

Site identification
 Property Owner Dough Hefel Well Number _____
 Address @ Rupp Hollow Rd Dubuque
 Tenant Waterford Estates
 Well Depth 888 ft Date completed 8/24/04

Location County Dubuque
 _____ mi. N and _____ mi. E of intersection of _____ and _____
 _____ 1/4 of the SE 1/4 of the SE 1/4 of Sec 4 TWP 8N RANG 20 W
 Show exact location of well in section grid with a dot (•). Sketch map of well location on property.

upland hillside valley Elevation (if known) _____

Formation log

| From | To | Color | Hardness | Formation description |
|------|-----|--------|----------|-----------------------|
| 0 | 24 | Yellow | | Clay |
| 24 | 172 | TAN | | Limestone |
| 172 | 208 | Grey | | Limestone |
| 208 | 231 | LTAN | | Limestone |
| 231 | 243 | | | Carver with Cobbles |
| 243 | 255 | | | Redwax |
| 255 | 283 | LTAN | | Limestone |
| 283 | 290 | Green | | Shale |
| 290 | 305 | TAN | | Limestone |
| 305 | 350 | Grey | | Limestone |
| 350 | 395 | White | | SANDSTONE |
| 395 | 402 | White | | SANDSTONE w/ Shal |
| 402 | 430 | Buff | | Limestone |
| 430 | 440 | Buff | | Limestone w/ Shal |
| 440 | 700 | LTAN | | Limestone |
| 700 | 704 | White | | SANDSTONE |
| 704 | 749 | Red | | Limestone |
| 749 | 781 | White | | Sandstone |
| 781 | 828 | Gray | | Dolomite |

Remarks (including depth of test drilling fluids, materials, or tools)

Well use

Domestic Municipal Commercial
 Livestock Public supply Monitoring
 Test well Irrigation Other _____
 (explain) _____

Drill method rotary auger cable other _____

Hole size
 17 1/8 inch from 0 ft to 243 ft
 13 inch from 243 ft to 575 ft
 hole size continued
 7 9/8 inch from 575 ft to 828 ft

Record all depth measurements from ground level (GL). Use (+) for above GL measurements.

Casing Drive shoe (yes/no) no Piless adapter (yes/no) no

| Size (ID/OD) | Type / Wt | Depth top | Depth bottom | Amount (length) |
|------------------|-----------|-----------|--------------|-----------------|
| 14" SCH 40 Steel | 117 | 244 | 127' | |
| 8" SCH 40 Steel | -#1 | 575 | 576 | |

Perforated or slotted casing? (yes/no) no

Perforated / slotted from _____ ft to _____ ft
 Perforated / slotted from _____ ft to _____ ft

Casing grouted? (yes/no) yes Placement method Halliburton-Fremmer

| Type | Depth Top | Depth bottom | Amount (vol/wt) |
|--------|-----------|--------------|-----------------|
| Cement | 117 | 200 | 70 |
| Cement | 0 | 575 | 510 |

Well screen? (yes/no) no

| Diameter | Slot size | Depth Top | Depth Bottom | Length | Material |
|----------|-----------|-----------|--------------|--------|----------|
| 0.--- | | | | | |
| 0.--- | | | | | |

Bottom capped (yes/no) no with _____
 Seals / Packers (yes/no) yes kind Shel trap depth 230 ft
 Gravel packed (yes/no) from _____ ft to _____ ft
 type _____ amount _____

Well developed? (yes/no) yes Explain Air
 (pumped, aerated, bailed) for 2 hrs at _____ GPM.

Pump installed? (yes/no) no Date ____/____/____
 Installer's name _____
 Type of pump _____ Depth to intake _____ ft
 Pump diameter _____ Rated capacity _____ GPM

Water information Aquifer: sand / gravel limestone sandstone
 Main water-supply zone from 600 ft to 825 ft seepage well
 Static water level 268 ft (below / above) GL; tape airline E-line estimate
 Pumping water level _____ ft below GL; tape airline E-line estimate
 At yield of _____ GPM; orifice volumetric estimate
 Measurements taken at _____ (AM / PM) Date ____/____/____

Water quality test? (yes/no) no Date tested ____/____/____
 Tested by _____

Contractor Gingerich Well
 Address 1321 Loust Ave Kalona IA 52247
 Driller Kurt Gingerich Certification no. 40016