WELL RECORD FORM

PWTS No. *or* PWS No. 2424027 | Project No. W2015-0432 | PWTS Permit No. 2016-0361W | GEOSAM Well No. *(IGS use only)* 85930 -

Site Identification

Facility ID: WL16

Property owner Denison Municipal Utilities | Other ID Well #14

Address 721 Broadway | City Denison, IA

Tenant Denison Municipal Utilities

Well depth 69 ft (69' from grade, 76' top of casing) | Date completed 5 / 31 / 2017

Location

County Crawford

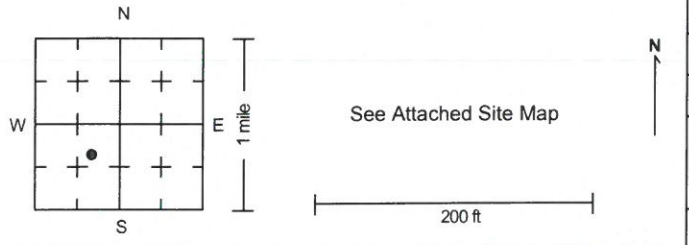
GPS coordinates (NAD83 datum)

42.0407940 Latitude | -95.3565440 Longitude

☑ Decimal Degrees ☐ Degrees, Decimal Minutes ☐ Degrees, Minutes, Seconds

SW 1/4 of the NE 1/4 of the SW 1/4 of Sec 35 TWP 84 RNG 39 E (W)

Show exact location of well in section grid with a dot (•). Sketch map of well location on property.



Formation Log

From	To	Color	Hardness	Formation description
0	12	Brown		Top soil
12	16	Brown		Sandy top soil/clay stringers
16	20	Brown		Clay stringers mixed w/fine sand
20	24	Brown		Silty clay, some gray clay
24	27			Fine-med sand w/some coarse
27	31			Coarse sand w/mixed fine/med
31	45		Loose	Coarse sand w/cobbles & gravel
45	50		Loose	Gravel & sand/cobbles
50	67			Gravel & cobbles w/fines
67	69			Gravel, sand & cobbles, mix
				(use additional sheets as needed)

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

Well Use

☐ Domestic ☑ Public supply ☐ Livestock

☐ Heat pump ☐ Commercial ☐ Irrigation

# of borehole(s) ____ ☐ Monitoring ☐ Other ____

Drill Method

☐ Rotary ☐ Auger ☐ Cable ☐ Other Reverse

Hole size

48 inch from 0 ft to 69 ft

____ inch from ____ ft to ____ ft

hole size continued

____ inch from ____ ft to ____ ft

____ inch from ____ ft to ____ ft

Casing or Loop Pipe

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

Size (in)	Material	Depth Top	Depth Bottom	Perforated	Slotted	Screen
24	Steel casing	+7'	39'	☐	☐	☐ slot size ____
24	SST screen	39'	69'	☐	☐	☑ slot size 0.070
				☐	☐	☐ slot size ____
				☐	☐	☐ slot size ____
				☐	☐	☐ slot size ____

Casing Grout

Placement method Pressure tremie

Type	Depth Top	Depth Bottom	Amount (vol/wt)
Neat Cement	0	35	13 cyd
☑ Gravel packed variety RF #70	37	69	22 tons
☑ Seals/packers (Bentonite seal)	35	37	30 bags

Pump Installation

Date 5 / 31 / 2017

Type of pump Vertical Turbine | Depth to intake 48 ft

Pump diameter 11 in | Rated capacity 500 GPM

Water Information

Date 9 / 29 / 2016

Use + for above GL measurements.

Static Water Level	Pumping Water Level	Yield	Duration
22 ft	33 ft	600 GPM	24.00 hrs

Water level measurement: ☑ Sonic ☐ Tape ☐ Airline ☐ E-line ☐ Estimate

Water yield measurement: ☑ Orifice ☐ Volumetric ☐ Estimate

Main water-supply zone from 39 ft to 69 ft below GL

Well Development

☑ Physical explain: Surge block, bailer, rawhide pumping, etc.

☐ Chemical explain: ____

Contractor

Company Layne Christensen Company

Address 3150 SE Gateway Drive, Suite B

Driller Mark Leslie | Certification no. 3684

IGS IIHR Hydroscience & Engineering

Mail form to **Iowa Geological Survey**: 100 Oakdale IGS, Iowa City, IA 52242-1304

Or click here to e-mail form to: IIHR-IGS-WellRecords@uiowa.edu

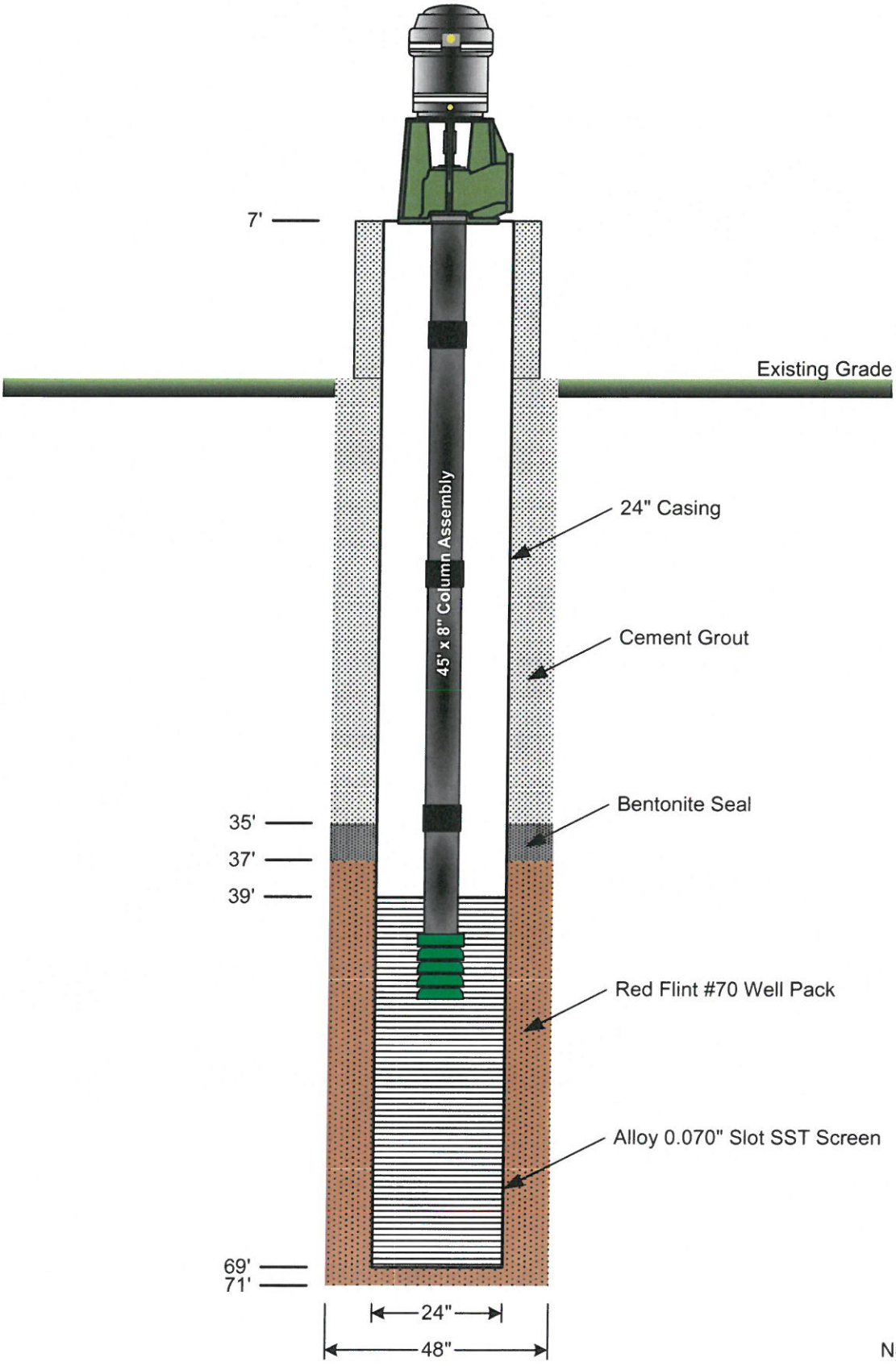
Make copies for: **well contractor, customer, and county health department**

6-29-2017

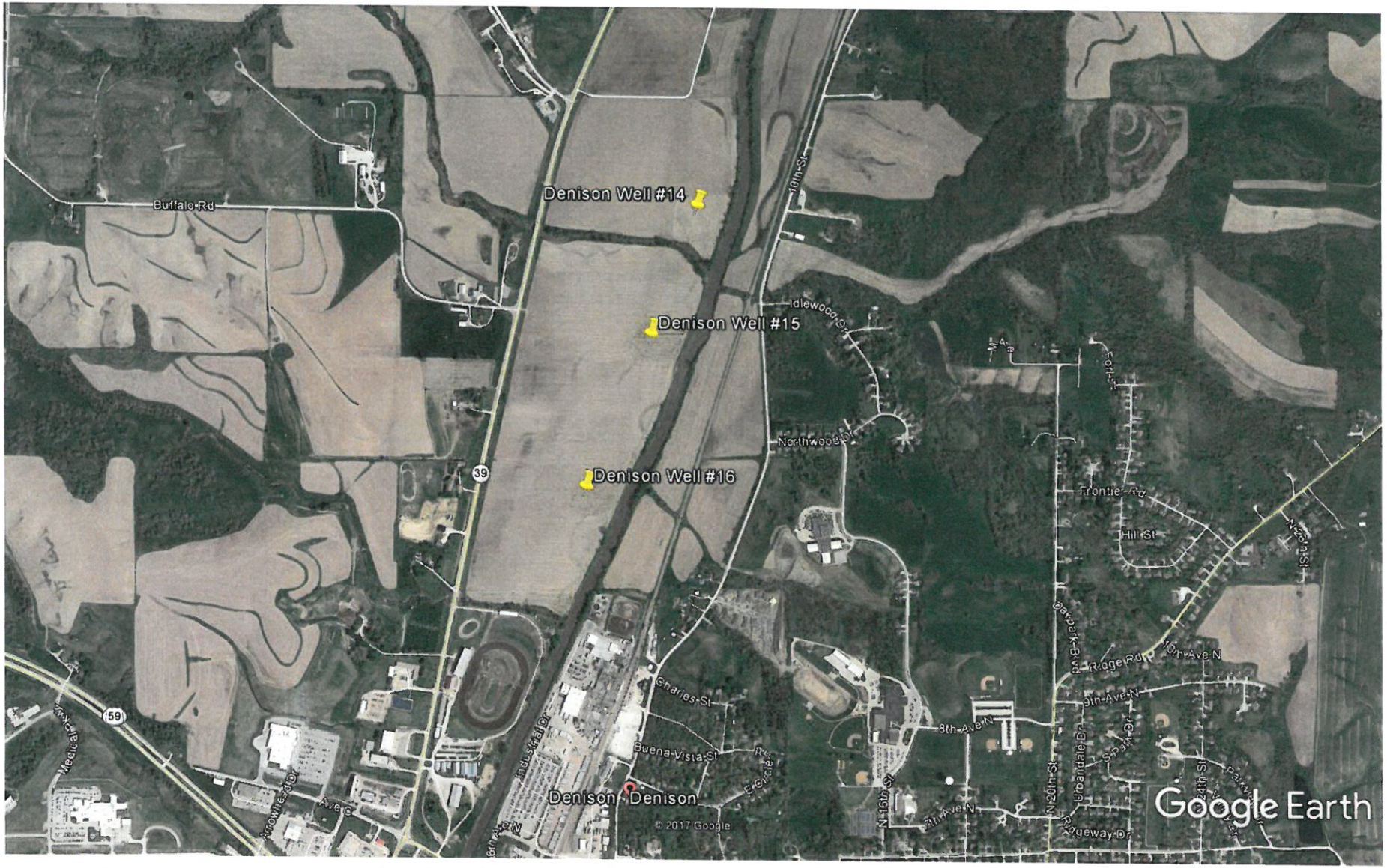
The University of Iowa

Rev. 2014

Well #14 As-Built Drawing
Denison Municipal Utilities
Completed May 31, 2017



Not To Scale



Google Earth

miles 1

km 2