



Robin Simmons
Regional Land Manager

September 28, 2020

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Oklahoma Water Resources Board

Matt Cogburn
Oklahoma Water Resources Board
3800 N. Classen
Oklahoma City, OK 73118

Re: Martin Marietta/Material Producers Davis Quarry Q2 2020 Monitoring Report

Dear Mr. Cogburn:

Attached please find the Q2 2020 monitoring report and associated data and calculations for Martin Marietta/Material Producers' Davis Quarry.

As is typical at the Davis Quarry, in Q2 we see more precipitation and runoff entering the pit than the total water we use from the pit. Also typically, we do not see a rise in water levels in the pit that correspond to the additional precipitation and runoff that we know is entering the pit and not being used. Thus we still see a net decrease of water within the pit indicating that we continue to augment groundwater through the pit.

Sincerely,

A handwritten signature in cursive script that reads 'Robin L. Simmons'.

Robin L. Simmons
Regional Land Manager

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MMM Davis Quarry 2020 Monitoring Report

All volumes are in acre-feet.

	Total Groundwater Entering Pit	Total Stormwater Entering Pit	Total Stormwater Diverted from Pit	Total Water Diverted	Water Sent To Holding Basin	Groundwater Augmentation	Streamwater Augmentation	Consumptive Use of Stormwater	Consumptive Use of Groundwater	Groundwater Pumped From Well
January-20	-4.49	18.47	18.47	13.98	N/A	-4.49	0.00	5.96	0.00	0.00
February-20	-6.13	11.19	11.19	5.06	N/A	-6.13	0.00	5.00	0.00	0.00
March-20	-13.32	21.03	21.03	7.70	N/A	-13.32	0.00	7.17	0.00	0.00
1st QTR Totals	-23.94	50.69	50.69	26.75	0.00	-23.94	0.00	18.13	0.00	0.00
April-20	-14.93	28.23	28.23	13.30	N/A	-14.93	0.00	9.23	0.00	0.00
May-20	-20.15	32.31	32.31	12.15	N/A	-20.15	0.00	17.54	0.00	0.00
June-20	-3.99	16.74	16.74	12.74	N/A	-3.99	0.00	7.78	0.00	0.00
2nd QTR Totals	-39.07	77.27	77.27	38.20	0.00	-39.07	0.00	34.55	0.00	0.00

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Davis Water Balance

	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
Monitoring Period, Days	31	28	31	30	31	30
Monthly Production, tons	127,571	116,816	163,132	94,739	9,753	110,987
Product Moisture Content	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Water Truck Loads	12	13	22	59	7	39
Month End Water Elevs.						
1) Freshwater pond, depth to water	19.362	18.223	19.75	17.185	17.189	19.235
2) Pit Sump, depth to water	13.37	13.392	12.251	14.835	12.972	13.48
Pond Surface Acres						
1) Freshwater pond	1.1	1.1	1.1	1.1	1.1	1.1
2) Pit Sump	2.3	2.3	2.3	2.3	2.3	2.3
Total surface acres	3.4	3.4	3.4	3.4	3.4	3.4
Pond Water Volume Change						
1) Freshwater pond	3.656	-1.253	1.680	-2.822	0.004	2.251
2) Pit Sump	2.997	0.051	-2.624	5.943	-4.285	1.168
3) Change in settling pond storage	0.000	0.000	0.000	0.000	0.000	0.000
Net Volume Change	6.653	-1.202	-0.945	3.122	-4.281	3.419
Water Inputs, ac-ft						
Rural Water	0.130	0.132	0.361	0.061	0.006	0.007
Lake Water	0.000	0.000	0.000	0.000	0.000	0.000
Well Water	0.000	0.000	0.000	0.000	0.000	0.000
Precipitation	18.472	11.192	21.025	28.229	32.306	16.737
Total Water Input	18.602	11.323	21.387	28.289	32.312	16.744
Water Usage, ac-ft						
Product moisture content	3.285	3.008	4.201	2.440	0.251	2.858
Haul road dust control	0.368	0.233	0.491	0.724	0.215	1.197
Evaporation losses	0.436	0.480	0.799	0.962	1.168	1.575
Misc usage	3.37	2.67	3.52	6.11	14.81	3.70
Total Water Usage, Ac-ft	7.460	6.393	9.011	10.240	16.441	9.330
Net Water Input	11.143	4.931	12.376	18.049	15.871	7.414
emergency storage of precipitation and runoff, ac-ft						
Groundwater Inflow	-4.489	-6.133	-13.320	-14.927	-20.151	-3.995

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Consumptive Use	January	February	March	April	May	June
Water Truck Usage	0.37	0.23	0.49	0.72	0.21	1.20
Moisture Content of Product Shipped	2.22	2.10	3.16	2.39	2.52	2.88
Misc on site use	-	-	-	-	-	-
Misc off site	3.37	2.67	3.52	6.11	14.81	3.70
Total	5.96	5.00	7.17	9.23	17.54	7.78

Shipped Tons	January	February	March	April	May	June
Base	29,088	30,835	45,028	23,538	29,086	26,455
Coarse Aggregate	52,412	46,515	56,544	54,229	63,661	63,742
Fine Aggregate	20,991	18,524	34,684	29,264	24,890	37,330
Total	102,491	95,875	136,256	107,031	117,637	127,527
Moisture Shipped	2.22	2.10	3.16	2.39	2.52	2.88

April Precipitation Data

PIT RUNOFF ASSUMPTIONS		
Hydrologic Soil Group	D	
Land Use	gravel road	
AMC Condition	II (ave)	
CN (pit fringe)	88	area draining into pit
CN (pit)	100	area with direct interception
S (pit fringe)	1.364	area draining into pit
S (pit)	0.000	area with direct interception
Pit - Direct Interception (>95 ft deep)	65.19	subject to refinement
Pit fringe (area drains to pit)	94.06	subject to refinement
Drainage to Pit (total area)	159.26	subject to refinement

Runoff from
 $P_e = (P - 0.2)$
 $S = (1000/r)$



Quarry area Fringe area

Date	Precip, in	Runoff, in	Runoff, in	Evapor, in/day
1-Apr	0.00	0.00	0.00	0.10
2-Apr	0.00	0.00	0.00	0.06
3-Apr	0.09	0.09	0.00	0.03
4-Apr	0.00	0.00	0.00	0.03
5-Apr	0.00	0.00	0.00	0.10
6-Apr	0.00	0.00	0.00	0.08
7-Apr	0.00	0.00	0.00	0.17
8-Apr	0.00	0.00	0.00	0.24
9-Apr	0.00	0.00	0.00	0.12
10-Apr	0.00	0.00	0.00	0.14
11-Apr	0.70	0.70	0.00	0.07
12-Apr	0.11	0.11	0.00	0.09
13-Apr	0.00	0.00	0.00	0.09
14-Apr	0.07	0.07	0.00	0.05
15-Apr	0.00	0.00	0.00	0.13
16-Apr	0.00	0.00	0.00	0.14
17-Apr	0.00	0.00	0.00	0.07
18-Apr	0.00	0.00	0.00	0.10
19-Apr	0.00	0.00	0.00	0.05
20-Apr	0.00	0.00	0.00	0.11
21-Apr	0.00	0.00	0.00	0.16
22-Apr	2.38	2.38	1.28	0.09
23-Apr	0.00	0.00	0.00	0.16
24-Apr	0.00	0.00	0.00	0.12
25-Apr	0.00	0.00	0.00	0.16
26-Apr	0.00	0.00	0.00	0.15
27-Apr	0.00	0.00	0.00	0.14
28-Apr	0.00	0.00	0.00	0.14
29-Apr	0.00	0.00	0.00	0.17
30-Apr	0.00	0.00	0.00	0.17
		0.00	0.00	
		3.35	1.28	
Volume, ac-ft		18.20	10.03	3.394
Total Vol, ac-ft		28.23		

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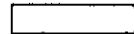
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May Precipitation Data

PIT RUNOFF ASSUMPTIONS		
Hydrologic Soil Group	D	
Land Use	gravel road	
AMC Condition	II (ave)	
CN (pit fringe)	88	area draining into pit
CN (pit)	100	area with direct interception
S (pit fringe)	1.364	area draining into pit
S (pit)	0.000	area with direct interception
Pit - Direct Interception (>95 ft deep)	65.19	subject to refinement
Pit fringe (area drains to pit)	94.06	subject to refinement
Drainage to Pit (total area)	159.26	subject to refinement

Runoff for
 $P_e = (P - 0.2)$
 $S = (1000/A)$



Quarry area Fringe area

Date	Precip, in	Runoff, in	Runoff, in	Evapor, in/day
1-May	0.00	0.00	0.00	0.16
2-May	0.00	0.00	0.00	0.17
3-May	0.00	0.00	0.00	0.16
4-May	0.61	0.61	0.00	0.19
5-May	0.01	0.01	0.00	0.16
6-May	0.00	0.00	0.00	0.11
7-May	0.00	0.00	0.00	0.14
8-May	0.60	0.60	0.00	0.14
9-May	0.00	0.00	0.00	0.15
10-May	0.00	0.00	0.00	0.13
11-May	0.00	0.00	0.00	0.15
12-May	0.87	0.87	0.00	0.04
13-May	0.01	0.01	0.00	0.08
14-May	0.11	0.11	0.00	0.16
15-May	1.42	1.42	0.52	0.09
16-May	0.28	0.28	0.00	0.03
17-May	0.01	0.01	0.00	0.19
18-May	0.00	0.00	0.00	0.18
19-May	0.00	0.00	0.00	0.18
20-May	0.00	0.00	0.00	0.10
21-May	0.00	0.00	0.00	0.07
22-May	0.53	0.53	0.00	0.14
23-May	0.00	0.00	0.00	0.17
24-May	0.33	0.33	0.00	0.12
25-May	0.38	0.38	0.00	0.03
26-May	0.02	0.02	0.00	0.08
27-May	0.00	0.00	0.00	0.16
28-May	0.01	0.01	0.00	0.11
29-May	0.00	0.00	0.00	0.18
30-May	0.00	0.00	0.00	0.19
31-May	0.00	0.00	0.00	0.19
		5.19	0.52	0.00
Volume, ac-ft		28.20	4.11	4.124
Total Vol, ac-ft		32.31		

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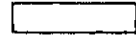
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June Precipitation Data

PIT RUNOFF ASSUMPTIONS

Hydrologic Soil Group	D	
Land Use	gravel road	
AMC Condition	II (ave)	
CN (pit fringe)	88	area draining into pit
CN (pit)	100	area with direct interception
S (pit fringe)	1.364	area draining into pit
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Pit - Direct Interception (>95 ft deep)	65.19	subject to refinement
Pit fringe (area drains to pit)	94.06	subject to refinement
Drainage to Pit (total area)	159.26	subject to refinement

Runoff for
 $P_e = (P - 0.2)$
 $S = (1000/P_e)$



Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Jun	0.00	0.00	0.00	0.15
2-Jun	0.00	0.00	0.00	0.18
3-Jun	0.00	0.00	0.00	0.19
4-Jun	0.06	0.06	0.00	0.19
5-Jun	0.01	0.01	0.00	0.20
6-Jun	0.00	0.00	0.00	0.21
7-Jun	0.00	0.00	0.00	0.20
8-Jun	0.00	0.00	0.00	0.18
9-Jun	0.00	0.00	0.00	0.27
10-Jun	0.00	0.00	0.00	0.23
11-Jun	0.00	0.00	0.00	0.22
12-Jun	0.00	0.00	0.00	0.21
13-Jun	0.00	0.00	0.00	0.21
14-Jun	0.00	0.00	0.00	0.21
15-Jun	0.00	0.00	0.00	0.19
16-Jun	0.00	0.00	0.00	0.19
17-Jun	0.00	0.00	0.00	0.20
18-Jun	0.00	0.00	0.00	0.21
19-Jun	1.54	1.54	0.61	0.12
20-Jun	0.11	0.11	0.00	0.19
21-Jun	0.27	0.27	0.00	0.11
22-Jun	0.08	0.08	0.00	0.18
23-Jun	0.04	0.04	0.00	0.11
24-Jun	0.04	0.04	0.00	0.20
25-Jun	0.02	0.02	0.00	0.19
26-Jun	0.02	0.02	0.00	0.19
27-Jun	0.00	0.00	0.00	0.17
28-Jun	0.01	0.01	0.00	0.12
29-Jun	0.00	0.00	0.00	0.18
30-Jun	0.00	0.00	0.00	0.17
		0.00	0.00	
		2.20	0.61	
Volume, ac-ft		11.95	4.78	5.56
Total Vol, ac-ft		16.74		

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