

62619

| Location of Well  |  |   | Well Site Information   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
|---|--|---|---|---|--|-----------|-------|-------|-----------|-------|-------|------|-------|-------|--------------------|--------|-------|----------------|----------|-------|----------------|-----------|------|-------------------|-----------|------|-------|-----------|-------|-----------|-----------|-------|----------|-----------|-------|-----------|-----------|-------|----------|-----------|-------|-----------|-----------|------|----------|-----------|-------|----------|--|---------|-------------------|--------|-----|----------|-----|-----------|--------|--|---------|--------|--------|-------------|----------|-------------|
| <b>Well #7</b><br><b>Elkader, IA</b><br><b>T93N R5W</b>                       | County <b>Clayton</b><br>Township <b>Boardman</b><br>Section<br>Quarters | Actual Size <b>10"</b><br>Depth <b>726'</b><br>Elevation<br>SWL <b>113</b><br>RPS <b>300@450 GPM</b><br>Max GPM <b>1250</b> | Pump Inst -- Liner--ft<br>-- Screen--<br>Sulfide<br># Water Tests: Iron<br>PH<br>Nitrate<br><b>330, 440, 460-</b><br>Made Water <b>480, 570-577,</b><br><b>584-660</b>  | Air Lift <b>400 @ 640 GPM,</b><br><b>726 @ 1250 GPM</b><br>Exploratory -- To Ft<br>Mock Rock -- Acidize --<br>Well Use<br>Rig<br>Driller <b>Gary Martin; Cert #: 3845</b><br>Driller 2<br>Description:<br><b>A 23" hole was drilled to 35'. 36 feet of 16" OD x .365 wall steel casing was then installed. The annular space was filled with 2.5 cubic yards of concrete and 90 sacks of neat cement grout. A 15" hole was then drilled to a depth of 323 feet. 325 feet of 10" ID x 0.365" wall casing was then installed. A Braden head was installed on the casing and 326 sacks of neat cement grout was used to seal the annular space. An initial 125 sacks was pumped through the Braden head and the balance of the grout was pumped using a tremie down the side of the casing. Grout circulation was not achieved with the initial pumping due to severely fractured bedrock. A 10" diameter hole was then drilled 403 feet to a final depth of 726 feet. The well was then airlifted for 4 hours. Static water level was at 113 feet upon completion. On 4/25/05, the well was test pumped for 11 hours with 1 hour of recovery monitoring, with the static water level at 109' prior to pumping. The well was test pumped for 10 hours at 570 gallons per minute, with the pumping water level at 121' after 10 hours. The rate was then increased to 760 gallons per minute for 1 hour, with the pumping water level at 126' after 1 hour. The pump was then shut off to allow for 1 hour of recovery monitoring. The static water test was 110' after 1 hour of recovery.</b> | Screen Size<br>Slot Size<br>Riser Pipe<br>Set From<br>Perforated From<br>Tail Pipe |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| <b>Customer Information</b>   |  |   | <b>Job Information</b>  |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| <b>Elkader, City of</b><br><b>City of Elkader</b><br><b>Elkader, IA 52043</b> | Contact Date <b>1/19/2005</b><br>Confirmation Date                       | Best time to call:<br>Email:<br>Customer since: <b>1/20/2005</b><br>Referred By: <b>Engineer</b>                            | Area <b>CM</b><br><b>T93N R5W</b><br>Latitude<br>Longitude<br>PWTS #<br>Permit Number   | Confirmation<br>Start Date <b>3/22/2005</b><br>End Date <b>4/22/2005</b><br>Warranty Date<br>Warranty   | Remarks:<br>Well Grout Used  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| <b>Contact Information</b>  |  |   | <b>Well Formation Log</b>   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| Home Ph:<br>Work Ph:<br>Cell Ph:<br>Fax:                                      |  |   | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>From-To</th> <th>Color</th> <th>Formation</th> </tr> </thead> <tbody> <tr><td>0 - 3</td><td>Brown</td><td>Fill Rock</td></tr> <tr><td>3 - 6</td><td>Brown</td><td>Clay</td></tr> <tr><td>6 - 8</td><td>Brown</td><td>Broken Rock &amp; Sand</td></tr> <tr><td>8 - 22</td><td>Brown</td><td>Limerock, Soft</td></tr> <tr><td>22 - 143</td><td>Brown</td><td>Limerock, Hard</td></tr> <tr><td>143 - 205</td><td>Blue</td><td>Shale, Shale Rock</td></tr> <tr><td>205 - 210</td><td>Blue</td><td>Shale</td></tr> <tr><td>210 - 270</td><td>White</td><td>Sandstone</td></tr> <tr><td>270 - 570</td><td>Brown</td><td>Limerock</td></tr> <tr><td>570 - 577</td><td>White</td><td>Sandstone</td></tr> <tr><td>577 - 584</td><td>Brown</td><td>Limerock</td></tr> <tr><td>584 - 660</td><td>White</td><td>Sandstone</td></tr> <tr><td>660 - 680</td><td>Gray</td><td>Limerock</td></tr> <tr><td>680 - 726</td><td>Brown</td><td>Limerock</td></tr> </tbody> </table> | From-To   | Color  | Formation | 0 - 3 | Brown | Fill Rock | 3 - 6 | Brown | Clay | 6 - 8 | Brown | Broken Rock & Sand | 8 - 22 | Brown | Limerock, Soft | 22 - 143 | Brown | Limerock, Hard | 143 - 205 | Blue | Shale, Shale Rock | 205 - 210 | Blue | Shale | 210 - 270 | White | Sandstone | 270 - 570 | Brown | Limerock | 570 - 577 | White | Sandstone | 577 - 584 | Brown | Limerock | 584 - 660 | White | Sandstone | 660 - 680 | Gray | Limerock | 680 - 726 | Brown | Limerock | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>From-To</th> <th>Bit Size - Number</th> </tr> </thead> <tbody> <tr><td>0 - 34</td><td>23"</td></tr> <tr><td>34 - 323</td><td>15"</td></tr> <tr><td>323 - 726</td><td>9 7/8"</td></tr> </tbody> </table> | From-To | Bit Size - Number | 0 - 34 | 23" | 34 - 323 | 15" | 323 - 726 | 9 7/8" | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>From-To</th> <th>Casing</th> </tr> </thead> <tbody> <tr><td>0 - 36</td><td>16" x Steel</td></tr> <tr><td>36 - 361</td><td>10" x Steel</td></tr> </tbody> </table> | From-To | Casing | 0 - 36 | 16" x Steel | 36 - 361 | 10" x Steel |
| From-To   | Color  | Formation   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 0 - 3   | Brown  | Fill Rock   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 3 - 6   | Brown  | Clay  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 6 - 8   | Brown  | Broken Rock & Sand  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 8 - 22  | Brown  | Limerock, Soft  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 22 - 143  | Brown  | Limerock, Hard  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 143 - 205   | Blue   | Shale, Shale Rock   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 205 - 210   | Blue   | Shale   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 210 - 270   | White  | Sandstone   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 270 - 570   | Brown  | Limerock  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 570 - 577   | White  | Sandstone   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 577 - 584   | Brown  | Limerock  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 584 - 660   | White  | Sandstone   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 660 - 680   | Gray   | Limerock  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 680 - 726   | Brown  | Limerock  |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| From-To   | Bit Size - Number  |   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 0 - 34  | 23"  |   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 34 - 323  | 15"  |   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 323 - 726   | 9 7/8"   |   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| From-To   | Casing   |   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 0 - 36  | 16" x Steel  |   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| 36 - 361  | 10" x Steel  |   |   |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
| <b>Well Casing Log</b>  |  |   | <b>Well Grout Used</b>  |   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |
|   |  |   | Screen Size<br>Slot Size<br>Riser Pipe  | Set From<br>Tail Pipe   |  |           |       |       |           |       |       |      |       |       |                    |        |       |                |          |       |                |           |      |                   |           |      |       |           |       |           |           |       |          |           |       |           |           |       |          |           |       |           |           |      |          |           |       |          |  |         |                   |        |     |          |     |           |        |  |         |        |        |             |          |             |

**Amount**  
12 sacks  
416 sacks

**Type**  
Benseal  
Neat Cement

(603) 237-8381  
(303) 598-4448

Location of Well

Well Site Information

Client: Mayton  
Township Boardman  
Section  
Superior

Actual Size 18"  
Depth 726'  
Elevation  
SVC 113  
RPM 3000-480 GPM  
Max GPM 1200

Pump well -  
Casing -  
Screen -  
Surfside

Customer Information

Contact Date 1/18/2005  
Completion Date

Water Tests: Iron  
PH  
Nitrate

County: City of  
State of Colorado

Colorado, IA 52043

330, 440, 450-  
Made Water 460-570-577,  
584-860

Contact Information

Home Ph.  
Work Ph.  
Cell Ph.  
Fax

Best time to call:  
Email  
Customer since: 1/20/2005  
Referred by: Engineer

Art Lift 400 @ 640 GPM,  
726 @ 1200 GPM

Screen Size

Exhaustory - To BT

Bit Size

Block Rock - Asides -

Reel Pipe

Well Use

Set From

Rig

Tap Pipe

Driller: Grey Martin / Con. # 3648

Job Information

Area CM

Confirmation

TSM RW

Start Date 02/27/2005

Latitude

End Date 4/22/2005

Longitude

Warranty Date

FWTS #

Warranty

Permit Number

**Description:**  
A 23" hole was drilled to 39' 38 feet of 18" OD x .390 wall steel casing was then installed. The annular space was filled with 2.0 cubic yards of concrete and 24 sacks of neat cement grout. A 15" hole was then drilled to a depth of 323 feet, 326 feet of 16" OD x 3.360" wall casing was then installed. A broken head was installed on the casing and 324 sacks of neat cement grout was used to seal the annular space. An initial 125 sacks was pumped through the broken head and the balance of the grout was pumped using a tremie down the side of the casing. Grout circulation was not achieved with the tremie pumping due to severely fractured bedrock. A 18" diameter hole was then drilled 493 feet to a final depth of 726 feet. The well was then circulated for 4 hours. Static water level was at 113 feet upon completion. On 4/26/05, the well was last pumped for 11 hours with 1 hour of recovery monitoring, with the static water level at 109' prior to pumping. The well was then pumped for 10 hours at 370 gallons per minute, with the pumping water level at 121' after 10 hours. The rig was then increased to 750 gallons per minute for 1 hour, with the pumping water level at 128' after 1 hour. The pump was then shut off to allow for 1 hour of recovery monitoring. The static water level was 110' after 1 hour of recovery monitoring.

Well Formation Log

Sore Log

| From-To | Color | Formation          |
|---------|-------|--------------------|
| 0-3     | Brown | Fill Rock          |
| 3-6     | Brown | Clay               |
| 6-8     | Brown | Broken Rock & Sand |
| 8-32    | Brown | Limestone, Soft    |
| 32-143  | Brown | Limestone, Hard    |
| 143-205 | Blue  | Shale, Shale Rock  |
| 205-219 | White | Shale              |
| 219-270 | White | Sandstone          |
| 270-270 | Brown | Limestone          |
| 270-277 | White | Sandstone          |
| 277-384 | Brown | Limestone          |
| 384-500 | White | Sandstone          |
| 500-580 | Grey  | Limestone          |
| 580-726 | Brown | Limestone          |

| From-To | Bit Size - Number |
|---------|-------------------|
| 0-34    | 23"               |
| 34-323  | 18"               |
| 323-726 | 15"               |

Well Casing Log

| From-To     | Casing      |
|-------------|-------------|
| 0-38        | 18" x Steel |
| 38-260      | 16" x Steel |
| Screen Size |             |
| Bit Size    | Set From    |
| Reel Pipe   | Tap Pipe    |

Well Grout Hood