



Smoke Management Program

Monterey Bay
Air Resources District

June 11, 2019

Smoke Management PROGRAM – Regulatory Background

- **California Health and Safety Code**

- “It is the intent of the legislature...that agricultural burning be reasonably regulated and not be prohibited.”



- **California Code of Regulations**

- Ensures that air districts develop programs to accommodate agricultural and prescribed burning in their areas.



- **Rule 438**

- Allows burning while minimizing smoke impacts on the public.

- Smoke management permit
- Smoke management plan
- Favorable meteorology

Smoke Management Program - Purpose

- **Protect public health**
- Avoid:
 - public nuisance
 - exceeding air quality standards
- Support land management needs
- Provides increase burn opportunities
- Allows for continuation of burn programs
- Fuels reduction = wildfire risk reduction

Types of Burning

Pile Burns



Agricultural:

Clean ag waste burned under permissive burn day conditions



Backyard Burning

High emission events objective is to move smoke above or away from populations

Range Improvement




Wildland Vegetation Management



Reduce hazardous fuel build-up along the Wildland-Urban Interface, in parks and other public lands.

Who Permits What?

#1

- Check with Your Local Fire Agency
- Fire District Doesn't Issue Burn Permits?
then the Air District will Permit 
- **BYB / Ag Burn:** Either/Or - Not Both
- **Rx Burn:** BOTH

MBARD Permit Process

- Free!
- Small Pile Burns – Use Online System
- Large Pile Burns (10 Acres+) and Prescribed Burns
 - Contact Air District
 - Smoke Management Plan
 - Prescribed Fire Information Reporting System (PFIRS)
 - Site Inspection
- Contact District to renew or modify permit

Online Burn Permit System

<https://www.mbard.org/smoke-management>

Monterey Bay Air Resources District

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AIR QUALITY AND PLANNING

- CURRENT AIR QUALITY / FORECAST
- AIR MONITORING STATION CAMERAS
- SMOKE MANAGEMENT PROGRAM
- SAN LORENZO VALLEY - SPARE THE AIR PROGRAM
- COMMUNITY AIR PROTECTION PROGRAM
- COMMUNITY EDUCATION
- AIR QUALITY MANAGEMENT PLANS
- CEQA
- CLIMATE CHANGE
- ADVANCED CLEAN TRANSPORTATION

Smoke Management

Smoke management is the use of techniques such as meteorology, fuel moisture, fuel loading, fire suppression and other burn methods to minimize the smoke impacts from fires. Accordingly, the purpose of the MBARD's Smoke Management Program is to minimize the air quality impacts of open burning.

Backyard burning is the burning of green waste material by occupants of single- or two-family dwellings.

Backyard burn season closed on April 30 and will begin on December 1. The Backyard Burn Permit System will be available at the end of November.

Agricultural burning is used in the growing of crops, the raising of fowl, animals, or bees as a gainful occupation.

[Apply here for an Agricultural Burn Permit.](#)

Prescribed burning is the use of broadcast or pile burns for the purposes of managing wildlands, range improvement, or improving wildlife habitat.

[Apply here for a Prescribed Burn Permit.](#)

Development burns are for disposing of dry vegetation grown on a property being developed for commercial or residential purposes. Please contact the MBARD office to apply for a Development Burn Permit.

Applicable Rules and Regulations:

- 🔗 Rule 438
- 🔗 Title 17: Smoke Management Guidelines for Agricultural and Prescribed Burning

Burn Type Information

- 🔗 What are the different types of burns?

MAP OF FIRE DISTRICTS IN MBARD

Use the map link below to search your address to identify your fire district.

[READ MORE >](#)

MAP OF BURN ZONES

Use the map link below to search your address to identify your burn zone.

[READ MORE >](#)

Online Burn Permit System via Air Quality and Planning



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[San Lorenzo Valley - Spare the Air Program](#)

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☆ AG Burn



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- Authority to Construct/Permit to Operate
- Gas Stations
- Ag Engine Registration
- Open Burning Permits / Smoke Management
- Air Toxics
- Emission Reduction Credits (ERC)



<https://www.mbard.org/smoke-management>

Online Burn Permit System Backyard / Ag Burning

<https://www.mbard.org/smoke-management>

MONTEREY BAY

AIR RESOURCES DISTRICT _____ SMOKE MANAGEMENT/AGRICULTURAL BURN PERMITS
24580 SILVER CLOUD COURT * MONTEREY, CALIFORNIA 93940 * 831/647-9411 * FAX 831/647-8501

LOG IN

Please enter your username and password. [Register](#) if you don't have an account.

Account Information

Username:

Password:

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Smoke Management PLANS

- Provide clear and accurate maps
- Identify location of smoke sensitive areas
- Identify favorable wind direction
- **Manageable burn unit size** – Complete one before moving on
- Escaped fire and suppression plan
- Avoid flare-ups on days following the burn

Prescribed Burn Permit Tracking: PFIRS

PFIRS Prescribed Fire Information Reporting System

Front Page ARB Products Local Agencies Support

Current Ignitions in PFIRS Username: Password: [Log In](#) [Forgot Password?](#)

View Ignitions By: Agency Burn Status Select Start Date: Select End Date: [View](#) [Larger Map](#)

NPS USFS BLM USFWS CalFire CA Parks Tahoe Conservancy Local Fire Local Non-Fire Private

Map Satellite

Medford
Shasta-Trinity National Forest
Reno
Sacramento
San Francisco
San Jose
Fresno
CALIFORNIA
Death Valley National Park
Las Vegas
NEVADA
Utah
Ogden
Salt Lake City
Sandy
Provo
QUINTAH AND OURA RESERVATION
St George
NAVAJO RESERVATION

PFIRS Access



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org/

Smoke Management

GOOD SMOKE MANAGEMENT

*Smoke jettisoned vertically 1,000's of feet
in the air, far above population.*

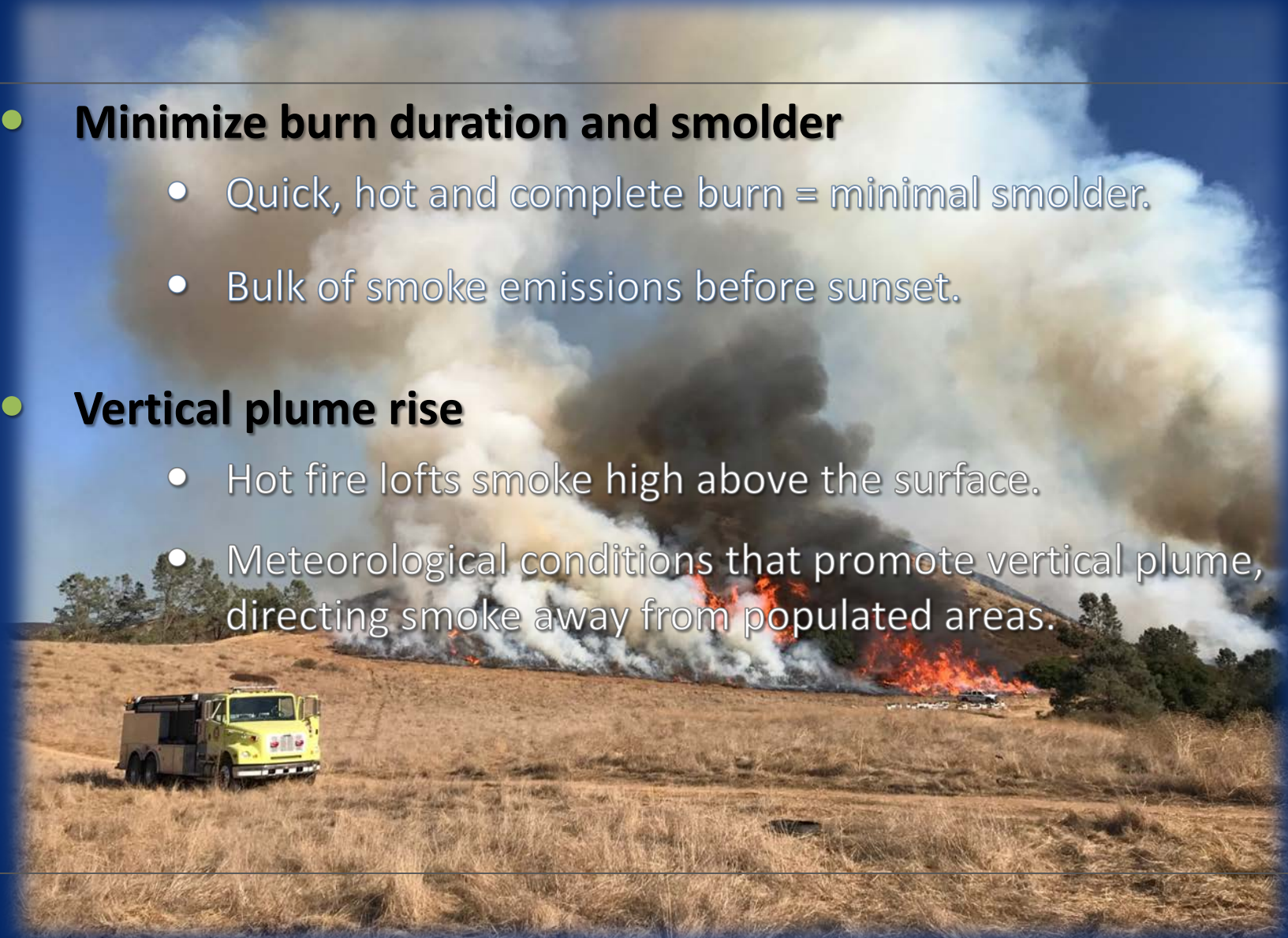


BAD SMOKE MANAGEMENT

*Smoke moving along the ground where it can
impact nearby communities.*

Approach to Smoke Management

- **Minimize burn duration and smolder**
 - Quick, hot and complete burn = minimal smolder.
 - Bulk of smoke emissions before sunset.
- **Vertical plume rise**
 - Hot fire lofts smoke high above the surface.
 - Meteorological conditions that promote vertical plume, directing smoke away from populated areas.

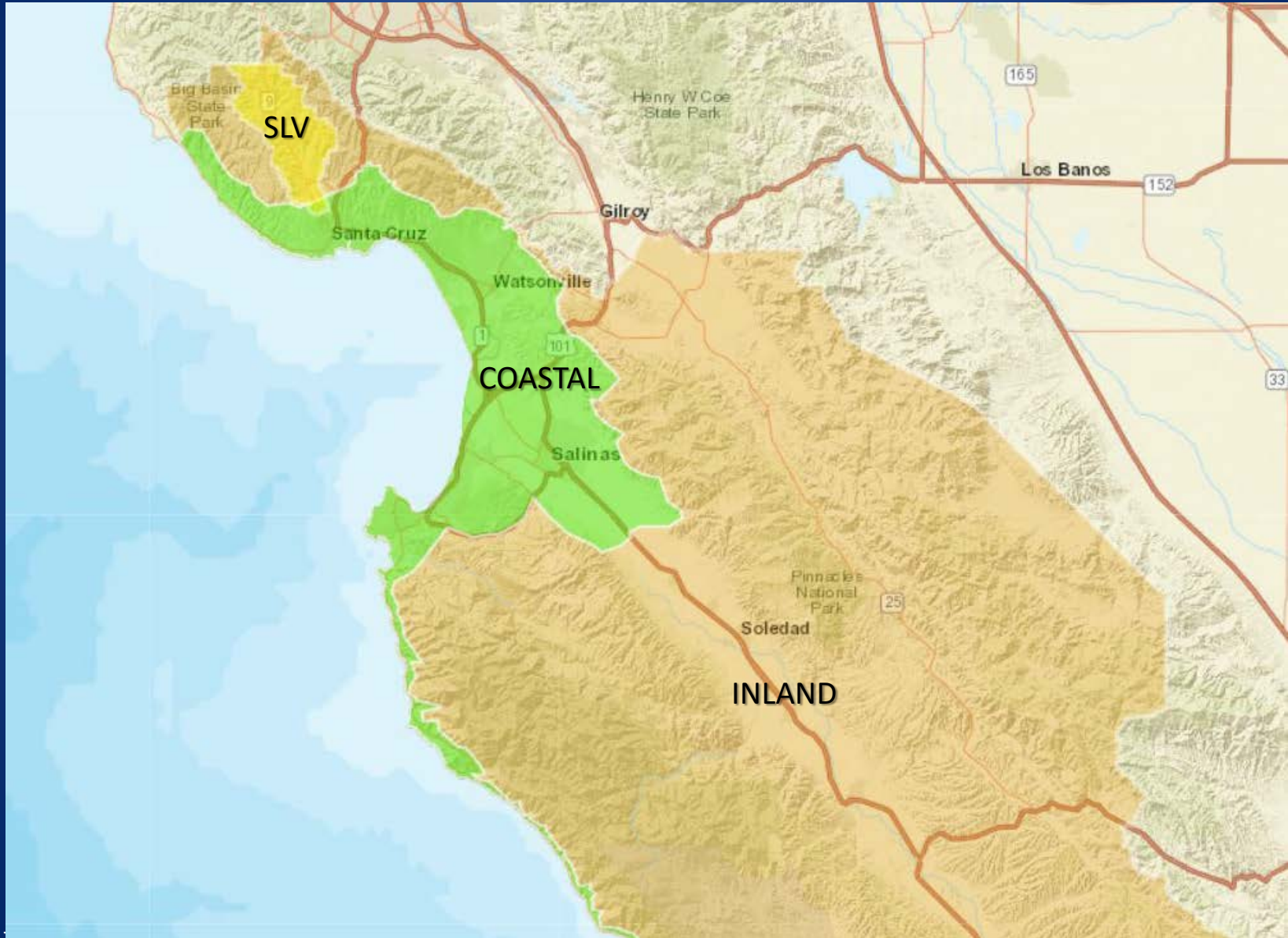


Avoid Significant Smoke Impacts

Collaboration is Key

- Burn authorization based on ...
 - » Meteorology
 - » Size/Area
 - » Vegetation Type
 - » Location
 - » Proximity to population

Burn Zones



Central Coast Met Challenges



Smoke Behavior - Coastal vs Inland Zones



COASTAL – Smoke is affected by marine inversion and onshore airflow causing it to be held at ground-level.

INLAND – Plume rise tends to be much less restricted, generally allowing smoke to rise more vertically.



Inversion



A Successful Burn:

- Safety
- Minimal impacts to populated areas
- No public nuisance complaints
- No exceedance of Air Quality Standards
- Rx Burn objectives achieved

Collaboration is Key



Contacts

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Improving Meteorological Tools

- Utilize improved modeling tools for forecasting
- On-site Remote Automated Weather Station
- Provide earlier forecasting
- No-cost spot weather forecast from National Weather Service
- On-site weather balloons or drones

Radiation Inversion

Altitude

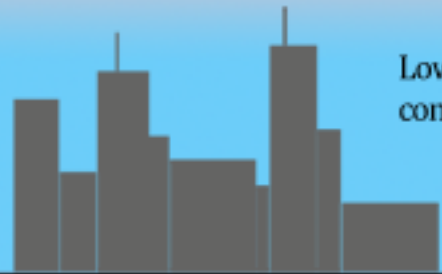
Temperature increasing with height in the inversion layer

Temperature reduces with height above the inversion layer

Warmer layer of air above remains unaffected by the cold surface

Lower layer cools by contact with the cold surface

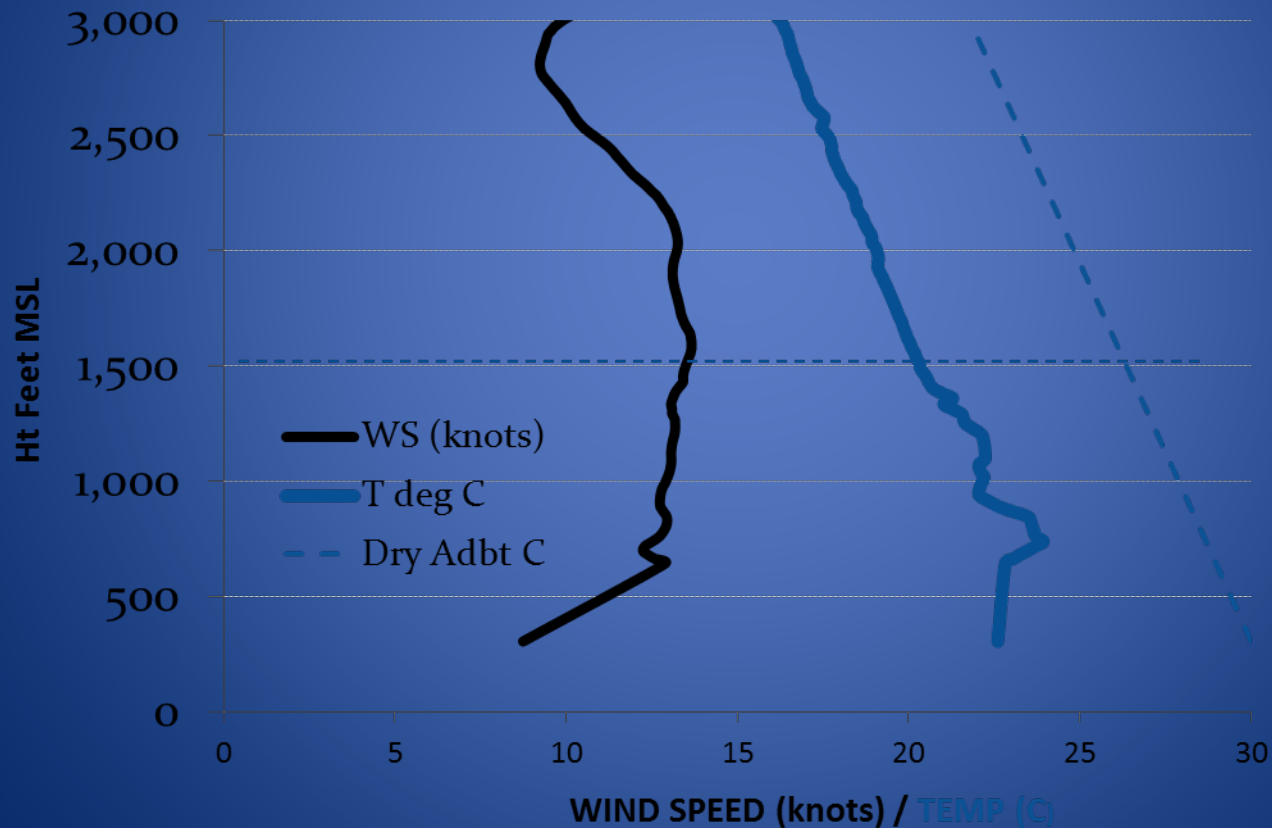
Temperature



Example: Vertical Observations

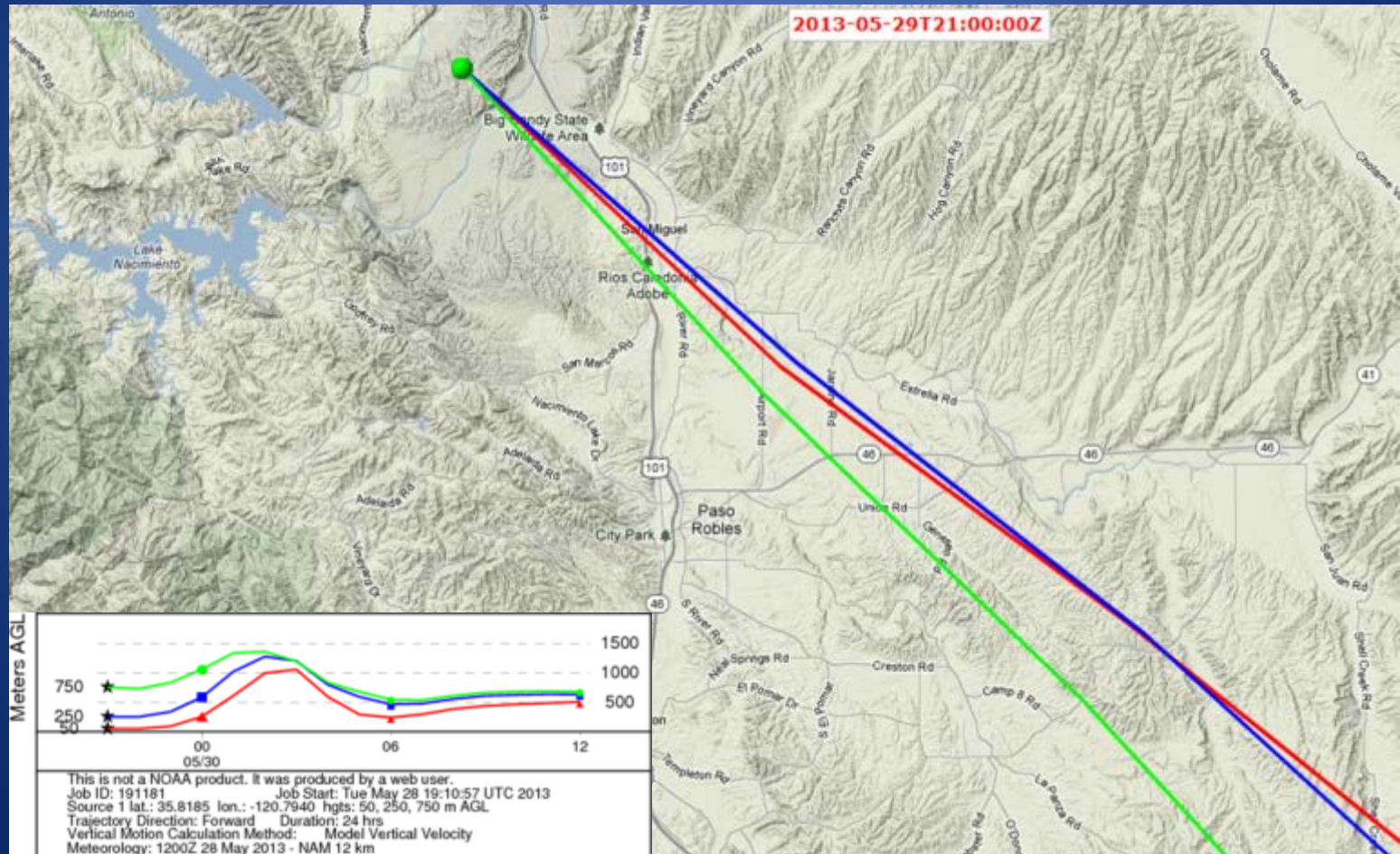
Radiosonde Plot

10:58 am PST 5/29/2013



Example: Forecast Trajectory

Camp Roberts Burn – Forecasted Smoke Trajectory



La Macchia Rx Burn





