the olfactory nerves on sniffing certain volatile substances.*”
39. Comment: Develop an odor management study to determine an odor inventory. Without data substantiating individual contributions to an odor inventory, rendering facilities would be held accountable for their neighbor’s odor emissions by requiring costly and ineffective odor controlling best management practices. Develop an odor study to better characterize odor causing components and to determine odor plume and its occurrence throughout the year. According to the data provided, the farthest unconfirmed odor event SCAQMD is attributing to rendering is 2.5 miles away.
- Response: Please see response to Farmer John comment #65. Development of an odor management study would have many of the same issues as described in the response to this comment.
40. Comment: Rulemaking necessity has not been adequately justified for the costs incurred by rendering facilities.
- Response: Rulemaking necessity is addressed in Chapter 4 of the staff report. Regarding the costs, staff has prepared a socioeconomic assessment for PR 415 that describes the costs and regional impact of the proposed rule.

41. Comment: Put windrose diagrams from SCAQMD “Ambient Measurements of Air Toxic Pollutants at Resurrection Catholic School in Boyle Heights” into the Staff Report.
- Response: Windrose data from the cited study has been included in the Draft Staff Report.
42. Comment: Train SCAQMD inspectors to follow ASTM standards on odor and to apply a standard odor intensity referencing scale when confirming an odor event. Field air pollution inspectors, using a standard odor intensity referencing scale can provide measured, dependable, repeatable observations of ambient odor intensity. Odor intensity referencing compares the odor in the ambient air to the odor intensity of a series of concentrations of a reference odorant (n-butanol). A monitor observes the odor in the ambient air and compares it to a standard Odor Intensity Referencing Scale (OIRS). Field analysis of chemical odorants can be accomplished using a variety of portable analysis methods at low cost.
- Response: SCAQMD inspectors currently use a similar procedure. See response to Farmer John comment #114. SCAQMD thanks the commenter for the suggestion and will pass this information along to the appropriate Compliance staff.
43. Comment: Ensure that safety concerns are adequately addressed. As testified by the City of Vernon Environmental Health Director, the City of Vernon Building Inspector and Fire Marshall had concerns regarding placing grease generating processes under a roof. The concern is for grease fires. Also, wastewater location is so impacted that further construction would not be allowed by the City of Vernon. Because of the issues with permanent enclosure, we do not have a subject matter expert who could better speak to the requirements for permanent enclosure.
- Response: In discussions with personnel at a facility subject to the requirements of PR 415, staff heard that the Fire Marshall’s concern was not with enclosure of operations where grease is present, but rather with the type of fire suppression system used. The City of Vernon can address this concern by requiring an adequate fire suppression system. Regarding the comment about enclosure of wastewater operations, the commenter’s facility may be entitled to take advantage of the exemption for enclosure of wastewater treatment operations under paragraph (l), if the commenter can provide sufficient documentation for the limitations stated in the exemption.
44. Comment: For integrated rendering process, the receiving area should not be under permanent enclosure nor require control equipment. Rendering processes begin with size reduction prior to going to a cooker. If there were no

rendering process, this is where the material would be collected and picked up by a rendering truck.

Response: Per discussions with the commenter, SCAQMD staff understands the non-traditional raw material delivery system to the rendering plant at Farmer John, and that Farmer John intends to propose measures to turn the material delivery system/receiving operation into a closed system. If this is accomplished, such a closed system would comply with the requirements of paragraph (f)(3) for the receiving area.

45. Comment: Require a weather monitoring station to identify whether rendering plants are the cause of odor complaints.

Response: The SCAQMD maintains a network of 39 permanent ambient air quality monitoring stations in the South Coast Air Basin, including one in downtown Los Angeles at 1630 North Main Street. SCAQMD staff believes wind data from this station is the best representation of the conditions in the Vernon area. As such, there is no need to establish another monitoring station in Vernon or to require each facility to install and maintain a weather monitoring station.

46. Comment: Provide scientific evidence showing a comparison between Tallowmasters and Vernon area rendering plants. Allow the City of Vernon to update and improve their Health Department program. Work with the City of Vernon to implement these programs.

Response: SCAQMD staff does not know what kind of scientific evidence or comparison the commenter refers to. Regarding the comment to allow the City of Vernon to update and improve their Health Department program, the City can update and improve their program(s) independent of PR 415. SCAQMD staff is available to work with the City of Vernon if there are air quality issues that need to be addressed.

47. Comment: Disregard Tallowmaster's recommendations because SCAQMD staff cannot differentiate the odor control effectiveness of BMPs.

Response: Tallowmaster made no recommendations to SCAQMD staff. Staff went to this facility to see their odor control equipment.

48. Comment: Develop a procedure for determining current/"baseline" odor levels and incorporate odor reduction requirements into the rule. Without such levels or requirements, affected facilities and SCAQMD have no objective means of ensuring that the purpose of the rule is fulfilled. It is necessary to determine which EPA method a facility or the District can use to determine migration from the facility to the residential portion of the communities and measure intensity in terms of concentration (e.g. Odor Units). Since there

were no baseline measurements of odors, how do we know what the improvements are to local or migratory odors? Since the majority of odor complaints are coming from the community that exists beyond Vernon's border, the rail yard and the commercial buildings area, conditions need to clarify migration and intensity of odors in the community.

Response: SCAQMD staff is concerned about odor impacts to commercial business locations within Vernon as well as to residential locations to the non-commercial areas outside of Vernon. The requirements of PR 415 intend to reduce odors at the source of odor generation, rather than attempting to regulate nuisance odors after they have migrated from the commenter's location into the adjoining commercial and non-commercial locations surrounding the Vernon rendering facilities. For this reason, the staff proposal includes: enclosure of odorous operations at a rendering facility, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

49. Comment: The April 2012 Boyle Heights study concluded that mobile vehicle traffic was the source of odor affecting the community instead of the rendering facilities.

Response: The study referred to by the commenter, *"Ambient Measurements of Air Toxic Pollutants at Resurrection Catholic School in Boyle Heights"* was conducted for the express purpose of measuring air toxic pollutant levels at Resurrection Catholic School. During VOC sample collection and analysis, no attempt was made to speciate chemical compounds found in rendering odors. The study conclusion that *"atmospheric levels of diesel PM and VOCs were higher [than two reference sites] likely due to the very close proximity of the Resurrection School site to the I-5 and busy surface streets."* does not mean that rendering odors are not present at Resurrection School; only that the air toxic pollutant VOCs measured at Resurrection are likely to be from mobile sources. Any extrapolation of the study data or conclusions to rendering odors from the Vernon rendering facilities is not appropriate.

50. Comment: Civil Code section 3482.6 (The Right to Farm Act) includes rendering plants licensed pursuant to Food and Agricultural Code section 19300 as an "agricultural processing activity, operation, facility." After a rendering plant has been in continuous operation for more than 3 years, it may not become a public or private nuisance due to changed conditions in or about

the locality, if it is operated in a manner consistent with proper and accepted customs and standards, or if it was not a nuisance at the time it began. If the above conditions are met and the rendering facility is operating within the limits of its SCAQMD permit and the SCAQMD receives odor complaints, the SCAQMD has no authority to take an enforcement action against the facility. Creating PR415 to reduce odors would be circumventing and undermining Civil Code section 3482.6.

Response: Staff has investigated the land uses surrounding the Vernon rendering facilities and determined that between 1989 and 1994, the facilities were surrounded by commercial and residential (i.e. non-agricultural) uses as of 1993. See maps in this response. Under Civil Code §3482.6, an air district may enforce regulations adopted pursuant to Health & Safety Code §41700, such as PR 415, in these circumstances

SCAQMD staff disagrees with the commenter that the SCAQMD has no authority to take an enforcement action against rendering plants and creating PR415 to reduce odors would be circumventing and undermining Civil Code section 3482.6, for the reasons expressed in staff's response to Baker Commodities comments #37 and #59.

Map from May 30, 1994



Map from August 22, 1989

51. Comment: Reword the purpose statement to read as follows, *“The purpose of this rule is to reduce perceived odors from facilities licensed to render animals and animal parts from reaching the nearby communities.”*

Response: The purpose of PR 415 is to reduce odors from rendering operations at the rendering facility. The purpose statement in the proposed rule stands as written.

52. Comment: Clarify the meaning of “Process”. No definition is found in section (c). It is unclear whether “Process” includes carcasses that are converted to ash for off-site disposal; and does not include if meat and bone meal, blood drying operations, or other slaughtering activities are associated that leads to a need for inedible rendering are included.

Response: Under the rendering definition in paragraph (c)(19), process means the same as operation. If carcasses are converted to ash for off-site disposal in an operation or process that falls under the definition of rendering (*i.e.*

converting raw rendering materials into fat commodities and protein commodities by heat and mechanical separation), that operation or process is subject to the requirements of PR 415. Blood drying operations and meat- and bonemeal processing operations meeting certain requirements are specifically exempted under subdivision (l).

53. Comment: Implement a facility threshold for applicability based on a fixed parameter (e.g. on the raw material input), which will represent the rendering plant size. PR 415 does not account for facility size which impacts the odor generation potential for a rendering plant.

Response: During rule development, SCAQMD staff visited all of the Vernon rendering facilities. In spite of a wide range of raw rendering materials and facility throughput limits, staff detected noticeable odors at the facilities. Staff believes the nature of inedible rendering creates odors, and therefore a facility threshold for applicability based on a fixed parameter which represents rendering plant size is not part of the staff proposal.

54. Comment: The definition of Collection Center is unclear. Under the Food and Agricultural Code sections 19300-19306, rendering facilities and collection centers have the same requirements. Please consider exempting collection centers under PR415, since it is part of the overall process of rendering and is included in the definition of rendering operations.

Response: The definition of “collection center” was taken from Vehicle Code section 2460(j). Food and Agricultural Code sections 19300-19306 pertain to the California Department of Food and Agriculture’s licensing requirements for rendering plant and collection center operators. The purpose for including a “collection center” in PR 415(c)(3) is to provide for an exemption under PR 415(l)(1)(B) for collection centers that do not conduct inedible rendering or handle or process trap grease. Therefore, it would not be appropriate to define “collection center” in a manner which would include (and therefore exempt) the entire rendering operation.

55. Comment: Define “Transportation”. “Transportation” may not be consistent with other uses of transportation such as: “Facility Grounds”, Receiving Area, “Transport Vehicles”, “Delivery of Raw Rendering Materials”, “transportation within permanent enclosures”.

Response: In the staff proposal, transportation is only used in the definition for collection center. As described in another response, the purpose for including the definition of a collection center in paragraph (c)(3) is only to provide a basis for exemption under subparagraph (l)(1)(B) for collection centers that do not conduct inedible rendering or handle or process trap grease. Therefore, there is no need to define transportation, as it its use in

PR 415 is not in conflict with other uses in the proposed rule, since there are none.

56. Comment: There is no procedure defined for the District Inspector to verify an odor complaint or current odor levels. CPC believes that it is imperative that a procedure is developed to objectively determine and document the current odor levels. Require a valid form of identification during odor complaints to prevent callers calling from making multiple calls from different locations, such as payphones.

Response: SCAQMD Compliance personnel follow a prescribed procedure to verify the source of all odor complaints. If verification cannot be made by SCAQMD staff, there is no enforcement action taken against a facility alleged to be the source of an odor, including a rendering facility. Regarding multiple calls from different locations, such as payphones, a complainant is free to make multiple calls from as many locations as they choose. However, multiple odor complaints made by the same individual from different phone numbers will not count toward a confirmed odor event. During the odor verification process, a trained, professional SCAQMD inspector investigates the odor complaint by interviewing the complainant. The inspector then attempts to verify the odor. This requires the inspector to detect the same odor as the complainant describes and trace that odor to its source. If the inspector does not smell the same odor as the complainant describes (many times odors are not present when an inspector interviews the complainant) or cannot verify the source of the odor, the odor cannot be verified. It requires three verified odor complaints to constitute one confirmed odor event. A confirmed odor event by definition requires “. . . *three or more complaints by different individuals from different addresses. . .*” [PR 415(c)(4)]. Therefore, the commenter’s concerns about the lack of procedure and individuals trying to take unfair advantage of the system are unfounded.

57. Comment: Refine the definition of "Enclosure Envelope" to focus on rendering operations only. This definition potentially includes all buildings at a facility; even non-rendering associated buildings.

Response: The definition of enclosure envelope (*i.e. the total surface area of a building directly enclosing rendering operations and includes the enclosure’s exterior walls, floor and horizontal projection of the roof on the ground*) is specific to the building directly enclosing rendering operations. It does not include non-rendering associated buildings.

58. Comment: Are odorous compounds considered an air contaminant? Clarify the meaning of “odorous compounds” and revise the definition of “Odor” as an air contaminant instead of perceptory?

Response: Health and Safety Code section 39013 includes odors in its definition of an “air contaminant” or “air pollutant.” Odorous compounds are considered air contaminants. PR 415 does not “target” sulfur or any other compounds, although staff believes that reduced sulfur compounds are a component of odors generated during cooking and wastewater treatment at rendering facilities, PR 415 establishes ammonia (NH₃) and hydrogen sulfide (H₂S) as one of two marker compounds that are used to evaluate the control efficiency of an odor control device. SCAQMD staff disagrees with the commenter that the definition of “Odor” in PR 415(c)(12) should be revised as an air contaminant instead of the perception experienced by a person. Odors are subjective in nature, thus the level at which an odor becomes objectionable is subject to each person’s perception.

59. Comment: Civil Code Section 3482(e)(1) includes odor generating sources from rendering under an agricultural processing activity, operation, facility or appurtenances thereof that is conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards. Refine the definition of odor generating source to the State’s definition in regards to rendering. Refine “Rendering Facility” definition so as to be consistent with the State law definition of rendering.

Response: It is assumed that the commenter is referring to the definition of “Agricultural processing activity” under Civil Code Section 3482.6(e)(1), which includes rendering plants. SCAQMD staff disagrees with the commenter that the Right to Farm Act contains any definition of odor generating sources. Civil Code Section 3482.6(e)(3), defines proper and accepted customs and standards as the compliance with all applicable state and federal statutes and regulations governing the operation of the agricultural processing activity, operation, facility, or appurtenances with respect to the condition or effect alleged to be a nuisance. Civil Code §3482.6 allows enforcement of regulations adopted pursuant to Health & Safety Code §41700, such as PR 415, where the affected facilities were surrounded by commercial and residential uses in 1993. Staff has determined that this is the case for the Vernon rendering plants. See attached maps from 1989 and 1994. The District’s legal authority to adopt and enforce PR 415, establishing best management practices and requirements to reduce odors from rendering facilities derives, in part, from Health and Safety Code section 41700. The District’s authority granted by Health and Safety Code section 41700 to protect the public’s comfort and health and safety includes the regulation of facilities in order to prevent the discharge of odors before they cause nuisance or annoyance to the public. The District is authorized under Health and Safety Code section 41508 to adopt rules imposing requirements that are stricter than those set forth in state law, including Civil Code Section 3482.6(e)(3). PR 415’s “Rendering Facility” definition is not inconsistent with the State law definition for rendering plants.

60. Comment: Is a permanent enclosure designed to be air pollution control equipment?
- Response: A permanent total enclosure is a component of air pollution control equipment. Under PR 415, a permanent total enclosure, in combination with an associated ventilation system designed to keep the permanent total enclosure under negative pressure is intended to function as containment for fugitive odors from the rendering operations it encloses.
61. Comment: "Raw Rendering Materials" definition does not represent all potential operating configurations. Some rendering facilities may exclude certain streams specified in this definition, such as blood, offal, and feces from the rendering process. As a result of including non-typical rendering material, the rule may inadvertently affect non-typical rendering operations, such as anaerobic digesters.
- Response: The definition of raw rendering materials includes all materials that may be present in an incoming waste stream. Defining raw rendering materials in this way does not infer that these materials must be present for the raw material receiving area to be subject the PR 415 rule requirements. The intent of PR 415 is not to include anaerobic digesters that are completely covered.
62. Comment: Add applicable NAICS or SIC codes to the definition. Definition does not include the applicable NAICS or SIC codes.
- Response: NAICS and SIC codes are not typically included in SCAQMD rules. They are not included in the definition of "rendering facility".
63. Comment: Refine "ventilation system" definition. The definition is missing shutdown criteria language for maintenance and non-operational periods.
- Response: It is not appropriate to include shutdown criteria in a definition. The definition of a ventilation system does not change when the system is shut down for maintenance or non-operational periods. During permitting of a permanent total enclosure, , the evaluation will consider the appropriate timing for shutdown during maintenance and non-operational periods.
64. Comment: Refine "Wastewater Treatment" definition. Use the California Association of Sanitation Agencies (which is a part of) definition which focuses on suspended solids, not on COD. Their Waste water definition is "A series of chemical, physical or biological processes to remove dissolved and suspended solids from wastewater before discharge."
- Response: The definition clearly states ". . . for the purpose of this rule. . ." and is specific to wastewater treatment for rendering and trap-grease related

operations, as appropriate for PR 415. The definition does not include chemical oxygen demand (COD), as the commenter implies.

65. Comment: Conduct dispersion modeling of odors per each facility (since each facility will emit different odors from rendering and each facility has different configurations, equipment, and operations.) By standardizing a measurement of odors, we would be able to:
- Facilitate compliance monitoring assurance as part of any permit requirements.
 - Determine specific odor sources during complaint investigations.
 - Measure and track odor levels to evaluate odor performance.
 - Compare operating practices/requirements when evaluating operating alternatives.
 - Compare odor mitigation measures during tests and trials.
 - Verify estimated odor impacts from dispersion modeling.

Response: SCAQMD thanks the commenter for suggesting an alternative approach to the staff proposal. Regarding the suggestion to conduct dispersion modeling of odors from each rendering facility, staff believes this approach is not feasible for several reasons, which are described below.

In order to conduct dispersion modeling, it is necessary to first understand the chemical makeup and source strength of odors. As discussed in the staff report, more than 100 chemical compounds have been identified in rendering odors. Modeling requires input of an initial concentration for each chemical compound, which may not be possible to obtain. Many of these compounds do not currently have established methods for collection, speciation and analysis. Many do not currently have established odor detection thresholds. For these reasons, it is not currently possible to identify the exact chemical makeup of rendering odors using existing science and the present state of technology. It follows that it is therefore not currently possible to establish initial concentrations for modeling.

Even if the limitations in the current science can be overcome, there are multiple sources of odor that originate from rendering facilities (raw rendering material, cooking of meat, non-condensable vapors from cooker condensate, wastewater) and therefore multiple odor profiles from fugitive odors at each facility. Odors may also be different at the same facility depending on the materials being processed and other factors.

Furthermore, a modeling approach as suggested by the commenter may present uncertainty for two reasons. First, modeling of multiple, overlapping volume sources of fugitive odors with different odor profiles would require many simplifying assumptions to be made. Second, there is uncertainty with regard to downwind chemical reactions; that is, reactions

occurring in the atmosphere before odors reach receptor locations. These uncertainties may lead to possible overprediction or underprediction of actual ground level concentrations at receptor locations. In summary, staff does not believe the existing science allows for the suggested modeling approach to be implemented. However, as test methods develop and the science of odor measurement evolves, it may be possible to conduct modeling of odors in the future.

SCAQMD staff believes that rendering odors are distinctive and unmistakable as a whole, even if existing science does not allow chemical compounds that make up these odors to be fully identified and quantified. For this reason among others, staff has elected to follow the approach in PR 415 of establishing enclosure and closed system standards, building ventilation standards and odor control equipment standards. The staff proposal contains odor reduction requirements, including: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. Staff believes this approach represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

66. Comment: Develop an acceptable odor level or odor reduction requirements. After implementing an objective odor measurement procedure, SCAQMD must establish an acceptable odor level or identify odor reduction requirements. Include a standard so a facility can demonstrate a reduction in odor. What if other BMPs were demonstrated to show effectiveness in reducing odor?

Response: SCAQMD thanks the commenter for suggesting an alternative approach to the staff proposal. The staff proposal contains odor reduction requirements, including: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations. Regarding the suggestion to establish a standard for acceptable odor levels, SCAQMD staff believes that the PR 415 proposal will reduce odors in the communities and commercial areas surrounding the Vernon rendering facilities to acceptable odor levels and will result in fewer complaints from these areas. In the event a facility still has odor issues, after implementing the staff proposal that result in an NOV for Public Nuisance or 3 confirmed odor events within a consecutive 180-day period (a very difficult standard to meet, for reasons described in other responses to comments), that facility will be asked to submit an Odor Mitigation Plan (OMP) to propose further odor mitigation activities.

Regarding the comment about other BMPs being demonstrated to show effectiveness in reducing odor, the commenter should be advised that all of the BMPs in the rule proposal, as described in subdivision (e) would be required and a facility may not substitute another BMP that they deem equally effective in controlling odors for one or more of the required BMPs. The commenter participated in working group and public meetings during rule development of PR 415. If the commenter identified other BMPs that are thought to be as effective in controlling odors as those in the staff proposal, the commenter had ample opportunity to share that information with SCAQMD rule development staff.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

67. Comment: Add clarifying language such as, "Best Management Practices including permanent enclosure and closed systems, which may or may not involve BACT to mitigate odor, which is considered an Air Contaminant, are needed only if the emissions are greater than one pound per day." Under BACT guidelines, modifications subject to Regulation XIII require an emissions increase in potential to emit. Was BACT pre-determined as an enclosure and odor control equipment?

Response: Under PR 415, a permanent total enclosure is not considered a Best Management Practice (BMP). In the proposed rule, the requirement for a permanent total enclosure is independent of compliance with BMPs as described under subdivision (e). In addition, the staff proposal does not require a determination of an increase in actual emissions or potential to emit (PTE) from a rendering facility to trigger compliance with BMPs or the enclosure standard under subdivision (f).

Regarding the comment and question about BACT; during evaluation of an application submitted for a permanent total enclosure/odor control system under PR 415, SCAQMD staff will look at all applicable rule requirements as well as whether BACT must be applied. Under New Source Review (Regulation XIII), if there is an increase in the "potential to emit" (PTE) or actual emissions of any criteria pollutant of at least 1 lb/day, BACT must be applied. Whether or not there is an increase in PTE or actual emissions, SCAQMD staff must evaluate an application for compliance with all applicable rules. After adoption of PR 415, staff will evaluate an application for compliance with the requirements of PR 415, irrespective of whether an increase in PTE or actual emissions occurs as a result of the permit application. Furthermore, BACT is a separate requirement for criteria pollutants rather than odors. Therefore, BACT is not pre-determined.

68. Comment: Trigger the submittal requirement of 12 months to submit permit applications only after approval is received to construct/build by the local building permitting agency. In order for an SCAQMD permit application to be submitted, we would need to be ensured that we will receive the proper permits from the City of Vernon.
- Response: SCAQMD staff disagrees with the commenter's statement that it is necessary to have assurance from the City of Vernon prior to submittal of a permit application to the SCAQMD for enclosures. Air Quality Permits, like building and other business permits are a part of doing business in California. The City of Vernon's permitting requirements are separate and distinct from the SCAQMD's permitting process.
69. Comment: In the event an OMP requires construction, add language that timelines will be from the Executive Officer approving the OMP. In the event an OMP is triggered by an NOV, where a permanent enclosure and/or closed system is required, the timeline should get reset to Executive Officer approval of the OMP.
- Response: The only timeline included under the requirement to submit an OMP under paragraph (d)(2) is that the owner or operator submit an OMP within 90 days after notification by the Executive Officer. There are no fixed timelines under the OMP content requirements, as defined in subdivision (h). Instead the owner or operator is required to identify a detailed construction schedule for each proposed permanent total enclosure, and an explanation of why construction of proposed permanent total enclosures cannot be expedited prior to the date a permanent total enclosure is required under subparagraph (d)(1)(B), for OMPs that are submitted prior to the enclosure standard becoming effective. Therefore, no clarifying language is required.
70. Comment: What does "good operating condition" mean?
- Response: The term "operating in good condition", as used in the context of control equipment in the proposal refers to odor control equipment that operates within the parameters established by the manufacturer (pressure drop, air flow rate, recirculation rate, concentration of scrubber solution, etc.). In the case of a packed-bed scrubber or a room air scrubber used for room air to treat fugitive odors from within a permanent total enclosure, it also means being cleaned regularly to ensure packing media, if used is not fouled. A requirement to maintain equipment in "good operating condition" is typically included in permitting as well.
71. Comment: Include "all incoming trucks containing raw material to process in rendering. Trucks entering the facility may not be rendering trucks.

- Response: SCAQMD staff believes the language of paragraph (e)(1) is sufficiently clear to limit this BMP to transport trucks delivering raw rendering materials.
72. Comment: If a truck is found without a cover, who will receive the NOV?
- Response: PR 415 is applicable to new and existing rendering facilities that process raw rendering materials; and trap grease wastewater associated with rendering or trap grease processing. The intent of the BMP under PR 415(e)(1) to cover incoming transport vehicles, as well as the requirement for the rendering facility to install signage notifying incoming truck drivers of the requirement to cover incoming trucks is to place rendering facility personnel and independent third-party truck drivers on notice of the requirement to cover incoming loads of raw rendering materials. If rendering facility personnel allow an uncovered truck past the first point of contact at a rendering facility for incoming trucks, such as a guard shack or weigh station, and an SCAQMD inspector witnesses this occur, the owner or operator of the rendering facility would be potentially subject to an enforcement action. The enforcement action could include the issuance of a Notice to Comply (N/C) or a Notice of Violation (NOV), depending on the specific circumstances of the incident.
73. Comment: Specify the type of NOV that would trigger submittal of an OMP. An NOV triggered for odor nuisance is regulated under Rule 402.
- Response: The language of subparagraph (d)(2)(A) limits a notice of violation (NOV) that triggers submittal of an OMP to an NOV issued for public nuisance related to rendering odors under Rule 402.
74. Comment: Add applicability clarifying language as to what confirmed odor events mean. Because an NOV can be triggered by a confirmed odor event, it is important for further clarification on “confirmed odor event”.
- Response: SCAQMD staff believes the definition of confirmed odor event; (i.e. “*the occurrence of an odor resulting in three or more complaints by different individuals from different addresses, and the source of the odor is verified by District personnel trained in odor inspection techniques*”) is sufficiently clear and no clarifying language is necessary. The commenter is not correct in stating that an NOV can be triggered by a confirmed odor event. An NOV is typically not issued for fewer than 6 verified odor complaints.
75. Comment: Add a definition of "transport vehicles". PR 415 does not define "transport vehicles." It is unclear whether transport vehicles include onsite forklifts.

- Response: The intent of the requirements for transport vehicles (BMPs under paragraph (e)(1) and (e)(3)] is not to include forklifts. Forklifts are exempted under subdivision (l).
76. Comment: The receiving area is required to be vented to an odor control device; therefore, it is not necessary for the cargo area transport vehicle to be covered while in the receiving area.
- Response: PR 415 does not require a transport vehicle to be covered while inside an enclosed receiving area that complies with the requirements of subdivision (f).
77. Comment: Farmer John both renders and sends material to be rendered. When material is placed outside in odor sealed containers, the material may be there until picked up by an outside rendering facility. We do not have control the amount of time until the material is picked up. Would we need to build a permanent enclosure for this material, even though it is packaged in an odor proof container?
- Response: The intent of paragraph (e)(2) would be met by placing materials intended to be rendered at another facility into covered containers within 60 minutes after removing these materials from the slaughter or packing portion of the commenter's facility.
78. Comment: Clarify whether BMPs are required to be tracked on a continuous basis. The recordkeeping requirements do not include tracking compliance with the BMP requirements.
- Response: Recordkeeping of BMPs is not required in the staff proposal. Recordkeeping under subdivision (j) is limited to measurements of inward face velocity [paragraph (j)(1)] and odor complaints received directly by a facility [paragraph (j)(2)], in addition to recordkeeping to demonstrate that a facility is eligible for an exemption.
79. Comment: Remove requirement for washing of outgoing transport vehicles.
- Response: Tarping of incoming vehicles is required under paragraph (e)(1). Washing of outgoing transport vehicles is required under paragraph (e)(3).
80. Comment: Revise BMP for holding time of incoming raw materials to "By the end of a standard work shift or within 4 hours after arrival, whichever is less, incoming loads of raw rendering materials to the facility shall be processed in a cooker or placed in a sealed, odor-tight container for temporary storage." It is not known what is the purpose of the condition since difference between a four and six hour standard is based solely on temperature. Any material will quickly be the same ambient temperature.

Response: SCAQMD staff understands that the commenter's facility only renders unusable hog parts at ambient temperature. The purpose of the best management practice under paragraph (e)(5) is to ensure that, before the enclosure standard for a raw material receiving enclosure becomes effective, raw material is not allowed to remain outside for an extended period of time. Note that the staff proposal has been changed from the use of an "odor-tight container" to a "covered container".

81. Comment: The holding time duration requirement may not be appropriate or necessary for all facilities. If a facility receives material at the end of a shift, then they would be required to process (or store) it regardless of when the next shift will take over. The raw rendering material odor is required to be routed to an odor control device; therefore, it is not necessary to implement a time period restriction.

Response: Under paragraph (e)(5), existing rendering facilities subject to PR 415 have three options to comply with the BMP for holding of incoming raw rendering material, including entering the cooking process, being staged in a permanent total enclosure or stored in covered containers. The timing of this BMP is within 4 hours after delivery for material delivered at ambient temperature, or within 6 hours after delivery for material delivered below ambient temperature. Staff feels these three options provide sufficient flexibility for rendering facilities to process potentially odorous incoming raw material at rendering facilities. The commenter is correct in the assumption that once the enclosure standard is effective under PR 415, the enclosure will be vented to odor control equipment, and BMP (e)(2) requiring affected facilities to move material into a raw rendering enclosure within 60 minutes supersedes the requirements of BMP (e)(5). Staff has also provided an alternative standard for an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

82. Comment: Remove "...including but not limited to divots, cracks, potholes and spalling of concrete or asphalt" and rewrite "*all areas of broken concrete or asphalt repaired or repaved to prevent standing water with a surface area greater than one square foot from accumulating. The areas impacted will include raw material receiving area of a rendering facility or the rendering portion of a facility integrated with a slaughterhouse or meat-packing plant where raw rendering materials are unloaded.*" It is the intent of this condition that breaches in the floor material could harbor bacteria which causes odor. The condition is clear regarding the size that this breach would be. As such, there is no need to define broken areas.

Response: SCAQMD staff feels a description of the different types of broken concrete and asphalt (i.e. divots, cracks, potholes and spalling) can only lend clarity to

the requirement. During several visits to the commenter's facility, SCAQMD staff did not note any potholes in the raw material receiving area at the commenter's facility that would require repair. The delivery of raw rendering materials at the commenter's facility is not conducted in an area where potholes are present.

83. Comment: Remove exterior floor drains. Add "Accessible interior floor drains inside the receiving area, collection center or the rendering process area." The requirement may not be appropriate or necessary for all facilities especially integrated renderers.

Response: During SCAQMD staff visits to rendering facilities during the rule development process, staff noted clogged exterior drains in areas other than in raw material receiving areas that created pools of stagnant water. Therefore, it is necessary to include exterior floor drains as well as interior drains under paragraph (e)(11). Please note that collection centers that do not conduct inedible rendering are exempt from the requirements of PR 415 under subparagraph (l)(1)(B).

84. Comment: Remove requirements for inward face velocity. Inward face velocity is based on the size of the opening under Rule 410. Include a sliding scale similar to Rule 410.

Response: The permanent total enclosure standards are based on EPA Method 204, *Criteria for and Verification of a Permanent or Temporary Total Enclosure*. EPA Method 204 establishes several criteria to define a permanent total enclosure for VOC control, including an inward face velocity of at least 3,600 m/hr (200 fpm), and total area of all natural draft openings (routine enclosure openings under PR 415) not more than 5 percent of the surface area of the enclosure's four walls, floor, and ceiling. It also requires the direction of air flow through all routine enclosure openings into the enclosure.

85. Comment: Would a closed system be considered BACT? Would a closed system be considered under USDA (potential for bacterial growth)? Would a closed system be considered under the Fire code, with oil and grease material? Would containing hot grease and solids material in a closed system cause a BLEVE?

Response: As discussed on several occasions with the commenter, the part of the commenter's facility that is currently considered a closed system under the current language of PR 415 is the cooking/pressing operations. In addition SCAQMD staff understands that the commenter intends to propose solutions to the receiving and grinding area to be considered a closed system for purposes of complying with the rule requirements. However, it must be stated that the commenter is responsible for complying with all other codes,

regulations and requirements that the commenter's facility is subject to, including but not limited to fire codes and USDA requirements by local, district, state or federal authorities. If a closed system is not allowed for a certain application under the jurisdiction of another authority, it should not be proposed as a compliance solution under PR 415, and the commenter's facility may wish to instead propose an enclosure that complies with the requirements of subdivision (f).

Regarding the question about whether a closed system would be considered BACT, if PR 415 is adopted, the requirements of the rule could be considered by SCAQMD as well as other districts when a BACT determination is needed for new or modified rendering operations. In future BACT determinations, the requirements of PR 415 may be considered BACT for VOC from rendering operations, since BACT only applies to criteria pollutants. The entirety of the rule requirements would be considered, including closed systems as achieved-in-practice BACT, like the raw material receiving enclosure (vented to odor control equipment) at the Darling Los Angeles rendering facility is considered achieved-in-practice BACT for raw rendering material receiving operations. Therefore, it is possible that closed systems for certain operations will be considered in future BACT determinations.

86. Comment: Include exclusion language for closed systems in a permanent enclosure with odor control equipment. This requirement would be unnecessary if the closed system is enclosed in a permanent enclosure, which is vented to odor control equipment.

Response: PR 415 does not require a closed system to be operated within a permanent total enclosure. Therefore, exclusion language is not necessary.

87. Comment: Conduct an odor study in the community to determine year-long odor concentrations to establish a baseline for any future odor rules to measure.

Response: SCAQMD thanks the commenter for suggesting an alternative approach to the staff proposal. The staff proposal does not include an odor study conducted in the community to determine year-long odor concentrations to establish a baseline for any future odor rules to measure. Instead, the approach PR 415 has taken involves establishing standards SCAQMD staff believes represent the best and most reliable way to control odors from rendering operations. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating unenclosed rendering processes, as the commenter's facility and other rendering facilities currently operate within the City of Vernon. Instead, staff found that the accepted standard for

operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations. See response to Farmer John comment #65.

Regarding the suggestion to establish a baseline for future rules, it is not necessary to establish baseline odor levels because PR 415 does not require specific percent reductions. Instead enclosure, ventilation and odor control system standards, in addition to BMPs reduce the potential for odors. In cases where rendering odors from a facility constitute a public nuisance or trigger three confirmed odor events, an Odor Mitigation Plan will be required.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

88. Comment: A performance warranty or guaranty must be available with the purchase of the control technology and should be used to determine compliance. The community is concerned on how many times per day a system check would be required to ensure that it is working.

Response: During permitting of odor control equipment, SCAQMD staff typically includes a requirement that equipment should be operated according to manufacturer's specifications. If a piece of control equipment, including odor control equipment at a rendering facility subject to the requirements of PR 415 is not being operated in compliance with the manufacturer's specifications during inspection by SCAQMD Compliance staff, a rendering facility can be subject to enforcement action. A typical odor scrubber, if maintained in good operating condition does not require multiple "system checks" per day, as suggested by the commenter to ensure it is in good working order. SCAQMD staff believes a performance test of the odor control device as required under subparagraph (f)(4)(D), along with regular inspections conducted by SCAQMD Compliance staff are sufficient to ensure odor control equipment is reducing fugitive odors from enclosures under PR 415 as it was designed to do.

89. Comment: Clarify conditions to focus specifically on receiving, processing and wastewater. Integrated rendering facilities conduct more varied operations than rendering facilities. The rule's focus is the inedible rendering activities associated with receiving, processing and wastewater discharge.

Response: The areas of an integrated rendering facility that will be subject to PR 415 are clearly spelled out in the rule requirements and no clarifying language is necessary.

90. Comment: Conduct modeling studies in the community to determine the contribution of each facility's odorous sources from rendering so as to determine migration and intensity through plume determination and concentration. Conduct a modeling study in the communities as they relate to the markers to determine the contribution of each facility. Then create an OMP that is site specific based on this assessment. The rule indicates for the first time there is a scientific method to quantify at its source both migration and intensity of each individual facility's odorous emissions. The only question that remains is what the contribution is from each facility.

Response: Staff does not agree that the rule should include site specific odor mitigation plans instead of complying with the standards for permanent total enclosure (or closed system), ventilation system and odor control system. PR 415 establishes best management practices and other requirements that have been used at rendering facilities in the United States to reduce odors. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating unenclosed rendering processes, as the commenter's facility and other rendering facilities currently operate within the City of Vernon. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

The commenter is not correct in the statement that the rule indicates there is a scientific method to quantify at its source both migration and intensity of each individual facility's odorous emissions. The comment appears to be referring to the staff proposal establishing marker compounds for the express purpose of verifying compliance with the control efficiency requirements for an odor control device under paragraph (f)(5). If that is the context in which the statement is made, the commenter should be cautioned that marker compounds are not to be viewed as surrogates for odors in the areas surrounding the Vernon rendering facilities. Marker compounds were introduced in the staff proposal for the very limited purpose of verifying compliance with control efficiency requirements, and should not be used in any other way. See response to Farmer John comment #65.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

91. Comment: Restructure Odor BMP section to be implemented as applicable for each individual facility based on cost of implementation and reduction effectiveness of potential odors. Allow facilities to implement site-specific SCAQMD-approved OMPs and eliminate the current rule conditions that required all applicable BMPs to be implemented. The OMP is the appropriate method for implementing the BMPs because each facility can incorporate the BMPs that are most appropriate based on the effectiveness of odor control and cost of implementation. The OMP allows for affected facilities to implement different BMPs if the prescribed BMPs are not sufficient or are ineffective.

Response: SCAQMD thanks the commenter for suggesting an alternative approach to the staff proposal. Unfortunately, the commenter's proposal does not include timely enclosure of odorous operations at a rendering facility as the staff proposal does. As the commenter is well aware, having participated in numerous discussions during the rule development process, the approach PR 415 has taken involves establishing standards SCAQMD staff believes represent the best and most reliable way to control odors from rendering operations. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating unenclosed rendering processes, as the commenter's facility and other rendering facilities currently operate within the City of Vernon. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

Implementation of all applicable BMPs is part of the staff proposal, rather than allowing each facility to choose selected BMPs. In the commenter's case, applicable BMPs do not include those targeted to batch cooking operations. In addition, under paragraph (e)(12), a rendering facility is allowed to use an alternative BMP that meets the same objective the BMP it replaces, upon approval.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

92. Comment: Make odor complaints public by publishing on the AQMD website. Provide name, address, phone number and other identifying information so as to be used in assessing and remediating the situation. There should be no anonymity when the public is providing information that could be

detrimental (e.g. slander). There is no procedure for District inspectors to verify an odor complaint. It is imperative a procedure is developed.

Response: SCAQMD investigates air quality complaints to determine possible sources of air contaminants and whether the emission of such contaminants violates applicable air quality rules and regulations and/or permit conditions designed to protect public health. Any member of the public may allege any facility as the source of nuisance odors, but SCAQMD Compliance inspectors are required to witness and confirm the odors in the presence of “a considerable number” of complainants and trace the odors back to the operation of a unique source to prove a violation of SCAQMD Rule 402 – Nuisance.

Complainants are not required to provide their names or contact information when they make a complaint to SCAQMD. Complainant contact information, when provided to SCAQMD, is not released to alleged sources, other facilities, or the public but remains confidential for internal use only by SCAQMD staff, except where required to be disclosed in an enforcement action. Such information helps inspectors identify possible upwind sources of air contaminants based on the complainant’s location and determine whether odors can be detected and verified at that location in the complainant’s presence.

Unless an inspector can detect and verify an odor of at least six complainants from separate households who have provided sufficient contact information for follow-up, then trace that odor back to the operation of a specific facility, no enforcement action can be taken against that facility for creating a public nuisance.

Some alleged sources of air contaminants solicit direct community feedback by posting their own complaint line phone number on signage visible by the public at their facility perimeter. This enables complainants to voice air quality concerns directly to facility personnel who may be able quickly to address and remedy any problems they may find on site. The commenter may wish to consider this option, but is advised that even when facility complaint lines are available, complainants always have the option of reporting air quality complaints to SCAQMD.

93. **Comment:** Clarify the recordkeeping requirements. Proposed recordkeeping will not address the problem of determining migration and intensity without similar data collected at the source of the complaint.

Response: The limited recordkeeping as proposed under paragraph (j)(2) is not intended to correlate conditions at a complainant location with conditions at a rendering facility. It is intended to capture the conditions at the rendering facility when a complainant makes a complaint directly to a

rendering facility. SCAQMD staff believes most complaints will contact the SCAQMD using the primary contact number on an odor complaint contact sign (i.e. 1-800-CUT-SMOG). When a rendering facility receives a complaint directly through the secondary (facility) contact number, the recordkeeping requirement under paragraph (j)(2) ensures there will be a record of the contact.

94. Comment: The April 1, 1972 Waste Water Ordinance from the Los Angeles County Sanitation District, SECTION 406 - PROHIBITED AND RESTRICTED WASTE DISCHARGES states that they have jurisdiction over wastewater as a public nuisance and contains materials that adversely affects air quality. Because Clougherety Packing, LLC's rendering plant in the City of Vernon has a wastewater permit that predates the SCAQMD, this codified condition should be the one Waste Water permit holders would have to comply, not any other Agency. The wastewater requirement under odors from rendering should be removed from PR 415(l)(2). Among the seven rendering facilities as identified by Los Angeles as operating in Vernon, CA (Darling is partial since only the garage portion sits on the City of Vernon's jurisdiction), there are at least two integrated renderers in Vernon and many throughout the SCAQMD that this rule is going to impact. Therefore, to capture all integrated renderers we would need to clarify the language by removing "facility integrated with a slaughterhouse or meat-packing plant to "integrated rendering facility."

Response: SCAQMD staff disagrees with the commenter's implication that Section 406 of the Sanitation Districts...Ordinance states that they have *exclusive* jurisdiction over wastewater as a public nuisance. Section 406 specifies, in pertinent part, that any discharge to the Sanitation Districts' sewerage systems which may otherwise endanger the public, the environment, or create a public nuisance is a violation and the discharger shall be subject to enforcement. Section 406 further specifies no person shall discharge or cause to be discharged to the Districts' sewerage systems, any wastes which adversely affect air quality, or place the Sanitation Districts in noncompliance with any standard or regulation promulgated by the SCAQMD. See http://www.lacsd.org/wastewater/industrial_waste/iwordinances/wastewater_ordinance.asp. The District's legal authority to adopt and enforce PR 415, including requirements for wastewater associated with rendering processing derives, in part, from Health and Safety Code section 41700. City and county agencies may adopt air pollution rules that are stricter than those adopted by SCAQMD (Health & Saf. Code §40449) but otherwise do not have authority over air pollution control. Health & Saf. Code §40450. Therefore, the existence of LA County Sanitation Districts regulations has no effect on the SCAQMD's authority to adopt PR 415. The District's authority granted by Health and Safety Code section 41700 to protect the public's comfort and health and safety includes the regulation of facilities

in order to prevent the discharge of odors before they cause nuisance or annoyance to the public. SCAQMD staff disagrees with the commenter that the wastewater requirement under odors from rendering should be removed from PR 415(1)(2). SCAQMD has conducted multiple on-site inspections of rendering plants in the District and has observed through these inspections that the wastewater treatment systems at the plants are a significant source of odors. SCAQMD staff has detected rendering odors during onsite inspections at rendering plants coming from wastewater treatment systems that have the potential to create odor nuisances in the surrounding community, especially when combined with odors from other rendering operations and from nearby rendering plants. The language under exemption (1)(2) is not intended to capture all integrated rendering facilities, as the commenter suggests.

95. Comment: Clarify the definition by removing “40 volumes of” and include “process water.”

Response: The intent of the exemption under paragraph (1)(2) is to allow wastewater from other parts of the facility at an integrated facility to be used to dilute rendering wastewater. Staff is using the term “wastewater” to indicate water that passes through the wastewater treatment plant from all operations at a facility (whether at facility that only performs inedible rendering, or at an integrated rendering facility), and to differentiate wastewater from fresh water; thereby preventing a facility from using fresh water to dilute rendering wastewater. In this context, “process water” is considered to be wastewater. See response to Farmer John comment #96 also.

96. Comment: Remove “has an average chemical oxygen demand (COD) lower than 1500 mg/L, based on not less than 5 calendar years of sampling data.” It is unknown how 1500 ppm COD relates to contributing to a public nuisance.

Response: In response to comments, the exemption in the staff proposal under paragraph (1)(2) has been changed to: *“Wastewater treatment operations at a facility integrated with a slaughterhouse or meat-packing plant shall not be subject to the enclosure requirement of subdivision (g), provided each volume of rendering wastewater is diluted with more than 30 volumes of wastewater from other sources within the facility or, after such mixing, any wastewater exposed to the atmosphere has an average chemical oxygen demand (COD) lower than 3000 mg/L, based on the most recent three year average sampling data, which shall be made available to the Executive Officer upon request.”*

97. Comment: Clarify the definition to include “40 volumes of process water”. Wastewater at a minimum may contain oil and grease (especially at a meat packing/slaughtering processes), that have high fats, oils and greases which could create a hazard if it is in an entirely closed system which may cause a

BLEVE situation prior to DAF wastewater treatment in which any hazard would be removed. Would a sludge blanket that forms due to a properly working Dissolved Air Floatation system be considered a cover since the waste water itself is not being exposed to the elements?

Response: For exemption (1)(2), SCAQMD staff is using the term wastewater to describe all water that is processed through the commenter's wastewater treatment plant. If the commenter will dilute rendering wastewater with other wastewater that is high in fat content in an entirely closed system that would create a boiling liquid expanding vapor explosion (BLEVE) situation, the proposed exemption is not appropriate and the commenter's facility should instead comply with the requirements of subdivision (f) for a permanent total enclosure. A sludge blanket that temporarily forms on the top of a dissolved air flotation (DAF) tank is not considered to be a closed system under subdivision (g).

98. Comment: Civil Code Section 3482.6 (The Right to Farm Act) specifically includes rendering plants and meat processing plants in the definition of agricultural activity. It also exempts agricultural processing facilities and rendering plants from nuisance rules if the nuisance is due to changed conditions that occur after an agricultural activity has been in continuous operation for more than three years so long as it was not a nuisance at the time it began operation. If the above conditions are met and the rendering facility is operating within the limits of its SCAQMD permit and the SCAQMD receives odor complaints, the SCAQMD has no authority to take an enforcement action against the facility. Creating this rule to reduce odors would be circumventing and undermining Civil Code Section 3482.6?

Response: SCAQMD staff disagrees with the commenter that the SCAQMD has no authority to take an enforcement action against rendering plants and creating PR415 to reduce odors would be circumventing and undermining Civil Code section 3482.6, for the reasons expressed in staff's response to Baker Commodities comments #37 and #59.

99. Comment: Clarify the purpose to be consistent with the definitions of "odor" and "collection center". Reword the purpose statement to read as follows, "*The purpose of this rule is to reduce perceived odors from facilities licensed to render animals and animal parts from reaching the nearby communities.*"

Response: The definition for odor is similar to the definition of aroma under ASTM E253 in relating it to the perception of an odor. Collection center is defined specifically to provide an exemption under subparagraph (1)(1)(B). The purpose of PR 415 is to reduce odors from rendering operations at a rendering facility so the requested change was not made.

100. Comment: Clarify the meaning of "Process" to include combustion contaminants.

- Response: Combustion contaminants are outside the scope of PR 415. Therefore, there is no need to specifically include combustion contaminants in the definition of 'process'.
101. Comment: Definition for Continuous Cooker has been deleted and did not indicate whether supporting equipment falls under the continuous cooker definition. Some continuous cookers may include operating periods with varying speeds or partial interruptions. Revise to: *“CONTINUOUS COOKER means a cooking vessel used for rendering where the raw material flows through the system at a constant or varying speed with limited interruption. It does not include supporting equipment or vessels, such as entrainment tanks.”*
- Response: Since the rule requirements for PR 415 do not specifically refer to a continuous cooker, no definition is provided in the proposed rule language. Supporting equipment or vessels, such as entrainment tanks are subject to the requirements for a permanent total enclosure or closed system.
102. Comment: “Licensed rendering plant” is not defined. Farmer John is licensed as a food processor. According to Civil Code section 3482.6, licensed rendering plants, processing of meat and egg products are considered “Agricultural processing operation.” Further, existing law authorizes the Secretary of Food and Agriculture in lieu of any civil action and lieu of seeking prosecution to levy a civil penalty against a person who violates certain of these provisions, or any regulation adopted in an amount not to exceed \$1,000. Finally, Health and Safety Code section 41704 states that nuisance odors do not include agricultural operations. The definition of “Collection Center” and “Rendering Operations” in PR 415 should be refined.
- Response: “Licensed rendering plant” in PR 415(c)(3) refers to rendering plants licensed pursuant to Food and Agricultural Code section 19300. SCAQMD staff agrees with the commenter that Farmer John’s rendering plant in the City of Vernon is an “agricultural processing activity, operation, facility” under Civil Code section 3482.6. Pursuant to Health and Safety Code section 42403, the SCAQMD may bring a civil action in the name of the People of the State of California to enjoin any violation of Part 4, Division 26 of the Health and Safety Code, or of any SCAQMD order, rule, or regulation and to seek civil penalties for violations pursuant to Health and Safety Code, sections 42401, 42402, 42402.1, 42402.2, 42402.3, and 42402.4. SCAQMD disagrees with the commenter that Health and Safety Code section 41704 states that nuisance odors do not include agricultural operations. Health and Safety Code section 41704 states in relevant part, that restrictions on discharges into the atmosphere under Health and Safety Code section 41701 do not apply to agricultural operations and the use of other equipment in agricultural operations necessary for the growing of

crops or raising of fowl or animals. Health and Safety Code section 41701 defines prohibited discharges as obscuring an observer's view to a degree equal to or greater than smoke, or as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart. Health and Safety Code sections 41701 and 41704 do not reference odors or nuisance, and do not exempt agricultural operations from odor nuisance violations. Please see the response to Farmer John comments #54 and #59, regarding the definition of “collection center” under PR 415(l)(1)(B), and PR 415’s “Rendering Facility” definition. If the commenter meant to refer to H & S C Section 41705 instead of 41704, please see Response to Farmer John comment #32.

103. Comment: What “odorous compounds” are being referred to in the collection efficiency definition?

Response: The control efficiency definition refers to odorous compounds in an odor control system.

104. Comment: The intent of the Receiving Area is to define it as an odor generation source activity. To make the definition of Civil Code section 3482(e)(1) consistent, then the definition needs to incorporate agricultural processing activity, operation, facility or appurtenances thereof that is conducted or maintained for commercial purposes. Refine the definition of odor generating source to the State’s definition in regards to rendering.

Response: It is assumed that the commenter is referring to the definition of “Agricultural processing activity” under Civil Code Section 3482.6(e)(1), which includes rendering plants. SCAQMD staff disagrees with the commenter that the Right to Farm Act contains any definition of odor generating sources. The District’s authority granted by Health and Safety Code section 41700 to protect the public’s comfort and health and safety includes the regulation of facilities in order to prevent the discharge of odors before they cause nuisance or annoyance to the public. PR 415’s “Receiving Area” definition is not inconsistent with the State law definition for rendering plants.

105. Comment: The intent of rendering is to define it consistently with the California / Food and Agricultural Code - FAC / ARTICLE 1. Definitions [19200. - 19216.] / Section 19213. "Pursuant to Rendering" means all recycling, processing, and conversion of animal and fish materials and carcasses and inedible kitchen grease into fats, oils, proteins, and other products that are used in the animal, poultry, and pet food industries and other industries. This definition was used in the previous draft of PR 415. Refine "Rendering" definition so as to be consistent with State Law’s definition of rendering.

Response: SCAQMD staff agrees with the commenter that the November 18, 2014 version of PR 415 defined “Rendering Operations” according to Food and

Agricultural Code section 19213. The definition of “Rendering” in PR 415(c)(19), June 23, 2015 version, was made more general following requests from other stakeholders. PR 415’s “Rendering” definition is not inconsistent with the State law definition for rendering operations.

106. Comment: 24 months may be unrealistic for timing requirements for permanent enclosure (d)(1)(B)(iii) and venting to odor control equipment (d)(1)(C)(ii). Timing for these requirements should be based on approval to construct/build by local building permitting agency.

Response: SCAQMD staff disagrees with the commenter’s statement that 24 months may be unrealistic for timing requirements for construction of a permanent total enclosure and venting to odor control equipment. The 24 month deadline is following the issuance of a Permit to Construct from the SCAQMD to the facility. The facility should also timely submit any permits required by their local building permitting agency to coordinate with the SCAQMD’s permitting process.

107. Comment: There are more than 5 rendering operations in the Basin (Stiles in Ontario, Co-West Commodities in San Bernardino). Include all renderers.

Response: Neither Stiles Animal Removal nor Co-West Commodities conduct inedible rendering, and therefore do not meet the applicability criteria for PR 415.

108. Comment: The SCAQMD staff report does not include modeling data to show how far rendering odors travel.

Response: Please refer to response to Farmer John comment #65.

109. Comment: Remove the wastewater enclosure requirement for integrated rendering facilities.

Response: As discussed with the commenter, an exemption is provided under paragraph (1)(2) specifically exempting wastewater operations that meet certain criteria.

110. Comment: For paragraph (i)(2), remove “after receiving the odor complaint or after facility personnel” and add “first contact became aware of the complaint.”

Response: Since the requirement under paragraph (i)(2) does not require a contact person at a rendering facility to be listed on the odor complaint contact sign, the obligation falls to the facility personnel that took the odor complaint. Therefore, it is appropriate to say “facility personnel” instead of “first contact”).

111. Comment: Clarify language in the staff report regarding the date the permanent enclosure and odor control equipment standards become effective.
- Response: This change has been made.
112. Comment: What does affected facility mean in the staff report?
- Response: Affected facility means a facility subject to the requirements of PR 415.
113. Comment: Remove the time limit to enclose raw materials within an odor-tight container within 60 minutes.
- Response: Paragraph (e)(2) has been amended in the latest language of PR 415 to read: *“After the date a permanent total enclosure is required under clause (d)(1)(B)(iii), the owner or operator shall ensure incoming raw rendering materials are transferred into the permanent total enclosure pursuant to subdivision (f) or into covered containers.”* Note that the staff proposal has been changed from the use of an “odor-tight container” to a “covered container”.
114. Comment: What ASTM Standard do SCAQMD inspectors use to verify an odor complaint?
- Response: Other comments have addressed ASTM E679, used to establish odorant detection thresholds (ASTM E679) and ASTM E544, used to match the concentrations of odorants to scaled odor intensities.
- Odor verification requires that inspectors first confirm, in the complainant’s presence, that the qualitative character of the odor they themselves detect matches that of the odor perceived and described by a complainant. Once the odor character is confirmed, the odor is traced to its origin through a process of upwind/downwind surveillance that rules out other possible sources. Inspectors also ask complainants to rank the intensity of the odor they detect on an ordinal scale from 1-5. Scaled odor intensity also appears to represent the hedonic quality of the odor perceived by the complainant; in general, odors ranked higher on the scale evoke a more negative response and are a surrogate for the level of annoyance or discomfort the odor creates for the complainant. Scaled intensity values also provide a means by which complainants can indicate the relative intensities of odors perceived at different times. This information coupled with meteorological data can also help the inspector locate the likely or actual source of odors.
115. Comment: Put a moratorium of 10 years on any rule amendments to PR 415.
- Response: It is not appropriate for staff to include such a commitment because staff cannot restrict any future Board action. A moratorium could also be a

detriment to industry if a rule amendment was needed that would have a positive effect for the facilities under the rule.

116. Comment: Eliminate the requirement for odor control equipment until it is proven that it is needed.

Response: The requirement for odor control equipment is necessary once a permanent total enclosure is installed. A permanent total enclosure acts as containment for odors that can escape from the cooker, presses and centrifuges, as well as fugitive odors that are not currently addressed by Rule 472 (i.e. from raw material receiving area, processing equipment, wastewater treatment). Unless these odors are collected in a ventilation system and routed to odor control, they will escape from the permanent enclosure as fugitive odors through building ventilation releases. Hence, the requirements for a permanent enclosure and odor control equipment are linked in the rule and the timing for these standards to become effective is coincident. However, staff has also provided an alternative standard for a permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

117. Comment: Specify anemometer reading frequency in paragraph (j)(1).

Response: A specific frequency for anemometer readings taken by facility personnel to verify the inward face velocity standard under subparagraph (f)(3)(B) is not stated in the recordkeeping requirement under paragraph (j)(1). SCAQMD inspectors will verify the inward face velocity during inspections. However, these readings are required under PR 415 to allow an SCAQMD inspector to compare readings taken by rendering facility personnel with readings as determined by the inspector. Under the proposal facility operators are allowed to determine the appropriate frequency to take such readings.

118. Comment: PR 415 was rushed and does not account for stakeholder comments. Stakeholders have to wait for the final staff report for response to comments. Allow sufficient time for feedback.

Response: PR 415 has gone through 3 major revisions to accommodate many of the comments made by stakeholders in the rule development process. SCAQMD has complied with all legal requirements for noticing and staff has done its best to release new language in sufficient time to allow stakeholder review prior to working ground meetings. The due date has been extended for submittal of comments based on industry requests. Regarding the comment that stakeholders need to wait for the final staff report for formal, written responses to comments; staff provided responses to many comments in the revised preliminary draft staff report released in June 2015. It is more typical during rulemaking for a written response to

comments to be provided in the draft of the staff report that is provided for the Board Hearing on the proposed rule. In addition, the schedule for this proposed rule to be considered by the Governing Board has been extended. PR 415 was originally scheduled to be heard in May 2015. That schedule was moved back to June 2015 and then October 2015 due to comments from stakeholders requesting more time for rule development. It is now scheduled for hearing by the Governing Board in November 2017.

119. Comment: Blood meal is used for animal feed. Include animal feed in the description under “The Rendering Process” in the staff report.

Response: Blood meal has been added as one of the solid proteins that is used to manufacture animal feed.

120. Comment: Remove the statement regarding rendering odors being detected up to 20 miles from rendering plants. This statement is not reflective of current situations.

Response: The statement clearly refers to “*untreated rendering plant emissions*”, and research from the early 1970s. It is intended to convey the idea that rendering odors can be detected for great distances. Since the time period for the research is stated and the statement is qualified by referring to untreated odors, SCAQMD staff feels it is appropriate to include this statement in the staff report.

121. Comment: Remove the statement “*It is often difficult to complete this process during an odor event while the odors are still present, assuming that a facility source can even be identified. Due to the very long distances rendering odors can travel and the proximity of the five Vernon area facilities relative to one another, it is often not possible to pinpoint a single facility as the source of odors.*” from Findings of Public Nuisance section in Chapter 1 of the staff report. This is an assumption not verified by data.

Response: In support of this request to remove the statement, the commenter presents summary data of all confirmed odor complaints as a percentage of the total number of odor complaints received by SCAQMD from 2002 to 2014. SCAQMD staff believes use of the overall data set is not appropriate to make the commenter’s point. Furthermore, odor complaint verification is much more straightforward for most sources of odor in the summary data, where verification is not thwarted by having five facilities in the same industry in close proximity to each other. The nature of odors from other industrial processes are not comparable to rendering odors, which can be detectable at low concentrations for miles.

122. Comment: The effective implementation of Rule 402 renders PR 415 unnecessary. If SCAQMD believes that odor from rendering plants result in public nuisance

events, then SCAQMD must either enforce Rule 402 or revise Rule 402 such that SCAQMD can enforce the existing regulation effectively.

Response: PR 415 is not changing the policy for when an odor nuisance NOV is issued, instead the rule is defining a separate and distinct “confirmed odor event.” Submittal of an Odor Mitigation Plan (OMP) under PR 415 is not enforcement action. The purpose of an OMP is to establish practices and requirements to reduce odors from rendering facilities. PR 415’s definition of a confirmed odor event does not conflict with District Rule 402, both rules require an investigation into the source of the odor. However, regardless of a nuisance or “Confirmed Odor Event,” new and existing facilities may still have to implement Best Management Practices (BMP), operate in a closed system or permanent total enclosure, or install odor control equipment. Please also refer to responses to Baker Commodities comments 38 & 43.

123. Comment: No evidence has been provided that alleged rendering odors have travelled past the facility boundary, much less the City of Vernon boundary.

Response: Odors typical of rendering facilities were noticeable at a number of locations surrounding Vernon during SCAQMD staff visits to the rendering facilities. SCAQMD staff detected rendering odors on the Farmer John property near the rendering facility and the same odors after leaving the property. Staff believes these odors are real and they are impacting the quality of life for residences and commercial employees in the communities surrounding Vernon. For these reasons, the approach PR 415 has taken involves establishing equipment and operational standards SCAQMD staff believes represent the best and most reliable way to control odors from rendering operations. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

124. Comment: Texas only imposes odor control on rendering facilities for new facilities and changes to existing facilities that result in increased throughput. Make PR 415 consistent with other state’s provisions.

- Response: PR 415 is applicable to new and existing facilities, due to the need to impose a basic standard of operation on rendering facilities operating in an urban setting.
125. Comment: Remove assumptions of health impacts coming from rendering facilities since they are not supported by facts.
- Response: District staff disagrees with the commenter's statement that assumptions of health impacts coming from rendering facilities is not supported by facts. The statements in the staff report are references to published articles from experts in the field. As such, any conclusions drawn in these articles are not 'assumptions', but the opinions of the authors based on their respective fields of research
126. Comment: Develop an odor panel-based approach in lieu of the current marker-compound based approach.
- Response: The staff proposal establishing marker compounds is used for the express purpose of verifying compliance with the control efficiency requirements for an odor control device under paragraph (f)(4). Marker compounds are not to be viewed as surrogates for odors in the areas surrounding the Vernon rendering facilities. Marker compounds were introduced in the staff proposal for the very limited purpose of verifying compliance with control efficiency requirements, and should not be used in any other way. Regarding the suggestion to develop an odor panel-based method, the approach PR 415 has taken involves establishing equipment and operational standards SCAQMD staff believes represent the best and most reliable way to control odors from rendering operations. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.
- *The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.
127. Comment: PR 415 does not account for other controls and best management practices (BMP's) for ensuring odors are removed. PR 415 would create duplication of procedures and records and will require prescriptive and costly changes in existing odor control programs.

- Response: The requirements of PR 415 establish a consistent approach to odor control at rendering facilities and a basic level of odor control to new and existing rendering facilities. Staff has made efforts to avoid duplication of recordkeeping and worked with rendering facility operators to modify rule language so that costs are minimized
128. Comment: Applying a “one-size fits all approach” to controls does not accommodate existing effective systems already in use at our facility.
- Response: Regarding the comment on applying a “one-size-fits-all” approach, please see response to Vernon Chamber of Commerce comment #6.
129. Comment: If PR 415 is implemented, the new regulation will become administratively burdensome for both regulatory and operator.
- Response: The recordkeeping requirements of PR 415 are limited by intent, specifically to prevent administrative burden on a facility. The recordkeeping requirements under subdivision (j) are limited to anemometer readings taken by facility personnel to verify compliance with inward face velocity, a record of odor complaints that a facility receives directly, and records to demonstrate a facility qualifies for an exemption under subdivision (l). SCAQMD staff does not believe these requirements are burdensome.

Responses to Teamsters Joint Council 42 Letter

1. Comment: Should PR 415 be enacted in its present state, it will have severe effects on rendering facilities operating in the City of Vernon, as well as on the men and women who work at these facilities. Vernon’s rendering industry has created an economic web of union jobs and wages that will be disastrously affected should PR 415 become law.
- Response: SCAQMD staff disagrees with the assessment of the economic impacts on the rendering facilities subject to PR 415. Of the five rendering facilities subject to PR 415, one has already submitted permit applications for an enclosure and odor control equipment that will meet the permanent total enclosure, ventilation system, and odor control equipment standards in the proposed rule. Two other facilities have indicated their anticipated compliance with the rule requirements. Of the two remaining facilities, one will be able to take advantage of an exemption from enclosure for their process. SCAQMD staff has taken every opportunity to work with the remaining facility to address their concerns and extremely high cost estimates. Costs for all five of the rendering facilities are addressed in the socioeconomic impact analysis that accompanies PR 415. SCAQMD has worked diligently with all the rendering facility operators that chose to

engage in meaningful cooperation with staff, in order to minimize costs where possible.

2. Comment: On the basis of 350 citizen complaints over a decade, SCAQMD has created PR 415. PR 415 aims to stop those complaints by creating a set of regulations meant to contain odors escaping facility properties.

Response: As described in the staff report, frequent and pervasive rendering odors were a key issue identified in the pilot Clean Communities Plan for the areas in and around Boyle Heights. In addition, many SCAQMD staff have experienced the distinctive rendering odors when visiting the rendering plants and other facilities in the area. The commenter is correct in assuming that the proposed requirements of PR 415 intend to contain fugitive odors that currently escape facility boundaries and create potential odor nuisance issues in the communities surrounding Vernon.

3. Comment: SCAQMD created a “one-size-fits-all” regulatory package that does not account for production and material differences. Because the costs are currently estimated in the tens of millions, rendering companies will be forced to lay off a portion on the workforce or shut their plants and go out of business.

Response: SCAQMD staff proposes requirements for PR 415 after researching operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating unenclosed rendering processes. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

Regarding the commenter’s assessment that costs are estimated in the tens of millions of dollars and rendering companies will be forced to lay off a portion on the workforce or shut their plants and go out of business, the commenter should be advised that costs for all five of the rendering facilities are addressed in the socioeconomic impact analysis that accompanies PR 415. The estimate of costs is based on industry-related cost estimates and is nowhere near tens of millions of dollars.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

4. Comment: Allow each company to create its own Odor Management Plan and set it in practice. SCAQMD inspectors would monitor the success or failure of each facility and plan. Should a significant number of complaints be verified and traced to a single rendering facility, that company would need to enact the Best Practices or physical alterations. If initial strategies prove ineffective, a second, more stringent level of would need to be completed by the company. Enclosing a rendering company's entire operation would be the last solution, not the first, in order to prevent job losses in the hundreds.
- Response: Staff did not take this approach for the proposed rule in part because requiring individual plans would not allow for the discussion of requirements in a public process. The proposed rule has undergone a full public process and all stakeholder input has been considered. Staff believes an enclosure or closed system is the most effective and still reasonable method of reducing odors.
- The SCAQMD Governing Board will consider the proposal and has the option to adopt the staff proposal, make modifications, or decline to take an action. Should the rule be adopted, the facilities that will be subject to the rule will have certainty as to what will be required. The process for submittal of individual plans by each facility would undergo review by staff and there could be some inconsistency between requirements for different facilities.
5. Comment: The Teamsters hope the SCAQMD will allow whatever time rendering companies request, even if the vote does not occur on the proposed date of May 1, 2015.
- Response: Due to comments from the Teamsters and others calling for more time to work with rendering facilities, the Board hearing for PR 415 was delayed 5 months, to October 2, 2015. The current schedule for Governing Board consideration is November 2017.

Responses to Kirst Pump, Urban Legend Public Relations, and PromoShop Promotional and Marketing Services

1. Comment: Our company is concerned about PR 415 and the impact it will have on businesses. If PR 415 is enacted in its present state it will have severe effects on rendering facilities operating in the City of Vernon, on the men and women who work at these facilities and those that supply rendering companies with materials and services. Vernon's rendering industry has created an economic web of union jobs and wages that will be disastrously affected should PR 415 become law
- Response: Thank you for taking the time to comment on this proposed rule. SCAQMD staff shares your concern about the employees at these facilities and those

who supply rendering companies with materials and services. However, staff disagrees with your assessment of the impact that PR 415 will have on rendering facilities, for the reasons discussed in responses to other commenters.

2. Comment: We implore SCAQMD to suspend rulemaking to allow stakeholders to develop comments, identify issues and offer alternative solutions. We request an additional 8 months to allow parties to carefully study PR 415.

Response: SCAQMD delayed the Board hearing for PR 415 by 5 months, to October 2, 2015, in order to give stakeholders in the rule development process the opportunity to express their concerns about the proposed rule requirements, offer alternative suggestions for a rule approach and work with SCAQMD staff to minimize costs for compliance with the proposed requirements. The current schedule for Governing Board consideration is November 2017.

Responses to City of Vernon Letter

1. Comment: The problem of rendering odors has been an issue for many decades. Many of the existing rendering plants established their locations away from residential areas years ago and encroachment by homes into nearby neighborhoods has placed them closer to the source of the odors, by no fault of the rendering community.

Response: The SCAQMD staff thanks the City of Vernon for acknowledging that odors from rendering facilities have been an issue in the communities surrounding Vernon for many decades. However, staff has determined that these facilities were surrounded by commercial and residential uses at least by 1993. SCAQMD does not have any authority over land use decisions but has the responsibility for air quality in the South Coast Air Basin. The purpose of the proposed rule is to reduce rendering odor problems in the surrounding communities.

2. Comment: Allow rendering plants and local regulatory agencies (CUPA, LEA, Planning Dept., etc) to have flexibility in implementing odor management plans and working on effective remedies for each site, and not jumping to a 36 month compliance date.

Response: SCAQMD staff remains available to consult with rendering facilities as well as facilities of other odorous operations on the best way to contain or control odors from their facility. SCAQMD staff assumes the City of Vernon LEA is also available to consult with regarding odor reduction activities at rendering facilities. Regarding the 36 month compliance date, the commenter refers to an early version of the staff proposal for PR 415: the requirement for a permanent total enclosure over certain odorous operations at a rendering facility in the current version of PR 415 is likely to be more

like 3½ to 4 years, as the trigger for compliance with the enclosure requirement is based on issuance of a permit from SCAQMD.

3. Comment: Find remedies to fund total enclosure plans for facilities that show a need for financial assistance.

Response: SCAQMD staff investigated sources of supplemental funding, but was not able to identify a source of funding for financial assistance to rendering facilities for enclosure costs. However, staff will continue to investigate sources of possible funding in order to be able to accommodate this request.

4. Comment: Develop a method to qualitatively quantify and measure odors in order to legitimize and scientifically identify the problem. Nuisance problems are not necessarily public health issues.

Response: Early in the rule development for PR 415, SCAQMD staff considered a quantitative approach to assessing odors from rendering facilities. For reasons discussed in the staff report; namely, limitations with the current science with regard to quantifying specific chemical compounds, staff took a different approach. Instead of pursuing quantitative methodology, staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

Regarding the comment on nuisance problems not necessarily being health issues, staff believes that for many people, unpleasant odors do cause health effects such as nausea and headaches. Further information on health effects is contained in the staff report.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

5. Comment: Emphasize the odor mitigation plan concept first, over building a total enclosure at the site, and allow the local enforcement agency authority to be the primary regulator.

Response: SCAQMD staff thanks the commenter for suggesting an alternative approach to the staff proposal. Unfortunately, SCAQMD staff believes the commenter's proposal to submit an odor mitigation plan instead of containing fugitive sources of odors and routing them to odor control

equipment falls short of the steps necessary to control odors from rendering facilities and reduce odor problems in the communities surrounding Vernon. In particular, the commenter's suggestion does not include a requirement for timely enclosure of odorous operations at a rendering facility as the staff proposal does. SCAQMD staff believes the approach represented by the PR 415 proposal is necessary in order to ensure containment and reduction of fugitive odors from certain odorous processes at a rendering facility. An odor mitigation plan-first approach does not provide the same certainty.

6. Comment: Consider other mitigation methods of odor control to reducing odors (such as quantity restriction when exceeding odor limits, and mist controls).

Response: For reasons discussed in other comments, SCAQMD staff does not believe developing odor limits as suggested by the commenter is a practical suggestion. In addition, every rendering facility already has multiple throughput limits in their SCAQMD-issued permit, and SCAQMD staff does not believe such a correlation between throughput limits and odors that may migrate offsite from a rendering facility exist.

7. Comment: Consider other AQMD data to model air dispersion from each site to the nearest receptors (residential units) and determine how they may effect odors and different times of the day.

Response: In order to conduct dispersion modeling, it is necessary to first understand the chemical makeup and source strength of odors. As discussed in the staff report, more than 100 chemical compounds have been identified in rendering odors. Modeling requires input of an initial concentration for each chemical compound, which may not be possible to obtain. Many of these compounds do not have established methods for collection, speciation and analysis. Many do not have established odor detection thresholds. For these reasons, it is not currently possible to identify the exact chemical makeup of rendering odors using existing science, and therefore to establish initial concentrations for modeling. In summary, staff does not believe the existing science and technology allows for the suggested modeling approach to be implemented.

However, SCAQMD staff does believe that rendering odors are distinctive and unmistakable as a whole, even if existing science does not allow chemical compounds that make up these odors to be quantified. For this reason among others, staff has elected to follow the approach in PR 415 of establishing enclosure and closed system standards, building ventilation standards and odor control equipment standards. The staff proposal contains odor reduction requirements, including: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. Staff believes this approach

represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

8. Comment: No consideration is given to adverse effects if rendering facilities which fail to meet compliance requirements are forced to close and stop doing business (CEQA?)

Response: Please refer to the response to comments 1.0-1 and 1.0-4 in addition to Master Response #2 for the letter from the City of Vernon dated August 3, 2015 commenting on the Draft Environmental Assessment.

9. Comment: No consideration is given to the effects if rendering facilities close as to the effects on AB 939 in landfills, additional greenhouse gases emitted due to longer driving to landfills, using landfills to take unrendered carcasses; and moving rendering odor problems to landfills. Further discussion with CalRecycle staff and the effects this would have on solid waste disposal would be recommended.

Response: See response to Farmer John comment #26.

17. Comment: Consideration for other odor causing industries should follow using the same guidelines (what about odor complaints from fast food restaurants, farms, food processing plants, etc?)

Response: While there are a number of other industries that have significant numbers of odor problems, SCAQMD has addressed the rendering industry under PR 415 due to the distinctive and unmistakably unpleasant nature of odors from rendering operations. All facilities in the Basin are subject to the same procedures for complaint investigation and resolution and may have permit conditions and/or rule requirements related to reducing odors. Industries have rules that reduce odors, such as from landfills, and sewage treatment plants. The unique, frequent and bothersome odors from rendering plants were identified as a significant issue which warranted a proposed rule. Through this rule development, SCAQMD staff is responding to the public concerns expressed at the Clean Communities Plan working group meetings and the public meetings during rule development of PR 415, which indicated a high degree of public concern over odors from rendering facilities.

Responses to Vernon Chamber of Commerce Letter (July 16, 2015)

1. Comment: The Vernon Chamber agrees with SCAQMD's response and the public's interest to address and reduce the level of odors stemming from businesses in Vernon.

 Response: SCAQMD thanks the Vernon Chamber of Commerce for acknowledging that there is an odor issue that arises from rendering facilities in the City of Vernon.
2. Comment: In its current form, PR 415 does not solve the problem of odor. There is a low level of odor complaints and violations. This does not justify a mandate to require total enclosures. Odors are not constant, but occur during certain hours of the day and times of the year.

 Response: SCAQMD staff disagrees with the commenter regarding the justification for total enclosure for the reasons articulated in the staff report. Enclosures are used at rendering facilities across the country for the purpose of containing odors.
3. Comment: PR 415 threatens the existence of an industry that plays a critical economic and recycling role for many related industries. Can SCAQMD really afford to legislate an important industry out of business and be responsible for eliminating thousands of jobs?

 Response: SCAQMD has worked with rendering facilities to identify cost-effective solutions to minimize cost impacts to rendering facilities. Three of the five affected rendering facilities subject to PR 415 have already either submitted permit applications for new enclosures and equipment that will comply with the requirements of PR 415, or have indicated to SCAQMD staff the indication that they will comply. One additional rendering facility will take advantage of an exemption in the proposal that does not require them to construct an enclosure. Therefore, the rendering industry, as it has existed in the City of Vernon for decades is not threatened, as suggested by the commenter. Furthermore, SCAQMD staff disagrees with the commenter that thousands of jobs are at stake with the adoption of PR 415, for the reasons expressed in other responses to comments.
4. Comment: Timing of the release of rule drafts, CEQA and other reports does not give enough time to analyze material or provide feedback in a timely manner.

 Response: PR 415 has gone through 3 major revisions to accommodate the comments made by stakeholders in the rule development process. SCAQMD has complied with all legal requirements for noticing and staff has done its best to release new language in sufficient time to allow stakeholder review prior to working ground meetings. In situations where it was not possible for staff to release new language prior to a working group meeting, a two- to three-week period was allowed for stakeholders to analyze and comment on

that language. The public hearing was delayed 5 months in order to provide additional time for stakeholder input. The current schedule for consideration by the SCAQMD Governing Board is November 2017.

5. Comment: Commenter seeks a science-based solution. If passed in its current form, there will be economic consequences that impact the region.
- Response: SCAQMD staff feels the approach in the current proposal represents the best solution for control of odors, as the City of Vernon has acknowledged that there is an odor issue that arises from rendering facilities in the City of Vernon in a previous comment. Regarding the economic impacts on the region, SCAQMD has prepared a socioeconomic analysis that addresses impacts on the region, as well as impacts on each facility subject to PR415. The commenter is directed to this socioeconomic impact analysis.
6. Comment: The Vernon Chamber of Commerce opposes a one-size-fits-all total enclosure solution on existing rendering operations as it does not solve the problem of odor. PR 415 does not account for differences in plants that only do edible rendering vs. inedible rendering. This approach does not take into account the unique building layouts and creates fire and safety risks that put employee's lives at risk.
- Response: The rule approach for PR 415 considers differences in operation at each facility. While the proposed rule requirements seek enclosure of certain very odorous processes (raw material receiving, wastewater treatment), attempts were made during the rule development process to accommodate each facility's needs. For example, one facility reported they would have difficulties constructing a receiving enclosure tall enough to accommodate trucks that tilt up to dump raw materials. Staff changed a requirement in the proposed rule to allow this facility to continue to use its current material delivery configuration, as long as continuous effort is made to move this material into an enclosure within 60 minutes after the end of material delivery. The same facility conducts cooking and processing operations in a large building that would be very expensive to demolish and reconstruct. Staff worked to craft rule requirements that would allow the cooking and processing operations to be considered a closed system, provided that modest changes are made to certain bins, hoppers and conveyors. Another example of the flexibility of the PR 415 approach involves the wastewater treatment plant at an integrated rendering facility. This facility processes wastewater from several areas of the facility, where rendering wastewater is currently diluted by a large volume of less-odorous water. Staff crafted an exemption for the wastewater enclosure for this facility, with the help of the Sanitation Districts of Los Angeles County (LACSD). This rule is far from the 'one-size-fits-all' approach suggested by the commenter. Staff has been extremely responsive to the needs of rendering facilities.

Regarding the differences in edible vs. inedible rendering, the commenter should be aware that facilities that conduct only edible rendering operations are exempted from the requirements of PR 415 under subparagraph (l)(1)(A).

Regarding the comment that the proposed rule approach does not take into account unique building layouts and creates fire and safety risks that put employee's lives at risk, SCAQMD staff disagrees with this statement. Enclosures constructed under the requirements of the proposed rule will need to meet all appropriate fire and safety codes. PR 415 does nothing to undermine worker safety.

7. Comment: PR 415 contradicts and overreaches with regulations from other agencies such as LACSD, California Department of Agriculture, USDA Food Safety & Inspection, and City of Vernon Health Department and Fire Department.

Response: The commenter offers no specific regulations under the authority of these agencies that are contradicted by PR 415. SCAQMD staff has not identified any contradictions with other regulations. See responses to Farmer John comments #32, #59 and #94.

8. Comment: Community and SCAQMD feedback center on Vernon rendering facilities. It is assumed that rendering facilities in Ontario and San Bernardino would also be forced to comply.

Response: The commenter appears to be referring to Stiles Animal Removal in Ontario and Co-West Commodities in San Bernardino. If this is correct, neither Stiles nor Co-West meet the applicability criteria for PR 415. Neither facility performs inedible rendering. Co-West Commodities has been identified as one of the facilities that will be included during rule development of PR 416, which addresses odors from kitchen trap grease.

9. Comment: Where would product go if companies go out of business as a result of this rule?

Response: SCAQMD staff has prepared a CEQA document that addresses this question. Please refer to the Draft Environmental Assessment.

10. Comment: PR 415 must have a science-based foundation to assess and reduce odor. The Vernon Chamber would support a more customized template of PR 415 if it outlined a methodology to measure, track and identify odors and impacts.

Response: Rendering odors are a complex mixture of many compounds that may include:

“organic sulfides, disulfides, C-4 to C-7 aldehydes, trimethylamine, C-4 amines, quinoline, dimethyl pyrazine, other pyrazines, and C-3 to C-6 organic acids. In addition, lesser amounts of C-4 to C-7 alcohols, ketones, aliphatic hydrocarbons, and aromatic compounds” (AP-42 9.5.3).

SCAQMD staff believes the cost of the approach suggested by the commenter to collect and analyze odorous samples from multiple locations within a facility would be excessive due to the number of samples necessary and the number of chemical compounds that would need to be analyzed for each sample collected. The cost of analyzing 25 compounds may run into the tens of thousands of dollars, according to the experts SCAQMD staff has contacted.

Therefore, in this rule development effort, staff focused on identifying the current and accepted practices around the state of California and the nation for operating a rendering facility within an urban area. In doing so, staff was unable to find even a single example of a rendering facility in an urban area operating an open-air rendering process such as several of the rendering facilities currently operate within the City of Vernon. Instead, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. This same standard of operation is used in other areas by at least two of the companies that operate rendering facilities within Vernon.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

11. Comment: PR 415 should include an extensive Best Practices Odor Management Plan as a template for renders to customize on a plant-by-plant basis. Rule 410 outlines an Odor Mitigation Plan. Rule 472 addresses high intensity odors.
- Response: SCAQMD staff believes PR 415 incorporates necessary flexibility for each rendering facility subject to its requirements for the reasons expressed in other responses to comments. The commenter is correct regarding Rule 472 addressing high intensity odors from rendering. However, it does not address fugitive odors that are the source of complaints in the communities surrounding Vernon, and the commercial locations in and around Vernon.
12. Comment: Odors are not continuous on a 24-hour basis. Odors are seasonal, occur at certain hours of the day and are stronger with certain wind patterns. Therefore, SCAQMD should commission a study to measure odors before passing PR 415.

Response: SCAQMD thanks the commenter for this suggestion. The staff proposal does not include an odor study. Instead, the approach PR 415 has taken involves establishing standards SCAQMD staff believes represent the best and most reliable way to control odors from rendering operations. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff found that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

13. Comment: Adverse economic impacts if PR 415 is passed today:
- Not all rendering facilities will continue business operations
 - Compliance costs will be \$7 million to \$30 million per facility
 - SCAQMD's 3 – 5 year compliance schedule does not account for new building layout
 - 1,100 jobs will be at risk; mostly prevailing wage union jobs
 - Odors will increase as product is transport to other cities or out of state
 - Consumers will see an increase in the cost of food and commodities
 - California taxpayers, SCAQMD and rendering facilities do not need another lawsuit

Response: The commenter has not presented any evidence for the assumptions that rendering facilities will go out of business, any jobs will be lost, or that rendering facilities will incur high cost to comply with PR 415. Regarding the comments on rendering facilities not continuing operations, high compliance costs and 1,100 jobs at risk, SCAQMD staff has high confidence that rendering facilities subject to the requirements of PR 415 will continue to operate as they currently do. As evidence of this conclusion, one facility has already submitted permit applications for an enclosure and odor control equipment that will meet the permanent total enclosure, ventilation system, and odor control equipment standards in the proposed rule. Two other facilities have indicated their anticipated compliance with the rule requirements. Of the two remaining facilities, one will take advantage of an exemption in the proposal and will not be required to build an enclosure. Staff has made every effort to work with the fifth facility to limit the scope of best management practices and consider a portion of their operation to be a closed system in order to limit costs for this facility.

SCAQMD staff conducted a socioeconomic impact analysis for estimated costs incurred by this facility as well as the other 4 facilities subject to the requirements of PR 415. Please refer to that analysis for an estimation of the costs to comply with the proposed requirements.

Regarding the comment on timing of the enclosure requirement, staff believes this timing is reasonable. Three of the 5 rendering facilities have already indicated their anticipated compliance with the proposed rule requirements.

Regarding the comment that consumers will see an increase in the cost of food and commodities, the commenter offers no data to support this conclusion or justification for it. SCAQMD cannot respond to this comment without specific information to support the commenter's conclusion that consumer costs will increase as a result of compliance with the requirements of PR 415.

Finally, regarding the comment about a lawsuit, SCAQMD staff agrees with the commenter.

Responses to North American Meat Institute Letter (July 17, 2015)

1. Comment: PR 415's mandatory permanent enclosure and ventilation requirements would adversely affect companies' ability to do business in the area such that long term viability of those companies would be jeopardized. The regulatory goal can be met by setting objective compliance criteria and allowing companies to determine the best method to achieve compliance. PR 415 fails to establish baseline conditions or minimum odor standard.

Response: SCAQMD staff disagrees with the commenter about long term viability of rendering facilities in the South Coast Air Basin (and particularly in Vernon) for the reasons expressed in response to comment 30. Regarding the comment about setting objective compliance criteria, staff believes the current science does not allow direct measurement of all the chemical compounds that make up odors, for reasons expressed in other comments. Therefore, setting objective compliance criteria is not a practical approach to rule compliance for PR 415. The approach PR 415 has taken involves establishing requirements SCAQMD staff believes represent the best and most reliable way to control odors from rendering operations. SCAQMD staff researched operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. This includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*. SCAQMD staff believes this approach represents the best and most reliable way to control odors from rendering operations.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

2. Comment: PR 415 presumes each rendering facility is creating an odor problem that can only be addressed by permanent enclosures or closed systems. Enclosure requirements are not necessary to reduce odor concerns and are so costly that PR 415 will likely cause businesses to leave the area.

Response: The proposed rule has undergone several changes in response to industry comments that reduce the number of areas that would need to be enclosed. SCAQMD staff disagrees with the comment about the cost of enclosure requirements, for reasons expressed in the response to other comments.

3. Comment: Research is available on how to objectively measure odor using standardized odor measurement procedures and there are well established laboratory techniques for testing odor and development odor standards (e.g. ASTM E679). A regulatory approach based on objective measures requires an understanding of baseline conditions and development of minimum odor standards.

Response: ASTM Method E679 is a dilution-to-threshold method that relies on an odor panel to determine a detection threshold for an odor sample. As such, its potential value would only be to establish the level at which odors from an odor sample can be detected by an odor panel – not the level at which a complainant may find an odor to be objectionable. Use of this method will not help to establish baseline conditions nor the development of minimum odor standards.

Regarding the comment about development of minimum odor standards, staff believes the current science does not allow direct measurement of all the chemical compounds that make up odors. Therefore, setting minimum odor standards based on measurement of chemical compounds in odors is not feasible given the existing science and technology.

4. Comment: Reconsider the proposed approach. NAMI requests postponing the rule for at least 6 months.

Response: Due to comments from the NAMI and others calling for more time to work with rendering facilities, the Board hearing for PR 415 was delayed 5 months, to October 2, 2015. It is now scheduled for consideration by the SCAQMD Governing Board in November 2017.

Responses to Betty T. Yee Letter (April 24, 2015)

1. Comment: Extend the rulemaking process beyond June 5, 2015 so PR 415 may be amended to authorize the SCAQMD to work with rendering facilities individually to identify site-specific controls that may be necessary.

Response: Due to comments from the State Controller and others calling for more time to work with rendering facilities, the Board hearing for PR 415 was delayed 5 months, from the original May 2015 hearing date to October 2, 2015. The proposed rule was developed with consideration of many of the individual facility needs. PR 415 is now scheduled for consideration by the SCAQMD Governing Board in November 2017.
2. Comment: Fast-tracking of PR 415 intended to address citizen complaints about odors with a “one size fits all approach,” will have unintended consequences, including the loss of jobs in the rendering industry.

Response: The rule approach for PR 415 accounts for differences in operation at each facility. While the proposed rule requirements seek enclosure of certain very odorous processes (raw material receiving, wastewater treatment), attempts were made during the rule development process to accommodate each facility’s needs. For example, one facility reported they would have difficulties constructing a receiving enclosure tall enough to accommodate trucks that tilt up to dump raw materials. Staff changed a requirement in the rule to allow this facility to continue to use its current material delivery configuration, as long as continuous effort is made to move this material into an enclosure within 60 minutes after the end of material delivery. The same facility conducts cooking and processing operations in a large building that would be very expensive to demolish and reconstruct. Staff worked to craft rule requirements that would allow the cooking and processing operations to be considered a closed system, provided that modest changes are made to certain bins, hoppers and conveyors. Another example of the flexibility of the PR 415 approach involves the wastewater treatment plant at an integrated rendering facility. This facility processes wastewater from several areas of the facility, where rendering wastewater is currently diluted by a large volume of less-odorous water. Staff crafted an exemption for the wastewater enclosure for this facility, with the help of the Sanitation Districts of Los Angeles County (LACSD). This rule is far from the ‘one-size-fits-all’ approach suggested by the commenter. Staff has been extremely responsive to the needs of rendering facilities.

Regarding the comment about unintended consequences, including the loss of jobs in the rendering industry, SCAQMD staff has prepared a socioeconomic impact analysis that addresses impacts on the region, as well as impacts on each facility subject to PR415.
3. Comment: PR 415 is not based on science, and assumes all rendering facilities are the origin of the citizen complaints without consideration of other existing

odors in the region and accounting for wind direction. PR 415 is short-sighted and will cause financial harm and hardship to these companies.

Response: Regarding the comment about rule requirements being based on science, staff believes the current science and technology does not allow direct measurement of all the chemical compounds that make up odors, for reasons expressed in other responses to comments. However, staff believes odors from rendering operations are distinct and unmistakable. Staff has experienced these distinctive rendering odors both at the facilities and in the communities surrounding Vernon. These odors are distinguishable from those from other sources such as diesel combustion.

4. Comment: The rendering industry should be given the opportunity to engage and educate the community on its operations and practices. Allowing rendering companies to have this public dialogue and the SCAQMD to work with each individual facility will ensure a better outcome for addressing citizens' odor complaints.

Response: The rendering industry is not precluded from engaging with the community independent of a rule development process. Staff has attempted to work with each of the facilities during this effort. The response by the facilities has varied widely.

Responses to City of Vernon (Green Vernon Commission) Letter (April 2, 2015)

1. Comment: Suspend rulemaking process for 180 days to allow additional time for parties to address concerns.

Response: Due to comments from the Green Vernon Commission and others calling for more time to work with rendering facilities, the Board hearing for PR 415 was delayed 5 months, from the original May 2015 hearing date to October 2, 2015. It is now scheduled for consideration by the SCAQMD Governing Board in November 2017.

2. Comment: Construction alternatives in light of restrictions from the Planning Department and Fire Marshall. The Vernon Fire Marshall would object to enclosing processing areas as it would make fighting grease/oil fires more difficult when inside an enclosure than an open area.

Response: The City of Vernon has allowed at least one facility that SCAQMD staff is aware of to operate grease generating processes within an enclosure. The City of Vernon has not presented any evidence as to why this practice is acceptable in current situations, but the Fire Marshall has objections to enclosure of operations that would be subject to the requirements of PR 415. In discussions with personnel at another facility subject to the requirements of PR 415, staff learned that the Fire Marshall was not concerned with

enclosure of operations where grease is present, per se, but with the type of fire suppression system used. In any case, the Fire Marshall has not commented on this aspect of rulemaking for PR 415.

3. Comment: CEQA implications as a result of site upgrades and new construction requirement. Requiring rendering facilities to enclose operations might require a CEQA review if the changes proposed increase the operations foot-print.

Response: A Draft Environmental Assessment was prepared for PR 415. The commenter is directed to that document for review.

4. Comment: Consider impacts on local economy and potential loss of jobs. There are potentially 800 jobs currently in rendering that would be subject to closure.

Response: SCAQMD staff has high confidence that facilities subject to the requirements of PR 415 will continue to operate as they currently do. Please see response to Vernon Chamber of Commerce comment for justification of this conclusion. In addition, SCAQMD staff has prepared a socioeconomic analysis that addresses impacts on the region, as well as impacts on each facility subject to PR415. The commenter is directed to this socioeconomic impact analysis for a discussion of job impacts.

5. Comment: Consider financial impacts to rendering and auxiliary businesses. Where would businesses operate if not in Vernon? Would such businesses be incentivized to leave California? Where would businesses send animal waste if rendering sites close?

Response: Based on an estimation of the costs of compliance with the requirements of PR 415 that was used in the socioeconomic impact analysis, SCAQMD staff does not believe the compliance costs will be so burdensome to any single facility that it will cause any rendering facility to close the rendering operations at their facility. Rendering will continue to operate in Vernon. The next nearest rendering facilities are in central California.

6. Comment: Allow alternative options to control odors. The Vernon businesses are better equipped to control site specific odor issues.

Response: PR 415 includes two compliance options for odorous operations, including enclosure, and operation of closed systems which are not required to be ventilated to odor control equipment. SCAQMD staff has worked with the facilities to identify lower cost solutions than enclosure, and have proposed exemptions for several types of operations under subdivision (l). Regarding the comment that Vernon rendering facilities being better equipped to control site specific odors; there is nothing in the proposed rule that would

prevent a rendering facility from implementing additional work practices and installing controls the operators believe would further reduce odors.

7. Comment: Quantify and qualify odors in a scientific fashion. There is currently no scientific accepted practice to identify an odor or specify the intensity of given odors in order to identify the source of the odors. This issue would require further study.

Response: Staff believes the current science does not allow direct measurement of all the chemical compounds that make up odors, for reasons expressed in other comments. SCAQMD staff will continue to look for ways to measure odors.

8. Comment: Develop a technical standard to document complaints so they can be measured and assessed. How will inspectors be able to identify the source of a complaint if the odor is not currently present, lag time exists between complaint and inspection, or high winds carry odors over multiple sources?

Response: SCAQMD Compliance personnel follow a prescribed procedure to verify the source of all odor complaints. The commenter has identified issues that sometimes make it difficult for SCAQMD inspectors to trace an odor to its source. If verification cannot be made by SCAQMD staff, this would not be considered as counting towards a confirmed odor event or a potential public nuisance.

Responses to JR Grease Services Email

1. Comment: Our company is deeply concerned about PR 415 and the serious impacts it will have on our business. We depend on the service contract that is provided by rendering facilities. Suspend rulemaking for 8 months to allow stakeholders to develop comments, identify issues and offer solutions.

Response: SCAQMD staff shares your concern for economic viability of rendering facilities that are subject to the requirements of PR 415 and companies that do business with rendering facilities. Regarding the comment of a rule delay, due to comments from JR Grease Services and others calling for more time to work with rendering facilities, the Board hearing for PR 415 was delayed 5 months, from the original May 2015 hearing date to October 2, 2015. It is now scheduled for consideration by the SCAQMD Governing Board in November 2017.

Responses to Senator Andy Vidak

1. Comment: PR 415 assumes rendering plants in Vernon are the true emitter of this odor. It does not take into account other industries in the area that may emit odors.

PR 415 will require costly upgrade or lead to job losses for rendering facilities and affiliated facilities throughout California.

Response: SCAQMD staff believes odors from rendering facilities are distinctive and unmistakable. Staff has experienced these distinctive rendering odors both at the facilities and in the communities surrounding Vernon. These odors are distinguishable from those from other sources such as diesel combustion. Regarding the comment on costly upgrades and job losses, SCAQMD has prepared a socioeconomic report to address costs from compliance with PR 415 requirements and job losses in the region. The commenter is directed to that socioeconomic report for staff's analysis.

2. Comment: Extend the rule making process beyond the Jun 25, 2015 date.

Response: Due to comments from the Senator and others calling for more time to work with rendering facilities, the Board hearing for PR 415 was delayed 5 months, from the original May 2015 hearing date to October 2, 2015. It is now scheduled for consideration by the SCAQMD Governing Board in November 2017.

Responses to Rio Hondo/Vernon Rotary Club Email

1. Comment: SCAQMD should pause for a conservative 8 months to listen and appreciate the willingness and desire to arrive at an acceptable process than will eliminate 100% of odors, permanently enclose wastewater, reduce holding time of incoming raw materials, reduce holding time of incoming raw material and institute and odor control system as well as refine the recordkeeping process.

Response: Due to comments from the Rio Hondo/Vernon Rotary Club and others calling for more time to work with rendering facilities, the Board hearing for PR 415 was delayed 5 months, from the original May 2015 hearing date to October 2, 2015. It is now scheduled for consideration by the SCAQMD Governing Board in November 2017.

Responses to National Renderers Association (August 11, 2014)

1. Comment: A one-size-fits all approach to odor control does not produce the best results. Allow rendering plants to adopt the optimal approach for their individual operations.

Response: Regarding the comment on a "one-size-fits-all" approach not producing the best results, please see response to Vernon Chamber of Commerce comment.

2. Comment: Additional research should occur before PR 415 is finalized. Technologies should be used to monitor the origin and range of odors in an area before prescriptive steps.

Response: Regarding the comment on the origin of odors, as stated in Chapter 1 of the staff report, due to the very long distances rendering odors can travel and the proximity of the five Vernon area facilities relative to one another, it is often not possible to pinpoint a single facility as the source of odors. For this reason, it is often not possible to verify odor complaints, and odor events from rendering facilities in the Vernon area rarely can be attributed to a specific individual facility since the facilities are located relatively close together. This is true despite the fact that unpleasant odors typical of rendering operations can often be detected miles away from the Vernon area rendering facilities, and odors are prevalent many days out of the year.

For these reasons, the approach taken for PR 415 was to research operations in other states as well as other jurisdictions within California to determine the current and accepted practices for operating a rendering facility within an urban area. In doing so, staff determined that the accepted standard for operating a rendering facility in an urban area includes: enclosure of odorous operations, maintaining that enclosure under negative pressure, and venting that enclosure to odor control equipment*.

*The proposed rule allows an unventilated permanent total enclosure for raw material receiving, provided a secondary odor containment method is used at each enclosure opening.

APPENDIX B: SUMMARY OF RENDERING FACILITY REGULATIONS IN OTHER STATES

Summary of Rendering Facility Regulations in Other States

Table B-1 presents a summary of the requirements imposed by 16 states on rendering facilities, without references to state regulations. It should not be taken as an exhaustive list of all requirements imposed on rendering facilities in each listed state; rather, a brief summary of the State regulations that SCAQMD staff was able to identify. Citation of the chapter for each state's regulations will be provided in subsequent versions of this staff report.

State	Summary of State Rendering Requirements
Alabama	Render in a pressure tank where temperature is not lower than 220 degrees for not less than 4 hours. Use steel-bodied trucks or trucks with impervious liners for transport. Thoroughly clean and disinfect transport vehicles after each trip. Separate room with concrete floor for skinning and cutting up dead animals. Do not store grease or other tankage in room for skinning/cutting up.
Arizona	Note: Arizona requirements divided into: 1. Slaughter Establishments; 2. Rendering to Produce Certified Animal Fat; 3. Meat from Dead Animals used as Animal Food. Raw materials free from condemned and/or diseased material. Walls of smooth, finished Portland cement plaster, glazed tile, or other approved material impervious to moisture. Floors constructed of dense concrete or floor tile, sloped to drain. Hot and cold water connections shall be provided. No openings between an inedible products department and an edible products department. Loading dock shall be paved, drained, and of sufficient size to accommodate the largest truck used. Raw materials not certified for animal fat production separated at all times (transport, storage and rendering) from other material in separate marked containers identified as such. Hot and cold water provided (hot water at least 180° F). Drainage and plumbing system and sewage disposal system that will not serve as a breeding place for flies, constitute a hazard, or endanger public health. Floors, walls, ceilings, partitions, posts, doors, and other structures of materials capable of being thoroughly cleaned. Floors must have sufficient drainage to preclude stagnant accumulations of moisture. All outside windows and doors shall be screened. Rooms with well-distributed ventilation to prevent uncontrolled mold growth and filth or bacteria that may endanger health. Plant kept free from flies, rats, mice, and vermin.

State	Summary of State Rendering Requirements
California	<p>Note: California requirements inclusive of renderers, collection centers, dead animal haulers and transporters of inedible kitchen grease. Vehicles used in transportation leakproof and constructed of impervious material to permit cleaning and sanitizing and to control insects and odors and prevent the spread of disease. Vehicles used to transport dead animals cleaned and sanitized at the end of each day. Rendering facilities must be physically separate from any facility with meat or meat byproducts. Rendering facilities that receive carcasses from any source other than a slaughter facility on the premises cannot operate within 1000 yards of a facility that slaughters livestock or other animals for human consumption. Rendering facilities must comply with the California Building Code (2007). Buildings of sound construction, to discourage entrance/harboring of pests. Floors, walls, ceilings, partitions and doors of material and finish as to make them readily cleanable. Unloading slab of sufficient size to contain all waste material unloaded on it; constructed of concrete and sloped to result in quick draining of fluids. Floors of rooms graded to cause runoff into drains and avoid pooling. No excessive build-up of dust and organic matter on equipment, floors, walls and ceilings or excessive accumulation of water, blood, manure, raw material, grease or organic matter on floors and passageways. Plant premises kept free of excessive junk, wood piles, debris and weeds that provide potential breeding places and harborage for rodents; excessive accumulation of raw materials, including manure piles, paunch contents, hair piles, dead animals and other places suitable for fly breeding; pooling water; and similar nuisances and potential breeding areas for insects and vermin.</p>
Colorado	<p>Rendering plants of sound construction and kept in good repair, to prevent the entrance into, or the harboring therein, of rodents, birds, insects, vermin, dogs, cats. Plant premises kept clean and orderly and free of strong or foul odors, smoke and other pollutants. Outside areas kept free from refuse, rubbish and waste materials, to prevent harborage of rodents, insects, vermin. Supply of running water available, adequate for operations. Water temperature not less than 180 degrees F., or a chemical sanitizing agent used for washdown. Vehicles used in the transportation of dead animal carcasses, parts, bone and raw tankage material constructed and maintained to prevent leakage of blood & tissue. Load compartment covered whenever a load is on board. Floors, walls, ceiling, partitions, posts, doors, and other parts of each plant structure shall be of material, construction, and finish to be readily and thoroughly cleaned. Floor kept water tight.</p>

State	Summary of State Rendering Requirements
Georgia	Floors constructed of concrete or other non-absorbant material. Ample hot water supply (140 F). Adequate drainage. Drainage only into sewer. Cleaned and sanitized daily to prevent odor. Trucks used to transport carcasses or refuse on public highways must prevent seepage and residue from escaping. Carcasses/refuse not allowed to accumulate or be held except at rendering plant. Rodent/vermin control diligently practiced. Barrels used to transport carcasses/refuse marked "INEDIBLE" with letter at least 2 inches high.
Idaho	Rendering establishments must be constructed to protect finished product and prevent pollution of surrounding environment or creation of a nuisance to the public. Rendering material transported to the rendering establishment in covered and leak-proof vehicles, such vehicles to be used for this purpose only and to be cleaned and disinfected after delivering each load. Rendering material shall be heated to a sufficient temperature for a sufficient length of time to destroy all pathogens, and processed under sanitary procedures that prohibit the recontamination of the product after cooking.
Illinois	Floors constructed of concrete or other non-absorbent material. Adequate drainage. Rooms to be equipped with sufficient steam and steam hose to clean floors and trucks. Floors, walls and equipment kept in sanitary condition and cleaned with steam. Trucks and truck equipment kept in sanitary condition and cleaned with steam.
Kentucky	Haul carcass in covered vehicle, bed or tank which is constructed so that no drippings or seepings from carcass can escape. If driver suspects that animal died of communicable disease, vehicle must be disinfected.

State	Summary of State Rendering Requirements
Michigan	<p>Except for approved escapes for steam, all tanks, cookers, boilers, driers, and condensers must be airtight. Steam shall be controlled in a manner that does not constitute a public or private nuisance or pose a threat to the health of the public or animals. Floors and walls constructed of a material that can be easily cleaned and disinfected. Floors have adequate surface drainage so that liquids will not collect or create standing pools. Adequate supply of running hot water for cleaning purposes. Loading and unloading docks/platforms constructed so that drainage is adequate and natural precipitation will not collect or create standing pools. Equipment necessary to maintain the facility in a clean and sanitary condition, including insect and pest control equipment. The floor space and equipment in a licensed facility shall be kept clean and free of accumulations of filth and debris.</p> <p>Accumulations of dead animals shall not create a public or private nuisance or health hazard. Odors in and around licensed facilities shall not be allowed to create a public or private nuisance. Odor control equipment available on the premises. Dead animals stored indoors on floors constructed of concrete. Contents of the digestive tract and manure not allowed to accumulate on the premises of any licensed facility for more than 6 days and disposal not allowed to create a public nuisance or health hazard or endanger the health of livestock. The contents of the digestive tract shall be stored in covered containers that do not leak.</p>

State	Summary of State Rendering Requirements
Mississippi	<p>No new plant located or constructed within two miles of the nearest point of any municipality with a population in excess of five hundred (500) according to the latest federal census, or within one mile of the nearest boundary of lands owned or controlled in connection either with any state, county, township, city or town park, or boulevard, or of any public school or hospital, or of any charitable, religious or educational institution. Building must have four walls complete and be provided with concrete or cement floors and with good drainage and be thoroughly sanitary in construction and maintenance. Any sewage, drainage, or waste water, if of an offensive or obnoxious character or odor, not be permitted to escape until first treated. All sewage and plant wastes disposal according to recognized and accepted sanitary engineering methods which will not create a public health hazard or unsanitary situation so as to be a nuisance. Plants must be equipped and operated with steel tanks, enclosed dryers and cold water condensers. Tanks must be airtight except proper escapes for live steam, passing through the tanks during cooking, which steam shall be condensed by use of cold water condensers. All equipment for use in disposal or rendering plants constructed and maintained as to prevent any avoidable escape of odors into the air. Skinning and dismembering done within a building so that no unnecessary annoyance caused to other persons by the conditions or unsightly appearance. All such bodies/parts disposed of within 24 hours after delivery to plant.</p>
Ohio	<p>Floors constructed of concrete or some other nonabsorbent materials. Have adequate water supply, and be supplied with sufficient steam and steam hose to clean the floors of the plant and its trucks. All parts of building and all equipment kept in a sanitary condition and cleaned at least once each day with steam. All raw rendering material processed or disposed of within forty-eight hours after arrival at the rendering plant. Cooking vats/tanks airtight, except for proper escapes for steam. Steam disposed of so as to cause no nuisance. All skinning and dismembering of an animal body or part thereof done within a building.</p>

State	Summary of State Rendering Requirements
Oklahoma	<p>Floors constructed of concrete, or some other non-absorbent material, adequate drainage, be thoroughly sanitary, be provided with adequate water supply and sufficient hot water to properly and adequately clean floors and trucks. Plants separated by a permanent wall and apart from any other business operation. Maintain the facilities in such sanitary manner as to eliminate insofar as possible, all odors, insects, and vermin. Separate building or storage area shall be provided for the purpose of storing the finished products in order to avoid contamination after processing. No tools or equipment used in handling the unfinished product used in storage area, or in handling of finished product. Rodent and vermin control diligently practiced. Uncontrolled animal and birds not tolerated on premises. Buildings and surrounding grounds shall be kept clean and free from refuse, trash, or the accumulation of product or products of processing, including paunch manure. Barrels used for transporting and storage of scrap or used cooking grease and oils clearly marked "inedible" with letters not less than three inches in height.</p>

State	Summary of State Rendering Requirements
Oregon	<p>All interior surfaces of impervious materials. All areas of the building and equipment used in the conduct of the business shall be maintained in a clean and sanitary condition. Areas and equipment, including storage pits and transfer augers, cleaned at the end of every work day, and a log kept. Floors, walls and ceilings shall be free of any observable raw material. Liquid not allowed to collect or pool. Sanitary drainage provided, leading to a sewage disposal system. Hot water and steam available to maintain the areas and equipment. Outside premises shall be maintained free of raw material, any dried liquid matter from animal parts and litter. Immediately after unloading for processing or into transfer pits, raw material sprayed with an odor control spray. Raw material for rendering not to remain longer than eight hours on the premises of a business without being refrigerated, processed or transferred to another processing site. If circumstances outside control of the business arise which prevent action within eight hours, business to maintain raw material in such a manner that no public annoyance is caused by the unsightly appearance or odor of the raw material. Cooking area must be separate from the storage area and the area where raw materials are skinned, butchered or dismembered. The latter two areas shall also be separate from each other. The cooking, loading and unloading areas shall be enclosed. Pressure control to be automatic, checked daily. Pressure control calibrated, and tested annually. Traps capable of preventing odor in the disposal of steam or exhaust installed on steam vents. Transport of raw material in a manner that no public annoyance is caused by the unsightly appearance of such material. Vehicles maintained to prevent drippings or seepings. Use industrial grade seals. Inspect seals regularly. Maintain seals to prevent drippings or seepings. Vehicles and containers cleaned after every work day to ensure that no raw material, liquids or scraps remain, and a log kept.</p>
South Carolina	<p>Be located on site zoned for use, have a potable water supply, wastewater and solid disposal; utilize buildings and partitions to prevent any contact between raw material and finished product; ensure adequate drainage and sanitation, walls, floors and ceilings constructed of nonabsorbent materials; have adequate supply of hot water and cleaning agents; operate using reasonable precautions to prevent objectionable odors from being discharged beyond the boundaries of the permittee's property; practice rodent and vermin control; mark all barrels with "INEDIBLE" in letters at least two inches in height; have a control and recontamination program that prevents cross-contamination between raw material and finished product.</p>

State	Summary of State Rendering Requirements
South Dakota	A rendering plant must include a building or buildings provided with concrete floors with good drainage and constructed to be maintained in a sanitary condition. There must be provision to prevent entrance to the buildings of rodents or other animals. All windows, doors, and other openings must be screened unless a program for insect extermination is followed in the buildings and on the premises where the buildings are located. All skinning and dismembering of carcasses must be done in buildings constructed for that purpose. The cooking vats must be airtight except for vents for the live steam used in cooking. All steam vents must be furnished with closing mechanisms and steam valve gauges to ensure that cooking is at the required steam pressure. All carcasses and parts must be disposed of by subjecting them to a cooking and rendering procedure in vats or tanks under steam pressure. Floors and walls of the plant must be thoroughly flushed or scrubbed daily with live steam or boiling water when the plant is in operation. All floor washings and other liquid waste or accumulation of water from washing the viscera must be disposed of through disposal facilities.
Texas	Clean floors at the end of each day's operation. Premises kept clean and free from refuse, waste, rodents, insect breeding, & standing water. Collection containers leak-proof and sanitary. Transfer and loading of dead animals must prevent release of animal parts, spills and leaks. Construction/layout of operation must prevent development of malodorous conditions or nuisance. Floors, walls and ceilings constructed of impervious and easily cleanable materials. Exterior walls/roof and openings must protect against intrusion of insects, rodents and other vermin. Provide a paved area adequate to wash & sanitize trucks. Drain paved area to sanitary sewer system. Provide sufficient ventilation to dispel disagreeable odors, condensate and vapor.