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Via Email: RMD.ODI@dot.gov

To: Defects and Recall Information Analysis Division
Associate Administrator for Safety Assurance
National Highway Traffic Safety Administration
400 7th Street, SW
Washington DC 20590

PART 573 Defect and Noncompliance Report

Report Date: June 29, 2011

On June 23, 2011, Vermeer Manufacturing Company, d/b/a Vermeer Corporation, determined that there is a defect which relates to motor vehicle safety with respect to certain motor vehicles listed below, and is furnishing notification to the National Highway Traffic Safety Administration in accordance with 49 CFR Part 573 Defect and Noncompliance Reports.

1. **Fabricating Manufacturer:**
   Vermeer Manufacturing Company, d/b/a Vermeer Corporation
   1210 Vermeer Road East
   Pella, IA 50219
   Telephone: 641-628-3141 **Fax:** 641-621-7739

Contact Name and Title:	Lois Slings Product Liability Risk Manager
Name and Title of Person Who Prepared Report:	Lois Slings Product Liability Risk Manager

Signed: Lois Slings **Date:** 6-29-11

PART 573 Defect and Noncompliance Report

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I. Identify the Vehicle Models Involved in the Recall

2. **Manufacturer's Identification Code**: IK00-1667

3. **Vehicle Identification**:

Make:	Vermeer	**Model Years Involved:**	2008, 2009	
Model(s):	BC2100XL			
Production Dates:	Beginning:	12/19/2007	Ending:	2/09/2009
VIN Range:	Beginning:	1VR2202YX81000101	Ending:	1VR2392Y591000140
Vehicle Type:	Trailer – Tandem axle brush chipper			

Description which characterizes/distinguishes the recalled vehicles from those model vehicles not included in the recall: The VIN Range includes 40 units.

Identify the approximate percentage of the production of all the recalled models manufactured by your company between the inclusive dates of manufacture provided above, that the recalled model population represents. For example, if the recall involved Widgets equipped with certain items of equipment from January 1, 1996 through April 1, 1997, then what was the percentage of the recalled Widgets of all Widgets manufactured during that time period. 100%

II. Identify the Recall Population

4. **Total Number of Vehicles Recalled Potentially containing the defect or noncompliance:**

Model	Year	Number of Vehicles Potentially Involved
BC2100XL	2008	33
BC2100XL	2009	7
Total Number Potentially Affected by the Recall:		40

5. **Approximate percentage of Total Number of Vehicles Estimated to actually contact the defect or noncompliance**: 100%

Identify and describe how the recall population was determined, in particular how the recalled models were selected and the basis for the beginning and final dates of manufacture of the recalled vehicles: From manufacturing records, we were able to determine the 40 units were built with the same frame configuration

III. Describe the Defect or Noncompliance

6. **Describe the defect or noncompliance. The description should address the nature and physical location of the defect or noncompliance. Illustrations should be provided as appropriate.**

Model BC2100XL units, S/N 101-140, were equipped with a mainframe front subweldment, Item number 163642960 (Exhibit A). The front subweldment design includes a 1/4" thick front crossmember stiffner plate (Item 2, Exhibit A) that is welded to a 3" x 5" x 3/16" main frame tongue outer tube (Item 3, Exhibit A). A Finite Element Analysis (FEA) was undertaken that indicated a high stress concentration at the location of the bullet nose of the front crossmember stiffner plate (Item 2, Exhibit A) weld to the mainframe outer tongue tube (Item 3, Exhibit A) due to the change in cross section. The analysis indicated that material stresses in the mainframe outer tongue tube (Item 3, Exhibit A) at the toe of the weld could result in bending and/or fatigue fractures (cracks) which can eventually result in the failure of the center connection of the mainframe front subweldment. The failure will result in mainframe front subweldment sag/droop at the location of the failure but would not result in a total separation of the outer tongue tube due to other parts and bolted joints to the machine mainframe.

A copy of a product brochure for Vermeer Model BC2100XL (Exhibit B) is attached for your reference.

Describe the cause(s) of the defect or noncompliance condition.

Component design had inadequate useful life.

Describe the consequence(s) of the defect or noncompliance condition.

Development of bending and/or fatigue cracks in the mainframe front subweldment which can result in frame failure.

Identify any warning which can (a) precede or (b) occur.

(a) Visible bending and/or fatigue cracks can develop at the high stress site prior to failure.

If the defect or noncompliance is in a component or assembly purchased from a supplier, identify the supplier by corporate name and address.

Not applicable.

Identify the name and title of the chief executive officer or knowledgeable representative of the supplier.

Not applicable.

IV. Provide the Chronology in Determining the Defect/Noncompliance

If the recall is for a defect, complete item 6, otherwise item 7.

7. **With respect to a defect, furnish a chronological summary (including dates) of all the principle events that were the basis for the determination of the defect. The summary should include, but not be limited to, the number of reports, accidents, injuries, fatalities, and warranty claims.**

05-JAN-2011 **First field notification** – Vermeer factory Environmental Division Service Department received a notification from the dealership, Vermeer Pacific, Fontana, CA regarding a crack found in frame member tube of the forward section of the frame on BC2100XL Brush Chipper, VIN 1VR2202Y981000106.

06-JAN-2011 Vermeer factory Environmental Division Service Department received a follow-up email from Vermeer Pacific with photos attached of the area with a crack in the frame member. Photo of the frame section is attached as Exhibit C.

13-JAN-2011 Warranty claim for SN 106 was filed and a revised design of the forward section of the frame (Exhibit D) that was implemented in production on SN 140 in April 2009 was shipped to the Vermeer dealer and installed.

28-APR-2011 Vermeer Product Safety Department met with Environmental Service and Engineering Departments to discuss the frame issue. Environmental Service was scheduled to be in the Vermeer-Illinois, Inc. dealership area in near future and it was decided they would attempt to locate and view BC2100XL Brush Chipper machine(s) in the Illinois area.

19-MAY-2011 **Second field notification** – A Vermeer Environmental Service Department Representative was traveling, visiting customers, and performing random machine viewing and observed a crack in same frame member as the previous machine. The machine found to have a crack on this date was VIN 1VR2202Y481000112. The dealership was notified by Vermeer Environmental to order a new, redesigned forward section of the frame.

01-JUN-2011 Vermeer Product Safety Department met with Environmental Service and Engineering Departments. Photos of the second machine frame were requested and the revised design of the forward section of the frame (Exhibit D) was sent to the dealership to replace on the second machine.

08-JUN-2011 An FEA review of the original design and the revised design was completed.

23-JUN-2011 Photos were received of the crack in the second machine frame section. Photo of the frame section is Exhibit E.

With respect to a noncompliance, identify and provide the test results or other data (in chronological order and including dates) on which the noncompliance was determined.

Not applicable.

Furnish a description of the manufacturer's remedy for the defect or noncompliance. Clearly describe the differences between the recall condition and the remedy.

The engineering team has completed an alternative design FEA analysis that confirms that the distribution of loading will produce satisfactory fatigue life. The new design weldment will increase the front mainframe subweldment cross-section by a factor of 2.83 along with eliminating stress concentrations at the location of high bending stresses. See Item Number 180016813 drawing attached as Exhibit D. With the new design our analysis shows that the peak stress level will be reduced by 76 percent.

Clearly describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.

Field kit modifications are currently under development. The new front mainframe subweldment design shows adequate service life.

Identify and describe how and when the recall condition was corrected in production. If the production remedy was identical to the recall remedy in the field, so state. If the product was discontinued, so state.

The shipment of additional Model BC2100XL units S/N 140 and above from the factory included the new designed front mainframe subweldment. The new design has been released to the production and is the same design as the field kit modification.

VI. Identify the Recall Schedule

Furnish a schedule or agenda (with specific dates) for notification to other manufacturers, dealers/retailers, and purchasers. Please, identify any foreseeable problems with implementing the recall.

08/10/11: Complete development of field modification kit, including fabrication of replacement parts and installation instructions.

08/12/11: Factory will publish Service Bulletin and Kit Instructions to dealers introducing field modification kit via company-to-dealer website.

08/15/11: Factory will provide listing of affected units in their area to dealers via fax and/or email.

08/26/11: Factory will notify owners of mandatory field modification via certified/registered US mail.

VII. Furnish Recall Communications

11. Furnish a final copy of all notices, bulletins, and other communications that relate directly to the defect or noncompliance and which are sent to more than one manufacturer, distributor, or purchaser. This includes all communications (including both original and follow-up) concerning this recall from the time your company determines the defect or noncompliance condition on, not just the initial notification. ***A DRAFT copy of the notification documents should be submitted to this office by Fax (202-366-7882) or by E-Mail to RMD.ODI@dot.gov for review prior to mailing.***
Note that these documents are to be submitted separately from those provided in accordance with Part 579.5 requirements.