

STATE WELL REPORT

Part 1

Driller's Log

Mississippi Department of Environmental Quality
Office of Land and Water Resources
P.O. Box 2309
Jackson, MS 39225-2309
(601)961-5555
(601)961-5228 (fax)

County: <u>Grenada County</u>
Permit #: _____
Driller: <u>Theseus Taylor</u>
Date drilling completed: <u>08/09/19</u>

For Office Use Only:
Well #: <u>H 166</u>
Aquifer: _____
E-Log #: _____

State Law requires that this report be prepared by the license holder responsible for the work and filed with the Department at the above address within 30 days of completion of drilling of the well or borehole.

<p style="text-align: center;">Well Owner Information <i>(Landowner if borehole is not for a water well)</i></p> <p>Owner Name: <u>Grenada Manufacturing LLC</u></p> <p>Mailing Address: <u>635 Highway 332</u></p> <hr/> <p><u>Grenada</u> <u>MS</u> <u>38901</u> City State Zip Code</p> <p>Telephone No. (____) _____</p>	<p style="text-align: center;">Well or Borehole Location</p> <p>Latitude: <u>N33.803090</u> Longitude: <u>W89.799251</u></p> <p>Method of Lat/Long (check one): Conventional Survey <input checked="" type="checkbox"/> _____</p> <p>USGS quad _____, Hand-held GPS _____, Survey-grade GPS _____</p> <p><u>SW</u> $\frac{1}{4}$ <u>NW</u> $\frac{1}{4}$, Sec <u>5</u> T <u>23N</u> <u>22N</u> <u>R5E</u></p> <p><u>2.4</u> Miles <u>NNE</u> of <u>Grenada, MS</u> (Distance) (Direction) (Nearest Town)</p>
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<p style="text-align: center;">Well / Borehole Data</p> <p>Date drilling started: <u>August 6, 2019</u> Date drilling completed: <u>August 9, 2019</u> Hole depth: <u>53</u> Hole diameter: <u>12</u></p> <p>Location of the source of any surface water used for drilling: _____</p> <p>Method of dosing and volume of Chlorine used in drilling and development: <u>N/A</u></p> <p>Logs run (check all applicable): <input type="checkbox"/> log run <input type="checkbox"/> Electric <input type="checkbox"/> Gamma Ray <input type="checkbox"/> Density <input type="checkbox"/> Sonic <input type="checkbox"/> Neutron Other: _____</p> <p>Name of organization running log(s): _____</p> <p>Purpose of borehole (check one): Water Well <input type="checkbox"/> Geotechnical/Geological Investigation <input type="checkbox"/> Ground Source Heat Pump <input type="checkbox"/> Seismic Survey Other (describe) <u>Extraction well for remediation</u></p> <p style="text-align: center;"><i>If drilling is not related to water well construction, skip the remainder of this block</i></p>
<p>Purpose of Well (check all applicable): <input type="checkbox"/> Home <input type="checkbox"/> Industrial <input type="checkbox"/> Public Supply <input type="checkbox"/> Irrigation <input type="checkbox"/> Fish Culture</p> <p>Other (describe): <u>Extraction well for groundwater remediation</u></p> <p>If a flowing well, method of flow regulation: Valve _____ Other (describe) _____</p> <p>Static Water Level: <u>9.4</u> feet <input type="checkbox"/> above or <input checked="" type="checkbox"/> below land surface Date measured: <u>8/9/19</u> (check one)</p> <p>Method of measurement (check one) <input type="checkbox"/> Steel tape <input checked="" type="checkbox"/> Electric tape <input type="checkbox"/> Air line <input type="checkbox"/> Other (describe): _____</p> <p>Well depth: <u>53'</u> Well grouted to a depth of: <u>4'</u> feet Type of grout (check one) <input type="checkbox"/> Neat Cement <input type="checkbox"/> Bentonite <input checked="" type="checkbox"/> Mix</p> <p>Casing length: <u>40</u> feet Casing diameter: <u>8</u> inches Type of casing: <u>stainless steel</u></p> <p>Screen length: <u>13</u> feet Screen diameter: <u>8</u> inches Type of screen: <u>stainless steel</u></p> <p>Screen slot size: <u>.020</u> inches Setting depth: From <u>38</u> feet to <u>51</u> feet</p> <p>Type of completion (check all applicable) <input checked="" type="checkbox"/> gravel packed <input type="checkbox"/> Underreamed <input type="checkbox"/> Open hole <input type="checkbox"/> Natural Development</p> <p>Other (describe): <u>#0 sand installed (53-20) ft bgs; #0 sand (20-15) ft bgs; bentonite seal (15-9) ft bgs; cement-bentonite grout (9-4) ft bgs.</u></p> <p>Top of lap pipe or reduction in casing: _____ feet</p> <p style="text-align: center;"><i>If telescoped or more than one screen, describe on next page</i></p>

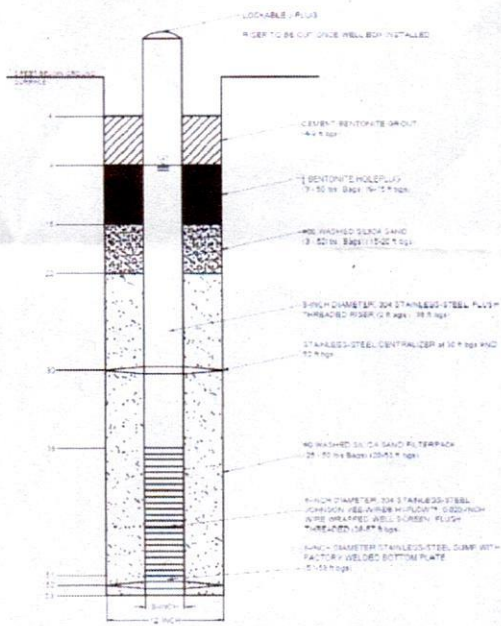
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County: Grenada
 Permit #: _____

For Office Use Only:
 Well #: H 166

The sketch below only required for water wells
If well telescopes, show depths on sketch.

Description of formations encountered must be provided for all wells and boreholes, unless specifically exempted by regulations

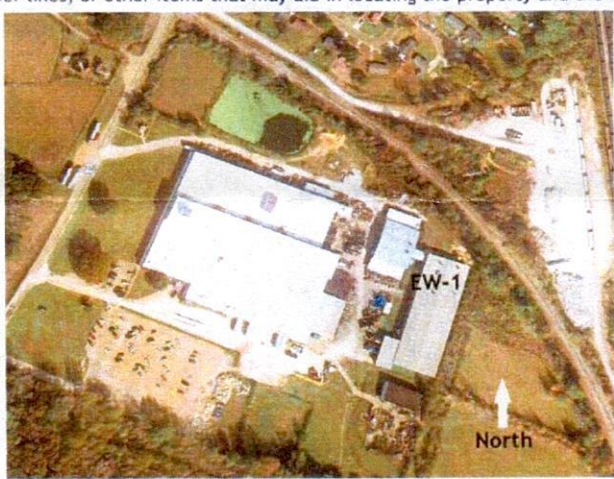


Description of Formations Encountered	From (depth) Ground level	To (depth)
See attached log		

If more than one screen, show location of each on sketch

Sketch the property layout and include the following:

- 1) the well location
- 2) any permanent structures on the property that may aid in locating the well
- 3) any roads, power lines, or other items that may aid in locating the property and the well
- 4) north arrow



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Landowner Name: Grenada Manufacturing LLC

I HEREBY CERTIFY that the well/borehole was drilled, constructed, and completed in accordance with all applicable requirements of the Mississippi Department of Environmental Quality and the Mississippi Department of Health regulations, if applicable, and state laws.

Oliver Pederson UNR-00008699 9-4-19
 Print Name of Responsible Licensee and License No. Date

Signature of Licensee



Location: EW-1

Project Grenada Manufacturing Location Type EW - Extraction Well
 Location Grenada, Mississippi Project Area _____ Date Drilled 8/6/2019
 Surface Elev. (ft) 181.846 Total Bore Depth (ft) 53.7
 Top of Casing (ft) _____ Total Well Depth (ft) 53.7 Depth to Water (ft TOC) 9.16
 Northing 1565729.156 Well Diameter (in) 8 Well Material SS
 Easting 2458828.437 Screen Length (ft) 13.0 Screen Material SS wire
 Drilling Company Cascade Drilling Rig _____
 Drilling Method Rotasonic Log By SB
 Sample Method 8 inch core barrel Checked By JP

See site map for boring location

COMMENTS:

Depth (ft)	PID (ppm)	Well Completion	Graphic Log	Material Description
0				(0-0.4) SAND AND GRAVEL, (limestone), clasts to 1 inch, loose, gray, dry; @ 0.4 feet filter fabric
			Bentonite	(0.4-1) SILTY CLAY, with little sand, trace roots, tight, 1 ton/ft2, slightly plastic, brown with orange laminations at bottom, moist
				(1-1.4) SILTY CLAY, with little sand, tight, brown, friable, 0.5 ton/ft2, moist
2				(1.4-2.7) SILTY CLAY to CLAYEY SILT, thinly laminated, tight, dense, light brown with orange and gray mottling and banding, 1.5ton/ft2, friable, moist
				(2.7-2.9) No Recovery
				(2.9-7.5) CLAYEY SILT, tight, soft, 0.5 tons/ft2, brown with orange and gray mottling and banding, thinly laminated, moist [(2.9-4 ft) recovers3d in (4-14) ft run]
4				
		Cement-bentonite grout		
6				
				(7.5-12.3) CLAYEY SILT to SILTY CLAY, tight, thinly laminated, medium consistency, 1-1.5 tons/ft2, plastic, brown with orange and gray mottling and banding, moist
8				
10				
12			Bentonite	(12.3-12.7) CLAYEY FINE SAND, tight, brown, moist, with trace orange stains, soft, moist
				(12.7-12.8) CLAYEY SILT with some fine sand, tight, slightly plastic, orange brown, very thinly laminated, moist
				(12.8-13.3) FINE SAND AND SILT, gray with orange at bottom, tight, friable, moist
14				(13.3-13.8) CLAYEY SILT with some fine sand, dense, tight, 1.5 ton/ft2, friable, gray with thinly laminated, moist.

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Location: EW-1

Depth (ft)	PID (ppm)	Well	Completion	Graphic Log	Material Description
16				Bentonite	(13.8-14.6) FINE SAND, light brown, loose, well sorted, saturated
					(14.6-15.1) CLAYEY SAND, tight, friable, 1.8 ton/ft ² , brown, wet
					(15.1-15.6) FINE SAND, trace silt, loose, brown, saturated
					(15.6-15.8) SILTY CLAY, tight, dense, 1.2 ton/ft ² , plastic, gray, moist
18				#00 Sand	(15.8-17.4) FINE SAND, well sorted, loose, gray with trace orange streaks, saturated
					(17.4-17.9) FINE SAND with little silt, loose, light brown, saturated
					(17.9-17.95) SILTY CLAY, tight, soft, plastic, brown, wet
					(17.95-18.1) FINE SAND, well sorted, loose, brown, saturated
					(18.1-18.3) VERY FINE SAND with little silt, orange with dark orange stains and brown, loose, soft
					(18.3-18.6) FINE SAND, little silt, loose, saturated, light brown
20					(18.6-21) FINE SAND, well sorted, loose, light brown, saturated
					(21-22.3) MEDIUM TO FINE SAND, quartz, loose, brownish-gray, saturated
22					(22.3-34) No Recovery
24					
26					
28				#0 Sand	
30					
32					
34					
					(34-38.5) MEDIUM SAND, well sorted, trace fine sand, loose, brown, saturated

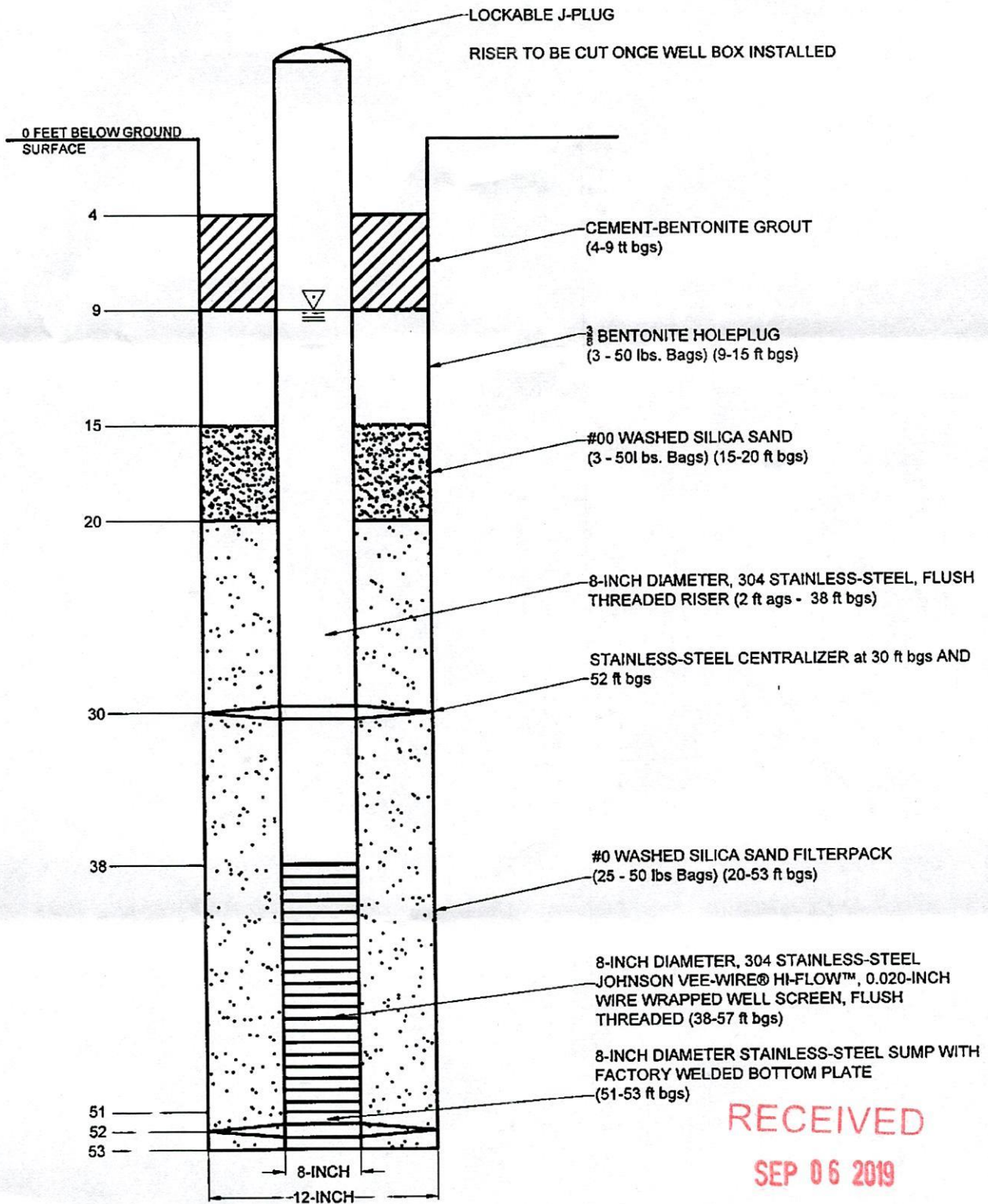
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Location: EW-1

Depth (ft)	PID (ppm)	Well Completion	Graphic Log	Material Description
36			#0 Sand	(34-38.5) MEDIUM SAND, well sorted, trace fine sand, loose, brown, saturated
38				(38.5-39.4) FINE SAND, orange-brown, loose, saturated
40				(39.4-39.6) SILTY CLAY, tight, 1 ton/ft ² , medium stiff, brown with orange banding, plastic, moist
				(39.6-40.1) INTERBEDDED FINE SAND WITH SILTY CLAY, silty clay is about 0.05 to 0.1 ft wide, and about 0.3 to 0.4 feet apart, silty clay is brown, with orange stains, tight, soft, 0.75 tons/ft ² , plastic, moist, sand is fine to medium, loose, poorly sorted,
				(40.1-41) FINE SAND, little silt, tight, friable, brown, saturated
				(41-41.9) FINE SAND, well sorted, brown with light gray, quartz, loose, saturated
42				(41.9-44) NO RECOVERY
44				(44-46.2) FINE SAND, well sorted, loose, gray, saturated
46				(46.2-47.6) FINE SAND, trace silt, loose, gray with dark gray, saturated
48				(47.6-47.8) SILTY CLAY, tight, soft, 0 ton/ft ² , plastic, dark brown, thinly laminated, wet
				(47.8-48.2) FINE TO MEDIUM SAND, with some silt, very poorly sorted, loose, dark gray to olive drab, saturated
				(48.2-48.3) SILTY CLAY, tight, very soft, plastic, thinly laminated, dark gray, saturated
				(48.3-48.7) COARSE SAND, quartz, subangular, loose, well sorted, saturated
				(48.7-49.2) SILTY CLAYEY SAND, loose, dark brown to gray, saturated, very poorly sorted
50				(49.2-49.6) FINE SAND, some silt, poorly sorted, loose, saturated, dark gray
			(49.6-49.8) SILTY CLAY, tight, plastic, thinly laminated, soft, 0 ton/ft ² , saturated	
			(49.8-50.1) FINE SAND, trace medium sand, little silt, dark gray, loose, saturated	
			(50.1-53.7) SILTY CLAY with silt, tight, friable, 1-3 tons/ft ² , dense, stiffening with depth, chocolate brown with light gray to silver along thin laminations, fine sandy silt along thin laminations, micaceous, moist to dry,	
52				
54				

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EW-1 WELL CONSTRUCTION LOG

