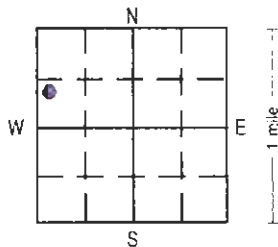
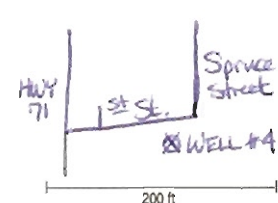


Site identification Property Owner <u>CITY OF AUBURN</u> Well Number <u>4</u> Address <u>209 PINE STREET</u> Tenant <u>CITY OF AUBURN</u> Well Depth <u>232</u> ft Date Completed <u>04 / 21 / 97</u>				Drill method <u>REVERSE</u> rotary ☒ auger ☐ cable ☐ other _____ Hole size <u>32</u> inch from <u>0</u> ft to <u>193</u> ft <u>23</u> inch from <u>193</u> ft to <u>232</u> ft Record all depth measurements from ground level (GL). Use (+) for above GL measurements.																																					
Location County <u>SAC</u> ____ mi. N and <u>4</u> mi. E of intersection of <u>HWY 71</u> and <u>1st ST</u> <u>NW</u> 1/4 of the <u>SW</u> 1/4 of the <u>NW</u> 1/4 of Sec. <u>24</u> TWP <u>86</u> RNG <u>35</u> E Show exact location of well in section grid with a dot (•).  Sketch map of well location on property  ☒ upland ☐ hillside ☐ valley Elevation (if known) _____				Casing Size (ID/OD) Type / WT Depth top Depth bottom Amount (length) <table border="1" style="width:100%; border-collapse: collapse;"><tr><td>24"</td><td>0.375"</td><td>0'</td><td>193'</td><td>193'</td></tr><tr><td>14"</td><td>0.375"</td><td>+3'</td><td>197'</td><td>200'</td></tr></table> Perforated or slotted casing? (yes/no) Perforated / slotted from _____ ft to _____ ft Perforated / slotted from _____ ft to _____ ft Casing grouted? (yes/no) <table border="1" style="width:100%; border-collapse: collapse;"><thead><tr><th>Type</th><th>Depth Top</th><th>Depth Bottom</th><th>Amount</th></tr></thead><tbody><tr><td>Neat Cement</td><td>0'</td><td>193'</td><td>20 yds.</td></tr><tr><td>Neat Cement</td><td>0'</td><td>170'</td><td>10 yds.</td></tr></tbody></table> Well screen? (yes/no) <table border="1" style="width:100%; border-collapse: collapse;"><thead><tr><th>Diameter</th><th>Slot size</th><th>Depth Top</th><th>Depth Bottom</th><th>Length</th><th>Material</th></tr></thead><tbody><tr><td>14"</td><td>0.035"</td><td>197'</td><td>232'</td><td>35'</td><td>SST.</td></tr></tbody></table> Bottom capped (yes/no) with <u>0.375" SST. Plate</u> Seals / Packers (yes/no) kind <u>Bentonite</u> depth <u>170'-175'</u> ft Gravel packed (yes/no) from <u>175</u> ft to <u>232</u> ft type <u>Northern</u> amount <u>12 TONS</u> Well developed? (yes/no) Explain <u>Surge block, bailer, phosphate, and pump development</u>				24"	0.375"	0'	193'	193'	14"	0.375"	+3'	197'	200'	Type	Depth Top	Depth Bottom	Amount	Neat Cement	0'	193'	20 yds.	Neat Cement	0'	170'	10 yds.	Diameter	Slot size	Depth Top	Depth Bottom	Length	Material	14"	0.035"	197'	232'	35'	SST.
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DATA FOR WELL NO. 42969

GENERAL INFORMATION

WNUMBER: 42969 LOCATION: T. 86 N., R. 35 W., Sec. 24 NW SW ^{NE} LOC. ACC.: (calc. +/- 470')
 QUADRANGLE NAME: CARROLL NE COUNTY: SAC STATE: IOWA
 SURFACE ELEVATION: 0 ft. TOTAL DEPTH: 232 ft. BEDROCK DEPTH: 88 ft.
 OWNER: AUBURN, CITY OF DRILLER: LAYNE WESTERN - IA. DRILLING DATE: 04/21/97
 OTHER IDENTIFIER: #4 WELL TYPE: municipal
 DRILLING METHOD: rotary SAMPLE TYPE: unkn AQUIFER: bedrock
 LOG TYPE: driller log ADD'L LOG TYPE:

HYDROGEOLOGIC INFORMATION

MAIN WATER TOP: 0 ft. MAIN WATER BOTTOM: 0 ft. AQUIFER: bedrock
 DATE: 04/22/97 STATIC WATER LEVEL: 104.0 ft. PUMPED WATER LEVEL: 175.0 ft. YIELD: 150.0 gpm

*** Hydrogeologic data from pumping test. Contact GSB for additional information. ***

WELL CONSTRUCTION INFORMATION

Well Construction Date: 04/21/97

HOLE SIZE:

- (1) Hole Diameter: 32.00 in. Depth to Bottom: 193.00
- (2) Hole Diameter: 23.00 in. Depth to Bottom: 232.00

CASING STRINGS:

- (1) Diameter: 24.00 in. Type: STEEL Depth Top: 0.00 ft. Depth Bottom: 193.00 Amt: 193.00 ft.
- (2) Diameter: 14.00 in. Type: STEEL Depth Top: -3.00 ft. Depth Bottom: 197.00 Amt: 200.00 ft.

SCREEN OPENINGS - SLOTS:

- (1) Diameter: 14.00 in. Slot Size: 0.035 in.
 Depth Top: 197.00 ft. Depth Bottom: 232.00 Amt: 35.00

GROUT:

- (1) Grout Type: CEMENT Grout Top: 0 ft. Grout Bottom: 193 ft.
- (2) Grout Type: CEMENT Grout Top: 0 ft. Grout Bottom: 170 ft.

GRAVEL PACK:

Depth Top: 175.0 ft. Depth Bottom: 232.0 ft.

PUMP INSTALLATION:

Pump Type: SUBMERSIBLE Diameter: 6.0 in. Capacity: 150gpm Depth: 195ft.

REMARKS:

12 tons Northern gravel pack

SUBMERSIBLE PUMP INSTALLATION REPORT *Layne-Western*

JOB NAME: City of Auburn
Address: 209 Pine Street, P.O. Box 238
City, State: Auburn, Iowa 51433-0238

DATE: 5/5/97 Job Completion

PUMP NO: New Repair
Pump Trouble: Installed existing pump in new well.

PUMP SIZE		
	DIAMETER	LENGTHS
Discharge	4" <u>Above</u> Below	
Column	4" <u>Screw</u> Flange	9 x 21'
Pitless Unit	<u>Above-grade flanged discharge</u>	

Column setting to bowl: 191 ft.

BOWL:

Manufacturer: Grundfos
Diameter: 6" **Shaft Diameter:** 1"
Type: 135S150 **No. Stages:** 9
Bowl Length: 3' 6" **Bowl Material:** SST.
Check valve in column: (Yes) No **Size:** 4"
Submersible cable size: #6
Special paint, coatings, zinc sleeves, etc:

MOTOR OR GEAR DRIVE:

Make: Franklin **HP:** 15
Speed: 3450 rpm **Volts:** 230
Diameter: 6" **Length:** 2' 4"
Serial # Model 2366036020 **S/N** 10 0183
Amperes: 41 - 39 - 42 **Volts:** 237 - 237 - 235

Megger Check:

	On Ground			Installed In Well		
Motor leads						
Cable leads				200M	200m	200m

WELL:

No: 1 **Year Drilled:** 1997
Location: East First Street & Spruce
Diameter: 14" **Depth:** 235'

Measured from top of 14 " diameter casing
 which is 3 feet above ground level

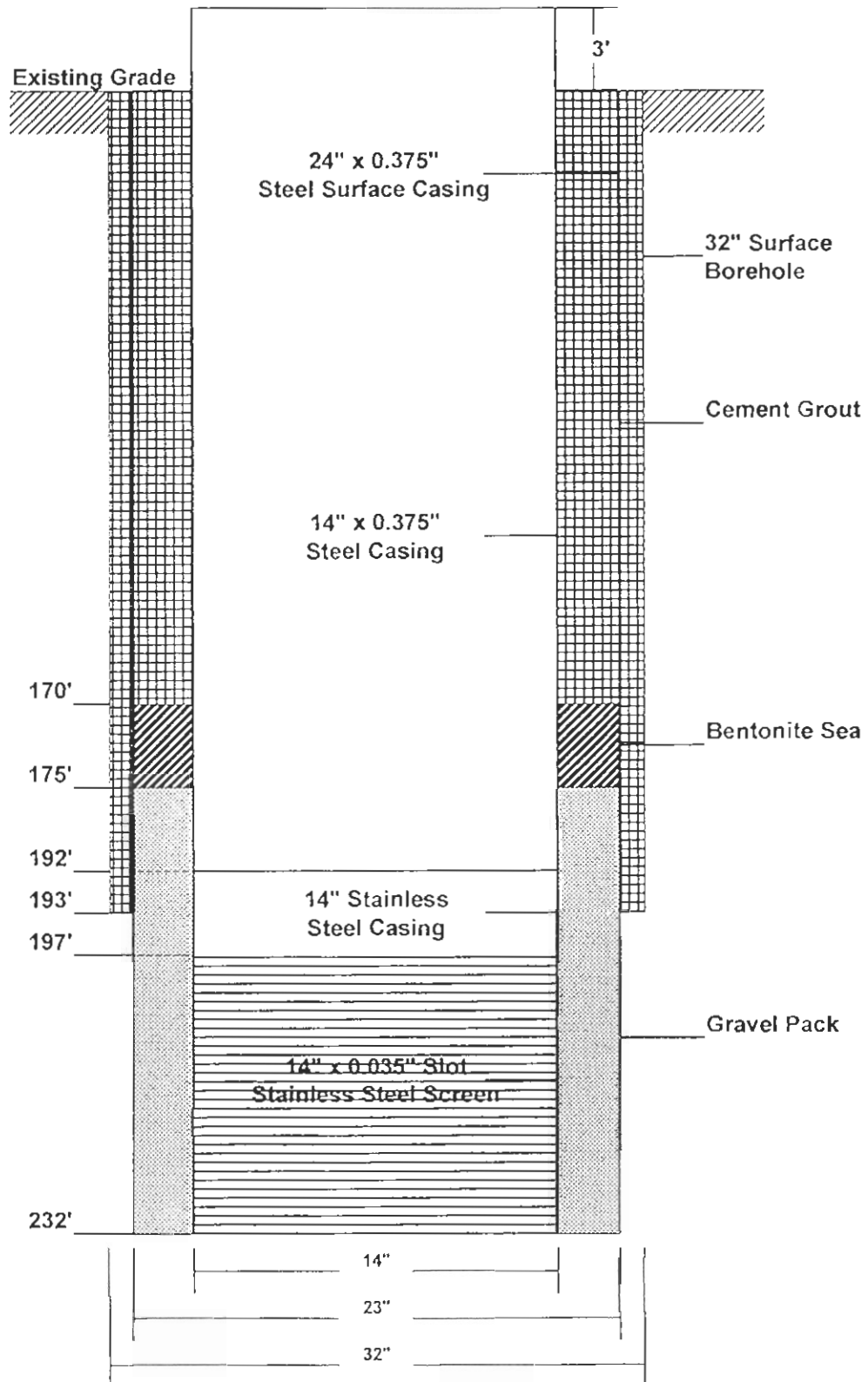
Tape to water: 103'
Airline length: 190' **A.L. Material:** 1/4" PVC

Static Gauge: 86' **Static Level:** 104'
Pumping Gauge: 23' **Pumping Level:** 167'
Disch. Pressure: 72 psi when pumping to
 waste at 134 gpm.

INSTALLER: Mark Evans
Rig Used: 12R Pump Rig

PUMP REPAIR	
CONDITION OF PUMP WHEN PULLED	NEW PARTS INSTALLED
Column: <u>Fair</u>	Column: <u>1 - 4" x 21' black T&C drop pipe</u> <u>1 - 3" bronze MxF check valve</u> <u>1 - 3" SST. handling nipple and coupling</u> <u>1 - 4" x 3" galvanized reducer coupling</u>
Bowl: <u> </u>	Bowl: <u>Grundfos, 135S150, 9 stage (supplied by others)</u>
Motor: <u> </u>	Motor: <u>Franklin, 15 HP, 230/60/3, 3450 RPM (supplied by others)</u>
Head: <u> </u>	Head: <u>Fabricated flanged discharge head</u>
MACHINE WORK: <u> </u>	1. DRAIN PORTS OPEN Yes <u>(No)</u> 2. CHLORINATE WELL <u>(Yes)</u> No 3. ALIGN PUMP HEAD WITH DIAL INDICATOR Yes <u>(No)</u> 4. GROUTED HEAD-BASE PLATE Yes <u>(No)</u> 5. PUMP RUNS <u>(Good)</u> Fair / Bad

WELL CONSTRUCTION DETAIL
CITY OF AUBURN, IOWA
WELL NO. 4



NOT TO SCALE



WELL INSTALLATION REPORT

LAYNE-WESTERN

1. CONTRACT WITH: City of Auburn DATE: 4/21/97
2. CITY AND STATE: Auburn, Iowa DRILLER: Dave Deaver
3. WELL NO: 4 AT TEST HOLE NUMBER 97-1 WELL LOCATION: South of First Street, near existing Well No. 3.
4. WORK COMPLETED: 4/23/97 TOTAL MAN HOURS CHARGED TO JOB:

5. MATERIAL:	LENGTH	DIA.	GAUGE OR THICKNESS	MATERIAL	TYPE	SLOT SIZE
6. SCREEN:	40'	14"	Std.	SST.	W.W.	0.035"
7. INNER CASING:	195'	14"	0.375"	Steel	Std.	
8. OUTER CASING:	193'	24"	0.375"	Steel	Std.	

9. 14 TONS OF GRAVEL PACK USED IN THE WELL. SIZE: Northern Gravel Coarse "Ø"
10. TEST OF WELL: TEST PUMP OR PERMANENT PUMP: Test BOWL SIZE STAGES
11. SIZE OF ORIFICE: 6" x 3" ORIFICE TUBE READING:

12. PUMPING TEST - MEASUREMENTS FROM GROUND LEVEL:

TIME	GPM	STATIC	DRAWDOWN	PUMPING LEVEL
See enclosed pumping test results.				

13. RECOVERY IN 5 MINUTES: See enclosed sheets, IN 30 MINUTES: See enclosed sheets
14. DID YOU SEAL BOTTOM OF WELL Yes THICKNESS: 0.375" MATERIAL: SST.
15. WELL UNDERREAMED? No FROM TO FROM TO
16. IF ALL SCREEN WAS NOT PLACED AT BOTTOM, STATE HOW IT WAS PLACED?
FROM TO; FROM TO; FROM TO
17. DEPTH OF WELL FROM GROUND LEVEL 232' SIZE OF DRILL HOLE: 32" x 23"
18. WAS CEMENT PLACED AROUND OR BETWEEN ANY OF THE CASINGS? Yes
19. IF SO, STATE INTERVALS, QUANTITY, AND METHOD USED: 20 yards from 0' - 193' on the outer casing, 10 yards from 0' - 170' on the inner casing. Grouted with tremie pipe.



