

Chris Deel



31 October 2018  
18-ED-269

Mr. Matt Cogburn  
Planning and Management Division  
Oklahoma Water Resources Board  
3800 North Classen Boulevard  
Oklahoma City, OK 73118

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CONCRETE  
SAND & GRAVEL  
STONE  
BLOCK  
MASONRY

**RE: Water Monitoring Plan Report, 3<sup>rd</sup> Quarter 2018, for Dolese Bros. Co. Davis Quarry, Murray County, Oklahoma**

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Dear Mr. Cogburn:

According to the Oklahoma Water Resources Board's Title 785, Chapter 30, Subchapter 15, Part 4, *Mines with Preexisting Exemptions*, Dolese Bros. Co. Davis Quarry qualifies as a mine with a preexisting exemption. As part of maintaining this exemption status, the regulations require us to do the following:

1. Adopt and implement a plan to monitor and report to the Board the accumulation and disposition of pit water during the previous calendar year;
  - The Davis Quarry has adopted and implemented such a plan, and the tables below serve to report to the Board the accumulation and disposition of pit water during 3<sup>rd</sup> Quarter 2018.
2. Make quarterly and annual reports of the measured or reasonably estimated groundwater and surface water volumes, separately stated, entering the pit, of the water that is diverted from the pit, of the disposition of the water from the pit, and of the consumptive use of the water from the pit on or before the deadlines provided by Title 82 of Oklahoma Statutes, § 1020.2(E)(1);
  - The Davis Quarry has continued to fulfill this obligation by compiling and submitting this 3<sup>rd</sup> Quarter 2018 report. The specific information requested in this section is outlined in the tables shown below.
3. At any time after March 31, 2015, demonstrate to the satisfaction of the Board within the pertinent report or reports that the mine has not consumptively used during the previous twelve-month period, from the mining site, an amount of groundwater which combined with any amounts used from permitted groundwater wells exceeds the MEPS<sup>1</sup>. Such demonstration may require providing to the Board a copy of the mine's monitoring plan and all of the data collected and procedures used to support the calculations and results reported.
  - After 31 March 2015, the Davis Quarry will be willing to demonstrate to the Board that the mine site has not consumptively used during the previous twelve-month period from the mining site, an amount of groundwater which combined with any amounts used from permitted groundwater wells exceeds the MEPS. Example calculations used in the First Quarterly Monitoring Report for 2013 have already been submitted to the OWRB for review and analysis

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<sup>1</sup> Mine's Equal Proportionate Share

**DOLESE BROS. CO.**  
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Below, in Tables 1, 2, and 3, are shown the 3<sup>rd</sup> Quarter 2018 summary data collected at the Davis Quarry.

Table 1

**Accumulation & Disposition of Pit Water during 3<sup>rd</sup> Quarter 2018**

	<u>Groundwater</u> Acre-Feet	<u>Surface Water</u> Acre-Feet	<u>Total</u> Acre-Feet
<b>Water Entering The Mine Pit</b>	<b>93.66</b>	<b>264.98</b>	<b>358.64</b>
<b>Water Diverted From The Mine Pit Into Fresh Water Lake</b>	<b>82.99</b>	<b>234.98</b>	<b>317.97</b>
<b>Water Removed From Fresh Water Lake</b>	<b>179.74</b>	<b>745.34</b>	<b>925.08</b>
<b>Water Returned To Fresh Water Lake</b>	<b>196.83</b>	<b>816.20</b>	<b>1013.03</b>
<b>Water Returned To Land Surface Overlying ASA<sup>2</sup> Basin</b>	<b>18.22</b>	<b>75.56</b>	<b>93.78</b>
<b>Water Consumptively Used</b>	<b>39.22</b>	<b>(See Table 3 for Calculations)</b>	

Table 2

**Water Fluctuations in Fresh Water Lake during 3<sup>rd</sup> Quarter 2018**

<b>Average Size of Lake</b>	<b>32.99 acres</b>
<b>Gain in Water Elevation</b>	<b>3.42 feet</b>
<b>Gain in Lake Volume</b>	<b>112.83 acre-feet</b>

Table 3

**Consumptive Use Summary for 3<sup>rd</sup> Quarter 2018**

	<u>Activity or Location</u>	<u>Amount of Pit Water Used,</u> Acre-Feet	<u>Groundwater Content,</u> Percent	<u>Groundwater Component,</u> Acre-Feet
<b>1</b>	<b>North Water Well</b>	<b>0.00</b>	<b>All</b>	<b>0.58</b>
<b>2</b>	<b>South Water Well</b>	<b>0.00</b>	<b>All</b>	<b>1.74</b>
<b>3</b>	<b>Material Moisture Hauled from Site</b>	<b>4.88</b>	<b>0.1943</b>	<b>0.95</b>
<b>4</b>	<b>Land Application for Roadway Dust Suppression</b>	<b>25.49</b>	<b>0.1943</b>	<b>4.95</b>
<b>5</b>	<b>Evaporation from Mine Pit</b>	<b>3.50</b>	<b>0.2613</b>	<b>0.92</b>
<b>6</b>	<b>Offsite Dewatering</b>	<b>154.81</b>	<b>0.1943</b>	<b>30.09</b>
<b>Total Groundwater Consumption from ASA at Davis Quarry =</b>		<b>39.22 Acre-Feet</b>		

<sup>2</sup> Arbuckle Simpson Aquifer

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Below, in Table 4, please find the Groundwater Rights Summary for the Davis Quarry.

Table 4

**Summary of Groundwater Rights for Davis Quarry**

From Acreage on the Arbuckle-Simpson Aquifer And Included in the ASA Groundwater Rights $(1,083 \text{ ac.} + 113 \text{ ac.} - 10 \text{ ac. on ASA}) \times (0.2 \text{ ac-ft/acre}) = 237.2 \text{ acre-feet on the ASA}$
From Acreage off the Arbuckle-Simpson Aquifer And Excluded from the ASA Groundwater Rights $(937 \text{ ac.} - 135 \text{ ac.} + 10 \text{ ac. off ASA}) \times (2.0 \text{ ac-ft/acre}) = 1,624 \text{ acre-feet off the ASA}$

Based on the plan that we have adopted and implemented to monitor and report the accumulation and disposition of pit water, based on our actual consumptive use of groundwater quantities, and based on the timely submittal of all reports including this 3<sup>rd</sup> Quarter 2018 report, we believe that the Davis Quarry is in full compliance with all of the regulations that allow us to maintain its preexisting exemption.

**General Information**

Our calculations show that Davis Quarry's total estimated groundwater consumption for 3<sup>rd</sup> Quarter 2018 was 39.22 acre-feet. This equates to about 16.5% of Davis Quarry's Equal Proportionate Share (EPS) for the year.

- The calculations show the groundwater consumption to be this high because we were required to discharge off-site some water from the Fresh Water Lake (FWL) due to high water conditions as a result of rainfall received during the quarter. Approximately 77% of the groundwater shown to be "consumed" during the quarter was as a result of off-site dewatering.
- The remaining amount that we consumed during the quarter (approximately 23% of the total amount consumed) pertains to all other consumptive use activities, which include groundwater usage from two (2) small water wells, material moisture hauled from the site, dust suppression waters, and evaporation of Mine Pit water.
- Davis Quarry has received over 43 inches of rainfall during the first nine (9) months of the year, with over 18 inches falling during the third quarter. The average annual rainfall for Davis, Oklahoma, is about 36 inches per year. Essentially, the facility has received about 120% of the average annual rainfall during the first three quarters of the year.

During the first three quarters of the year, Davis Quarry has consumed a total of 161.45 acre-feet of groundwater, which is 68% of Davis Quarry's available water rights for 2018. Please note that we have 237.2 acre-feet per year of groundwater rights available over the ASA at the Davis Quarry location, but our total available water rights for this site could also include other significant unused groundwater rights that we have at another site that overlies the ASA in Murray County. Both the Davis Quarry and the other site we own are located within the western lobe of the ASA.

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During 3<sup>rd</sup> Quarter 2018, the Davis Quarry logged over 18 inches of rainfall, as measured using rain gauges. The effective runoff into the quarry lakes created from these rains was estimated to be 12.39 inches. Three of the individual rainfall events during the quarter were rather significant. One was measured at 7.8 inches, and the other larger rains were measured at 2.9 and 2.8 inches, which contributed to a significant percentage of the runoff into the Mine Pit; that is, about 85% of the actual runoff for the quarter.

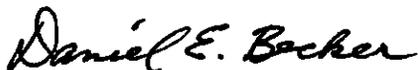
The "calculated" groundwater percentage in the Fresh Water Lake was 19.43% for the 3<sup>rd</sup> Quarter 2018, and storm water comprised the other 80.57%.

In the Annual Water Monitoring Reports for this quarry, we have always included more of the details regarding the water calculations and how they were performed, than are shown in the quarterly reports. The Annual Reports also detail how we always try to use the least controversial methods of calculating and estimating groundwater consumption at this facility. Since these detailed explanations were covered in the annual report for 2017, I will not outline them in these quarterly reports.

As we stated last quarter, water management always has been and continues to be very important to us at Dolese Bros. Co., especially at the Davis Quarry. We understand that the Arbuckle Simpson Aquifer is a unique aquifer that must be protected. Our plant personnel make daily efforts to responsibly manage the waters within our quarry boundaries so that when they return to their nearby homes and properties, these same quality waters will be available for their personal and community uses.

Please contact me if you have any questions or comments concerning this submittal. Thank you.

Sincerely,  
DOLÈSE BROS. CO.



Daniel E. Becker, P.E.  
Environmental Engineer

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cc: Mr. Chris Neel, Oklahoma Water Resources Board