

**Maximum Limits of Reimbursement
For Drilling Services
February 1, 2011**

The maximum limits of reimbursement to the Tank Owner from the Mississippi Groundwater Protection Trust Fund for drilling services are listed below. Drilling must be performed in accordance with the attached "MDEQ Minimum Specifications for Drilling Services" dated July 1, 2005, and the scope of work approved by the MDEQ project manager. Charges for work not in accordance with the minimum specifications or not approved in the scope of work may not be reimbursed. The maximum limits of reimbursement listed below include *all charges, profit, and subsistence*. Any charges above the maximum limits listed below are not reimbursable. These limits apply to all projects performed after February 1, 2011.

1. MOBILIZATION AND DEMOBILIZATION \$100.00 Flat Fee plus
\$3.00/mile up to a total
maximum charge of \$1,000.
(only one mobilization and
demobilization is reimbursable
per phase of work)

Mobilization and Demobilization charges will be reimbursed on a charge/mile basis, plus flat fee, and will include the furnishing of all labor, equipment, materials and supplies, and any incidentals necessary to perform and complete the work properly. These charges should include any charges incidental to equipment set-up and removal. This item will also include the costs incurred by the driller with respect to time spent in obtaining and transporting any of the equipment and supplies required for the project to the site and from the site. Only one round trip will be reimbursed from the Mississippi Groundwater Protection Trust Fund (MGPTF) with distances determined by the official Mississippi State Highway map or as determined by the MDEQ contracting officer or his designee.

2. DECONTAMINATION \$75.00/boring

Reimbursement for this item shall include all charges for materials and equipment including steam cleaners, generators, and tank/water trucks.

3. DRILLING BOREHOLE AND ABANDONMENT \$18.00/foot

Reimbursement for this item will be based upon actual number of linear feet drilled (augured) as documented by the engineering firm's field geologist or engineer and includes all labor, materials, soil/waste handling, split-spoon sampling at five foot intervals, and equipment including jackhammers, air compressors, and hand augers.

4. DRILLING BOREHOLE AND ABANDONMENT \$20.00/foot
(Including soil disposal)

Reimbursement for this item will be based upon actual number of linear feet drilled (augured) as documented by the engineering firm's field geologist or engineer and includes all labor, materials, soil/waste handling, soil disposal, split-spoon sampling at five foot intervals, and equipment including jackhammers, air compressors, and hand augers.

5. ADDITIONAL SAMPLES \$15.00/additional sample

Reimbursement for this item will be based upon actual number of additional samples collected as documented by the engineering firm's field geologist or engineer and includes all labor, soil disposal, equipment, and materials.

6. BORING AND 2" WELL INSTALLATION \$34.00/foot

The charges associated with installing the monitoring wells shall include drilling to the required depth, split-spoon sampling at five foot intervals, soil/waste handling, PVC casing (schedule 40 or better), screen, bottom plugs, locking well caps, labor, sand, bentonite, grout, cement, and all equipment including jackhammers, air compressors, and hand augers.

7. BORING AND 2" WELL INSTALLATION \$37.00/foot
(Including soil disposal)

The charges associated with installing the monitoring wells shall include drilling to the required depth, split-spoon sampling at five foot intervals, soil/waste handling, soil disposal, PVC casing (schedule 40 or better), screen, bottom plugs, locking well caps, labor, sand, bentonite, grout, cement, and all equipment including jackhammers, air compressors, and hand augers.

8. BORING AND 4" WELL INSTALLATION \$40.00/foot

The charges associated with installing the monitoring wells shall include drilling to the required depth, split-spoon sampling at five foot intervals, soil/waste handling, PVC casing (schedule 40 or better), screen, bottom plugs, locking well caps, labor, sand, bentonite, grout, cement, and all equipment including jackhammers, air compressors, and hand augers.

9. BORING AND 4" WELL INSTALLATION \$44.00/foot
(Including soil disposal)

The charges associated with installing the monitoring wells shall include drilling to the required depth, split-spoon sampling at five foot intervals, soil/waste handling, soil disposal, PVC casing (schedule 40 or better), screen, bottom plugs, locking well caps, labor, sand, bentonite, grout, cement, and all equipment including jackhammers, air compressors, and hand augers.

10. BORING AND 6" WELL INSTALLATION \$48.00/foot

The charges associated with installing the monitoring wells shall include drilling to the required depth, split-spoon sampling at five foot intervals, soil/waste handling, PVC casing (schedule 40 or better), screen, bottom plugs, locking well caps, labor, sand, bentonite, grout, cement, and all equipment including jackhammers, air compressors, and hand augers.

11. BORING AND 6" WELL INSTALLATION \$52.00/foot
(Including soil disposal)

The charges associated with installing the monitoring wells shall include drilling to the required depth, split-spoon sampling at five foot intervals, soil/waste handling, soil disposal, PVC casing (schedule 40 or better), screen, bottom plugs, locking well caps, labor, sand, bentonite, grout, cement, and all equipment including jackhammers, air compressors, and hand augers.

12. WELL DEVELOPMENT \$100.00/well

This item shall include all charges for labor, equipment, water disposal, and product disposal.

13. FLUSH MOUNT SECURITY CASINGS \$175.00/each

This item shall include all charges for labor, equipment, and materials.

Notes:

- 1. Only the above items, not to exceed the above maximum unit rates, are reimbursable for drilling services.*
- 2. Up to an additional \$2.00/ft may be allowed for borings and monitoring wells over 50 feet.*
- 3. Footage for well installation is the actual number of feet from the top of the well casing to the bottom plug.*

**Mississippi Department of Environmental Quality
Minimum Specifications for Drilling Services**

ITEM 1 - MOBILIZATION AND DEMOBILIZATION

The driller should leave the site as clean as when he arrived which includes soil disposal, if necessary.

ITEM 2 - DECONTAMINATION

Prior to mobilization any part of the drill rig and/or equipment that comes in contact with the borehole will be thoroughly cleaned to remove all oil, grease, mud, tar, etc. This cleaning process will consist of scrubbing the equipment with a detergent and tap water then using a high-pressure hot water rinse.

Before drilling each boring, the augers, drilling bits, etc. shall be cleaned by at least using a high-pressure hot water rinse. Special attention should be given to the threaded section of the casing. Petroleum based lubricants shall not be used to prevent binding.

Before taking Shelby tube or split-spoon samples, this and associated equipment shall be minimally decontaminated using the following protocol:

- (1) Cleaned thoroughly with detergent and tap water,
- (2) Rinsed thoroughly with isopropyl alcohol or methanol, and
- (3) Then rinsed thoroughly with distilled water.

ITEMS 3, 4, AND 5 - DRILLING OF BOREHOLES, SPLIT-SPOON SAMPLING, AND ABANDONMENT

Subsurface samples will be collected at five-foot intervals with a cleaned split-spoon or equivalent. Sampling will be carried out to the required depth while using standard ASTM protocols to recover the samples. Borehole abandonment will require grouting by the tremie method (95% Portland cement and 5% bentonite by weight) to begin at the bottom of the boring and proceeds to land surface. The patch at the land surface shall be the same material surrounding the borehole (i.e. asphalt, concrete, etc.).

ITEMS 6, 7, 8, 9, 10, AND 11 - INSTALLATION OF MONITORING WELLS

All monitoring wells shall be at least PVC schedule 40 with 0.010-inch factory slotted screen openings and drilled using hollow stem/Sonic drilling technology. Each screen will be continuously slotted and at least 10 foot in length. The well will consist of a least a schedule 40 (ASTM) body with threaded flush joints. No solvents or lubricating compounds will be used to aid pipe connection. PVC plugs will be threaded onto the bottom of each well screen to prevent the intrusion of filter material. The driller will place the threaded caps onto the well pipe opening at the surface. The well caps shall be watertight and lockable. If the wells are to be less than/greater than standard 4" inside diameter, prior approval from the MDEQ must be granted *before* the wells are installed.

The annular space between the monitoring well and the borehole wall shall be at least 2.0 inches and will be backfilled with a clean medium to coarse grain sand (20/40 sand) to a level approximately 1.0 foot above the top of the screen.

A two-foot bentonite seal of bentonite pellets will be placed immediately above the sand and firmly tamped in place.

The remainder of the annular space should be grouted to land surface with a grout mixture (95% Portland cement and 5% bentonite by weight) to approximately land surface.

ITEM 12 - WELL DEVELOPMENT

Upon completion of the monitoring well installation, the well should be developed by bailing, pumping, surge block, etc. At least three to five well volumes should be pumped or the well should be pumped dry. The final water from the well should not be turbid. The engineering firm's field geologist or engineer shall determine the decision as to when the well is properly developed.

ITEM 13 - FABRICATION/INSTALLATION OF MONITOR WELL HEAD PROTECTION

In most cases the site will utilize concrete or asphalt as a covering material. Before installation of monitor well head protection, the engineer shall review the attached drawing to assure proper excavation prior to the pouring of concrete, which forms the vehicular traffic protector. If the location of the monitor well is within a covered area (asphalt or concrete), the existing surface about the monitor well must be removed utilizing either mechanical sawing or pneumatic hammer equipment to a depth of existing cover and the width and length as specified on the drawing. Loose materials on the exposed earthen surface shall be removed or compacted to assure a smooth surface upon which to pour the concrete mixture. If the monitor well is to be located outside a covered area, the earthen material should be removed using a shovel or pickaxe to a depth of six inches and a width and length as specified on the attached drawing. The monitor well should then be cut to the proper height so that the security casing cover will extend 2 inches above the well casing considering the requirements as outlined in the attached drawing and the security casing set.

The concrete mixture to be used as the vehicular traffic protector shall consist of the addition of five (5) pounds of Portland cement to each 80-pound bag of "Quickcrete" or other commercially available brand concrete mixture when the poured material is to be derived from bagged dry mix. Water should be added to the mixture in an amount necessary for desired consistency before the concrete is poured. If the poured material is to be delivered from a concrete supplier by truck, 2500 psi concrete should be specified. The concrete surface of the protector should then be trialed so that the surface of the concrete on any side of the security casing is flush with the monitor well security casing well cap and mating cover material. A flush mounted protective cover should be installed on the well casing protector to protect the monitoring wells against damage from site activities. The words "Monitoring Well" or a similar designation should be *embossed* on the protective cap.

MONITORING WELLHEAD PROTECTION

