MINNESOTA MASTER LOGGER FIELD AUDIT FORM

Revised October 19, 2010

Applicant I.D. #:		**Date Audited:**
Field Auditor I.D. #:	**Harvest Size:** **Property Size:**	**Site I.D.:**

The purpose of this form is to document an applicant's field compliance and conformance with standards and practices that have been adopted for the Minnesota Master Logger Certification (MMLC) program. Fill out a separate checklist for each site audited. Sign and date the audit checklist when the audit is complete. For technical information, refer to the Minnesota Voluntary Site-level Forest Management Guidelines handbook and any other applicable references.

Page 2:
Fill in general information on the sale and give a brief overview of the sale including topography, wetlands, streams, soils, challenges, etc. to describe the overall situation.

Page 3:
Use this form and the codes below to document compliance with MMLC areas of responsibility and performance standards. For each item, enter a code in the empty box in the second column.

CODES:

- **C: Conforms with or exceeds required practices**
- **SNC: Serious (major) non-conformance with required practices**
- **MNC: Minor non-conformance with required practices**
- **NA: Not applicable**
- **Yes/No Applies in limited situations as noted**

A rating of **SNC** or **MNC** requires a comment on page 11. Describe the non-conformity. Comments regarding exceptional performance may also be included on page 11. **Do not suggest corrective measures. This is not a consultation process.**

Page 11: Remarks should reference Area, Performance Standard, and Practice (e.g., II-C.3)

Summarize your inspections on the Field Audit Summary Report. **Sign all forms using your Auditor ID #.** Consult with the MMLC Coordinator as needed. Submit Field Audit Forms and the Summary Report to:

Minnesota Logger Education Program
Attn: Minnesota Master Logger Certification Program
301 W 1st St.
Suite 510
Duluth, MN 55802

GENERAL JOB OVERVIEW: Active

Ownership: Private If Other Explain:

Harvest Size Acres
Property Size: Acres Contiguous:

Type of Harvest/Species:

- ☐ Uneven
- ☐ Even
  - ➢ Shelterwood ☐
  - ➢ Clearcut ☐
  - ➢ Seed Tree ☐
- ☐ Intermediate
- ☐ Land Use Change
- ☐ Type Conversion

Explanation (if necessary)

Cutting Method:

☐ Hand ☐ Machine-CTL ☐ Machine-Tree Length

Water & Soil Issues:

☐ RMZ ☐ Stream Crossing

☐ Wetland ☐ Rock Outcrops

☐ Soil Condition Issues

Topography:

- ☐ Steep Slopes
- ☐ Rolling
- ☐ Level

Type of Sale:

- ☐ Forester Marked Sale
- ☐ Unmarked Prescription Sale
- ☐ Logger's Choice Sale

Roads:

- ☐ New
- ☐ Pre-existing (Used As Is)
- ☐ Pre-existing (Upgraded)

Harvesting Activities Conducted By:

- ☐ Applicant
- ☐ Employee (s)
- ☐ Independent Contractor (s)

Goal and Future Desired Condition of the Timber Sale Area:

General Overview of Sale (Quality, Landowner Objectives, Challenges, etc.):

Area One:
Protection of Water Quality and Soils

Performance Standard I-A

Harvest and skidding operations protect soils, slopes, wetlands, streams and sensitive areas as outlined in the Minnesota Voluntary Site-level Forest Management Guidelines (FMGs)[*].

FMG Practices

1		Skid trail locations are planned prior to commencement of harvest operations to minimize the number of trails and site disturbance.	GG 75 FS 5
2		Where possible, skid trails are located outside filter strips, wetlands and riparian management zones.	TH 12
3		Topography is considered in skid trail layout to avoid steep areas (over 35% slope) and wet areas when possible.	TH 26
4		When necessary to operate in soft, wet or steep areas, steps are taken to minimize rutting and erosion (use of seasonal operations, using tops and slash as matting, etc).	TH 28
5		Water diversion structures are properly installed to divert surface runoff when necessary.	TH 31
6		Slash is kept out of drainage areas where runoff may wash it into streams, wetlands, or water bodies.	TH 28
7		Skidding traffic is concentrated or dispersed to disturb or to protect soils, consistent with silvicultural objectives.	FR 12
8		Low ground pressure equipment and reducing loads carried by logging equipment used to minimize rutting and compaction.	GG 20 TH 7
9		When possible, leave snags, decayed, and cavity trees on site; take care not to disturb down logs and uprooted stumps on the harvest area.	GG 75-78 TH 33
10		During biomass harvests, tops and limbs are retained on deep peat soils and shallow soils over bedrock.	FBH 22-23
11		Approximately 1/3 of fine woody debris (FWD) is retained on biomass harvest.	FBH 29
12		Landings and areas used to store/pile biomass are left in a condition that favors regeneration of native vegetation and trees following use.	FBH 23
13		Avoid re-entry to the general harvest areas for the purpose of retrieving biomass once regeneration has begun or planting has been completed.	FBH 24-25
14		Erosion control measures are re-established and in working order on roads that are re-opened to retrieve biomass.	FBH 25

Additional Practices

15		Layout of skid trails considers the predominant lean of the stand where chainsaw felling is used.	
16		Plans address wet weather events (e.g., inventory systems, wet weather tracts, definitions of acceptable operating conditions).	

[*] FMG references are located in the far right column. FBH=Forest Biomass; FR=Forest Roads; FS=Forest Soils, GG=General Guidelines; PU=Pesticide Use; TH=Timber Harvesting; TSI=Timber Stand Improvement REF=Reforestation

Performance Standard I-B

Riparian management zones (RMZs), filter strips and wetlands are maintained and managed per the Minnesota Voluntary Site-level Forest Management Guidelines. *Performance Standard I-B cannot be met if Practice 3 or Practice 4 receives and SNC.*

If no RMZ, check here (☐) Do not fill out this section
If RMZ was established by another party, check here (☐)

FMG Practices

1		RMZs are clearly established.	GG 29-67
2		Longer-lived trees of appropriate size, distribution and stocking are left within the RMZ consistent with landowner management objectives and FMGs.	GG 35
3		Roads and skid trails are located outside of RMZs and filter strips, except for necessary crossings of streams, lakes or wetlands.	FR 13
4		Landings and fueling/maintenance areas are located outside of RMZs and filter strips.	GG 39
5		No slash, clearing debris or fill is deposited in filter strips, RMZs, streams, lakes or non-forested wetlands.	TH 28
6		Filter strips are established on all streams, lakes and wetlands with widths appropriate to slopes (as recommended in FMGs).	GG 24
7		Keep logging residue that does not originate within the wetland out of all seasonal ponds and wetlands.	TH 28
8		Soil exposure, rutting and compaction are minimized in RMZs, filter strips and wetlands with stabilization measures taken to prevent erosion.	GG 15
9		Harvesting in wetlands is done under frozen ground conditions whenever necessary.	GG 17-18 TH 31
10		No borrow pits are located within filter strips or RMZs.	FR 13
11		Coarse woody debris is retained in RMZs consistent with recommendations contained in FMGs.	GG 79
12		Harvesting of biomass is avoided in RMZs except for the tops and limbs of trees harvested under the FMGs as part of a round wood harvest.	FBH 28

Additional Practices

13		Appropriate restricted equipment operation zones are established and/or observed for RMZs.	GG 29-67

Performance Standard I-C

Stream crossings comply with the Minnesota Voluntary Site-level Forest Management Guidelines and required water crossing permits. *Performance Standard I-C cannot be met if Practice 1 receives an SNC.*

If no stream crossings, check here (☐) Do not fill out this section.
If someone else installed stream crossing, check here (☐), proceed to MMLC Board Interpretations below this section.

FMG Practices

1		All required water crossing permits (state and federal) are in place and followed.	FR 17
2		Stream, lake or open-water crossings are avoided where possible.	FR 17
3		Appropriate stabilization practices are used to minimize soil erosion into streams.	FR 32
4		Stream crossings installed at a right angle to the stream channel with approaches to stream banks with low percent slopes and short slope lengths.	FR 17
5		Normal water flow in wetland or water body undisturbed following harvest operations with fish and other aquatic life migration unimpeded.	FR 18
6		Culverts have appropriate diameter and length for the stream size and road width.	FR 18
7		Culverts are properly installed with appropriate fill and riprap.	FR 18
8		Road drainage is diverted into an appropriate filter strip.	FR 31
9		Stream crossing approaches are properly stabilized to minimize sedimentation.	FR 17
10		Temporary crossing structures are properly anchored to prevent washouts and to facilitate removal when no longer needed.	FR 18
11		Temporary crossings are removed to the extent practical after use is complete.	FR 18
12		Natural fords (water crossings) have low stream banks and firm rock/gravel base.	FR 18
13		Equipment avoids stream banks for all non-frozen intermittent and perennial streams regardless of size; instead use improved crossings.	FR 18

Performance Standard I -C: MMLC Board Interpretations on Stream Crossings

14		If built by someone else, was it a legal crossing? ***Yes/No If No, explain on page 11.***
15		If built by someone else, did the logger use it? ***Yes/No If Yes, see item 3, below.***
16		If built by someone else, did logger's use of the crossing conform to MMLC Board interpretation on responsibility for stream crossings? *(See text of interpretation on page 10)* ***(Y/N) If No, explain on page 11.***

Performance Standard I-D

Mineral soil, shallow and deep peat wetlands, seep, and spring crossing construction and removal comply with the Minnesota Voluntary Site-level Forest Management Guidelines.

FMG Practices

1		Wetland crossings are avoided or minimized to the extent practical.	FR 13, 17
2		All required water crossing permits (state and federal) are in place and followed.	FR 19, 34

3		Soil from mineral soil and shallow peat wetlands (as defined in the FMGs) removed during construction of crossing are backfilled with appropriate granular soils.	FR 38-39
4		Provide adequate cross-drainage by using frozen crossings, or utilizing construction methods that provide free flow through and away from the road bed or culverts of sufficient size at each end of the wetland crossing and at least every 300 feet, properly installed to minimize disruption of normal water flow across landscape.	FR 29, 36
5		Wetland crossings select shortest possible routes, avoid crossing open water or active springs, avoid using soil fill, and do not block normal water flow.	FR 43
6		Temporary crossings are removed to the extent practical after use is complete.	FR 45

Performance Standard I-E

Roads and landing locations are placed in accordance with the Minnesota Voluntary Site-level Forest Management Guidelines.

If installed by someone else, check here (☐) Proceed to MMLC Interpretations on Roads, below this section.

FMG Practices

1		The number and size of roads and landings are kept to the minimum required (no more than 3 percent of the total harvest area) for the number of acres to be harvested, equipment used, and products cut.	TH 22
2		Road locations allow for drainage away from the road.	FR 8
3		Roads are located in well-drained soils if possible.	FR 9
4		Road grades do not exceed 10%, grade lengths are minimized and drainage structures are used to minimize erosion where appropriate.	FR 14
5		Roads follow natural contours, minimize cut/fills, and balance cut/fills.	FR 8-9 TH 17
6		Road surfaces are crowned, outsloped, or insloped to provide adequate drainage.	FR 8
7		Clearing, excavation, and maintenance debris from new or reconstructed roads deposited outside filter strips and water bodies are not affected.	FR 21
8		Cut/fill slopes are stable and will revegetate easily (either naturally or artificially).	FR 32
9		Steep grades and erodable soils are surfaced to minimize surface erosion.	FR 8
10		Ditches and cross drains are constructed to handle water runoff entering onto or adjacent to the road.	FR 28
11		Culverts are properly sized and are installed at correct depth, angle, and location to provide effective cross-drainage.	FR 26
12		Culvert base and fill is appropriate.	FR 18
13		Broad-based dips, water bars and other water diversion structures are installed and maintained properly in the correct locations.	FR 28-31
14		Landings are located and constructed to promote efficient	TH 22

		drainage.	
15		Cleared or excavated materials for landings deposited in stable locations outside of filter strips of lakes, streams, wetlands, and seasonal ponds.	FR 23
16		Landings and roads are seeded (appropriate noninvasive seed mix preferred) if needed to prevent erosion and sedimentation.	FR 47
17		Landings located outside of wetlands, filter strips or RMZs where possible.	GG 81

Area I.E: MMLC Board Interpretations on Roads

18		If built by someone else, did logger's use of the roads conform to MMLC Board interpretation on responsibility for roads? *(See text of interpretation on page 10)* ***(Y/N)*** ***If No, explain in on page 11.***

Performance Standard I-F

Management of equipment, fuel & lubricants are consistent with the Minnesota Voluntary Site-level Forest Management Guidelines and applicable laws and regulations.

FMG Practices

1		Specified area used to drain lubricants from equipment during routine maintenance.	GG 70
2		Maintenance vehicles with necessary equipment available to collect and store lubricants drained during repair activities.	GG 70
3		Collected solid waste materials are recycled or disposed of properly.	GG 70
4		Fueling and maintenance areas located away from open water, on upland sites, and outside filter strips or riparian management zones (whichever is wider) where practical.	GG 70
5		Waste containers present in maintenance areas to collect and store lubricants, oil containers and filters, grease tubes and other trash.	GG 70
6		Spills less than five gallons are thin spread to ensure adequate decomposition of hydraulic products.	GG 70

Additional Practices

7		Equipment does not have excessive operating fluid leaks.	GG 22
8		Spill Kit and a spill plan are maintained, complete, and on the logging site (active sales).	PU 11
9		Spills greater than 5 gallons are handled according to the spill plan.	GG 70

Area Two:
Management of Visual Quality

Performance Standard II-A
Visual quality management techniques are used across the logging site, as consistent with the Minnesota Voluntary Site-level Forest Management Guidelines.

FMG Practices

1		Slash height does not exceed 24 inches in moderate to most sensitive sites as defined in the FMGs.	TH 29
2		Time operations in moderate to most sensitive sites, either seasonally or time of day, to avoid visual and noise conflicts with users of recreational facilities (trails, resorts, campgrounds, water accesses, picnic areas) and/or neighboring landowners	GG 19

Additional Practices

3		Rock and geologic landforms are protected according to the harvest plan.	
4		Inform neighbors and recreational users prior to and during operations (use signs and/or contact neighbors).	

Performance Standard II-B
Landowner contract provisions regarding aesthetics are followed, as consistent with the Minnesota Voluntary Site-level Forest Management Guidelines.

FMG Practices

1		Landowner's aesthetic concerns or goals are discussed and incorporated into the sale design.	GG 7-9
2		Aesthetic guidelines for the sale are made clear to all employees.	GG 15

Performance Standard II-C
Special care is taken in highly visible areas to avoid negative visual impacts, as consistent with the Minnesota Voluntary Site-level Forest Management Guidelines.

FMG Practices

1		Irregular boundaries, feathered edges, leave trees, no-cut islands, vistas and other applications are used.	TH 17
2		Disturbed areas, borrow pits, and landings are cleaned up, stabilized, leveled and seeded.	GG 81 TH 41
3		Slash is reduced to 24 inches maximum height in areas classified as most sensitive or moderately sensitive per the FMGs.	TH 29
4		Muddy road exits are cleaned up.	FR 15

Additional Practices

5		Land boundary markers are not damaged.	
6		Stumps are less than ½ of stump diameter and do not exceed 18 inches unless otherwise specified in the contract.	
7		Root wads, slash piles, hanging tops, broken trees are not present unless specified by the landowner.	

Area Three:
Conformance with Acceptable Silvicultural, Operational and Utilization Standards

Performance Standard III-A
Silvicultural guidelines are followed for the tree species or timber types as outlined in the North Central Research Station Manager's Handbooks. Acceptable operational and utilization guidelines are followed for the tree species or timber types.

FMG Practices

1		Acceptable cutting system was used for the timber type in question that is compatible with landowner objectives.	GG 20
2		For final harvests, regeneration was considered and planned for.	REF. 6
3		For thinnings and selective (all-aged) harvests, residual basal areas are within acceptable ranges per accepted silviculture practices.	GG 35-36
4		Remaining crop and wildlife trees are acceptable for the management system being used.	TSI 3

Performance Standard III-B
Trees are utilized to the extent that current wood markets permit.

FMG Practices

1		All merchantable timber utilized within the road clearing.	FR 22

Additional Practices

2		Cooperation with mill managers for better utilization of species and low-grade material.	
3		Merchandising of harvested material to ensure use for its most beneficial purpose.	
4		Stump pull and split logs are minimal.	
5		All merchantable wood is utilized to contract specifications.	
6		All cut wood products are forwarded to the landings.	
7		Cut wood products are hauled from the landings (inactive or completed sales).	
8		Operations within prescribed boundaries.	
9		Marked or designated trees are harvested. Changes must be documented or agreed between seller and purchaser (must verify verbal agreements).	

Performance Standard III-C
Harvest operations protect residual stands and/or provide for regeneration.

FMG Practices

1		Felling and skidding damage to residual trees is minimized (roots, boles, crown).	TH 26
2		Protection of desirable or planned advanced *natural regeneration* during harvest.	TH 39

Additional Practices

3		Feller places cut products where skidder can load without rutting soils or damaging residual timber.	
4		Forest health issues (if any) identified in harvest plan are followed. If not followed, variances are approved by a known, credible source with supportive reasons and documentation.	

Performance Standard III-D
Harvest operations effectively manage slash.

FMG Practices

1		Harvest operations disperse slash on site (rather than piling slash) where dispersal does not conflict with management objectives or reforestation.	TH 28
2		Equipment used to move slash on site minimizes soil disturbance.	TH 28
3		Landings left clean with little waste.	TH 24

Area Four:
Compliance with Government Regulations Applicable to Logging Operations

Performance Standard IV-A
Appropriate federal, state and county laws, posting notices, checks and permits have been addressed.

Practices

1		Continuously identify wood from the stump to the primary processor as required for all sales.	
2		Check with county to ensure property taxes have been paid before any cutting begins.	
3		File any necessary notices and secure permits before logging operations begin.	FR 34 GG 10
4		Federal and state laws concerning cultural resources are followed to ensure that significant resources are taken into consideration.	GG 10
5		Awareness of responsibilities under the U.S. Endangered Species Act and Minnesota's "Protection of Threatened and Endangered Species" statute.	GG 10
6		Use of pesticides for the intended use and applied in accordance with label requirements.	PU 7

Performance Standard IV-B
All federal and state standards and regulations pertinent to a logging business are followed.

Practices

1		Employee training is documented to comply with OSHA regulations.	

2		OSHA regulations are implemented on the job site.	
3		Annual meetings of OSHA safety requirements are conducted and documented as part of a larger safety program.	
4		Company's written safety plan is on file and is present at the place of business.	
5		LogSafe safety practices are implemented on the job site.	
6		Monthly safety meetings with all employees to comply with logging standard.	

Area Five:
Adherence to Site Specific Harvest and Management Plans

Performance Standard V-A

A written management plan or harvest plan is in place for the property or specific site on which the timber harvest occurs. *Performance Standard V-A cannot be met if Practice 1, 2, or 3 addressing harvest and management planning receives an SNC.*

Practices

1		Harvest plan is required for properties with less than 100 contiguous acres.	
2		Harvest plan and management plan are required for properties with 100-499 contiguous acres.	
3		For properties with 500 contiguous acres or more, the land must be certified.	
4		Plan includes landowner objectives for the harvest.	GG 7
5		Landowner receives information on Minnesota's Forest Management Guidelines (copy of the *Sustainable Forestry – A Landowner's Manual*).	
6		Plan provides for regeneration of the stand.	
7		Plan identifies and protects known important habitat elements for wildlife including critically imperiled and imperiled species and communities, threatened and endangered species, and cultural resources on the harvest site.	
8		Logger and employees are familiar with the plan.	
9		Leave trees and clumps are retained in representative habitats to provide benefits to soil, wildlife, regeneration, and include longer lived healthy trees consistent with the harvest management plan.	
10		Plans consider the visual sensitivity resources identified for protection.	
11		Plan addresses future recreational trail desires.	

Performance Standard V-B

A written contract or written agreement exists for each harvesting site. *Performance Standard V-B cannot be met if Practice 4 receives and SNC.*

Practices

1		Contract or agreement is signed by both seller and purchaser.	

2		Contract includes the basic categories of an acceptable timber sale contract (reference: *Sustainable Forestry – A Landowner's Manual*).	
3		Harvest plan/contract includes a sale map identifying the cutting area, cutting specifications, and pertinent operational requirements and restrictions.	
4		Harvest contract includes landowner verification of legal ownership of property and timber.	

Performance Standard V-C

A clear understanding of sale terms and conditions must be established between seller and purchaser.

Practices

1		A pre-harvest meeting is held on-site with the landowner or landowner representative to discuss harvest plan, property boundaries, and all contract provisions found in the contract.	TH 20
2		All contract provisions are met or exceeded.	

Master Logger Certification Board

Interpretation on Responsibilities for BMP's, roads, etc.

If pre-existing roads, stream crossings, or other conditions are in violation of MMLC standards and practices, the Minnesota Certified Master Logger is not required to improve those conditions if:

- The pre-existing conditions do not get worse as a result of the Minnesota Certified Master Logger's use or,
- No environmental damage (i.e. siltation, erosion, etc) occurs because of the Minnesota Certified Master Logger's use or,
- There is no violation of environmental laws or regulations (i.e. use of illegal stream crossing).

Description of Findings

Describe exceptional performance or shortfalls determined in this audit. Categorize remarks by Area, section, and item (Ex. I-C-9). Add pages if necessary.