

PWSID# or PWTS No. IA9774102		Project No. W2017-0445 PWTS Permit No. 2019-0103W		GeoSam WNumber (IGS use only) 94328																																																																		
Site Identification Property owner Koch Fertilizer LLC Other ID Koch #2 Address 2735 Port Neal Circle City Sgt. Bluff, IA 51054 Tenant Koch Fertilizer LLC Well depth 150 ft Date completed 05 / 10 / 2019																																																																						
Location County Woodbury GPS coordinates (NAD83 datum) 42.307785 Latitude -96.364745 Longitude ☒ Decimal Degrees ☐ Degrees, Decimal Minutes ☐ Degrees, Minutes, Seconds SE 1/4 of the SW 1/4 of the NW 1/4 of Sec 31 TWP 87N RNG 47W E W Show exact location of well in section grid with a dot (.). Sketch map of well location on property. N S E 1 mile W 200 ft																																																																						
Formation Log <table border="1" style="width:100%; border-collapse: collapse;"><thead><tr><th>From</th><th>To</th><th>Color</th><th>Hardness</th><th>Formation description</th></tr></thead><tbody><tr><td>0</td><td>26</td><td>Bm</td><td></td><td>Fine sand</td></tr><tr><td>26</td><td>49</td><td>Bm</td><td></td><td>Med-coarse sand</td></tr><tr><td>49</td><td>123</td><td>Gray</td><td></td><td>Med-coarse sand</td></tr><tr><td>123</td><td>158</td><td>Gray</td><td></td><td>Fine-coarse sand w/gravel</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td>(use additional sheets as needed)</td></tr></tbody></table>						From	To	Color	Hardness	Formation description	0	26	Bm		Fine sand	26	49	Bm		Med-coarse sand	49	123	Gray		Med-coarse sand	123	158	Gray		Fine-coarse sand w/gravel																																								(use additional sheets as needed)
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Remarks (including depth of lost drilling fluids, materials, or tools)																																																																						
Drill Method ☒ Rotary ☐ Auger ☐ Cable ☐ Other _____																																																																						
Hole size 17.5 inch from 0 ft to 158 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. <table border="1" style="width:100%; border-collapse: collapse;"><thead><tr><th>Size (in)</th><th>Material</th><th>Depth Top</th><th>Depth Bottom</th><th>Perforated</th><th>Slotted</th><th>Screen</th></tr></thead><tbody><tr><td>10</td><td>Sch. 40 Steel</td><td>+3'</td><td>130'</td><td>☐</td><td>☐</td><td>☐ slot size _____</td></tr><tr><td>10</td><td>SS Screen</td><td>130'</td><td>150'</td><td>☐</td><td>☐</td><td>☐ slot size 0.080"</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td>☐</td><td>☐</td><td>☐ slot size _____</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td>☐</td><td>☐</td><td>☐ slot size _____</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td>☐</td><td>☐</td><td>☐ slot size _____</td></tr></tbody></table> ☒ Gravel packed 100' 150' amount 4 Tons variety Red Flint #70 ☐ Seals/packers _____ type _____ ☒ Bottom capped with Stainless Steel Plate						Size (in)	Material	Depth Top	Depth Bottom	Perforated	Slotted	Screen	10	Sch. 40 Steel	+3'	130'	☐	☐	☐ slot size _____	10	SS Screen	130'	150'	☐	☐	☐ slot size 0.080"					☐	☐	☐ slot size _____					☐	☐	☐ slot size _____					☐	☐	☐ slot size _____																							
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Pump Installation Date 08 / 21 / 2019 Type of pump Submersible Depth to intake 90 ft Pump diameter 6 in Rated capacity 300 GPM																																																																						
Water Information . Date 05 / 16 / 2019 <table border="1" style="width:100%; border-collapse: collapse;"><thead><tr><th>Static Water Level</th><th>Pumping Water Level</th><th>Yield</th><th>Duration</th></tr></thead><tbody><tr><td>18.2 ft</td><td>30.8 ft</td><td>422 GPM</td><td>24 hrs</td></tr></tbody></table> Water level measurement: ☐ Sonic ☐ Tape ☐ Airline ☒ E-line ☐ Estimate Water yield measurement: ☒ Orifice ☐ Volumetric ☐ Estimate Main water-supply zone from 130 ft to 150 ft below GL						Static Water Level	Pumping Water Level	Yield	Duration	18.2 ft	30.8 ft	422 GPM	24 hrs																																																									
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Well Development ☒ Physical explain: Surge block, bailer, pump rawhiding ☐ Chemical explain: _____																																																																						
Contractor Company Layne Christensen Company Address 4601 N. 252nd Street Driller Mark Leslie Certification no. 3684																																																																						
Well Use ☐ Domestic ☒ Public supply ☐ Livestock ☐ Heat pump ☐ Commercial ☐ Irrigation # of borehole(s) _____ ☐ Monitoring ☐ Other _____																																																																						

Koch Fertilizer Sgt. Bluff

Legend

94328



Koch Fertilizer New Well #2

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Port Neal Cir

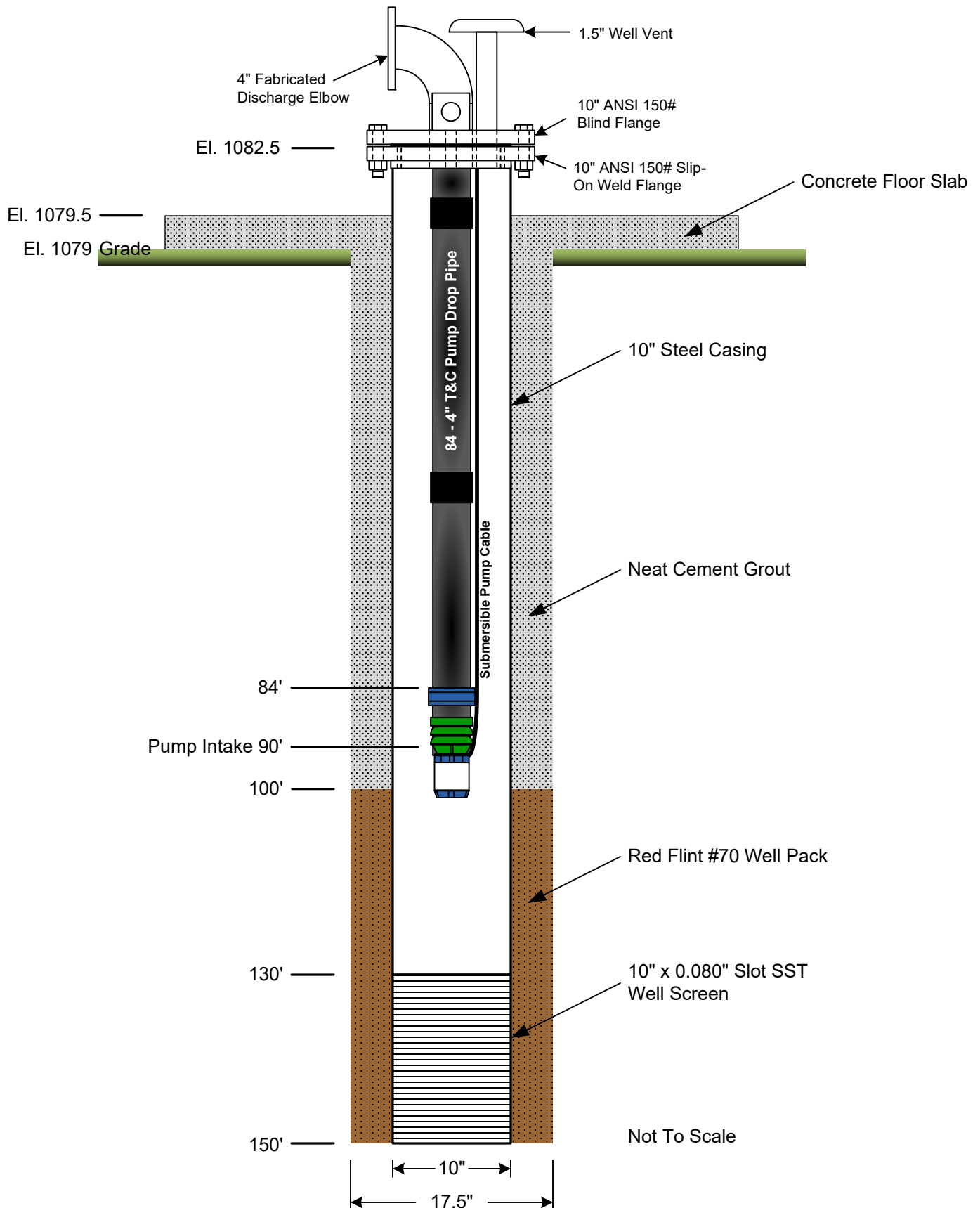
Google Earth

© 2020 Google

900 ft



Well #2 As-Built Detail
Koch Fertilizer – Sergeant Bluff, Iowa
August 21, 2019



Layne Christensen Company
4601 N. 252nd Street
Grimes, IA 50111
(402) 359-2042 / 2310 Fax

WELL TEST DATA REPORT

PUMPING TEST PAGE 1



PROJECT: Koch Fertilizer, LLC
LOCATION: Sgt. Bluff, Iowa
WELL NO: 2
WELL DIAMETER: 10.00 inches I.D.
WELL DEPTH: 152.0 feet - from top of casing
TOP OF SCREEN: 132.0 feet - from top of casing
STATIC LEVEL: 18.2 feet - from top of casing
ORIFICE SIZE: 6" x 4"

DATE TESTED: 05/15/19 - 05/16/19
TESTED BY: Buchanan / Washington
DRIVER: Submersible Test Motor
COLUMN AND SHAFT: 6" T&C
BOWL SIZE & MAKE: 625S
MANUFACTURER: Grundfos
SERIAL NUMBER: _____

TIME	PIEZ. READ. (IN)	FLOW RATE (GPM)	AIRLINE READING (FEET)	WATER LEVEL (FEET)	DRAW DOWN (FEET)	DISCHARGE PRESSURE (LBS.) (FEET)		SPEC. CAPACITY (GPM/FT)	REMARKS
1 min.		427.0		30.3	12.1			35.3	
2		427.0		30.3	12.1			35.3	
3		427.0		30.5	12.3			34.7	
4		427.0		30.5	12.3			34.7	
5		427.0		30.5	12.3			34.7	
6		427.0		30.5	12.3			34.7	
7		427.0		30.6	12.4			34.4	
8		427.0		30.6	12.4			34.4	
9		427.0		30.6	12.4			34.4	
10		427.0		30.6	12.4			34.4	
15		427.0		30.7	12.5			34.2	
20		425.0		30.7	12.5			34.0	
25		425.0		30.8	12.6			33.7	
30		425.0		30.8	12.6			33.7	
35		425.0		30.8	12.6			33.7	
40		425.0		30.8	12.6			33.7	
45		425.0		30.8	12.6			33.7	
50		425.0		30.8	12.6			33.7	
55		425.0		30.8	12.6			33.7	
60		425.0		30.8	12.6			33.7	
75		425.0		30.8	12.6			33.7	
90		425.0		30.8	12.6			33.7	
105		425.0		30.8	12.6			33.7	
120		425.0		30.8	12.6			33.7	
150		425.0		30.8	12.6			33.7	
180		425.0		30.8	12.6			33.7	
240		425.0		30.8	12.6			33.7	
300		425.0		30.8	12.6			33.7	
360		425.0		30.8	12.6			33.7	



DATE TESTED:	05/15/19 - 05/16/19
TESTED BY:	Buchanan / Washington
DRIVER:	Submersible Test Motor
COLUMN AND SHAFT:	6" T&C
BOWL SIZE & MAKE:	625S
MANUFACTURER:	Grundfos
SERIAL NUMBER:	

[illegible]

Layne Christensen Company
4601 N. 252nd Street
Valley, NE 68064
(402) 359-2042 / 2310 Fax

SUBMERSIBLE PUMP INSTALLATION REPORT



JOB NAME: Koch Fertilizer LLC
Address: 2735 Port Neal Circle
City, State: Sergeant Bluff, IA 51054

DATE PROJECT COMPLETED: 08/21/19

PUMP NO: _____ ☒ New Pump ☐ Repair
Pump Trouble: New Well Pump Installation

PUMP SIZE		
	Diameter	Lengths
Discharge	4" ☒ Above ☐ Below	
Column	4" ☒ Screw ☐ Flange	4 x 21' black T&C 1 x 6" nipple
Pitless Unit	4" Fab. Well Head	

Column setting to bowl: 85 ft.

BOWL ASSEMBLY:

Manufacturer: Wilo
Diameter: 6" Shaft Diameter: _____
Type: SPI6.300-6.250 No. Stages: 6
Bowl Length: 4' Bowl Material: SST
Check valve in column: ☒ Yes ☐ No Size: 4"
Submersible cable size: #4
Special paint, coatings, zinc sleeves, etc: N/A

MOTOR:

Make: Wilo HP: 25
Speed: 3450 rpm Volts: 230
Diameter: 6" Length: 4'
Serial # _____
Amperes: _____

MEGGER CHECK:

	On Ground		Installed In Well	
Motor leads				
Cable leads				

WELL:

No: 2 Year Drilled: 2019
Location: West side of property
Diameter: 10" Depth: 153'
Measured from top of 10 " diameter casing
which is 3 feet above ground level
Tape to water: 19'
Airline length: 85' A.L. Material: 1/4" Toro
Static Gauge: 66' Static Level: 19'
Pumping Gauge: _____ Pumping Level: _____
Disch. Pressure: _____ psi when pumping into
system at _____ gpm

INSTALLER:

Buchanan
Rig Used: 10T Pump Rig

PUMP REPAIR

CONDITION OF PUMP WHEN PULLED	NEW PARTS INSTALLED
Column: <u>N/A</u>	Column: <u>4 - 4" x 21' black T&C pipe</u> <u>1 - 4" x 6" SST handling nipple</u> <u>1 - 4" Flomatic 80DIVFD check valve</u>
Bowl: <u>N/A</u>	Bowl: <u>Wilo SPI6.300-6.250</u>
Motor: <u>N/A</u>	Motor: <u>Wilo 25-HP, 3/60/230V, 3450 rpm, 6" motor</u>
Head: <u>N/A</u>	Head: <u>4" fabricated discharge head</u>
SHOP/MACHINE WORK: _____	1. DRAIN PORTS OPEN? ☐ Yes ☒ No 2. CHLORINATE WELL? ☒ Yes ☐ No 3. ALIGN PUMP HEAD WITH DIAL INDICATOR? ☐ Yes ☒ No 4. GROUTED BASE PLATE? ☐ Yes ☒ No 5. PUMP RUNS: ☒ Good ☐ Fair ☐ Bad