



DQW-1 (1 of 2)

	Indianapolis, Indiana		Project Number	08-03	-009		
Client:	City of South Bend		Drilling Method: Hollo			er	
Project	Hannover Property		Sampling Method: split	spoon	1		
_ocatio	n: 731 West Chippewa Avenue, South Bend, Indiana		Elevation:				
_oggeo	By: DWM		Time Terminate	d: 103	0 Wea	ther: sunny, 70's	
Drilling	Company: Earth Exploration Drillers: Craig, Joe		Completion Date	e: Jun	e 30, 20	008	
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
	ASPHALT	· [1] ·		0		_ISurface Casing	
-	fine grained SAND, moist, 10 YR 3/2 very dark grayish brown	성화왕() 영양왕()		_			
-	fine grained SAND, moist, 10YR 4/3 brown	2		0			
5 -	fine to medium grained SAND, wet, 10 YR 4/3 brown	3		0	- 5 -		
-		4		0			
4.0		5		0			
10 -		6		0.6	- 10 -		
-		7		0			
- 15 —	fine to medium grained SAND, saturated at	8		0	 - 15		
	14 feet, 10 YR 4/3 brown						
-		9		0			
20 -		10		0	- 20 -		
-		11		0			
-	fine grained SAND, saturated, 10 YR 4/3 brown	12		0			
25 -		13		0	- 25 -		
-		14		0		크 르	
-		15		0.5		크 크	
30 -					- 30 -	크 크	
-		16		0		크 크	
-		17		0		Bentonite Seal	
35 -		18		0.3	- 35 -		
-		19		0.3			
-		20		0.2			
40 -	fine grained SAND, saturated, 10YR 4/6	21		0.4	- 40 -		
-	dark yellowish brown	22		0.6			
45							
45 -	fine grained SAND, saturated, 10YR 4/3	23		0.3	- 45 -		
-	brown	24		0.6			
50		25		0.3	- 50		
50 -	(Continued)				- 50 -		





DQW-1 (2 of 2)

Client:		City of South Bend		Method: Hollo			er	
Project	t:	Hannover Property		Sampling Method: split s	spoon			
ocatio	on:	731 West Chippewa Avenue, South Bend, Indiana	l	Elevation:				
ogged	d By:	DWM		Time Terminated: 1030 Weather: sunny, 70's				
Drilling	Com	pany:Earth Exploration Drillers: Craig, Joe		Completion Date	: June	e 30, 2	008	
Depth (feet)		SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
		fine grained SAND, saturated, 10YR 4/6 dark yellowish brown(<i>Continued</i>) medium to coarse grained SAND, saturated, 10 YR 4/3 brown	26 27		0 23			
55 -		fine grained SAND, saturated, 10YR 4/6 dark yellowish brown	28 29		3.3 0.7	- 55 -		
60 -			30		0.3	- 60 -		
65 -		medium to coarse grained SAND, saturated, 10YR 4/3 brown	32 33		0 -	- 65 -		
-			34 35		0 -	-		
70 -			36 37		0	- 70		
75 -			38 39		0 -	- 75 -		
- 80			40		0 -	- 80 -	#5 Quartz Sand Pack	
85 -			42		0	- 85 -	2" PVC Sch. 40 0.010 Slot Screen	
-			44 45		0	· -		
90 -		fine grained SAND, saturated, 10YR 5/4 yellowish brown CLAY, (90% clay, 10% very fine grained	47	2 inch band of 10 (R 5/8 yellowish	0 -	- 90		
95 -		sand), very plastic, very hard, saturated, 10 YR 5/1 gray Boring terminated at 96 ft		prown color at 91 eet	0 -	- 95		
- - 100 —	-				-	- 100		



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road Indianapolis, Indiana



DQW-2 (1 of 2)

Client:	City of South Bend		Drilling Method: Hollo	w Ste	m Aug	er	
Project:	Hannover Property		Sampling Method: split				
Location:	731 West Chippewa Avenue, South Bend, Indiana		Elevation:				
_ogged B	y: DWM		Time Terminated: 900 Weather: sunny, 70's				
Drilling Co	Drillers: Craig, Joe		Completion Date	e: July			
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
-	ASPHALT/CONCRETE	1		1.4		Surface Casing	
	fine grained SAND, dry, 10YR 3/2 very dark	2		0.9			
_	fine grained SAND with CONCRETE, moist, 10YR 4/6 dark yellowish brown	<u>의 영상</u> 정영 전			 F		
5 -	fine grained SAND with CONCRETE, $-$	3		5.9	- 5 -		
	high moist, 10YR 4/3 brown / fine to medium grained SAND, wet, 10YR /	4		15			
10 -	\4/6 dark yellowish brown \very fine grained SAND, moist, 10YR 6/6	5		3.4	 - 10 -		
	brownish yellow /	6		8.7			
	fine to medium grained SAND, very wet, 10YR 5/4 yellowish brown	7		3.8			
15 -	fine to medium grained SAND, saturated at	8		0	- · ·		
	14 feet, 10YR 5/4 yellowish brown	9		0	- ·		
20 -		10		0	- 20 -		
		11		1.1			
-		12		2.6			
25 -		13		7.7	- 25 -		
		14		9.8			
		15		8.1			
30 -				0.1	- 30 -		
	very fine to fine grained SAND, saturated,	16					
4	10YR 5/4 yellowish brown	17		0	 	Bentonite Seal	
35 -		18		0	- 35 -		
		19		0			
		20		0			
40 -		21		0	- 40 -		
		22		0			
- 45 -		23		0	- 45 - -		
		24		0	- ·		
- 50 -		25		0	 - 50 -		
50 -	(Continued)				- 50 -		





DQW-2 (2 of 2)

Client:	City of South Bend		Project Number Drilling Method: Holl	ow Ste		er	
Project	t: Hannover Property		Sampling Method: split	spoon	1		
_ocatio	ion: 731 West Chippewa Avenue, South Bend, India	na	Elevation:				
_ogged	ed By: DWM		Time Terminated: 900 Weather: sunny, 70's				
Drilling	g Company: Earth Exploration Drillers: Craig, Joe		Completion Dat	te: July	<i>ı</i> 2, 200	8	
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
	very fine to fine grained SAND, saturated,						
-	10YR 5/4 yellowish brown(<i>Continued</i>)	26		0			
-		27		0			
55 -		28		0	- 55 -		
	coarse grained SAND, saturated, 10YR 5/4 yellowish brown	29		0		르 르	
-		30		0			
60 -	very coarse grained SAND, saturated,	31		1.2	- 60 -	좀 좀	
-	10YR 5/6 yellowish brown	32		0.6			
65 -	very coarse grained SAND, saturated, 10YR 4/3 brown	33		0.3	 - 65 -		
-							
-		34		0.4			
70 -	fine grained SAND, 10 YR 5/4 yellowish	35		0.5	- 70 -		
-	brown	36		0.5			
-		37		0.3			
75 -	coarse grained SAND, saturated, 10 YR 5/4 yellowish brown	38		0.5	- 75 -		
-	fine grained SAND, saturated, 10YR 5/4	39		0.2			
-	yellowish brown	40		0.6			
80 -	coarse grained SAND, saturated, 10 YR 4/4	41		1.0	- 80 -	→ +5 Quartz Sand Pack	
-	dark yellowish brown	42		1.6		2" PVC Sch. 40 0.010 Slot Screen	
05					05		
85 -		43		0	- 85 -		
-	fine grained SAND, saturated, 10YR 4/6	44		0			
90 -	dark yellowish brown CLAY (90% clay, 10% fine grained sand),	45		0	- 90 —		
-	satuarted, 10YR 6/1 gray	46		0			
-	Boring terminated at 92 ft						
95 -	-				- 95 -		
-	1						
-							
100 -					- 100 -		





DQW-3 (1 of 2)

			Project Number: 0	08-03-0	09			
Client:	City of South Bend		Drilling Method: Hollow		Auger			
Project:	Hannover Property		Sampling Method: split spoon					
Locatior	n: 731 West Chippewa Avenue, South Bend, Indian	а	Elevation:					
Logged	By: DWM		Time Terminated:	910	Weather	sunny, 70's		
	Company: Earth Exploration Drillers: Craig, Joe		Completion Date:	July 7				
	, , , , , , , , , , , , , , , , , , , 							
Depth (feet)	SOIL DESCRIPTION	Sample			Depth (feet)	WELL DIAGRAM		
	CONCRETE/ASPHALT			0 -		_ _Surface Casing		
	fine grained SAND, dry, 10 YR 2/1 black fine grained SAND, dry, 10YR 3/3 dark	2		0		 		
	brown		-		_ E			
5 +	SANDY CLAY LOAM, moist, 10YR 2/2 very	3	-	0 -	5			
	dark brown	4		0 -				
		5		0 -	, E			
10 -	fine grained SAND, wet, 10YR 2/2 very	6		0 -	10			
	dark brown SANDY CLAY LOAM, very wet, 10YR 2/2	7		25.6 -				
15 -	very dark brown fine grained SAND, very wet, 10YR 4/1	8	-		15	¥ 		
- CI	dark gray		-					
	SANDY LOAM, saturated at 14 feet, 10YR 4/1 dark gray	9	3	315.7 -				
20 -	fine to medium grained SAND, saturated, 10YR 4/1 dark gray	/ 10	1	148.7 -	20			
-	medium to coarse grained SAND,	11		651 -				
	saturated, 10YR 5/3 brown	12		460 -				
25 -	10YR 5/3 brown	13		357 -	25			
-	fine to medium grained SAND, saturated,	14	-	314 -				
	10YR 5/3 brown fine grained SAND, saturated, 10YR 5/2		-					
30 -	grayish brown	15		45.6 -	30			
		16		50.7 -				
-		17		71.0		- — - — _ — — Bentonite Seal		
35 -		18		1.8 -	35			
		19		10.3 -				
	fine grained SAND, saturated, 10YR 5/4	20	-	6.2 -				
40 -	yellowish brown fine grained SAND, saturated, 10YR 5/3		-		40			
	brown	21	-	6.2 -	[
		22		35 -				
45 -		23		21 -	45			
	fine grained SAND, saturated, 10YR 4/4 dark yellowish brown	24		10.2 -				
		25		16.4 -				
50 —	(Continued)		-		50	F		





DQW-3 (2 of 2)

Client:	City of South Bend		Project Number: 0 Drilling Method: Hollow		Auger			
Project:			Sampling Method: split sp					
Location		ina	Elevation:					
	d By: DWM		Time Terminated: 910 Weather: sunny, 70's					
	Company:Earth Exploration Drillers: Craig, Joe		Completion Date:					
<u></u>				<u> </u>	,			
Depth (feet)	SOIL DESCRIPTION	Sample			Oepth (feet) WELL DIAGRAM			
	fine grained SAND, saturated, 10YR 4/4 dark yellowish brown(<i>Continued</i>)	26	2	23.2 -				
-		27		4.0 -	= =			
55 -		28	:	2.0 -	55			
-		29		4.0				
		30		1.5 -				
60	fine grained SAND, saturated, 10YR 5/4	31		1.6 -	60			
	yellowish brown coarse grained SAND, saturated, 10YR 5/6	32		4.6 -				
65 -	yellowish brown	33						
05 -	fine to medium grained SAND, 10YR 5/4							
-	yellowish brown fine to medium grained SAND, saturated,	34	-	4.0 -				
70 -	10YR 4/3 brown	35	-	2.2 -	70 -			
		36	:	2.9 -				
-		37	4	5.6 -				
75 -	medium to coarse grained SAND, saturated, 10YR 4/3 brown	38		0.6 -	75 -			
_		39		1.0 -				
		40		1.1 -				
80 -	fine grained SAND, saturated, 10YR 5/4 yellowish brown	41		1.4 -	80 Pack			
-		42		5.6 -	2" PVC Sch. 40 0.010 Slot Screen			
85 -	fine grained SAND, saturated, 10YR 4/3	43	2	21.6 —	85 -			
-	brown	44	2	21.2 -				
	coarse grained SAND, saturated, 10YR 4/3 brown	45		7.0 -				
90 -					90 - 90			
		46		16.0 -				
95 -	CLAY (90% clay, 10% fine grained sand), moist, very plastic, very hard, 10YR 6/1	47	-	0 -	95 -			
-	Boring terminated at 96 ft		-					
100 -				[100 —			





DQW-4 (1 of 2)

	-	Indianapolis, Indiana		Project Number	: 08-03	-009	
Client:	C	City of South Bend		Drilling Method: Hollo	w Ster	n Auger	
Project	t: F	Hannover Property		Sampling Method: split	spoon		
Locatio	on: 7	731 West Chippewa Avenue, South Bend, Indiana	l	Elevation:			
Loggec	d By: [MM		Time Terminate	d: 915	Weather: sunny	, 70's
Drilling	Compa	any:Earth Exploration Drillers: Craig, Joe		Completion Dat	e: July	[,] 8, 2008	
Depth (feet)		SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet) WELL DI	AGRAM
-	<u>N 17</u>	TOPSOIL, dry, 10YR 2/2 very dark brown	$\begin{bmatrix} \frac{\sqrt{t_z}}{t_z} \end{bmatrix} = 1$		16.3	- <u>-</u>	urface Casing
-		fine grained SAND, moist, 10YR 3/2 very dark grayish brown	2		0		
- 5 -		fine grained SAND, moist, 10 YR 4/3 brown	3		0		
-		SANDY LOAM, wet, 10YR 3/1 very dark gray	4		0	· + + + + + + + +	
- 10 -			5		53.7 3.0		
-		SANDY LOAM, wet, 10YR 3/3 dark brown	7		0		
- 15 -		fine grained SAND, wet, 10YR 4/3 brown	8		0	- 15	
-		fine grained SAND, saturated at 16 feet, 10YR 4/3 brown	9		0		
- 20		fine grained CAND esturated 40 VD E/4	10		0	- 20 - 20 - 20 - 20 - 20 - 20 - 20 - 20	
-		fine grained SAND, saturated, 10 YR 5/4 yellowish brown	11		78.7		
- 25 -			12		220 295		
- 25			13		476		
-			15		523		
30 -		coarse grained SAND, saturated, 10 YR 5/4 yellowish brown	16		386		
-			17		80.4		entonite Seal
35 -			18		53.2	- 35	
-			19		31.3 47.8		
40 -		fine grained SAND, saturated, 10YR 5/4	20		22.7	- 40	
-		yellowish brown	21		23.7		
45 -			23		15.2	- 45	
-			24		19.7		
- 50 -			25		57.7		
		(Continued)					





DQW-4 (2 of 2)

				Project Number	r: 08-0 3	-009		
Client:		City of South Bend		Drilling Method: Hollo			er	
Projec	:	Hannover Property		Sampling Method: split	spoon			
Locatio	on:	731 West Chippewa Avenue, South Bend, Indiana		Elevation:				
Logge	d By:	DWM		Time Terminated: 915 Weather: sunny, 70's				
		ppany:Earth Exploration Drillers: Craig, Joe		Completion Dat				
U				1 1		,		
Depth (feet)		SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
-		fine grained SAND, saturated, 10YR 5/4 yellowish brown(Continued)	26		5.2			
			27		1.2			
- 55 -			28		2.8	- 55 -		
		fine grained SAND, saturated, 10YR 5/6	29		0.6	 		
		yellowish brown	30		1.3			
60 -		fine grained SAND, saturated, 10YR 5/4	1993) 2013			- 60 -		
		medium to coarse grained SAND, saturated, 10YR 4/6 dark yellowish brown	31		0.7			
•		•	32		0.4	· ·		
- 65 -		coarse grained SAND, saturated, 10YR 5/6 yellowish brown	33		0.4	- 65 -		
			34		0.4			
			35		0.3	· -		
- 70 -		NO RECOVERY	36			- 70 -		
	\longrightarrow	coarse grained SAND, saturated, 10YR 5/6	37		0			
		yellowish brown						
- 75 -		fine grained SAND, saturated, 10YR 5/4	38		0	- 75 -		
•		yellowish brown	39		0	· -		
- 80 -			40		0	- 80	#5 Quartz Sand	
. 00			41		0	- 00 -	Pack	
			42		0	· -	2" PVC Sch. 40 0.010 Slot Screen	
- 85 -			43		0	- 85 -		
			44		0			
		coarse grained SAND, saturated, 10YR 4/3	동안감 외감인					
- 90 -		brown	45		0	- 90 -		
	,,,,,		46		0	 		
		CLAY (90% clay, 10% fine sand), very plastic, very hard, moist, 2.5YR 4/1 dark	47		0			
- 95 -		gray	48		0	- 95 -		
	<u> ////</u>	Boring terminated at 96 ft				· -	I	
-								
- 100 -						- 100 -		



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road Indianapolis, Indiana



DQW-5 (1 of 2)

Client:		City of South Bend		Drilling Method: Hollow Stem Auger				
Project:	:	Hannover Property		Sampling Method: conti				
_ocatio		731 West Chippewa Avenue, South Bend, Indiana		Elevation:				
		DWM		Time Terminate	d: 1020) Wea	ather: sunny, 70's	
		npany:Earth Exploration Drillers: Craig, Joe		Completion Date				
Jinnig	0011	Dimers. Graig, oc				, 20		
Depth (feet)		SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
-	۲		×× 1		0			
-		fine grained SAND, dry, 10 YR 4/4 dark					= =	
	211	vellowish brown	2		0	· ·		
5 -	41	fine grained SANDY CLAY LOAM, moist,	3		0	- 5 -		
+		10YR 3/2 very dark grayish brown			10			
+		1/2/1 black	4		13	· ·		
ļ		fine to medium grained SANDY LOAM, wet,	5		10.1			
10 -		10YR 3/3 dark brown	6		10.6	- 10 -		
ļ		fine grained SAND, moist, 10YR 3/2 very			10.0			
+	add	SILTY CLAY LOAM, very moist, 10YR 3/2	7		5.5			
15 -		very dark gravish brown	8		11.8	- 15 -	토크 토크	
-		SANDY LOAM, very moist, 10YR 3/2 very						
-		SILTY CLAY LOAM, very moist, 10YR 4/4	9		13.3		╞═┥ <mark>┯</mark> ╞═┥	
-		dark yellowish brown		saturated at 18 feet	8.1			
20 -		fine grained SAND, wet, 10YR 3/3 dark		leel		- 20 -	물 물	
-		fine grained SANDY LOAM, very wet, 10YR	11		9.0			
-		3/2 very dark grayish brown	12		3.1			
25		fine grained SAND, very wet, 10YR 3/3	40		10.4	 		
25 –		hidark brown	13		18.1	- 25 -		
-		yellowish brown	14		10.3		듣 듣	
		fine to medium grained SAND, saturated at	15		22.1			
30 -		18 feet, 10YR 4/6 dark yellowish brown	GI			- 30 -		
-		fine grained SAND, saturated, 10YR 4/6 dark yellowish brown	16		20.8			
		fine to medium grained SAND, saturated,	17		10.6	· ·	Bentonite Seal	
-		10YR 4/6 dark yellowish brown						
35 -		fine grained SAND, saturated, 10YR 4/4	18		11.4	- 35 -	<u>F</u> -1 F-1	
1		fine grained SAND, saturated, 10YR 5/4	19		16.2			
-		vellowish brown					= =	
40 -		Coarse grained SAND, saturated, 10YR 5/4	20		1.3	- 40 -		
- 0-		yellowish brown fine grained SAND, saturated, 10YR 5/4	21		2.0			
+		🗋 yellowish brown 🦯					들리 들리	
		fine to medium grained SAND, saturated,	22		1.0	· ·		
45 -		10YR 5/4 yellowish brown fine grained SAND, saturated, 10YR 5/6	23		2.5	- 45 -		
-		yellowish brown					티 티	
		, ,	24		1.3		E E	
-			25		0.9			
50 -	e de je	(Continued)	- 24,43 			- 50 -	4— →	





DQW-5 (2 of 2)

	Indianapolis, Indiana		Project Number	: 08-03	-009			
Client:	City of South Bend		Drilling Method: Hollo	w Ster	m Auger			
Project:	Hannover Property		Sampling Method: continuous					
Location:	731 West Chippewa Avenue, South Bend, Indiana		Elevation:					
Logged B	y: DWM		Time Terminate	d: 102(0 Weather: sunny, 70's			
Drilling Co	ompany:Earth Exploration Drillers: Craig, Joe		Completion Date	e: July	11, 2008			
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet) WELL DIAGRAM			
	fine grained SAND, saturated, 10YR 5/4 yellowish brown	26		0 -				
55 -		28		0				
60 -		30		0				
		31 32		0 -				
65 -	coarse grained SAND, saturated, 10YR 4/4 dark yellowish brown	33 34		0 -	- 65 - 400 			
70 -		35		0	- 70 -			
		37		0				
		39		0				
80 -	fine grained SAND, saturated, 10YR 4/4	40		0 9.9	- 2" PVC Sch. 40 - 80 - 0.010 Slot Screen			
85 –	dark yellowish brown coarse grained SAND, saturated, 10YR 4/3 brown fine grained SAND, saturated, 10YR 5/4	42		5.3 9.6	- 85			
	coarse grained SAND, saturated, 10YR 4/3	44		6.4 9.4				
90 -	CLAY (90% clay, 10% sand), very plastic, very hard, moist, 2.5 Y 4/1 dark gray Boring terminated at 92 ft	46		0	- 90 - 			
- 95 — - -					 - 95 - 			
- - 100 -					 			





DQW-6 (1 of 2)

			Project Number: 08-03-009 Drilling Method: Hollow Stem Auger					
Client:	City of South Bend					er		
Project:	Hannover Property		Sampling Method: cont	inuous	6			
ocation	: 731 West Chippewa Avenue, South Bend, Indiana	1	Elevation:		1			
ogged E	By: DWM		Time Terminate	ed: 835	Wea	ather: sunny, 80's		
Drilling C	Company:Earth Exploration Drillers: Craig, Joe		Completion Dat	e: July	/ 15, 20	008		
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM		
	SANDY LOAM, dry, 10YR 4/4 dark yellowish brown	1 1		6.1				
	SANDY LOAM, moist, 10YR 3/1 very dark	2		9.6				
	gray							
5 –	fine grained SAND, moist, 10YR 4/6 dark	3		10.9	- 5 -			
	yellowish brown	4		4.9				
10 -	fine grained SAND, wet, 10YR 5/6 yellowish brown	5		2.9	- 10 -	털털		
		6		10.5		털털		
		7		4.4				
15 -		8		14.7	- 15 -			
	fine grained SAND, very wet, 10YR 5/4 yellowish brown	9		16.6				
-	fine grained SAND, saturated at 18 feet,		saturated at 18 eet	14.5		{} ¥ { }		
20 -	10YR 5/4 yellowish brown	11	eel	5.4	- 20 -			
	fine grained SAND, saturated, 10YR 4/4	12		5.7				
25 –	dark yellowish brown fine grained SAND, saturated, 2.5Y 6/4 light	13		5.1	- 25 -			
20	yellowish brown fine grained SAND, saturated, 10YR 4/4				- 25			
	dark yellowish brown	14		5.0				
30 -		15		8.6	- 30 -			
		16		10.5		Bentonite Seal		
		17		9.6				
35 -		18		11.0	- 35 -			
-		19		8.4				
	fine to medium grained SAND, saturated,	20		7.4	-	= =		
40	10YR 4/6 dark yellowish brown fine grained SAND, saturated, 10YR 5/4				- 40 -			
	yellowish brown	21		12.8	-			
-		22		11.8				
45 –		23		11.5	- 45 -			
		24		11.0				
-		25		13.1				
50 -	(Continued)				- 50 -			





DQW-6 (2 of 2)

Client:	City of South Bend		Drilling Method: Hollo			er	
Project	Hannover Property		Sampling Method: continuous				
Locatio	731 West Chippewa Avenue, South Bend, Indiana		Elevation:				
Logged	d By: DWM		Time Terminated: 835 Weather: sunny, 80's				
Drilling	Company:Earth Exploration Drillers: Craig, Joe		Completion Dat	e: July	15, 20	008	
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
-	fine grained SAND, saturated, 10YR 5/4 yellowish brown(<i>Continued</i>)	26		16.1			
-		27		19.0			
- 55 -		28		24.4	- 55 -		
-		29		30.9	· ·		
-		30		25.5	 		
60 -		31		31.6	- 60 -		
-		32		6.5			
-							
65 -		33		6.0	- 65 -		
-	modium to opprogram deviced SAND	34		28.5	· ·		
- - 70 -	medium to coarse grained SAND, saturated, 10YR 4/3 brown	35		10.8	- 70 -		
-		36		3.1			
-		37		2.3			
- 75 -		38		9.8	- 75 -	#5 Quartz Sand Pack	
-		39		23.2	· ·	2" PVC Sch. 40 0.010 Slot Scree	
-		40		3.7	· ·		
- 80 -	coarse grained SAND, saturated, 10YR 4/3	41		19.7	- 80 -		
-	brown	42		7.6	 		
- 85 -		43		3.3	 - 85 -		
- 00							
-	CLAY (90% clay, 10% sand), moist, very \plastic, very hard, 10YR 5/4 yellowish	44		2.1	· ·		
- 90 –	//////brown	45		0	 - 90 -		
-	CLAY (90% clay, 10% sand), moist, very plastic, very hard, 2.5Y 4/1 dark gray				 	1	
-	Boring terminated at 90 ft						
- 95 -					- 95 -	}	
-					· ·]	
-					· ·		
- 100					- 100 -	{	





DQW-7 (1 of 2)

	Indianapolis, Indiana		Project Number	: 08-03	-009		
Client:	City of South Bend		Drilling Method: Hollo			er	
Project:	roject: Hannover Property		Sampling Method: continuous				
Location:	731 West Chippewa Avenue, South Bend, Indiana	a	Elevation:				
Logged By	y: DWM		Time Terminate	d: 810	Wea	ather: sunny, 80's	
Drilling Co	mpany:Earth Exploration Drillers: Craig, Joe		Completion Date	e: July	10, 20	008	
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
- 5 -	SANDY LOAM, dry, 10YR 3/1 very dark gray SANDY LOAM, moist, 10YR 3/4 dark yellowish brown SANDY LOAM, moist, 10YR 3/2 very dark grayish brown	1 2 3 4		0.6 0.6 1.2 0.3	- 5 -		
- 10	fine grained SAND, wet, 10YR 4/6 dark yellowish brown	6 7		0.3 - 0.4 - 1.7 -	- 10 -		
- 15 -	fine grained SAND, wet, 10YR 5/4 yellowish brown	8		2.4 0.6	- 15 -		
- 20 -	fine grained SAND, saturated at 18 feet, 10YR 5/4 yellowish brown		aturated at 18 eet	1.8 0	- 20 -		
- 25 - - -		12 13 14		0 -	- 25 -		
- 30 -		15		0 -	- 30 -		
- 35 -		17		0 -	- 35 -		
- 40 -		19 20 21		0 -	- 40 -		
- 45 -	coarse grained SAND, saturated, 10YR 5/4 vellowish brown fine grained SAND, saturated, 10YR 5/4	22		0 -	- 45 -		
- - - 50 –	yellowish brown (Continued)	24 25		0 -	- 50 -		





DQW-7 (2 of 2)

				Project Number:	08-03	-009	
Client:		City of South Bend		Drilling Method: Hollo			er
Project	t:	Hannover Property		Sampling Method: conti	nuous	i	
Locatio	on:	731 West Chippewa Avenue, South Bend, Indiana	l	Elevation:			
Logged By: DWM		Time Terminated: 810 Weather: sunny, 80's					
	Drilling Company: Earth Exploration Drillers: Craig, Joe		Completion Date: July 10, 2008				
						•	
Depth (feet)		SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM
-		fine grained SAND, saturated, 10YR 5/4 yellowish brown(Continued)	26		0		
-			27		0		
- 55 -			28		0.6	- 55 -	
-			29		0.6		
-			30		0.3		
- 60 -			31		2.0	- 60 -	
-							
-		SILT LOAM, saturated, 10YR 2/1 black	32		0.3		
65 -		fine grained SAND, saturated, 10YR 5/4	33		0.4	- 65 -	
-		yellowish brown	34		0.4		
- 70 -			35		0.1		
			36		0.6		
-		coarse grained SAND, saturated, 10YR 4/4 dark yellowish brown	37		0.3		
- 75 -			38		0.4	- 75 -	
-			39		0.3		
-			40		0.4		
80 -						- 80 -	
-			41		0.3		₩ #5 Quartz Sand Pack
-			42		0.6		
- 85 - -			43		0.3	- 85 -	2" PVC Sch. 40 0.010 Slot Screen
-			44		0.3		
-			45		0.6		
90 -			46		1.2	- 90 - 	
-			47		0.3		
- 95 -	·////		48		0.4	- 95 -	
-		CLAY (90% clay, 10% sand), moist, 2.5Y 4/1 dark gray					
-		Boring terminated at 98 ft	49		0		
- - 100 –	1					- 100	1





DQW-8 (1 of 2)

Client:	Client: City of South Bend Project: Hannover Property			Project Number: 08-03-009 Drilling Method: Hollow Stem Auger Sampling Method: continuous				
Location: 731 West Chippewa Avenue, South Bend, Indiana		Elevation:						
Logged By: DWM		Time Terminated: 945 Weather: sunny, 70's						
			Completion Dat			• •		
Jinng	Company:Earth Exploration Drillers: Craig, Joe, Jeff			e. July	23, 20	00		
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM		
	CONCRETE/ASPHALT	<u>></u>		0.3		. ''Surface Casing —		
-	SANDY LOAM, dry, 10YR 3/3 dark brown SANDY LOAM, moist, 10YR 4/6 dark	2		0.2				
-	yellowish brown	2		0.2	- +			
5 -	SANDY LOAM, moist, 10YR 4/3 brown fine grained SAND, moist, 10YR 5/6	3		0.3	- 5 -			
-	yellowish brown	4		0.1				
-	SANDY LOAM, wet, 10YR 3/2 very dark	5		0				
10 -	grayish brown	6		0	- 10 -			
-	SILT LOAM, wet, 10YR 3/1 very dark gray SILT LOAM, wet, 10YR 3/3 dark brown							
-	fine grained SAND, moist, 10YR 5/4	7		0				
15 –	Vellowish brown fine grained SAND, wet, 10 YR 4/4 dark	8		0	- 15 -			
-	yellowish brown	9 Si	aturated at 17	0	- +			
-	fine grained SAND, saturated at 17 feet, 10YR 4/4 dark yellowish brown	- 14 - 14	et	0				
20 -	\uparrow fine grained SAND, saturated, 10YR 3/3 $/$	11		0.1	- 20 -			
-	dark brown / fine grained SAND, saturated, 10YR 4/6 /							
-	\dark yellowish brown	12		0.3				
25 –	fine grained SAND, saturated, 10YR 5/4 yellowish brown	13		0.1	- 25 -			
-	fine grained SAND, saturated, 10YR 5/3 brown	14		0				
-	DIOWIT	15		0	- +			
30 -	fine grained SAND, saturated, 10YR 5/4	16		0	- 30 -			
-	yellowish brown				- 4			
-		17		1.3	- 1 - 1			
35 -		18		0	- 35 -			
-	fine grained SANDY LOAM, saturated, 10YR 5/4 yellowish brown	19		0	- 1 -			
-		20		0	- 1 - 1			
40 -	fine grained SAND, saturated, 10YR 5/4	21		0	- 40 -			
-	yellowish brown				 -			
-		22		0	- 4 - 4			
45 -		23		0	- 45 -			
-		24		0				
-		25		0	 			
50 -	(Continued)				- 50 -			





DQW-8 (2 of 2)

Client: City of South Bend				Project Number: 08-03-009 Drilling Method: Hollow Stem Auger				
Project: Hannover Property			Sampling Method: continuous					
_ocatio	on:	731 West Chippewa Avenue, South Bend, Indiana	Elevation:					
Logged By: DWM		Time Terminated: 945 Weather: sunny, 70's						
Drilling	g Con	npany:Earth Exploration Drillers: Craig, Joe, Jeff		Completion Dat	e: July	/ 25, 20	008	
Depth (feet)		SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM	
-			26		0			
		fine to medium grained SAND, saturated, 10YR 5/4 yellowish brown	27		0			
55 -		fine grained SAND, saturated, 10YR 5/4	28		0	- 55 -		
		yellowish brown	29		0			
			30		0	 _	目目	
60 -						- 60 -		
			31		0.1			
•			32		0.1			
65 -			33		0.3	- 65 -		
-		coarse grained SAND, saturated, 10YR 5/4 yellowish brown	34		0.8			
		coarse grained SAND, saturated, 10YR 3/3 dark brown	35		0.6			
70 -		fine to medium grained SAND, saturated,	36		0.4	- 70 -		
•		10YR 4/3 brown	37		0.6			
75 -		SANDY CLAY LOAM, saturated, 10YR 5/4	38		0.3	- 75 -		
		yellowish brown	39		0.5			
		fine to medium grained SAND, saturated,					#5 Quartz Sand Pack	
80 -		fine to medium grained SAND, saturated, \10YR 4/4 dark yellowish brown	40		1.2	- 80 -	2" PVC Sch. 40 0.010 Slot Scree	
		fine grained SAND, saturated, 10YR 5/4	41		0.3	- ·		
•		yellowish brown	42		0.3			
85 -			43		0.4	- 85 -		
		fine grained SAND, saturated, 10YR 5/3 brown	44		0.6			
		fine grained SAND, saturated, 10YR 4/3	45		0.5	-		
90 -		CLAY (90% clay, 10% sand), moist, 2.5Y	46		0	- 90 - -		
	<u>*////</u> -	4/1 dark gray Boring terminated at 92 ft	×////			- ·		
95 -	-					- 95 -	4	
	_						1	
	-							
100 -	1					- 100	1	