

## SILVICULTURAL PLANNING FORM

### INSTRUCTIONS

1. Submit FM Application to FM Section Administrator noting the use of the Progressive System of Forest Management Planning Certification Program
2. FM Section Administrator will return county level RTE worksheet and HCVF Guidance Worksheet for Cooperating Forester to complete
3. Copy or print only the portions of this FORM that are needed for the forest management unit you are working in.
4. Obtain appropriate map to designate FM boundary, harvest boundary, stand locations, SMZs, special areas including HCVF, and non-harvest areas.
5. Use a walk-through of the non-harvest area to fill in the NON-HARVEST AREA section.
6. Use a walk-through of the harvest unit to fill out the BASIC TRACT DESCRIPTION section, PRESCRIPTION sections, and RETENTION section. The walk-through is used to delineate stands/management units, make observations and take data on individual stands where appropriate take, and note areas where retention is required. Stands/management units should be designated and you will need to identify them on a map for the Certified Logger.
7. Select appropriate silvicultural practice(s) in the PRESCRIPTION section to provide a prescription for each stand/management unit. Note a prescription section can be used for more than one stand if appropriate. Fill in appropriate data, descriptions, and justification. Make as many copies of these sections as needed.
8. Use information in the PRESCRIPTION Section to develop cutting guidelines for each stand/management unit. These cutting guidelines are developed by translating the silvicultural prescription information into logger vernacular in a manner that conveys how the logger should cut the stand. The cutting guidelines are input into the HARVEST and CUTTING GUIDELINES Form.
9. Discuss cutting guidelines with logger and ensure that guidelines can be implemented. If necessary and appropriate adjust guidelines to accommodate harvest constraints (local markets, equipment, time constraints on harvest, etc.) and landowner objective(s). Use of flagging to demonstrate intermediate treatments or retention is encouraged where appropriate.
10. Complete HARVEST AND CUTTING GUIDELINES Form.
11. Once complete send entire SILVICULTURAL PLANNING FORM and the HARVEST AND CUTTING GUIDELINES FORM (electronic, scanned, or hardcopy and map) to the CFWC FM Section Administrator for approval.
12. Provide approved final HARVESTING and CUTTING GUIDELINES Form to the certified logger. You may provide a copy of your map to the logger or use the loggers map to delineate stands, retention and other issues.
13. Ensure that cutting guidelines and general tract information is understood and can be accomplished by the certified logger.

**Note:** A copy of the Silvicultural Planning Form and Harvest and Cutting Guidelines Form will be kept by the FM Section Administrator. If any changes have been made to this Form after initial submission please indicate this to the FM Section Administrator as soon as possible.

**Basic Tract Description Section** - This section provides general information on the property and is used to establish basic planning information for the tract. It allows the Center to relate these planning documents associated with this harvest to the landowner and to the traditional forest management plan that will eventually be required for the property. NOTE: T&E occurrence information will be provided by the Forest Management Section Administrator. HCVF guidance for the harvest unit can also be obtained from the Center. Both require that the location of the harvest unit be conveyed to the Center to derive these inputs prior to completing this form.

**Prescription Section** - The Prescription Section provides a number of common silvicultural prescription types that can be used to prescribe treatments for a wide range of forest conditions including:

- Intermediate – normally used to for thinnings (area wide, row), crop-tree release, or non-regenerative improvement prescriptions
- Regeneration: Group – used for group opening, group selection or patch cuts within a stand.

- Regeneration: Whole Stand – used for clearcuts in FSC defined plantations in the Appalachian Region or semi-natural planted stands outside of the Appalachian Region or in any stand type where degradation is significant to warrant removal of standing material.
- Regeneration: Two Age/Deferment – used to prescribe details for a deferment harvest associated with two age stand development.
- Regeneration: Shelterwood – include traditional or irregular shelterwoods (not including deferment).
- Regeneration: Individual Tree Selection – used to develop shade tolerant species development and within stand multi-aged ( $\geq 3$ ) cohorts.
- Other Prescription: used to develop alternative prescriptions in lieu of using other prescription alternatives.

These prescriptions provide a framework for developing cutting guidelines for each stand or management unit. Prescription selected must be warranted and justified with supporting quantifiable data and qualitative descriptions. If a prescription alternative provided is not adequate to meet the conditions associated with a particular stand, use the Other Prescription option to provide sufficient stand and prescription information. Prescriptions must be able to be implemented with the Certified Loggers available harvest equipment, operational capacity, and workforce ability and under the constraints of local financially viable markets. Ultimately, the stand/management unit silvicultural prescriptions and cutting guidelines must be consistent with silvicultural principals and methodologies that result in sustainable growth and development of stands to meet FM certification objectives.

NOTE: One or more prescriptions can be selected for a stand/management unit. When multiple prescriptions are selected due to a high degree of variation existing within a stand/management unit you must describe when each prescription should be implemented within the stand/management.

**Retention Section** - FSC requires retention for most properties. The checklist allows you to indicate the retention elements for the entire harvest unit. Retention elements that are included in the stand cutting guidelines do NOT need to be discussed with the logger. Retention elements that are manufactured or additional need to be delineated on a map if appropriate and discussed with the logger.

**Non-Harvest Section** - The non-harvest section is used to provide information that indicates that the Center, landowner, and Cooperating Forester are aware of issues outside of the harvest unit. Non-harvest areas do NOT include areas where no cutting will occur with the harvest unit, such as patches that are non-merchantable, or setbacks areas associated with special habitats, etc. Generally no immediate action will be required to deal with these issues unless they are significant enough to stop certification of the property.

### **Filling Out the HARVEST and CUTTING GUIDELINE Form.**

The Harvest and Cutting Guideline Form is developed from the silviculture prescription information and after consultation with the certified logger so that constraints of equipment, workforce prowess, and markets can be planned for in the guidelines.

The Harvest and Cutting Guideline Form must be completed and is divided into three parts as follows:

- General Guidelines for the Entire Harvest Boundary – this area is used to provide information that is applicable throughout the harvest unit. For example SMZ or cliff line issues may occur in more than one stand.
- Stand Cutting Guidelines – delineate stands (areas within the harvest boundary) and provide cutting guidelines for each stand. Providing the cutting guidelines in logger vernacular is extremely important. For example, provide retention (leave tree) information in terms of species, diameter (or other descriptor), and spacing (ft apart or lengths of cutting machine). Typically use of basal area, trees per acre, or other similar silviculture terminology may not be appropriate.
- Continuation Sheet – use as needed if space enough space is not available in the General Guideline or Stand sections.

**NOTE Cooperating Forester:** The FMU and harvest will be visited as a part of annual Center FMU audits and evaluation of the Silviculture Planning Form and Harvesting and Cutting Guideline Form will be completed as part of the audit.



**INTERMEDIATE PRESCRIPTIONS – thinnings, croptree release, improvement treatments**

This prescription can be used to provide increased growing space to Acceptable Growing Stock (AGS) and/or remove Unacceptable Growing Stock (UGS). Typically this prescription would encompass crop tree release, improvement treatments in degraded stands, area wide thinning, or row thinning or a combination of row and select thinning in plantations. Regardless of removals the prescription requires that adequate stocking of AGS remains after harvest. It assumes that adequate volumes of removals are present to warrant a financially viable harvest while retaining appropriate volume and value of AGS.

Condition: Stand retains adequate AGS to meet minimum full stock levels or can achieve minimum full stocking in 10 yrs.

Data and Description: Collect adequate plot data to determine residual basal area and dbh/#stems data to determine residual stocking (stocking percent, crown competition factor, relative density), describe preferred species and AGS.

**Stand/Management Unit:** \_\_\_\_\_

**AGS Description** Species: \_\_\_\_\_  
 \_\_\_\_\_

Characteristics of AGS and/or Degraded Stems to Be Removed: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Residual Stocking**

\_\_\_\_\_ # plots/points      \_\_\_\_\_ residual AGS ba/a      \_\_\_\_\_ residual AGS dbh/# stems/a

\_\_\_\_\_ residual TOTAL ba/acre

\_\_\_\_\_ percent AGS stocking (or equivalent)      \_\_\_\_\_ percent TOTAL stocking (or equivalent)

**Practice Description** (check which best describes this treatment)

\_\_\_ Crop Tree Release(CTR)    \_\_\_ Improvement treatment    \_\_\_ CTR/Improvement Comb.

\_\_\_ Area Wide Thinning      \_\_\_ Row Thinning              \_\_\_ Row/Selection Thinning

**Implementation** – Describe specific conditions for implementation of this practice (ex. description of when this is to be implemented for a portion of a stand/management unit, recommendations associated with equipment and/or skidding, practices to limit AGS damage).  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Desired Post Harvest Condition** - Describe the desired post harvest condition.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**REGENERATION: GROUP/PATCH – group openings, group selection, patch cuts**

This prescription is used to initiate regeneration to a portion of a stand/management unit. The group opening areas or patches must have adequate regenerative capacity to provide the regenerating age class with acceptable species and stocking. Openings are large enough to initiate and maintain regenerating age class development of shade tolerant and/or intermediate tolerant species. Maximum opening sizes must be established to meet FM certification specifications and should be justified based on growing stock requirements and financial considerations of the harvest. Retention within the opening does not limit regenerating age class development. Location and spacing should be based on providing appropriate retention and buffering areas to meet FM certification requirements.

Condition: Stand has adequate regenerative potential where group openings are to occur.

Opening size(s) and within opening retention are adequate to provide for long-term growth and development of regenerating age class without the need for further treatments prior to canopy closure of the regenerating age class (typically 10 – 15 yrs after harvest).

Data and Description: Collect adequate information (quantitative or qualitative) to determine regenerative potential (ex. preferred species, sources of reproductions) and group opening size and configuration (ex. harvesting equipment, topography, requirements of preferred species).

Stand/Management Unit: \_\_\_\_\_

Preferred Species to Regenerate: \_\_\_\_\_  
\_\_\_\_\_

**Reproductive Capacity** (check all that are appropriate)

\_\_\_ Seed Bank species: \_\_\_\_\_

\_\_\_ Seed Deposited Post Cut species: \_\_\_\_\_

\_\_\_ Advance Reproduction species: \_\_\_\_\_

height/size (circle all that apply) <2 2-4 4-6 >6 <2 2-4 4-6 >6 <2 2-4 4-6 >6

\_\_\_ Stump Sprouts species: \_\_\_\_\_

Dbh range (circle all that apply) 2-6 6-12 >12 2-6 6-12 >12 2-6 6-12 >12

Average age or age range \_\_\_\_\_

\_\_\_ Root Suckers species \_\_\_\_\_

Artificial Regeneration/Site Preparation Required – CFWC FM Section required proof of planning for these practices (seedling purchase order, farm bill/conservation practice signup). Attach to this form or provide contact information for FM Section.

**Opening Size** (provide recommended open size or range of sizes to be used)

One recommended opening size \_\_\_\_\_ ft or acres (minimum 150 ft to 10 acres in Appal.)

Range of opening sizes \_\_\_\_\_ to \_\_\_\_\_ ft or acres

**Spacing Provisions** – Describe the # or placement of openings as well as their spacing or proximity to each other, stand/management unit boundaries, topographic structures. (Note: 150 ft is required between openings to provide adequate buffering retention when no other retention is provided for in the harvest unit.)

\_\_\_\_\_

\_\_\_\_\_

**Within Opening Retention** – Describe within opening retention (max 20 sq ft BA/a allowed).

\_\_\_\_\_

[The prescription information is used to develop stand level guidelines expressed in logger vernacular and provided in the HARVEST and CUTTING GUIDELINE Form]

**REGENERATION: WHOLE STAND OPENING – clearcuts, commercial or total**

This prescription is used to initiate regeneration to an entire stand/management unit. This alternative can only be used in FSC defined plantations (monoculture plantings, short rotation and/or intensive site preparation) requiring even-aged management in FSC Appalachian Region or FSC semi-natural planted stands in non Appalachian Regions requiring even-aged management or in naturally regenerating hardwood, pine, or mixed stands that are significantly degraded to warrant removal of all standing material. Justification is required to indicate that other silvicultural alternatives, ex. two age deferment harvests are not a viable alternative. The stand must have adequate regenerative capacity to provide the regenerating age class with acceptable species and stocking or artificial regeneration is planned. Retention within the stand does not limit regenerating age class development.

Condition: Stands have adequate regenerative potential or artificial regeneration is required. Residual growing stock levels allow for the development of regenerating age class without the need for further treatments prior to canopy closure of the regenerating age class (typically 10 – 15 yrs after harvest) or site preparation treatments are planned.

Data and Description: Collect adequate information (quantitative or qualitative) to determine regenerative potential for natural regeneration (ex. preferred species, sources of natural reproduction) OR collect or describe soil/site information necessary to provide planting prescription including species, spacing/density, site preparation.

Stand/Management Unit: \_\_\_\_\_

Regeneration: \_\_\_\_\_ natural \_\_\_\_\_ artificial

Preferred Species to Regenerate: \_\_\_\_\_

**Natural Reproductive Capacity** (check all that are appropriate)

___ Seed Bank	species:	_____	_____	_____								
___ Seed Deposited Post Cut	species:	_____	_____	_____								
___ Advance Reproduction	species:	_____	_____	_____								
height/size (circle all that apply)	<2	2-4	4-6	>6	<2	2-4	4-6	>6	<2	2-4	4-6	>6
___ Stump Sprouts	species:	_____	_____	_____								
Dbh range (circle all that apply)	2-6	6-12	>12	2-6	6-12	>12	2-6	6-12	>12			
Average age or age range	_____	_____	_____									
___ Root Suckers	species	_____	_____	_____								

**Artificial Planting** Species \_\_\_\_\_

Spacing row spacing \_\_\_\_\_ ft within row spacing \_\_\_\_\_ ft

**Within Stand Retention** – Describe within opening retention (max 20 sq ft BA/a allowed).

**Site Preparation Required** (> 20 sq ft ba/acre must be retained within the stand)

Describe site preparation required: Artificial Regeneration: \_\_\_\_\_

Natural Regeneration: \_\_\_\_\_

CFWC FM Section requires proof of planning for site preparation and planting practices (seedling purchase order, farm bill/conservation practice signup). Attach to this form or provide contact information for FM Section.

[The prescription information is used to develop stand level guidelines expressed in logger vernacular and provided in the HARVEST and CUTTING GUIDELINE Form]

**REGENERATION: TWO AGE/DEFERMENT**

Deferment harvests are used to establish a stand with two age classes, an older age class of reserve trees and a younger regenerating age class. The practice requires that the stand contains 10 to 15 sq ft/acre of appropriate reserve trees capable of maintaining long-term growth and development. The practice is an alternative for several conditions including:

- regeneration potential of appropriate species is adequate and retention is required to meet FM certification or individual forest management objectives, and/or
- regeneration potential of appropriate species is adequate and harvest constraints require removal of significant overstory stems,
- regeneration potential is inadequate and condition of overstory trees requires significant removal (ex. overstory is degraded) or harvest constraints require removal of significant overstory stems.

Condition: Stand requires the presence of at least 10 to 15 sq ft of BA/a of reserve trees that have the ability to maintain reasonable growth and development (full, well balanced crowns typically dominant or co-dominant) over the course of another rotation length (long-lived species), and meet ownership objectives (wildlife, timber, etc.). These trees should be evenly distributed and maintained across the stand or maintained in small groups. All other merchantable material including pulpwood sized trees should be removed.

Data and Description: Collect adequate information (quantitative or qualitative) to determine regenerative potential (ex. preferred species, sources of reproductions) and group opening size and configuration (ex. harvesting equipment, topography, requirements of preferred species).

**Stand/Management Unit:** \_\_\_\_\_

**Reserve Tree**

Species: \_\_\_\_\_

dbh \_\_\_\_\_

Species: \_\_\_\_\_

dbh \_\_\_\_\_

Reserve BA /A : \_\_\_\_\_

Crown / Form Description: Describe the crown form, shape, or position of reserve trees (by species if appropriate): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Topographic/Landowner Position: Describe which land forms should not have individual reserve trees left standing due to potential wind throw (ex. nose, ridges, wetlands, and other locations with thin soil or conditions that contribute to shallow rooting).

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\_\_\_\_\_

[The prescription information is used to develop stand level guidelines expressed in logger vernacular and provided in the HARVEST and CUTTING GUIDELINE Form]

**REGENERATION: SHELTHOOD - traditional or irregular shelterwoods**

Shelterwoods, traditional or irregular, are designed specifically to facilitate the development of an age class of intermediate shade tolerant species (ex. oaks). Implementation requires the retention of overstory that provides intermediate shade on the forest floor (ex. upland oak stocking percent 45 to 60). The overstory is retained until the regenerating age class is established at which time all of the overstory (traditional) or part (irregular) is removed. The latter may require subsequent removal of overstory. Regardless, the shelterwood is at minimum a two step overstory removal and requires advance regeneration or stump sprouting capacity present at the time of overstory removal. Further, if a commercial harvest is used to implement the removals it requires that the stand must financially provide two harvests of overstory trees within 15 years. It is not suited for conditions where the regeneration capacity is not adequate nor where two harvests within 15 years is not possible.

Condition: Post harvest evenly distributed retention of 40 to 60 sq. ft. of overstory ba/a (for upland oak stands).

Data and Description: Collect adequate information (quantitative or qualitative) to determine if there is adequate regenerative potential of intermediate shade tolerant species (ex. preferred species, sources of reproductions) and to determine if the retention of 40 to 60 sq. ft ba/a of overstory is feasible.

**Stand/Management Unit:** \_\_\_\_\_

**Reproduction**

Preferred Species to Regenerate: \_\_\_\_\_  
\_\_\_\_\_

Reproductive Capacity (check all that are appropriate)

___ Advance Reproduction	species: _____	_____	_____
height/size (circle all that apply)	<2 2-4 4-6 >6	<2 2-4 4-6 >6	<2 2-4 4-6 >6
___ Stump Sprouts	species: _____	_____	_____
Dbh range (circle all that apply)	2-6 6-12 >12	2-6 6-12 >12	2-6 6-12 >12
Average age or age range	_____	_____	_____

**Overstory Retention**

Total Stand BA/A : \_\_\_\_\_ Total Stand Volume: \_\_\_\_\_  
 Overstory Retention BA/A: \_\_\_\_\_ Overstory Retention Volume: \_\_\_\_\_  
 Overstory Removal Volume: \_\_\_\_\_

Description of overstory retention: Describe the species, size, stem quality (if appropriate) and distribution of trees to be retained in the overstory: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Description of removals: Describe the removals relative to species, size and crown class distribution: \_\_\_\_\_  
 \_\_\_\_\_

[The prescription information is used to develop stand level guidelines expressed in logger vernacular and provided in the HARVEST and CUTTING GUIDELINE Form]

**REGENERATION: INDIVIDUAL TREE SELECTION**

Individual tree selection is specifically designed to develop sustainable cohabitating multiple age classes of shade tolerant species. This is accomplished through an initial preparatory cut designed to initiate an appropriate coexisting distribution of age class trees (at least 3). Followed by harvests at intervals (10-20 yrs) requiring cutting of a range of diameter trees (surrogate for age). The number of stems by diameter class is determined based on calculation of the Q value for the stand (which is functionally a ratio of the # of stems per acre of one diameter class to the next diameter class). Initial cut is a preparatory cut and requires less data acquisition and less prescription detail than subsequent cuts. This form assumes an initial preparatory cut. If subsequent individual tree selection cuts are needed calculations of Q values and cutting intervals will be determined. Use textbook references for these calculations.

Condition: Preparatory Cut: UGS removed from all diameter classes, merchantable trees above maximum diameter removed and AGS and/or preferred shade tolerant species present in at least the smallest diameter class.

Data Description: Preparatory Cut. Preferred species determined, maximum dbh determined, and minimum stocking level determined (requiring total basal area per acre or # of stem and average diameter).

**Preferred Shade Tolerant Species** \_\_\_\_\_  
 \_\_\_\_\_

**Maximum DBH** Determine maximum dbh for stand. Based on estimated predominant shade tolerant species growth capacity and markets.

Maximum DBH: \_\_\_\_\_

**Stocking Level** Determine minimum full stocking level or equivalent.

Total Stand BA/Acre : \_\_\_\_\_ Average DBH or # stems per acre : \_\_\_\_\_  
 Total Stand Stocking Level: \_\_\_\_\_ Minimum Full Stocking: \_\_\_\_\_

**Describe UGS** that needs to be removed (ex. species, size, form): \_\_\_\_\_  
 \_\_\_\_\_

**Prescription Summary:** Remove all merchantable trees above maximum dbh (\_\_\_\_\_) and remove UGS from all diameter classes starting with the largest diameter class in the stand with a residual basal area target of minimum full stocking (\_\_\_\_\_ basal area/acre).

[The prescription information is used to develop stand level guidelines expressed in logger vernacular and provided in the HARVEST and CUTTING GUIDELINE Form]

**OTHER PRESCRIPTION:**

Use to provide a prescription alternative where other prescription options on this form are not adequate to meet management and silvicultural objectives for the stand. Provide the following information.

Provide the stand condition that warrants development of this prescription and precludes the use of alternative presented in this Form.

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Describe Data or Descriptive Information Used for Prescription Development:

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Describe Prescription in Detail:

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Describe the Condition of the Stand AFTER the Cut. Include retention description (species, basal area, spatial arrangement, etc.) and regeneration condition and/or potential (preferred species, where is regeneration coming from).

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[The prescription information is used to develop stand level guidelines expressed in logger vernacular and provided in the HARVEST and CUTTING GUIDELINE Form]

**RETENTION**

Retention is required at the level of the harvest unit. Retention provides habitat diversity that has some attributes of natural disturbances. Retention should include a range of trees sizes and habitats and landforms across the harvest tract. Exceptions include mono-culture

Use the list below to check off retention elements within the harvest unit.

**Retention Associated with Harvest and Silvicultural Practices**

- Streamside (Riparian) Management Zones
- Cliff line Buffers
- Required Aesthetic Buffers
- HCVF setbacks and retention
- Residuals Associated with Silvicultural Practices
  - residuals associated with intermediate prescriptions
  - residuals in group openings and patches
  - buffers between group openings and patches
  - reserve trees in two age deferment harvests
  - reserve trees in shelterwoods
  - residuals associated with individual tree selection
  - other
- Other

**Manufactured Retention** (required if retention associated with harvest or silvicultural prescriptions is absent or limited in extent)

- Residuals along ephemeral channels
- Intact corridors between regeneration openings
- Non-required aesthetic buffers
- Additional stream or channel buffering
- Additional in-stand retention

**Description** Provide a description of the retention within the harvest unit. Include all retention elements with special attention to manufactured or added retention.

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[The prescription information is used to develop GENERAL HARVEST guidelines expressed in logger vernacular and provided in the HARVEST and CUTTING GUIDELINE Form]

## NON-HARVEST AREA

Non-harvest Acreage (approximate) \_\_\_\_\_

Conduct a survey of non-harvest areas. Non-harvest areas do NOT include areas where no cutting will occur with the harvest unit, such as patches that are non-merchantable, or setbacks areas associated with special habitats, etc.

\_\_\_\_\_ water quality problems associated with forest management  
description of problem (ex. improper stream crossing) \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ invasive species present and problematic for natural forest development  
problematic species present \_\_\_\_\_  
\_\_\_\_\_ location \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ GMO present  
description \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ evidence of banned chemical usage  
description \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ HCVF presence  
description \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Insect / Disease (significant presence)  
description \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Forest Damage  
description \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ other non-conformance issues  
description \_\_\_\_\_  
\_\_\_\_\_