WELL RECORD FORM (Page 1)

PWTS N	PWTS No. or PWS No 5815101 PWTS Permit No						20160189 GEOSAM Well No. (IGS use only) 8 3 4 0 4 -							0 4 -	
2000 0.00 0.00 0.00 0.00	entificat		Meats, Inc.		Other ID WL09	Drill Method Z Rotary Auger Cable Other									
1 1	16198 HV				Columbus Junction	Hole	size(See A	Attack	ned)	hole siz	e con	tinued			
									,				150	ft to <u>455</u> ft	
Tenant	1520														
and the second s	h_1530	ft			pleted 7 / 22 / 16				to t	t	nch	from	400	ft to 1,100 ft	
Locatio	n		Cou	nty Lous	518		ig or Loop		from only	nd lovel (CL)	Lico	+ for c	have G	maggurements	
	dinates (NAI			Record	all depth measu I	rements	s nom grour					measurements.			
	1.2964010		atitude		.3540850 Longitude	Size (in)	Materia	l	Depth Top	Depth Bottom	Perforateu	Slotted		Screen	
30					Degrees, Minutes, Seconds		0.0751.01.0			-		_			
SW 1/4	of the	_ 1/4 of the	SE 1/4 of	Sec_18	_ _{TWP} _75 _{RNG} _4	36	0.375" Blk S	-	0	38		-	-	t size	
Show exact		ell in section	grid with a dot	(•). Sketch	n map of well location on property.	30	0.375" Blk S		+2	150			=	t size	
	N				N	24	0.500" Blk S		+2	450		+	=	size	
L	+ + -				Ĩ	18	0.500" Blk S	teel	450	1100		-	slot		
w	<u> </u>	E E	See	Attack	ned Site Map								slot		
	+ + +					Casir	ng Grout			Place			nethod Haliburton		
	i		. –		200 ft		Туре			Depth To	p	Depth Bottom		Amount (volwt)	
	S				200 it	Type I	0	_	150		210 SKS				
Formati	on Log					Type I	Portland Cerr	ent - 2	24" x 18"	0		11	00	900 SKS	
From	То	Color	Hardness		Formation description										
0	14			Sand, g	Iravel	Gra Gra	avel packed	variety_							
14	21			Clay		□ Sea	als/packers					_			
21	48	gray		Sand, s	mall gravel	Pump	o Installatio	n				Date	4 /	10 / 2017	
48	90			Coarse	sand, boulders	Type of pump Vertical Turbine Depth to intake62							620 ft		
90	104			Sandy of	clay	Pump diameter <u>12</u> in Rated capacity <u>1450</u>							0 GPM		
104	125	-		Clay, gr	avel mix	i unp c			"''		oup				
125	190	-			nale mix, some lime	Water Information Date/ Use + for above GL measurements. Date/									
190	196				imestone mix		i			- F			1		
196	203			Limesto				Pumpir	ng Water Le		Yiel			Duration	
203	212				ne, Shale mix		180 ft	Kalan Andrea	465 1	t	066	_GPM		6.00 hrs	
212	240			Limesto		Water le	evel measurem	ent:	Sonic	Птаре 🕻	ZAirl	ine [E-line	Estimate	
240	340			Dolomit	e	Water y	ield measurem	ent:		Drifice	Volur	netric	Esti	mate	
340	390	gray		Limesto		Main wa	ater-supply zon	e from	1100	ft to 15	30	ft belo	w GL		
390	395				ne, some chert	- 1									
395	401			Limesto		Well [Developme								
401	405					🔽 Phy	sical explain	Airli	ft develop	ment and o	over	pumpi	ng w/te	st pump	
						🗋 Che	mical explair	n:				_			
Remarks	S (including d	epth of lost dr	illing fluids, mat												
				Contractor											
Well Us	:e					Company Layne Christensen Company									
Domes		□Pu	blic supply		Livestock	Address 721 W. Illinois Ave									
Heat p		Co	mmercial		Irrigation Other		ason Gerwing			Certifica	tion r	no	110	98	
_	IGS Mail form to lowa Geological Survey: 100 Oakdale IGS, lowa City, IA 52242-1304 Image: Construction of the University of Lowa Or click here to e-mail form to: IIHR-IGS-WellRecords@uiowa.edu Or click here to e-mail form to: IIHR-IGS-WellRecords@uiowa.edu														

Rev. 2014

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WELL RECORD FORM (Page 2)

PWTS N	No. or PWS No5815101 PWTS Permit No				20160189 GEOSAM Well No. (IGS use only)										
	entificati				14/1 00	Drill	Method	Z R	otary 🛛 A	luger [Ca	ble	Other		
10727 - 10533			Meats, Inc.					1							
Address	16198 HV	VY 70 Nor	th	Hole	size			hole s	ize co	ontinue	d				
Tenant									ft to f						
Well dept	h _1530	ft	l	Date com	pleted 7 / 22 / 16		inch from	1,100	ft to 1,530 f	t	inch	fro	m	ft to	ft
Locatio				inty Lous	ia	Casin	g or Loop	Pip	e						
GPS coor	dinates (NAI	083 datum)			.3540850 Longitude	Record	all depth meas	sureme	ents from grour	nd level (Gl	Sec. 10.		above G	L measu	urements.
4	1.2964010	L	atitude	Size	Mater	ial	Depth	Depth		Slow	2	Scree	en		
Decim	al Degrees	Degre	es, Decimal N	linutes	Degrees, Minutes, Seconds	(in)			Тор	Bottom		and in	8		
SW 1/4	of the NE	1/4 of the	SE 1/4 of	_{Sec} _18	_TWP 75 RNG 4 💩									ot size	
Show exac	t location of w	ell in section	grid with a dot	(•). Sketch	map of well location on property.							-		ot size _	1
	N													ot size	
												니디		ot size	
w		E B	See	ned Site Map] 🔲 sk	ot size		
	∔ ∔ i		000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Casir	ng Grout			Plac	emer	nt meth	thod		
			. –		200 ft		Туре	9		Depth T	ор	Dept	h Bottom	Amo	unt (vollwt)
	S				200 ft '					Sec. 1					
Formati	on Log														
From	То	Color	Hardness		Formation description										
405	640			Shale		Gra	avel packed	variet	у						
640	860			Limesto	ne	Sea	als/packers								
860	875			Limesto	ne, shale mix	Pump	Installatio	on				Dat	e/	1	
875	945			Limesto	ne	Type of	f pump				0	Depth	to intake		ft
945	970			Shale			liameter			Poto					
970	1015			Limesto	ne	Fump				Nale	u cap				
1015	1030			Limesto	ne, some shale	Water Information Date/									
1030	1100			Limesto	ne	Use + for above GL measurements.									
1,100	1,120			Dolomit	9	Static Water Level Pumping Water Level Yield E					Durati	on			
1120	1135			Limesto	ne		ft		f	t		GPI	M _		hrs
1135	1430			Dolomite	9	Water le	evel measure	ment:	Sonic	Tape	DAi	rline	E-line	Es	stimate
1430	1450			Sandy d	olomite	Water yield measurement: Orifice Volumetric Estimate									
1450	1460			Dolomite	e, shale mix	Mainwa	ater-supply zo	ne fro	m	ft to		ft be	Now GI		
1460	1500			Dolomite	9	TVICIN T VVC	ator Supply 20				2				
1500	1510			14.1.1100	e, shale mix	Well C	evelopme	ent							
1510	1517				e, cemented sandstone	Phys	sical explai	in:				1.1.1.			
					onal sheets as needed)	Che	mical expla	in:							
Remarks	(including de	epth of lost dr	illing fluids, mat	erials, or to	ols)										
								Contractor							
Well Us	Well Lise							Company							
Domes		🗆 Pul	blic supply		Livestock	Address					_				
Heat p	ump	☑ Co	mmercial	Driller Certification no											
# of borehole(s) [Monitoring] Other Driller Certification no															

Widoscience & 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 THE UNIVERSITY OF IOWA

WELL RECORD FORM (Page 3)

PWTS No	o. or PWS	No	5815101		PWTS Permit No.	2016	0189		GEOSA	AM Wel	No. (IGS)	ise on	(y)			
	entificati		Meats, Inc.													
Address	Hole	size				hole size		ntinued								
Tenant			rth		inch from	0	ft to	Ĥ					ft to	e.		
Well depth	1530	ft	[inch from											
Location			Cou	Constraint Constraint	g or Loo			^					<u></u>	I		
GPS coord		083 datum)	000		all depth mea			n ground	level (GL).	Use	+ for a	bove GL	. measur	ements.		
a second s	.2964010		atitude	Size				Depth	Depth	perf	0					
Decima	l Degrees	Degre	es, Decimal M	-91 linutes	(in)	Mate	erial		Тор	Bottom	perforateu	Slotted		Screen		
SW 1/4	of the NE	1/4 of the	SE 1/4 of	Sec 18	75 4 🗑									Slor	t size	
Show exact	location of w	ell in section	grid with a dot	(•). Sketch	map of well location on property.			31						Slor	t size	
	N													Slot	t size	
	+ $+$ $+$				Ň									Slot	t size	
		E t	Sec	Attach	ed Site Map									Slot	size	
	·		000	Allaon		Casir	ng Grout				Placer	nent	method	łł	_	
			. —		200 ft		Тур	е			Depth Top		Depth I	Bottom	Amour	nt (volkvt)
	S				200 ft											
Formatio	on Log															
From	То	Color	Hardness	F	Formation description										-	
1517	1520			Cement	ed sandstone	Gravel packed variety										
1520	1526			Dolomite		Seals/packers										
1526	1529				ed sandstone	Pump	Installati	ion					Date	/	/	
1529	1529 1530 Cemented sandstone, shale								Type of pump Depth to intake ft							
						Pump diameter in Rated capacity GPM								GPM		
						Water Information Date/										
						Use + for above GL measurements.										
						Static V	Vater Level	Pur	mping Wa		el	Yiek			Duration	
							ft			ft			_GPM	_		hrs
						Water level measurement: Sonic Tape Airline E-line Estimate								mate		
						Water yield measurement: Orifice Volumetric Estimate										
						Main wa	ater-supply z	one fr	rom		ft to		ft belo	w GL		
						Well D	evelopm	ent		,				n é		
				(upp addition		Phys	sical expla	iin:								_
		onal sheets as needed)	Chemical explain:													
Remarks	Remarks (including depth of lost drilling fluids, materials, or tools)															
									Contractor							
Well Use	9					Company										
Domest		🗆 Pul	blic supply		Livestock	Address										
Heat pu # of boreh	Heat pump Commercial Irrigation # of borehole(s) Monitoring Other							Driller Certification no							_	



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 THE UNIVERSITY OF LOWA



w83404



WELL INFORMATION - ROCK WELLS

Layne Christensen Company

PROFESSIONAL SERVICES FOR WATER SYSTEMS

721 West Illinois Avenue • Aurora, Illinois 60506-2892 • Phone 630/897-6941 229 West Indiana Avenue • Beecher, Illinois 60401 • Phone 708/946-2244

Name Of Job Tyson Fresh Meats, Inc. Date 9/13/16											
City Columbus Junction State Iowa											
Well No. 8		Drillers	Harold	Wayde	II						
Well Location		ft.	() and		ft. () of the			corner of
the	1/4 of Section	18	_{,Twp} . 75	(North), Range	4	(West) Louis	а	County
Otherwise locate	ed as NE ¼ S	SW ¼ SE ½	4								
16198 Hwy	70 North, Colur	nbus Juncti	ion, IA								
Work Began:	April 25, 2015				w	ork Complet	ed: Jul	y 22, 2016			
Casing Record	Dia.	Wt. or T	Thickness		Material						
40'	36"	0.3	375"	Black	Steel	with	no	Joints from	+2'		38'
150'	30"	.03	375"	Black	Steel	with	welded	joints from	+2'	to	150'
450'	24"	0.8	500"	Black	Steel	with	welded	joints from	+2'	to	450'
5'	24"x 18"	0.8	500"	Black	Steel	with	welded	joints from	450'	to	455'
645'	18"	0.8	500"	Black	Steel	with	welded	joints from	455'	to	1,100'
Hole Record:											,
	42"	inch from		0'		to	38'				
	36"	inch from		38'		to	150'				
	29"	inch from	inch from		150'		455'				
	23"	inch from		455	,	to	1,100'				
	17"	inch from		1,10	0'	to	1,530'			b	ottom of hole
Cementing Reco	rd: 30" cem	ented using	g Type I Po					24" x 18" lo	ong string	casing	ı with
24"x18" conc	entric reducer o	cemented u	sing neat ce	ement (900 sacks	s) of Portla	and Type I	Cement			
Well Test Data:	Static Level	140 ft	; pumpii	ng level	473'	after	24	hours pumping	gat <u>1,0</u> 2	25	g.p.m.
Length of test	24	hrs. See V	Vell Test Data	Sheet Dat	ed						
Remarks No	sand; clear wa	ter									
Layne Job No.	42098			Well	Permit No.:	2016-1	089W			_	

WELL LOG

Feet	F	eet	Description
0	to	14	Sand, gravel
14	to	21	Clay
21	to	48	Gray sand, small gravel
48	to	90	Coarse sand, boulders
90	to	104	Sandy clay
104	to	125	Clay, gravel mix
125	to	190	Clay, shale mix, some lime
190	to	196	Shale, limestone mix
196	to	203	Limestone
203	to	212	Limestone, shale mix
212	to	240	Limestone
240	to	340	Dolomite
340	to	390	Gray limestone
390	to	395	Limestone, some chert
395	to	401	Limestone
401	to	405	Limestone, shale mix
405	to	640	Shale
640	to	860	Limestone
860	to	875	Limestone, shale mix
875	to	945	Limestone
945	to	970	Shale
970	to	1015	Limestone
1015	to	1030	Limestone, some shale
1030	to	1100	Limestone
1100	to	1120	Dolomite
1120	to	1135	Limestone
1135	to	1140	Dolomite
1140	to	1430	Dolomite
1430	to	1450	Sandy dolomite

WELL LOG

Feet	Feet	Description
1450	to 1460	Dolomite, shale mix
1460	to 1500	Dolomite
1500	to 1510	Dolomite, shale mix
1510	to 1517	Dolomite, cemented sandstone mix
1517	to 1520	Cemented sandstone
1520	to 1526	Dolomite
1526	to 1529	Cemented sandstone
1529	to 1530	Cemented sandstone, shale
	to	