

FINAL

WASTE MATERIAL REMOVAL COMPLETION REPORT FOR  
ARVINMERITOR

Former Moose Lodge Road Disposal Area  
Grenada, MS

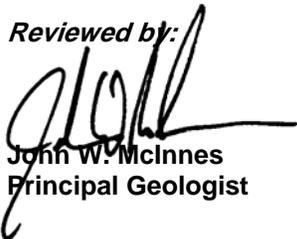
January 12, 2006  
220T.11530.00.00016

*Prepared by:*



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**Project Scientist**

*Reviewed by:*



**John W. McInnes**  
**Principal Geologist**

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## 1.0 INTRODUCTION

SECOR International Incorporated (*SECOR*) has prepared this Waste Material Removal Completion Report for the Former Moose Lodge Road Disposal Area (Site) on behalf of ArvinMeritor. *SECOR* was retained by ArvinMeritor to implement the Waste Removal Workplan dated September 17, 2004 and approved by the Mississippi Department of Environmental Quality (MDEQ) on February 7, 2005. ArvinMeritor is the successor to the entities comprising the former automotive division of Rockwell International Corporation (Rockwell) that operated the manufacturing facility adjacent to the Moose Lodge Road Disposal Area.

### 1.1 Background

The Site was reportedly used by Rockwell from 1966 to 1967 for disposal of buffing compound from the adjacent wheel cover facility processes. The Site encompasses approximately 2.8 acres and is located within property owned by International Paper (Figure 1). The site is bounded to the east by Moose Lodge Road, to the north by a field, to the west by the Illinois Central Gulf Railroad spur, and to the south by woods. During 1993, a 6-foot-high chain-link fence was installed around the perimeter of the site and a silt fence was installed around the southeastern perimeter of the site.

*SECOR* performed a limited investigation in July 2003 to supplement existing information related to the quantity and location of waste material. The results of the investigation indicated that the material is present in an area of approximately 100,000 square feet with the thickness of buffing compound (waste material) ranging from 0.1 to 2 feet.

Samples of the waste material identified the presence of low concentrations of trichloroethylene (TCE). TCE concentrations in the buff compound range from 0.017 to 0.180 mg/kg and TCE concentrations in adjacent soil range from non-detect (i.e., <0.001 mg/kg) to 2.300 mg/kg with the majority of samples being below 0.100 mg/kg. These concentrations are substantially below the Mississippi DEQ Target Remedial Goal (TRG) for unrestricted sites of 5.17 mg/kg. MDEQ reviewed the waste characteristics and concluded that the waste and soils do not exhibit a hazardous waste characteristic. The Non-Hazardous determination for the waste material and Soils provided by the MDEQ is presented in Appendix A.

## **2.0 SITE PREPARTIONS**

### **2.1 Clearing and Grubbing**

During the week of January 30, 2006, clearing and grubbing was initiated to remove trees, snags, logs, stumps, rubbish and garbage from the area illustrated on Figure 2 and in Appendix B – Photographs 1 and 2. Clearing and grubbing was necessary to remove vegetation and allow access to the waste material. Trees and underbrush were cut above ground level and chipped on-site. The root systems were left in place until the Site was cleared. The root systems with visible waste material were removed and staged for disposal. Larger trees were cut above ground surface and staged for off site transportation. The clearing and grubbing concluded during the week of February 13, 2006.

Due to wet conditions on the Site, trees and underbrush were chipped within the removal area. A portion of the chips generated during the clearing and grubbing process were used to construct the semi-trailer loading area. The remaining chips were used to manage wet soil conditions and to help stabilize the excavator during soil removal.

The security fencing existing on the Site was maintained to ensure a safe and secure work site. The security fencing was removed as necessary to facilitate removal of the waste material. Upon completion of the waste removal, the security fence was removed and recycled.

### **2.2 Staging Area and Access Road Construction**

A road was constructed to allow trucks and machinery access to the Site from Moose Lodge Road. The access road was constructed in the northeast corner of the Site where the gate to enter the disposal area was located (Figure 3). A 12-inch culvert was installed in the ditch between Moose Lodge Road and the Site to allow for drainage. Gravel was brought in and placed on top of the native soil and culvert to provide a truck access way and staging area. The access road and staging area are illustrated on Figure 3.

A loading area was constructed in the northeast portion of the site (Figure 3). The loading area was constructed to allow the semi- trailers (trucks) to enter the site, load, and exit without having

contact between the wheels and the waste material. To manage wet conditions and provide a stable surface for loading, the loading area was constructed from wood chips, native soil, and gravel. The clean gravel was left on site for access to the Site from Moose Lodge Road. The wood chips and native soil/gravel that came into contact with waste material were removed from the Site and disposed of at the landfill as described in Section 3.

### **2.3 Run-off Control**

The topography of the Site slopes to a low in the southeastern corner. Drainage from the site flows to this low and during wet conditions there is frequently standing water in this area. To manage any sediment in the runoff from the site, silt fences were constructed along the southeastern perimeter of the Site prior to clearing and grubbing (refer to Figure 3). The silt fences extended to the north and west from the southeastern corner and were designed to prevent sediment run-off during rain events. During waste removal activities, the silt fences were inspected daily to ensure that they were in proper working order. Repairs were made as necessary to maintain integrity of the silt fences. New silt fences were installed after the removal was completed.

### **2.4 Decontamination Area**

Decontamination areas were established for decontamination of personnel and equipment. An area for daily decontamination of personnel was set up in the northeastern corner of the Site, north of the access road (Refer to Figure 3). After completion of waste removal activities, a larger decontamination area was constructed to facilitate decontamination of equipment and machinery prior to demobilization. The decontamination pad was constructed using two by fours and heavy polyethylene liner. The pad was constructed so that decontamination fluids and solids were contained and did not come in contact with native soil. The equipment decontamination area was constructed during the last stage of the removal, so that decontamination materials could be transported to the landfill.

### 3.0 WASTE MATERIAL REMOVAL

#### 3.1 Removal Procedures

Removal of the buffing compound was initiated in the southwest corner of the Site. A toothless excavator bucket was used to remove surficial waste material (buffing compound) down to the native soil. The toothless bucket was used to allow for effective removal of the waste material and to minimize removal of the underlying native soil. The waste material is visibly distinct from the underlying native soil, it is primarily dark gray to black in color with the consistency of fine sand. The underlying native soil is silty sand and is tan to brown in color (reference Appendix B - Photograph 4).

Removal of the waste material was completed using two excavators. The two excavators started in the southwest corner and proceeded to the east and north finishing in the northeast corner of the Site. Throughout the removal process, the excavating equipment was positioned in a manner to allow for removal of the waste material without moving the equipment across areas of native soil. Visual inspection of the removal area was conducted prior to moving the excavators to limit the potential for tracking waste material onto the native soil. The approximate limits of earthwork are indicated on Figure 3.

As waste material was removed, it was staged in a stockpile located in the northeast corner of the Site. An excavator was used to load the waste material into trucks. The trucks traveled only on the gravel access road and on the staging area to prevent waste material from coming in contact with the truck tires. If any waste material was accidentally spilled on the loading area they were promptly cleaned up and placed on the stockpile for disposal.

Approximately 7,243 tons of waste material and 70.78 tons of root system debris were disposed of at LeFlore County Landfill in Greenwood, Mississippi from February 16, 2006 to March 14, 2006. The weight tickets and non-hazardous waste tracking sheets are included as Appendix C.

### **3.2 Decontamination**

Decontamination of field personnel was conducted daily in the decontamination area in the northeast corner of the site (refer to Section 2.4). The decontamination station consisted of a three foot in diameter polyethylene container, scrub brush,alconox, and potable water. Before leaving the site, the boots for each member of the field staff were decontaminated. Boots and other equipment that had contacted the waste material were scrubbed and rinsed in the polyethylene container. Decontamination was complete when no visible waste material remained.

The heavy equipment was the decontaminated in a containment area constructed as described in Section 2.4. Initial decontamination consisted of scraping soil and waste material from the tracks and buckets of the heavy equipment. After the initial scraping, the buckets and tracks were pressure washed to remove residual waste material. The heavy equipment was visually inspected to ensure the waste material had been removed. The decontamination fluids were contained on the decon pad and managed in accordance with the approved Waste Material Removal Work Plan dated September 14, 2006. The materials used to construct the decontamination pad were transported to LeFlore County Landfill.

### **3.3 Visual Confirmation**

In accordance with Section 2.5 of the MDEQ approved Waste material Removal Work Plan (September 14, 2004). Removal of the waste material was to confirmed by visual inspection. The waste material and underlying soil are visibly distinct and can be easily differentiated based on visual inspection (refer to Appendix B – Photograph 4). As the excavation progressed from the southwest to the northeast, the removal area would be inspected to confirm that any residual waste material had been removed. Photographs showing representative portions of the site before, during, and after removal of the waste material are presented in Appendix B – Photos 5 through 21. These photos clearly illustrate successful removal of the waste material.

## **4.0 SITE RESTORATION**

### **4.1 Grading**

Following removal of the waste material and decontamination of the equipment, the Site was re-graded to match the natural grade using a bulldozer (Appendix B – photographs 24 and 25). Earth moving was conducted as necessary to remove low spots and facilitate run-off toward the southeast corner of the site. The waste material had historically been placed on the natural ground surface and not used to fill in any depressions. Therefore, additional soil was not necessary to achieve the final grade.

### **4.2 Run-off Control**

Upon completion of grading, new silt fences were installed along the southern and eastern boundaries of the Site. The southeast corner is the lowest elevation on the Site and the silt fences were installed to intercept run-off and prevent off site movement of sediment. In accordance with the approved Waste Material Removal Work Plan, the silt fences will remain in place until sufficient vegetative cover is established. The silt fences are illustrated on Figure 3 and will be inspected on a quarterly basis.

### **4.3 Re-vegetation**

The MDEQ approved Waste Removal Work Plan (September 17, 2004) specified that Site would be seeded and mulched to re-establish vegetative cover. Inspection of the surface soils remaining after waste removal indicated that it may be difficult to establish an effective grass cover. A representative of the Mississippi Forestry Commission visited the Site, based on soil conditions; he suggested re-vegetation of the Site using pine trees. The MDEQ was contacted and verbal approval was granted to substitute pine trees as the vegetative cover. Approximately 1,800 pine trees were planted to minimize erosion and establish a vegetative cover. Refer to photographs 27 through 30 in Appendix B.

## 5.0 CONCLUSION

The Moose Lodge Road Disposal Area was historically used by Rockwell for disposal of buffing compound (waste material) from the adjacent wheel cover facility processes. The waste material was disposed of from 1966 through 1967 and was placed on the ground surface. The Site encompasses approximately 2.8 acres and is owned by International Paper. The Waste Material Removal Work Plan was approved by the MDEQ on February 2, 2005. The objective of the work plan was to remove and dispose of visible waste material while minimizing disturbance of the underlying native soil. The MDEQ approved Waste Material Removal Work Plan was implemented during February and March 2006.

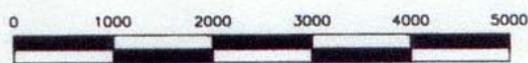
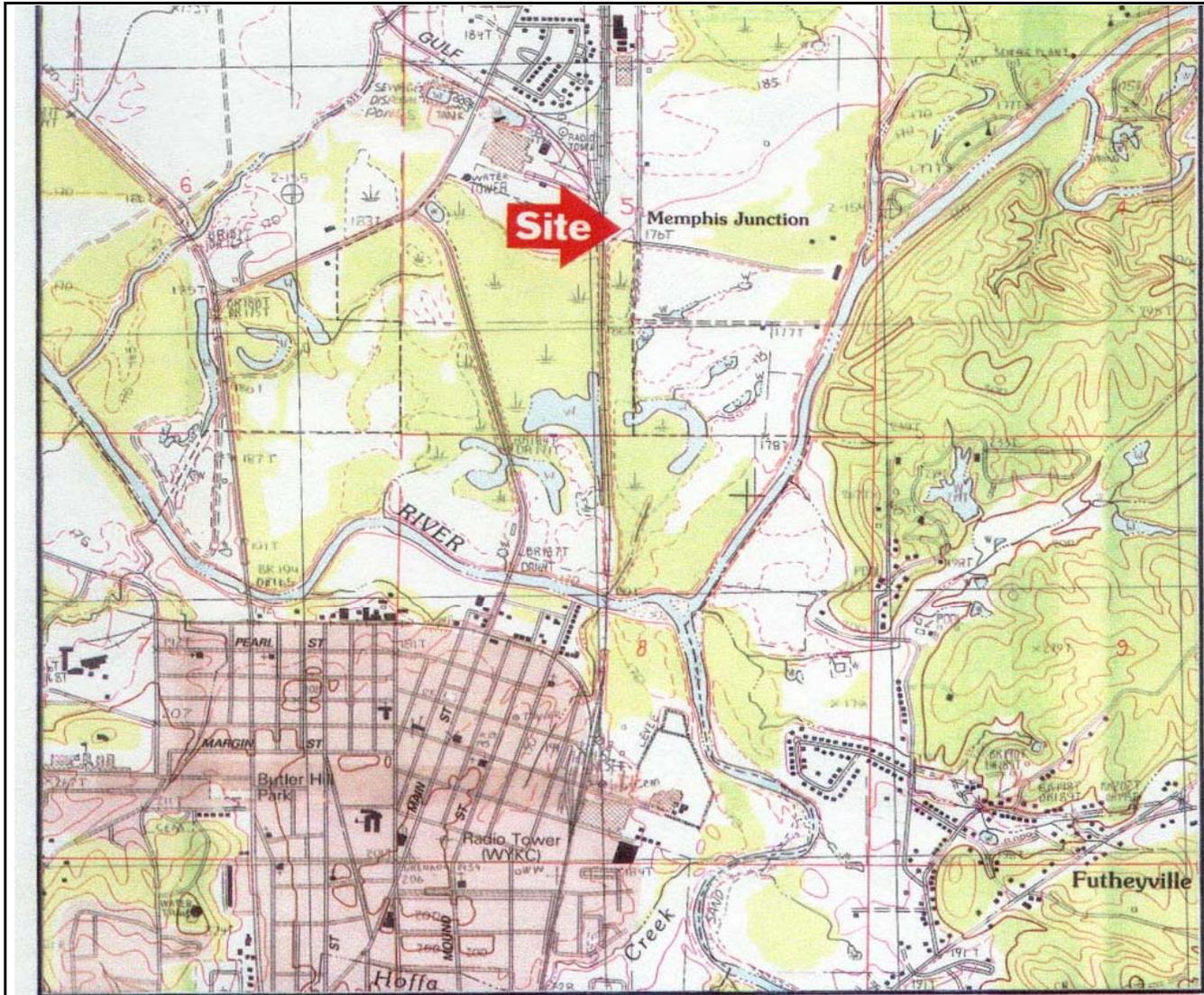
Approximately 7,400 tons of waste material was excavated and removed from the Site from February 16 to March 14, 2006. The waste material was transported to LeFlore County Landfill in Greenwood, Mississippi and disposed of as non-hazardous waste as specified in the approved work plan. Photo documentation of the waste material removal has been included as Appendix B. Visual inspection as specified in the approved Waste Material Removal Work Plan has confirmed that all visible waste material has been removed.

Upon completion of the waste material removal, the Site was graded to match the natural ground surface and to facilitate drainage. The Site was re-vegetated with approximately 1,800 pine trees as recommended by the Mississippi Forestry Commission regional forester. Silt fences were installed at the southeast perimeter of the Site to manage erosion until sufficient vegetation is established. The silt fences will be inspected on a quarterly basis to confirm their integrity.

The waste material removal was completed in March of 2006 in accordance with MDEQ approved Waste Material Removal Work Plan dated September 14, 2004. No further action to address the former presence of buffing compound at the Site is anticipated.

## FIGURES

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SCALE IN FEET



**SECOR**

*International Incorporated*

**SITE LOCATION MAP  
MOOSE LODGE ROAD  
DISPOSAL AREA  
GRENADA, MISSISSIPPI**

FIGURE:

**1**

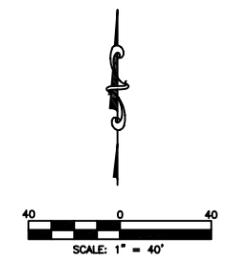
JOB #: 22OT.11530.00

DWN: WJB

DATE: 3/20/05



**LEGEND:**  
 - - - - - PROPERTY LINE



|                         |      |
|-------------------------|------|
| SIGNATURE               | DATE |
| REVIEW ENGINEER: _____  |      |
| PROJECT ENGINEER: _____ |      |
| PROJECT MANAGER: _____  |      |
| CLIENT: _____           |      |

PREPARED BY:

**SECOR**  
 8770 GUION ROAD, SUITE B  
 INDIANAPOLIS, INDIANA

PREPARED FOR:

ARVIN MERITOR

SITE LAYOUT

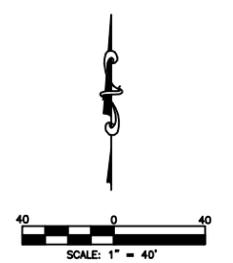
|                    |                |             |
|--------------------|----------------|-------------|
| DESIGNED BY:       | DRAWN BY:      | CHECKED BY: |
|                    |                | SH          |
| DATE:              | CAD FILE:      |             |
| 12/20/06           | WORKZONES-06   |             |
| PROJECT No.:       | DRAWING SCALE: |             |
| 220T.11530.00.0001 | 1"=40'         |             |

SOURCE OF CONTOURS:  
 JOE A. SUTHERLAND, JR. PE.-L.S. 2307  
 ENGINEER-SURVEYOR  
 P.O. BOX 635 228 FIRST STREET  
 GRENADA, MISS. 38902-0635 TEL. (601)226-3505  
 SWORN CHAINMEN:  
 ALLEN SMITH  
 SCOTT YEOMAN  
 12-18-03

**FIGURE 2**



- LEGEND:**
- - - PROPERTY LINE
  - - - LIMITS OF CLEAR AND GRUB
  - - - LIMITS OF EARTHWORK
  - LOCATION OF SILT FENCE



|                   |      |
|-------------------|------|
| SIGNATURE         | DATE |
| REVIEW ENGINEER:  |      |
| PROJECT ENGINEER: |      |
| PROJECT MANAGER:  |      |
| CLIENT:           |      |

PREPARED BY:



**SECOR**  
8770 GUION ROAD, SUITE B  
INDIANAPOLIS, INDIANA

PREPARED FOR:

**ARVIN MERITOR**

**REMOVAL AREA LAYOUT**

|                    |                |              |
|--------------------|----------------|--------------|
| DESIGNED BY:       | DRAWN BY:      | CHECKED BY:  |
| DATE:              | CAD FILE:      | WORKZONES-06 |
| PROJECT No.:       | DRAWING SCALE: |              |
| 22OT.11530.00.0001 | 1"=40'         |              |

**FIGURE 3**

## **TABLES**

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**APPENDIX A  
NON-HAZARDOUS  
DETERMINATION**

Waste Material Removal Completion Report  
ArvinMeritor  
Former Moose Lodge Road Disposal Area  
Grenada, MS  
22OT.11530.00.00016  
January 12, 2006



STATE OF MISSISSIPPI  
GOVERNOR HALEY BARBOUR  
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

April 9, 2004

Mr. John Bozick  
Corporate Environmental Manager  
ArvinMeritor, Inc.  
2135 W. Maple Rd.  
Troy, MI 48084

Re: Rockwell Moose Lodge Road Site  
Non-Hazardous Determination for Buffing Compound & Soil  
Grenada, Grenada County, MS

Dear Mr. Bozick:

The Mississippi Department of Environmental Quality (MDEQ) has reviewed the analytical results for the samples collected from the buffing compound and adjacent soils back in 1993 and 1995. The buffing compound when originally disposed of back in the 1960's contained trichloroethylene (TCE). Normally if the buffing compound and contaminated soils were picked up and disposed of, they would be classified as a hazardous waste. However, analytical data for TCE from both the buffing compound and contaminated soils reveal that the highest concentration found was 2.3 mg/kg in soil and 0.180 mg/kg in the buffing compound. These concentrations are well below our health based risk concentration for unrestricted use of 5.1 mg/kg. Therefore, the buffing compound and soils do not contain listed hazardous waste resulting from the TCE and are not hazardous wastes provided the buffing compound and soils do not exhibit a hazardous waste characteristic.

Please call me at 601-961-5221 with any questions you may have.

Sincerely,

Handwritten signature of Jerry B. Banks in cursive script.

Jerry B. Banks, P.E., DEE  
Chief, Groundwater Assessment & Remediation Division

**APPENDIX B**  
**PHOTOGRAPHS**

Waste Material Removal Completion Report  
Arvin Meritor  
Former Moose Lodge Road Disposal Area  
Grenada, MS  
22OT.11530.00.00016  
January 12, 2006

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 1**



Entrance of Site prior to clearing and grubbing. (view from east to west)

**PHOTO No. 2**



Site during clearing and grubbing. (View from north to south)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 3**



Site after trees and brush have been cleared. (View northeast to southwest)

**PHOTO No. 4**



View of buffing compound and native soil.

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 5**



Southwest section of the Site during buffing compound removal. (View to southwest from the northeast)

**PHOTO No. 6**



View of the southwest portion of the Site during removal of buffing compound. (View from the northeast)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 7**



Southwest section of the Site after removal of buffing compound. (View from east)

**PHOTO No. 8**



Southeast section of the Site prior to removal of buffing compound. (View from the northwest.)

SECOR  
PHOTOGRAPHIC RECORD

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 9**



Southeast section of the Site prior to removal of buffering compound. (View from the east.)

**PHOTO No. 10**



Southeast section of the Site after removal of buffering compound. (View from the east)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 11**



North central portion of the site prior to removal of buffering compound. (View from the northwest.)

**PHOTO No. 12**



View from the northwest to the southeast during removal of the buffering compound.

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 13**



View for the northwest to the southeast after removal of the buffing compound.

**PHOTO No. 14**



Root systems and buffing compound in the northwest corner of the site. (View from the southeast)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 15**



View of the northwest section of the site after removal of the root systems and buffing compound. (View from the south.)

**PHOTO No. 16**



Buffing compound located in the central portion of the Site. (View from east to west.)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 17**



View of the central portion of the Site after removal of buffing compound.

**PHOTO No. 18**



Northwest section of the Site near stock pile prior to removal of buffing compound.  
(View from excavator to the northeast.)

SECOR  
PHOTOGRAPHIC RECORD

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 19**



Buffing compound along the eastern margin of the Site. (View from the west.)

**PHOTO No. 20**



View of the eastern margin of the Site after buffing compound removal. (View from the north.)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 21**



View of the eastern margin of the Site after removal of the buffing compound.  
(View from the northeast to the southwest.)

**PHOTO No. 22**



Semi-truck loading of buffing compound.

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 23**



Semi-Truck loading area.

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 24**



View of Site grading after removal of buffing compound. (View from the east to west.)

**PHOTO No. 25**



View of Site after completion of grading. (View from the southwest to the northeast.)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 26**



View of Site and loading area after the removal of buffing compound was completed. (View from the northeast.)

**PHOTO No. 27**



View of Site from the northeast after pine tree planting. (View from the northeast.)

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 28**



View of Site from the northwest after pine tree planting

**PHOTO No. 29**



View of Site from the southwest after pine tree planting

**SECOR  
PHOTOGRAPHIC RECORD**

**Client:** ArvinMeritor, Inc.

**Job Number:** 22OT.11530.00.00016

**Site Name:** Former MLR Disposal Area

**Date:** February 1 through March 16, 2006

**PHOTO No. 30**



View of the Site from the south to the north after removal of buffering compound and pine tree planting.

**APPENDIX C**  
**WEIGHT TICKETS – ON CD**

Waste Material Removal Completion Report

ArvinMeritor

Former Moose Lodge Road Disposal Area

Grenada, MS

22OT.11530.00.00016

January 12, 2006