

US EPA ARCHIVE DOCUMENT

Module 5

Soil Fumigant RED Requirements

Protections for Handlers & Workers (2010)

Restricted Use Pesticide Classification

Before reregistration:

-Restricted use:

- *methyl bromide*
- *1,3-dichloropropene*
- *chloropicrin*

-Non-restricted use products

- *(most) metam sodium/potassium*
- *(most) dazomet*

After reregistration: ALL are restricted use

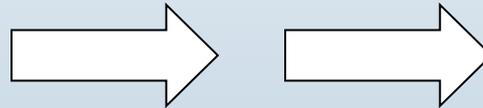
Who is a “handler”?

*A person
in:*

*from start
of application*

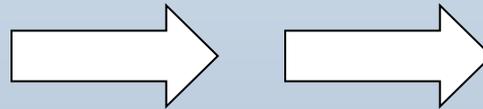
*to end
of:*

1. application
block



entry restricted
period

2. buffer zone



buffer zone
period

Handler activities include:

- Participating in the application
 - as supervisors, loaders, drivers, tractor co-pilots, shovelers, cross ditchers, or as other direct application activities;
- Using air sampling devices to monitor fumigant concentrations;
- Cleaning up fumigant spills
- Handling or disposing of fumigant containers;
- Cleaning, handling, adjusting, or repairing parts of equipment that may contain fumigant residues;
- Installing, repairing, operating, or removing irrigation equipment in application block or buffer zone;
- Entering application block or buffer zone to perform scouting, crop advising, or monitoring tasks;
- Installing, perforating, removing, repairing, or monitoring tarps;
- Performing any handling tasks as defined by the Worker Protection Standard.

Supervision of Handlers

Non-water run applications (e.g., shank, hot gas)

- “Certified applicators must be at the fumigation site in the line of sight of the application and must directly supervise all persons performing handling activities”

Water run applications (e.g., center pivot, drip)

- Certified applicator must be at site to begin the application
- Certified applicator or handlers under supervision of certified applicator must return every two hours to check on application
- Handlers communicate with certified applicator via cell phone or other means

Respiratory Protection for Handlers

If experiencing sensory irritation, handlers must either:

1. Stop work, leave area and monitor air concentrations
 - Resume work only when concentrations are below trigger level and irritation is gone

OR

2. Wear a respirator & resume work
 - *Measure air concentration every 2 hours*
 - *Stop work if having sensory irritation while wearing respirator, or measured concentration exceeds upper working limit of respirator*
 - If still having sensory irritation, can resume work only when concentrations are below trigger level, irritation is gone, and have changed respirator cartridge

Note: air purifying respirators are required for methyl bromide products with less than 20% chloropicrin

Figure A. Requirements when handlers cease operations

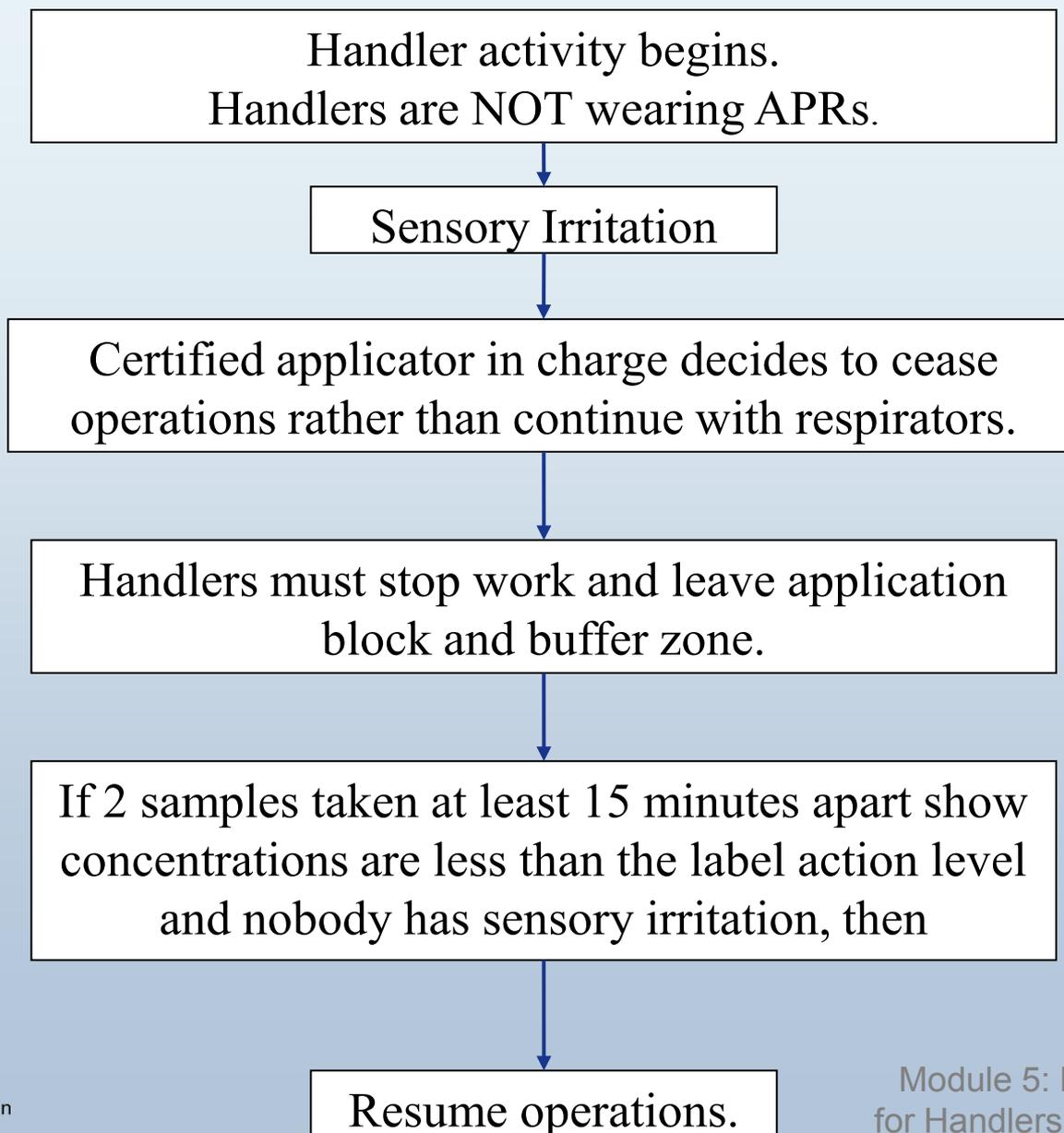
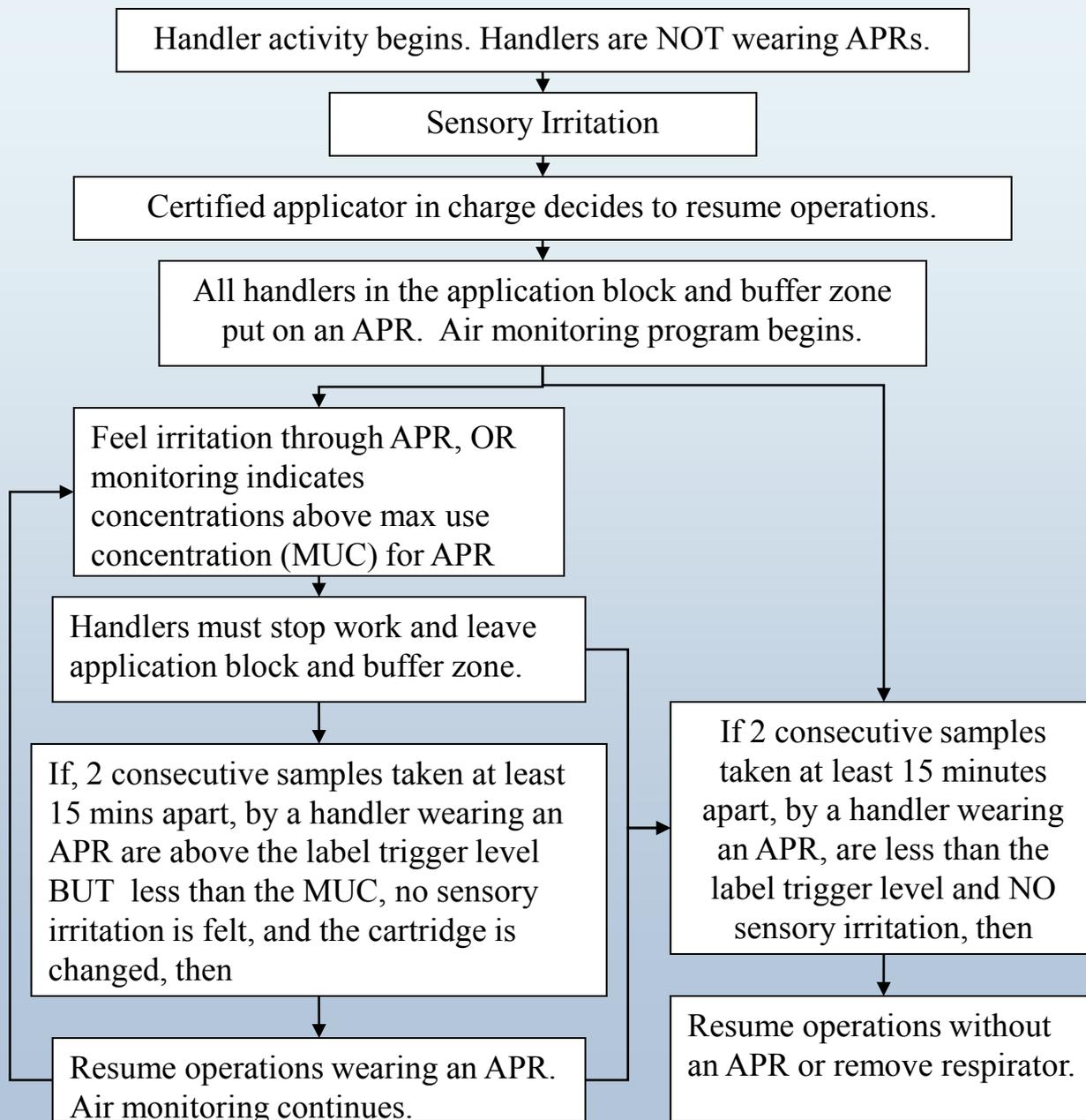


Figure B. Requirements when handlers resume work while using a respirator



Number of Handlers and Respirators Required On-site During Handler Activities

Product/ Formulation	Min # of Handlers	Min # of Air- Purifying Respirators 	Min # of SCBAs 
Methyl bromide or chloropicrin combo product with $\geq 20\%$ chloropicrin	2	2 Full-face	1
Methyl bromide product with $< 20\%$ chloropicrin	2	2 Half-mask	1
Metam sodium/ potassium	1	1 Full-face	0
Dazomet	1	1 Full-face	0

Handlers who use respirators must be:



- fit-tested



- trained



- physically fit to wear a respirator*

Module 5: Protections for
Handlers & Workers

Review Question

1. True or False?

All handlers who use a respirator must be fit tested, trained, and pass a full medical exam.

Review Question

2. How many air purifying respirators must be on site when applying a 100% chloropicrin product ?

- a. at least one
- b. at least two
- c. one for each handler

Tarp Perforation & Removal

Perforation

- 5 days after fumigant application is complete

Removal

- 2 hours after perforation is complete

Planting

- Less than 14 days after application:
 - Plant 48 hours after tarp perforation is complete
- 14 days or more after application:
 - Perforate and plant simultaneously

Early Tarp Perforation & Removal

Early removal (before 5 days) for broadcast applications

- Only if integrity of tarp is compromised by adverse weather conditions & tarp poses a safety hazard

Early perforation - flood prevention activities



Tarp Perforation Requirements - Manual Perforation

- May only occur:
 - At the beginning of each row when a coulter blade is used on a motorized vehicle such as an ATV
 - In fields that are 1 acre or less
 - During flood prevention activities
- If these conditions are not met, they must use mechanical methods

Tarp Perforation Requirements - Broadcast Applications

- Must perforate *each panel* of tarp
- Complete before noon
- Cannot perforate if rainfall is expected within 12 hours



Review Questions

3. Under normal conditions, how long must handlers wait before they can perforate tarps?
4. Can planting and perforation take place at the same time? If so, when?
5. *True or False?*
Manual perforation is never allowed.

Review Question

6. Seventy-two hours after a broadcast application, part of a tarp blows off a field. The remaining tarp could blow onto a nearby road.

Can the tarp be removed?

Entry Restricted Period

- Old labels allow reentry after 48 hours
- Reentry time lengthened
 - Highly variable fumigant dissipation rate (soil conditions, application method, and tarp type) so could still have high concentrations after 48 hours

Entry Restricted Period \neq REI

Four Scenarios for Entry Restricted Periods



Entry Restricted Period by Scenario

<i>If</i> application is...	<i>and</i> tarp is...	_____ days after application is completed	workers may enter...
1. Untarped	-	-	5 days after application is complete
2. Tarped	Perforated & Removed	within 14 days	after tarp is removed
3. Tarped	Perforated BUT <u>Not</u> Removed	within 14 days	48 hours after perforating tarps
4. Tarped	Perforated and/or Remove	more than 14 days	5 days after application is complete

Scenario 1 - Entry Restricted Period for Untarped Applications

5 days after application is complete



Shank Untarped



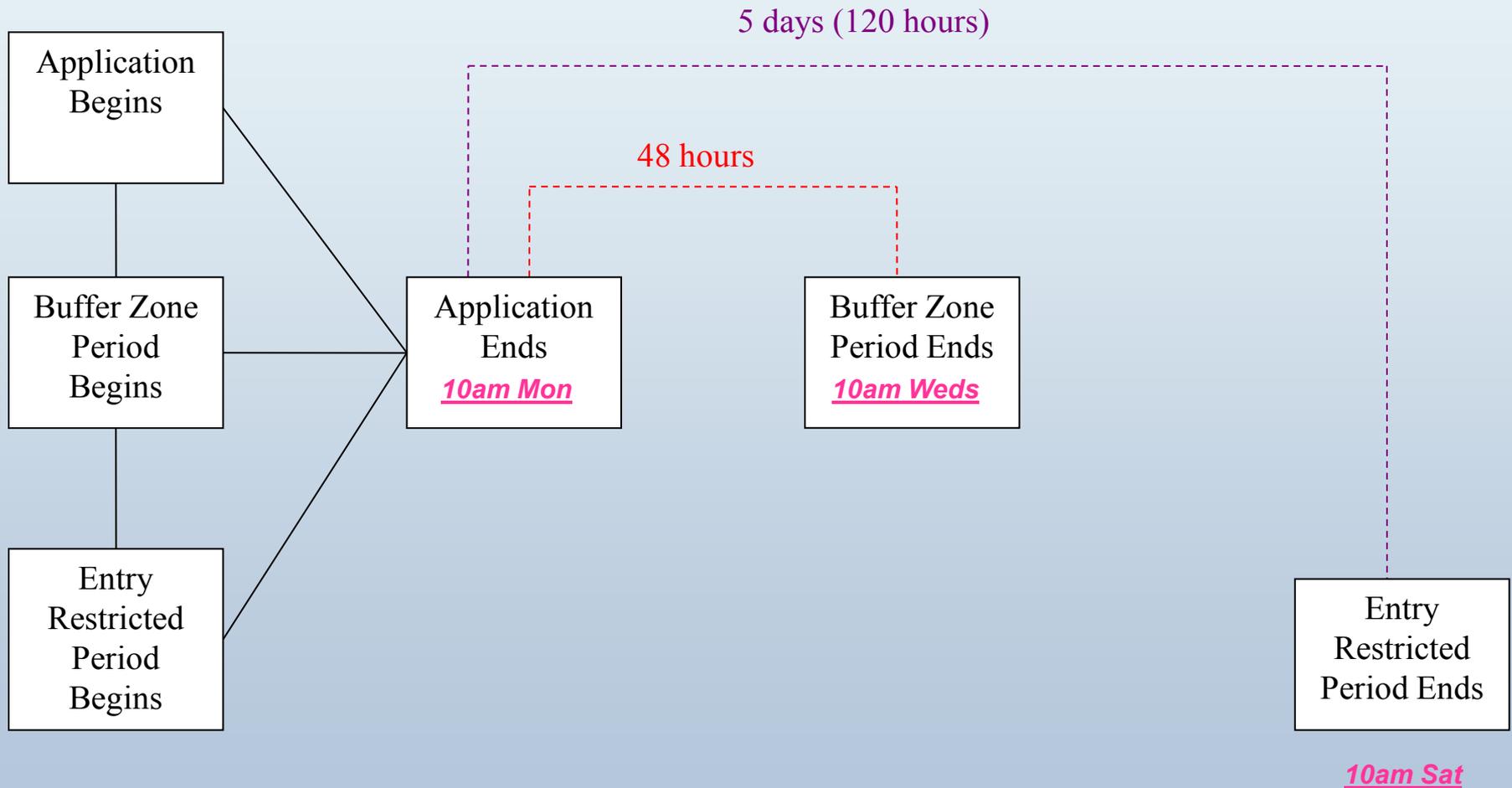
Drip Untarped



Center Pivot



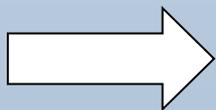
Scenario 1 – Example of Entry Restricted Period for Untarped Application



Scenario 2 - Entry Restricted Period for Tarped Applications

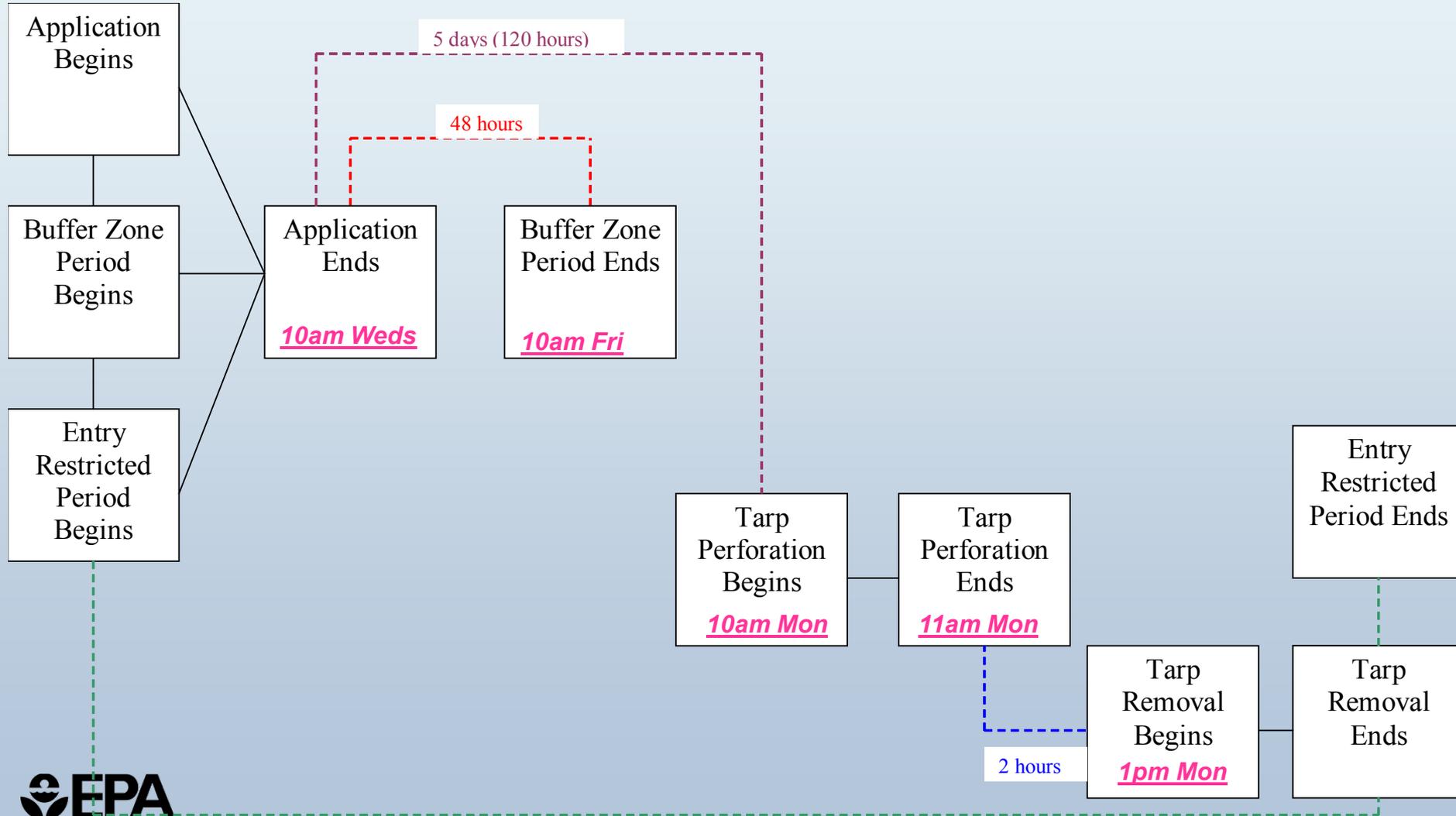


If tarps are perforated & removed less than 14 days...



Enter after tarp is removed

Scenario 2 – Example of Entry Restricted Period for Tarped Application



Scenario 3 - Entry Restricted Period for Tarped Applications

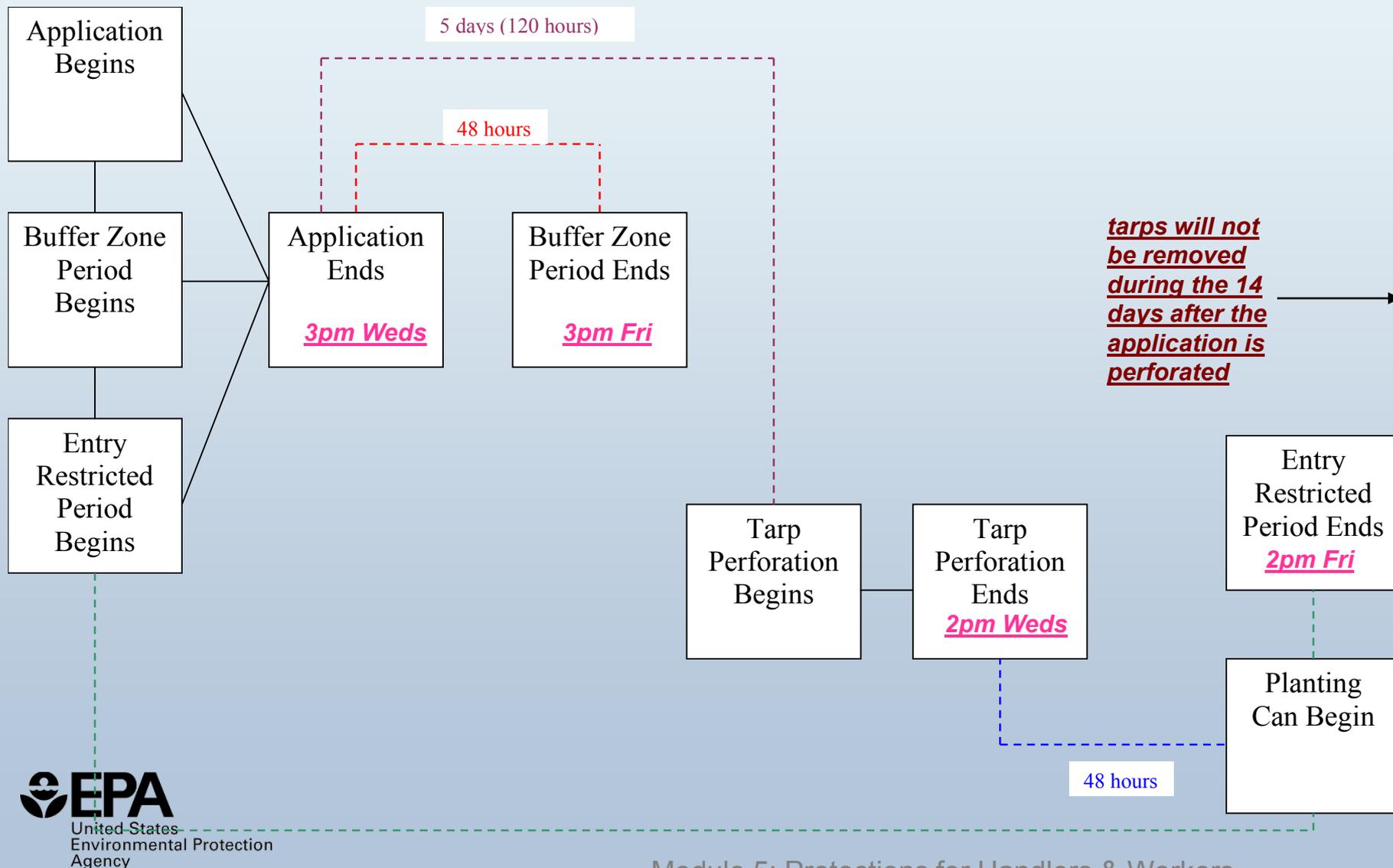


When tarps remain on field at least 14 days, but perforated within 14 days...



Enter 48 hours after perforating tarps

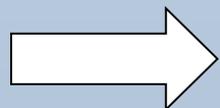
Scenario 3 – Example of Entry Restricted Period for Tarped Application



Scenario 4 - Entry Restricted Period for Tarped Applications

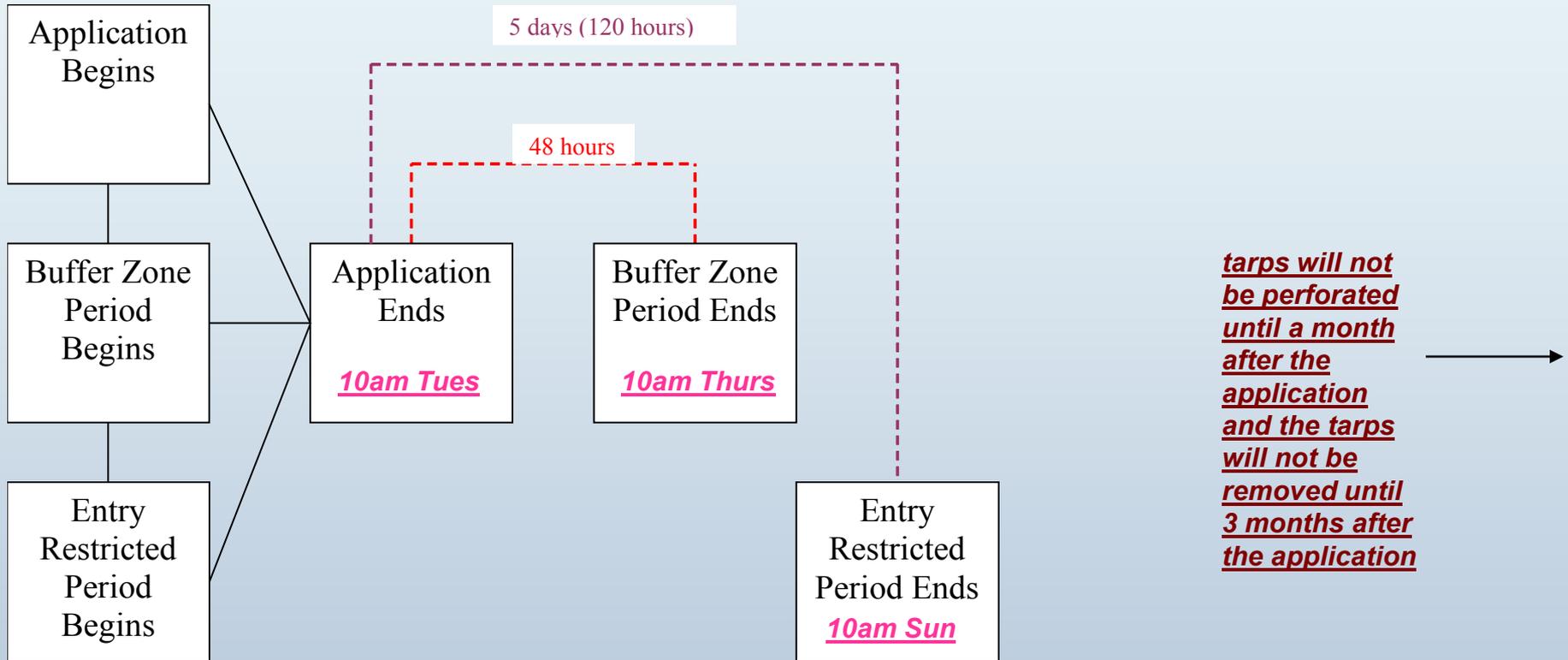


When tarps remain on field at least 14 days and are not perforated for 14 days or more...



Enter after 5 days

Scenario 4 – Example of Entry Restricted Period for Tarped Application



tarps will not be perforated until a month after the application and the tarps will not be removed until 3 months after the application

Tarp Perforation & Planting



Review Questions

True or False?

7. Handlers can enter a treated field before the entry restricted period expires.
8. An application to a tarped bedded field is completed at 5 pm on Monday. Tarps will not be perforated for 3 weeks. When can workers reenter the field?

Review Question

9. *True or False?*

Removing irrigation equipment in the treated area 48 hours after the application has stopped is **NOT** a handler activity.

Summary

- All soil fumigants will be restricted use
- “Handlers” is defined – and activities listed on label
- Handlers must stop work or wear a respirator if experiencing sensory irritation
- Tarps must remain on treated fields for 5 days after application, with some exceptions
- Only protected handlers can enter the application block during the entry restricted period
- Entry restricted period varies by application scenario

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