

### MMM North Troy 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	Streamwater Pumped From Mill Creek	Groundwater Pumped From Wells	Total Annual Groundwater Allocation, Ac-ft
January-14	175.70	1.98	1.98	174.21	26.91	151.66	0.00	3.80	0.00	0.00	594.72
February-14	147.76	1.21	1.21	148.70	0.00	154.41	0.00	3.96	0.00	0.26	594.72
March-14	203.20	3.05	3.05	198.27	0.00	204.25	0.00	7.17	0.00	0.33	594.72
<b>1st QTR Totals</b>	<b>526.66</b>	<b>6.24</b>	<b>6.24</b>	<b>521.18</b>	<b>26.91</b>	<b>510.32</b>	<b>0.00</b>	<b>14.92</b>	<b>0.00</b>	<b>0.59</b>	<b>N/A</b>



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-14	176.18	1.98	1.49	26.91	149.27	0.00	1.76	2.04	0.00	0.00	0.00	0.00	0.00
February-14	149.92	1.21	-0.94	0.00	149.92	0.00	1.59	1.87	0.50	0.00	0.00	0.26	0.00
March-14	201.32	3.05	4.93	0.00	201.32	0.00	2.79	3.73	0.64	0.00	0.00	0.33	0.00
April-14		0.00					0.00	0.00		0.00	0.00		0.00
May-14		0.00					0.00	0.00		0.00	0.00		0.00
June-14		0.00					0.00	0.00		0.00	0.00		0.00
July-14		0.00					0.00	0.00		0.00	0.00		0.00
August-14		0.00					0.00	0.00		0.00	0.00		0.00
September-14		0.00					0.00	0.00		0.00	0.00		0.00
October-14		0.00					0.00	0.00		0.00	0.00		0.00
November-14		0.00					0.00	0.00		0.00	0.00		0.00
December-14		0.00					0.00	0.00		0.00	0.00		0.00

Pit Sump Volumes

	West Sump						905 Sump						New Freshwater Pond					Total Evaporation, ac-ft
	Month End Depth-to-Water, Ft	Width, Ft	Length, Ft	Sump Volume Change, Ac-ft	Evaporation, ac-ft	Month End Depth-to-Water, Ft	Width, Ft	Length, Ft	Sump Volume Change, Ac-ft	Evaporation, ac-ft	Month End Depth-to-Water, Ft	Width, Ft	Length, Ft	Pond Volume Change, Ac-ft	Evaporation, ac-ft			
January-14	17.634	125	325	1.49	0.20	4	50	50	0.00	0.01	3	475	750	0.00	1.76	1.97		
February-14	18.64	125	325	-0.94	0.18	4	50	50	0.00	0.01	3	475	750	0.00	1.59	1.78		
March-14	13.352	125	325	4.93	0.32	4	50	50	0.00	0.02	3	475	750	0.00	2.79	3.13		
April-14		125	325	0.00	0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
May-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
June-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
July-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
August-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
September-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
October-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
November-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		
December-14		125	325		0.00	4	50	50	0.00	0.00		475	750		0.00	0.00		

February 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)	1.36363636	area draining into pit
S (pit)	0	area with direct interception
Pit - Direct Interception (>95 ft deep)	53.91	subject to refinement
Pit fringe (area drains to pit)	122.04	subject to refinement
Drainage to Pit (total area)	175.95	subject to refinement

Date	Precip, in.	Quarry area Runoff, in.	Fringe area Runoff, in.	Daily Evaporation, in.
1-Feb	0.00	0.00	0.00	0
2-Feb	0.00	0.00	0.00	0.01
3-Feb	0.19	0.19	0.00	0.028
4-Feb	0.02	0.02	0.00	0.013
5-Feb	0.01	0.01	0.00	0.052
6-Feb	0.00	0.00	0.00	0.03
7-Feb	0.00	0.00	0.00	0.019
8-Feb	0.04	0.04	0.00	0.013
9-Feb	0.01	0.01	0.00	0.014
10-Feb	0.00	0.00	0.00	0.011
11-Feb	0.00	0.00	0.00	0.023
12-Feb	0.00	0.00	0.00	0.094
13-Feb	0.00	0.00	0.00	0.097
14-Feb	0.00	0.00	0.00	0.183
15-Feb	0.00	0.00	0.00	0.126
16-Feb	0.00	0.00	0.00	0.123
17-Feb	0.00	0.00	0.00	0.178
18-Feb	0.00	0.00	0.00	0.157
19-Feb	0.00	0.00	0.00	0.044
20-Feb	0.00	0.00	0.00	0.175
21-Feb	0.00	0.00	0.00	0.168
22-Feb	0.00	0.00	0.00	0.166
23-Feb	0.00	0.00	0.00	0.104
24-Feb	0.00	0.00	0.00	0.052
25-Feb	0.00	0.00	0.00	0.083
26-Feb	0.00	0.00	0.00	0.105
27-Feb	0.00	0.00	0.00	0.123
28-Feb	0.00	0.00	0.00	0.145
		0.00	0.00	
		0.00	0.00	
		0.00	0.00	
sum	0.27	0.27	0.00	2.34
<b>Volume, ac-ft</b>		<b>1.21</b>	<b>0.00</b>	
<b>Total Vol, ac-ft</b>		<b>1.21</b>		

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

Blue cells contain formulas

January 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)	1.363636364	area draining into pit
S (pit)	0	area with direct interception
Pit - Direct Interception (>95 ft deep)	53.91	subject to refinement
Pit fringe (area drains to pit)	122.04	subject to refinement
Drainage to Pit (total area)	175.95	subject to refinement

Date	Precip, in.	Quarry area	Fringe area	Daily
		Runoff, in.	Runoff, in.	Evaporation, in.
1-Jan	0.00	0.00	0.00	0.096
2-Jan	0.00	0.00	0.00	0.064
3-Jan	0.00	0.00	0.00	0.093
4-Jan	0.00	0.00	0.00	0.104
5-Jan	0.00	0.00	0.00	0.068
6-Jan	0.00	0.00	0.00	0.055
7-Jan	0.00	0.00	0.00	0.097
8-Jan	0.06	0.06	0.00	0.021
9-Jan	0.03	0.03	0.00	0.011
10-Jan	0.35	0.35	0.00	0.037
11-Jan	0.00	0.00	0.00	0.128
12-Jan	0.00	0.00	0.00	0.194
13-Jan	0.00	0.00	0.00	0.139
14-Jan	0.00	0.00	0.00	0.112
15-Jan	0.00	0.00	0.00	0.089
16-Jan	0.00	0.00	0.00	0.137
17-Jan	0.00	0.00	0.00	0.095
18-Jan	0.00	0.00	0.00	0.126
19-Jan	0.00	0.00	0.00	0.09
20-Jan	0.00	0.00	0.00	0.115
21-Jan	0.00	0.00	0.00	0.068
22-Jan	0.00	0.00	0.00	0.062
23-Jan	0.00	0.00	0.00	0.032
24-Jan	0.00	0.00	0.00	0.07
25-Jan	0.00	0.00	0.00	0.112
26-Jan	0.00	0.00	0.00	0.02
27-Jan	0.00	0.00	0.00	0.074
28-Jan	0.00	0.00	0.00	0.053
29-Jan	0.00	0.00	0.00	0.059
30-Jan	0.00	0.00	0.00	0.085
31-Jan	0.00	0.00	0.00	0.073
sum	0.44	0.44	0.00	2.58
Volume, ac-ft		1.98	0.00	
Total Vol, ac-ft		1.98		

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

Blue cells contain formulas

**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)	1.363636364	area draining into pit
S (pit)	0	area with direct interception
Pit - Direct Interception (>95 ft deep)	53.91	subject to refinement
Pit fringe (area drains to pit)	122.04	subject to refinement
Drainage to Pit (total area)	175.95	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	0.034
2-Mar	0.00	0.00	0.00	0.014
3-Mar	0.00	0.00	0.00	0.054
4-Mar	0.00	0.00	0.00	0.09
5-Mar	0.14	0.14	0.00	0.081
6-Mar	0.01	0.01	0.00	0.08
7-Mar	0.00	0.00	0.00	0.142
8-Mar	0.03	0.03	0.00	0.025
9-Mar	0.00	0.00	0.00	0.118
10-Mar	0.00	0.00	0.00	0.183
11-Mar	0.00	0.00	0.00	0.225
12-Mar	0.00	0.00	0.00	0.21
13-Mar	0.00	0.00	0.00	0.192
14-Mar	0.00	0.00	0.00	0.179
15-Mar	0.16	0.16	0.00	0.009
16-Mar	0.00	0.00	0.00	0.001
17-Mar	0.01	0.01	0.00	0.128
18-Mar	0.00	0.00	0.00	0.225
19-Mar	0.00	0.00	0.00	0.138
20-Mar	0.00	0.00	0.00	0.176
21-Mar	0.00	0.00	0.00	0.202
22-Mar	0.00	0.00	0.00	0.114
23-Mar	0.00	0.00	0.00	0.188
24-Mar	0.00	0.00	0.00	0.165
25-Mar	0.00	0.00	0.00	0.16
26-Mar	0.30	0.30	0.00	0.05
27-Mar	0.02	0.02	0.00	0.161
28-Mar	0.00	0.00	0.00	0.113
29-Mar	0.00	0.00	0.00	0.192
30-Mar	0.00	0.00	0.00	0.272
31-Mar	0.01	0.01	0.00	0.175
sum	0.68	0.68	0.00	4.10

**Volume, ac-ft**                      **3.05**                      **0.00**  
**Total Vol, ac-ft**                      **3.05**

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

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January Shipments			February Shipments			March Shipments		
	Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped		Tons Shipped	Ac-ft of water shipped
Base Products	11,738	0.287	Base Products	15,194	0.372	Base Products	15,358	0.376
Coarse			Coarse			Coarse		
Aggregates	113,757	1.367	Aggregates	71,549	0.860	Aggregates	147,258	1.770
			Fine					
Fine Aggregates	12,199	0.388	Aggregates	20,013	0.636	Fine Aggregates	49,858	1.584
	137,694	2.042		106,756	1.868		212,474	3.730