



Robin Simmons
Land Manager

October 17, 2014

Kent Wilkins
Oklahoma Water Resources Board
3800 N. Classen
Oklahoma City, OK 73118

Re: Martin Marietta/Material Producers Davis Quarry Q3 2014 Monitoring Report

Dear Mr. Wilkins:

Attached please find the Q3 2014 monitoring report and associated data and calculations for Martin Marietta/Material Producers' Davis Quarry.

Sincerely,

A handwritten signature in blue ink that reads 'Robin L. Simmons'.

Robin L. Simmons, EIT
Land Manager

MMM Davis Quarry 2014 Monitoring Report

All volumes are in acre-feet.

	Total Groundwater Entering Pit	Total Stormwater Entering Pit	Total Pit Stormwater Diverted	Total Pit Water Diverted	Pit Water Sent To Holding Basin	Groundwater Augmentation	Streamwater Augmentation	Consumptive Use of Pit Water	Consumptive Use of Groundwater	Groundwater Pumped From Well
January-14	-7.51	0.72	0.72	-6.79	N/A	-7.51	0.00	3.36	0.00	0.00
February-14	2.55	1.38	1.38	3.92	N/A	2.55	0.00	3.12	0.00	0.00
March-14	-6.05	18.93	18.93	12.88	N/A	-6.05	0.00	3.63	0.00	0.00
1st QTR Totals	-11.02	21.03	21.03	10.01	0.00	-11.02	0.00	10.10	0.00	0.00
April-14	-8.90	10.19	10.19	1.29	N/A	-8.90	0.00	4.68	0.00	0.00
May-14	-4.12	9.78	9.78	5.66	N/A	-4.12	0.00	5.24	0.00	0.00
June-14	-35.01	48.77	48.77	13.76	N/A	-35.01	0.00	4.50	0.00	0.00
2nd QTR Totals	-48.04	68.75	68.75	20.71	0.00	-48.04	0.00	14.42	0.00	0.00
July-14	-15.99	23.62	23.62	7.63	N/A	-15.99	0.00	6.24	0.00	0.00
August-14	-4.86	8.20	8.20	3.34	N/A	-4.86	0.00	5.39	0.00	0.00
September-14	-8.94	16.32	16.32	7.38	N/A	-8.94	0.00	4.37	0.00	0.00
3rd QTR Totals	-29.79	48.14	48.14	18.35	0.00	-29.79	0.00	16.00	0.00	0.00
2014 Totals	-76.70	137.92	137.92	61.22	0.00	-76.70	0.00	40.52	0.00	0.00

	Consumptive Use									
	January	February	March	April	May	June	July	August	September	October
Water Truck Usage	0.49	0.34	0.40	1.23	1.44	0.74	1.53	1.12	1.02	
Moisture Content of Product Shipped	2.87	2.78	3.23	3.46	3.80	3.76	4.71	4.28	3.35	
Misc on site use	-	-	-	-	-	-	-	-	-	
Misc off site	-	-	-	-	-	-	-	-	-	
Total	3.36	3.12	3.63	4.68	5.24	4.50	6.24	5.39	4.37	

	January	February	March	April	May	June	July	August	September	October
Shipped Tons										
Base	52,439	49,339	54,065	58,759	62,687	54,216	71,245	52,829	30,794	
Coarse Aggregate	75,435	62,483	76,095	94,111	97,268	83,133	97,426	90,572	102,187	
Fine Aggregate	12,723	17,953	21,728	17,340	23,006	34,115	42,984	47,092	31,609	
Total	140,597	129,775	151,888	170,210	182,961	171,463	211,655	190,493	164,590	
Moisture Shipped	2.87	2.78	3.23	3.46	3.80	3.76	4.71	4.28	3.35	

Davis Water Balance

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
Monitoring Period, Days	31	28	31	30	31	30	31	31	30
Monthly Production, tons	129,160	112,239	155,305	168,000	173,134	150,060	201,703	177,700	186,275
Product Moisture Content	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Water Truck Loads	16	11	13	40	47	24	50	47	33.1
Month End Water Elevs.									
1) Freshwater pond, depth to water	18.392	18.152	9.338	14.164	15.169	6.947	6.968	9.878	8.768
2) Pit Sump, depth to water	15.111	14.273	14.249	14.823	14.336	11.656	10.595	12.262	12.217
Pond Surface Acres									
1) Freshwater pond	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
Total surface acres	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	-6.766	0.225	8.259	-4.522	-0.942	7.704	-0.020	-2.727	1.040
2) Pit Sump	-0.047	0.270	0.008	-0.185	0.157	0.863	0.342	-0.537	0.014
3) Change in settling pond storage	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net Volume Change	-6.813	0.495	8.266	-4.707	-0.785	8.567	0.322	-3.263	1.055
Water Inputs, ac-ft									
Rural Water	4.103	0.017	0.247	0.081	0.084	0.059	0.000	0.000	0.000
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	0.725	1.377	18.929	10.192	9.785	48.774	23.617	8.199	16.320
Total Water Input	4.828	1.394	19.175	10.273	9.869	48.833	23.617	8.199	16.320
Water Usage, ac-ft									
Product moisture content	3.326	2.890	4.000	4.326	4.459	3.864	5.194	4.576	4.797
Haul road dust control	0.491	0.338	0.399	1.228	1.442	0.737	1.534	1.442	1.016
Evaporation losses	0.311	0.219	0.457	0.522	0.630	0.654	0.576	0.583	0.515
Misc usage	0	0	0	0	0	0	0	0	0
Total Water Usage, Ac-ft	4.128	3.447	4.856	6.076	6.531	5.255	7.305	6.602	6.328
Net Water Input	0.699	-2.053	14.320	4.197	3.338	43.578	16.312	1.597	9.992
Groundwater Inflow	-7.513	2.548	-6.053	-8.904	-4.123	-35.011	-15.990	-4.861	-8.937
Groundwater Inflow, Avg Ac-ft/Day	-0.242	0.091	-0.195	-0.297	-0.133	-1.167	-0.516	-0.157	-0.298
Groundwater Inflow, Avg Gallons/Day	-78,968	29,650	-63,627	-96,715	-43,337	-380,277	-168,079	-51,092	-97,076

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)	54.36	subject to refinement
Pit fringe (area drains to pit)	68.34	subject to refinement
Drainage to Pit (total area)	122.70	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Jul	0.03	0.03	0.00	0.17
2-Jul	0.78	0.78	0.00	0.12
3-Jul	0.00	0.00	0.00	0.15
4-Jul	0.00	0.00	0.00	0.21
5-Jul	0.00	0.00	0.00	0.20
6-Jul	0.00	0.00	0.00	0.23
7-Jul	0.00	0.00	0.00	0.24
8-Jul	0.00	0.00	0.00	0.29
9-Jul	0.07	0.07	0.00	0.14
10-Jul	0.00	0.00	0.00	0.23
11-Jul	0.00	0.00	0.00	0.27
12-Jul	0.00	0.00	0.00	0.28
13-Jul	0.00	0.00	0.00	0.28
14-Jul	0.00	0.00	0.00	0.12
15-Jul	0.00	0.00	0.00	0.21
16-Jul	0.24	0.24	0.00	0.09
17-Jul	0.54	0.54	0.00	0.03
18-Jul	0.00	0.00	0.00	0.06
19-Jul	0.00	0.00	0.00	0.13
20-Jul	0.00	0.00	0.00	0.20
21-Jul	0.00	0.00	0.00	0.20
22-Jul	0.00	0.00	0.00	0.19
23-Jul	0.32	0.32	0.00	0.19
24-Jul	0.01	0.01	0.00	0.21
25-Jul	0.00	0.00	0.00	0.23
26-Jul	0.00	0.00	0.00	0.25
27-Jul	0.00	0.00	0.00	0.25
28-Jul	0.31	0.31	0.00	0.09
29-Jul	0.00	0.00	0.00	0.16
30-Jul	1.84	1.84	0.84	0.06
31-Jul	0.02	0.02	0.00	0.05
		4.16	0.84	
Volume, ac-ft		18.84	4.77	5.492
Total Vol, ac-ft		23.62		

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)	54.36	subject to refinement
Pit fringe (area drains to pit)	68.34	subject to refinement
Drainage to Pit (total area)	122.70	subject to refinement

Quarry area Fringe area

Date	Precip, in.	Runoff, in.	Runoff, in.	Evapor, in/day
1-Aug	0.01	0.01	0.00	0.13
2-Aug	0.00	0.00	0.00	0.17
3-Aug	0.00	0.00	0.00	0.19
4-Aug	0.00	0.00	0.00	0.18
5-Aug	0.00	0.00	0.00	0.18
6-Aug	0.00	0.00	0.00	0.20
7-Aug	0.14	0.14	0.00	0.17
8-Aug	0.00	0.00	0.00	0.18
9-Aug	0.05	0.05	0.00	0.16
10-Aug	0.00	0.00	0.00	0.17
11-Aug	1.36	1.36	0.00	0.19
12-Aug	0.00	0.00	0.00	0.20
13-Aug	0.00	0.00	0.00	0.20
14-Aug	0.00	0.00	0.00	0.19
15-Aug	0.00	0.00	0.00	0.20
16-Aug	0.00	0.00	0.00	0.09
17-Aug	0.00	0.00	0.00	0.19
18-Aug	0.00	0.00	0.00	0.21
19-Aug	0.00	0.00	0.00	0.18
20-Aug	0.00	0.00	0.00	0.15
21-Aug	0.00	0.00	0.00	0.19
22-Aug	0.00	0.00	0.00	0.22
23-Aug	0.00	0.00	0.00	0.22
24-Aug	0.00	0.00	0.00	0.20
25-Aug	0.00	0.00	0.00	0.19
26-Aug	0.00	0.00	0.00	0.18
27-Aug	0.00	0.00	0.00	0.15
28-Aug	0.00	0.00	0.00	0.17
29-Aug	0.25	0.25	0.00	0.12
30-Aug	0.00	0.00	0.00	0.19
31-Aug	0.00	0.00	0.00	0.19
		1.81	0.00	
Volume, ac-ft		8.20	0.00	5.559
Total Vol, ac-ft		8.20		

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)	54.36	subject to refinement
Pit fringe (area drains to pit)	68.34	subject to refinement
Drainage to Pit (total area)	122.70	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	1.19
2-Sep	0.01	0.01	0.00	0.18
3-Sep	0.00	0.00	0.00	0.20
4-Sep	0.00	0.00	0.00	0.23
5-Sep	0.00	0.00	0.00	0.19
6-Sep	1.48	1.48	0.57	0.03
7-Sep	0.00	0.00	0.00	0.13
8-Sep	0.00	0.00	0.00	0.15
9-Sep	0.00	0.00	0.00	0.19
10-Sep	0.02	0.02	0.00	0.03
11-Sep	0.00	0.00	0.00	0.05
12-Sep	0.49	0.49	0.00	0.02
13-Sep	0.00	0.00	0.00	0.10
14-Sep	0.00	0.00	0.00	0.09
15-Sep	0.02	0.02	0.00	0.09
16-Sep	0.00	0.00	0.00	0.12
17-Sep	0.00	0.00	0.00	0.14
18-Sep	0.86	0.86	0.00	0.07
19-Sep	0.01	0.01	0.00	0.15
20-Sep	0.00	0.00	0.00	0.13
21-Sep	0.00	0.00	0.00	0.14
22-Sep	0.00	0.00	0.00	0.16
23-Sep	0.00	0.00	0.00	0.16
24-Sep	0.00	0.00	0.00	0.16
25-Sep	0.00	0.00	0.00	0.15
26-Sep	0.00	0.00	0.00	0.14
27-Sep	0.00	0.00	0.00	0.14
28-Sep	0.00	0.00	0.00	0.13
29-Sep	0.00	0.00	0.00	0.15
30-Sep	0.00	0.00	0.00	0.13
		0.00	0.00	
		2.89	0.57	
Volume, ac-ft		13.09	3.23	4.91
Total Vol, ac-ft		16.32		