



Natural Resources Conservation Service  
Federal Building, Room 443  
10 East Babcock  
Bozeman, MT 59715

---

March 31, 2004

**NATIONAL ENGINEERING FIELD HANDBOOK SERIES (PART 650/BOOK I)**  
**Montana Supplement to the Engineering Field Handbook**  
**210-VI**  
**AMENDMENT MT29**

**SUBJECT:** ENG--DISTRIBUTION OF THE MONTANA TABULATION SHEET; REVISED TABLE OF CONTENTS FOR CHAPTERS 50, 51, 52 AND 53; REVISED CONSTRUCTION SPECIFICATION FOR WATER WELL (642); REVISED PLANNING AND DESIGN GUIDE FOR WATER WELL; REVISED OPERATION AND MAINTENANCE FOR WATER WELL; REVISED MONTANA ENGINEERING WORKSHEETS MT-ENG-251 AND MT-ENG-642-a AND A NEW MONTANA ENGINEERING WORKSHEET MT-ENG-642-b

**Purpose:** To distribute a new Montana Tabulation Sheet, a revised Table of Contents for Chapters 50, 51, 52, and 53, pages 50-3/4; 51-3; 52-3; 53-7/8; revised Construction Specification, Planning and Design Guide, Operation and Maintenance, and Engineering Worksheets MT-ENG-251 and MT-ENG-642-a and a new Engineering Worksheet for Water Well, MT-ENG-642-b.

**Effective Date:** When filed.

**Explanation of Changes:** These documents have been changed to more closely conform to State regulations and OSHA safety standards. The Construction Specification for Water Well (642) has been revised to recognize that Licensed Water Well Contractors are the only people qualified by law to design the completion of a water well. **This eliminates the need to use Montana Standard Drawings for Water Well 642.001 through 642.009 when NRCS provides technical or financial assistance.** The Water Well Log Worksheet, MT-ENG-642-a and the Driller's Documentation and Certification of Well Completion Sheet, MT-ENG-642-b are now the two worksheets required. These two worksheets are to be signed by the Well Driller. NRCS will "concur" for payment on MT-ENG-642-b.

The other major change as outlined in the practice standard, Water Well (642), is the recognition that "frost pits" are a nationally recognized (OSHA) type of hazard (enclosed space), especially where the water source or associated geological units may have significant volumes of dissolved or pressurized gasses in it. Dissolved or pressurized gasses are commonly associated with the Judith River Formation, the Eagle Sandstone, coal beds of the Fort Union Formation and many other rock units less frequently. Most flowing wells will have dissolved gasses in the water and

- more -

most wells that encounter coal have a likelihood of emitting gasses. Additional hazards associated with frost pits include biological, fall, electrical, and groundwater contamination hazards and hazards to domestic and native animals.

The MT-ENG-642-a and MT-ENG-642-b worksheets have been altered to conform with State Law, with the addition of short references to permitting requirements, along with explanations of what is required for geological reports for wells. In the future, the MT-ENG-642-a and MT-ENG-642-b worksheets will serve as the certification by the contractor that the practice has been properly completed. Additional water quality parameters have also been added to the Operation and Maintenance requirements for irrigation wells.

### **WATER WELL DOCUMENTATION REQUIREMENTS:**

The producer shall be given a copy of the Geology Report; Construction Specification Cover Sheet, MT-ENG-7; Construction Specification for Water Well, pages MT-642-1 through MT-642-11; Operation and Maintenance Guide for your Water Well; and two clean copies of the worksheets, MT-ENG-642-a and MT-ENG-642-b. The Montana Licensed Water Well Contractor shall fill out MT-ENG-642-a and MT-ENG-642-b worksheets and return them signed to the producer. The Licensed Well Driller shall also return a completed MT-ENG-642-a to the Montana Bureau of Mines. The NRCS staff shall review the signed MT-ENG-642-a and MT-ENG-642-b worksheets after the well has been completed. If the worksheets are adequate, NRCS shall concur on MT-ENG-642-b for payment (see the Montana Supplement to the Engineering Field Handbook, Planning and Design Guide, Pages 51-39 through 51-41 for further guidance).

### **OTHER INFORMATION:**

The worksheet MT-ENG-251, Landowner's Responsibility for Installing Conservation Projects with USDA Assistance has been revised with word changes of "construction" to "installation" and "system" to "project".

The new Engineering worksheets/forms, MT-ENG-251, MT-ENG-642-a and MT-ENG-b have been electronically located at the NRCS web site under:

<http://www.mt.nrcs.usda.gov/technical/eng/worksheets.html> -- ef251, 642a, 642b

**Filing Instructions:** Remove and replace Montana Tabulation Sheet in front of the Montana Supplement to the Engineering Field Handbook. Remove after index tab Chapter 50, Engineering Specifications, Table of Contents, Pages 50-3/4 dated January 2001. Insert after index tab Chapter 50, Engineering Specifications, Table of Contents, Pages 50-3/4 dated March 2004. Remove in Chapter 50, Construction Specification for Well, Pages MT-642-1 through MT-642-10 dated June 1995. Insert in Chapter 50, Construction Specification for Water Well, Pages MT-642-1 through MT-642-11.

Remove after index tab Chapter 51, Planning and Design Guide, Table of Contents, Page 51-3 dated March 2001. Insert after index tab Chapter 51, Planning and Design Guide, Table of Contents, Page 51-3 dated March 2004. Remove in Chapter 51, Planning and Design Guide for Wells, Pages 51-39 through 51-41 dated October 1993 and Factors Affecting Feasibility of Irrigation Well Installation, Pages 51-42 through 51-45 dated June 1995. Insert in Chapter 51, Planning and Design Guide for Water Well, Pages 51-39 through 51-41 dated March 2004 and Factors Affecting Feasibility of Irrigation Well Installation, Pages 51-42 through 51-45 dated March 2004.

Remove after index tab Chapter 52, Operation and Maintenance, Table of Contents, Page 52-3 dated January 2001. Insert after index tab Chapter 52, Operation and Maintenance, Table of Contents, Page 52-3 dated March 2004. Remove in Chapter 52, Operation and Maintenance for Well, Pages 52-26 through 52-31 dated October 1993. Insert in Chapter 52, Operation and Maintenance for Water Well, Pages 52-26 through 52-31 dated March 2004. Remove after index tab Chapter 53, Engineering Worksheets, Table of Contents, Pages 53-7/8 dated May 2003/July 2003. Insert after index tab Chapter 53, Engineering Worksheets, Table of Contents, Pages 53-7/8 dated March 2004. Remove in Chapter 53 (in the plastic slipcovers) revised worksheets MT-ENG-251, dated May 2003 and MT-ENG-642-a dated January 2002. Insert in Chapter 53 (in the plastic slipcovers) revised worksheets MT-ENG-251 and MT-ENG-642-a dated March 2004 and the new worksheet MT-ENG-642-b dated March 2004 and place them in numerical order after worksheet MT-ENG-250B. Future copies of these forms can be retrieved off of the web site listed on Page 2 under Explanation of Changes.

If you have any questions, please call ReNae Grantier at (406) 587-6822, or Mike Garverich at (406) 587-6830.

/s/ by Dave White on (3/31/04) / rg

DAVE WHITE  
State Conservationist

Enclosures

cc:  
All Assistant State Conservationists for Field Operations  
All Field Offices  
All Field Engineers  
All State Office Engineers