
Rules of
Department of Natural Resources
Division 23—Division of Geology and Land Survey
Chapter 6—Test Hole Construction and Plugging Code

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**Title 10—DEPARTMENT OF
NATURAL RESOURCES**
**Division 23—Division of Geology
and Land Survey**
**Chapter 6—Test Hole Construction and
Plugging Code**

Editor's Note: Forms mentioned in these rules may be found at the end of the chapter.

10 CSR 23-6.010 Definitions

PURPOSE: This rule specifically defines words used in Chapter 6 concerning test wells, otherwise the definitions contained in 10 CSR 23-1.010 apply.

(1) Test hole means a hole drilled in the explorations for minerals or for geologic data. This includes, but is not limited to, stratigraphic holes drilled to obtain geologic information for structural studies, seismic shot holes and industrial mineral exploration holes.

AUTHORITY: sections 256.606 and 256.626, RSMo (Cum. Supp. 1991). Original rule filed Aug. 17, 1993, effective March 10, 1994.*

**Original authority: 256.606, RSMo (1991) and 256.626, RSMo (1985), amended 1991.*

**10 CSR 23-6.020 General Protection of
Groundwater Quality and Resources**

PURPOSE: This rule protects the overall groundwater quality and resources in Missouri.

(1) Differences Between Wells. The rules contained in 10 CSR 23-6 cover test holes drilled for obtaining geologic data or mineral exploration data. Test holes differ from water wells, monitoring wells and heat pump wells in that the information obtained from test holes and their locations are often proprietary information. Test holes, in many cases, are smaller in diameter than water wells. In addition, test holes are drilled and are then quickly plugged.

(2) Test holes that are to be converted into other types of wells. Test holes may be converted into a well at the request of the landowner. All requests must be made in writing to the division, by the landowner. The well must meet the applicable standards contained in 10 CSR 23-1—10 CSR 23-6.

AUTHORITY: sections 256.606, 256.615 and 256.626, RSMo (1994). Original rule filed Aug. 17, 1993, effective March 10, 1994. Amended: Filed Nov. 1, 1995, effective June 30, 1996.*

**Original authority: 256.606 and 256.615, RSMo (1991) and 256.626, RSMo (1985), amended 1991.*

10 CSR 23-6.030 Location of Test Holes

PURPOSE: This rule sets criteria for the location of test holes.

(1) The need to obtain site-specific data dictates the location of test holes. If the hole needs to be located closer than distance requirements stated in 10 CSR 23-3.010, a variance must be obtained before the hole is drilled (see 10 CSR 23-1.040 for details on variance issuance).

AUTHORITY: sections 256.606 and 256.626, RSMo (Cum. Supp. 1991). Original rule filed Aug. 17, 1993, effective March 10, 1994.*

**Original authority: 256.606, RSMo (1991) and 256.626, RSMo (1985), amended 1991.*

**10 CSR 23-6.040 Construction Standards
for Test Holes**

PURPOSE: This rule describes the minimum standards for a properly constructed test hole.

(1) Standards for Construction of Test Holes. All test holes shall be constructed in a manner that will conserve and protect the groundwater resources and not be a source or channel of contamination or pollution to any aquifer.

(2) Casing Material. All casing used in the construction of a test well must meet or exceed standards set out in 10 CSR 23-3.030.

(3) Casing Depth. If permanent surface casing is set, it must be set at least fifty feet (50') into bedrock. Temporary surface casing lengths may be determined by the permitted contractor.

(4) Temporary Cap. All holes must be capped during the period they remain unplugged.

(5) Hole Size. Test hole size will be determined by the person owning the mineral rights or designing the hole.

(6) Approved Grout. When a hole is grouted, procedures and materials set out in 10 CSR 23-3.030(3) and (4) must be followed.

AUTHORITY: sections 256.606 and 256.626, RSMo (1994). Original rule filed Aug. 17, 1993, effective March 10, 1994. Amended: Filed Nov. 1, 1995, effective June 30, 1996.*

**Original authority: 256.606, RSMo (1991) and 256.626, RSMo (1985), amended 1991.*

10 CSR 23-6.050 Plugging of Test Holes

PURPOSE: This rule establishes criteria for the proper procedures to be followed when plugging a test hole.

(1) All test holes, except those that are converted to other types of wells are to be plugged in accordance with this chapter within sixty (60) days from the date that the well was drilled. Extensions of this time limit are available on a case-by-case basis from the division.

(A) Plugging the Test Hole.

1. Test holes with no surface casing.

A. Test holes must be filled with grout via tremie to within two feet (2') of the ground surface. If the Davis Formation is penetrated, an expanding packer must be placed in the bottom portion of the formation and grouted to within two feet (2') of the surface.

B. The top two feet (2') of hole must be filled with soil.

C. A registration report form must be submitted to the division which documents the method of plugging the test hole.

2. Test holes with removable surface casing pipe.

A. If the Davis Formation is penetrated, an expanding packer must be set in the bottom portion of the formation.

B. The hole must be filled with grout from the packer to the bottom of the interior casing pipe via tremie pipe. This grout plug must extend from near the bottom of the Davis Formation to at least fifty feet (50') above the top of the Davis Formation.

C. The hole must be backfilled with chlorinated clean fill such as varied sized agricultural lime, gravel or sand to the base of the surface casing pipe, while the interior casing is being pulled.

D. A fifty-foot (50')-grout plug must be pumped through the surface casing pipe as it is being removed, filling the hole to the top of bedrock.

E. Chlorinated clean fill must be used to backfill the hole above the upper plug



while the surface casing pipe is being removed. The clean fill must extend from the top of the grout plug to within two feet (2') of the surface.

F. The top two feet (2') of the hole must be filled with on-site soil.

G. A registration report form must be submitted to the division which documents the method of plugging.

H. The test hole may be filled from total depth to surface with grout.

3. Test holes with grouted nonremovable surface casing.

A. Cut off casing three feet (3') below ground surface making a hole at least two feet (2') in diameter larger than the surface casing.

B. Fill the hole from total depth to within two feet (2') of the surface with grout.

C. Fill remaining hole with soil.

D. Submit a registration report form to the division.

(2) Test Holes Drilled to Expand Quarrying and Surface Mining Operations. When test holes are drilled in the process of expanding quarrying and surface mining operations and are destroyed within one (1) year by the advance of the mine or quarry, they are required to be plugged by only inserting a temporary surface plug into the hole which will prevent surface water from entering the hole. Reporting requirements are not required for these temporary holes. If these test holes are drilled deeper than the quarry or mine floor, they must be plugged from the mine floor to the total depth of the hole with approved grout. If these holes are not destroyed by the mining process within one (1) year then the requirements of subsection (1)(A) must be met. Extensions of this time limit will be considered on a case-by-case basis by the division.

(3) Test Holes Drilled in Association with Clay Mining Operations, Shallow Industrial Minerals Exploration and Miscellaneous Geologic Data Holes.

(A) When the test hole is drilled that bottoms in an impermeable fire clay deposit a temporary surface plug must be inserted which prevents surface water from entering the hole. This type of well is exempted from reporting requirements.

(B) When a test hole is drilled that bottoms at the bedrock-unconsolidated material contact or above, it must be plugged when no longer needed for exploratory purposes. If the test hole is less than one hundred feet (100') in depth and does not encounter a potable water horizon, the test hole must be plugged by filling the hole from bottom to top

with the type of uncontaminated material removed from the hole or other approved grout. A registration report is required per site for holes drilled and plugged that are greater than twenty feet (20') in depth. One (1) registration fee is required per report form for this type of hole. If a test hole is less than twenty feet (20') in depth, it must be filled with the material removed from the hole as soon as it is no longer needed for exploratory purposes. Test holes less than twenty feet (20') in depth are exempted from the rules. These wells can not be used in any way relative to monitoring well sites.

(C) If a test hole is greater than one hundred feet (100') in depth, it must be plugged as stated in 10 CSR 23-6.050(1).

*AUTHORITY: sections 256.606, 256.614, 256.615 and 256.626, RSMo (1994). * Original rule filed Aug. 17, 1993, effective March 10, 1994. Amended: Filed July 13, 1994, effective Jan. 29, 1995. Amended: Filed Nov. 1, 1995, effective June 30, 1996.*

**Original authority: 256.606, RSMo (1991); 256.614, RSMo (1985), amended 1991; 256.615, RSMo (1991); and 256.626, RSMo (1985), amended 1991.*

10 CSR 23-6.060 Confidentiality of Registration Report Form

PURPOSE: This rule sets standards to ensure that registration report forms are held confidential for at least ten years as required in section 256.615, RSMo.

(1) Confidentiality of Registration Report Forms. All registration report forms submitted to the division which document the plugging of holes drilled in the exploration for minerals or for geologic data must be held strictly confidential for a period of ten (10) years from the date of submittal. These holes include exploration drill holes for economic and industrial minerals and geologic data but do not include monitoring wells. The person submitting the report or the person for whom the well was drilled may request, in writing, that this information remain confidential for an additional five (5) years and the division shall grant this request. The submittal of this type of registration report form and fee is required within one hundred eighty (180) days of completion of the plugging of the test hole. Upon successful review of the registration report form, which indicates that the hole was plugged according to the rules, a registration number will be sent to the prop-

erty owner which documents that the hole is plugged according to minimum standards.

(2) Since test holes are usually temporary in nature and are required to be plugged quickly after drilling, they are exempted from the certification process.

*AUTHORITY: sections 256.606, 256.614, 256.615 and 256.626, RSMo (Cum. Supp. 1991). * Original rule filed Aug. 17, 1993, effective March 10, 1994.*

**Original authority: 256.606, RSMo (1991); 256.614, RSMo (1985), amended 1991; 256.615, RSMo (1991); and 256.626, RSMo (1985), amended 1991.*



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF GEOLOGY AND LAND SURVEY
 WELLHEAD PROTECTION SECTION
 WELL DRILLERS UNIT
 P.O. BOX 250
 ROLLA, MO
 65401
 (314) 368-2165

DO NOT FILL IN

CHECK NUMBER	
DATE RECEIVED	DATE APPROVED
TEST ID	

TESTING APPLICATION

APPLICANT NAME (LAST, FIRST, MIDDLE)			
BUSINESS NAME			
BUSINESS ADDRESS			
CITY	STATE	ZIP	BUSINESS TELEPHONE ()
HOME ADDRESS			HOME TELEPHONE ()
SOCIAL SECURITY NUMBER			

TESTS

Mark all of the tests you are applying for. If you do not qualify for a permit to operate but you wish to obtain a permit to contract the drilling of wells, installation of pumps, or both, please mark the "Not Valid for Operating" box under the permit you are applying for.

- | | |
|---|--|
| <input type="checkbox"/> General (\$25.00) | <input type="checkbox"/> Heat Pump (\$25.00) |
| <input type="checkbox"/> Pump Installation (\$25.00) | <input type="checkbox"/> Not Valid for Operating |
| <input type="checkbox"/> Not Valid for Operating | <input type="checkbox"/> Retake (\$25.00) |
| <input type="checkbox"/> Monitoring/Test Well (\$25.00) | <input type="checkbox"/> Reschedule (\$25.00) |
| <input type="checkbox"/> Test Hole Drilling Only | |
| <input type="checkbox"/> Not Valid for Operating | |
| <input type="checkbox"/> Water Well (\$25.00) | |
| <input type="checkbox"/> Not Valid for Operating | |

Enclose the appropriate fee with this application.

STATUS OF APPLICANT	<input type="checkbox"/> Owner	<input type="checkbox"/> Employee	<input type="checkbox"/> Supervisor
TYPE OF DRILLING	<input type="checkbox"/> Unconsolidated-Consolidated	<input type="checkbox"/> Unconsolidated ONLY	
TYPE OF PUMP INSTALLATION	<input type="checkbox"/> Commercial	<input type="checkbox"/> Non-Commercial	<input type="checkbox"/> Both

Testing date preferred: _____ Second Choice: _____

See attached testing schedule.

You will receive notification of the time and place you are scheduled for testing.



MISSOURI DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGY AND LAND SURVEY CLOSED LOOP HEAT PUMP CERTIFICATION RECORD

OFFICE USE ONLY DATE RECEIVED REF. NO. C.R. NO. STATE WELL NUMBER CHECKED BY APPROVED BY CHECK NO. TRANSMITTAL NO. ROUTE ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY HEAT PUMP INSTALLATION CONTRACTOR

NAME TELEPHONE ADDRESS CITY STATE ZIP CODE ADDRESS OF HEAT PUMP SITE (IF DIFFERENT THAN ABOVE) CITY STATE ZIP CODE

OWNER STATUS: PRIVATE HOME OWNER BUILDER DEVELOPER OTHER (SPECIFY)

MILEAGE AND DIRECTION FROM NEAREST TOWN OR HIGHWAY SIGNATURE (HEAT PUMP OWNER) DATE

LOCATION OF HEAT PUMP SYSTEM SHOW LOCATION IN SECTION PLAT COUNTY ELEVATION

LOCATION MAP (ATTACHED MAP OR SKETCH) OF HEAT PUMP SYSTEM FROM NEAREST TOWN OR HIGHWAY. INCLUDE DISTANCES FROM PERMANENT STRUCTURES AT SITE LOCATION. SMALLEST 1/4 LARGEST 1/4 SEC. TWN. N.RNG. E OR W LAT. LONG.

INFORMATION FOR VERTICAL CLOSED LOOP SYSTEM

NUMBER OF HOLES DRILLED DIAMETER OF DRILL HOLES DEPTH OF DRILL HOLES

ARE ALL WELLS CONSTRUCTED THE SAME? TYPE OF GROUT USED BENTONITE NON-SLURRY SLURRY

STATIC WATER LEVEL (FEET FROM SURFACE) METHOD OF GROUT INSTALLATION GRAVITY OPENHOLE TREMIE PRESSURE GROUT THROUGH TREMIE OTHER THROUGH CASING

VARIANCE ISSUED? DATE ISSUED VARIANCE NUMBER

INFORMATION FOR CLOSED LOOP MATERIALS

TYPE OF HEAT TRANSFER FLUID USED HEAT PUMP TOTAL TON RATING

PIPE MATERIAL POLYBUTYLENE CLASS B TYPE II GRADE I CLASS C TYPE II GRADE I TOTAL AMOUNT OF PIPE USED: FT. DIAMETER OF PIPE USED IN.

WERE BENTONITE PLUGS HYDRATED AFTER EMPLACED? YES NO POSITION OF GROUT SEAL FULL LENGTH SERIES OF 5 FT. PLUGS

DEPTH OF TRENCH FT. DEPTH FORMATION DESCRIPTION

IF FULL LENGTH, TOTAL NUMBER OF BAGS USED IF SERIES OF 5 FT. PLUGS, NUMBER OF BAGS USED PER PLUG POUNDS PER BAG lbs.

DEPTH TO TOP AND BOTTOM OF NEAR SURFACE PLUG (MEASURED FROM ORIGINAL GROUND SURFACE): TOP FT. BOTTOM FT.

LIST DEPTHS TO TOP OF EACH ADDITIONAL PLUG 1. FT. 2. FT. 3. FT. 4. FT. 5. FT.

INFORMATION FOR PERMANENT CASING

CASING DETAILS LENGTH FT. DIAMETER OF CASING IN. WEIGHT OR SDR # DIAMETER OF DRILL HOLE IN.

JOINTS THREADED WELDED DRIVE SHOE? MATERIAL PLASTIC CONCRETE GLUED WELDED STEEL

CASING PACKER DETAILS TYPE USED NONE RUBBER BOOT COUPLING INVERTED BELL DEPTH SET

CASING GROUT DETAILS IS GROUT SEAL FULL LENGTH? YES NO MATERIAL BENTONITE CEMENT FORM SLURRY CHIPS GRANULAR PELLETS NUMBER OF BAGS POUNDS PER BAG lbs.

DEPTH FROM THE SURFACE TO THE TOP OF THE GROUT SEAL FT. METHOD OF INSTALLATION GRAVITY OPENHOLE TREMIE POSITIVE DISPLACEMENT PRESSURE GROUT THROUGH TREMIE OTHER THROUGH CASING

DEPTH FROM THE SURFACE TO THE BOTTOM OF THE GROUT SEAL FT.

INFORMATION FOR HORIZONTAL CLOSED LOOP SYSTEM

PLACE OF INSTALLATION TRENCH PIT LAKE IF A TRENCH OR PIT WAS USED

CONSTRUCTED WIDTH: FT. CONSTRUCTED LENGTH: FT. CONSTRUCTED DEPTH: FT.

I HEREBY CERTIFY THAT THE HEAT PUMP HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF HEAT PUMPS.

HEAT PUMP CONTRACTOR'S NAME PRIMARY CONTRACTOR? YES NO DRILLER CONTRACTOR'S NAME PRIMARY CONTRACTOR? YES NO

SIGNATURE (HEAT PUMP CONTRACTOR) SIGNATURE DATE SIGNATURE (DRILLING CONTRACTOR) SIGNATURE DATE

PERMIT NUMBER HEAT PUMP COMPLETION DATE PERMIT NUMBER DRILL HOLE COMPLETION DATE

MO 780-1413 (6-95) DISTRIBUTION: PINK/DIVISION WHITE/CONTRACTOR CANARY/OWNER MAIL PINK COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402 ENCLOSE FEE BASED ON HEAT PUMP TOTAL TON RATING: TON (1-50) — \$40; TON (GREATER THAN 50) — \$75

MISSOURI DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF GEOLOGY AND LAND SURVEY
 WELLHEAD PROTECTION SECTION
 WELL DRILLERS UNIT

P.O. BOX 250
 ROLLA, MO
 65401
 (314) 368-2165



VEHICLE APPLICATION

DO NOT FILL IN					
PERMIT NUMBER			CHECK NO.		
DATE RECEIVED			DATE ISSUED		
MO.	DAY	YR.	MO.	DAY	YR.

Application must be fully completed in ink or typed.

PART I

BUSINESS NAME			
BUSINESS ADDRESS			
CITY	STATE	ZIP	BUSINESS TELEPHONE ()

PART II

VEHICLE 1	Truck Type	<input type="checkbox"/> Drill	<input type="checkbox"/> Pump	<input type="checkbox"/> Pick-up
MAKE OF TRUCK	YEAR	VEHICLE I.D. NUMBER		
LICENSE PLATE NUMBER	STATE	YEAR	TRUCK TITLE NUMBER	
RIG TYPE				
<input type="checkbox"/> Cable Tool <input type="checkbox"/> Rotary <input type="checkbox"/> Pump <input type="checkbox"/> Combination <input type="checkbox"/> Reverse Circulation <input type="checkbox"/> Hollow Rod <input type="checkbox"/> Jetting <input type="checkbox"/> Auger <input type="checkbox"/> Other _____				

VEHICLE 2	Truck Type	<input type="checkbox"/> Drill	<input type="checkbox"/> Pump	<input type="checkbox"/> Pick-up
MAKE OF TRUCK	YEAR	VEHICLE I.D. NUMBER		
LICENSE PLATE NUMBER	STATE	YEAR	TRUCK TITLE NUMBER	
RIG TYPE				
<input type="checkbox"/> Cable Tool <input type="checkbox"/> Rotary <input type="checkbox"/> Pump <input type="checkbox"/> Combination <input type="checkbox"/> Reverse Circulation <input type="checkbox"/> Hollow Rod <input type="checkbox"/> Jetting <input type="checkbox"/> Auger <input type="checkbox"/> Other _____				

PART III

I, _____, the applicant, hereby certify that the foregoing statements are true. I understand that misstatements of fact may result in the forfeiture of my permit, which is issued in accordance with Chapters 256.600 - 256.640, RSMo.

Signature _____ Title _____

Date _____



MISSOURI DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGY AND LAND SURVEY MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY DATE RECEIVED REF. NO. CHECK NO. C.R. NO. STATE WELL NUMBER TRANSMITTAL NO. CHECKED BY ROUTE APPROVED BY ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME WELL NUMBER SITE ADDRESS CITY STATE ZIP CODE OWNER NAME TELEPHONE OWNER ADDRESS CITY STATE ZIP CODE VARIANCE ISSUED DATE ISSUED VARIANCE NUMBER LOCATION OF WELL COUNTY SURFACE ELEVATION DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME PERMIT NUMBER DRILLING CONTRACTOR'S NAME PERMIT NUMBER

WELL CONSTRUCTION INFORMATION

TYPE OF WELL MONITORING WELL PIEZOMETER OTHER HAZARDOUS MATERIAL LANDFILL L.U.S.T. OTHER MONITORING FOR: V.O.C. METALS PETROLEUM PRODUCT OTHER ONLY PROTECTIVE CASING DETAILS LENGTH DIAMETER OF CASING WEIGHT OR SDR # DIAMETER AND DEPTH OF DRILL HOLE JOINTS THREADED MECHANICAL WELDED OTHER MATERIAL THERMO PLASTIC STEEL FLUORO POLYMER LOCKING CAP? YES NO CAP VENTED WEEP HOLE? CASING GROUT DETAILS MATERIAL CEMENT CONCRETE OTHER DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL TYPE OF SURFACE COMPLETION ABOVE GROUND FLUSH MOUNT DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED CENTRALIZER USED ON RISER NO YES LOCATED AT MATERIAL STAINLESS STEEL OTHER RISER PIPE DETAILS LENGTH DIAMETER OF RISER PIPE WEIGHT OR SDR # DIAMETER OF DRILL HOLE JOINTS THREADED MECHANICAL WELDED OTHER MATERIAL THERMO PLASTIC STEEL FLUORO POLYMER OTHER ANNUAL SEAL CEMENT SLURRY BENTONITE SLURRY NON SLURRY BENTONITE CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED % BENTONITE USED WATER USED/BAG GAL. BENTONITE SEAL MATERIAL BENTONITE SLURRY CHIPS GRANULAR PELLETS LENGTH OF SEAL BENTONITE SEAL INSTALLED IN UNSATURATED ZONE SATURATED ZONE PRIMARY FILTER PACK TYPE SAND MANUFACTURED NATURAL GRAIN SIZE LENGTH OF FILTER PACK METHOD OF INSTALLATION Information in this column to be supplied in the Feet from Surface column FEET FROM SURFACE FORMATION DESCRIPTION SECONDARY FILTER PACK TYPE SAND MANUFACTURED NONE GRAIN SIZE LENGTH OF FILTER PACK METHOD OF INSTALLATION Depth to bottom of Protective Casing Seal: WELL SCREEN LENGTH OF SCREEN DIAMETER SLOT SIZE WEIGHT OR SDR # MATERIAL PLASTIC STEEL FLUORO POLYMER Depth to Base of Annular Seal: SUMP DETAILS LENGTH OF SUMP DIAMETER OF SUMP MATERIAL PVC STEEL FLUORO POLYMER OTHER Depth to Base of Bentonite Seal: BACK FILL WAS THE WELL BACK FILLED? YES NO MATERIAL USED LENGTH OF BACK FILLED BORE HOLE Depth to Top of Primary Filter Pack: Depth to Top of the Screen: STATIC WATER LEVEL FEET FROM MEASURING POINT MULTIPLE CASED WELLS DATE OF STATIC WATER LEVEL SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED. MEASURING POINT FOR STATIC WATER LEVEL IS TOP OF RISER PIPE OTHER DRILLING EQUIPMENT AIR ROTARY AUGER TYPE REVERSE ROTARY OTHER DATE WELL DRILLING WAS COMPLETED I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS. SIGNATURE PRIMARY CONTRACTOR/PERMIT # DATE SIGNATURE DRILLER/PERMIT # DATE

MO 780-1415 (7-95)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402 ENCLOSE \$35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL COMPLETION



P.O. BOX 250
 ROLLA, MO
 65401
 (314) 368-2165



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF GEOLOGY AND LAND SURVEY
 WELLHEAD PROTECTION SECTION
 WELL DRILLERS UNIT

EXPERIENCE VOUCHER

APPLICANT NAME _____

You must have three (3) different references. References may be obtained from a permitted well/pump installation contractor, supplier, or someone in the drilling industry that knows of your experience in well and/or pump installation.

1. I hereby certify that I know the above applicant, _____ has _____ hours of experience in:

- Heat pump construction Pump installation
 Monitoring/test well construction Water well construction

Dates of experience:	
From _____	Year _____
Mo. _____	
To _____	Year _____
Mo. _____	

State of _____, County (and/or City) of _____
 . On this _____ day of _____
 in the year _____, before me, _____,
 a Notary Public in and for said state, personally appeared,
 _____ known to me
 the person who executed the foregoing Experience Voucher and
 acknowledged to me that he/she executed the same for the purposes
 therein stated.

NAME _____		
ADDRESS _____		
CITY _____	STATE _____	ZIP _____
TELEPHONE NO. _____		

 SIGNATURE _____ DATE _____
 OFFICIAL SIGNATURE OF NOTARY

2. I hereby certify that I know the above applicant, _____ has _____ hours of experience in:

- Heat pump construction Pump installation
 Monitoring/test well construction Water well construction

Dates of experience:	
From _____	Year _____
Mo. _____	
To _____	Year _____
Mo. _____	

State of _____, County (and/or City) of _____
 . On this _____ day of _____
 in the year _____, before me, _____,
 a Notary Public in and for said state, personally appeared,
 _____ known to me
 the person who executed the foregoing Experience Voucher and
 acknowledged to me that he/she executed the same for the purposes
 therein stated.

NAME _____		
ADDRESS _____		
CITY _____	STATE _____	ZIP _____
TELEPHONE NO. _____		

 SIGNATURE _____ DATE _____
 OFFICIAL SIGNATURE OF NOTARY

I, _____, the applicant, hereby certify that the foregoing statements are true. I understand that misstatements of fact may result in the forfeiture of my permit, which is issued in accordance to Chapter 256.600 - 256.640, RSMo.

Signature _____

MO 780-1423 (11-93)



MISSOURI DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGY AND LAND SURVEY REGISTRATION RECORD

OFFICE USE ONLY REF. NO. ROUTE STATE WELL NUMBER CHECKED BY APPROVED BY DATE DATE RECEIVED P.W.S. NUMBER CHECK NUMBER TRANSMITTAL NO. CROSS REFERENCE NO. ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY OWNER NAME ADDRESS CITY STATE ZIP CODE SITE NAME WELL NUMBER ADDRESS OF WELL SITE OR SITE NAME (IF DIFFERENT THAN ABOVE) OWNER STATUS: BUILDER PRIVATE HOME OWNER DEVELOPER OTHER (SPECIFY) CITY STATE ZIP CODE PURPOSE OF REGISTRATION FORM ABANDONED WELL MINERAL EXPLORATORY WELL RECONSTRUCTION TEST HOLE OTHER VARIANCE ISSUED? YES NO VARIANCE NUMBER: WELL CERTIFICATION NUMBER DATE ORIGINALLY DRILLED SIGNATURE (WELL OWNER) DATE

INFORMATION SUPPLIED BY CONTRACTOR SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS LOCATION OF WELL SHOW LOCATION IN SECTION PLAT QUAD COUNTY ELEV AREA NO. SMALLEST 1/4 LARGEST 1/4 SEC. TWN. N.RNG. E OR W LAT. LONG. DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL

CONTRACTOR'S NAME PERMIT NUMBER DRILLERS NAME PERMIT NUMBER

ABANDONMENT OF WELLS FORMER USE OF WELL HAND DUG DOMESTIC (1 TO 3 CONNECTIONS) MULTI-FAMILY HEAT PUMP IRRIGATION SOIL BORING PUBLIC WATER SUPPLY MINERAL EXPLORATORY TEST HOLE MONITORING OTHER DATE ORIGINALLY DRILLED DATE PLUGGED STATIC WATER LEVEL FT. PUMP REMOVED FROM WELL? YES NO DIA. OF WELL CASING IN. WAS WELL DISINFECTED AFTER RECONSTRUCTION YES NO DATE RECONSTRUCTION COMPLETED DEPTH OF THE WELL LENGTH OF CASING CASING DIAMETER/WELL DIA. RAISED CASING INFORMATION MATERIAL METHOD OF ATTACHMENT GROUT INSTALLATION METHOD CASING CUT OFF THREE FEET BELOW SURFACE? TYPE OF CASING STEEL PLASTIC OTHER GROUT MATERIAL USED NEAT CEMENT HI-EARLY PORTLAND TYPE 1 OTHER BENTONITE POWDER GRANULAR CHIPS PELLETS NUMBER OF BAGS OF GROUT USED POUNDS OF GROUT PER BAG IF NEAT CEMENT USED, HOW MANY GALLONS OF WATER MIXED PER BAG OF CEMENT TYPE OF FILL MATERIAL USED AMOUNT OF FILL MATERIAL USED CU. YDS. DEPTH TO TOP OF FILL MATERIAL WELL DISINFECTED BEFORE PLUGGING? YES NO NUMBER USED FOR DISINFECTION GALLONS OF CHLORINE POUNDS OF CHLORINE TABLETS OF CHLORINE WAS THE WELL ABANDONED BECAUSE OF HOOKING UP TO A PUBLIC OR RURAL WATER SUPPLY DISTRICT? YES NO IF YES, WHAT IS THE NAME OF THE WATER DISTRICT: LINER DETAILS PURPOSE OF LINER USED ONLY TO HOLD BACK FORMATION USED TO SEAL OUT CONTAMINATION OR OTHER CONDITIONS DIAMETER OF LINER IN. WEIGHT OR SDR # DEPTH TO THE TOP OF LINER FROM SURFACE FT. MATERIAL PLASTIC STEEL AMOUNT OF LINER USED FT. JOINTS GLUED WELDED OTHER LINER PACKER DETAILS TYPE USED NONE RUBBER BOOT DEPTH(S) SET LINER GROUT DETAILS POSITION OF SEAL FULL LENGTH BETWEEN PACKERS MATERIAL CEMENT: PORTLAND TYPE 1 HI EARLY BENTONITE: CHIPS PELLETS SLURRY GRANULAR DEPTH PUMP WAS SET FT. DEPTH FROM SURFACE TO TOP OF THE GROUT SEAL FT. DEPTH FROM SURFACE TO BOTTOM OF THE GROUT SEAL FT. GPM

CHECK THE BOX WHICH APPLIES I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS ABANDONED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE ABANDONMENT OF WELLS. I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS REPAIRED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE REPAIR OF WELLS. CONTRACTOR'S SIGNATURE DATE DEEPENING OF WELL INFORMATION FROM TO FORMATION DESCRIPTION YIELD

MO 780-1414 (1-95) DISTRIBUTION: WHITE/CONTRACTOR CANARY/DIVISION PINK/OWNER MAIL CANARY COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65401 RECORD MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION DATE


MISSOURI DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF GEOLOGY AND LAND SURVEY
 WELLHEAD PROTECTION SECTION
 WELL DRILLERS UNIT
 P.O. BOX 250
 ROLLA, MO
 65401
 (314) 368-2165



**HEAT PUMP INSTALLATION
 CONTRACTOR APPLICATION**

DO NOT FILL IN			
PERMIT NUMBER	RESTRICTIONS	<input type="checkbox"/> Probationary	
CHECK NO.	<input type="checkbox"/> Not valid for operating	<input type="checkbox"/> Commercial Pump	
TEST SCORE	<input type="checkbox"/> Unconsolidated	<input type="checkbox"/> Non-Commercial Pump	
DATE RECEIVED	DATE ISSUED		
MO. DAY YR.	MO. DAY YR.		

Application must be fully completed in ink or typed.

APPLICANT NAME (LAST, FIRST, MIDDLE)			TITLE <input type="checkbox"/> OWNER <input type="checkbox"/> EMPLOYEE <input type="checkbox"/> SUPERVISOR	
BUSINESS NAME				
BUSINESS ADDRESS				
CITY	STATE	ZIP	BUSINESS TELEPHONE ()	
HOME ADDRESS				
CITY	STATE	ZIP	HOME TELEPHONE ()	
YEAR OF BIRTH	SOCIAL SECURITY NUMBER			
TOTAL NUMBER OF HOURS WORKED IN HEAT PUMP INSTALLATION				
Nearest relative - not living with you:			NAME	
ADDRESS			CITY	
STATE	ZIP	TELEPHONE ()		
COUNTIES WITHIN WHICH THE FIRM OPERATES				
I certify that all information provided in this application is true. I understand that misstatements of facts may result in the forfeiture of my permit, which is issued in accordance with Chapters 256.600 - 256.640, RSMo.				
APPLICANT SIGNATURE			DATE	
REPRESENTATIVE OF FIRM			DATE	
MAIL COMPLETED APPLICATION AND \$75.00 PERMIT FEE TO:		 MISSOURI WELL DRILLERS FUND P.O. BOX 250 ROLLA, MO 65401		

MO 780-1419 (11-93)



MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY
WELLHEAD PROTECTION SECTION
WELL DRILLERS UNIT
P.O. BOX 250
ROLLA, MO
65401
(314) 368-2165



**PUMP INSTALLATION
CONTRACTOR APPLICATION**

DO NOT FILL IN			
PERMIT NUMBER	RESTRICTIONS		<input type="checkbox"/> Probationary
CHECK NO.	<input type="checkbox"/> Not valid for operating		<input type="checkbox"/> Commercial Pump
TEST SCORE	<input type="checkbox"/> Unconsolidated		<input type="checkbox"/> Non-Commercial Pump
DATE RECEIVED		DATE ISSUED	
MO.	DAY	YR.	MO. DAY YR.

Application must be fully completed in ink or typed.

APPLICANT NAME (LAST, FIRST, MIDDLE)			TITLE <input type="checkbox"/> OWNER <input type="checkbox"/> EMPLOYEE <input type="checkbox"/> SUPERVISOR	
BUSINESS NAME				
BUSINESS ADDRESS				
CITY	STATE	ZIP	BUSINESS TELEPHONE ()	
HOME ADDRESS				
CITY	STATE	ZIP	HOME TELEPHONE ()	
YEAR OF BIRTH	SOCIAL SECURITY NUMBER			
TOTAL NUMBER OF HOURS WORKED IN PUMP INSTALLATION				
Nearest relative - not living with you:			NAME	
ADDRESS			CITY	
STATE	ZIP	TELEPHONE ()		
COUNTIES WITHIN WHICH THE FIRM OPERATES				

I certify that all information provided in this application is true. I understand that misstatements of facts may result in the forfeiture of my permit, which is issued in accordance with Chapters 256.600 - 256.640, RSMo.

APPLICANT SIGNATURE	DATE
REPRESENTATIVE OF FIRM	DATE

MAIL
COMPLETED
APPLICATION
AND \$75.00
PERMIT FEE
TO:



MISSOURI WELL DRILLERS FUND
P.O. BOX 250
ROLLA, MO 65401

MISSOURI DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF GEOLOGY AND LAND SURVEY
 WELLHEAD PROTECTION SECTION
 WELL DRILLERS UNIT
 P.O. BOX 250
 ROLLA, MO
 65401
 (314) 368-2165



**WATER WELL INSTALLATION
 CONTRACTOR APPLICATION**

DO NOT FILL IN			
PERMIT NUMBER	RESTRICTIONS	<input type="checkbox"/> Probationary	
CHECK NO.	<input type="checkbox"/> Not valid for operating	<input type="checkbox"/> Commercial Pump	
TEST SCORE	<input type="checkbox"/> Unconsolidated	<input type="checkbox"/> Non-Commercial Pump	
DATE RECEIVED	DATE ISSUED		
MO. DAY YR.	MO. DAY YR.		

Application must be fully completed in ink or typed.

APPLICANT NAME (LAST, FIRST, MIDDLE)			TITLE <input type="checkbox"/> OWNER <input type="checkbox"/> EMPLOYEE <input type="checkbox"/> SUPERVISOR		
BUSINESS NAME					
BUSINESS ADDRESS					
CITY	STATE	ZIP	BUSINESS TELEPHONE ()		
HOME ADDRESS					
CITY	STATE	ZIP	HOME TELEPHONE ()		
YEAR OF BIRTH	SOCIAL SECURITY NUMBER				
TOTAL NUMBER OF HOURS WORKED IN WATER WELL INSTALLATION					
Nearest relative - not living with you:			NAME		
ADDRESS			CITY		
STATE	ZIP	TELEPHONE ()			
COUNTIES WITHIN WHICH THE FIRM OPERATES					
<p>I certify that all information provided in this application is true. I understand that misstatements of facts may result in the forfeiture of my permit, which is issued in accordance with Chapters 256.600 - 256.640, RSMo.</p>					
APPLICANT SIGNATURE				DATE	
REPRESENTATIVE OF FIRM				DATE	
MAIL COMPLETED APPLICATION AND \$75.00 PERMIT FEE TO:			MISSOURI WELL DRILLERS FUND P.O. BOX 250 ROLLA, MO 65401		

MO 780-1421 (11-93)