

## 2022 2nd Quarter Report

Report 2022

North Troy Quarry

Mill Creek, OK

Vulcan Materials Company

### VMC North Troy 2022 Monitoring Report

All volumes are in acre-feet.

	All Water Pumped	Total Stormwater Entering Pit note(a)	Total Groundwater Diverted	Pit Water Sent To Holding Basin	Groundwater Augmentation	Streamwater Augmentation	Defined Elements of Consumptive Use of Pit Water	Streamwater Pumped From Mill Creek	Groundwater Pumped From Wells	Total Annual Groundwater Allocation, Ac-ft
January-22	599.84	4.07	595.77	3.47	601.12	0.00	4.06	0.00	0.00	219.50
February-22	338.68	8.60	330.08	8.53	332.32	0.00	3.56	0.00	0.00	219.50
March-22	747.52	14.71	732.81	21.60	732.65	0.00	5.26	0.00	0.00	219.50
<b>1st QTR Totals</b>	<b>1686.04</b>	<b>27.38</b>	<b>1658.66</b>	<b>33.60</b>	<b>1666.09</b>	<b>0.00</b>	<b>12.88</b>	<b>0.00</b>	<b>0.00</b>	<b>N/A</b>
April-22	663.40	22.29	641.11	24.83	640.99	0.00	5.88	0.00	0.00	219.50
May-22	615.50	55.32	560.18	88.87	532.11	0.00	5.71	0.00	0.00	219.50
June-22	624.70	29.21	595.49	61.53	565.67	0.00	5.80	0.00	0.00	219.50
<b>2nd QTR Totals</b>	<b>1903.60</b>	<b>106.83</b>	<b>1796.77</b>	<b>175.23</b>	<b>1738.76</b>	<b>0.00</b>	<b>17.39</b>	<b>0.00</b>	<b>0.00</b>	<b>N/A</b>
July-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
August-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
September-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
<b>3rd QTR Totals</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>N/A</b>
October-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
November-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
December-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	219.50
<b>4th QTR Totals</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>N/A</b>
<b>2022 Totals</b>	<b>3589.64</b>	<b>134.21</b>	<b>3455.43</b>	<b>208.83</b>	<b>3404.85</b>	<b>0.00</b>	<b>30.27</b>	<b>0.00</b>	<b>0.00</b>	<b>219.50</b>
<b>2022 Total (adj)</b>	<b>3589.64</b>	<b>134.21</b>	<b>3455.43</b>	<b>208.83</b>	<b>3404.85</b>	<b>0.00</b>	<b>30.27</b>	<b>0.00</b>	<b>0.00</b>	<b>219.50</b>

1st Qtr notes      Production well electric issue - unable pump / no sample

2nd Qtr notes

3rd Qtr notes

4th Qtr notes

(a)      Total Stormwater = Volume of precipitation that falls into producing mine pit and volume of precipitation that falls onto producing mine and flows over the land surface into the mine pit.

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March Precipitation/Evaporation 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)	1.3636364	area draining into pit	
S (pit)	0	area with direct interception	
Pit - Direct Interception (>95 ft deep)	111.00	subject to refinement	**
Pit fringe (area drains to pit)	77.00	subject to refinement	**
Drainage to Pit (total area)	188.00	subject to refinement	

Date	Precip. in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.
1-Mar	0.00	0.00	0.00	0.14
2-Mar	0.00	0.00	0.00	0.17
3-Mar	0.00	0.00	0.00	0.2
4-Mar	0.00	0.00	0.00	0.21
5-Mar	0.00	0.00	0.00	0.33
6-Mar	0.10	0.10	0.00	0.12
7-Mar	0.00	0.00	0.00	0.12
8-Mar	0.00	0.00	0.00	0.05
9-Mar	0.00	0.00	0.00	0.11
10-Mar	0.00	0.00	0.00	0.18
11-Mar	0.01	0.01	0.00	0.07
12-Mar	0.00	0.00	0.00	0.13
13-Mar	0.00	0.00	0.00	0.35
14-Mar	0.00	0.00	0.00	0.16
15-Mar	0.00	0.00	0.00	0.17
16-Mar	0.00	0.00	0.00	0.24
17-Mar	0.41	0.41	0.00	0.31
18-Mar	0.00	0.00	0.00	0.15
19-Mar	0.01	0.01	0.00	0.17
20-Mar	0.00	0.00	0.00	0.35
21-Mar	0.57	0.57	0.00	0.12
22-Mar	0.00	0.00	0.00	0.1
23-Mar	0.00	0.00	0.00	0.21
24-Mar	0.00	0.00	0.00	0.16
25-Mar	0.00	0.00	0.00	0.18
26-Mar	0.00	0.00	0.00	0.23
27-Mar	0.00	0.00	0.00	0.32
28-Mar	0.00	0.00	0.00	0.36
29-Mar	0.02	0.02	0.00	0.3
30-Mar	0.47	0.47	0.00	0.15
31-Mar	0.00	0.00	0.00	0.16
sum	1.59	1.59	0.00	6.92
Volume, ac-ft		14.71	0.00	
Total Vol, ac-ft		14.71		Pan Evaporation from Sulphur Mesonet

Runoff formula  
 $Pe = (P-0.2S)^2 / (P+0.8S)$   
 $S = (1000/CN)-10$

Blue cells contain formulas

April Precipitation/Evaporation 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)	1.3636364	area draining into pit	
S (pit)	0	area with direct interception	
Pit - Direct Interception (>95 ft deep)	111.00	subject to refinement	**
Pit fringe (area drains to pit)	77.00	subject to refinement	**
Drainage to Pit (total area)	188.00	subject to refinement	

Date	Precip. in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.
1-Apr	0.06	0.06	0.00	0.21
2-Apr	0.00	0.00	0.00	0.22
3-Apr	0.09	0.09	0.00	0.33
4-Apr	1.11	1.11	0.00	0.12
5-Apr	0.01	0.01	0.00	0.23
6-Apr	0.00	0.00	0.00	0.45
7-Apr	0.00	0.00	0.00	0.28
8-Apr	0.00	0.00	0.00	0.25
9-Apr	0.00	0.00	0.00	0.34
10-Apr	0.00	0.00	0.00	0.4
11-Apr	0.00	0.00	0.00	0.22
12-Apr	0.00	0.00	0.00	0.2
13-Apr	0.00	0.00	0.00	0.3
14-Apr	0.00	0.00	0.00	0.27
15-Apr	0.00	0.00	0.00	0.38
16-Apr	0.00	0.00	0.00	0.15
17-Apr	0.00	0.00	0.00	0.21
18-Apr	0.00	0.00	0.00	0.24
19-Apr	0.08	0.08	0.00	0.27
20-Apr	0.04	0.04	0.00	0.31
21-Apr	0.00	0.00	0.00	0.25
22-Apr	0.00	0.00	0.00	0.28
23-Apr	0.00	0.00	0.00	0.24
24-Apr	0.99	0.99	0.00	0.08
25-Apr	0.00	0.00	0.00	0.24
26-Apr	0.00	0.00	0.00	0.23
27-Apr	0.00	0.00	0.00	0.25
28-Apr	0.00	0.00	0.00	0.3
29-Apr	0.00	0.00	0.00	0.25
30-Apr	0.03	0.03	0.00	0.26
sum	2.41	2.41	0.00	7.76
Volume, ac-ft		22.29	0.00	
Total Vol, ac-ft		22.29		Pan Evaporation from Sulphur Mesonet

Runoff formula  
 $Pe = (P-0.2S)^2 / (P+0.8S)$   
 $S = (1000/CN)-10$

Blue cells contain formulas

May Precipitation/Evaporation 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)	1.3636364	area draining into pit	
S (pit)	0	area with direct interception	
Pit - Direct Interception (>95 ft deep)	111.00	subject to refinement	**
Pit fringe (area drains to pit)	77.00	subject to refinement	**
Drainage to Pit (total area)	188.00	subject to refinement	

Date	Precip. in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.
1-May	0.00	0.00	0.00	0.24
2-May	0.85	0.85	0.00	0.19
3-May	0.00	0.00	0.00	0.16
4-May	0.00	0.00	0.00	0.14
5-May	0.25	0.25	0.00	0.12
6-May	0.00	0.00	0.00	0.22
7-May	0.00	0.00	0.00	0.25
8-May	0.00	0.00	0.00	0.37
9-May	0.00	0.00	0.00	0.36
10-May	0.00	0.00	0.00	0.26
11-May	0.00	0.00	0.00	0.29
12-May	0.00	0.00	0.00	0.37
13-May	0.04	0.04	0.00	0.3
14-May	0.94	0.94	0.00	0.27
15-May	0.00	0.00	0.00	0.34
16-May	0.01	0.01	0.00	0.27
17-May	0.00	0.00	0.00	0.27
18-May	0.00	0.00	0.00	0.28
19-May	0.00	0.00	0.00	0.35
20-May	0.00	0.00	0.00	0.36
21-May	0.03	0.03	0.00	0.17
22-May	0.01	0.01	0.00	0.2
23-May	0.00	0.00	0.00	0.12
24-May	2.42	2.42	1.31	0.05
25-May	0.52	0.52	0.00	0.07
26-May	0.00	0.00	0.00	0.29
27-May	0.00	0.00	0.00	0.26
28-May	0.00	0.00	0.00	0.41
29-May	0.00	0.00	0.00	0.41
30-May	0.00	0.00	0.00	0.33
31-May	0.00	0.00	0.00	0.33
sum	5.07	5.07	1.31	8.05
Volume, ac-ft		46.90	8.43	
Total Vol, ac-ft		55.32		Pan Evaporation from Sulphur Mesonet

Runoff formula  
 $Pe = (P-0.2S)^2 / (P+0.8S)$   
 $S = (1000/CN)-10$

Blue cells contain formulas

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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-20	599.84	4.07	0.00	3.47	596.38	0.00	0.42	3.03	0.61	0.00	0.00	0.00	0.00
February-20	338.68	8.60	0.00	8.53	330.15	0.00	0.49	2.71	0.37	0.00	0.00	0.00	0.00
March-20	747.52	14.71	0.00	21.60	725.91	0.00	0.85	3.95	0.46	0.00	0.00	0.00	0.00
April-20	663.40	22.29	0.00	24.83	638.60	0.00	1.74	3.77	0.37	0.00	0.00	0.00	0.00
May-20	615.50	55.32	0.00	88.87	526.62	0.00	1.80	3.52	0.39	0.00	0.00	0.00	0.00
June-20	624.70	29.21	0.00	61.53	563.17	0.00	2.01	3.29	0.50	0.00	0.00	0.00	0.00
July-20		0.00				0.00	0.00	0.00		0.00	0.00		0.00
August-20		0.00				0.00	0.00	0.00		0.00	0.00		0.00
September-20		0.00				0.00	0.00	0.00		0.00	0.00		0.00
October-20		0.00				0.00	0.00	0.00		0.00	0.00		0.00
November-20		0.00				0.00	0.00	0.00		0.00	0.00		0.00
December-20		0.00				0.00	0.00	0.00		0.00	0.00		0.00

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Settling Cell Evaporation and Infiltration

	FO2 East						FO2 West					FO3/FO4 South Settling Cell								
	Width, Ft	Length, Ft	Evaporation, ac-ft	Number of Production Days	Infiltration Rate, Ac-ft/day	Total Infiltration, Ac-ft	Width, Ft	Length, Ft	Evaporation, ac-ft	Number of Production Days	Infiltration Rate, Ac-ft/day	Total Infiltration, Ac-ft	Width, Ft	Length, Ft	Evaporation, ac-ft	Number of Production Days	Infiltration Rate, Ac-ft/day	Total Infiltration, Ac-ft	Total Evaporation, ac-ft	Total Infiltration, ac-ft
January-20	50	330	0.00		0.08	0.00	50	350	0.10	19.00	0.22	4.23	200	435	0.48	19.00	0.03	0.51	0.59	4.74
February-20	50	330	0.11	20.00	0.08	1.64	50	350	0.00		0.22	0.00	200	435	0.57	20.00	0.03	0.53	0.68	2.17
March-20	50	330	0.00	0.00	0.08	0.00	50	350	0.20	27.00	0.22	6.02	200	435	1.00	27.00	0.03	0.72	1.20	6.74
April-20	50	330	0.24	22.00	0.08	1.80	50	350	0.00		0.22	0.00	200	435	1.29	22.00	0.03	0.59	1.54	2.39
May-20	50	330	0.00		0.08	0.00	50	350	0.27	22.00	0.22	4.90	200	435	1.34	22.00	0.03	0.59	1.61	5.49
June-20	50	330	0.28	23.00	0.08	1.88	50	350	0.00		0.22	0.00	200	435	1.49	23.00	0.03	0.61	1.78	2.50
July-20	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
August-20	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
September-20	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
October-20	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
November-20	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00
December-20	50	330	0.00		0.08	0.00	50	350	0.00		0.22	0.00	200	435	0.00		0.03	0.00	0.00	0.00

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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	3,959	0.097	Base Products	1,090	0.027	Base Products	2,314	0.057
Coarse			Coarse			Coarse		
Aggregates	261,500	3.143	Aggregates	216,941	2.607	Aggregates	235,998	2.836
Fine			Fine			Fine		
Aggregates	16,755	0.532	Aggregates	27,855	0.885	Aggregates	12,489	0.397
	282,214	3.772		245,886	3.519		250,801	3.290

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