

Quarterly Report 2016  
 North Troy Quarry  
 Mill Creek, OK  
 Vulcan Materials Company

2nd QTR

VMC North Troy 2016 Monitoring Report

All volumes are in acre-feet

	Total Groundwater Entering Pit	Total Stormwater Entering Pit	Total PA Stormwater Diverted	Total Pit Water Diverted	Pit Water Sent To Holding Basin	Groundwater Augmentation	Streamwater Augmentation	Consumptive Use of Pit Water	Streamwater Pumped From Mill Creek	Groundwater Pumped From Wells	Total Annual Groundwater Allocation, Ac-ft
January-16	343.14	1.28	1.28	330.36	53.06	241.05	39.78	4.10	0.00	0.00	219.50
February-16	303.78	16.79	16.79	314.86	51.53	263.89	65.07	6.65	0.00	0.00	219.50
March-16	270.82	27.14	27.14	267.20	5.80	348.12	122.45	8.71	0.00	1.48	219.50
1st QTR Totals	917.74	45.19	45.19	912.42	110.39	853.05	227.81	19.46	0.00	1.48	N/A
April-16	264.37	50.12	50.12	263.45	43.18	272.64	108.45	8.72	0.00	0.00	219.50
May-16	818.50	12.58	12.58	816.39	32.53	290.32	65.89	8.44	0.00	0.00	219.50
June-16	378.20	2.20	2.20	377.85	43.24	336.81	0.00	7.77	0.00	0.00	219.50
2nd QTR Totals	1461.18	64.80	64.80	1457.89	119.95	899.77	174.34	24.63	0.00	0.00	N/A
July-16											219.50
August-16											219.50
September-16											219.50
3rd QTR Totals											N/A
October-16											219.50
November-16											219.50
December-16											219.50
4th QTR Totals											N/A
2016 Totals											219.50

1st Qtr Notes

2nd Qtr Notes Pit Meter replaced Mar 10th

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May Precipitation/Evaporation Data

PIT RUNOFF ASSUMPTIONS	
Hydrologic Soil Group	D
Land Use	gravel road
AMC Condition	II (avg)
CN (in fringe)	88
CN (in pit)	100
S (in fringe)	1.343638
S (in pit)	0
Pit Direct Interception (±85 ft deep)	53.81
Pit fringe (area drains to pit)	122.04
Drainage to Pit (total area)	175.95
	area draining into pit
	area with direct interception
	area draining into pit
	area with direct interception
	subject to refinement
	subject to refinement

Date	Quarry area Fringe area		Daily Runoff, in.	Runoff formula
	Precip. in.	Runoff, in.		
1-May	0.07	0.07	0.23	Runoff formula
2-May	0.07	0.07	0.13	$Pe = (P-0.25)^2/2(P+0.85)$
3-May	0.00	0.00	0.10	$S = (1000/CN) * 10$
4-May	0.00	0.00	0.26	
5-May	0.00	0.00	0.24	
6-May	0.00	0.00	0.25	
7-May	0.00	0.00	0.29	
8-May	0.10	0.10	0.06	
9-May	0.89	0.89	0.00	
10-May	0.00	0.00	0.31	
11-May	0.00	0.00	0.28	
12-May	0.03	0.03	0.00	
13-May	0.00	0.00	0.26	
14-May	0.00	0.00	0.25	
15-May	0.00	0.00	0.16	
16-May	0.00	0.00	0.14	
17-May	1.36	1.36	0.00	
18-May	0.00	0.00	0.11	
19-May	0.06	0.06	0.06	
20-May	0.01	0.01	0.10	
21-May	0.00	0.00	0.22	
22-May	0.00	0.00	0.24	
23-May	0.16	0.16	0.1	
24-May	0.00	0.00	0.21	
25-May	0.02	0.02	0.00	
26-May	0.00	0.00	0.17	
27-May	0.00	0.00	0.21	
28-May	0.01	0.01	0.26	
29-May	0.00	0.00	0.24	
30-May	0.01	0.01	0.2	
31-May	0.01	0.01	0.12	
sum	2.86	2.86	8.16	
Volume, ac-ft		12.68		
Total Vol, ac-ft		12.58		

Blue cells contain formulas

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Pan Evaporation from Sulphur Mesonet

6.16

June Precipitation/Evaporation Data

PIT RUNOFF ASSUMPTIONS	
Hydrologic Soil Group	D
Land Use	gravel road
AMC Condition	II (ave)
CN (pit fringe)	68
CN (pit)	100
S (pit fringe)	1.363636
S (pit)	0
Pit - Direct Interception (1-95 ft deep)	53.91
Pit fringe (area drains to pit)	122.04
Drainage to Pit (total area)	175.95

Date	Precip. in.	Runoff, in.	Runoff, in.	Evaporation, in.	Daily
1-Jun	0.00	0.00	0.00	0.17	Runoff formula
2-Jun	0.01	0.01	0.00	0.06	Pe = (P-0.25)*2/(P+0.85)
3-Jun	0.03	0.03	0.00	0.18	S = (1000/CN)-10
4-Jun	0.09	0.09	0.00	0.19	
5-Jun	0.19	0.19	0.00	0.28	
6-Jun	0.11	0.11	0.00	0.26	
7-Jun	0.02	0.02	0.00	0.25	Runoff Data for G1-69 taken from
8-Jun	0.01	0.01	0.00	0.28	Mid Creek stream gage due to
9-Jun	0.00	0.00	0.00	0.3	weather station malfunction
10-Jun	0.00	0.00	0.00	0.32	
11-Jun	0.00	0.00	0.00	0.28	
12-Jun	0.01	0.01	0.00	0.11	
13-Jun	0.00	0.00	0.00	0.14	
14-Jun	0.00	0.00	0.00	0.24	
15-Jun	0.02	0.02	0.00	0.32	
16-Jun	0.00	0.00	0.00	0.28	
17-Jun	0.00	0.00	0.00	0.32	
18-Jun	0.00	0.00	0.00	0.26	
19-Jun	0.00	0.00	0.00	0.26	
20-Jun	0.00	0.00	0.00	0.37	
21-Jun	0.00	0.00	0.00	0.3	
22-Jun	0.00	0.00	0.00	0.37	
23-Jun	0.00	0.00	0.00	0.35	
24-Jun	0.00	0.00	0.00	0.34	
25-Jun	0.00	0.00	0.00	0.34	
26-Jun	0.00	0.00	0.00	0.28	
27-Jun	0.00	0.00	0.00	0.28	
28-Jun	0.00	0.00	0.00	0.3	
29-Jun	0.00	0.00	0.00	0.29	
30-Jun	0.00	0.00	0.00	0.28	
sum	0.48	0.48	0.00	7.91	

Volume, ac-ft 2.20  
 Total Vol, ac-ft 2.20  
 Pan Evaporation from Sulphur Measnet

RECEIVED

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Monthly Water Data, ac-ft

	Water Diverted From Pit	Storm Water Entering Pit	Net Sump Volume Change	Groundwater Sent To Holding Basin	Groundwater Sent To Infiltration Areas	Groundwater Used For Stream Augmentation	Evaporation	Moisture Content of Product Shipped	Water Truck Usage	Misc Pit Water Use On Site	Misc Pit Water Use Off Site	Production Well Permit 2002-602	North Well Permit 20060601A
January-15	331.037	1.26	12.78	53.06	239.77	39.79	1.78	1.43	0.88	0.00	0.00	0.00	0.00
February-15	331.654	18.79	-11.08	51.53	258.15	55.67	3.40	2.35	0.90	0.00	0.00	0.00	0.00
March-15	294.34	27.14	3.62	5.80	345.02	122.46	4.11	3.54	1.04	0.00	0.00	1.48	0.00
April-15	313.57	50.12	0.93	43.18	272.64	108.45	4.91	3.06	0.71	0.00	0.00	0.00	0.00
May-15	828.87	12.58	2.18	32.53	260.32	65.83	4.71	3.37	0.37	0.00	0.00	0.00	0.00
June-15	380.05	2.20	0.45	43.24	338.81	0.00	8.04	0.95	0.77	0.00	0.00	0.00	0.00
July-15										0.00	0.00	0.00	0.00
August-15										0.00	0.00	0.00	0.00
September-15										0.00	0.00	0.00	0.00
October-15										0.00	0.00	0.00	0.00
November-15										0.00	0.00	0.00	0.00
December-15										0.00	0.00	0.00	0.00

Pit Sump Volumes

Month End Depth-to-Water, Ft	West Sump			905 Sump			New Freshwater Pond			Total Evaporation, ac-ft		
	Width, Ft	Length, Ft	Sump Volume Change, ac-ft	Month End Depth-to-Water, Ft	Width, Ft	Length, Ft	Sump Volume Change, ac-ft	Month End Depth-to-Water, Ft	Width, Ft		Length, Ft	
January-15	174	324	12.18	4	50	50	0.00	5.405	475	475	750	1.78
February-15	125	324	-11.08	4	50	50	0.00	0.00	475	475	750	3.40
March-15	125	325	0.03	4	50	50	0.00	0.00	475	475	750	4.11
April-15	125	325	0.03	4	50	50	0.00	0.00	475	475	750	4.40
May-15	125	325	2.10	4	50	50	0.00	0.00	475	475	750	4.71
June-15	125	325	0.45	4	50	50	0.00	0.04	475	475	750	5.36
July-15	125	325		4	50	50	0.00		475	475	750	
August-15	125	325		4	50	50	0.00		475	475	750	
September-15	125	325		4	50	50	0.00		475	475	750	
October-15	125	325		4	50	50	0.00		475	475	750	
November-15	125	325		4	50	50	0.00		475	475	750	
December-15	125	325		4	50	50	0.00		475	475	750	

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	April Shipments		May Shipments		June Shipments	
	Tons Shipped	Ac-ft of water shipped	Tons Shipped	Ac-ft of water shipped	Tons Shipped	Ac-ft of water shipped
Base Products	1,013	0.047	1,787	0.044	3,028	0.074
Course						
Aggregates	184,422	2,337	237,426	2,854	61,078	0.734
Fine						
Aggregates	22,134	0.703	14,840	0.471	4,589	0.145
	218,489	3,087	254,053	3,389	68,675	0.953

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