



Robin Simmons
Regional Land Manager

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NOV 28 2017

November 28, 2017

Anthony Mackey
Oklahoma Water Resources Board
3800 N. Classen
Oklahoma City, OK 73118

Re: Martin Marietta/Material Producers Davis Quarry Q3 2017 Monitoring Report

Dear Mr. Mackey:

Attached please find the Q3 2017 monitoring report and associated data and calculations for Martin Marietta/Material Producers' Davis Quarry.

Sincerely,

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

Robin L. Simmons, EIT
Land Manager

MMM Davis Quarry 2017 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-17		4.81	4.81	4.81	N/A	0.00	0.00	2.68	0.00	0.00
February-17		10.47	10.47	10.47	N/A	0.00	0.00	3.05	0.00	0.00
March-17		5.40	5.40	5.40	N/A	0.00	0.00	3.36	0.00	0.00
1st QTR Totals	0.00	20.68	20.68	20.68	0.00	0.00	0.00	9.09	0.00	0.00
April-17	-4.84	5.66	5.66	0.82	N/A	-4.84	0.00	4.14	0.00	0.00
May-17	1.94	7.43	7.43	9.37	N/A	1.94	0.00	3.35	0.00	0.00
June-17	-3.59	1.55	1.55	-2.05	N/A	-3.59	0.00	3.43	0.00	0.00
2nd QTR Totals	-6.49	14.64	14.64	8.15	0.00	-6.49	0.00	10.93	0.00	0.00
July-17	-40.37	59.78	59.78	19.41	N/A	-40.37	0.00	5.06	0.00	0.00
August-17	-14.40	25.17	25.17	10.76	N/A	-14.40	0.00	6.07	0.00	0.00
September-17	-8.43	13.47	13.47	5.03	N/A	-8.43	0.00	3.45	0.00	0.00
3rd QTR Totals	-63.21	98.41	98.41	35.20	0.00	-63.21	0.00	14.58	0.00	0.00

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Consumptive Use

	January	February	March	April	May	June	July	August	September
Water Truck Usage	0.37	0.40	0.71	1.99	1.04	0.86	2.38	2.97	0.83
Moisture Content of Product Shipped	2.31	2.65	2.65	2.15	2.31	2.57	2.68	3.10	2.62
Misc on site use	-	-	-	-	-	-	-	-	-
Misc off site	-	-	-	-	-	-	-	-	-
Total	2.68	3.05	3.36	4.14	3.35	3.43	5.06	6.07	3.45

	January	February	March	April	May	June	July	August	September
Shipped Tons	27,811	40,538	32,314	28,698	22,291	25,813	15,932	29,188	33,720
Base	50,585	50,566	55,895	48,746	59,184	69,993	61,598	70,293	60,957
Coarse Aggregate	25,282	25,771	29,586	20,687	25,743	26,096	40,253	38,837	25,607
Fine Aggregate	103,678	116,875	117,794	98,131	107,218	121,902	117,783	138,318	120,284
Total	2.31	2.65	2.65	2.15	2.31	2.57	2.68	3.10	2.62
Moisture Shipped									

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Davis Water Balance

	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
Monitoring Period, Days		31	29	31	30	31	30	31	31	30
Monthly Production, tons		98,920	115,597	153,589	90,714	92,462	122,847	104,045	93,306	50,580
Product Moisture Content		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Water Truck Loads		12	13	23	65	34	28	388	308	27
Month End Water Elevs.										
1) Freshwater pond, depth to water				17.769	13.326	19.301	13.15	17.866	14.524	18.617
2) Pit Sump, depth to water				4.762	5.583	4.934	2.304	1.686	7.248	8.246
Pond Surface Acres										
1) Freshwater pond	0.937	0.937	0.937	0.937	0.937	0.937	0.937	0.937	0.937	0.937
2) Pit Sump	0.322	0.322	0.322	0.322	0.322	0.322	0.322	0.322	0.322	0.322
Total surface acres	1.259	1.259	1.259	1.259	1.259	1.259	1.259	1.259	1.259	1.259
Pond Water Volume Change										
1) Freshwater pond				-4.163	-4.163	5.599	-5.763	4.419	-3.131	3.835
2) Pit Sump				0.264	0.264	-0.209	-0.847	-0.199	1.791	0.321
3) Change in settling pond storage				0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net Volume Change				-3.899	-3.899	5.390	-6.610	4.220	-1.340	4.156
Water Inputs, ac-ft										
Rural Water		0.101	0.000	0.000	0.000	0.000	0.000	0.041	0.201	1.647
Lake Water		0.000	0.000	0.000	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	0.000	0.000	0.000
Precipitation		4.809	10.473	5.397	5.664	7.427	1.550	59.777	25.167	13.465
Total Water Input		4.910	10.473	5.397	5.664	7.427	1.550	59.818	25.368	15.112
Water Usage, ac-ft										
Product moisture content		2.547	2.977	3.955	2.336	2.381	3.164	2.679	2.403	1.303
Haul road dust control		0.368	0.399	0.706	1.995	1.043	0.859	11.907	9.452	0.829
Evaporation losses		0.234	0.268	0.399	0.392	0.557	0.542	0.644	0.449	0.390
Misc usage		-	-	-	-	-	-	-	-	-
Total Water Usage, Ac-ft		3.150	3.643	5.060	4.723	3.982	4.565	15.231	12.304	2.521
Net Water Input		1.760	6.829	0.337	0.941	3.445	-3.015	44.588	13.064	12.591
emergency storage of precipitation and runoff, ac-ft										
Groundwater Inflow				-4.839		1.944	-3.595	-40.368	-14.404	-8.434
Groundwater Inflow, Avg Ac-ft/Day				-0.161		0.063	-0.120	-1.302	-0.465	-0.281
Groundwater Inflow, Avg Gallons/Day				-52,562		20,438	-39,047	-424,318	-151,409	-91,612

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July 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)	64.12	subject to refinement
Pit fringe (area drains to pit)	161.49	subject to refinement
Drainage to Pit (total area)	225.61	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Jul	3.77	3.77	2.52	0.17
2-Jul	0.08	0.08	0.00	0.12
3-Jul	0.19	0.19	0.00	0.16
4-Jul	0.08	0.08	0.00	0.19
5-Jul	0.08	0.08	0.00	0.16
6-Jul	0.08	0.08	0.00	0.22
7-Jul	0.08	0.08	0.00	0.23
8-Jul	0.06	0.06	0.00	0.13
9-Jul	0.05	0.05	0.00	0.19
10-Jul	0.05	0.05	0.00	0.22
11-Jul	0.03	0.03	0.00	0.24
12-Jul	0.01	0.01	0.00	0.24
13-Jul	0.01	0.01	0.00	0.24
14-Jul	0.00	0.00	0.00	0.24
15-Jul	0.03	0.03	0.00	0.19
16-Jul	0.00	0.00	0.00	0.19
17-Jul	0.00	0.00	0.00	0.18
18-Jul	0.09	0.09	0.00	0.20
19-Jul	0.00	0.00	0.00	0.20
20-Jul	0.00	0.00	0.00	0.24
21-Jul	0.00	0.00	0.00	0.25
22-Jul	0.00	0.00	0.00	0.22
23-Jul	0.12	0.12	0.00	0.19
24-Jul	0.00	0.00	0.00	0.18
25-Jul	0.00	0.00	0.00	0.18
26-Jul	0.00	0.00	0.00	0.22
27-Jul	0.00	0.00	0.00	0.27
28-Jul	0.00	0.00	0.00	0.19
29-Jul	0.04	0.04	0.00	0.21
30-Jul	0.00	0.00	0.00	0.17
31-Jul	0.00	0.00	0.00	0.15
		4.85	2.52	
Volume, ac-ft		25.92	33.86	6.136
Total Vol, ac-ft		59.78		

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August 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)	64.12	subject to refinement
Pit fringe (area drains to pit)	161.49	subject to refinement
Drainage to Pit (total area)	225.61	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Aug	0.10	0.10	0.00	0.06
2-Aug	0.30	0.30	0.00	0.13
3-Aug	0.00	0.00	0.00	0.19
4-Aug	0.11	0.11	0.00	0.17
5-Aug	0.00	0.00	0.00	0.21
6-Aug	1.18	1.18	0.00	0.13
7-Aug	0.00	0.00	0.00	0.10
8-Aug	0.00	0.00	0.00	0.14
9-Aug	0.00	0.00	0.00	0.14
10-Aug	0.08	0.08	0.00	0.13
11-Aug	1.02	1.02	0.00	0.14
12-Aug	0.52	0.52	0.00	0.06
13-Aug	0.01	0.01	0.00	0.12
14-Aug	0.25	0.25	0.00	0.11
15-Aug	0.01	0.01	0.00	0.16
16-Aug	0.00	0.00	0.00	0.12
17-Aug	1.07	1.07	0.00	0.16
18-Aug	0.00	0.00	0.00	0.18
19-Aug	0.00	0.00	0.00	0.19
20-Aug	0.00	0.00	0.00	0.17
21-Aug	0.00	0.00	0.00	0.16
22-Aug	0.04	0.04	0.00	0.17
23-Aug	0.02	0.02	0.00	0.11
24-Aug	0.00	0.00	0.00	0.09
25-Aug	0.00	0.00	0.00	0.11
26-Aug	0.00	0.00	0.00	0.12
27-Aug	0.00	0.00	0.00	0.12
28-Aug	0.00	0.00	0.00	0.16
29-Aug	0.00	0.00	0.00	0.15
30-Aug	0.00	0.00	0.00	0.15
31-Aug	0.00	0.00	0.00	0.15
		4.71	0.00	
Volume, ac-ft		25.17	0.00	4.281
Total Vol, ac-ft		25.17		

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September 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)	64.12	subject to refinement
Pit fringe (area drains to pit)	161.49	subject to refinement
Drainage to Pit (total area)	225.61	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Sep	0.00	0.00	0.00	0.15
2-Sep	0.20	0.20	0.00	0.12
3-Sep	0.01	0.01	0.00	0.15
4-Sep	0.00	0.00	0.00	0.21
5-Sep	0.00	0.00	0.00	0.14
6-Sep	0.00	0.00	0.00	0.16
7-Sep	0.00	0.00	0.00	0.16
8-Sep	0.00	0.00	0.00	0.15
9-Sep	0.00	0.00	0.00	0.15
10-Sep	0.00	0.00	0.00	0.15
11-Sep	0.00	0.00	0.00	0.15
12-Sep	0.00	0.00	0.00	0.11
13-Sep	0.00	0.00	0.00	0.15
14-Sep	0.00	0.00	0.00	0.16
15-Sep	0.00	0.00	0.00	0.14
16-Sep	0.00	0.00	0.00	0.15
17-Sep	0.01	0.01	0.00	0.10
18-Sep	0.40	0.40	0.00	0.12
19-Sep	0.00	0.00	0.00	0.14
20-Sep	0.00	0.00	0.00	0.15
21-Sep	0.00	0.00	0.00	0.14
22-Sep	0.00	0.00	0.00	0.14
23-Sep	0.00	0.00	0.00	0.13
24-Sep	0.00	0.00	0.00	0.13
25-Sep	0.11	0.11	0.00	0.10
26-Sep	0.29	0.29	0.00	0.03
27-Sep	0.95	0.95	0.00	0.01
28-Sep	0.51	0.51	0.00	0.01
29-Sep	0.04	0.04	0.00	0.02
30-Sep	0.00	0.00	0.00	0.10
		0.00	0.00	
		2.52	0.00	

Volume, ac-ft 13.47 0.00 3.719
 Total Vol, ac-ft 13.47

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