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| **Guidelines for Selecting Environmental Monitoring Sites** | | |
| **Revision: #2** | **Replaces: 4/8/02 version** | **Effective: 9/3/19** |

**1. Purpose and Scope:** Qualitative method to assist Environmental Monitoring Coordinators (EMC) select monitoring sites based on site-specific conditions. Sites selection should be based on a calculated risk score that is derived from two general predictors of risk:

- The potential for human, environmental or non-target species exposure .
- The potential for adverse health or environmental effects.

These guidelines are primarily for use when the number of sensitive sites in the Program area are too numerous to monitor all of them. However, this general approach to ranking sites may also be helpful when initially selecting sensitive sites.

These guidelines can help identify sites that have the greatest potential to demonstrate USDA and Program commitment to insuring the protection of human health and the environment during control and eradication operations. In addition, field environmental monitoring teams can use their time and other resources more efficiently while providing the most useful and representative sampling data.

**2. Reasons for Monitoring**: The selection of appropriate sensitive sites for monitoring is essential to demonstrating the effectiveness of Program operational procedures to exclude or minimize exposure of people and the environment to Program-applied pesticides.

Sampling will be conducted at sensitive areas as defined in the applicable Environmental Monitoring Plan (EMP). Each work unit should inventory all sensitive sites within the unit. Sufficient personnel to monitor all sites should be hired. If for any reason, sensitive sites are too numerous (as defined in the EMP) to be effectively sampled, EMCs need to provide a statement of the number of sensitive sites within the work unit area, a description of all sites and the reason why all sites cannot be monitored (e.g.,staff shortages, size of program area, time constraints). Then using these guidelines, select a sample of representative sensitive sites and identify these sites to the EMT.

Some of the key factors that must be considered are:

- Number of persons at risk
- Persons at increased risk (children, ill, disabled, elderly or hypersensitive)
- Exposure potential (food crops, livestock, fish)
- Potential for drift (distance to site, prevailing winds)
- Potential for runoff (topography, soil type, surface type, distance to site)
- Sensitive species (bees, fish farm)

Threatened and endangered species habitats are not covered in these guidelines because sites and applicable protective measures are established through consultation with the US Fish and Wildlife Service and other appropriate agencies. These sites will be identified in the environmental monitoring plan and must be monitored.

**3. Determining the Potential for an Adverse Effect:** Table 1 ranks sensitive sites for their potential for an adverse effect either on human health or the environment. The list of locations and sites in the table do not account for all possible situations. It is designed to provide a guide for identifying sites based on risk. EMCs should use the information in the tables in combination with their knowledge of the community to rank specific sites as high (3), moderate (2) or low (1) risk.

**Table 1. Potential for Adverse Effects**

| Site Description | Site Risk | Site Description | Site Risk |
|---|---|---|---|
| **Residential** | | **Commercial** | |
| If the following present: (Kitchen garden, orchid, pool, play area, children, elderly resident, chemically sensitive resident, bee hives) | 3 | Auction barn | 1 |
| Residences with none of the above | 2 | Slaughterhouse | 2 |
| | | Holding pens | 1 |
| **Community** | | Dairy | 3 |
| Elementary school | 3 | Grain storage | 2 |
| Jr. high or middle school | 2 | Food processing plant | 2 |
| High school | 2 | Apiary | 3 |
| Church | 2 | Fish or shrimp farm | 3 |
| Play ground | 3 | Organic Farm | 3 |
| Public buildings: post office, courthouse, etc | 1 | Research Farm | 3 |
| | | Shopping center | 1 |
| Ball fields | 1 | Restaurant | 1 |
| Public pool | 2 | Health club | 1 |
| Nursing home or other adult care facility | 2 | Food crops | 2 |
| | | Orchid | 2 |
| Child day care | 3 | Airport | 1 |
| Health clinic or hospital | 2 | Industrial park or strip | 1 |
| Fairgrounds | 1 | | |
| Beach | 1 | **Non-target Species** | |

| | | | |
|---|---|---|---|
| Stadium | 1 | General habitat | 3 |
| Reservoir (drinking water) | 2 | Critical habitat | 3 |
| Water treatment facility | 2 | Breeding area | 3 |
| Reservoir (non-drinking water) | 1 | Nesting area | 3 |
| | | Foraging or hunting zone | 3 |
| Jail or prison | 2 | Migration route | 3 |
| Campground | 2 | Pollinator habitat | 3 |
| Fishing pond | 2 | | |

**4. Determining the Potential for Human, Environmental or Non-Target Species Exposure:** Table 2 ranks site-specific characteristics for their potential to result in human, environmental or non-target species exposure to Program pesticides. EMCs should use this table as a guide in completing the Sensitive Site Selection Worksheet.

**Table 2. Potential for human, environmental or non-target species exposure**

| Exposure Factors | | Site Conditions | Score |
|---|---|---|---|
| **Drift Potential** | Distance from treated field to site | 0-100 feet<br>101-250 feet<br>251-500 feet<br>501-1000 feet<br>More than 1001 feet or not applicable | 4<br>3<br>2<br>1<br>0 |
| | Prevailing Winds | Generally towards site<br>Generally not towards site or not applicable | 1<br>0 |
| **Runoff Potential** | Soil type | Relatively non-porous (clay)<br>Moderately (loamy)<br>Highly porous (sandy) or not applicable | 2<br>1<br>0 |
| | Slope | Land generally slopes down towards site<br>Land generally does not slope towards site or not applicable | 1<br>0 |
| **Protection** | Natural or Manmade barrier between treated field and site | No<br>Yes or not applicable | 1<br>0 |

**5. Risk Assessment for Selecting Environmental Monitoring Sites**: Using the attached worksheet calculate a risk assessment score for sites in your work area or zone. Enter the site's potential for adverse effects score and exposure potential scores in the appropriate boxes. Sum the scores in each column to get the total risk assessment score. Using table 3 below or the instructions on the form, which show the recommended risk management strategies based on the risk assessment score, to institute an appropriate level of environmental monitoring.

For some sites the calculated score may not suggest an appropriate risk management strategy. In those cases, use you judgment and knowledge of the site to apply a strategy that is more appropriate to the situation than that suggested by the calculated score.

Note that there are certain sensitive sites that regardless of the calculated score may require environmental sampling:

- Presence of person(s) identified as being highly sensitive to Program pesticide.
- An adverse effect was possibly caused by program.
- Sampling has been requested by property owner, resident, etc.
- Endangered and threaten species habitat

**Table 3. Environmental monitoring Guidelines**

| Risk Assessment Score | Environmental Monitoring Strategy |
|---|---|
| **9 to 12** | High risk location, monitoring highly recommended |
| **5 to 8** | Moderate risk location, monitoring recommended |
| **1 to 4** | Low risk location, monitor if time and resources permit |

# Sensitive Site Selection Worksheet / Environmental Monitoring

| | | Site 1 | Site 2 | Site 3 | Site 4 | Site 5 | Site 6 |
|---|---|---|---|---|---|---|---|
| **Adverse effects potential** | | | | | | | |
| Description of site | | | | | | | |
| Select score from Table 1 | | | | | | | |
| **Potential for exposure** (NA= not applicable) | | | | | | | |
| Distance from field to site | 4 = 0-99 feet<br>3 = 100-249 feet<br>2 = 250-499 feet<br>1 = 500-999 feet<br>0 = More than 1000 feet or NA | | | | | | |
| Prevailing Winds | 1 = Generally towards site<br>0 = Generally not towards site or NA | | | | | | |
| Soil type | 2 = Relatively non-porous (clay)<br>1 = Moderately (loamy)<br>0 = Highly porous (sandy) or NA | | | | | | |
| Slope | 1 = Generally down towards site<br>0 = Generally not towards site or NA | | | | | | |
| Natural or manmade barrier present | 1 = No<br>0 = Yes or NA | | | | | | |
| Risk Assessment Score (Column totals) | | | | | | | |

**Risk Assessment**
9 to 12 = High Risk
5 to 8 = Moderate Risk
1 to 4 = Low Risk

**Environmental Monitoring Strategy**
Monitoring highly recommended
Monitoring recommended
Monitor if time and resources permit

Refer to the your program's Environmental Monitoring Plan or contact the USDA-APHIS Environmental Monitoring Team at 301-851-2351 or -2345 for information on the use of this form. Please photocopy this form as needed.