APPENDIX D

Monitoring Well Construction Logs

2008 MONITORING WELL LOGS

PROJ	ECT:	Fo	ormer	West	Station Plant Area MGP Site	Log of Well No	o. GM	X-MW-01Da-d		
BORIN	NG LO	OCA		l: Se	ee Site Plan for MW locations	TOP OF RISER ELEVAT	ION:	DATUM:		
DRILL	ING	COI	NTRA	CTOR	R: Nothnagle Drilling Company	DATE STARTED: DATE FINISHED:				
DRILL	ING	ME	THOE): 41	/4" dia. HSA/HQ Core Barrel/ 11 7/8" Roller bit	TOTAL DEPTH:		SCREEN INTERVAL:		
DRILL	ING	EQI	JIPMI	ENT:	CME-85 Rotary Drill Rig	DEPTH TO FIRST (OMPL.	CASING:		
SAMP	LING	s Me	тно	D: 2"	" Split Spoon	LOGGED BY:				
НАММ	IER \	NEI	GHT:	140	b DROP: 30" (auto)	RESPONSIBLE PROFES	SIONAL	: REG. NO.		
├	SA	MPL	ES		DESCRIPTION	R. Frappa				
DEPTH (feet)	ample No.	ample	lows/ foot	(mdd)	NAME (USCS Symbol): color, moist, % by weight, plast., cementation, react. w/HCl, geo. inter.	tructure,		CILLING REMARKS		
	š	š	<u> </u>		Surface Elevation: 413.94 fmsl		st	ickup		
1-					see log of GMX-MW-1S for 0-30' litholog			GMX-MW-1Da		
2_	-						0.00 0.00 0.00	— GMX-MW-1Db		
	-									
4 - - 5 -	-									
6-	-						.0.00 .0.00			
7-							0 0 0			
8_	-						0.00 0.00			
9-	-						0 0			
							0.0			
12-	-						0.000 0.000			
13-	-						0 0			
14-	-									
15-	-						00 00 00 00			
16-	-						0.0			
	-						0.00			
18-							0.0 0.0			
20-							0 00 0 00			
21-	-						· · · · · ·			
22-	-						0.00			
23-							0 0 0			
24-							0.000 0.000 0.000 0.000 0.000			
25-							0.00			
							0.00			
21-							0.00			
20-							0.00			
30-										
Proje	ct No.	120	661.00)2	Geomatri Geomatri	C Consultants		Page 1 of 3		

PROJECT: Former West Station Plant Area MGP Site

Log of Well No. GMX-MW-01D (cont'd)

	SA	MP	LES				
DEPTH (feet)	Sample No.	Sample	Blows/ foot	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
31 - 32 - 33 - 34 -	- - - R#1	\succ		0.0	interbedded shale/limestone - medhard grey fine grained limestone with shale interbeds throughout - typically less than or equal to 0.5" in thickness, few shells at 30.1', minor dolomitization at 30.4-32.8' exhibiting few small (1mm) vugs, frequent mechanical breaks, no in-situ joints noted, minor horizontal fracturing (closed) at 34' within shale interbeds	 * Run #1: lost 15 water, drill rate = approximately 2 min./foot, bottom of Rochester Sha is a brown friable 	gal 15' ile
35-					ROD: 31"/49" (63%)	shale not present	(
36-					(35-40') Run #2: Rochester Shale		
37-	R#2				same as above becoming slightly less calcareous with shale (med. bedded) dominating, heavily broken zones at 37 7-37 9' and 39-40'	Limestone Kun #2: lost 15 water, lose water	gal
38-					No NAPL presence on core or within fractures, could	received at 39', regained quickly	at
39-		Х			staining present	39.1'	
40-					RQD: 22"/39" (56%) (40-45') Run #3: Rochester Shale		nal
41	-				same as above becoming more calcareous (medhard)		yai m
42-	R#3			0.0	throughout, shale seam at 42.5' exhibits slight odor,	- - except at 42.5' - - - where 1.5ppm	
43-					open vertical joint (partially healed) at 42.9-43.1' RQD: 49"/60" (82%)	│	
44-						2" dia, 0.01" slot	
45-					(45-50') Run #4: Rochester Shale		
46-					shale partings throughout, significant increase of		al,
47-	R#4			0.0	calcareous component (frequent shells, crinoid rubble, few small vugs)	- Run #4: lost 10 - water	gai
40-					no NAPL presence RQD: 47"/57" (82%)		
49-		\sim					
50_ 51-					(50-55') Run #5: Irondequoit Limestone medhard grey limestone with shaley interbeds, shale		
52-					partings (weathered to clay at 52.1, 52.7, 53.1, & 53.7), shale bed (moderately weathered) at 54-54.2', 3-4mm	* Run #5: lost 15	aal
53-	R#5			0.0	vugs encountered throughout, brachiopods & crinoid	water Choke Sand	J *
 54 -					no odors, sheens or staining observed	│	
55-	-				RQD: 48"/60" (80%)		
56 -					(55-60') Run #6: Irondequoit Limestone same as above grading to a light grey limestone with		
50	-				frequent small 1-2mm dia. vugs between 55.8 & 57.3'		
57-	R#6			0.0	and grey to dark grey limestone with shaley interbeds to 60'	- Run #6: lost 15 water, drill rate =	gai
58-	-				no NAPL, odors, staining or sheers	approximately 3	
59-					NQD. 40 730 (02 %)		
60-		Î			(60-65') Run #7: Irondequoit Limestone		
61-					dark grey limestone with shaley interbeds - 2 open vertical joints at 61-61.4' and 63.2-63.5', shale is		
62- - 63-	R#7			0.0	unweathered, few med. breaks bottom 1.5' increasing green thinly bedded shale at 64-65'	Poor rock qualit the bedrock surfa necessitates the	y at ice
64 -					RQD: 100%	need to ream out	ha
65-		U				4 1/2" roller bit to	a ,
66-					(65-70') Run #8: Irondequoit Limestone to Williamson Shale at 68'	depin of 38 (very difficult to advance accing during	æ
					1		
Droic	ot NIa	40	0664.00	2	Coomstriv Consultant	WELL_OVM ALL MONITORING WELLS.GPJ (5/0)9)
Fiojed	JL INO.	12	.001.00	~		Page 2 of 3	

PROJE	ECT:	Former	West	Station Plant Area MGP Site Log of Well N	lo. GMX-MW-01D (cont'd)
—	SA	MPLES			
DEPTH (feet)	Sample No.	Sample Blows/ foot	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS 1Dc 1Dd
67 - 68 - 69 - 70 -	R#8		0.0	grey to green shale with limestone interbeds at 67' & 68.5' - several mechanical breaks within shale, open vertical fracture between 67' & 67.5', moderately weathered shale at 68' & 68.5', locally weathered to clay no NAPL, staining or sheens RQD: 41"/58" (71%)	- coring) - * Run #8: lost 10 gal water
71 - 72 - 73 - 74 -	R#9		0.0	(70-75') Run #9: Williamson Shale to Sodus Shale at 74' dark green to grey shale - few partings and slightly weathered mudseams at 70.5' and 73.5', no vertical fracturing, some pitting from calcareous solutioning, thinnly bedded RQD: 40"/60" (67%)	* Run #9: lost 20 gal * Run #9: lost 20 gal water
75_ 76_ 77_ 78_ 78_ 79_	R#10			(75-80') Run #10: Sodus Shale same shale as above - very broken with occasional clay seams, very broken zone at 76.5-77.5', limestone interbed at 77.6-77.8', many brachiopods from 76.5-79' no odors or sheens RQD: 30%	* Run #10: lost 20 gal water
80- 81- 82- 83- 83- 84-	R#11	×		(80-85') Run #11: Sodus Shale same thin bedded shale - more calcareous, abundant brachiopods, very broken zone at 80-81' becoming massive below 82' and less fossils RQD: 53%	* Run #11: lost 120 gal water (mostly from 80-81')
85 - 86 - 87 - 88 - 88 - 89 -	R#12	\times		(85-90') Run #12: Sodus Shale grey, massive, thin bedded shale - occasional bedding plane fractures and brachiopods RQD: 96%	 * Reaming at 10" coverhole to 96' complete. Minimal water loss (less than 20g) during 10 hour reaming process. Purge drill water and rinse coverhole w/ potable water.
90- 91- 92- 93-	R#13			(90-95') Run #13: Reynales Limestone light grey hard limestone - med. grained shaley interbeds at 90-92', broken zone at 91-92', stylotites at 94', near vertical fracture from 93.7' to 94.2' RQD: 3'/4.8' (63%)	Allowed well to sit
94 - 95 - 96 - 97 -					Tor about 1 hr and water level rises to within 30' of ground surface with air, purge accumulated water. (~1,500 gal. purged)
98- 99- 100- 101-					
102_					-
				I	
Project		12661 0	12	Coomstriv Consultanta	WELL_OVM ALL MONITORING WELLS.GPJ (5/09)
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PROJECT	Г:	Fo	rmer	West S	tation Plant Area MGP Site	Log of Well No. GMX-MW-01S						
BORING	LOC	ATI	ON:	Se	e Site Plan for MW locations	TOP OF RISER ELEVATION: DATUM: 416.93 fmsl barge can						
DRILLING	G CC	DNTI	RACTO	OR: No	othnagle Drilling Company	DATE STARTED: DATE FINISHED: 9/23/08 9/23/08						
DRILLING	G MI	ETH	OD: 4	4 1/4" c	dia. Hollow Stem Augers/ HQ Core Barrel	TOTAL DEPTH: 30.0 fbgs				SCREEN INTERVAL: 20-30 fbgs		
DRILLIN	G EC	QUIP	MENT	: CME	E-85 Rotary Drill Rig	DEPTH TO FIRS WATER: 2	ST 4 ft	¦co	MPL.	CASING:		
SAMPLIN	NG N	ΛETH	HOD:	2" Spl	it Spoon	LOGGED BY: MAC						
НАММЕ	RW	EIGH	IT: 14	40lb	DROP: 30" (auto)	RESPONSIBLE PROF R. Frappa	FESSIC	DNA	L:	REG. NO.		
DEPTH (feet)	SAMPLES DESCRIPTION Image: Second s					re,	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS					
					Surface Elevation: 413.94 fmsl		~~~~		st	tickup		
	1	$\Big $	8 9	0.1	Gravel - dry, no odors or staining	iestone 						
2- 3-	2	\sum	16 14 8 7	2.0	FILL - brown fine to med. Sand grading to dar to black, coarse limestone Gravel, cobble lodge shoe. dry	rk brown cystowed in cystowed				* collected 2-4'		
4 5	3	$\stackrel{\sim}{\rightarrow}$, 6 4 4	40	- strong petroleum hydrocarbon-type odor at 3 FILL - brown fine to med. Sand and coarse lim Gravel - dry, black staining, sheens	estone			analysis Grout to Surface			
6		\bigcirc	9 5 7		FILL - brown fine Sand with Silt lodged in shoe	FILL - brown fine Sand with Silt lodged in shoe						
7- 8-	4	Å	2 3 3	20						* poor recovery		
9-	5	\square	3 3	10								
10- 11-	6	$\overline{\langle}$	4 4 5 3	0.7	FILL - brown fine Sand with Silt - slight petroleum hydrocarbon-type odor, no s sheens	staining or -		•		——2" dia. PVC Riser		
12-	7	$\left\{ \right\}$	5 5 5	0.5								
14-		$\left\{ \right\}$	3 5 5 8	0.5								
16-	8	Š	3 7 7	0.5								
17 <u>-</u> 18 <u>-</u>	9	Å	10 15 10 8	0.3	FILL - brown fine Sand with Silt, trace brick and clinker/coal fragments moist throughout, compact, some black stainir	ng at				——3/8" Bentonite Chips		
19 – 20 –	10	Ż	7 9 9	0.3	- petroleum hydrocarbon-type odor				•	#00N Filter Sand		
21 -	11	\rightarrow	7 11 3	22.8								
22 -			4 5		FILL - brown fine Sand with Silt, trace brick and	d, –		•		2" dia. PVC Screen		
23 -	12	X	7 3 7	8.7	weathered concrete at 23.5-24', moist, loose to	compact				* spoon bouncing:		
25 -	13	$\left \right\rangle$	7 31 21	32		/ _ /				auger refusal at 29' * overdrill 4 1/4" HSA with 10 1/4"		
26 -	14	\mathbb{R}	9 20 8	30	Fine Gravel (GP), some med. Sand, saturated, black staining, strong sheens	loose, –				dia. auger to prepare for 10"		
28	ŧ	$\left \right $	16 16 18		friable limey Shale bedrock moist					* roller bit. to 30', heavy sheens & NAPL blebs		
29-	15		100/.5							returned in received water		
Project	No.	1266	51.002		Geomatrix	Consultants	W	/ELL_O	IVM ALL MC	DNITORING WELLS.GPJ (5/09) Page 1 of 1		

PROJECT: Former	West S	tation Plant Area MGP Site	Log of Well No. GMX-MW-02D						
BORING LOCATION:	Se	e Site Plan for MW locations	TOP OF RISER	DATUM:					
DRILLING CONTRACT	OR: No	othnagle Drilling Company	DATE STARTE	DATE FINISHED:					
DRILLING METHOD:	6 1/4" c	dia. Hollow Stem Augers	TOTAL DEPTH	l:	SCREEN INTERVAL:				
DRILLING EQUIPMEN	T: CME		DEPTH TO	FIRST	COMPL.	CASING:			
SAMPLING METHOD:	2" Spl	it Spoon	LOGGED BY:	L					
HAMMER WEIGHT: 1	40lb	DROP: 30" (auto)	RESPONSIBLE	RESPONSIBLE PROFESSIONAL:					
SAMPLES		DESCRIPTION	К. Frappa	V	VELL CONSTR AND/OR DRI	UCTION DETAILS LLING REMARKS			
DEPTh DEPTh (feet ample ample slows/ foot	(mdd)	cementation, react. w/HCl, geo. inter.	iie,						
		Surface Elevation: 414.43 fmsl			st	ickup			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.0	FILL - brown topsoil, some fine limestone Gra wood fiber FILL - black fine Sand (possibly foundry sand), coarse Sand and fine angular limestone Grave moist	some			* Open Rock Hole			
3 - 2 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 -	0.0								
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.0	FILL - brown fine Sand, little brick moist, soft to loose, no odors or staining	MXMW2S(2-4')			* collected samples for lab analysis: 6-8' and 22-22.4'			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.0		Ū			Cement/ bentonite grout			
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.0	FILL - Shale Gravel, some fine Sand, trace Silt a occ. pieces of brick lodged in shoe	and		•				
	0.0					Riser to 2' below bedrock			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.0	FILL - brown fine Sand with Silt, trace coarse S little brick and coal, some Gravel 18-20', cobble in shoe - moist, soft	and, e lodged						
19 - 10 2 20 - 15	0.0								
20 - 9 - 9	N/A	NO RECOVERY	5			* auger grinding @			
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		Gravel (GP) with loose fine Sand and Silt, sat	urated,			22'			
		weathered Shale bedrock							
		moist (24-29') Run #1: light grey/brown hard Limes	tone			* advanced auger to 24'			
25 - 26 - 27 -		with thin shale interbeds, few unweathered sh partings, few 1-2" long sub vertical fractures, so small vugs throughout (<2mm dia.) no odors, no sheen	ale everal			* lost 125 gal water (steady)			
		recovery: 3.2'/5' (79%) RQD: (68%)							
					•	Bedrock			
30		(29-34') Run #2: light grey/brown hard Limes	tone						
Project No. 12661.002		Geomatrix	Consultants	v	VELL_OVM ALL MC	Page 1 of 2			
<u> </u>									

PROJI	ECT:	Fc	ormer	West Stat	ion Plant Area MGP Site	Log of Well N	lo. (GMX	(-MW-02	2D (cont'd)
۲,	SA	MPL	ES		DESCRIPTION					
DEPT (feet	Sample No.	Sample	Blows/ foot	(mqq)	NAME (USCS Symbol): color, moist, % b structure, cementation, react. w/HCI	y weight, plast., geo. inter.		WELL AND	CONSTRUC OR DRILLIN	TION DETAILS G REMARKS
- 21	-				with few small breaks and crinoid ste	ems in cross section	_			* lost 275 gal water (steady)
31- -					recovery: 5'/5'		-			* average drill rate = 3 min./foot
ວ <u>2</u> –	1				RQD: (68%)		-			
33-	1						-			Open HQ Covernole
34-					(34-39') Run #3: light grey/brown ha	rd Limestone	-			
35-					no odors, no sheen	ig snale partings	-			* lost 80 gal water (steady)
36-	-				recovery: 5'/5' (79%) ROD [.] (32%)		_			* average drill rate = 2.5 min./foot
37-	-						_			
38-							_			
39_										
40_							_			
41-							_			
42-							_			
43-							-			
44-]						-			
45-							-			
46-							-			
47-	-						-			
48-	-						_			
49-	-						_			
50-	-						_			
51-							_			
52-							_			
53-										
51_							_			
55							_			
55							-			
- 50 							_			
5/- 							-			
58- -]						7			
59-	1						7			
60-							-			
61-	-						-			
62-	1						-			
63-	-						1			
64-							1			
65_							_			
66-							-			
								WELL_C	OVM ALL MONITO	RING WELLS.GPJ (5/09)
Projec	ct No.	12	661.00	02	Geo	omatrix Consultants				Page 2 of 2

PROJE	CT:	Fc	ormer	West S	itation Plant Area MGP Site	Log o	f Wel	l No. G	MX-N	1W-02S	
BORIN	G LOO	CATI	ON:	See Si	ite Plan for MW locations	TOP OF RISER ELEVATION: DATUM: 416.85 fmsl barge canal					
DRILLI	NG CO	ЭМТ	RACT	OR: No	othnagle Drilling Company	DATE STARTED: 10/6/08	DATE STARTED: DATE FINISHEE				
DRILLI	NG M	ETH	OD: 4	4 1/4" c	dia. Hollow Stem Augers	TOTAL DEPTH: 23.0 fbas			SCR 13-2	EEN INTERVAL: 2.6 fbgs	
DRILLI	NG EC	QUIF	MENT	: CME	E-85 Rotary Drill Rig	DEPTH TO F	IRST 22 ft	COMPL.	CAS	ING:	
SAMPL	ING N	MET	HOD:	Not sa	ampled for lithology	LOGGED BY:		1			
намм	ER W	EIG	HT: 14	40lb	DROP: 30" (auto)	RESPONSIBLE PF	RESPONSIBLE PROFESSIONAL:				
EPTH (feet)	SAI	mple aldu	oot SS	(mdd)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., str cementation, react. w/HCl, geo. inter.	ucture,		WELL CONST AND/OR DI	RUCTION RILLING F	N DETAILS REMARKS	
	Sai	Sai	, Bi		Surface Elevation: 414.43 fm	sl			~2.25' st	ickup	
1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -					see log of GMX-MW2D for lithology					Grout to surface 2" dia. PVC Riser * hydrated bentonite chips 3/8" Bentonite Chips #00N Filter Sand 2" dia. PVC Screen	
27 -						:	-				
28 -											
29 -						-	-				
30 -	1						v	VELL_OVM ALL N	MONITORIN	G WELLS.GPJ (5/09)	
Projec	t No.	1266	51.002		Geomatr	ix Consultants				Page 1 of 1	

PROJECT: Former We	est Station Plant Area MGP Site	Log of Well No. GMX-MW-03D						
BORING LOCATION:	See Site Plan for MW locations	TOP OF RISER ELEVATION: DATUM: 413.72 fmsl barge canal						
DRILLING CONTRACTOR	: Nothnagle Drilling Company	DATE STARTED: DATE FINISHED 10/7/08 10/7/08						
DRILLING METHOD: 61	/4" dia. Hollow Stem Augers/ HQ Core Barrel	46.0 fbgs	N/A fbgs					
DRILLING EQUIPMENT:	CME-85 Rotary Drill Rig	DEPTH TO FIRST CO WATER: 19 ft	MPL. CASING:					
SAMPLING METHOD: 2'	' Split Spoon	LOGGED BY: MAC						
HAMMER WEIGHT: 140	b DROP: 30" (auto)	RESPONSIBLE PROFESSIONA R. Frappa	L: REG. NO.					
DEPTH DEPTH (feet) No. Slows/ foot	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structur cementation, react. w/HCl, geo. inter.	re, WELL AND	CONSTRUCTION DETAILS D/OR DRILLING REMARKS					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Surface Elevation: 413.72 fmsl FILL - tan/brown fine Sand, Silt and fine angula 0.0 Gravel, some loose coarse Sand, trace brick and concrete no odors or staining 0.1 FILL - black foundry Sand with coal clinker, sor	ar I ne	flush mount curb box flush mount curb box flush mount curb box					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	masonry brick dry, no odors FILL - black Sand with little brick very slight petroleum odor FILL - coal with cotton fabric, abundant wood little Sand and trace glass, taffy like consistency	fiber,	Cement/ Betonite					
	 (possible tar), strong coal tar-like odor FILL - brown fine Sand with refractory brick strong odors 		Grout 4" Steel Casing Riser to 2' below					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - wood fiber (poor recovery)		bedrock* PID readings coming from wood					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	 FILL - black fine to med. Sand, wood fiber, trac viscous taffy like matrix very strong coal tar-like odor 	e brick,						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - med. to coarse black Sand, trace fine rou Gravel and brick, moist, petroleum hydrocarbo odor	inded on type						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - weathered to fine angular siltstone bedr Gravel - strong odors	rock						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	 FILL - bedrock fragments with the sand and s matrix saturated, no sheen, strong petrol odor FILL - bedrock fragments, trace brick and red s pieces 	ihale						
23 - 12 $3 - 2724 - 18$	very light sheen, petrol odor							
	Gravel fragments							
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - fine Sand, Silt, weathered brown bedroc Gravel fragments, blebs of NAPL	k -						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - med. Sand saturated		* spoon bouncing @ 28'					
$30 \xrightarrow{57} 7$	Shale bedrock							
Project No. 12661.002	Geomatrix G		Page 1 of 2					

PROJECT:	Former West Station Plant Area MGP Site
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Log of Well No. GMX-MW-03D (cont'd)

H H	
31 12 moist, lightly weathered, visible laminating - * auger refusal 32 54 (31-36') Run #1: hard, grey to light grey limestone - 30.5' 32	I DETAILS EMARKS
35 dark grey shale 36 RQD: 23"/50" (46%) 37 (36-41') Run #2: hard, grey limestone with shale interbeds and several shale wrip-ups at 40-41', few healed subvertical fractures RQD: 40"/60" (67%) 40 41 42 43 R#3 44 45 46 47	I DETAILS MARKS ger refusal @ n #1: less than I water lost, drill approximately nin./feet n #2: less than I water lost rock ben HQ erhole d of corehole at
48-	WELLS.GPJ (5/09) age 2 of 2

PROJECT: Former West Station Pla	ant Area MGP Site	Log of Well No. GMX-MW-03S					
BORING LOCATION: See Site Plar	n for MW locations	TOP OF RISER ELEVATION: DATUM:					
DRILLING CONTRACTOR: Nothnac	le Drilling Company	DATE STARTED: DATE FINISHEI 10/7/08 10/7/08					
DRILLING METHOD: 6 1/4" dia. Ho	llow Stem Augers	TOTAL DEPTH: SCREEN INTER 29.0 fbas 18-28 fbas					
DRILLING EQUIPMENT: CME-85 RC	otary Drill Rig	DEPTH TO FIRST COMPL WATER: 19 ft	. CASING:				
SAMPLING METHOD: 2" Split Spoo	on	LOGGED BY: MAC	I				
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.				
SAMPLES ample foot foot foot foot foot foot	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structu cementation, react. w/HCl, geo. inter.	Ire, WELL CON AND/OR	STRUCTION DETAILS DRILLING REMARKS				
	Surface Elevation: 413.72 fmsl		flush mount curb box				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	see log of GMX-MW3D for lithology		Cement/bentonite Grout to surface 3/8" bentonite chips #00N Iter sand 2" dia. PVC Screen				
	Shale bedrock (see log of GMX-MW3D)						
Project No. 12661.002	Geomatrix		Page 1 of 1				

PROJECT: Former West Station Plant Area MGP Site								Log of Well No. GMX-MW-04S						
BORING	G LOO	CATI	ON:	Se	e Site Plan for	MW locations		TOP OF RISER ELEVATION: DATUM: 416.26 fmsl barge ca						JM: Irge canal
DRILLIN	NG CO	ONT	RACT	OR: No	othnagle Drill	ing Company		DATE STARTED: DATE FINISHED: 10/8/08 10/8/08						E FINISHED: /08
DRILLIN	NG M	ETH	OD:	4 1/4" c	dia. Hollow Sto	em Augers		TOTAL DEPTI 21.1 fbgs	H:				SCRE 11-20	EN INTERVAL: D.5 fbgs
DRILLIN	NG EC	QUIF	PMEN	T: CME	E-75 Rotary Dr	ill Rig		DEPTH TO WATER:	FIR	ST	CO	MPL.	CASI	NG:
SAMPL	ING I	MET	HOD:	2" & 3	" Split Spoons	5		LOGGED BY: G. Combes						
намм	ER W	/EIGł	HT: 1	40lb		DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.		
DEPTH (feet)	SA No.	ample AM	Blows/ ST foot	(mdd)	N/	DESCR AME (USCS Symbol): color, mois cementation, read	RIPTION st, % by weight, plast., structu ct. w/HCl, geo. inter.	ıre,		WELL CONSTRU			RUCTION	DETAILS EMARKS
	Š	š	8		EU L-	Surface Elevation	on: 413.78 fmsl	vil				s	tickup	collected 8'-10'
	1		2 2 5	0.0	dry FILL -	light grey and black	fine Sand, fine grav	el,					1 S a	2'-14' and 20'-22' ample for lab. nalysis
	2	\mathbb{X}	5 4 4	0.0	dry FILL -	of brick black fine Sand, trace	e-fine gravel, piece	es of					(Cement/Bentonite Grout to Surface
5-	3	\triangleright	5 24/2'	0.0	dry, no FILL -	odor brown fine to med. S	Sand, fine angular G	iravel,					* 	3" spoon used for I-6' only
6- - 7-	4	\square	8	8.2	dry	orconcrete					•		2	" dia. PVC Riser
8-	5	$\left\{ \right\}$	4 1 3	185.0	FILL - coal, co wet at	black fine med. Sand bal tar-like material 8 bottom, light sheen	l, fine Gravel, pieces -11'(separate phase pushed cobble wit	s of e), h sampler	45W(8-10				3	8/8" bentonite seal
10-		$\left \right\rangle$	1 4 25	180.5	coal ta	r-like odor						•	#	00N Filter sand
11	6	\square	13 13 13	24.2	FILL - Sand, S	Coal, fine Gravel, pie Silt and coal tar-like n	ces of brick, some fi naterial	ine	V(1 2-14)					
13 – 	7	\square	5 5 11 8	290	FILL - wet, ur	rotten wood and san hknown sweet odor,	ne fill as above some green/blue st	taining					* r	extremely high PID eadings
15 -	8	$\left \right\rangle$	7 12 9	8500 225	FILL-	coal tar-like material	with some fi l l as ab	oove	- פֿ - -				* *	8500ppm reading oming from wood 225ppm reading
	9	$\left \right\rangle$	11 9 7	15.8	FILL - wet, sc	Silty Gravel oft, NAPL presence th	roughout as strong	sheens			•		2	coming from II and coal tar material ." dia. PVC Screen
	10	\mathbb{R}	9 16 19 2 3	49	FILL - wet, so yellow	Silty Gravel and piec oft, owing, strong odo -green NAPL	es of brick or (possibly diesel fi	uel),						
20	11	\square	10 5 2	3.0 0	FILL - wet, bl	dark grey Silt, fine Sa ebs of NAPL present	and and wood							
22 -			3 4 100/.1'		grey w thinly l	eathered Shale bedr aminated	ock							
23 -														
24 -														
26 -														
27 -														
28 -														
29 -														
30 -					I					v	VELL_O	VM ALL M	ONITORING	WELLS.GPJ (5/09)
Projec	t No.	1266	51.002				Geomatrix	Consultants						Page 1 of 1

PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-05D					
BORING	G LOO	CATI	ON:	Se	e Site Plan for MW locations	TOP OF RISER 413.11 fmsl	TOP OF RISER ELEVATION: DA 413.11 fmsl				
DRILLIN	NG C	ONT	RACT	OR: No	othnagle Drilling Company	DATE STARTEI 10/9/08	D:			DATE FINISHED: 10/9/08	
DRILLIN	NG M	ETH	OD: 6	5 1/4" c	dia. Hollow Stem Augers/ HQ Core Barrel	TOTAL DEPTH 29.5 fbgs	:			SCREEN INTERVAL: N/A fbgs	
DRILLIN	NG EC	QUIP	MENT	: CME	E-85 Rotary Drill Rig	DEPTH TO WATER:	FIRST 13 ft	cc	OMPL.	CASING:	
SAMPL	ING I	METH	HOD:	2" Spl	lit Spoon	LOGGED BY: MAC					
НАММ	ER W	'EIGH	HT: 14	40lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa			REG. NO.		
DEPTH (feet)	DESCRIPTION DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.					CONST D/OR DI	NSTRUCTION DETAILS R DRILLING REMARKS				
	S	S	Surface Elevation: 413.11 fmsl						flush mount curb box		
1- 2-	1	$\left \right\rangle$	14 8 9 13	0.0	FILL - brown fine Sand with Silt, brick and traditional dry, compact, no odors or staining	/ ace fines		$\langle \langle \rangle$		* Open Rock Hole	
	2	\square	3 4	0.0						Cement/Bentonite	
5-	3	$\left \right\rangle$	6 2	0.0						Grout	
6-		\bigcirc	2 3 4		FILL - brown Silt with little brick and trace commoist throughout, no odors or staining	al		•		4" Steel Casing Riser to 19'	
7- _ 8-	4	\bowtie	1 3 5	0.0							
9-	5	$\left \right\rangle$	6 3	0.1							
10	6	$\left\{ \right\}$	2 3 2 2	0.0	FILL - same as above brown Silt with increasi and some fine angular Gravel	ng brick					
12-	7	\bigcirc	3 4 3	0.0	NATIVE ALLUVIUM - fine grey/brown Sand (SP), some Silt and trace			Ì			
14 -	,	X	1 1 1	0.0	fines, moist to saturated at 13', very soft, no or staining	dors or					
15 -	8	\ge	1 1 2	0.0	same as above (SP), with trace line Sit						
17 -	9	\triangleright	4 4 3	0.0	Weathered Shale Bedrock, locally more comp	etent					
18-	10	\square	7 18	0.0					-		
20 -			26 100/.1		(19.5-24.5') Run #1: grey Shale with limes	one					
21 -					throughout, few rip-ups of limestone within s	hale			•	Bedrock	
22 -	R#1									* Runs #1 and 2:	
23										drill rate a pprox. 2'/min., 15 gal water loss each	
25 -					(24.5-29.5') Run #2: grey Shale with limest	one					
26					RQD: 33"/48" (68%)			•		Open HO coverhole	
27 -	R#2										
28											
30		Ē						WELL		AONITORING WELLS.GP1 (5/09)	
Project No. 12661.002					Geomatrix	Consultants		*		Page 1 of 1	

PROJE	CT: F	orm	ner We	est Stat	tion Plant Area MGP Site	Log of Well No. GMX-MW-05S				
BORIN	G LOO	CATI	ON:	See Si	ite Plan for MW locations	TOP OF RISER EL 413.10 fmsl	EVATION:		DATUM: barge canal	
DRILLII	NG CO	ЭМТ	RACT	DR: No	othnagle Drilling Company	DATE STARTED: 10/9/08			DATE FINISHED: 10/9/08	
DRILLII	NG M	ETH	OD: 6	5 1/4" c	dia. Hollow Stem Augers	TOTAL DEPTH: 29.5 fbgs			SCREEN INTERVAL: 7-17 fbgs	
DRILLII	NG EC	QUIP	MENT	: CME	E-85 Rotary Drill Rig	DEPTH TO F	IRST CC	OMPL.	CASING:	
SAMPL	.ING I	METI	HOD:	2" Spli	lit Spoon	LOGGED BY:				
намм	ER W	EIGH	HT: 14	10lb	DROP: 30" (auto)	RESPONSIBLE PR	ROFESSIONA	L:	REG. NO.	
DEPTH (feet)	Ceet) (feet) (feet) No. Sample Sample foot foot (ppm)			(mdd)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast, struct cementation, react. w/HCl, geo. inter.	ure,	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS			
	s	s	_		Surface Elevation: 413.11 fmsl			flu:	sh mount curb box	
1 - 2 - 3 -	-				see log of GMX-MW5D for lithology	-		•	Grout to surface	
4 - 5 - 6 -	-					-			——-3/8" Bentonite Seal	
7	-					-			#00N Filter Sand	
10 - 11 - 12 - 13 -	-					- - - - - - - - - - - - - - - - - - -	Z		——2" dia. PVC Screen	
14 - 15 - 16 -	-					-				
17 - 18 - 19 - 20 - 21 - 22 - 23 - 24 - 25 - 26 - 27 - 28 - 29 - 30 -					Shale bedrock (see log of GMX-MW3D)		WELL_C	DVM ALL MON	TTORING WELLS.GPJ (5/09)	
Projec	t No.	1266	51.002		Geomatrix	Consultants			Page 1 of 1	

PROJECT: Former We	est Station Plant Area MGP Site	Log of Well No. GMX-MW-0 6					
BORING LOCATION:	See Site Plan for MW locations	TOP OF RISER ELEVATION: 415.71 fmsl	DATUM: barge canal				
DRILLING CONTRACTOR	: Nothnagle Drilling Company	DATE STARTED:	DATE FINISHED:				
DRILLING METHOD: 41,	/4" dia. Hollow Stem Augers	TOTAL DEPTH:	SCREEN INTERVAL:				
DRILLING EQUIPMENT:	CME-75 Rotary Drill Rig	DEPTH TO FIRST COMPL.	CASING:				
SAMPLING METHOD: 2"	' & 3" Split Spoons	LOGGED BY:					
HAMMER WEIGHT: 140	b DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: B. Franna	REG. NO.				
SAMPLES so of t so of	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS					
	Surface Elevation: 413.76 fmsl	stic	kup				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - grey black fine Gravel, coarse to fine Sanc moist FILL - dark brown to black Silt and fine Sand moist to saturated, soft, no odors FILL - pieces of concrete, black fine Gravel, med	d, d. to	* collected 6'-8', 22'-24' sample for lab analysis				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.0 coarse Sand, dry to moist, no odors FILL - brown to black med. to coarse Sand and Gravel, moist to wet	fine	Cement/Bentonite Grout to surface ——* possible coal tar in				
5 - 3 - 6 9 6!	5.1 FILL - black coal tar-like material strong coal tar-like odor		brous material				
	FILL - possible concrete	ed to	* 3" spoon used for				
	coarse Sand, yellow slag like material, trace Silt moist, slight coal tar-like odor FILL - brown fine Sand, little Silt		6-8 only				
	moist, no odors, occasional black staining						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - dark green/brown fine Sand, some fine G little Silt, pieces of coal and concrete moist to wet at bottom, slight coal tar-like odor	iravel,	2" dia. PVC Riser				
$ \begin{bmatrix} 12 \\ 13 \\ -7 \end{bmatrix} $ $ \begin{bmatrix} 4 \\ 30 \\ 13 \\ 6 \end{bmatrix} $ $ \begin{bmatrix} 0 \\ 0 \end{bmatrix} $	FILL - brown, grey and yellow fine Gravel, little coarse Sand, Silt, pieces of brick moist, little black staining, very slight coal tar-lik	fine to ke odor					
14 4 15 8 3 1 16 8 2 0	FILL - yellow brown fine to coarse Sand, some f Gravel, pieces of brick moist to wet, no odors	fine					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - grey, black and little yellow fine Gravel, so med. to coarse Sand, pieces of concrete and occ metal - wet	ome casional					
10^{-10} 10^{-10} 10^{-10} 10^{-10} WOR 10^{-10}	FILL - black Silt and fine Sand saturated, septic odor		* spoon fell 2' under weight of rod at 18 5' possible void				
	.2						
$\begin{bmatrix} 21 \\ 22 \\ 22 \\ 4 \end{bmatrix}$	FILL - black fine Gravel, fine to med. coarse San	id, (17, 17, 17, 17, 17, 17, 17, 17, 17, 17,					
	some coal tar-like material and blebs of NAPL, tr saturated, strong coal tar-like odor						
24 - 3 25 - 13 WOR 2	FILL - black med. to coarse Sand, pushed cobbl sampler	le with					
	saturated, strong coal tar-like odor FILL - black med. to coarse Sand, little fine Grav	/el,					
27 - 14 28 - 4 28 - 5	green brown weathered Shale						
29	dry to moist, coal tar-like odor						
30		WELL_OVM ALL MON	ITORING WELLS.GPJ (5/09)				
Project No. 12661.002	Geomatrix C	Consultants	Page 1 of 1				

PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-07S					
BORIN	G LOCA	TION:	Se	e Site Plan for MW locations	TOP OF R 412.80 fr	ISER EL nsl	DATUM: barge canal				
DRILLII	NG COI	NTRACT	OR: N	othnagle Drilling Company	DATE STA 10/9/08	RTED:			DATE FINISHED: 10/9/08		
DRILLII	NG MET	THOD:	4 1/4" (dia. Hollow Stem Augers	TOTAL DE 14.1 fbas	EPTH:			SCREEN INTERVAL: 8-13 fbgs		
DRILLII	NG EQL	JIPMEN [.]	T: CMI	E-85 Rotary Drill Rig	DEPTH TO WATER:) F	IRST 12 ft	COMPL.	CASING:		
SAMPL	ING MI	THOD:	2" Spl	lit Spoon	LOGGED MAC	LOGGED BY: MAC					
намм	ER WEI	GHT: 1	40lb	DROP: 30" (auto)	RESPONS R Frappa	RESPONSIBLE PROFESSIONAL: REG. NO.					
DEPTH (feet) iample No. SWMDFES Blows/ foot (ppm)			(mdd)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, j cementation, react. w/HCl, geo. in	plast., structure, ter.		RUCTION DETAILS				
	N N	ň ^e		Surface Elevation: 412.80	fmsl				flush mount curb box		
1 - 2 - 3 -	2	25 13 4 20 11	0.0	FILL - Asphalt with brick, crushed lime little brown fine Sand and Silt dry, no odors	estone Gravel,			•	Cement/Bentonite Grout to surface ——* poor recovery at several depths		
4 - 5 -	3	10 8 11 1 2	0.1	FILL - dark brown to grey Silt with littl	e fine Gravel	 //W7S(4-6')		•	2" dia. PVC Riser 3/8" bentonite seal		
6	4	3 1 6 100/.1	0.1	Concrete		- GMXI			* broke auger sub & head on concrete at 6.5', moved north		
8- - 9- - 10-	5	3 4 5	0.0	FILL - dark brown to grey Silt with littl slight coal tar like odor	e fine Gravel				~3 [.] ———#00N I ter sand		
10	6	6 3 4 3	0.0	FILL - same as above		Z	Z		2" dia. PVC Screen		
13 -	7	4	0.0	FILL - dark brown to grey Silt, coarse S fine Gravel - no odors or staining	band and little						
13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		26 21 100/.1	0.0	grey to brown weathered Shale bedro moist to dry, visible laminations, locall with clay, shale becoming hard and les 13.5', no evidence of impact	ck y weathered to silt ss weathered at			/ELL_OVM ALL M	ONITORING WELLS.GPJ (5/09)		
Projec	t No. 12	2661.002		Geo	omatrix Consultan	ts			Page 1 of 1		

PROJEC	CT:	Fo	ormer	West	Station Plant Area MGP Site Log of We	Log of Well No. GMX-MW-08S				
BORING	G LO	CATI	ON:	Se	e Site Plan for MW locations TOP OF RISER ELEVATI 417.19 fmsl	ION:	DATUM: barge canal			
DRILLIN	NG C	ONT	RACTO	DR: N	othnagle Drilling Company DATE STARTED: 10/9/08		DATE FINISHED: 10/10/08			
DRILLIN	NG N	1ETH	OD: 4	4 1/4" (dia. Hollow Stem Augers TOTAL DEPTH: 30.4 fbgs	TOTAL DEPTH: SCREEN INTEL 30.4 fbas 20-29.5 fbas				
DRILLIN	NG E	QUIF	PMENT	: CMI	E-75 Rotary Drill Rig DEPTH TO FIRST WATER:	COMPL.	CASING:			
SAMPL	ING	MET	HOD:	2" Spl	lit Spoon LOGGED BY: G. Combes					
НАММ	ER W	/EIGł	HT: 1₄	40lb	DROP: 30" (auto) RESPONSIBLE PROFES R. Frappa	SSIONAL:	REG. NO.			
ЭЕРТН (feet)	SAMPLES DESCRIPTION Image: Signal state stat				DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONS AND/OR D	TRUCTION DETAILS DRILLING REMARKS			
	Sa	Sa	8		Surface Elevation: 414.84 fmsl	~	stickup			
		$\left \right $	_		FILL - grey fine Gravel, some fine to coarse Sand, dry	8 🗱				
2-			7 8 10 7	0.0	FILL - brown fine Sand and Silt, trace fine Gravel, - moist - FILL - black fine Sand and Silt, moist, no odors -		Grout to Surface			
3 - - 4 -	2		5 12 50/.4	0.0	FILL - black, grey and yellow med. to coarse Sand, fine Gravel, pieces of brick, coal and concrete, no odors		 auger grinding hard on concrete 			
5-					Concrete		* no sampling 4-8' (concrete)			
7-							* augered through concrete to 8'			
9- 9-	3	$\left \right\rangle$	5 4	0.0	FILL - brown fine to coarse Sand, fine Gravel and Image: Coarse Sand, fine Gravel and pieces of concrete, moist, no odors Image: Coarse Sand, fine Gravel and		 collected 8-10' sample for lab 			
	4	$\left \right $	6 7 2 4	0.0	FILL - brown fine to coarse Sand and fine Gravel		analysis			
12	5	$\left \right\rangle$	6 6 12 22	0.0	FILL - grey fine Gravel, some med. to coarse Sand, - little brown fine Sand and Silt - moist, no odors -	•	2" dia. PVC Riser			
14 	6		11 3 2 3	0.0	FILL - brown fine to med. Sand with pieces of coal, - glass and occasional fine rounded Gravel - moist to wet at bottom, no odors -					
17 – 17 – 18 –	7		5 3 6 4	0.0	FILL - brown fine med. to coarse Sand, some fine Gravel		3/8" bentonite seal			
19	8	$\left \right\rangle$	5 1	0.0	wet, no odors	-	#00N filter sand			
20 -		\square	6 10 19		FILL - black fine Gravel, little fine coarse Sand					
21 -	9		9	0.0	NATIVE ALLUVIUM - broken weathered Shale (GP)- wet, layered, coal Image: State of the st		not bedrock			
23 -	10	\square	15 15	7.1	tar-like odor ନ୍ୟୁ black med. to coarse Sand (SP), fine Gravel		* collected 22-24'			
24 -		K	3 8 15		wet, blebs of NAPL throughout, strong sweet and coal tar-like odors		sample for lab analysis			
25 -	11	$\left \right\rangle$	14 4	45	shale gravel		2" dia. PVC Screen			
26	12	\square	7 12	2 1	tar-like odor					
	12	\square	4 10	5.1	some med. to coarse Sand wet, strong coal tar-like odor					
20-	13	\triangleright	10 23	0.0	black fine Gravel (GP), little med. to coarse Sand,					
		\mathbb{N}	1	0.0	green/brown weathered shale at bottom					
						WELL_OVM ALL	MONITORING WELLS.GPJ (5/09)			
Project	t No.	1266	51.002		Geomatrix Consultants		Page 1 of 2			

PROJI	ECT:	Fo	ormer	·West S	Station Plant Area MGP Site	Log of Well No). GMX-MW-08	S (cont'd)
	SA	MPI	LES		READIRTION			
DEPTH (feet)	Sample No.	Sample	Blows/ foot	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % structure, cementation, react. w/HC	by weight, plast., גו, geo. inter.	WELL CONSTRUCT AND/OR DRILLING	ION DETAILS REMARKS
31-	14		7 11 11		green/brown weathered Shale			
32-			100/.4					
33-								
34-								
35-								
30 37-	-							
38-	-							
39-								
40-	-							
	-							
42 -								
44-	-					-		
45_								
46-	-							
47-								
40 49-	-					-		
- 50	-					-		
51-	-							
52-	-					-		
53- 54-								
55-	-							
56								
57-	-					-		
58- - 59-								
60 -	-					-		
61-						-		
62_								
						=		
65-								
66-						=		
							WELL_OVM ALL MONITOR	RING WELLS.GPJ (5/09)
Proje	ct No.	12	661.0	02	∕/%⊆ Ge	omatrix Consultants		Page 2 of 2

PROJECT: Former West	Station Plant Area MGP Site	Log of Well No. GMX-MW-09S			
BORING LOCATION: Se	e Site Plan for MW locations	TOP OF RISER ELEVATIO 416.91 fmsl	ON:	DATUM: barge canal	
DRILLING CONTRACTOR: NO	othnagle Drilling Company	DATE STARTED: 10/10/08 TOTAL DEPTH:		DATE FINISHED: 10/10/08 SCREEN INTERVAL:	
DRILLING METHOD: 4 1/4" o	dia. Hollow Stem Augers	24.1 fbgs	24.1 fbgs 14-23.5		
DRILLING EQUIPMENT: CME	E-75 Rotary Drill Rig	DEPTH TO FIRST WATER:	COMPL.	CASING:	
SAMPLING METHOD: 2" Spl	it Spoon	G. Combes			
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESS	SIONAL:	REG. NO.	
Sample Sample No. OVM fpm) (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., struct cementation, react. w/HCl, geo. inter.	ure,	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Surface Elevation: 414.34 Imsi		stick	kup	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	 FILL - dark brown to black Silt and fine to coa Sand, some fine Gravel, pieces of brick, coal dry, no odors FILL - same as above with increase of brown f Sand moist, no odors FILL - dark brown, black, brownish red med. co Sand, some Silt and fine Gravel, pieces of brick coal moist, no odors FILL - black fine med. Sand, little fine Gravel, pof brick and coal - moist, no odors FILL - brown, black and yellow fine Gravel and med. to coarse Sand, trace Silt, pieces of brick, and concrete - moist, no odors FILL - yellow brown weathered Sandstone an Gravel - moist FILL - broken up pieces of grey Dolomite in b med. Sand and little rounded fine Gravel matr moist, no odors, lone dolomite pieces 15.5-16 FILL - broken up pieces of Dolomite, grey fine and fine to coarse Sand - dry, no odors NATIVE ALLUVIUM - grey/brown fine angular Gravel (GP), some fir coarse Sand, trace Silt - wet, no odors brown green fine to med. Sand (SP), trace round fine Gravel, occasional pieces of weathered sh saturated dark brown fine med. Sand (SP) - saturated brown weathered Shale, occasional dolomite dry, thinly laminated 	rse		 — 2" dia. PVC Riser — * collected 4-6' sample for lab analysis — Cement/Bentonite Grout to surface — 3/8" bentonite seal — * drove through a piece of weathered rock — #00N Filter sand — 2" dia. PVC Screen * collected 21-23' sample for lab analysis 	
26 100/.4 27 28 29 1					
30					
Project No. 12661.002	Geomatrix	Consultants	WELL_OVM ALL MONI	Page 1 of 1	

PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-10S				
BORIN	g lo	CATI	ON:	Se	e Site Plan for MW locations	TOP OF RISER ELEVATION:DATUM:414.28 fmslbarge cana				
DRILLI	NG C	ONT	RACTO	DR: No	othnagle Drilling Company	DATE STARTE 10/13/08	ED:		DATE FINISHED: 10/13/08	
DRILLI	NG M	1ETH	OD: 4	4 1/4" o	Jia. Hollow Stem Augers	30.0 fbgs	4:		SCREEN INTERVAL: 19.8-29.3 fbgs	
DRILLI	NG E	QUIF	PMENT	: CME	-75 Rotary Drill Rig	DEPTH TO WATER:	FIRST	COMPL.	CASING:	
SAMPL	ING	MET	HOD:	2" Spl	it Spoon	LOGGED BY: G. Combes				
намм	ER W	/EIGł	HT: 14	40lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa			REG. NO.	
DEPTH (feet)	DEPTH Cfeet) ample foot foot foot foot			(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structur cementation, react. w/HCl, geo. inter.	e,		WELL CONSTR AND/OR DRI	UCTION DETAILS LLING REMARKS	
<u> </u>	ŝ	ŝ	8		Surface Elevation: 414.28 fmsl	Surface Elevation: 414.28 fmsl				
1- 2-	1	X	24 12 15 17	0.0	FILL - road bedding gravel backfill: dark grey to grey fine angular Gravel, some coarse to fine Sa dry, no odors	brown Ind		•		
3-	2	\square	12 6	0.0	FILL - dark brown Silt, little fine to coarse Sand,	, some				
4-		Ŕ	4 4	0.0	fine Gravel, moist, no odors, black staining FILL - brown to black coarse to fine Sand, some	e fine			<pre>* collected 4-6' sample for lab</pre>	
5- - 6-		\ge	3 4 7	0.0	angular Gravel, little Silt and pieces of brick moist, no odors				analysis	
7 - 7 - 8 -	4	$\left \right\rangle$	7 50/.2 4 6	0.0	FILL - dark brown and grey fine angular Gravel, coarse to fine Sand, little Silt, moist, no odors	, some	5 -		* hard, grinding at 6', augered to 6.5'	
9-	5	\mathbb{R}	4 6 2	0.0	FILL - dark grey Gravel, little fine to med. Sand, Silt and pieces of brick, moist	trace				
10 <i>-</i> - 11 <i>-</i>	6	$\left \right\rangle$	2 4 3	0.0	FILL - dark grey fine Gravel, little coarse to fine trace Silt, pieces of brick, moist to wet, no odors	Sand, S			Cement/Bentonite Grout to surface	
12-		\bigcirc	2 3 3	0.0	NO RECOVERY (possible void in bricks)		- -			
14 -	,	\square	3 3 2	0.0			_ _			
	8	$\left \right\rangle$	2 5 5	0.0	FILL - grey fine Gravel, trace coarse to fine Sand Silt, angular limestone or calcareous shale moist to dry, looks like road bedding	d, little			2 (0" headen ite eest	
17-	9	$\left \right\rangle$	7 7 2 2	0.0	FILL - brown to dark brown and yellow fine Gra some coarse to fine Sand, little Silt - wet, no odd staining	avel, ors or			5/6 bentonite sear	
18-	10	$\left \right\rangle$	4 4 2	0.0	FILL - brown med. to fine Sand and Silt, little fir Gravel, pieces of wood - wet, some black stainir slight coal tar-like odor at bottom	ne ng, very				
20-	11	\square	5 70 9	0.0	FILL - soft black Silt and fine Sand, little fine Gra	avel, and				
22 -		Д	4 6	0.0	sheen present - slight coal tar-like odor				#oon inter sand	
23 -	12	$\left \right\rangle$	7 9 9	0.0	trace Silt, occasional pieces of brick - saturated some blebs of NAPL present, slight coal tar-like	a, sy to wet, so odor sy			* collected 22-24' sample for lab analysis	
24 -		Ŕ	16 32	0.0						
25	13	\ge	50 3 5 10	0.0	brown weathered Shale (GP) - moist, occasional black staining, slight coal tar-like odor				——2" dia. PVC Screen	
27 - - 28 -	14	\geqslant	22 10 8	0.0	black to dark grey fine Gravel (GP) and brown coarse to fine Sand, little Silt - saturated, slight u	unknown				
29 -	15		15 15 5	0.0	brown to grey weathered Shale bedrock-	/			* augered to 30'	
30 -		1	-		uning lammated, very signt unknown odor (sar			WELL_OVM ALL MC	DNITORING WELLS.GPJ (5/09)	
Projec	t No.	1266	51.002		Geomatrix C	Consultants			Page 1 of 2	

PROJI	OJECT: Former West Station Plant Area MGP Site Log of Well No. GMX-MW-10S (cont'd)									
_	SA	MP	LES							
DEPTH (feet)	Sample No.	Sample	Blows/ foot	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % structure, cementation, react. w/HC	by weight, plast., גו, geo. inter.	WELL CONSTRUCT AND/OR DRILLING	ION DETAILS GREMARKS		
31-			11 100/.3		above)	-				
32_	-					_				
33-	-									
34-	-					-				
35-	-					-				
30-										
38-	-					_				
	-					-				
40-	-					-				
41-	-									
42-						-				
43-										
44-	-					-				
45-	-									
46-	-					-				
	-					-				
48-										
50-	-					_				
51 -	-					-				
 52-	-					-				
53-	-									
54										
55_	-					_				
56-	-					-				
57-	-					-				
	-									
59- - 60-										
00 61-	-					_				
62-										
63-						-				
64-						-				
65-	1					-				
66-										
							WELL_OVM ALL MONITOR	RING WELLS.GPJ (5/09)		
Projec	ct No.	12	661.00	02	/ /? Ge	omatrix Consultants		Page 2 of 2		

PROJE	CT: F	ormer	West	Station Plant	t Area MGP Site		Log c	of Well No. G	MX-MW-11S-a			
BORIN	G LOC	ΑΤΙΟΝ	N: Se	e Site Plan f	for MW locations		TOP OF RISE 416.52 fmsl	R ELEVATION:	DATUM: barge canal			
DRILLII	NG CO	NTRA	CTOF	R: Nothnagle	e Drilling Company		DATE STARTED: DATE FINISHE 10/13/08 10/13/08					
DRILLII	NG ME	THOD	D: 41	/4" dia. Hollo	w Stem Augers		TOTAL DEPTH: SCREEN INTERVAL 3.5 fbgs N/A fbgs					
DRILLII	NG EQ	UIPM	ENT:	CME-75 Rot	tary Drill Rig		DEPTH TO FIRST COMPL. CASING: WATER:					
SAMPL	ING M	ЕТНО	D: 2'	' Split Spoon			LOGGED BY: G. Combes	·				
НАММЕ	ER WE	IGHT:	140	b	DROP: 30" (auto)		RESPONSIBL R. Frappa	E PROFESSIONAL	: REG. NO.			
EPTH (feet)	SAMP	Des /swc	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., struc cementation, react. w/HCl, geo. inter.			tructure,	WELL CONS AND/OR DF	IRUCTION DETAILS RILLING REMARKS			
	Sal Sal	Bic			Surface Elevation	: 414.43 fmsl						
	1	27	0.0	Aspha FILL -	alt grey fine Gravel, little o	coarse to fine S	and,	_	* auger grinding			
2_	\square	8		Conci	rete			_				
3_		100/.1						_	——* driller concerned about breaking rig;			
4_								_	drilling stopped at 3.5'			
5-								_	* hole continued on			
6-								_	SB-MW-11S-b			
7-								_				
8-								_				
9-								_				
10-								-				
11								-				
12-								-				
13-								-				
14-								-				
15-								-				
16-												
17-								-				
18-								_				
19-								-				
20-								_				
21-								_				
22								-				
23-								-				
24-								_				
25-								_				
26												
								-				
28												
20								_				
								-				
Project	No 12	0661.00	12			Geometriv	Consultante	WELL_OVM ALL M	AONITORING WELLS.GPJ (5/09)			
	. 110. 12	.001.00	<i>.</i>		//*		Sonsultants	•	1 aye 1 01 1			

PROJECT: Former West Station Plant Area MGP Site							Log of Well No. GMX-MW-11S-b						
BORING	g loo	CATI	ON:	See	Site Plan fo	r MW locations		TOP OF RISE 416.52 fms	R ELEV	ATION:		DATUM: barge	canal
DRILLI	NG CO	ЭМТ	RACT	OR: No	thnagle Drill	ing Company		DATE START 10/17/08	ED:			DATE FIN 10/17/08	ISHED:
DRILLI	NG M	ETH	OD: 4	4 1/4" d	ia. Hollow St	em Augers		TOTAL DEPT 17.0 fbas	TH:			SCREEN II 7-16.5 fbg	NTERVAL:
DRILLI	NG EC	QUIF	MEN	Г: СМЕ·	-75 Rotary Di	rill Rig		DEPTH TO FIRST COMPL. CASING:					
SAMPL	ING I	MET	HOD:	2" Split	t Spoon			LOGGED BY G. Combes	:				
намм	ER W	EIG	HT: 1	40lb		DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: REG. NO.					REG. NO.
EPTH feet)	SA o	hen 메르	es pot	(mdd	N	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.				WEI A	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	San	San	Blo fc			Surface Elevation: 414	.43 fmsl			~~~~~	st	ickup	
$ \begin{array}{c} 1 \\ - \\ 2 \\ - \\ 3 \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ -$	1		4 50/.4 3 2 3 5 3 3 4 6 6 7 7 4 14 6 7 7 4 14 6 7 7 8 100/.3	0.0 0.0 0.0 0.0 0.0	FILL - fine Sa FILL - Gravel FILL - fine Gr impact FILL - Clayey or imp FILL - some G NATIV brown Clayey no odd weath thinly	brown black fine to med. Grand, moist, no odors dark brown coarse to fine Sa , little Clayey Silt, moist, no o brown to dark brown fine to avel, little Clayey Silt, moist, t brown fine Gravel, some coa iilt, bits of coal, moist, no odo brown fine Gravel, fine to me Silt, occasional pieces of coa act present brown fine Gravel and coars Clayey Silt, moist, no impact /E ALLUVIUM - very fine Sand (SP), some fine Silt (possible weathered beo ors or signs of impact ered bedrock with Clayey Silt laminated	avel and coar of dors coarse Sand no odors or s arse to fine Sa ed. Sand and al, moist, no c e to fine Sand identified — — — — — ne Gravel, so drock), moist t	rse to e , some signs of and, bdors d, to wet,	GMXMW115(14-16') GMXMW115(14-16') GMXMW115(6-8')			Grout	to Surface PVC Riser entonite seal ated) ected 6-8' e for lab sis filter sand PVC Screen ected 14-16' le for lab sis
20 -													
27 -													
29 -													
30 -										\\/E11	OVM ALL MC		5 GP I (5/09)
Projec	t No.	1266	51.002				Geomatrix C	Consultants		VVLLI		Pag	e 1 of 1

PROJECT: Former West	t Station Plant Area MGP Site	Log of W	/ell No. GN	MX-MW-12S				
BORING LOCATION: Se	ee Site Plan for MW locations	TOP OF RISER ELEVA 401.05 fmsl	TION:	DATUM: barge canal				
DRILLING CONTRACTOR: N	lothnagle Drilling Company	DATE STARTED: 10/14/08		DATE FINISHED: 10/14/08				
DRILLING METHOD: 4 1/4"	dia. Hollow Stem Augers	TOTAL DEPTH: 11.7 fbgs	TOTAL DEPTH:SCREEN I11.7 fbgs6.7-11.7 f					
DRILLING EQUIPMENT: CM	E-85 Rotary Drill Rig	DEPTH TO FIRST WATER: 51	COMPL.	CASING:				
SAMPLING METHOD: 2" Sp	lit Spoon	LOGGED BY: MAC	LOGGED BY: MAC					
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFE R. Frappa	RESPONSIBLE PROFESSIONAL: REG. NO. R. Frappa					
CPEPTH DEPTH Sample	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., si cementation, react. w/HCl, geo. inter.	ructure,	WELL CONSTR AND/OR DR	RUCTION DETAILS				
	FILL - brown fine Sand with trace Silt - dry		S'	tickup Cement/Bentonite				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - med. Sand with trace Gravel, hard/b like consistency, visible staining, strong she	rittle to taffy	•	Grout to Surface 2" dia. PVC Riser				
3 - 2 + 14 + 19 + 112	FILL - same as above mixed with trace bric and wood fiber - tar-like consistancy 3.5-4'	k, concrete		* NAPL and impacts are found from 1-4';				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - same as above (poor recovery) saturated at 5'	GMX GMX		significantly below 4-6' interval 3/8" Bentonite Seal				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	FILL - loose coarse black Sand with concre	te. brick.		#00N Filter Sand				
8 3 5 17 20	fine rounded Gravel, slight sheen - light to moderate coal tar-like odor with s	eptic odor						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	dominating			2" dia. PVC Screen				
11 - 6 - 9 - 0.2 12 - 7 - 7 - 7	concrete, firm, no sheen - very light coal tar-like and moderate septi			* auger refusal at 11.7', grinding				
12 _ 9 13 - 100/.1	Shale bedrock			* collected 2-4' and				
				10-11.5' samples for lab analysis				
17								
20 -								
21 _								
22 -								
25 -								
26								
30			WELL OVAL ALL					
Project No. 12661.002	Geomat	rix Consultants	WELL_OVM ALL M	Page 1 of 1				

PROJEC	CT:	Former	West St	tation Plan	t Area MGP Site		Log of V	Vell No. G	GMX-MW-13S
BORING	G LOCA	TION:	See !	Site Plan fo	r MW locations	TOP C 400 7	OF RISER ELEV	ATION:	DATUM: barge canal
DRILLIN	NG CON	ITRACT	OR: Notl	hnagle Drill	ling Company	DATE 10/14	STARTED:		DATE FINISHED: 10/14/08
DRILLIN	NG MET	HOD:	4 1/4" dia	a. Hollow St	em Augers	TOTA 12.1 f	L DEPTH: bas		SCREEN INTERVAL: 7.3-12 fbgs
DRILLIN	NG EQU	JIPMEN ⁻	Г: СМЕ-8	35 Rotary D	rill Rig	DEPT WATE	H TO FIRS	T COMPL	. CASING:
SAMPL	ING ME	THOD:	2" Split !	Spoon		LOGO G. Co	ED BY: mbes		
намм	ER WEI	GHT: 1	40lb		DROP: 30" (auto)	RESPO R. Fra	ONSIBLE PROF ppa	ESSIONAL:	REG. NO.
DEPTH (feet)	SAME No.	Blows/ STG	(mdd)	N	DESCRIPTION AME (USCS Symbol): color, moist, % by weight, p cementation, react. w/HCl, geo. int	last., structure, er.		WELL CONS AND/OR I	STRUCTION DETAILS DRILLING REMARKS
-		5 9 11 22 13 21 7 2 5 2 1/1' WOH WOH 1/1' WOH 3 3 7 9 16 100/.2	0.0 16.0 0.0 0.0 0.0 0.0	FILL - Gravel FILL - Strong FILL - septic FILL - light s FILL - fine Gi FILL - fine Gi satura Shale	Surface Elevation: 398.00 fine grey Sand dark grey/black fine to med. San , pieces of coal, coke and brick, d brown fine Sand, trace fine Grave coal tar like material, dry, soft coal tar-like odor black fine Sand, little fine Gravel odor black fine Sand, saturated eptic odor until 8' red brown to grey brown layerer ravel, saturated, no odors black, brown and yellow fine coa ravel, trace Silt, pieces of coal and ted /Siltstone bedrock	fmsl nd and fine lry, no odors el, dry , moist d fine Sand, little arse Sand, little d bricks,	al GMXMW135(8-10) GMXMW135(3.5-4')		stickup
29 - 30 -								WELL_OVM ALI	L MONITORING WELLS.GPJ (5/09)
Projec	t No. 12	2661.002			Geo	matrix Consu	ltants		Page 1 of 1

PROJEC	CT:	Fo	ormer	West	Station Plant Area MGP Site	Log	of V	Vell I	No. G	MX-MW-1	4S
BORING	g lo	CATI	ION:	See	e Site Plan for MW locations	TOP OF RISER 415.63 fmsl	ELEV	ATION:		DATUM: barge ca	anal
DRILLIN	NG C	ONT	RACT	OR: No	othnagle Drilling Company	DATE STARTE	D:			DATE FINIS	HED:
	IG M	\FTH	00.	Direct P		TOTAL DEPTH	ł:			SCREEN INT	ERVAL:
			00.	Directi		25.5 fbgs	FIRS	т		12.9-22.4 fb	ogs
DRILLIN	NG EO	QUIF	PMEN	T: GEO	PROBE 6610 DT	WATER:			201111 2.	e, isirte.	
SAMPL	ING I	MET	HOD:	4' Dire	ect Push Acetate Sleeves	LOGGED BY: G. Combes					
НАММ	ER W	/EIGł	HT: 1	40lb	DROP: 30" (auto)	RESPONSIBLE R. Frappa	PROF	ESSION	IAL:	R	EG. NO.
EPTH feet)	SA o.	MPL ple	ws/	(mqq	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., st cementation, react. w/HCl, geo. inter.	ructure,	Г	WEI Al	L CONS ND/OR D	TRUCTION DETAIL RILLING REMARK	_S S
۵.	San	San	Blo fc		Surface Elevation: 413.38 fmsl					stickup	
					FILL - black and brown fine to med. Gravel	, coarse to	-			hand c	leared to 3'
			N1/A		The Sand and Clayey Site					Cement	
	1		N/A	0						* refusal stopped	at 4.2', I sampling:
										sample	had shards
					FILL - brown to black to red fine Sand and	Silt, pieces				* movec	to point
					moist to wet	5	. –			betweer	n buildings
	2		N/A	0		45(6-8					
						, WW.				2" dia. P	VC Riser
8-					FILL - dark grey and brown fine Sand and S	ilt, pieces					
9-		\vdash			slight septic odor					3/8" Ber	itonite Seal
	3	V	N/A	0							
12-		\square							•	#00N Fi	ter sand
13-					FILL - brown fine Sand and Silt, trace fine C	iravel,					
14-	4	\vdash	N/A	0	vet, no odors						
15 -		X									
16-		Ħ								2" dia. P	VC Screen
17-						j0,)					
18-	5	\mathbb{N}	N/A	.5	FILL - black fine to coarse Sand and Silt, litt	le fine					
19-		Ŵ			Gravel and pieces of coal, wet slight coal tar-like odor	W14:				* collect	ed 6-8' and amples for
20 -		H			FILL - grey Silt and med. fine Sand, trace fir	ne Gravel,				lab anal	ysis
21-					saturated	-					
22 -	6		N/A	0	FILL - black fine Gravel, fine Sand, some Sil	t					
23 -		X			saturated, septic odor					auger * 23'	refused at
24 _		H		-						20	
25 -	7		N/A		weathered, brown shale bedrock gravel					* samnle	er refused at
26 -					-					25.5'	u
27 _											
28 -											
29 -											
30								WELL	_OVM ALL	MONITORING WELLS.G	PJ (5/09)
Project	t No.	126	51.002		Geomat	rix Consultants				Page	1 of 1

PROJEC	CT:	Fo	ormer	West	Station Plant Area MGP Site	Log	of Wel	ll No. Gl	MX-MW-15S
BORING	G LO	CATI	ION:	Se	e Site Plan for MW locations	TOP OF RISER	ELEVATIO	N:	DATUM:
DRILLIN	NG C	ONT	RACT	OR: No	othnagle Drilling Company	DATE STARTEI	D:		DATE FINISHED:
		1FTU	י יחטו	Direct D		TOTAL DEPTH	l:		SCREEN INTERVAL:
				Direct		26.5 fbgs	FIRST	COMPL	16.4-26 fbgs
DRILLI	NG E	QUIF	PMEN	T: GEO	PROBE 6610 DT	WATER:	14 ft		Choind.
SAMPL	ING	MET	HOD:	4' Dire	ect Push Acetate Sleeves	LOGGED BY: G. Combes			
намм	ER W	/EIGł	HT: 1	40lb	DROP: 30" (auto)	ONAL:	REG. NO.		
EPTH (feet)	SA ^{aldu} oj	MPL	ES pot poc	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., s cementation, react. w/HCl, geo. inter.	structure,		WELL CONST AND/OR DF	RUCTION DETAILS IILLING REMARKS
	Sar	Sar	Blo		Surface Elevation: 412.88fms	l		5	stickup
					FILL - black fine to med. Gravel, trace fine t Sand, moist	to coarse			* hand cleared 0-3'
	1	\vdash	N/A	0.0					
- - -		X			FILL - brown coarse to fine Sand, fine Grav Clayey Silt and piece of coal - moist, no ode	/el, little ors			* collected 4-8'
4-		Д			FILL - brown Clayey Silt, some fine med. Sa fine Gravel - moist no odors	and, little			sample for lab. analysis
5-									,
6-	2		N/A	0.0	FILL - black, brown and yellow brown fine	Gravel,			Bentonite Seal
7-		\square			coarse fine sand, some silt - moist, no odol	rs			
8-		A							
9-								•	1" dia. PVC Riser
10-	3		N/A	0.0					
11-									
12-		X							
13 -									
14 -	4		N/A	0.0	FILL - brown to black fine Sand, Silt, trace rounded Gravel	fine	Ţ	•	#00N filter sand
15 -					moist to wet at 10' and saturated at 14', slip	ght septic			
16-		ř			ouors, no staining				
17 -								-	2" dia. PVC Screen
18 -	5		N/A	0.0					
19-		ľÅ							
20 -		\square							
21-					FILL - black fine to med. Sand, trace fine G	iravel			* collected 20-22' sample for lab.
22 -	6	\vdash	N/A	0.0	saturated				analysis
$\begin{bmatrix} 23 \\ - \\ - \\ - \end{bmatrix}$		X							
24 -					FILL - black coarse to med. Sand. fine wea	thered			* 7" of worthard
25 -	7		N/A	0.0	shale Gravel and some Silt, saturated septic odor				shale in shoe
27 -		\vdash			Shale bedrock				* auger refusal at
28 -									27'
29 -									
30 -							<u>ا</u>	WELL_OVM ALL N	IONITORING WELLS.GPJ (5/09)
Projec	t No.	1266	61.002		Geomat	trix Consultants			Page 1 of 1

BORING LOCATION: See Site Plar DRILLING CONTRACTOR: Nothnagle I DRILLING METHOD: Direct Push DRILLING EQUIPMENT: GEOPROBE 66 SAMPLING METHOD: 4' Macrocores HAMMER WEIGHT: NA HAMMER WEIGHT: NA	Drilling Company 610 DT 610 DT DROP: NA DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structu cementation, react. w/HCl, geo. inter. Surface Elevation: 394.89 fmsl ILL - green brown grading to black Silt and fi and, saturated, no odors ILL - black fine sand, saturated, light sheen	TOP OF RISER ELEVATION 396.82 fmsl DATE STARTED: 10/27/08 TOTAL DEPTH: 8.5 fbgs DEPTH TO FIRST WATER: LOGGED BY: G. Combes RESPONSIBLE PROFESSIO R. Frappa W Jre, Ine 	I: DATUM: barge canal DATE FINISHED: 10/27/08 SCREEN INTERVAL: 4-8 fbgs COMPL. CASING: NAL: REG. NO. ELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS stickup stickup Grout to surface
DRILLING CONTRACTOR: Nothnagle I DRILLING METHOD: Direct Push DRILLING EQUIPMENT: GEOPROBE 66 SAMPLING METHOD: 4' Macrocores HAMMER WEIGHT: NA E (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Drilling Company 610 DT DROP: NA DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast, structu cementation, react. w/HCl, geo. inter. Surface Elevation: 394.89 fmsl LL - green brown grading to black Silt and fi and, saturated, no odors LL - black fine sand, saturated, light sheen	DATE STARTED: 10/27/08 TOTAL DEPTH: 8.5 fbgs DEPTH TO FIRST WATER: LOGGED BY: G. Combes RESPONSIBLE PROFESSIO R. Frappa W Jre, Ine	DATE FINISHED: 10/27/08 SCREEN INTERVAL: 4-8 fbgs COMPL. CASING: NAL: REG. NO. ELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS stickup grout to surface 2" dia. PVC Riser
DRILLING EQUIPMENT: GEOPROBE 66 SAMPLING METHOD: 4' Macrocores HAMMER WEIGHT: NA E to be a second by the second b	610 DT DROP: NA DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structu cementation, react. w/HCl, geo. inter. Surface Elevation: 394.89 fmsl ILL - green brown grading to black Silt and fi and, saturated, no odors	Ine	COMPL. CASING: VNAL: REG. NO. ELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS stickup Grout to surface 2" dia. PVC Riser
SAMPLING METHOD: 4' Macrocores HAMMER WEIGHT: NA E (a) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b	DROP: NA DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast, structu cementation, react. w/HCl, geo. inter. Surface Elevation: 394.89 fmsl ILL - green brown grading to black Silt and fi and, saturated, no odors	Ine	INAL: REG. NO. ELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS stickup Grout to surface 2" dia. PVC Riser
HAMMER WEIGHT: NA SAMPLES Height of the second se	DROP: NA DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast, structu cementation, react. w/HCl, geo. inter. Surface Elevation: 394.89 fmsl ILL - green brown grading to black Silt and fi and, saturated, no odors	RESPONSIBLE PROFESSIO R. Frappa W Jre, Ine	REG. NO. ELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS stickup Grout to surface 2" dia. PVC Riser
SAMPLES HLBU SAMPLES U Samples Samples Samples U N/A U Samples U N/A U FII Samples Samples U N/A U FII	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structu cementation, react. w/HCl, geo. inter. Surface Elevation: 394.89 fmsl ILL - green brown grading to black Silt and fi and, saturated, no odors	ine -	ELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS stickup Grout to surface
1 FII 2 1 N/A 0 3	LL - green brown grading to black Silt and fi and, saturated, no odors	ne	stickup Grout to surface """ """
	LE - black line sand, saturated, light sheen		3/8" Bentonite Seal
5 - FIL occ 6 - 2 N/A 0 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -	LL - black Silt and fine Sand, light sheen, no casional bivalve clam shell	odors,	 #00N Filter sand 2" dia. PVC Screen * collected 4-8' sample for lab analysis
8 3 N/A 0 gree 10	ey weathered Shale bedrock		* refusal at 8.5'

PROJE	CT: F	orn	ner W	/est Sta	tation Plant Area MGP Site	1X-MW-17S					
BORIN	G LOO	CATI	ON:	See Si	ite Plan for MW locations		TOP OF RISER E 399.63 fmsl	ELEVATIO	N:	DATUM: barge canal	
DRILLI	NG CO	ЭМТ	RACT	OR: No	othnagle Drilling Company		DATE STARTED):		DATE FINISHED:	
		стц	00.				TOTAL DEPTH:			SCREEN INTERVAL:	
			00.				8.3 fbgs	FIRST	COMPL	2.5-7.5 fbgs	
DRILLI	NG EC	QUIF	MEN	T: Back	khoe		WATER: 8.25 ft				
SAMPL	ING N	MET	HOD:				LOGGED BY: MAC				
НАММ	ER W	EIGł	HT:		DROP:		RESPONSIBLE I R. Frappa	PROFESSI	ONAL:	REG. NO.	
EPTH (feet)	No.	MPLI _{able}	ows/	(mdd)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. cementation, react. w/HCl, geo. inter.	., structure	s,		WELL CONSTR AND/OR DRII	UCTION DETAILS LLING REMARKS	
	Sai	Sai	B +		Surface Elevation: 396.10	6 fmsl					
1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -				see drilling re- marks column	FILL - brown fine sand with several small hardened tar blocks, concrete, brick and s moist throughout, becoming saturated at	ll (6 incl steel t 8-8.3'	h dia.), (9-9)SZIAWIXWB			 Topsoil and Excavated Backfill PVC Pack Screen * OVM readings = ~1-2ppm throughout excavation * OVM readings higher (~30-40ppm) where tar dominates 	
25 -								-			
26 -								_			
2/- - -]			
$\begin{vmatrix} 20 \\ - \\ 20 \end{vmatrix}$								_			
- ²⁹ 30 -								_			
Projec	t No.	1266	51.002		Geoma	atrix C	onsultants	\	WELL_OVM ALL MO	Page 1 of 1	

PROJE	CT: F	orn	ner W	/est Sta	tion Plant A	rea MGP Site		1X-MW-18S			
BORIN	G LOC	ATI	ON:	See	Site Plan fo	r MW locations		TOP OF RISER E	ELEVATIO	N:	DATUM:
DRILLI	NG CC	DNTI	RACTO	OR: Not	thnagle Drill	ing Company		DATE STARTED):		DATE FINISHED:
	NG MI	FTH	00.					TOTAL DEPTH:			SCREEN INTERVAL:
				- Da ald				7.0 fbgs DEPTH TO	FIRST	COMPL.	2-7 fbgs CASING:
	NGEC	ĮUIP	WENI	: Backi	ioe			WATER:	4 ft		
SAMPL	ING N	NETH	HOD:					MAC			
НАММ	ER W	EIGH	IT:			DROP:		RESPONSIBLE I R. Frappa	ROFESSI	ONAL:	REG. NO.
EPTH (feet)	SAN Po Po Po	MPLE ble	oot	(mdd)	N	DESCF AME (USCS Symbol): color, moi cementation, rea	RIPTION ist, % by weight, plast., structur act. w/HCl, geo. inter.	re,		VELL CONSTR AND/OR DRI	UCTION DETAILS LLING REMARKS
	Sar	Sar	Ble ₽			Surface Ele	vation: 392.59 fmsl				
$ \begin{array}{c} 1 \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ -$					FILL - fine to long), - no oc NATIV large k exhibit enterit accum - stron	brown fine Sand wit med. Gravel, glass, s few large cobbles lors or tar encounter /EALLUVIUM - edrock cobbles mixe ts layering, heavy sta 19 test pit at 4', separ ulates on water surfa g coal tar like odor	ch Silt, little brick, cor steel pipe (4" dia. X 1 red ed with fine Sand an ining and sheens, wa rate brown NAPL pha ace	acrete, 5' d Silt ater ase Se			Topsoil and Excavated Backfill PVC Pack Screen * refusal at 7.5', moved 20' closer to river bank to attempt another test pit * collected 5-6' sample for lab analysis
Proiec	t No.	1266	51.002				Geomatrix (Consultants	\	WELL_OVM ALL MC	Page 1 of 1

PROJE	CT: F	orn	ner W	est Stat	tion Plant A	rea MGP Site		Log of Well No. GMX-MW-19S					W-19S
BORIN	G LOC	CATI	ON:	See	Site Plan foi	r MW locations		TOP OF RISER 398.46 fmsl	ELEVA	TION	:	DATI ba	JM: rge canal
DRILLII	NG CO	ONT	RACT	OR: Not	hnagle Drill	ing Company		DATE STARTE	D:			DATE	FINISHED:
	NGM	FTH	00.					TOTAL DEPTH	1:			SCRE	EN INTERVAL:
			00.					7.0 fbgs	FIRST	r	COMPL	2-7 ft	ogs NG:
DRILLII	NG EC	QUIP	MENT	: Backh	ioe			WATER:	4	ft		C/ ISI	
SAMPL	ING N	ΛETH	HOD:					LOGGED BY: MAC					
НАММ	ER W	EIGH	IT:			DROP:		RESPONSIBLE R. Frappa	PROFE	SSIO	NAL:		REG. NO.
EPTH (feet)	SAI o. .o	nple MPLE	oot	(mdd)	N	DES AME (USCS Symbol): color, n cementation,	CRIPTION noist, % by weight, plast., stru react. w/HCl, geo. inter.	cture,		W	ELL CONSTR AND/OR DRI	UCTION LLING R	DETAILS EMARKS
	Sar	Sai	₿ f			Surface E	levation: 395.72 fn	nsl					
1 - 2 - 3 -	-				FILL - cobble freque	brown fine Sand w es, concrete pieces, ent steel re-bar	vith little Gravel, few trace solidified tar j	large Dieces,				T E	opsoil and xcavated Backfill
4-	-			_	NATI pieces	/E ALLUVIUM - of bedrock Gravel	and cobbles				• 0000 0000 0000 00000	P	VC Pack Screen
6-	-				satura	ted						* e	reached limit of xcavator at 7'
/ _ 8-								-					
9-	-												
10-	-												
11 -													
12-													
13 -													
14 -													
15 -													
16-													
17 -													
18-													
19-													
20 -													
21 -													
22 -													
23 -													
24 -													
25 -													
26 -													
27 -													
28 -													
29 -													
30 -										WE	ELL_OVM ALL MC	DNITORING	WELLS.GPJ (5/09)
Projec	t No.	1266	51.002				Geomatri	x Consultants					Page 1 of 1

PROJE	CT: F	orn	ner W	est Sta	ation Plant A	Area MGP Site		Log	of Wel	l No. GM	X-MW-20S
BORIN	g loc	ATI	ON:	See	e Site Plan fo	r MW locations		TOP OF RISER (not surveye	ELEVATIO	N:	DATUM:
DRILLI	NG CC	DNT	RACTO	DR: No	othnagle Drill	ling Company		DATE STARTE	D:		DATE FINISHED:
		тц	مں					TOTAL DEPTH	:		SCREEN INTERVAL:
								8.0 fbgs DEPTH TO	FIRST	COMPL.	3-8 fbgs CASING:
	NG EC	QUIP	MENI	: Back	hoe			WATER:	1.5 ft		
SAMPL	ING N	1ETI	HOD:					MAC			
намм	ER W	EIGH	IT:			DROP:		RESPONSIBLE R. Frappa	PROFESSI	ONAL:	REG. NO.
EPTH (feet)	SAN o o	uple apple	oot S	OVM (mdd)	N	DESCRIPTION AME (USCS Symbol): color, moist, % by we cementation, react. w/HCl, c	ight, plast., structur jeo. inter.	e,		WELL CONSTRU AND/OR DRIL	JCTION DETAILS LING REMARKS
	Sar	Sar	Be			Surface Elevation:	(not surveye	ed)			
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -					FILL - Gravel satura - no or	angular bedrock cobbles wi ted at 1.5', very slight sheen dors or staining	th Silt, Sand a on water in t	and est pit (<u>S-P</u>)SOZAWXXV9			 Topsoil and Excavated Backfill PVC Pack Screen * collected 4-5' sample for lab analysis * reached limit of excavator at 8'
30 -									v	VELL_OVM ALL MOI	NITORING WELLS.GPJ (5/09)
Projec	t No.	1266	1.002				Geomatrix (Consultants			Page 1 of 1

2009 MONITORING WELL LOGS

PROJE	ECT:	Fc	ormer	West	Station Plan	t Area MGP Site		Log	J O	fW	ell	No.	GM	X-MW-12D
BORIN	G LC	CA		I: Se	e Site Plan	for MW Locations		TOP OF RIS 400.18 fmsl	ER	ELEV	ATIC	ON:	DA bar	TUM: ge canal
DRILLI	NG (201	ITRA	CTOR	R: Nothnagi	e Drilling Company		DATE STAR 11/9/09	TEC	D:			DA 11/	TE FINISHED: 10/09
DRILLI	NGI	MEI	HOD	: 61/	/4" dia. Hollo	ow Stem Augers/ HQ Core Barre	el	TOTAL DEP 30.0 fbgs	TH:				SC 15-	REEN INTERVAL: 30 fbgs
DRILLI	NG E	EQL	JIPME	ENT:	CME 850			DEPTH TO WATER:	¦ FI	RST	C	OMPL	. CA	SING:
SAMPI	ING	ME	тно	D: 2"	Split Spoon	, NX Core		LOGGED BY AKC	(:					
НАММ	ER V	VEI	GHT:	140		DROP: Autohammer		RESPONSIB Richard Frap	BLE ppa	PROF	ES	SIONA	L:	REG. NO.
DEPTH (feet)	SA No.	ample IAW	lows/ foot	(mdd)	N	DESCRIPTION AME (USCS Symbol): color, moist, % by weigh cementation, react. w/HCl, geo. in	it, plast., str ter.	ucture,		١	NEL AN	L CON D/OR [STRUC DRILLIN	TION DETAILS IG REMARKS
	Х	Š	<u> </u>			Surface Elevation: 398.06	6 fmsl		T			140		
ЭХХХХХХХХХХХООООООООООООООООООООООООО					Bedroc (15-25') Rec: 9.4 RQD: 3 Lith: Re staining aperatu mechar mm) vu limestor (25-30') Rec: 4. RQD: 3 Lith: As bgs. In	k Run #1: Rochester Shale 4/10' (94%) .7'/9.4' (39.4%) ochester shale, slightly calcareo or odors. Few open vertical fra re). Several bedding plane fractical breaks, few small to large or gs. Few brachiopods throughou he interbedding in bottom 8" of or Run #2: Rochester Shale 4'/5.0' (88%) .2'/4.4' (72.7%) above, large (~15 mm) calcite creased brachiopods from 25.5-	rden lith	r shale. No (~1 mm Several r (~1-10 eased			•			-4" Steel Casing Riser to 2' below bedrock -Bedrock -Open HQ Coverhole
Projec	t No.	126	61.00	4		Geor	matrix	Consultant	ts	W	ELL_	OVM MO	NITORIN	Page 1 of 1

PROJI	ECT:	Fc	ormer	West	Station Plan	t Area MGP Site	Log	of W	ell No. (GMX-MW-16I
BORIN	IG LO	CA		I: Se	e Site Plan f	for MW Locations	TOP OF RISI 396.67 fmsl	ER ELEV	ATION:	DATUM: barge canal
DRILL	ING	CON	NTRA	CTOR	: Nothnagle	e Drilling Company	DATE STAR 11/18/09	TED:		DATE FINISHED: 11/19/09
DRILL	ING I	MET	HOD	: 41/	/4" dia. Hollo	w Stem Augers/ HQ Core Barrel	TOTAL DEP 47.0 fbgs	TH:		SCREEN INTERVAL: 37-47 fbgs
DRILL	ING I	EQL	JIPME	ENT:	Gus Pech		DEPTH TO WATER:	FIRST	COMPL.	CASING:
SAMP	LING	ME	THO	D: 2"	Split Spoon		LOGGED BY MAC	:		
HAMM	IER V	VEI	GHT:	140		DROP: Autohammer	RESPONSIB Richard Frap	LE PROF	ESSIONAL:	REG. NO.
DEPTH (feet)	Sample No.	sample	Blows/ foot	(mdd)	N	DESCRIPTION AME (USCS Symbol): color, moist, % by weight, plast cementation, react. w/HCl, geo. inter.	., structure,		VELL CONST AND/OR DR	RUCTION DETAILS ILLING REMARKS
	S	S	ш —			Surface Elevation: 394.93 fms	sl	T =///////		
					(27-37) F Rec: 10.0 RQD: 7.3 Lith: Rod diameter througho Light gre No staini decrease (37-47) F Rec: 9.5 RQD: 9. Lith: Irou limeston or odors Several is mechani depth.	 * See GMX-MW-16D for bedrock lith from 12-27' bgs Run #1: Rochester Shale 0'/10.0' (100%) 3'/10.0' (73%) chester Shale, with several medium 'vugs (~5 to 10 mm). Many brachic but. Irondequoit Limestone at ~33 ey limestone with many grey-green s ing or odors. Increased limestone c ed shale content with depth. Run #2: Irondequoit Limestone '/10.0' (95%) 1'/9.5' (95.8%) indequoit Limestone. Light grey-gre e with dark gray interbedding. No s . Many small to medium healed ver small diameter (~1 mm) vugs. Seve ical breaks. Increased limestone co 	to large pods feet bgs. hale interbeds. ontent and en taining tical fractures. eral ntent with			
Proied	ct No.	126	61.00	4		Geomat	rix Consultant	S		Page 1 of 1

PROJE	CT:	Fo	rmer	West	Station Plar	t Area MGP Site	Log	of W	/ell	No. (GMX-MW-16D
BORING	G LC	CA		I: Se	e Site Plan	for MW Locations	TOP OF RISE 396.79 fmsl	R ELE	VATIO	DN:	DATUM: barge canal
DRILLIN	IG (ON	ITRA	CTOR	R: Nothnag	e Drilling Company	DATE START 11/9/09	ED:			DATE FINISHED: 11/10/09
DRILLIN	NG N	/IET	HOD): 41,	/4" dia. Hollo	ow Stem Augers/ HQ Core Barrel	101AL DEPT 17.0 fbgs	H:			SCREEN INTERVAL: 12-17 fbgs
DRILLIN	NG E	QL	JIPMI	ENT:	Gus Pech		WATER:	FIRST		MPL.	CASING:
SAMPL	ING	ME	THO	D: 2"	Split Spoor	1	LOGGED BY AKC				
НАММЕ	ER V	VEI	GHT:	140		DROP: Autohammer	RESPONSIBI Richard Frap	LE PRC	FESS	SIONAL	: REG. NO.
EPTH (feet)	SAN o	uple mple	ES oot	(mdd)	Ν	DESCRIPTION IAME (USCS Symbol): color, moist, % by weight, plas cementation, react. w/HCl, geo. inter.	t., structure,		WELL AND	. CONST)/OR DR	FRUCTION DETAILS RILLING REMARKS
	0	Sa	ē,ª			Surface Elevation: 394.91 fm	sl				
1					FILL C	Green brown grading to black silt and ed, no odors.	d fine sand,				
24567					FILL E occasio	Black silt and fine sand, light sheen, nal bivalve clam shell.	no odors,				
				_	Bedro	ck					bedrock
					(12-21') Rec: 9 RQD: 3 Lith: Ri shale. NAPL s Occasic healed (21-27') Rec: 6 RQD: 4 Lith: Ri diamete vug at 2 vertical 25-27' I present bgs.	 Run #1: Rochester Shale 0/9.0' (100%) 3.2'/9.0' (35.6%) ochester shale, gray to dark gray ca Locally soft with few bedding plane partings onal small vugs (5-10 mm in diameter vertical fractures throughout. Run #2: Rochester Shale 0'/6.0' (100%) .5'/6.0' (75%) ochester shale, as above, with few se or (1-10 mm) vugs. Calcite filled 10 22' bgs. Many brachiopods throughouf fractures throughout. Open vertical ogs. Coal tar-like material, NAPL and in fracture plane at 27' bgs and in p 	Icareous partings. s at 24.5' bgs. er). Few small to large mm diameter ut, few healed fractures at d staining parting at ~22'				—Bedrock —Open HQ Coverhole
									WELL_O	VM MONI	TORING WELL LOGS.GPJ (3/10)
Project	No.	126	61.00)4		Geomat	rix Consultants	S			Page 1 of 1

PROJECT: Former West Station	Plant Area MGP Site	Log of Well No.	GMX-MW-17D				
BORING LOCATION: See Site F	Plan for MW Locations	TOP OF RISER ELEVATION:DATUM:397.22 fmslbarge canal					
DRILLING CONTRACTOR: Noth	inagle Drilling Company	DATE STARTED: 11/10/09	DATE FINISHED: 11/11/09				
DRILLING METHOD: 4 1/4" dia.	Hollow Stem Augers/ HQ Core Barrel	TOTAL DEPTH: SCREEN INTER 29.0 fbgs 14-29 fbgs					
DRILLING EQUIPMENT: Gus Pe	ech	DEPTH TO FIRST COMPL. WATER: 7 ft	CASING:				
SAMPLING METHOD: 2" Split Sp	poon	LOGGED BY: MAC					
HAMMER WEIGHT: 140	DROP: Autohammer	RESPONSIBLE PROFESSIONAL Richard Frappa	: REG. NO.				
SAMPLES (feet) mmple mmple ood f (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., st cementation, react. w/HCl, geo. inter.	tructure, AND/OR DF	TRUCTION DETAILS RILLING REMARKS				
	Surface Elevation: 395.45 fmsl						
1 6 27.0 Hai sar 2 9 27.0 Fil sar 2 31.0 Slig 3 14 10.0 As 16 7 10.0 As 18 16 1.7 Grag 3 4 6 7 Grag 60 2 500.2 Bee (14 8 (14 Ref 14 14	nd excavate to 4' bgs. Cuttings consist of b nd with silt, metal, several solidified tar block ncrete. LL Weathered concrete and shale bedroc ght coal tar-like odor and light sheen. above, saturated. Staining and heavy shee -like odor. ay fine to coarse sand with silt, little coarse avel, trace brick. Slight coal tar-like odor. N ofock 4-24') Run #1: Rochester Shale c: 9 4'/10 0' (94%)	orown fine k and ck gravel. en. Coal angular to staining.	——4" Steel Casing Riser to 2' below bedrock ——Bedrock				
180 Red 200 Litt 200 Itil 200 Itil <	c: 9.4'/10.0' (94%) lD: 4.9'/9.4' (52.1%) 1: Dark gray clacareous shale. No staining veral healed vertical fractures. Few 2 to 3" tical fractures, (~2 to 3 mm apperature), se chanical breaks. Few brachiopods through all diameter (~1 to 3 mm) vugs, clay imparti- rting at 21' bgs. I-29') Run #2: Rochester Shale c: 5.0'/5.0' (100%) 1D: 4.5'/5.0' (90%) 1: As above, significant calcareous debris la oughout core, with many brachiopods. Incr estone content, few healed vertical fracture ctures with 1 to 2 mm aperature. Few smal gs (1 to 10 mm in diameter).	g or odors. long open weral hout. Few ing in ayering reased es, few open Il to large	Open HQ Coverhole				
Project No. 12661 004	Ceomatrix	Consultants	Page 1 of 1				

PROJ	ROJECT: Former West Station Plant Area MGP Site								Log	of W	ell No.	GM)	(-MW-17S
BORIN	NG LO	CA		I: Se	e Site Plan	for MW Loc	ations		TOP OF RISER ELEVATION: DATUM: 397.49 fmsl barge canal				
DRILL	ING (CO	NTRA	CTOR	R: Nothnagi	le Drilling Co	ompany		DATE STARTED: DATE FINISH 11/11/09 11/11/09				
DRILL	ING I	ME	THOD): 41	/4" dia. Hollo	ow Stem Au	gers		TOTAL DEP 14.0 fbgs	TH:		SCR 3.5-1	EEN INTERVAL: 10.5 fbgs
DRILL	ING I	EQL	JIPM	ENT:	Gus Pech				DEPTH TO WATER:	FIRST	COMPL.	CAS	ING:
SAMP	LING	ME	THO	D: 2"	Split Spoor	ו			LOGGED BY MAC	:			
НАММ	1ER V	VEI	GHT:	140		DROP: /	Autohammer		RESPONSIBLE PROFESSIONAL: REG. NO.				
DEPTH (feet)	ample No.	ample Buble	lows/ SH	OVM (mdd)	Ν	NAME (USCS Syn cerr	DESCRIPT nbol): color, moist, % nentation, react. w/H	ION 6 by weight, plast., s Cl, geo. inter.	tructure,		WELL CONS AND/OR D	STRUCT RILLING	ION DETAILS REMARKS
	й	ÿ	8			Surfa	ce Elevation:	395.11 fmsl		T - XXXXX			
						** See GMX	MW-17D for	lithology					Sement/bentonite prout J/8" Diameter Bentonite Chips 400N Filter Sand ?" Diameter 0.010" Slot PVC Well Diameter VC Well Diameter WELL LOGS.GPJ (3/10)
Proje	ct No.	126	61.00)4				Geomatrix	Consultant	ts			Page 1 of 1

PROJECT: Former West S	Station Plant Area MGP Site	Log of Well No. GMX-MW-19I				
BORING LOCATION: See	e Site Plan for MW Locations	TOP OF RISER ELEVATION: 399.48 fmsl	DATUM: barge canal			
DRILLING CONTRACTOR:	Nothnagle Drilling Company	DATE STARTED: 11/16/09	DATE FINISHED: 11/17/09			
DRILLING METHOD: 4 1/4	4" dia. Hollow Stem Augers/ HQ Core Barrel	TOTAL DEPTH: SCREEN INTER 42.0 fbgs 32-42 fbgs				
DRILLING EQUIPMENT: 0	Gus Pech	DEPTH TO FIRST COMPL.	CASING:			
SAMPLING METHOD: 2" S	Split Spoon	LOGGED BY: MAC				
HAMMER WEIGHT: 140	DROP: Autohammer	RESPONSIBLE PROFESSIONAL: REG. NO. Richard Frappa				
SAMPLES (feet) So of Make (beat) So of Covernments (beat) So of Covernments (beat) So of Covernments (beat) So of Covernments (beat) Sample (beat) S	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., stru cementation, react. w/HCl, geo. inter.	ucture, WELL CONSTI AND/OR DRI	RUCTION DETAILS LLING REMARKS			
	Surface Elevation: 397.99 fmsl					
Project No. 12661.004	*** See GMX-MW-19D for overburden li (17-27') Run #1: Rochester Shale Rec: 9.0/10.0' (90%) RQD: 7.3'9.0' (81.1%) Lith: Rochester shale, dark gray calcareous shitar-like odor. Tar at 17.0-20' bgs in partings. Star-like odor. Tar at 17.0-20' bgs in partings. Star-like odor. Tar at 17.0-20' bgs in partings. Star-like odor. Tar at 17.0-20' bgs in partings at 21' ar Many brachiopods throughout. Many small dia Vertical fractures, few bedding plane fractures, mechanical breaks. 1/2" clay partings at 21' ar Many brachiopods throughout. Many small dia 2 mm) vugs throughout. Few large diameter (~ vugs, large vug or vertical fracture (~2" in diam bgs. (27-32') Run #2: Rochester Shale Rec: 4.4'5.0' (88%) RQD: 2.8'4.4' (63.6%) Lith: Rochester shale. As above, increased lir content from 29-32' bgs. No staining or odors, partings at 28.5' bgs. Several 1 to 2' long head fractures, several mechanical breaks, may brachroughout, many small diameter (~1 mm) vugs diameter (~15 to 22 mm) vugs at 29 and 30' bg (32-42') Run #3: Irondequoit Limestone Rec: 10.0'/10.0' (100%) ROD: 9.2'/10.0' (92%) Lith: Irondequoit Limestone at 32' bgs. Light g limestone with gray and gray-green interbeddim No staining or odors. Several small healed ver fractures. Small bedding plane fractures, main interbeds. Few small to medium vugs (~1 mm to throughout. Several mechanical breaks. Incrementional breaks. Incremention of throughout. Several mechanical breaks. Incremention of throughout. S	thology ale, coal sheens at aperature). several nd 23' bgs. imeter (1 to 10 mm) eter) at 22' nestone clay ed vertical achiopods s, 2 large js. rey-green ng. tical ly in shale to ~4mm) based WELL_OVM MONITOR TORSUITANTS	Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter Diameter DRING WELL LOGS.GPJ (3/10) Page 1 of 1			

PROJECT: Former West Station Plant Area MGP Site						t Area MGP Site	Log of Well No. GMX-MW-19D						
BORIN	G L	CA		I: Se	e Site Plan	for MW Locations	TOP OF RISE 399.96 fmsl	R ELEV	ATION:	DATUM: barge canal			
DRILLI	NG	COI	NTRA	CTOR	R: Nothnagl	e Drilling Company	DATE START 11/13/09	ED:		DATE FINISHED: 11/16/09			
DRILLI	NG	ME	THOE): 41	/4" dia. Hollo	ow Stem Augers/ HQ Core Barrel	TOTAL DEPT 32.0 fbgs	TOTAL DEPTH:SCREEN INTE32.0 fbgs17-32 fbgs					
DRILLI	NG	EQI	JIPM	ENT:	Gus Pech		DEPTH TO WATER:	FIRST 10 ft	COMPL.	CASING:			
SAMPI	ING	6 ME	THO	D: 2"	' Split Spoon	1	LOGGED BY: MAC						
НАММ	ER۱	NEI	GHT:	140		DROP: Autohammer	RESPONSIBL Richard Frapp	E PROF	ESSIONAL	.: REG. NO.			
EPTH (feet)	SA Jo Io	MPL mble	oot SH	(mdd)	N	DESCRIPTION IAME (USCS Symbol): color, moist, % by weight, plas cementation, react. w/HCl, geo. inter.	., structure,		WELL CONS AND/OR DI	TRUCTION DETAILS RILLING REMARKS			
	Surface Elevation: 397.90 fm												
	1 2 3 4		17 5 6 7 28 11 20 28 15 12 21 25 500.1	0.0 17.0 1.7 1.9	* Top 5' FILL B masonr FILL M little coa Slight s FILL G angular odor. N Bedrood (17-27') Rec: 9.0 RQD: 7 Lith: Ro tar-like 18-18.7 Vertical mechar Many b 2 mm) v vugs, la bgs. (27-32') Rec: 4.4 RQD: 2 Lith: Ro content partings fracture through diameter	¹ of fill was cleared with a mini-excav rown fine sand with silt, weathered of y brick. Dry. No staining or odors. loist brown to black fine sand with fir arse, trace brick. Coal tar-like odor. heen when sprayed with DI water. tray-black fine sand with fine to coar shale gravel. Slight coal tar-like and to staining or sheens. K • Run #1: Rochester Shale 0/10.0' (90%) .3'/9.0' (81.1%) ochester shale, dark gray calcareous odor. Tar at 17.0-20' bgs in partings 5' bgs in partings. Few small (~1 m fractures, few bedding plane fractur ical breaks. 1/2" clay partings at 21 rachiopods throughout. Many small vugs throughout. Few large diamete irge vug or vertical fracture (~2" in d P Run #2: Rochester Shale 4'/5.0' (88%) .8'/4.4' (63.6%) ochester shale. As above, increase from 29-32' bgs. No staining or odo s at 28.5' bgs. Several 1 to 2" long h es, several mechanical breaks, many out, many small diameter (~1 mm) v er (~15 to 22 mm) vugs at 29 and 30	ator concrete and le gravel, No staining. Se I spetic-like shale, coal s. Sheens at m aperature). es, several ' and 23' bgs. diameter (1 to (~10 mm) ameter) at 22' d limestone ors, clay ealed vertical brachiopods rugs, 2 large ' bgs.			 —4" Steel Casing Riser to 2' below bedrock —Bedrock —Open HQ Coverhole 			
éğ∃									VELL_OVM MON	ITORING WELL LOGS.GPJ (3/10)			
Proiec	t No.	120	61.00)4		Geomat	rix Consultants			Page 1 of 1			

PROJECT	: Fo	ormer	West	Station Plant Area MGP Site Log of Well No. GMX-MW-	Log of Well No. GMX-MW-19S					
BORING L	OCA		I: Se	e Site Plan for MW Locations TOP OF RISER ELEVATION: DATUM: 399.97 fmsl barge canal						
DRILLING	CON	ITRA	CTOR	:: Nothnagle Drilling Company DATE STARTED: DATE FINISH 11/13/09 11/13/09	ED:					
DRILLING	MET	HOD): 41/	/4" dia. Hollow Stem Augers TOTAL DEPTH: SCREEN INTI 11.0 fbgs 3.6-10.6 fbgs	ERVAL:					
DRILLING	EQL	JIPMI	ENT:	Gus Pech DEPTH TO FIRST COMPL. CASING: WATER: 10 ft COMPL.						
SAMPLIN	G ME	THO	D: 2"	Split Spoon LOGGED BY: MAC	MAC					
HAMMER	WEI	GHT:	140	DROP: Autohammer RESPONSIBLE PROFESSIONAL: REG Richard Frappa	RESPONSIBLE PROFESSIONAL: REG. NO. Richard Frappa					
DEPTH (feet) ample 2	ample	foot C	(mqq)	DESCRIPTION WELL CONSTRUCTION DETA NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	ILS (S					
	ő	<u> </u>		Surface Elevation: 397.92 fmsl						
				***See GMX-MW-19D for lithology	ntonite ter ;hips Sand r 0.010" /ell					
Project No	. 126	61.00)4	Geomatrix Consultants Page 1 of	F 1					

PROJI	ECT:	Fc	ormer	West	Station Plant	t Area MGP Site	Log	Log of Well No. GMX-MW-201D				
BORIN	IG LO	CA		I: Se	e Site Plan f	or MW Locations	TOP OF RIS 415.60 fmsl	TOP OF RISER ELEVATION:DATUM:415.60 fmslbarge canal				
DRILL	ING	201	ITRA	CTOR	: Nothnagle	e Drilling Company	DATE STAR 11/6/09	DATE STARTED: DATE FINISHE 11/6/09 11/6/09				
DRILL	ING I	MET	HOD	: 61/	/4" dia. Hollo	w Stem Augers/ HQ Core Barrel	TOTAL DEP 56.5 fbgs	TH:	-1	SCREEN INTERVAL: 45.5-55.5 fbgs		
DRILL	ING I	EQL	JIPME	ENT:	CME 850		DEPTH TO WATER:	¦ FIRST	COMPL.	CASING:		
SAMP	LING	ME	THO	D: 2"	Split Spoon	, HQ Core	LOGGED BY AKC	/: 				
HAMMER WEIGHT: 140 DROP: Autohammer							RESPONSIE Richard Frap		FESSIONAL	.: REG. NO.		
EPTH (feet)	SA د الملو	MPL mble	Ows/	(mdd)	N	DESCRIPTION AME (USCS Symbol): color, moist, % by weight, cementation, react. w/HCl, geo. inter	plast., structure, r.		WELL CONS AND/OR DF	TRUCTION DETAILS RILLING REMARKS		
	Sa	Sa	ē,			Surface Elevation: 413.56	fmsl					
					*** (44.5-47 Rec: 1. RQD: 0. Lith: He weather breaks. or odors ***Advan betweer (50-56.5 Rec: 4.2 RQD: 2. Lith: Iro with dar Several plane fra Brachiop bgs. Ma 1/2" clay 55', 56'	 * See GMX-MW-201 S for lithold * See GMX-MW-201 S for lithold * See GMX-MW-201 S for litho	m ~8" of core is veral mechanical ore. No staining bedrock/clay one een limestone aining or odors. Several bedding hterbeds. between 50-54' 0 mm) vugs. ke staining at 50',					
80-						A	- 4 - 14 - 14 - 14 - 14	· · ·	VELL_OVM MON	TORING WELL LOGS.GPJ (3/10)		
Project	t No.	126	61.00	4		Ceom	atrix Consultant	ts		Page 1 of 1		

PROJECT: Former West Station Plan	nt Area MGP Site	Log of Well No. GMX-MW-201S			
BORING LOCATION: See Site Plan	for MW Locations	TOP OF RISER ELEVATION: 415.88 fmsl	DATUM: barge canal		
DRILLING CONTRACTOR: Nothnag	le Drilling Company	DATE STARTED: 11/4/09	DATE FINISHED: 11/16/09		
DRILLING METHOD: 6 1/4" dia. Holl	ow Stem Augers	TOTAL DEPTH: 56.5 fbgs	SCREEN INTERVAL: 31-41 fbgs		
DRILLING EQUIPMENT: CME 850		DEPTH TO FIRST COMPL. WATER: 23.5 ft	CASING:		
SAMPLING METHOD: 2" Split Spoor	n, HQ Core	LOGGED BY: AKC			
HAMMER WEIGHT: 140	DROP: Autohammer	RESPONSIBLE PROFESSIONAL Richard Frappa			
DEPTH SAMDLES (feet) Cov (pow) (pow) Cov (pow) Cov (pow) (feet) Cov (feet) (feet) Cov (feet) (DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., st cementation, react. w/HCl, geo. inter.	ructure, AND/OR DR	ILLING REMARKS		
	Surface Elevation: 413.77 fmsl				
1 1 1 0.8 3" of to 2 2 8.7 NA wood. 3 0.9 FILL 0 and sla 5 0.0 FILL 0 and sla 7 3.9 No stai FILL 0 7 3.9 No stai slag fra 7 3 1.9 coarse slag fra 10 11 0.6 1.2 subang 11 2.7 As abo slag fra 12 13 4 2.7 As abo 11 12 14 2.7 As abo 12 14 11 29.7 and bla 16 6 1.0 Moist a 17 12 1.0 FilLL B 18 10 1.0 Brown- 19 6 1.1 Slight s 20 12 30 gravel 19 16 10 said, coa 10000.2 10000.2 10000.2 said, coa 10000.2	 ap soil. ight brown fine sand with silt, some coal bangular to rounded fine gravel. Trace Loose and moist. No staining or odors Gray silt with fine sand, coal dust. Trace go. Loose and dry. No staining or odors. Dark gray fine to medium sand with silt, sand and fine gravel. Trace brick and agments. Loose and dry. No staining or odors. Dark gray fine to medium sand with silt, sand and fine gravel. Trace brick and agments. Loose and dry. No staining or occi, in top 3" of sampler. we, with large slag fragments and coal of rock in top 3" of sampler. we, very slight diesel-like odor. bieces of rock and brick, slight diesel-like ose of rock and brick, slight diesel-like odor. coarse subangular to angular gravel, pleces of wood, trace coal dust. and loose. Slight diesel-like odor. coarse subangular to angular gravel, plotes of brick. r-like odor. Dark brown-dark gray, fine to medium sa farse sand and fine to coarse subangular pleces of brick and wood. Wet with shile odor. Veathered shale bedrock gravel with clane sand, trace brick. Wet. Strong diese sheen. Coal tar-like odor. Dark gray, fine to coarse sand, wet, s odor and NAPL present, heavy staining or work gray, fine to coarse sand, with silt ot coarse weathered shale grave. Slight coal tar-like odor. E ALLUVIUM Fine brown sand with brown ce fine to coarse gravel with dark gray fine to coarse fine to coarse gravel with solar of the to coarse gravel with some silt. g. Slight coal tar-like odor. 	arse sand pieces of e wood s. parse and pose and dry. trace wood, small or odor. dust. te odor. Dry e sand and pieces of nd, fine Wet, slight and with ir to angular ieen. Slight ay and silt, el-like odor. theen, coal g. p medium n clay and el. Wet. and clay. ar-like odor. me sand arse sand, Wet. No	Cement/bentonite grout		
Project No. 12661.004	Geomatrix	Consultants	Page 1 of 1		

PROJECT: Former West Station Plant Area MGP Site Log of Well N									۱o.	GM)	×-M	W-21D	
BORIN	G L	CA		I: Se	e Site Plan	for MW Locations	TO 41	P OF RISE 2.71 fmsl	ER ELEV	ATI	ON:	DAT barg	UM: e canal
DRILLI	NG	201	ITRA	CTOR	R: Nothnagi	e Drilling Company	DA 11/	TE START /16/09	ED:			DAT 11/2	E FINISHED: 7/09
DRILL	NG I	MEI	HOD): 61/	/4" dia. Hollo	ow Stem Augers/ HQ Core Barrel	TO 31.	TOTAL DEPTH: SCREEN INT 31.0 fbgs 16-31 fbgs				EEN INTERVAL: 1 fbgs	
DRILL	NG I	EQL	JIPM	ENT:	CME 850		DE WA	PTH TO ATER:	FIRST	C	OMPL.	CAS	ING:
SAMP	ING	ME	THO	D: 2"	' Split Spoon		LO AK	GGED BY	:				
НАММ	ER V	VEI	GHT:	140		DROP: Autohammer	RE Ric	SPONSIB	LE PROF ba	ES	SIONAL	:	REG. NO.
SAMPLES DESCRIPTION H G g g g g g g g g g g </td <td>plast., structur </td> <td>re,</td> <td></td> <td>NEL AN</td> <td>L CONS⁻ D/OR DF</td> <td>TRUCT</td> <td>ION DETAILS B REMARKS</td>						plast., structur 	re,		NEL AN	L CONS ⁻ D/OR DF	TRUCT	ION DETAILS B REMARKS	
	Surface Elevation: 413.16 fmsl												
	1 2 3 4 5		2 1 2 2 2 2 2 3 4 9 7 13 14 42 100/0.3		* Hand Brown f Trace b odors. Dark gu staining Brown s to wet. FILL E sand. T sand wi wet. N Light br bedrock Bedrocc (16-26') Rec: 7' RQD: 4 Lith: Ro shale. N 24.5' ar few sma open ve plane fr diamete (~20 mr (26-31') Rec: 3. RQD: 1 Lith: Ro oper ve plane fr diamete at 26.5'	cleared to 4' bgs ine sand and silt, trace medium to rick and trace coal dust. Moist. N ray fine sand and silt, trace mediu or odors. Trace angular gravel. silt and clay with trace fine to med No staining or odors. Brown silt and clay with trace fine for the silt. Trace medium to coarse so o staining or odors. own and light gray clay. Weathered the silt. Trace medium to coarse so o staining or odors. Weathered the sile of the sile of the sile. No staining or odors. Weathered the sile of the sile of the sile of the sile 'No.' (87%) .9'/8.7' (56.3%) Dechester shale, dark gray slightly to staining or odors. Clay in parti- id 25.5' bgs. Clay in vertical fracture all (<2" long) healed vertical fracture all (<2" long) healed vertical fracture atures, several mechanical brea er (1 to 2 mm) vugs throughout, or m) vug at 25.5' bgs. Few brachiop Run #2: Rochester Shale 7'/5.0' (74%) .4'/3.7' (37.8%) Dechester shale, as above, increass 28.5'-30' bgs. Clay in partings at veral bedding plane fractures. Se- nical breaks. ~27 - 27.5' bgs is su with clay, few open vertical fracture is cal breaks. ~27 - 27.5' bgs is su with clay, few open vertical fracture bgs.	calcareou ngs at 16 ure shale calcareou ngs at 16 ure at 20 ures, few he large o pods. eed limest calcareou ngs at 16 ure at 20 ures, few he large o pods.	sand. ng or no d. Moist m ine bist to us 5.5', 24', ' bgs small dding small diameter tone d 30' · shale mm nall m) vug		•		4 F E	I" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole
8g∃									L d w	/ELL		TORING	WELL LOGS.GPJ (3/10)
Projec	t No.	126	61.00)4		Geom	atrix Co	onsultant	S			-	Page 1 of 1

PROJECT: Former West Station Plant Area MGP Site							Log of Well No. GMX-MW-22D					
BORING LO	OCA	TION	I: Se	e Site Plan	for MW Locations	TC 41	OP OF RISE 15.92 fmsl	ER ELEV	IOITA	N:	DATUM barge c	1: canal
DRILLING	CON	ITRA	CTOR	: Nothnagl	e Drilling Company	D/ 11	ATE START /6/09	red:			DATE F 11/6/09	FINISHED:
DRILLING	MET	HOE): 41/	4" dia. Hollo	w Stem Augers/ HQ Core Bar	rel TC 50	DTAL DEPT	TH:			SCREE 35-50 fl	EN INTERVAL: bgs
DRILLING	EQU	IIPMI	ENT:	CME 75		DI W	EPTH TO ATER:	FIRST 15 ft	COI	MPL.	CASIN	G:
SAMPLING	6 ME	THO	D: 2"	Split Spoon	, NX Core	LC Ał	DGGED BY	:				
HAMMER	WEIG	GHT:	140		DROP: Autohammer	RI Ri	ESPONSIB chard Frap	LE PRO	FESSI	ONAL:		REG. NO.
DE PTH (feet) ample SNo. SS	MPL amble	lows/ foot	(mqq)	Ν	DESCRIPTION AME (USCS Symbol): color, moist, % by weig cementation, react. w/HCl, geo.	ght, plast., structu inter.	ıre,		WELL AND/	CONST OR DR	RUCTION ILLING R	N DETAILS EMARKS
	Surface Elevation: 413.63 fm								N.			
		15 14 14 18 15 15 15 7 8 10 11 8 4 8 4 4 5 6 4 4 5 6 7 7 8 10 12 12 16 37 5 4 9 5 6 7 7 8 10 11 8 4 8 4 4 5 5 15 7 8 10 11 8 4 8 4 4 5 5 15 7 8 10 11 8 4 8 4 4 5 5 5 15 7 8 10 11 8 4 8 4 4 5 5 5 6 7 7 8 10 11 8 7 5 4 9 5 6 7 7 8 10 12 11 8 7 5 15 7 8 10 11 8 4 8 4 4 5 5 5 5 6 7 7 8 10 11 8 7 5 4 9 5 6 7 7 8 10 12 12 16 7 5 10 10 10 10 10 10 10 10 10 10 10 10 10	0.1 2.0 3.7 0.5 0.4 1.7 4.7 1.5 1.7 68 Peak 137 20 13.5 4.1	* Hand FILL G Loose a FILL Li brick an As abov Slight si FILL G Moist. S As abov tar-like As abov tar-like As abov to medii Bedroc Highly v advance shale m (35-45') Rec: 8.9 RQD: 5 Lith: Ro shale. I fracture fracture vugs, m breaks. (45-50') Rec: 4.9 RQD: 3 Lith: As bottom vertical	cleared to 4' bgs. ray fine sand and trace limestor ind moist. No staining or odors ght brown fine sand with silt, c d concerete. Loose and dry. /e, with weathered concrete. heen. Coal tar-like odor at 17- ray-black weathered shale bec Slight coal tar-like odor. Light s /e, with some larger gravel (me and moderate coal tar-like odor /e, with few NAPL blebs. Stron- bodor. Saturated. Fine to medi /e, with weathered bedrock gra- coal tar-like odor. Heavy shee lebs. Saturated. /e, coarse angular bedrock gra- um sand. k veathered between 30 and 35' es easily to 35' bgs. No stainin- atrix. Run #1: Rochester Shale 9/10' (89%) .3'/8.9' (59.6%) bochester shale, slightly calcare No staining or odors. Several s s (~1 mm aperature), many be s, many small to large diameter any brachiopods throughout. Iron oxide-like staining at ~38 Run #2: Rochester Shale 5'/5.0' (90%) .4'/4.5' (74.6%) s above, 4" of heavily weathered y parting at 48.5' bgs, high lime foot of core. ~20 mm filled vug fractures.	ane gravel. s. oal fragmer 18' bgs. drock. sheen. edium). Lig or. ng sheen an um sand 22 avel with sat stainin avel with silt bgs. Auge ng or odors bgs. Auge ng or odors cous dark gr small open v edding plane er (~1 to 10 Several me y bgs.	ht ht hd coal 2-23'. nd. g. Few and fine r within ray vertical mm) echanical ~47' bgs, ent in gs. No				—4" S Rise bed —Bed —Ope	Steel Casing er to 2' below rock
≴8∃												
Project No.	126	61.00)4		Geo	omatrix C	onsultant	s ·	VELL_OV	/M MONIT		LL LOGS.GPJ (3/10)

PROJECT: Former West Station Plan	nt Area MGP Site	Log c	of Well No.	GMX-MW-23I
BORING LOCATION: See Site Plan	for MW Locations	TOP OF RISER 416.41 fmsl	ELEVATION:	DATUM: barge canal
DRILLING CONTRACTOR: Nothnag	le Drilling Company	DATE STARTEI 11/12/09	D:	DATE FINISHED: 11/13/09
DRILLING METHOD: 4 1/4" dia. Holl	ow Stem Augers/ HQ Core Barrel	TOTAL DEPTH: 70.0 fbgs		SCREEN INTERVAL: 60-70 fbgs
DRILLING EQUIPMENT: CME 850		DEPTH TO FI WATER: 2	IRST COMPL. 3.75 ft	CASING:
SAMPLING METHOD: 2" Split Spoor	n, NX Core	LOGGED BY: AKC		
HAMMER WEIGHT: 140	DROP: Autohammer	RESPONSIBLE Richard Frappa	PROFESSIONAL	.: REG. NO.
DEPTH DEPTH Chorw (pov (pov (pov (pov) (pov (pov) (pov	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., sti cementation, react. w/HCl, geo. inter.	ructure,	WELL CONS AND/OR DF	TRUCTION DETAILS RILLING REMARKS
	Surface Elevation: 414.50 fmsi	-		
1 1 4 0 FILL E 2 3 11 0/16.7 FILL E 3 11.0 0/16.7 FILL E 4 13 14.4 fragme 5 7 NA FILL T 6 7 NA FILL T 9 7 35/9.7 Taffy-lik 9 7 28.7 Moist. 11 7.0 Taffy-lik Brick fr 9 7 28.7 Moist. 11 2.0 gravel, Moist. 9 4 2.0 gravel, 11 2.0 gravel, Moist. 9 7 1.7 Dark bi 7 8 59.7 FILL E 9 7 1.8 59.7 11 3 59.7 FILL E 9 7 1.8 1.0 1000.5 8 7 1.1 11 <td>Brown fine sand with silt, trace fine to copular gravel. Trace brick, trace coal dust. No staining or odors. Brick fragments and coal dust, trace slagents. No staining or odors. Ick (first foot) and coal tar (bottom 0.5') we consistency. Strong coal tar-like odor. Far with brown fine sand and silt, pieces ke consistency. Grades to black and lignd. Silt with trace of rounded gravel. Strong coal tar-like odor. For the sand with silt, trace fine subrot trace tar. Strong coal tar-like odor. Strong coal tar-like odor. To fine sand with silt, trace fine subrot trace tar. Strong coal tar-like odor. Strong coal tar-like odor. Strong coal tar-like odor. To male sand with silt, trace fine subrot trace tar. Strong coal tar-like odor. Strong coal ta</td> <td>arse st. with r. of brick. ght brown bunded like odor. arse al tar-like race brick. subrounded br. Trace cy. reous shale. nm) vugs. rature), anical bedding ures, gs.</td> <td></td> <td></td>	Brown fine sand with silt, trace fine to copular gravel. Trace brick, trace coal dust. No staining or odors. Brick fragments and coal dust, trace slagents. No staining or odors. Ick (first foot) and coal tar (bottom 0.5') we consistency. Strong coal tar-like odor. Far with brown fine sand and silt, pieces ke consistency. Grades to black and lignd. Silt with trace of rounded gravel. Strong coal tar-like odor. For the sand with silt, trace fine subrot trace tar. Strong coal tar-like odor. Strong coal tar-like odor. To fine sand with silt, trace fine subrot trace tar. Strong coal tar-like odor. Strong coal tar-like odor. Strong coal tar-like odor. To male sand with silt, trace fine subrot trace tar. Strong coal tar-like odor. Strong coal ta	arse st. with r. of brick. ght brown bunded like odor. arse al tar-like race brick. subrounded br. Trace cy. reous shale. nm) vugs. rature), anical bedding ures, gs.		
	5' bgs: Rochester shale, as above. Ma	any		
Project No 12661 004	Geomatrix	Consultants	WELL_OVM MONI	Page 1 of 2

Log of Well No. GMX-MW-23I (cont'd)

	SA	MP	LES					
DEPTH (feet)	Sample No.	Sample	Blows/ foot	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		WELL CONSTRUCT AND/OR DRILLING	TION DETAILS G REMARKS
					brachiopods throughout. Significant hash layers. One ~3" long open vertical fracture (1-3 mm aperature) at 51' bgs. (57.5-60') Run #3 cont'd: Irondequoit Limestone 57.5-60' bgs: Irondequoit limestone, light gray-green limestone with dark gray-green and blue-green shale interbeds. several bedding plane fractures in shale interbeds. several mechanical breaks. Large open vertical fracture (1 to 3 mm aperature) at 59' bgs. Few smail to large diameter (1-10 mm) vugs. No staining or odors. (60-70') Run #4: Irondequoit Limestone Re: 9.7/10' (97%) RDI: 6.5'9.7' (67%) Lith: Irondequoit noe, light gray-green limestone with gray-green and blue-green interbedding. No staining or odors. Many healed vertical fractures. Large diameter vugs or large vertical fractures at 64-65' bgs with calcite crystals and pyrite. Few bedding plane fractures in shale interbeds. Several mechanical breaks, few small to large diameter (1-10 mm) vugs. Increased shale content 65-70'bgs.		WELL_OVM MONITORING	WELL LOGS.GPJ (3/10)
Projec	ct No.	12	661.00)4	Geomatrix Consultant	s		Page 2 of 2

PROJECT: Former West Station	n Plant Area MGP Site	Log of Well No. GMX-MW-24D				
BORING LOCATION: See Site	Plan for MW Locations	TOP OF RISER ELEVATION:DATUM:413.20 fmslbarge canal				
DRILLING CONTRACTOR: Not	hnagle Drilling Company	DATE STARTED: 11/10/09	DATE FINISHED: 11/12/09			
DRILLING METHOD: 6 1/4" dia.	. Hollow Stem Augers/ HQ Core Barrel	TOTAL DEPTH: 43.0 fbgs	SCREEN INTERVAL: 28-43 fbgs			
DRILLING EQUIPMENT: CME 8	850	DEPTH TO FIRST COMPL.	CASING:			
SAMPLING METHOD: 2" Split S	Spoon, NX Core	LOGGED BY: AKC				
HAMMER WEIGHT: 140	DROP: Autohammer	RESPONSIBLE PROFESSIONAL	REG. NO.			
DE PTH DE PTH (feet) (ppm) (ppm) (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., str cementation, react. w/HCl, geo. inter.	ructure, AND/OR DR	RUCTION DETAILS			
	Surface Elevation: 410.76 fmsl					
1 2 0 FII 2 3 4 0 FII 3 4 0 FII 0 3 4 0 FII 0 3 4 0 FII 0 4 5 6 7 0 Gr 5 6 7 7 0 Gr 6 7 8 0 Ass 35.0 Ox 9 10 11 12 0 Ass 11 12 0 Ass 11 12 0 FII an train train	LL Dark brown fine sand and silt. Fine to congular to rounded gravel, brick, wood, organiag. Moist. No odors or staining. LL Gray-brown fine sand and silt, fine to congular gravel. Trace brick, trace organic material of odors or staining. Tay fine sand and silt with fine angular gravel ust, trace slag and trace brick. No staining of LL Gray-brown silt with fine sand, trace meases sand, trace brick, trace slag. Tay the sand and silt with fine sand, trace meases and, trace brick, trace slag. Tay for staining or odors. Tay brown silt with fine sand, trace meases and, trace brick, trace slag. The staining or odors. The odor, hard taffy-like consistency. LL Gray-brown fine to medium sand with cond fine subrounded to subangular gravel. Trace wood. No staining, slight coal tar-like od L Dark brown fine to medium sand with cond fine subrounded to subangular gravel, trace ace wood. Wet. No staining, slight coal tar-like od L Dark brown fine to medium sand with cond fine subrounded to subangular gravel. Trace wood. Wet. No staining, slight coal tar-like od L Dark brown fine to medium sand with cond fine subrounded to subangular gravel. Trace wood and fine to coarse angular to subrounded to subangular gravel. Trace wood and fine to coarse angular to subrounded et slight coal tar-like odor. Tedrock 8-38') Run #1: Rochester Shale ec: 8.8'/10' (88%) QD: 5.1'/8.8' (58%) th: Rochester shale, dark gray calcareous slager shale gray shale breaks. A straining at 36.5' bgs. One small vertical fractures, several mechanical breaks. A straining at 36.5' bgs. One small vertical fractures, several mechanical bre	barse cs, trace arse ter. Moist. I. Coal rodors. dium and rong coal barse sand ace brick, ior. arse sand ce brick, ike odor. D coarse d gravel. hale, no meter (1-10 illed vug at bedding '1/2' clay e at 37.5' WELL_OVM MONT	 —4" Steel Casing Riser to 2' below bedrock —Bedrock —Open HQ Coverhole 			
Project No. 12661.004	Geomatrix	Consultants	Page 1 of 1			

PROJI	PROJECT: Former West Station Plant Area MGP Site								Log	j of W	ell No.	GMX-MW-24S	
BORIN	IG LC	CA		l: Se	e Site Plan	for MW Loc	cations		TOP OF RISER ELEVATION:DATUM:414.05 fmslbarge canal				
DRILL	ING (ITRA	CTOR	Nothnag	e Drilling C	ompany		DATE STARTED: DATE FINISHED 11/12/09 11/13/09				
DRILL	ING	MET	HOD	: 61/	4" dia. Hollo	ow Stem Au	lgers		TOTAL DEP 28.0 fbgs	TH:		SCREEN INTERVAL: 15-25 fbgs	
DRILL	ING E	EQL	JIPME	ENT:	CME 850				DEPTH TO WATER:	FIRST	COMPL.	CASING:	
SAMP	LING	ME	THO	D: 2"	Split Spoon	, NX Core			LOGGED BY AKC	/ :			
НАММ	IER V	VEI	GHT:	140		DROP:	Autohammer		RESPONSIBLE PROFESSIONAL: REG. NO. Richard Frappa				
DEPTH (feet)	SAI No.	ample IAM	Slows/	(mqq)	Ν	AME (USCS Syn	DESCRIPT mbol): color, moist, % nentation, react. w/H	TON % by weight, plast., st ICI, geo. inter.	tructure,		WELL CONS AND/OR DF	STRUCTION DETAILS DRILLING REMARKS	
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0												
					*See GI	WX-MW-24	D for lithology	/.				Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 	
Projec	ct No.	126	61.00	4				Geomatrix	Consultant	ts		Page 1 of 1	

PROJECT: Former West Station Plant Area MGP Site								Log of Well No. GMX-MW-25D				
BORIN	G L	CA		l: Se	e Site Plan	for MW Locations		TOP OF RISE 399.32 fmsl	ER ELEV	ATION:	DAT barg	ŪM: je canal
DRILLI	NG	CON	NTRA	CTOR	R: Nothnag	le Drilling Company		DATE STARTED: DATE FINISHED: 11/11/09 11/12/09				
DRILLI	NG I	MET	THOE): 41/	/4" dia. Holl	ow Stem Augers/ HQ Core Bar	rel	TOTAL DEPT 32.0 fbgs	TH:		SCF 17-3	REEN INTERVAL: 32 fbgs
DRILLI	NG	EQL	JIPMI	ENT:	Gus Pech			DEPTH TO WATER:	FIRST 6.5 ft	COMPL.	CAS	SING:
SAMPI	ING	ME	THO	D: 2"	Split Spoor	1		LOGGED BY AKC & MAC	:			
HAMMER WEIGHT: 140 DROP: Autohammer							RESPONSIB Richard Frap		ESSIONA	L:	REG. NO.	
EPTH (feet)	SAMPLES DESCRIPTION Image: second s						ght, plast., st inter.	ructure,		WELL CONS AND/OR D	STRUCI RILLIN(TION DETAILS G REMARKS
	Sa	Sa	ē,			Surface Elevation: 397.6	66 fmsl					
1					* Clear	red to 4' bgs with an excavator						
	1 3 4		1 2 2 5 5 7 7 12 12 10 10 4 5 7 9 10 50/0.2	8.5 19.1 3.0 23	FILL C and littl tar-like As abo betwee FILL L staining As abo sample Bedroo (14-29") Rec: 2 RQD: 0 Lith: R concref shale, r bgs, 1// vertical breaks, few sm (19-29") Rec: 8 RQD: 5 Lith: R limesto bedding Many b betwee through at ~22' (29-32' Rec: 3 RQD: 2 Lith: R 30.5' bg breaks, predon mm) vu diamete	Gray to black fine sand with some e brick, concrete. Some tar (so odor. ve, with some staining and NAI of 6.5' and 7' bgs. oose coarse sand with concrete g or sheens. Light coal tar-like ve, with staining and NAPL pre- shoe. Coal tar-like odor throug Ck) Run #1: Rochester Shale .1'/2.5' (84%) 0.3'/2.1' (14.3%) ochester shale at 16.5' bgs, top te (14-16.5' bgs). Dark gray slip to staining or odors. ~6" clay p 2" clay parting at 18' bgs, sever fractures (~1 mm aperature), s few bedding plane fractures, f all diameter (~1-2 mm) vugs.) Run #2: Rochester Shale .6'/10' (86%) 5.3'/8.6' (61.6%) ochester shale, as above, with ne content ~1/2" clay parting at pen vertical fractures (~1 mm at g plane fractures, several mech rachiopods, concentrated in sec in 24-29' bgs. Many small diam tout one large calcite filled vug bgs.) Run #3: 2 Rochester Shale .0'/3.0' (100%) 2.7'/3.0' (90%) ochester shale, as above, with gs. No vertical fractures, sever . Many brachiopods throughou minantly in hash layering, few s ugs. One large calcite filled vug er) at 31' bgs.	increasi t 20.5' of d ghtly cla arting at ral small several na neter (1-2) (~10 mr	e sand like). Coal urated rated. No pottom of core are careous 17-17.5' open nechanical hiopods, gs. Few e). Several reaks. ish layers 2 mm) vugs n diameter) y parting at anical ntrated imeter (~1-2 m in				4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole
						- ••		_	N	ELL_OVM MON	NITORING	WELL LOGS.GPJ (3/10)
Proiec	t No	126	61 00)4		Geo	omatrix	Consultant	s			Page 1 of 1

PROJECT: Former West Station Plant Area MGP Site								Log	go	of W	/ell	No.	GN	IX-MW-4D
BORIN	IG LO	CA		I: Se	e Site Plan	for MW Locations		TOP OF RISER ELEVATION: DATUM: 415.97 fmsl barge canal				TUM: ge canal		
DRILL	ING (201	NTRA	CTOR	: Nothnagl	e Drilling Company		DATE STARTED: DATE FINISHED: 10/29/09 11/2/09					TE FINISHED: 2/09	
DRILL	ING I	ME	THOD): 61/	/4" dia. Hollo	ow Stem Augers/ HQ Core Bar	rel	TOTAL DEPTH: SCREEN INTER 41.0 fbgs 26-41 fbas					REEN INTERVAL: 41 fbgs	
DRILL	ING I	EQL	JIPMI	ENT:	CME 85			DEPTH TO WATER:	¦ FI	RST		OMPL.	CAS	SING:
SAMP	LING	ME	THO	D: 2"	Split Spoon	, HQ Core		LOGGED BY AKC	:					
HAMMER WEIGHT: 140 DROP: Autohammer								RESPONSIB Richard Frap	LE pa	PROF	ES	SIONAL	_:	REG. NO.
DEPTH (feet)	ample No.	ample MPL	lows/ foot	(mdd)	N	DESCRIPTION AME (USCS Symbol): color, moist, % by weig cementation, react. w/HCl, geo.	ght, plast., st inter.	plast., structure, r. WELL CONSTR AND/OR DRIL			TRUC RILLIN	TION DETAILS IG REMARKS		
	Š	ő	ш.			Surface Elevation: 413.5	52 fmsl		Τ=					
					** Iithology Advanc cuttings sand ar present Advanc casing-t	** See log of GMX-MW-4S for of e augers to ~17' bgs without sa consist of black fine to mediur ad fine gravel, pieces of brick a material present. Taffy-like con ments. Strong odor. Black sta ad coarse gravel, saturated. Co . Strong odor. e augers to 23' bgs and set 4" grout in place. * See log of GMX-MW-4Irond f	ampling. n sand v nd conc nsistenc ined fine permane	den Soil with coarse rete. Coal by Sheen e to coarse ke material ent ock lithology			•		ITORING	-4" Steel Casing Riser to 2' below bedrock -Bedrock -Open HQ Coverhole
Projec	t No.	126	61.00	4		Geo	omatrix	Consultant	S					Page 1 of 1

BORING LOCATION: See Site Plan for MW Locations TOP OF RISER ELEVATION: Dature Starter DRILLING CONTRACTOR: Nothnagie Drilling Company DATE STARTED: DATE FINISHED: DRILLING CONTRACTOR: Nothnagie Drilling Company TOTAL DEPTH: SCREEN INTERV DRILLING METHOD: 61 41* dia. Holow Stem Augers/ HQ Core Barrel 60.0 fbgs SCREEN INTERV DRILLING EQUIPMENT: CME 85 DEPTH TO FIRST COMPL. SAMPLIS DROP: Autohammer RESPONSIBLE PROFESSIONAL: REG. NO HAMMER WEIGHT: 140 DROP: Autohammer RESPONSIBLE PROFESSIONAL: REG. NO SAMPLIS 50.0 DESCRIPTION Receared rates, an interview of the set of the	PROJE	ECT:	Fo	ormer	West S	Station Plan	t Area MGP Site	Lo	Log of Well No. GMX-MW-4I				
DRILLING CONTRACTOR: Nothinagle Drilling Company DATE STARTED: 10/30/09 DATE FINISHED: 10/30/09 DRILLING METHOD: 6 14* dia. Hollow Stem Augers/HQ Core Barrel 60.0 fbgs TOTAL DETTH: 50.00 fbgs SCREEN INTERV 50.60 fbgs DRILLING EQUIPMENT: CME 85 DEPTH TO Richard Prapa COMPL. AMMURG WEIGHT: 140 DROP: Autohammer MAMMER WEIGHT: 140 DROP: Autohammer SAMPLES SAMPLOS Bage Mate Goods Barcel Constraint, Streaded commention, set, No weldt, aset, and the commention, and commention, set, and commention, set, and the commention, and commention, set, and the commention, and commention, set, commention, and the commention, set, and the commention, and the commention, set, and the commention, set, and the commention, and the commention, set, and the commention	BORIN	IG LO	CA		I: Se	e Site Plan	for MW Locations	TOP OF RIS 415.80 fmsl	TOP OF RISER ELEVATION:DATUM:415.80 fmslbarge canal				
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel O. Or fbgs TOTAL DEPTH: SO AD fbgs SCREEN INTERV So AD fbgs SCREEN INTERV Cool fbgs DRILLING EQUIPMENT: CME 86 WATER: LOGGED BY: AKC CASING: HAMMER WEIGH: 140 DROP: Autohammer RESPONSIBLE PROFESSIONAL: RESPONSIBLE PROFESSIONAL: RESPONSIBLE PROFESSIONAL: SUBCOMMENT: RESPONSIBLE PROFESSIONAL: SUBCOMMENT: SUBCOMMENT: RESPONSIBLE PROFESSIONAL: RESPONSIBLE PROFESSIONAL: SUBCOMMENT: ACC NOT RESPONSIBLE PROFESSIONAL: RESPONSIBLE PROFESSIONAL: SUBCOMMENT: SUBCOMMENT: ADDOR DRILLING REMARKS TELE SAMPLES MAME (USCS Without sampling. Soil cuttings are dark brown to black fine to medium sand with coarse sand, fine grave, line: door. Advance to ~22' bgs without sampling. Soil cuttings are dark brown to black fine to medium sand with coarse sand, fine grave, line: door. Advance rollerbit 22-26' bgs and set 4" permanent casing-grout in place. Wood pieces in return water. (26:307) Run #1: Rochester Shale Recovery: 3.774' (92.5%) RCD: 1.97.77' (12.5%) ROD: 1.97.77' (12.5%) Lith:: Rochester Shale Recovery: 4.97.6.0' (60%) ROD: 3.374.0' (71.33%) Lith:: A above, with increasing limestone content. Several brachiopod hashayets, -1/2' Clay parting at 36.5' bgs Comment/bencom (36-407) Run #1: Rochester Shale Recovery: 4.97.6' (60%) ROD: 3.374.0' (77.33%) Lith:: A above, with increasing limestone content. Several brachiopod hashayets, -1/2' Clay parting at 36.5' bgs	DRILL	ING	CO	NTRA	CTOR	: Nothnagl	e Drilling Company	DATE STAR 10/29/09	DATE STARTED: DATE FINISHED: 10/29/09 10/30/09				
DRILLING EQUIPMENT: CME 85 DEPTH 20 WATER: WATER: COMPL. CASING: SAMPLING METHOD: 2* Split Spoon, HQ Core AKC LOGGED BY: AKC RESPONSIBLE PROFESSIONAL: RESPONSIER PROFESSIONAL: RESPONSIER PROFESSIONAL: RESPONSIER PROFESSIONAL: RESPONSIER PROFESSIO	DRILL	ING I	MET	THOE): 61/-	4" dia. Hollo	ow Stem Augers/ HQ Core Barrel	TOTAL DEP 60.0 fbgs	IOTAL DEPTH: SCREEN INTER 60.0 fbgs 50-60 fbgs				
SAMPLING METHOD: 2* Split Spoon, HQ Core LOGGED BY: AKC HAMMER WEIGHT: 140 DROP: Autohammer RESPONSIBLE PROFESSIONAL: Rehard Frappa REG. NC Rehard Frappa SAMPLES BS MALE USD Symbol: Gol: nowith, by weight able, studing, emmethatin, most with g as inter. WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS SAMPLING METHOD: 2* Split Split Gol: nowith, by weight able, studing, emmethating, most with g as inter. WELL CONSTRUCTION DETAILS MALE USD Symbol: Gol: nowith, by weight able, studing, emmethating, the gravel, pieces of brick and concrete. Coal tar. Here material present, and taffy-like consistency. WELL CONSTRUCTION DETAILS MALE USD Split Spl	DRILL	ING I	EQL	JIPMI	ENT:	CME 85		DEPTH TO WATER:	FIRST	COMPL.	CASING:		
HAMMER WEIGHT: 140 DROP: Autohammer RESPONSIBLE PROFESSIONAL: RES. RC SAMPLES Sample Status Big Status DESCRIPTION Well CONSTRUCTION DETAILS SAMPLES MAKE USOS Symbol continues, its weath past, structure, its manual reset, and reset, structure, its stru	SAMP	LING	ME	THO	D: 2"	Split Spoon	, HQ Core	LOGGED BY AKC	Y:				
SMMPLES DESCRIPTION MALE (USCS Symbol color, const, by weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, mark, so weight plate, structure, commutation, read, which goal, so weight plate, structure, commutation, read, which goal, so weight plate, structure, commutation, read, which goal, so weight plate, structure, structure, commutation, read, which goal, so weight plate, structure, str	HAMMER WEIGHT: 140 DROP: Autohammer								BLE PRO	FESSIONAL:	REG. NO.		
L Ø Ø Surface Elevation: 413.55 fmsl Image: Strate Construction *** See log of GMX-MW-4S for overburden lithology *** See log of GMX-MW-4S for overburden Image: Strate Construction Advance to ~22' bgs without sampling. Soil cuttings are dark brown to black fine to medium sand with coarse sand, fine gravel, pieces of brick and coarsete coal tar-like material present, and taffy-like consistency. Strong coal tar-like odor. Advance rollerbit 22-26' bgs and set 4" permanent casing-grout in place. Wood pieces in return water. (26.30) Run #1: Rochester Shale Recovery: 3.714' (02.5%) RQD: 19/3.7' (51.35%) Lith: (Rochester shale) Gray slightly calcareous shale, no staing or dors, no NAPL. Thin (~1/2') day partings at 27.5' and 29.4' bgs. Few healed vertical fractures, few open vertical fractures (-1 mm aperature), several mechanical breaks. Few bedding plane fractures, Few brachlopods. Few small and large vugs (~1 to 10 mm diameter). (20-25) Run #2: Rochester Shale Recovery: 4.0/50.0(80%) RQD: 3.3/4.5'(73.33%) Lith: As above, increasing limestone content. Several brachlopod hshupers, ~1/2' clay parting at 36.5' bgs (40-45) Run #4: Rochester Shale Recovery: 4.0/50.0(80%) RQD: 3.4/5.0' (96%) RQD: 4.1/4.8' (85.4%) Lith: As above, increasing limestone content. Brachiopod shroughout (45-50) Run #5: Irondequoit Limestone	SAMPLES DESCRIPTION Image: Second s							last., structure,		AND/OR DR	ILLING REMARKS		
 *** See log of GMX-MW-4S for overburden lithology Advance to ~22' bgs without sampling. Soil cuttings are dark brown to black fine to medium sand with coarse sand, fine gravel, pieces of brick and concrete. Coal tar-like material present, and taffy-like consistency. Strong coal tar-like odor. Advance rollerbit 22-26' bgs and set 4'' permanent casing-grout in place. Wood pieces in return water. (26-30) Run #1: Rochester Shale Recovery: 3.7/4' (92.5%) RQD: 19/3.7' (61.35%) Lith: (Rochester shale) Gray slightly calcareous shale, no staining or dors, no NAPL. Thin (~12') clay partings at 27.5' and 29.4' bgs. Few healed vertical fractures, few open vertical fractures (~1 mm aperature), several mechanical breaks. Few heading plane fractures. Few brachiopods. Few small and large vugs (~1 to 10 mm diameter). (20-25') Run #2: Rochester Shale Recovery: 4.5/5.0' (90%) RQD: 3.5/4.0' (87.5%) Lith: As above. (35-40') Run #3: Rochester Shale Recovery: 4.5/5.0' (90%) RQD: 3.5/4.0' (87.5%) Lith: As above, with increasing limestone content. Several brachiopod hashlayers, ~1/2' clay parting at 36.5' bgs (40-45') Run #4: Rochester Shale Recovery: 4.5/5.0' (96%) RQD: 3.5/4.0' (87.5%) Lith: As above, increasing limestone content. Brachiopods throughout Lith: As above, increasing limestone content. Brachiopods throughout (45-50') Run #5: mondequoi Limestone 		ů –	Š	<u> </u>			Surface Elevation: 413.55 f	msl		a xxxxxa			
66 (40-45') Run #4: Rochester Shale Recovery: 4.8'/5.0' (96%) RQD: 4.1'/4.8' (85.4%) Lith: As above, increasing limestone content. 72 73 74 75 74 75 74 75 74 75 76 77						Advanc dark bro sand, fui tar-like Strong of Advanc casing-((26-30') Recove RQD: 1 Lith: (R no stain at 27.5' open væ mechar brachio diamete (20-25') Recove RQD: 3 Lith: As (35-40') Recove RQD: 3 Lith: As	** See log of GMX-MW-4S for ove // e to ~22' bgs without sampling. S pown to black fine to medium sand ne gravel, pieces of brick and commaterial present, and taffy-like cor coal tar-like odor. e rollerbit 22-26' bgs and set 4" pe grout in place. Wood pieces in reference of the second	oil cuttings are with coarse crete. Coal hsistency. ermanent turn water. careous shale, ") clay partings al fractures, few), several ractures. Few -1 to 10 mm			Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter		
Z5 Rec: 4.9'/5' (98%) Z6 RQD: 4.4'/4.9' (89.8%) Z6 Lith: Z8 45-48' bgs; As above.						(40-45') Recove RQD: 4 Lith: As Brachio (45-50') Rec: 4.9 RQD: 4 Lith: 45-48' h	Run #4: Rochester Shale ry: 4.8'/5.0' (96%) .1'/4.8' (85.4%) above, increasing limestone cont pods throughout Run #5: Irondequoit Limeston 9'/5' (98%) .4'/4.9' (89.8%)	ent. e					
WELL_OVM MONITORING WELL LOGS.GPJ (3) Project No. 12661.004 Projec		+ No	100	S61.00				atrix Consultan	te	WELL_OVM MONIT	ORING WELL LOGS.GPJ (3/10)		

Log of Well No. GMX-MW-4I (cont'd)

			= -					
DEPTH (feet)	Sample No.	Sample	Blows/ foot	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		WELL CONSTRUCT AND/OR DRILLING	ION DETAILS REMARKS
					48-50' bgs: Irondequoit Limestone, gray-green limestone with green shale interbeds, no staining or odors. Fe open vertical gractures (~1 mm aperature) several mechanical breaks, few small vugs(~1 mm diameter), few brachiopod fossils throughout. Increasing limestone content with decreasing shale content with depth. (50-55') Run #6: Irondequoit Limestone Rec: 4.375.0' (86%) ROD: 3.4'/4.3' (79%) Lith: As above, decreasing shale content.		WELL_OVM MONITORING	WELL LOGS.GPJ (3/10)
Projec	t No.	12	661.00	04	Geomatrix Consultant	S		Page 2 of 2

PROJECT: Former West Station Plant Area MGP Site									Log of Well No. GMX-MW-6D				
BORING	G LC	CA		I: Se	e Site Plan	for MW Location	s		TOP OF RISER ELEVATION:DATUM:416.18 fmslbarge canal				M: canal
DRILLIN	IG C	201	ITRA	CTOR	: Nothnagi	e Drilling Compa	iny		DATE STARTED: DATE FINISHE 10/26/09 11/2/09				
DRILLIN	NG N	/IE7	HOD): 61/	/4" dia. Hollo	ow Stem Augers	HQ Core Barre	el	TOTAL DEPTH:SCREEN INTEL60.0 fbgs38-45 fbgs				
DRILLIN	NG E	QL	JIPM	ENT:	CME 85				DEPTH TO WATER:	FIRST	COMPL.	CASIN	IG:
SAMPL	ING	ME	THO	D: So	oil-None; Be	drock-HQ Core,	NX Core		LOGGED BY AKC & MAC				
HAMMER WEIGHT: 140 DROP: Autohammer							RESPONSIB Richard Frap	LE PROF	ESSIONAL	-: 	REG. NO.		
DEPTH (feet)	SAMPLES DESCRIPTION Image: Second s						nt, plast., str nter.	ucture,		WELL CONS AND/OR DF	TRUCTIC RILLING F	NN DETAILS REMARKS	
	ŏ	ů	8			Surface El	evation: 413.92	2 fmsl			14401		
					** set 4" p set 4" p Bedroc (38-43') Rec: 3. RQD: 1 Lith: Re materia Slight o mechar (43-45') Rec: 1. RQD: 0 Lith: As Increas	** See log of GM y **Advance 6 1/4' ermanent casing sk) Run #1: Roche 3'/5.0' (66%) .9'/3.3' (57.6%) ochester shale, (1 present in clay dor. Many brach incal breaks.) Run #2: Roche 7'/2' (85%) .7/1.7 (41.2%) s above, no coal ing limestone co	X-MW-6S for o diameter auge ster Shale gray calcareous partings and m niopods through ster Shale tar-like materia ntent with depth	er to 38' s shale, echanic nout sev al. No or h.	bgs and bgs and coal tar-like ral breaks. reral				Steel Casing ser to 2' below drock drock een HQ Coverhole
Project	No.	126	61.00)4			Geor	matrix	Consultant	S		F	Page 1 of 1

PROJI	ECT:	Fo	ormer	West	Station Plant Area	MGP Site	Lo	Log of Well No. GMX-MW-6I				
BORIN	IG LO	CA		I: Se	e Site Plan for MW	/ Locations	TOP OF RIS 416.20 fmsl	ER ELEV	ATION:	DATUM: barge canal		
DRILL	ING	col	NTRA	CTOR	: Nothnagle Drillir	ng Company	DATE STAR 11/2/09	DATE STARTED: DATE FINISH 11/2/09 11/3/09				
DRILL	ING I	ME-	THOD): 61/	4" dia. Hollow Ster	n Augers/ HQ Core Barre	el TOTAL DEP 60.0 fbgs	TH:		SCREEN INTERVAL: 50-60 fbgs		
DRILL	ING	EQI	JIPMI	ENT:	CME 85		DEPTH TO WATER:	¦ FIRST	COMPL.	CASING:		
SAMP	LING	ME	THO	D: So	il-None; Bedrock-ł	HQ Core, NX Core	LOGGED BY AKC & MAC	<i>(</i> :				
HAMMER WEIGHT: 140 DROP: Autohammer							RESPONSIE Richard Frap	BLE PROF	ESSIONAL:	REG. NO.		
DEPTH (feet)	SAMPLES DESCRIPTION Image: Sample in the second s								AND/OR DR	ILLING REMARKS		
	- Sa	S	<u> </u>		S	Surface Elevation: 413.99) fmsl		XXXXXXI			
				*** See lithology ***Advar set 4" permane	log of GMX-MW-6S for ov nce 6 1/4" diameter auge ent casing.	verburden r to 37' bgs and		•	Cement/bentonite grout			
					Bedrock (37-42') Run # Rec: 3.7'/5.0' RQD: 2.2'/3.7' Lith: Rocheste of core. ~2" cla present. Many vertical fracturn Several mecha in core beneat (42-44') Run # Rec: 1.3'/2.0' (RQD: 0.4'/1.3' Lith: As above from ~43'-44' b Many small to Increased lime (44-54') Run # Rec: 8.7'/10.0' RQD: 4.9'/8.7' Lith: (44-45.5' shale. No odo shale interval (bgs. Many bra	 Rochester Shale (74%) (59.5%) er shale, gray calcareous ay parting at ~41' bgs. Not y brachiopods throughout es (~1 mm aperature) at anical breaks, small bedd h clay partings. Rochester Shale	shale clay at top o dors or NAPL , few small open ~39.5' bgs. ing plane fractures ' bgs. In core ertical fractures. m) vugs.					
Proied	ct No.	126	61.00)4		Geor	natrix Consultant	ts		Page 1 of 2		

Log of Well No. GMX-MW-6I (cont'd)

	SAMPLES						
DEPTH (feet)	Sample No.	Sample	Blows/ foot	(mqq)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					 mm) vugs. Several mechanical breaks. (45.5-54') Run #3 cont'd: irondequoit Limestone Lith: Irondequoit limestone, light gray-green limestone with gray shale interbedding. ~6" heavily weathered shale layer (retains shale structure) at 47 bgs. Many small to large diameter (~1-10 mm) vugs. At ~49' bgs a lage calcite filled vug (~20 mm diameter) and 1.2" diameter vug. From ~49-54' bgs several hash layers and 3" shale interbed. (54-60') Run #4: irondequoit Limestone Re:: 5.5'/6.0' (92%) RQD: 3.7'/5.5' (67.3%) Lith: As above, with significant shale interbedding. Few small to large diameter (~1-10 mm) vugs. Several mechanical breaks. 		WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
Projec	t No	12	661.00	04	Geomatrix Consultant	s	Page 2 of 2

PROJECT: Former West S	station Plant Area MGP Site	Log of Well No. GMX-MW-8D				
BORING LOCATION: See	Site Plan for MW Locations	TOP OF RISER ELEVATION: DATUM: 417.17 fmsl barge canal				
DRILLING CONTRACTOR:	Nothnagle Drilling Company	DATE STARTED: 10/27/09 DATE FINISHED:				
DRILLING METHOD: 6 1/4	4" dia. Hollow Stem Augers/ HQ Core Barrel	TOTAL DEPTH: SCREEN INTE 48.0 fbgs 33-48 fbgs				
DRILLING EQUIPMENT: 0		DEPTH TO FIRST COMPL. WATER:	CASING:			
SAMPLING METHOD: 2" S	Split Spoon, HQ Core	LOGGED BY: AKC				
HAMMER WEIGHT: 140	DROP: Autohammer	RESPONSIBLE PROFESSIONAL	REG. NO.			
DEPTH DEPTH Sample Sample foot (ppm) (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., st cementation, react. w/HCl, geo. inter. Surface Elevation: 414.86 fmsl	WELL CONST AND/OR DR	RUCTION DETAILS			
1 1 1 1	 FILL Brown-black fine to coase sand with som to coarse rounded and angular shale gravel. Saturated. Slight coal tar-like odor. FILL Brown-black fine to coarse sand and silt coarse angular shale gravel. Trace brick. Saturated. Slight coal tar-like odor. FILL Brown-black fine to coarse sand and silt coarse angular shale gravel. Trace brick. Saturated. Slight coal tar-like odor. Bedrock (33-38') Run#1: Rochester Shale Rec: 4.7/5.0' (94%) RQD: 3.0'/4.7' (63.8%) Lith: Rochester shale, dark gray calcareous sf staining or odors. Few ~1" healed vertical fract foot. Few limestone interbeds between 34.5-5 Few small (1-10 mm diameter) vugs. Several breaks throughout. Many brachiopods, primar beds. (38-43') Run #2: Rochester Shale Rec: 5.0'5.0' (100%) RQD: 4.1'5.0' (82%) Lith: Dark gray calcareous shale. No staining Few healed/infilled vertical fractures throughou Increasing lime content toward bottom of core number of brachiopods in same section. Sever mechanical breaks, few bedding plane fractures beds, increasing small diameter (1-10 mm) vu (43-48') Run #3: Rochester Shale Rec: 4.9'/5.0' (98%) RQD: 4.1'/4.9' (83.7%) Lith: Dark gray calcareous shale. No staining Few healed/infilled vertical fractures throughou hore shale. An staining beds, increasing small diameter (1-10 mm) vu 	ne silt, fine Trace brick. , fine to hale. No ctures in top 35.5' bgs. mechanical rily in limey g or odors. ut. , increased eral es in shale gs. ut. Bottom	TORING WELL LOGS.GPJ (3/10)			

PROJ	ECT:	Fo	ormer	West S	tation Plant Area MGP Site	Log of Well N	lo. GMX-MW-8	D (cont'd)				
DEPTH (feet)	Sample No.	Sample	Blows/ foot	OVM (mdd)	DESCRIPTION NAME (USCS Symbol): color, moist, % I structure, cementation, react. w/HC	by weight, plast., I, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS					
					foot of core, predominantly limestone interbeds. Few small diameter (1 mm core. Many brachiopods throughout.	with shale) vugs in bottom of	WELL_OVM MONITORING	WELL LOGS.GPJ (3/10)				
Proje	ct No.	12	661.0	04	Ge	omatrix Consultants		Page 2 of 2				

Log of V	Log of Well No. GMX-PZ-26S					
BORING LOCATION: See Site Plan for MW Locations TOP OF RISER ELE 400.41 fmsl	TOP OF RISER ELEVATION:DATUM:400.41 fmslbarge canal					
DRILLING CONTRACTOR: Nothnagle Drilling Company DATE STARTED: 11/26/09	DATE STARTED: DATE FINISH 11/26/09 11/26/09					
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers TOTAL DEPTH: 13.9 fbgs	S 3.	CREEN INTERVAL: .9-13.9 fbgs				
DRILLING EQUIPMENT: Gus Pech DEPTH TO FIRST WATER: 8.5	ST COMPL. C	ASING:				
SAMPLING METHOD: 2" Split Spoon LOGGED BY: MAC						
HAMMER WEIGHT: 140 DROP: Autohammer RESPONSIBLE PRO	ROFESSIONAL:	REG. NO.				
SAMPLES DESCRIPTION H G g g B g g B g g B g </td <td>WELL CONSTRU AND/OR DRILL</td> <td>JCTION DETAILS ING REMARKS</td>	WELL CONSTRU AND/OR DRILL	JCTION DETAILS ING REMARKS				
Surface Elevation: 398.65 fmsl						
1 = *Cleared to 4' bgs with an excavator.		—3/8" Diameter Bentonite Chips				
FILL Brown fine sand with silt and fine angular FILL Brown fine sand with silt and fine angular limestone gravel, masonry brick. Loose and dry. No odors or staining. As above, with some coarse sand. Light to moderate sheen and coal tar-like odor. Saturated, loose to soft.	FILL Brown fine sand with silt and fine angular limestone gravel, masonry brick. Loose and dry. No odors or staining.					
Bedrock Rochester Shale	WELL_OVM MONITORI	Wire Wrap PVC Well Diameter				
Project No. 12661.004		Page 1 of 1				

PROJECT: Former West Station Plant Area MGP Site							Log	j of W	ell No.	GMX-PZ-27S		
BORING	G L(CA		N: Se	e Site Plan	for MW Locations		TOP OF RISER ELEVATION: DATUM: 414 78 fmsl				
DRILLIN	NG (NTRA	CTOR	: Nothnagl	e Drilling Company		DATE STARTED: DATE FINISHE 11/30/09 11/30/09				
DRILLI	NG I	MEI	THOE): 41	/4" dia. Hollo	w Stem Augers		TOTAL DEPT 28.0 fbgs	SCREEN INTERVAL: 18-28 fbgs			
DRILLI	NG I	EQL	JIPM	ENT:	Gus Pech			DEPTH TO WATER:	FIRST 22 ft	COMPL.	CASING:	
SAMPL	ING	ME	THO	D: 2"	Split Spoon			LOGGED BY MAC	:			
НАММЕ	HAMMER WEIGHT: 140 DROP: Autohammer							RESPONSIBI Richard Frap	LE PROF	ESSIONAL	: REG. NO.	
DEPTH (feet)	SAMPLES							ructure,	V	VELL CONS [.] AND/OR DF	TRUCTION DETAILS RILLING REMARKS	
	р 2	Sa	₩,			Surface Elevation: 4	15.10 fmsl			~~~~~		
					Concret Hand cl	e core 0 - 8" ear 8 - 48" bgs						
45	1	\ge	11 37 17 11 14	0 0	FILL Bi gravel.	own, dry fine sand with sil No staining or odors.	t and fine rol	unded				
8	3	\geq	12 11 15 7 8	0	FILL BI	own fine sand to silt, some	e concrete pi	ieces,			Cement/bentonite grout	
	4		6 5 4 10	0	little fine	e round gravel. Dry. No sta	aining or odo	ors.				
	6	Ň	6 9 3 6	0	and con	crete pieces. No staining	or odors.					
19 20 31	7	$\stackrel{\scriptstyle{\leftarrow}}{\scriptstyle{\times}}$	5 10 6 5	0			#00N Filter Sand					
FILL Wood pieces with some brick and coarse Slight coal tar-like odor. Slight sheen.							e sand.					
29	FILL Black fine sand with little medium to coarse coarse gravel. Strong coal for strong coal							rse al tar-like			Slot PVC Well Diameter	
			7 5 4 6		Bedroc	k		3C).				
334			4 4 3 10									
			9 8 15 24									
			19 50/0.4									
51												
54												
60 61 62												
8Ŭ			04.01				Coometal	Consultant	∟⊐w	ELL_OVM MONI	TORING WELL LOGS.GPJ (3/10)	
I Project	INO.	126	001.00	14			Geomatrix	Consultants	5		Page 1 of 1	