



Proposed Rule 1495 – Commodity Fumigation Public Workshop October 1, 2026 – 1:30 PM

Zoom Meeting: <https://aqmd.zoomgov.com/j/1600908662>

Call-in Option: (669) 254-5252 – **Meeting ID:** 160 090 8662

Agenda

Recap of Working Group Meeting #3

Additional Comment Letter Received

Background

Proposed Rule (PR) 1495

Impact Assessment

Next Steps

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Recap of Working Group Meeting #3



- Discussion of two Comment Letters received from:
 - UCI
 - National Resource Defense Council (NRDC)
- Health Effects and Screening Thresholds
 - Provided thresholds where no adverse noncancer health effects anticipated in the general population when operating below these emission limits
 - Will discuss again today in Background
- Technology Assessment
 - Presented capture techniques, control equipment, monitoring approaches, and best management practices
- Initial Rule Concepts
 - Limit emissions with permit condition or control equipment
 - Notifications to South Coast AQMD and community

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Comment Letter from Value Recovery

- Value Recovery, Inc. proposes 10 suggestions for PR 1495 including:
 - Restrictions on dividing work,
 - Fumigation monitoring and treatment practices,
 - Fumigant inventory and handling,
 - Daylight hours operations, and
 - Other related topics
- Written responses will be included in Draft Staff Report, scheduled to be released in November 2026
- Comment Letter available at:
 - https://www.aqmd.gov/docs/default-source/rule-book/proposed-rules/1495/pjoyce_1495_rule_suggestions.pdf



Value Recovery Letter (Industry, Treatment, & Storage)

Comments	Staff Response
1 & 10. Possible circumvention & responsible parties of commodity fumigation	These are either not within the South Coast AQMD's authority or are outside the scope of this rule development, or both.
2, 3 & 5. During treatment, measuring methyl bromide concentration, methyl bromide injection practices, & measurement of flow rates and temperatures	
6 & 7. Methyl bromide inventory management and storage vessels	

Value Recovery Letter (Capture, Aeration, & Control)

Comments	Staff Response
4. Tarpaulin fumigation is archaic and dangerous; recommendations to come in subsequent letter	Staff looking forward to follow-up letter with more information about potential capture alternatives
8. Fumigation should be performed during daylight hours	PR 1495 has a specific pathway for initiating aeration during daylight hours
9. Recommendations for permit conditions regarding control equipment of methyl bromide emissions	Engineering & Permitting staff will evaluate and implement permit conditions to ensure control equipment is operated effectively and safely

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Methyl Bromide Study

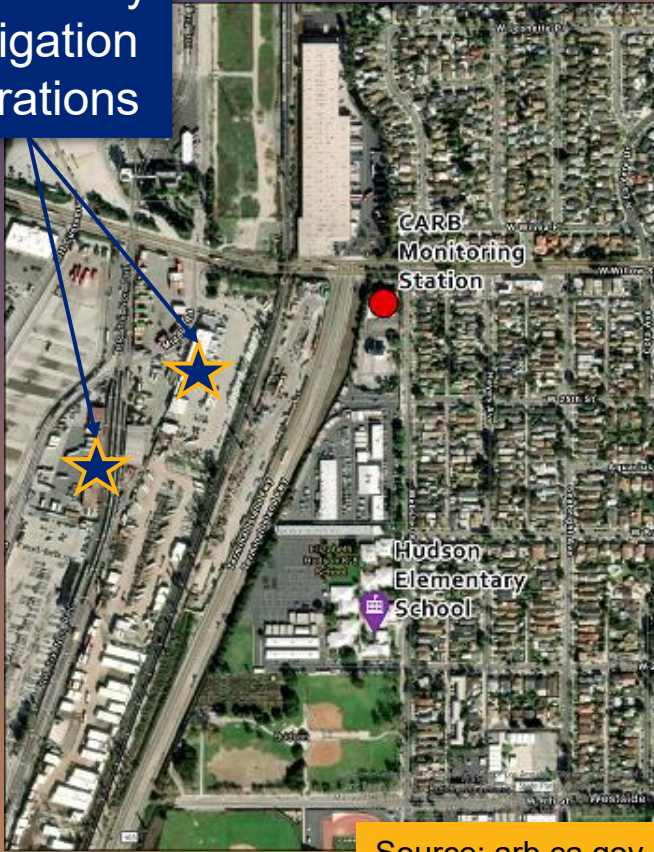
- **2017:** Planning began for the fifth Multiple Air Toxics Exposure Study (MATES V)
 - Methyl bromide monitoring included for the first time at the 12 monitoring sites
- **2021:** The final MATES V report noted the West Long Beach monitoring site detected elevated levels of methyl bromide relative to the other 11 monitoring sites
 - Identified commodity fumigation facilities west of the monitoring site
 - The late Jesse Marquez, local community activist, urged air regulators to investigate



Source: latimes.com

West Long Beach Methyl Bromide Investigation

Commodity
fumigation
operations



Source: arb.ca.gov

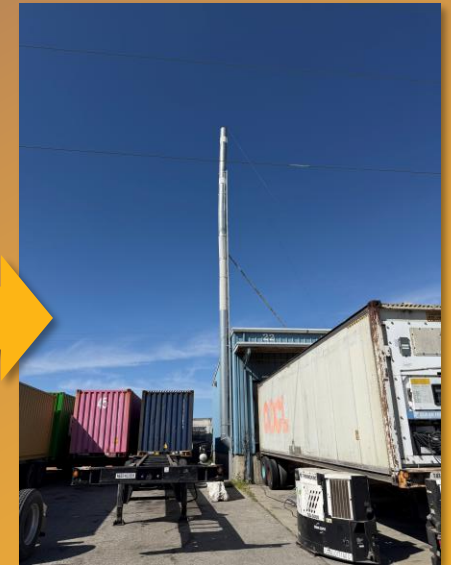
- **2023:** California Air Resources Board (CARB) began monitoring methyl bromide near Hudson Park in West Long Beach near commodity fumigation operations
 - Elevated methyl bromide levels detected in spring months
- **2024:** CARB convened an interagency working group, including South Coast AQMD and Los Angeles County Agricultural Commissioner (CAC) to reduce potential risk
- **January 2025:** Two commodity fumigation operations near the West Long Beach monitoring site agreed to additional permit conditions with the CAC (see next slide)
- **May 2025:** Primary responsibility of West Long Beach monitoring site transferred to South Coast AQMD

West Long Beach Best Management Practices

Additional permit conditions included:

- Raised stack height from 10 feet above roof to at least 50 feet above ground
 - Release points now 60 feet above ground
- Staggered ventilation start times
 - Facilities began working cooperatively not to begin aeration at the same time, staggering by at least one (1) hour

These additional permit conditions are identified in PR 1495 as “Best Management Practices”



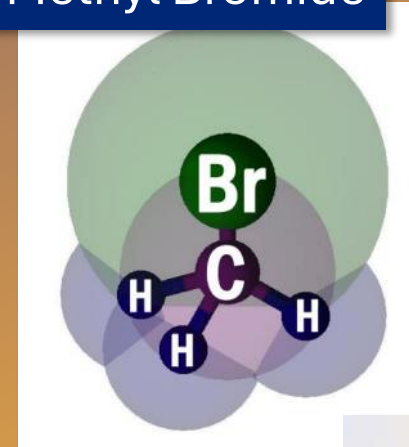
Source: Google Street View

Background on Fumigant Health Effects

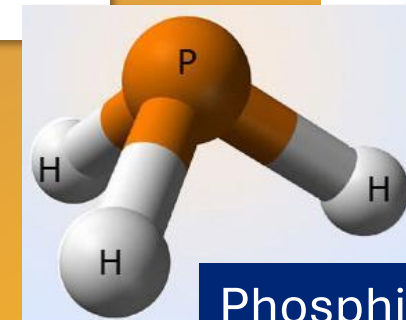
- Fumigants eradicate pests from goods, produce, and other products
 - Typically target insects and other biologicals
 - May also have adverse health effects on humans
- Acute and chronic health effects noted:
 - Acute (short term) - within minutes of exposure
 - Chronic (long term) - requiring years of exposure
- Health screening thresholds are health-based air concentrations at which no adverse noncancer health effects anticipated in the general population
 - Hazard Index (HI) score of 1 is South Coast AQMD's most health protective screening threshold
 - South Coast AQMD generally uses Office of Environmental Health Hazard Assessment (OEHHA) Reference Exposure Levels (RELs), if available
 - Department of Pesticide Regulation (DPR) Reference Concentrations (RfCs) used otherwise

Fumigants used in South Coast AQMD

Methyl Bromide



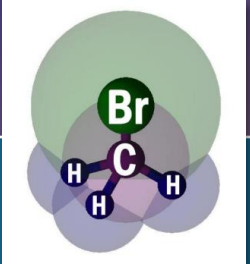
Sulfuryl Fluoride



Phosphine

Note: Fumigant cyanide no longer actively used

Methyl Bromide Health Effects

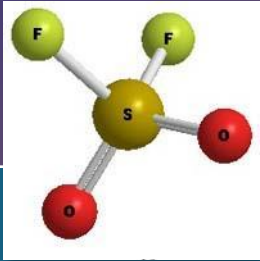


	Health Effects	Source	Threshold Value	Converted to Consistent Units
Acute (≤ 1 hour)	Shortness of breath, headaches, dizziness, lung irritation, chest pain, coughing and nasal irritation	OEHHA*	3,900 µg/m ³	1,000 ppb
Chronic (≥ 1 year)	Circulatory system damage, renal failure, and reproductive harm	OEHHA**	5 µg/m ³	1.28 ppb

* <https://oehha.ca.gov/media/downloads/crnrr/appendixd2final.pdf>

** <https://oehha.ca.gov/media/downloads/crnrr/appendixd3final.pdf>

Sulfuryl Fluoride Health Effects



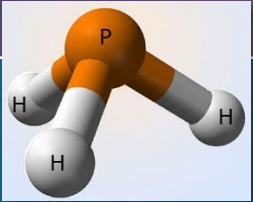
	Health Effects	Source	Threshold Value
Acute ($\leq$ 24 hours)	Eye and skin irritation, headaches, chest pain, fatigue, dry throat, coughing, and extreme thirst	DPR*	750 ppb
Chronic ($\geq$ 1 year)	Damage to bones, teeth, and respiratory system	DPR**	12 ppb

Note: OEHHA has not completed an assessment of sulfuryl fluoride at present time

* https://www.cdpr.ca.gov/wp-content/uploads/2024/11/final_rcd_vol1.pdf

** https://www.cdpr.ca.gov/wp-content/uploads/2024/10/sulfuryl-fluoride_addendum.pdf

Phosphine Health Effects



	Health Effects	Source	Threshold Value	Converted to Consistent Units
Acute (≤ 24 hours)	Respiratory, neurological, and gastrointestinal effects	DPR*	0.05 ppm	50 ppb
Chronic (≥ 1 year)	Respiratory system, central nervous system, liver, kidneys, and bones	OEHHA**	0.8 $\mu\text{g}/\text{m}^3$	0.6 ppb

Note: OEHHA has not completed an assessment of the acute effects of phosphine at present time

* <https://www.cdpr.ca.gov/wp-content/uploads/2024/10/phosphine.pdf>

** <https://oehha.ca.gov/media/downloads/crnrr/appendixd3final.pdf>

West Long Beach Methyl Bromide Case Study

Acute REL: 1,000 ppb

Timeframe	Highest Reading
February 2024	983.15
March 2024	965.61
<i>2025: Best Management Practices implemented</i>	
February 2026	75.36
March 2026	353.00

Chronic REL: 1.28 ppb

Timeframe	Average of Readings
January 2023 – April 2024	2.1 (15-month period)
<i>2025: Best Management Practices implemented</i>	
March 2025 – February 2026	0.71
April 2025 – March 2026	0.92

Note: Some periods of missing or invalid data detected in dataset.

Conclusion: Best Management Practices were effective in reducing ambient concentrations short-term and long-term

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Key Definitions

	AM		PM
Mon.		-	
Tues.		-	
Wed.		-	
Thur.		-	
Fri.		-	
Sat.		-	
Sun.		-	

Thank You

Source: creativesafety.com

- Daylight Hours
 - Consistent with DPR definition
 - Time period one (1) hour after sunrise to one (1) hour prior to sunset
- Emergency Fumigation
 - Required by local, state, or federal authorities to control pest not found in U.S., protect public health, or other crisis situation
- Non-Business Hours
 - Similar to restrictions in county agricultural commissioner permits
 - From 9:00 PM to 5:00 AM

Model Configurations and Schedules

- PR 1495 maintains concentrations from exceeding health screening thresholds, even accounting for building downwash, to ensure no adverse noncancer health effects anticipated in the general population
- Modeled two different configurations:
 - **Model 1 – State Minimum**
Stack height = 15 feet above ground, exit velocity = 600 ft/min
 - **Model 2 – Best Management Practices**
Stack height = 60 feet above ground, exit velocity = 2,500 ft/min
- Three different work schedules:
 - **Anytime** (used with model 1)
 - **Non-Business Hours** (used with model 2)
 - **Daytime Hours** (used with model 2)

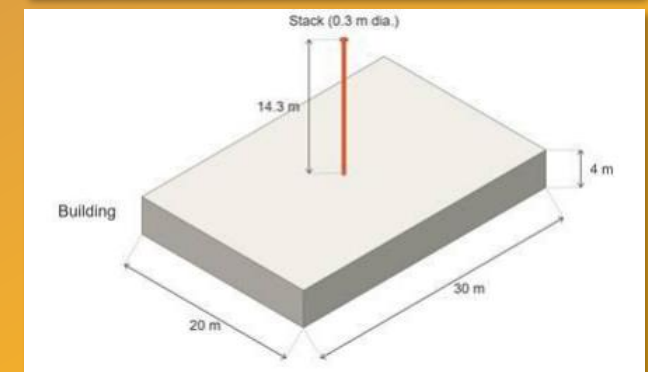
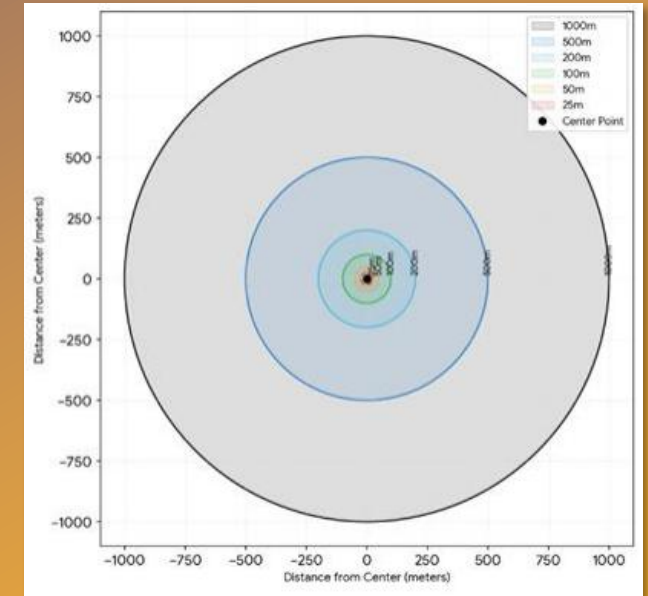


Table 1 Limits

- Ensures PR 1495 does not prohibit commodity fumigation if complying with state law
- No adverse noncancer health effects anticipated in the general population when operating below these emission limits
 - HI score less than 1 in all cases
- Facilities would likely need control equipment to comply with emission limits

Table 1 – Fumigant Emission Limits

Distance to Nearest Receptor Location (m)	Methyl Bromide		Sulfuryl Fluoride		All Others	
	Hourly Limit (lbs)	Annual Limit (lbs)	Daily Limit (lbs)	Annual Limit (lbs)	Daily Limit (lbs)	Annual Limit (lbs)
25 or less	2.0	83	55.2	831	1.2	13
26 to 50	5.7	283	187.2	2,827	4.2	45
51 to 75	7.5	446	280.8	4,456	6.2	71
76 to 100	9.7	643	388.8	6,427	8.6	103
101 to 200	24.4	2,308	1,053.6	23,084	23.4	369
201 to 300	58.6	6,523	2,460.0	65,232	54.6	1,042
301 to 500	171.7	16,841	6,475.2	168,407	143.8	2,690
Greater than 500	448.3	49,850	17,916.0	498,505	397.9	7,962

Typographical error in rule language, corrected here

Table 2 Limits

**Table 2 – Fumigant Best Management Practices Emission Limits
(Non-Business Hours)**

Distance to Nearest Receptor Location (m)	Methyl Bromide		Sulfuryl Fluoride		All Others	
	Hourly Limit (lbs)	Annual Limit (lbs)	Daily Limit (lbs)	Annual Limit (lbs)	Daily Limit (lbs)	Annual Limit (lbs)
25 or less	61.7	6,464	2,239.2	64,641	49.7	1,032
26 to 50	104.0	6,464	2,239.2	64,641	49.7	1,032
51 to 75	170.4	6,464	3,386.4	64,641	75.2	1,032
76 to 100	202.5	6,464	4,605.6	64,641	102.3	1,032
101 to 200	202.5	7,435	4,965.6	74,349	110.3	1,187
201 to 300	242.4	10,716	6,400.8	107,158	142.1	1,711
301 to 500	354.6	17,709	7,672.8	177,085	170.4	2,828
Greater than 500	705.3	33,223	13,034.4	332,226	289.5	5,306

- Best Management Practices required to utilize Table 2 limits
 - Tall stack with high exit velocity and parametric monitoring ensures enhanced dispersion
 - No adverse noncancer health effects anticipated in the general population when operating below these emission limits
 - HI score less than 1 in all cases
- Non-Business Hours operational schedule reduces potential Receptor Locations, such as schools and offsite workers

Table 3 Limits

- Like Table 2, Table 3 also requires Best Management Practices
 - Tall stack with high exit velocity
 - No adverse noncancer health effects anticipated in the general population when operating below these emission limits
 - HI score less than 1 in all cases
- Daylight Hours ensures more favorable atmospheric conditions for dispersion
 - Higher limits than Table 2
 - Certain Receptor Locations must be included versus non-business hours

**Table 3 – Fumigant Best Management Practices Emission Limits
(Daylight Hours)**

Distance to Nearest Receptor Location (m)	Methyl Bromide		Sulfuryl Fluoride		All Others	
	Hourly Limit (lbs)	Annual Limit (lbs)	Daily Limit (lbs)	Annual Limit (lbs)	Daily Limit (lbs)	Annual Limit (lbs)
25 or less	62.6	10,368	4,156.8	103,681	92.3	1,656
26 to 50	103.9	10,368	4,641.6	103,681	103.1	1,656
51 to 75	136.4	10,765	6,662.4	107,654	148.0	1,719
76 to 100	136.4	12,288	8,104.8	122,880	180.0	1,963
101 to 200	148.4	18,382	12,374.4	183,824	274.8	2,936
201 to 300	189.5	31,299	18,189.6	312,989	404.0	4,999
301 to 500	298.0	73,314	31,032.0	733,138	689.2	11,709
Greater than 500	648.0	254,518	69,504.0	2,545,177	1,543.5	40,649

Typographical error in rule language, corrected here

Comparison of Table Limits

On right, comparison of hourly and annual methyl bromide emission limits for Tables 1, 2, and 3 at distance 76-100 m, for example

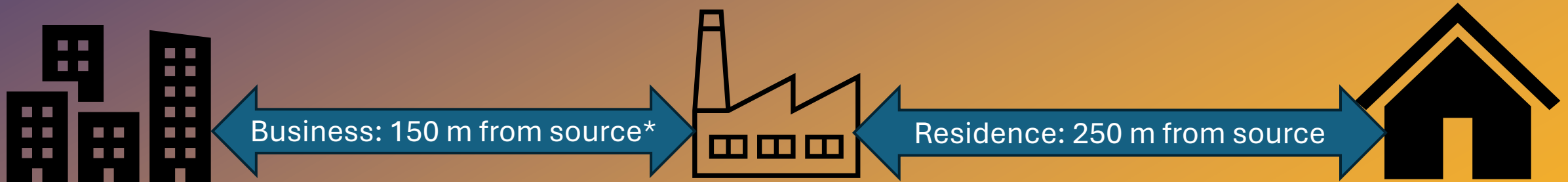
- Table 1 limits are the lowest and would likely require control equipment to comply
- Table 2 limits require Best Management Practices including equipment upgrades and non-business hours operating schedule
- Table 3 limits require Best Management Practices including equipment upgrades and daylight hours operating schedule

Comparison of Limits by Table			
Table	Distance to Nearest Receptor Location Distance (m)	Fumigant: Methyl Bromide	
		Hourly Limit (lbs)	Annual Limit (lbs)
Table 1	76-100	9.7	643
Table 2	76-100	202.5	6,464
Table 3	76-100	136.4	12,288

Example Scenario

To illustrate what options a facility would consider, staff developed an example scenario

Fumigant:
Methyl Bromide



Does not currently meet Best Management Practices for stack height or exit velocity and does not have control equipment

** May be excluded as Receptor Location if initiating aeration exclusively during Non-Business Hours*

Implementation

Table	Distance to Nearest Receptor Location Distance (m)	Fumigant: Methyl Bromide		Equipment and Operational Changes
		Hourly Limit (lbs)	Annual Limit (lbs)	
Table1	101-200	24.4	2,308	Install control equipment to reduce emissions to below applicable Table 1 limits
Table 2	201-300	242.4	10,716	Upgrade stack and fan, operate exclusively during non-business hours, and emit less than Table 2 limits
Table 3	101-200	148.4	18,382	Upgrade stack and fan and operate exclusively during daylight hours, and emit less than Table 3 limits

Conclusion: Owners and operators will need to decide whether to install control equipment and keep scheduling flexibility or implement Best Management Practices and select a strict operating schedule

General Requirements



- Utilize a fumigant capture strategy
 - Tarpaulin fumigation
 - Permanent Total Enclosure (PTE)
- Utilize a fumigant aeration strategy
 - Fumigant aeration system
 - Exhaust fan or other mechanical device to an emission stack
 - Control equipment
- Direct emissions in an upwards direction
 - Horizontally or downward emissions prohibited

Control Equipment and Source Testing

- 86% overall control efficiency required
 - Meters, gauges, or other devices required to parametrically monitor performance of control equipment
 - Operate control equipment within manufacturer's specification of parametric monitoring devices derived from most recent source test
- Source testing ensures 86% overall control efficiency
 - Submit a source test protocol at least 60 days before conducting initial source test
 - Conduct source test within 60 days of initial operation
 - Conduct periodic source testing every 24 months
 - Submit source test report within 60 days of sampling



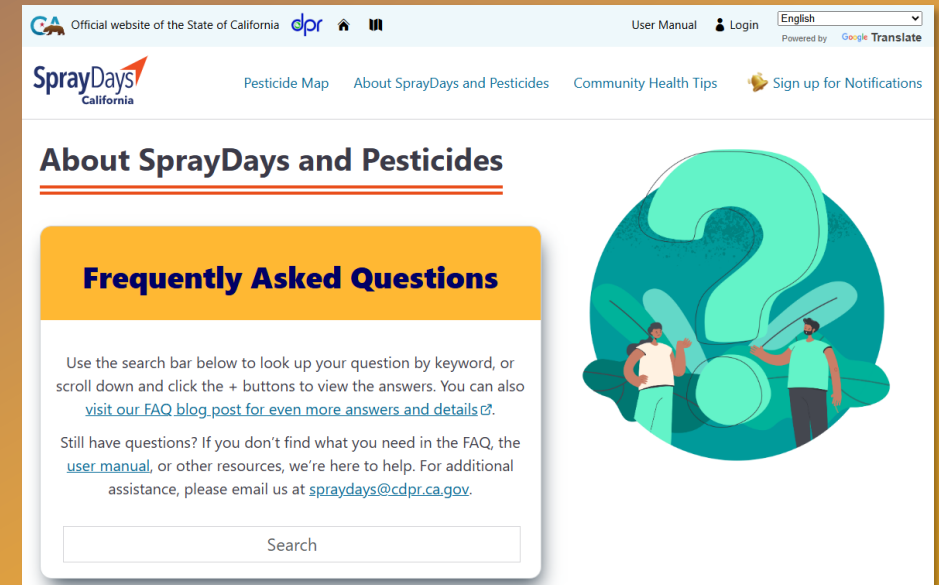
Parametric Monitoring



- Maintain a voltage meter, ammeter, power consumption meter, or other electrical monitoring device across the exhaust fan of the fumigant aeration system
- Prior to initiating aeration, record the voltage, current, or power consumption across the exhaust fan
- Maintain the exhaust fan within manufacturer's specifications

Public Website

- Commodity fumigation operators responsible for maintaining public website of their activities
 - Similar to Rule 1180 approach and consistent with SprayDays California website
- Will contain data within 72 hours of fumigation
 - Pounds of fumigant used each day
 - Starting and ending time of aeration
 - Parametric monitoring data



Triggered Requirements for Notices of Violation

Triggered Requirement	Public Outreach Within 30 Days
Each Notice of Violation (NOV)	Mail notification to nearby receptors
Three (3) NOVs in 12 months	Public Notice (media posting)
Six (6) NOVs in 12 months	Public Meeting (in community)*

* Notice for public meeting with mail notification to nearby receptors and media posting also required

Notifications, Recordkeeping, and Exemption

- Electronic notification to South Coast AQMD prior to fumigation and source testing
- Daily records of operations maintained for 5 years onsite and available upon request
- Note: Annual Emissions Reporting (AER) required
 - Applies to all South Coast AQMD permitted facilities
- Emergency fumigation exempted except for notification and recordkeeping requirements



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Estimated Costs

Line Item	One-Time Capital Cost	Annualized Recurring Cost
Raising Stack Height	\$10,000 per stack	N/A
Upgrading Exhaust Fan	\$1,000 per stack	N/A
Control Equipment	\$100,000 - \$500,000	\$10,000 - \$20,000
Control Equipment Source Testing	\$10,000	\$5,000

Projected Impacts Using Average Costs

Compliance Path	Affected Facilities	Total One-Time Capital Costs	Total Annualized Recurring Cost
Raising Stack Height	3	\$30,000	N/A
Upgrading Exhaust Fan	2	\$2,000	N/A
Control Equipment & Source Testing	1	\$310,000	\$20,000
Grand Totals	6	\$342,000	\$20,000

Socioeconomic Impact Assessment

- Analysis will consider:
 - Types of affected industries, including small businesses
 - Range of probable costs, including costs to industry or business
 - Other items typically included in socioeconomic impact assessment
- Draft Socioeconomic Impact Assessment will be available at least 30 days prior to the Public Hearing on December 4, 2026 (subject to change)

California Environmental Quality Act (CEQA)

- PR 1495 is a project subject to CEQA
- South Coast AQMD, as lead agency, is reviewing the proposed project to determine if it will result in any potential adverse environmental impacts
- Appropriate CEQA documentation will be prepared based on the analysis



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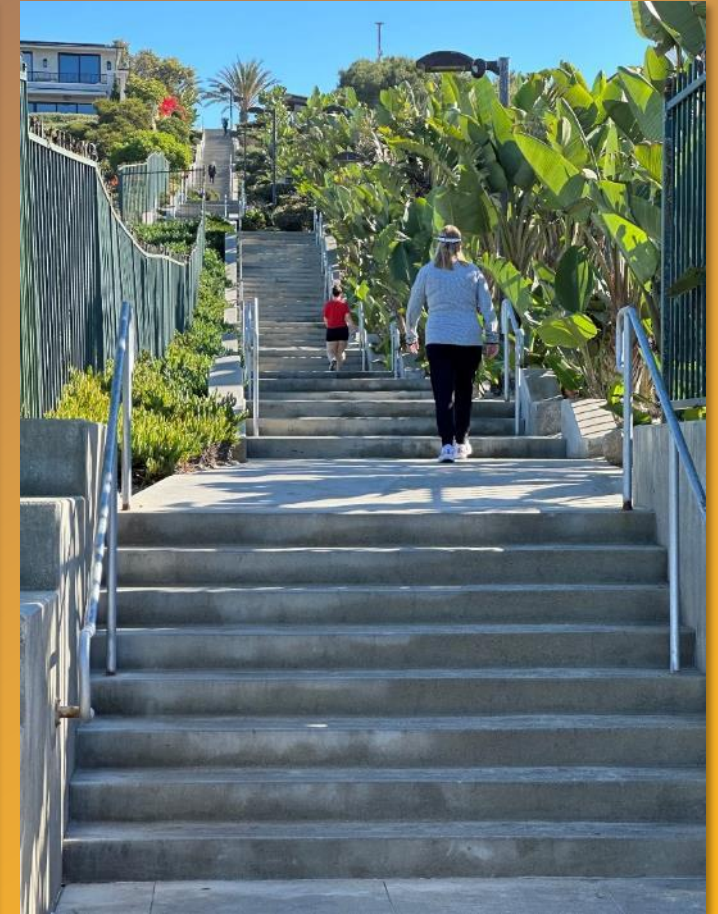
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Milestone	Projected Date
Written Comments Due	October 15, 2026
Stationary Source Committee	October 16, 2026
Permit Applications Due	October 28, 2026
Set Hearing	November 6, 2026
Public Hearing	December 4, 2026



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