

## **APPENDIX C**

# LOG OF BORING NO. CA-SOL-Sta 230+95 25 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
8	<b>SILTY LEAN TO FAT CLAY:</b> reddish-brown, trace roots, trace gravel and weathered shale	5	CL CH	1	SS	21			X	<170
8	<b>FAT CLAY:</b> reddish-brown and gray, trace sandstone gravel	10	CH	2	SS	20			X	<170
14	<b>SANDSTONE***</b>	15	CH	3	SS	9			X	247 +/-95
14.5	<b>SHALE***:</b> gray, severely weathered	15								
20.5	<b>BOTTOM OF BORING AT 20.5 FEET AUGER REFUSAL ON APPARENT LIMESTONE***</b>	20		4	SS	0				
20.5	<b>SHALE***:</b> gray, severely weathered	20								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED	11-20-06
BORING COMPLETED	11-20-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2 09067011T LOGS USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 232+83 123 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
5.5	<u>FAT CLAY</u> : reddish-brown, trace gravel  -: with gravel	5	CH		PA					
9.5	<u>SHALE</u> ***: yellow-gray, severely weathered	5			PA					
10.7	<u>LIMESTONE</u> ***: tan  BOTTOM OF BORING AT 10.7 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.	10		2	SS	18			X	<170
					PA					<170

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED	11-20-06
BORING COMPLETED	11-20-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 233+35 78 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
4.4	LEAN TO FAT CLAY: reddish-brown, trace gravel -: with gray fat clay	4.4	PA							
4.8	LIMESTONE***: gray BOTTOM OF BORING AT 4.8 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.	4.8	CL CH	1	SS	19			X	<170
			PA							

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ NONE	WS	▽
WL	▽		▽
WL			



BORING STARTED	11-20-06
BORING COMPLETED	11-20-06
RIG	750
FOREMAN	CV
APPROVED	TLB
JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 141+24.5 56 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<u>SILTY LEAN CLAY</u> : dark brown, trace roots  -: trace very fine grained sand	5	CL ML	1	SS	24			X	1537+/-138
	<u>LEAN TO FAT CLAY</u> : reddish-brown and gray, with sand and gravel	10	CL CH	2	SS	24			X	<170
	<u>FAT CLAY</u> : brown and gray	15	CH	3	SS	20			X	<170
	<u>SILTY SAND</u> : gray	25	SP SM	5	SS	10			X	<170
	<u>LIMESTONE***</u> BOTTOM OF BORING AT 28.6 FEET AUGER AND SPLIT SPOON REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.	28.6		6	SS	0				

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 17	WS	▽ 13
			AB
WL	▽		▽
WL			



BORING STARTED		11-21-06	
BORING COMPLETED		11-21-06	
RIG	750	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T

BOREHOLEZ\_09067011T LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 142+06 88 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES			TESTS				
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
5	<u>SILTY LEAN CLAY</u> : brown, trace very fine grained sand, trace roots				HS					
9	<u>SILT</u> : gray and brown	5	CL ML	1	SS	24			X	253 +/-95
11	<u>SILTY SAND</u> : brown, bedded sandy silt and medium grained sand	10	SP SM	2	SS	24			X	<170
23	<u>FAT CLAY</u> : gray and brown, with silt, trace very fine grained sand ▽ ▽	15	CH	3	SS	19			X	<170
27	<u>SANDY FAT CLAY</u> : gray	20	CH	4	SS	22			X	<170
27.3	<u>LIMESTONE***</u> BOTTOM OF BORING AT 27.3 FEET AUGER AND SPLIT SPOON REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.	25	CH	5	SS	12			X	<170
				6	SS	0				

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 15	WS	▽ 13 AB
WL	▽		▽
WL			



BORING STARTED	11-21-06
BORING COMPLETED	11-21-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2 09067011T LOGS USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 138+86 137 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
9	<u>LEAN CLAY</u> : brown, with roots	5	CL	1	SS	15				X	<161
10	<u>SAND</u> : fine to medium grained <u>FAT CLAY</u> : gray	10	CH	2	SS	6				X	<161
14	<u>SILTY LEAN CLAY</u> : gray, trace sand and gravel	15	CL ML	3	SS	24				X	<161
21	<u>BOTTOM OF BORING AT 21 FEET NO REFUSAL</u>	20	CL ML	4	SS	10				X	<161

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL	▼
WL	▼
WL	▼



BORING STARTED	11-27-06
BORING COMPLETED	11-27-06
RIG	750
FOREMAN	SB
APPROVED	TLB
JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 142+17.5 127 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<u>SILTY LEAN CLAY</u> : brown, trace very fine grained sand  -: with gravel		CL ML	1	SS	20			X	<161
	<u>LEAN CLAY</u> : dark brown, trace very fine grained sand		CL ML	2	SS	11			X	<161
	<u>LIMESTONE***</u> : gray  BOTTOM OF BORING AT 17.2 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.		CL ML	3	SS	10			X	<172
			HS							
			HS	4	SS	0				

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ NONE	WS	▽
WL	▽	WS	▽
WL		WS	



BORING STARTED		11-27-06	
BORING COMPLETED		11-27-06	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ\_TERRACON.GDT\_3/21/08



# LOG OF BORING NO. CA-SOL-Sta 138+90 28 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<p><u>SILTY LEAN CLAY</u>: brown</p> <p>-: with gray</p> <p>-: with sand</p> <p style="text-align: center;">▽</p>	<p>5</p> <p>10</p> <p>15</p> <p>20</p>	<p>CL ML</p> <p>CL ML</p> <p>CL ML</p> <p>SP SM</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p>	<p>SS</p> <p>SS</p> <p>SS</p> <p>SS</p>	<p>21</p> <p>20</p> <p>24</p> <p>10</p>		<p>X</p> <p>X</p> <p>X</p> <p>X</p>	<p>&lt;172</p> <p>273 +/-101</p> <p>&lt;172</p> <p>&lt;172</p>	
	<p><u>SILTY SAND</u>: gray, with clay</p> <p>BOTTOM OF BORING AT 21.5 FEET NO REFUSAL</p>									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 16	WS	▽ 17 AB
WL	▽		▽
WL			



BORING STARTED		11-28-06	
BORING COMPLETED		11-28-06	
RIG	750	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 139+17 62 R

CLIENT		ARCHITECT / ENGINEER									
Ameren UE											
SITE		PROJECT									
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
9.5	<u>SILTY LEAN CLAY</u> : brown	5	HS								
			CL ML	1	SS	18				X	<161
			HS								
10	<u>FAT CLAY</u> : gray, with silt			CH	2	SS	14			X	<161
			HS								
15	-: brown, trace silt			CH	3	SS	24			X	<161
			HS								
19											
21	<u>SAND</u> : gray, fine to medium grained	20		SP	4	SS	24			X	<161
	BOTTOM OF BORING AT 21 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 17	WS	▽ 16.5 AB
WL	▽	▽	
WL			



BORING STARTED		11-28-06	
BORING COMPLETED		11-28-06	
RIG	750	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 140+20 90 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>SILTY LEAN CLAY</u> : brown	5	CL ML	1	SS	18			X	<161	
	-: gray	10	CL ML	2	SS	24			X	<161	
	-: with sand	14			HS						
	<u>FAT CLAY</u> : gray with brown, trace silt and sand	15	CH	3	SS	24			X	<161	
	▼ ▼				HS						
	<u>SANDY SILT</u> : gray	20	ML	4	SS	24			X	<161	
	BOTTOM OF BORING AT 21 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▼ 18	WS	▼ 17
			AB
WL	▼		▼
WL			



BORING STARTED	11-28-06
BORING COMPLETED	11-28-06
RIG	750
FOREMAN	CV
APPROVED	TLB
JOB #	09067011T

BOREHOLEZ\_09067011T LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 104+94 60 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>SILT</u> : brown, trace very fine grained sand	5	ML	1	SS	19				X	<167
		10	ML	2	SS	16.5				X	<167
	▽	15	ML	3	SS	19				X	556 +/-110
16	BOTTOM OF BORING AT 16 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 12	WS	▽
WL	▽		▽
WL			



BORING STARTED	12-4-06
BORING COMPLETED	12-4-06
RIG	750
FOREMAN	CV
APPROVED	TLB
JOB #	09067011T

BOREHOLEZ 09067011T LOGS USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 104+96 71 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER							
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
0.1	1" GRAVEL BASEROCK SILT: brown, trace very fine grained sand								
		5	ML	1	SS	14.5		X	<167
					HS				
		10	ML	2	SS	13.5		X	<167
					HS				
	-: gray	15	ML	3	SS	16		X	<167
16	BOTTOM OF BORING AT 16 FEET NO REFUSAL								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 12	WS	▽ 12 AB
WL	▽		▽
WL			



BORING STARTED		12-4-06	
BORING COMPLETED		12-4-06	
RIG	750	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T

BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 107+62 110 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS				
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
14	<u>SILTY LEAN CLAY</u> : brown, trace very fine grained sand	5	CL ML	1	SS	14				X	<177
10		10	CL ML	2	SS	12				X	<177
15		15	SP SM	3	SS	13				X	3116+/-185
20		20	SP SM	4	SS	9				X	1662+/-149 1531* +/-146
24	<u>SILTY SAND</u> : gray, very fine grained	24			HS						
26	<u>SAND</u> : fine to medium grained	25	SP	5	SS	9				X	2343+/-167
26	BOTTOM OF BORING AT 26 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* Duplicate sample analysis run by laboratory

WATER LEVEL OBSERVATIONS, ft		<h1 style="font-size: 2em;">Terracon</h1>	BORING STARTED		12-6-06	
WL	∇ NONE WS		BORING COMPLETED		12-6-06	
WL	∇		RIG	750	FOREMAN	CV
WL			APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 109+85 67 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES			TESTS					
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
1.5	<u>SILTY LEAN CLAY</u> : brown <u>SILT</u> : light brown	5	ML	1	SS	23				X	<177
	-: with very fine grained sand	10	ML	2	SS	22				X	<177
14	<u>SILTY SAND</u> : very fine grained	15	SP SM	3	SS	20				X	3116+/-185
19	<u>SAND</u> : very fine grained, with silt	20	SP	4	SS	24				X	1662+/-149 1531* +/-146
26	BOTTOM OF BORING AT 26 FEET NO REFUSAL	25	SP	5	SS	10				X	2343+/-167

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* Duplicate sample analysis run by laboratory



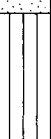

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 14	WS	▽ 18 AB
WL	▽		▽
WL			



BORING STARTED	12-6-06
BORING COMPLETED	12-6-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

**LOG OF BORING NO. CA-SOL-Sta 110+65 70 L**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
	<u>SILTY LEAN CLAY</u> : trace very fine grained sand	9	CL ML	1	SS	19					X	228 +/-103
	<u>SAND</u> : very fine grained, with silt	14			HS							
	<u>&gt;SILT</u> : gray, trace very fine grained sand	19	ML	3	SS	15					X	<177
	<u>SAND</u> : very fine grained	26	SP	4	SS	15					X	<177
	<u>SAND</u> : very fine grained				HS							
	<u>SAND</u> : very fine grained		SP	5	SS	10					X	<177
	BOTTOM OF BORING AT 26 FEET NO REFUSAL											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 20	WS	▽ 21 AB
WL	▽		▽
WL			



BORING STARTED	12-6-06
BORING COMPLETED	12-6-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08



# LOG OF BORING NO. CA-SOL-Sta 108+03 100 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
6	<u>SILTY LEAN CLAY</u> : brown, trace roots	5			HS						
9	<u>FAT CLAY</u> : brown, trace very fine grained sand	10	CL ML	1	SS	17				X	<181
15	<u>SILTY LEAN CLAY</u> : brown, trace very fine grained sand	15			HS						
16	<u>SILTY SAND</u> : gray, very fine grained BOTTOM OF BORING AT 16 FEET NO REFUSAL	15	SP SM	3	SS	13				X	<181

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽
WL	▽	▽
WL		



BORING STARTED		12-11-06	
BORING COMPLETED		12-11-06	
RIG	750	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 109+39 63 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS					
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
	<u>SILT</u> : trace very fine grained sand				HS							
		5	ML	1	SS	17				X		<181
					HS							
		10	ML	2	SS	10				X		<181
					HS							
14	<u>SAND</u> : very fine grained, trace silt				HS							
		15	SP	3	SS	13				X		<181
					HS							
		20	SP	4	SS	13				X		<181
					HS							
		25	SP	5	SS	10				X		<181
					HS							
27	<p>BOTTOM OF BORING AT 27 FEET AUGER REFUSAL ON APPARENT LIMESTONE***</p> <p>***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.</p>											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 17	WS	▽ 19 AB
WL	▽		▽
WL			



BORING STARTED	12-11-06
BORING COMPLETED	12-11-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 107+00 90 LT

CLIENT		ARCHITECT / ENGINEER										
Ameren UE												
SITE		PROJECT										
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
4	<u>SILTY LEAN CLAY</u> : brown, trace roots	4			HS							
5	<u>SAND</u> : very fine grained, with silt	5	SP	1	SS	12				X		<167
9	<u>SILTY SAND</u> : brown and gray, very fine grained	9			HS							
10		10	SP SM	2	SS	13				X		171 +/- 95
15		15			HS							
16		16	SP SM	3	SS	14				X		<167
	BOTTOM OF BORING AT 16 FEET NO REFUSAL											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽		▽	
WL	▽		▽	
WL				



BORING STARTED		12-13-06	
BORING COMPLETED		12-13-06	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 72+61 34 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
11	<u>SILTY SAND</u> : very fine grained	5	HS								
			SP SM	1	SS	16				X	<167
			HS								
10			SP SM	2	SS	16.5				X	<167
			HS								
15	<u>SAND</u> : very fine to meduim grained		SW	3	SS	17				X	<167
			HS								
20			SW	4	SS	16				X	429 +/-105
			HS								
25	<u>SILTY LEAN CLAY</u> : with very fine grained sand		CL ML	5	SS	24				X	451 +/-106
			HS								
30	<u>SAND</u> : gray, fine to medium grained		SP	6	SS	18				X	431 +/-105
			HS								
35			SP	7	SS	9				X	274 +/-99
			HS								
39	BOTTOM OF BORING AT 39 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.



WATER LEVEL OBSERVATIONS, ft			
WL	▽ 16	WS	▽ 18 AB
WL	▽		▽
WL			



BORING STARTED	12-15-06
BORING COMPLETED	12-15-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ\_TERRACON.GDT\_3/21/08

**LOG OF BORING NO. CA-SOL-Sta 224+34 23 L**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER											
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>											
GRAPHIC LOG	DEPTH, ft.	DESCRIPTION	USCS SYMBOL	SAMPLES				TESTS					
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)		
	0.3	<u>4" TOPSOIL</u>	CL		PA	12							
	2.5	<u>LEAN TO FAT CLAY</u> : light brown to brown, with gravel	CH										920 +/-121
		BOTTOM OF BORING AT 2.5 FEET AUGER REFUSAL ON APPARENT LIMESTONE***											
		***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▼ NONE	WS	▼
WL	▼		▼
WL			



BORING STARTED	12-21-06
BORING COMPLETED	12-21-06
RIG	750 FOREMAN SB
APPROVED	TLB JOB # 09067011T

# LOG OF BORING NO. CA-SOL-Sta 230+45 25 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
[Diagonal Hatching]	<u>LEAN TO FAT CLAY</u> : reddish-brown, trace roots	5	CL CH	1	SS	16					X	<165
9.5					HS							
[Brick Pattern]	<u>LIMESTONE***</u> : severely weathered, with sandstone	10	CL CH	2	SS	24					X	<165
13.5					HS							
	BOTTOM OF BORING AT 13.5 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED	12-21-06
BORING COMPLETED	12-21-06
RIG 750	FOREMAN SB
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 138+40 28 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>LEAN CLAY</u> : reddish-brown and brown				HS						
	-: trace roots	5	CL	1	SS	24				X	249 +/-97 403 +/-102
					HS						
	<u>SILTY LEAN CLAY</u> : brown	9	CL ML	2	SS	5				X	213 +/-96 <165
					HS						
	-: gray	15	CL ML	3	SS	8				X	<165 216 +/-96
	BOTTOM OF BORING AT 16 FEET NO REFUSAL	16									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽
WL	▽	▽
WL		



BORING STARTED	12-22-06
BORING COMPLETED	12-22-06
RIG	750 FOREMAN SB
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ\_TERRACON.GDT\_3/21/08

# LOG OF BORING NO. CA-SOL-Sta 141+24.5 100 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
5	<u>LEAN TO FAT CLAY</u> : brown and gray	5			PA						
5	<u>SAND</u> : fine to medium grained	5	CL CH	1	SS	24				X	<170
9	<u>SANDY LEAN CLAY</u> : brown	9			PA						
10		10	CL	2	SS	16				X	<170
13	<u>SILTY LEAN CLAY</u> : brown and gray	13			PA						
16	<u>BOTTOM OF BORING AT 16 FEET NO REFUSAL</u>	16	CL ML	3	SS	16				X	<170

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED	12-22-06
BORING COMPLETED	12-22-06
RIG	750 FOREMAN CV
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08



# LOG OF BORING NO. CA-SOL-Sta 74+03 117 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
9	<u>SILTY LEAN CLAY</u> : brown, trace sand	5	CL ML	1	SS	14			X	<167
14	<u>SILTY SAND</u> : very fine grained	10	SP SM	2	SS	12			X	<165
14	<u>SAND</u> : fine grained	15	SP	3	SS	12.5			X	<165
20		20	SP	4	SS	13.5			X	<171
26	-: coarse grained	25	SP	5	SS	20			X	<171
	BOTTOM OF BORING AT 26 FEET NO REFUSAL									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED	12-27-06
BORING COMPLETED	12-27-06
RIG	750 FOREMAN SB
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 69+45 45 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
4	<u>SILTY LEAN CLAY</u>			HS						
5	<u>SILTY SAND</u> : very fine grained		SP SM	1	SS	14			X	<171
9	<u>SAND</u> : very fine grained				HS					
10	<u>SAND</u> : very fine grained		SP	2	SS	14			X	<171
15	-: fine grained				HS					
15	-: fine grained		SP	3	SS	17			X	<171
20	-: fine grained				HS					
20	-: fine grained		SP	4	SS	12			X	<171
25	-: fine grained				HS					
25	-: fine grained		SP	5	SS	18			X	<171
26	BOTTOM OF BORING AT 26 FEET NO REFUSAL									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL	▼
WL	▼
WL	▼



BORING STARTED	12-28-06
BORING COMPLETED	12-28-06
RIG	750
FOREMAN	SB
APPROVED	TLB
JOB #	09067011T

BOREHOLE2 09067011T LOGS USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 73+94 100 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
9	<u>SILTY LEAN CLAY</u> : brown, trace roots	5	CL ML	1	SS	10				X	<171
9	<u>SILTY SAND</u> : brown, fine to medium grained	10	SP SM	2	SS	12				X	<171
15	▽	15	SP SM	3	SS	12				X	<171
19	<u>SAND</u> : brown, fine grained	20	SP	4	SS	17				X	<171
26	-: gray	25	SP	5	SS	15				X	<171
	BOTTOM OF BORING AT 26 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft				BORING STARTED 12-28-06	
WL	▽ 19	WS	▽ 16.5	AB	BORING COMPLETED 12-28-06
WL	▽		▽		RIG 750 FOREMAN SB
WL					APPROVED TLB JOB # 09067011T



BOREHOLE2\_09067011T LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 160+53 30 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
5.9	<u>LEAN CLAY</u> : gray	5	CL	1	SS	15	35			X	<167
9	<u>LIMESTONE</u> ***: weathered				PA						
	BOTTOM OF BORING AT 9 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ NONE	WS	▼
WL	▼		▼
WL			



BORING STARTED		1-9-07	
BORING COMPLETED		1-9-07	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 181+42 14 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
4.5	<u>LEAN CLAY</u> : brown, with gravel	5			PA					
5.5	<u>LIMESTONE</u> ***: weathered, with chert		CL	1	SS	12	50/5"		X	<167
	BOTTOM OF BORING AT 5.5 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.				PA					

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ NONE	WS	▽
WL	▽		▽
WL			



BORING STARTED		1-9-07	
BORING COMPLETED		1-9-07	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 203+63 14 R

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
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SITE <b>Pipeline Corridor Callaway County, Missouri</b>	PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>
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GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
3.5	<u>LEAN CLAY</u> : gray, with gravel				PA					
5	<u>FAT CLAY</u> : brown, trace gravel		CH	1	SS	14	16		X	<167
8					PA					
	BOTTOM OF BORING AT 8 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED		1-9-07	
BORING COMPLETED		1-9-07	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

BOREHOLE2 09067011T LOGS USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 2294+30 35 R

CLIENT		ARCHITECT / ENGINEER										
Ameren UE												
SITE		PROJECT										
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES					TESTS				
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
	<u>LEAN TO FAT CLAY</u> : reddish-brown				HS							
	-: with gray	5	CL CH	1	SS	20					X	<167
					HS							
	-: reddish brown, trace gravel	10	CL CH	2	SS	22					X	<171
					HS							
		15	CL CH	3	SS	18					X	1616+/-145
					HS							
	-: with gray, with jointing	20	CL CH	4	SS	16					X	<171
					HS							
		25	CL CH	5	SS	24					X	<171
					HS							
		30	CL CH	6	SS	24					X	<171
					HS							
	-: trace gravel	35.5	CL CH	7	SS	20					X	<171
					HS							
	<b>LIMESTONE***</b> : severely weathered, with chert	37										
	BOTTOM OF BORING AT 37 FEET AUGER REFUSAL ON APPARENT LIMESTONE***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ NONE	WS	▽
WL	▽		▽
WL			



BORING STARTED		1-10-07	
BORING COMPLETED		1-10-07	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 2303+98 20 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	LEAN TO FAT CLAY: brown				HS						
		5	CL CH	1	SS	8				X	<167
					HS						
	-: reddish-brown and gray	10	CL CH	2	SS	18				X	<167
					HS						
		15	CL CH	3	SS	10				X	<167
					HS						
	20	CL CH	4	SS	16				X	<167	
				HS							
	25	CL CH	5	SS	24				X	<167	
				HS							
	30	CL CH	6	SS	14				X	<167	
	31	BOTTOM OF BORING AT 31 FEET NO REFUSAL									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED		1-11-07	
BORING COMPLETED		1-11-07	
RIG	750	FOREMAN	JPT
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08



**LOG OF BORING NO. CA-SOL-Sta 19+35 27 L Dock Haul Road** Page 1 of 1

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
7.5	<u>FAT CLAY</u> : with silt	5	CH	1	DP	60			X	<166
10	<u>SAND</u> : fine grained	10	CH	2	DP	60			X	<166
15	<u>SILTY SAND</u> : fine grained	15	SM	3	DP	2.5			X	<166
20	<u>LEAN SANDY CLAY</u> : brown	20	CL	4	DP	60			X	<166
25	<u>SAND</u> : brown, coarse grained	25	CL	5	DP	56			X	<166
30	<u>SAND</u> : brown, coarse grained	25	SP	6	DP	52			X	657 +/-113
	BOTTOM OF BORING AT 30 FEET NO REFUSAL	30								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 22.5	WS	▽
WL	▽		▽
WL			



BORING STARTED		2-7-07	
BORING COMPLETED		2-7-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 72+80 25 L (MH-2)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>SANDY LEAN CLAY</u> : with silt	5	CL	1	DP	60			X	<181	
7.5	BOTTOM OF BORING AT 7.5 FEET AUGER REFUSAL ON APPARENT BOULDER***										
	<p>***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.</p>										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ NONE	WS	▽
WL	▽		▽
WL			



BORING STARTED		2-7-07	
BORING COMPLETED		2-7-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 72+80 30 L (MH-2)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
5	<u>SANDY LEAN CLAY</u> : brown, with silt	5	CL	1	DP	57				X	<162
5	<u>SILTY SAND</u> : very fine grained	5	SM	2	DP	38				X	<165
10	-: trace cinder	10	SM	3	DP	42				X	<165
15	<u>SAND</u> : fine grained to medium grained	15	SW	4	DP	47				X	<162
20	-: medium grained to coarse grained	20	SW	5	DP	35				X	<181
25	<b>BOTTOM OF BORING AT 25 FEET NO REFUSAL</b>	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ NONE	WS	▽
WL	▽		▽
WL			



BORING STARTED		2-7-07	
BORING COMPLETED		2-7-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 72+82 70 L

CLIENT		ARCHITECT / ENGINEER									
Ameren UE											
SITE		PROJECT									
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
15	<u>SILTY SAND</u> : brown, very fine grained	5	SM	1	DP	46				X	<162
10		5	SM	2	DP	49				X	<181
5		5	SM	3	DP	49				X	<162
15	<u>SAND</u> : brown, very fine grained to coarse grained	15	SW	4	DP	46				X	<162
20		5	SW	5	DP	30				X	238 +/-91
25	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽
WL	▽	▽
WL		



BORING STARTED		2-7-07	
BORING COMPLETED		2-7-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 73+47 69 L (MH-2)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
5	<u>SANDY LEAN CLAY</u> : with silt	5	CL	1	DP	60				X	<167
5	<u>SILTY SAND</u> : very fine grained	10	SM	2	DP	60				X	<167
10		15	SM	3	DP	40				X	<167
15		20	SM	4	DP	50				X	<167
20		25	SM	5	DP	37				X	<167
25	-: coarse grained BOTTOM OF BORING AT 25 FEET NO REFUSAL	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED	2-7-07
BORING COMPLETED	2-7-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 73+57 57 R (MH-2)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
5	<u>FAT CLAY</u> : reddish brown and gray, with silt	5	CH	1	DP	58				X	497 +/-108
14	<u>SILT</u> : reddish brown, trace very fine sand	10	ML	2	DP	56				X	<167
15	<u>SAND</u> : fine grained <u>SILTY LEAN CLAY</u> : brown	15	CL ML	3	DP	52				X	<167
22.6	<u>SAND</u> : medium grained	20	CL ML	4	DP	41				X	<168
25	<u>SAND</u> : medium grained	25	CL ML	5	DP	43				X	229 +/-97
	BOTTOM OF BORING AT 25 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▼
WL	▽	▼
WL		



BORING STARTED		2-7-07	
BORING COMPLETED		2-7-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 73+70 75 L (MH-2)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
0	<u>SANDY LEAN CLAY</u> : brown, trace gravel	0	CL	1	DP	60				X	<167
5	-: with silt	5	CL	2	DP	60				X	<167
10	<u>SAND</u> : brown, fine grained, trace silt	10	SP	3	DP	37				X	<167
15		15	SP	4	DP	55				X	<167
20	BOTTOM OF BORING AT 20 FEET NO REFUSAL	20									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ NONE	WS	▽
WL	▽		▽
WL			



BORING STARTED		2-7-07	
BORING COMPLETED		2-7-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 104+30 100 L (MH-5)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<u>SILTY LEAN CLAY</u> : brown, trace very fine sand	0	CL ML	1	DP	56			X	<169
		5	CL ML	2	DP	52			X	<169
	∇ -: with fine sand	10	CL ML	3	DP	55			X	<169
		15	SP SM	4	DP	52			X	<169
	<u>SILTY SAND</u> : very fine grained	15								
		20								
	BOTTOM OF BORING AT 20 FEET NO REFUSAL	20								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft		<h1 style="font-size: 2em;">Terracon</h1>	BORING STARTED		2-8-07	
WL	∇ 9      WS      ∇		BORING COMPLETED		2-8-07	
WL	∇                      ∇		RIG	Geoprobe	FOREMAN	MK
WL			APPROVED	TLB	JOB #	09067011T

BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/2/08



**LOG OF BORING NO. CA-SOL-Sta 105+39 100 L (MH-5)**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<u>SILTY LEAN CLAY</u> : brown, trace very fine sand	0	CL ML	1	DP	60			X	<169
		5	CL ML	2	DP	60			X	402 +/-100
	<u>CLAYEY SILT</u> : gray	10	ML	3	DP	60			X	2890+/-171 2956* +/-175
		15	ML	4	DP	60			X	1706+/-142 1305* +/-145
	BOTTOM OF BORING AT 20 FEET NO REFUSAL	20								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* Duplicate sample analysis run by laboratory

**WATER LEVEL OBSERVATIONS, ft**

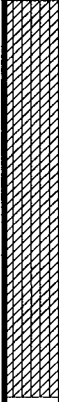
WL	▽ 17	WS	▽
WL	▽		▽
WL			



BORING STARTED	2-8-07
BORING COMPLETED	2-8-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

**LOG OF BORING NO. CA-SOL-Sta 107+13 21 L (MH-6)**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>SILTY LEAN CLAY</u> : brown, trace very fine sand	0	CL ML	1	DP	57				X	<169
		5	CL ML	2	DP	54				X	<169
		10	CL ML	3	DP	52				X	<169
	BOTTOM OF BORING AT 15 FEET NO REFUSAL	15									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽
WL	▽	▽
WL		



BORING STARTED	2-8-07
BORING COMPLETED	2-8-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 108+45 28 R (MH-6)

CLIENT		ARCHITECT / ENGINEER								
Ameren UE										
SITE		PROJECT								
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
5	<u>FAT CLAY</u> : reddish brown, trace gravel	5	CH	1	DP	60			X	<157
5	<u>LEAN CLAY</u> : reddish brown and gray brown, trace silt	5	CL	2	DP	60			X	<157
10		10	CL	3	DP	60			X	<157
15	BOTTOM OF BORING AT 15 FEET NO REFUSAL	15								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 13	WS	▽
WL	▽		▽
WL			



BORING STARTED	2-8-07
BORING COMPLETED	2-8-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

**LOG OF BORING NO. CA-SOL-Sta 109+93 116 L (MH-6B)**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<u>SILTY LEAN CLAY</u> : brown, trace very fine sand	0	CL ML	1	DP	56			X	<169
		5	CL ML	2	DP	60			X	<169
		10	CL ML	3	DP	51			X	<169
		15	CL ML	4	DP	52			X	<169
	BOTTOM OF BORING AT 20 FEET NO REFUSAL	20								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽
WL	▽	▽
WL		



BORING STARTED	2-8-07
BORING COMPLETED	2-8-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 75+82 26 R (MH-3A)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
				CL ML	1 2	DP DP	33 42			X X	<181 <167
				CH	3	DP	35			X	<181
7	<u>SILTY LEAN CLAY</u> : brown	5									
15	<u>FAT CLAY</u> : gray	10									
15	BOTTOM OF BORING AT 15 FEET NO REFUSAL	15									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ NONE	WS	▽
WL	▽		▽
WL			



BORING STARTED		2-8-07	
BORING COMPLETED		2-8-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 75+93 37 L (MH-3A)

CLIENT		ARCHITECT / ENGINEER									
Ameren UE											
SITE		PROJECT									
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	FAT CLAY: reddish brown, with silt	5	CH	1	DP	59				X	<167
		10	CH	2	DP	35				X	<181
		15	CH	3	DP	61				X	<168
	-: with gray, trace very fine sand	20	CH	4	DP	61				X	<169
		25	CH	5	DP	55				X	<181
	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

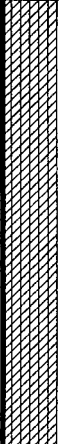
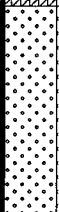
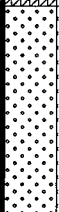
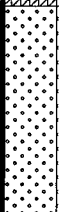
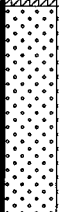
**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽
WL	▽	▽
WL		



BORING STARTED		2-8-07	
BORING COMPLETED		2-8-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

**LOG OF BORING NO. CA-SOL-Sta 83+37 52 R (MH-3B to MH-4 east)** Page 1 of 1

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>SILTY LEAN CLAY</u> : gray and brown, trace very fine sand	5	CL ML	1	DP	47				X	<167
	<u>SAND</u> : medium grained to coarse grained	10	CL ML	2	DP	59				X	<167
		15	CL ML	3	DP	26				X	<167
		20	CL ML	4	DP	32				X	<167
		25	SW	5	DP	60				X	<167
	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 17	WS	▽
WL	▽		▽
WL			



BORING STARTED		2-8-07	
BORING COMPLETED		2-8-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T LOGS\_USED.GPJ TERRACON.GDT 3/21/08

**LOG OF BORING NO. CA-SOL-Sta 95+09 63 R (MH-3B to MH-4 east)** Page 1 of 1

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>SILTY LEAN CLAY</u> : brown, trace very fine sand	0	CL ML	1	DP	60				X	<167
		5	CL ML	2	DP	60				X	<167
	<u>SILT</u> : gray and brown	10	ML	3	DP	37				X	<167
		15	ML	4	DP	47				X	<167
	<u>SAND</u> : fine grained to medium grained	19	SP	5	DP	60				X	<169
	25	BOTTOM OF BORING AT 25 FEET NO REFUSAL									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL	▽
WL	▽
WL	▽



BORING STARTED		2-8-07	
BORING COMPLETED		2-8-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ\_TERRACON.GDT\_3/21/08



**LOG OF BORING NO. CA-SOL-Sta 132+87 30 R (MH-6 to MH-8)** Page 1 of 1

CLIENT		ARCHITECT / ENGINEER							
SITE		PROJECT							
Ameren UE Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
	SILTY LEAN CLAY: brown  -: with gray	5 10 15	CL ML	1 2 3	DP DP DP	49 43 53		X X X	<157 <157 <157
	BOTTOM OF BORING AT 15 FEET NO REFUSAL								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽
WL	▽	▽
WL		



BORING STARTED		2-9-07
BORING COMPLETED		2-9-07
RIG	Geoprobe	FOREMAN MK
APPROVED	TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 138+76 75 L (MH-8)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
8	<u>SILTY LEAN CLAY</u> : reddish brown, trace gravel	5	CL ML	1	DP	48				X	267 +/-97
8	<u>LEAN CLAY</u> : gray, trace very fine sand -: trace medium sand	10	CL	2	DP	37				X	<164
15	<u>LEAN CLAY</u> : gray, trace very fine sand -: trace medium sand	10	CL	3	DP	43				X	305 +/-99
15	BOTTOM OF BORING AT 15 FEET NO REFUSAL	15									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 13	WS	▽
WL	▽		▽
WL			



BORING STARTED		2-9-07	
BORING COMPLETED		2-9-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 139+47 70 L (MH-8)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES					TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
0	<u>SILTY LEAN CLAY</u> : reddish brown, trace gravel	0	CL ML	1	DP	60				X	334 +/-100
5		5									
8	<u>LEAN CLAY</u> : gray, trace very fine sand	8	CL	2	DP	60				X	<164
10		10									
15	<u>LEAN CLAY</u> : gray, trace very fine sand	15	CL	3	DP	60				X	<164
15	BOTTOM OF BORING AT 15 FEET NO REFUSAL	15									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽		▼	
WL	▽		▼	
WL				



BORING STARTED		2-9-07	
BORING COMPLETED		2-9-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 143+65.5 26 L (MH-9B)

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>	PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
15	<p><u>SILTY LEAN CLAY</u>: brown, trace gravel</p> <p style="margin-left: 40px;">-: trace sand</p>	5	CL ML	1	DP	52			X	<164	
		10	CL ML	2	DP	54			X	<164	
		15	CL ML	3	DP	5			X	<164	
	<p>BOTTOM OF BORING AT 15 FEET NO REFUSAL</p>	15									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	▽	▽	▽
WL	▽	▽	▽	▽
WL				



BORING STARTED		2-9-07	
BORING COMPLETED		2-9-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

**LOG OF BORING NO. CA-SOL-Sta 2310+47.7 33 L (MH-86-4A)**

CLIENT		ARCHITECT / ENGINEER									
Ameren UE											
SITE		PROJECT									
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>FILL</u> : lean to fat clay, reddish brown and gray, with gravel	0-5		1	DP	60				X	< 158
	<u>LEAN TO FAT CLAY</u> : reddish brown and gray (Glacial Drift)	5-10	CL CH	2	DP	60				X	< 158
		10-15	CL CH	3	DP	60				X	< 158
		15-20	CL CH	4	DP	60				X	< 158
	BOTTOM OF BORING AT 20 FEET NO REFUSAL	20									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft

WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED	2-9-07
BORING COMPLETED	2-9-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

# LOG OF BORING NO. CA-SOL-Sta 2316+1.7 37 R (MH-86-3)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
0	<u>FILL</u> : lean to fat clay, reddish brown, with gravel	0		1	DP	31				X	< 158
5	-: with gray	5		2	DP	55				X	< 158
10	<u>LEAN TO FAT CLAY</u> : reddish brown and gray (Glacial Drift)	10	CL CH	3	DP	60				X	< 158
15		15	CL CH	4	DP	60				X	< 158
20		20	CL CH	5	DP	60				X	< 158
25	<b>BOTTOM OF BORING AT 25 FEET NO REFUSAL</b>	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ NONE	WS	▼
WL	▼		▼
WL			



BORING STARTED		2-9-07	
BORING COMPLETED		2-9-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

**LOG OF BORING NO. CA-SOL-Sta 2316+66.7 22 R (MH-86-3)**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	<u>FILL</u> : lean to fat clay, reddish brown	0		1	DP	56				X	<155
	-: with gray	5		2	DP	60				X	<158
	<u>LEAN TO FAT CLAY</u> : reddish brown and gray (Glacial Drift)	10	CL CH	3	DP	60				X	<158
		15	CL CH	4	DP	60				X	<158
		20	CL CH	5	DP	60				X	<158
	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	∇	NONE	WS	∇
WL	∇		∇	
WL				



BORING STARTED	2-9-07
BORING COMPLETED	2-9-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 2320+70 20 R (MH-86-2)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
0	<u>LEAN TO FAT CLAY</u> : reddish brown, possible fill	0	CL CH	1	DP	40			X	<156
5		5	CL CH	2	DP	60			X	<165
10	<u>LEAN TO FAT CLAY</u> : reddish brown and gray (Glacial Drift)	10	CL CH	3	DP	60			X	<165
15		15	CL CH	4	DP	60			X	<165
20		20	CL CH	5	DP	60			X	<158
25	<b>BOTTOM OF BORING AT 25 FEET NO REFUSAL</b>	25								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft		<h1 style="font-size: 2em; margin: 0;">Terracon</h1>		BORING STARTED		2-9-07			
WL	∇ NONE			WS	∇	BORING COMPLETED		2-9-07	
WL	∇				∇	RIG	Geoprobe	FOREMAN	MK
WL						APPROVED TLB		JOB # 09067011T	

BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08



**LOG OF BORING NO. CA-SOL-Sta 266+95 10.5 R (MH-12 to MH-13)** Page 1 of 1

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
	<p><u>LEAN TO FAT CLAY</u>: reddish brown, trace gravel (Glacial Drift)</p>    <p>-: with chert</p>	5	CL CH	1	DP	36				X	<163	
		10	CL CH	2	DP	60					X	<157
		15	CL CH	3	DP	30					X	<157
		18.2	CL CH	4	DP	38					X	<157
<p>BOTTOM OF BORING AT 18.2 FEET AUGER REFUSAL ON APPARENT CHERT CONGLOMERATE***</p>  <p>***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.</p>												

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED		2-9-07	
BORING COMPLETED		2-9-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ\_TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 270+60 39 R (MH-13)

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
				1	DP	52				X	<164
				2	DP	60				X	<164
3	DP	57				X	<164				
5	CL CH										
10	CL CH										
15	BOTTOM OF BORING AT 15 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL $\nabla$ 13	WS $\nabla$
WL $\nabla$	$\nabla$
WL	



BORING STARTED		2-9-07	
BORING COMPLETED		2-9-07	
RIG	Geoprobe	FOREMAN	MK
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 270+60 42 L (MH-13)

CLIENT		ARCHITECT / ENGINEER									
Ameren UE											
SITE		PROJECT									
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
	LEAN TO FAT CLAY: reddish brown, trace gravel (Glacial Drift)	5	CL CH	1	DP	51				X	<164
	-: with gray	10	CL CH	2	DP	60				X	<164
	FAT CLAY: brown and gray (Glacial Drift)	15	CH	3	DP	53				X	<171
		20	CH	4	DP	54				X	<171
	BOTTOM OF BORING AT 20 FEET NO REFUSAL	20									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL	
WL	
WL	



BORING STARTED	2-9-07
BORING COMPLETED	2-9-07
RIG Geoprobe	FOREMAN MK
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ\_TERRACON.GDT\_3/21/08

**LOG OF BORING NO. CA-SOL-Sta 140+58 102.5 R**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
0.3	<u>4" TOPSOIL</u> SILTY CLAY: brown				PA						
		5	CL ML	1	SS					X	< 193
					WB						
	-: with gray, sandy	10	CL ML	2	SS					X	< 193
					WB						
13	<u>SILTY SAND</u> : gray and brown, fine grained, poorly graded	15	SP SM	3	SS					X	< 193
					WB						
18	<u>FAT CLAY</u> : gray, trace silt, with sand	20	CH	4	SS					X	< 193
20	BOTTOM OF BORING AT 20 FEET NO REFUSAL	20									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL	11 WS
WL	
WL	



BORING STARTED	6-20-07
BORING COMPLETED	6-20-07
RIG	750 FOREMAN SB
APPROVED	TLB JOB # 09067011T

BOREHOLE2\_09067011T LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 140+78 159 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER							
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
0.3	<u>3" TOPSOIL</u> SILTY CLAY: brown	3		PA					
3	<u>LEAN TO FAT CLAY</u> : brown and gray, with silt  -: trace silt	5	CL CH	1 SS	WB			X	< 190
13	<u>SHALEY FAT CLAY</u> : gray, with weathered limestone	10	CL CH	2 SS	WB			X	< 193
18	<u>SHALE***</u> : gray, with weathered limestone	15	CH	3 SS	WB			X	< 193
20	<u>LIMESTONE***</u> : moderately weathered	20		4 SS				X	< 193
22.5	<u>LIMESTONE***</u> : slightly weathered BOTTOM OF BORING AT 22.5 FEET AUGER REFUSAL ON APPARENT LIMESTONE***								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL $\nabla$ 8	WS $\nabla$
WL $\nabla$	WS $\nabla$
WL	



BORING STARTED		6-20-07	
BORING COMPLETED		6-20-07	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. CA-SOL-Sta 104+64 60 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<u>SILT</u> : dark brown	5	ML	1	SS	18			X	< 193
	-: brown and gray	10	ML	2	SS	14			X	< 190
	-: trace sand	15	ML	3	SS	16			X	< 192
	18	20	SW SM	4	SS	17			X	< 192
	<u>SAND</u> : with silt	25	SW SM	5	SS	16			X	< 192
		30	SW SM	6	SS	18			X	< 190
	BOTTOM OF BORING AT 30 FEET NO REFUSAL	30								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	NONE	WS	▼
WL	▼	▼	▼
WL			



BORING STARTED		6-21-07	
BORING COMPLETED		6-21-07	
RIG	219	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T

BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 107+00 90 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
13	<u>SAND</u> : gray, with silt	5	CL ML	1	SS	17			X	< 193
18	<u>SILTY CLAY</u> : gray, trace sand	10	CL ML	2	SS	15			X	< 190
23	<u>SAND</u> : with silt	15	SP SM	3	SS	8			X	967 +/-136
28	<u>SILT</u> : trace sand	20	CL ML	4	SS	17			X	691 +/-126
30	<u>SAND</u> : with silt	25	SP SM	5	SS	16			X	< 191
30	BOTTOM OF BORING AT 30 FEET NO REFUSAL	30	ML	6	SS	18			X	< 191

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	∇ NONE	WS	∇
WL	∇		∇
WL			



BORING STARTED		6-21-07	
BORING COMPLETED		6-21-07	
RIG	219	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 137+85 12 R

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>	PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
4	<u>SILTY LEAN CLAY</u> : brown, trace organics				PA						
5	<u>SAND</u> : brown and gray, very fine grained, with silt		CL ML	1	SS	12	12			X	< 190
	-: silty				WB						
10			SP SM	2	SS	13	5			X	< 193
					WB						
15			SP SM	3	SS	14	20			X	< 193
16	BOTTOM OF BORING AT 16 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	NONE	WS	▼
WL	▼	▼	▼
WL			



BORING STARTED		6-21-07	
BORING COMPLETED		6-21-07	
RIG	219	FOREMAN	CV
APPROVED	TLB	JOB #	09067011T



# LOG OF BORING NO. CA-SOL-Sta 137+85 62 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				Tritium Analytical Results (pCi/L)
			NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY		
0.4	5" TOPSOIL			PA							
	LEAN CLAY: gray brown, trace silt and sand	CL	1	SS	22				X		< 190
				PA							
	-: with sand and gravel	CL	2	SS	24				X		< 190
				PA							
13	FAT CLAY: gray and reddish brown, trace sand	CH	3	SS	24				X		< 190
15	BOTTOM OF BORING AT 15 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 12.4	WS	▽
WL	▽		▽
WL			



BORING STARTED		6-21-07	
BORING COMPLETED		6-21-07	
RIG	750	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

# LOG OF BORING NO. RA-Sta 224+34 23 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
			NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
0.3	3" TOPSOIL			HA				RA-2	< 146	
2.5	LEAN TO FAT CLAY: light brown and brown, with gravel BOTTOM OF BORING AT 2.5 FEET									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ NONE	WS	▽ NONE AB
WL	▽		▽
WL			



BORING STARTED	9-27-07
BORING COMPLETED	9-27-07
RIG Hand Auger	FOREMAN TB
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. RA-Sta 232+25 25 L

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>	PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
5	<u>LEAN TO FAT CLAY</u> : yellow brown and brown, with gravel	5			HA HA				
5	BOTTOM OF BORING AT 5 FEET NO REFUSAL		CL CH	1	HA	16			RA-1  < 146

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ NONE	WS	▽ NONE AB
WL	▽		▽
WL			



BORING STARTED	9-27-07
BORING COMPLETED	9-27-07
RIG Hand Auger	FOREMAN TB
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 24+82 64 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
8	<u>LEAN TO FAT CLAY</u> : dark brown, trace reddish brown	5	CL CH	1 SS	15			X	<147	
18	<u>SAND</u> : gray and brown, fine grained, with silt	10	SP SM	2 SS	22			X	<147	
18	▼	15	SP SM	3 SS	18			X	<147	
18	<u>SAND</u> : gray and brown, fine grained	20	SW	4 SS	22			X	<147	
25	-: fine to coarse grained	25		WB						
25		30	SW	5 SS	12			X	<147	
30		30		WB						
35		35	SW	7 SS	18			X	<147	
	BOTTOM OF BORING AT 35 FEET NO REFUSAL	35								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			<b>Terracon</b>		BORING STARTED		9-28-07
WL	▽ 14	WS	▽ 14	AB	BORING COMPLETED		9-28-07
WL	▽		▽		RIG	960	FOREMAN SB
WL	AB = 120 hours after boring			APPROVED	TLB	JOB #	09067011T

BOREHOLE# 09067011T LOGS USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 72+80 105 R

CLIENT		ARCHITECT / ENGINEER							
Ameren UE									
SITE		PROJECT							
Pipeline Corridor Callaway County, Missouri		PIPELINE MANHOLE TRITIUM INVESTIGATION							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS		
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
1	12" TOPSOIL LEAN CLAY: gray and brown	1		PA					
4		4	CL 1	SS	18			X	<147
5	SANDY SILT: gray SAND: gray and brown, fine to medium grained	5		PA					
9.5		9.5	SW 2	SS	24			X	<147
13.5	LEAN TO FAT CLAY: gray	13.5		PA					
15	SILTY SAND: reddish brown -: gray and brown	15	SP SM 3	SS	20			X	<147
	SAND: gray, fine to medium grained, trace gravel			PA					
		20	SP 4	SS	20			X	<147
		25		PA					
		25	SP 5	SS	15			X	<147
		30		PA					
		30	SP 6	SS	20			X	<147
		35		PA					
		35	SP 7	SS	0				
	BOTTOM OF BORING AT 35 FEET NO REFUSAL	35							

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	17	WS	15
			AB
WL			
WL	AB = 264 hours after boring		



BORING STARTED	9-28-07
BORING COMPLETED	9-28-07
RIG	960
FOREMAN	SB
APPROVED	TLB
JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 105+24 200 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
18	<u>LEAN CLAY</u> : brown, with silt  -: gray, with reddish brown	5		PA						
			CL 1	SS	21				X	<147
				PA						
			CL 2	SS	12				X	<147
				PA						
23	<u>SILTY SAND</u> : gray	10		PA						
			CL 3	SS	21				X	1046+/-117 975+/-117
				PA						
25	<u>SAND</u> : gray, fine grained	15		PA						
			SP SM 4	SS	22				X	616 +/-103 525+/-101
				PA						
			SP 5	SS	24				X	<147
	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* Sample re-analysis run by laboratory

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 15	WS	▽ 11.1 AB
WL	▽		▽
WL	AB = 168 hours after boring		



BORING STARTED	10-1-07
BORING COMPLETED	10-1-07
RIG 960	FOREMAN SB
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 72+05 40 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES			TESTS				
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
1	<u>12" TOPSOIL</u> SANDY SILT: gray	0			HS					
		5	ML	1	SS	18			X	<147
		10			HS					
	-: with clay	15	ML	2	SS	17			X	<147
		20			HS					
	13.5	25	SW	3	SS	15			X	<147
	SAND: gray, fine to medium grained	30			HS					
	15	35	ML	4	SS	15			X	<147
	SANDY SILT: gray, fine to medium grained	40			HS					
	-: trace gravel	45	ML	5	SS	20			X	<147
		50			HS					
	-: with coarse grained sand	55	ML	6	SS	12			X	<147
		60			HS					
	36	65	ML	7	SS	10			X	<147
	SAND: gray, fine grained, trace gravel	70			HS					
	40	75	SP	8	SS	6			X	<147
	BOTTOM OF BORING AT 40 FEET NO REFUSAL	80								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 18	WS	▽ 16.4
		AB	
WL	▽		▽
WL	AB = 48 hours after boring		



BORING STARTED		10-1-07	
BORING COMPLETED		10-1-07	
RIG	960	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

BOREHOLE2\_09067011T LOGS USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 140+24 40 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
1	<u>12" TOPSOIL</u> LEAN CLAY: brown, with silt -: gray, with reddish brown, trace gravel	5	CL	1	SS	19				X	<147
9	SANDY CLAY: gray, medium to coarse grained, trace gravel	10	CL	2	SS	11				X	<147
14.6	SILTY CLAY: gray	15	CL	3	SS	19				X	<147
	BOTTOM OF BORING AT 15 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft				BORING STARTED 10-2-07			
WL	▽ 10	WS	▽ 9	AB	BORING COMPLETED 10-2-07		
WL	▽		▽		RIG 960	FOREMAN	SB
WL	AB = 168 hours after boring				APPROVED TLB	JOB #	09067011T



BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08



# LOG OF BORING NO. CA-SOL-Sta 143+17 40 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER											
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>											
GRAPHIC LOG		DESCRIPTION	DEPTH, ft.	USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
	4.6	<u>SILT</u> : light brown, with gravel	4.6			PA							
	8	<u>SILTY CLAY</u> : gray, with red mottles, trace organic matter	8	ML	1	SS	15					X	<147
	14	<u>SANDY CLAY</u> : gray, with red mottles, trace gravel	14	CL	2	SS	16					X	<147
	15	<u>SILTY CLAY</u> : gray	15	CL ML	3	SS	20					X	<147
		BOTTOM OF BORING AT 15 FEET NO REFUSAL											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft				BORING STARTED 10-2-07			
WL	▽ 10	WS	▽ 7.1	AB		BORING COMPLETED 10-2-07	
WL	▽		▽			RIG 960	FOREMAN SB
WL	AB = 168 hours after boring					APPROVED TLB	JOB # 09067011T



BOREHOLEZ\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 2293+94 50 R

CLIENT	Ameren UE		ARCHITECT / ENGINEER								
SITE	Pipeline Corridor Callaway County, Missouri		PROJECT								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS				
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
25	<p><u>LEAN TO FAT CLAY</u>: light brown, with silt, trace gravel</p> <p>-: gray, with reddish brown, trace black</p>	5	CL CH	1	SS	17			X	<145	
					PA						
			10	CL CH	2	SS	17			X	<145
						PA					
			15	CL CH	3	SS	17			X	<145
						PA					
	<p>-: light brown, trace gray and black</p>	20	CL CH	4	SS	20			X	<145	
					PA						
		25	CL CH	5	SS	18			X	<145	
	<p>BOTTOM OF BORING AT 25 FEET NO REFUSAL</p>										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ NONE	WS	▽ NONE AB
WL	▽		▽
WL	AB = 168 hours after boring		



BORING STARTED	10-2-07
BORING COMPLETED	10-2-07
RIG 960	FOREMAN SB
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 2294+59 80 L

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
	<b>LEAN TO FAT CLAY:</b> gray, with silt, trace gravel  -: gravelly -: with reddish brown and black  -: light brown -: gray, trace reddish brown and black  -: trace light brown and black	5	CL CH	1	SS	20				X	<147	
		10	CL CH	2	SS	21				X	<147	
		15	CL CH	3	SS	21				X	<147	
		20	CL CH	4	SS	19				X	<147	
		25	CL CH	5	SS	22				X	<147	
	BOTTOM OF BORING AT 25 FEET NO REFUSAL		25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft				<h1 style="font-size: 2em; margin: 0;">Terracon</h1>		BORING STARTED		10-2-07	
WL	∇ NONE	WS	∇ NONE			AB	BORING COMPLETED		10-2-07
WL	∇		∇				RIG	960	FOREMAN SB
WL	AB = 168 hours after boring					APPROVED	TLB	JOB # 09067011T	

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 2294+89 45 R

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
25	<p><u>LEAN TO FAT CLAY</u>: gray, trace light brown, with silt, trace gravel</p>	5	CL CH	1	SS	17			X	<145
		10			PA					
		15	CL CH	2	SS	14			X	<145
		20			PA					
		25	CL CH	3	SS	20			X	<145
					PA					
		20	CL CH	4	SS	21			X	<145
					PA					
		25	CL CH	5	SS	18			X	<145
	<p>25 BOTTOM OF BORING AT 25 FEET NO REFUSAL</p>									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft				<b>Terracon</b>	BORING STARTED		10-4-07	
WL	∇ NONE	WS	∇ NONE		AB	BORING COMPLETED		10-4-07
WL	∇		∇			RIG	960	FOREMAN SB
WL	AB = 120 hours after boring				APPROVED	TLB	JOB # 09067011T	

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta MH-86-1

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER								
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<u>LEAN TO FAT CLAY</u> : gray, with light brown, with silt  <div style="text-align: center;">▼</div>	5	CL CH	1	SS	15			X	<145
		10	CL CH	2	SS	17			X	<145
	-: with black	15	CL CH	3	SS	20			X	<156
		20	CL CH	4	SS	21			X	<156
	-: with sand	25	CL CH	5	SS	24			X	<156
	26	29	CL	6	SS	18			X	<156
SANDY CLAY: light brown, trace gravel  BOTTOM OF BORING AT 29 FEET SPLIT-SPOON SAMPLER REFUSAL ON APPARENT BEDROCK										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 24	WS	▼ 7.5 AB
WL	▽	WS	▼
WL	AB = 192 hours after boring		



BORING STARTED		10-4-07	
BORING COMPLETED		10-4-07	
RIG	960	FOREMAN	SB
APPROVED	TLB	JOB #	09067011T

BOREHOLE: 09067011T LOGS USED: GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 106+50 200 L

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER										
SITE <b>Pipeline Corridor Callaway County, Missouri</b>	PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES					TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
8	<u>LEAN CLAY</u> : brown, trace black, with silt	5	CL	1	SS	9				X	<156
8	<u>SAND</u> : gray, fine to medium grained	10	SP	2	SS	9				X	<156
8	▽	15	SP	3	SS	21				X	<156
8	▽	20	SP	4	SS	22				X	<156
8	-: trace black	25	SP	5	SS	21				X	339 +/-96
8		30	SP	6	SS	16				X	<156
8	BOTTOM OF BORING AT 30 FEET NO REFUSAL	30									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 14	WS	▽ 10.8
WL	▽	AB	
WL	AB = 3 hours after boring		



BORING STARTED	10-12-07
BORING COMPLETED	10-12-07
RIG	960
FOREMAN	SB
APPROVED	TLB
JOB #	09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. CA-SOL-Sta 105+24 300 L

CLIENT	Ameren UE		ARCHITECT / ENGINEER							
SITE	Pipeline Corridor Callaway County, Missouri		PROJECT							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES		TESTS			Tritium Analytical Results (pCi/L)		
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.		WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
0.7	8" TOPSOIL SILTY LEAN CLAY: brown	0.7			DP					
5	LEAN TO FAT CLAY: gray, with reddish brown, silty	5	CL ML	1	DP	36			X	< 144
8	SANDY LEAN CLAY: gray, with reddish brown	8	CL CH	2	DP	29			X	< 144
15		15	CL CH	3	DP	34			X	< 144
20	-: sand zone, fine to medium grained, 17.5' to 18' SAND: gray, fine grained	20	CL CH	4	DP	46			X	644 +/-103 535* +/-99
25	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25	SP	5	DP	46			X	215 +/-87

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \* Duplicate sample analysis run by laboratory

WATER LEVEL OBSERVATIONS, ft				BORING STARTED 11-9-07	
WL	▽ 9	WS	▽ 13.6	AB	BORING COMPLETED 11-9-07
WL	▽	WS	▽		RIG Geoprobe FOREMAN RT
WL	AB = 5 minutes after boring				APPROVED TLB JOB # 09067011T



BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

# LOG OF BORING NO. 9B INV 1: Sta 142+77.5 55 R

<b>CLIENT</b> <p style="text-align: center;"><b>AMEREN UE</b></p>	<b>ARCHITECT / ENGINEER</b>
--	-----------------------------

<b>SITE</b> <p style="text-align: center;"><b>MANHOLE 9B</b></p>	<b>PROJECT</b> <p style="text-align: center;"><b>OCTOBER 2007 RELEASE INVESTIGATION</b></p>
---	--

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	
	<u>SILTY LEAN CLAY</u> : brown, with gravel  -: gravel -: gray, trace gravel	5	CL ML	1	DP	24			X	< 144	
	-: with reddish brown mottles	10	CL ML	2	DP	24			X	< 157	
	-: wet	15	CL ML	3	DP	24			X	< 144	
		20	CL ML	4	DP	24			X	< 157	
		23	SP SC	5	DP	24			X	< 157	
	<u>SANDY LEAN CLAY</u> : grayish brown <u>SAND</u> : grayish brown, fine to medium grained, trace gravel BOTTOM OF BORING AT 25 FEET NO REFUSAL	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 11	WS	▽ 7.8
			5 min
WL	▽		▽
WL			



BORING STARTED		11-9-07	
BORING COMPLETED		11-9-07	
RIG	Geoprobe	FOREMAN	RT
APPROVED	TLB	JOB #	09057158

BOREHOLE# 09057158 MANHOLE 9B RELEASE GPJ TERRACON GDT 3/24/08



# LOG OF BORING NO. 9B INV 2: Sta 142+22.5 23 R

CLIENT <b>AMEREN UE</b>	ARCHITECT / ENGINEER
SITE <b>MANHOLE 9B</b>	PROJECT <b>OCTOBER 2007 RELEASE INVESTIGATION</b>

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
[Hatched Pattern]	<u>SILTY LEAN CLAY</u> : brown, trace gravel	0								
	-: gray lean to fat clay zone, 4'-8'	5	CL ML	1	DP	24			X	< 157
	-: with red mottles and black intrusions	5			DP					
	▼									
	-: gray, trace sand and gravel	10	CL ML	2	DP	24			X	< 157
[Dotted Pattern]	<u>SANDY LEAN CLAY</u> : gray, trace red mottles, trace gravel, moist	10			DP					
	-: light brown, fine to medium grained, wet	15	CL	3	DP	22			X	< 157
	▽									
[Dotted Pattern]	<u>SAND</u> : light brown, medium to coarse grained, wet	15			DP					
[Hatched Pattern]	<u>SANDY LEAN CLAY</u> : gray	17								
	-: gray, trace gravel	19.5	CL	4	DP	24			X	< 144
[Dotted Pattern]	<u>SAND</u> : light brown, medium to coarse grained, wet	20			DP					
	-: gray, trace gravel	25	SP	5	DP	24			X	< 157
	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 13	WS	▽ 6.6
			5 min
WL	▽		▽
WL			



BORING STARTED	11-9-07
BORING COMPLETED	11-9-07
RIG Geoprobe	FOREMAN RT
APPROVED TLB	JOB # 09057158

BOREHOLEZ\_09057158 MANHOLE 9B RELEASE.GPJ TERRACON.GDT 3/24/08

# LOG OF BORING NO. 9B INV 3: Sta 142+20.5 75 L

CLIENT		ARCHITECT / ENGINEER						
<b>AMEREN UE</b>								
SITE		PROJECT						
<b>MANHOLE 9B</b>		<b>OCTOBER 2007 RELEASE INVESTIGATION</b>						
GRAPHIC LOG	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
			NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
0.7	8" TOPSOIL			DP				
1.7	GRAVEL							
	LEAN TO FAT CLAY: gray, with black intrusions, with silt							
	-: with red mottles	CL CH	1	DP	24			X < 157
	-: trace gravel, moist							
	-	CL CH	2	DP	24			X < 157
	-							
	-	CL CH	3	DP	24			X < 157
	-							
15	SILTY LEAN CLAY: gray, wet							
	-	CL ML	4	DP	24			X < 157
	-							
19	SAND: gray and brown, fine to medium grained, wet							
	-	SW	5	DP	24			X < 157
	-							
25	BOTTOM OF BORING AT 25 FEET NO REFUSAL							

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 15	WS	▽ 6.7    5 min
WL	▽	WS	▽
WL			



BORING STARTED	11-9-07
BORING COMPLETED	11-9-07
RIG      Geoprobe	FOREMAN      RT
APPROVED    TLB	JOB #    09057158

BOREHOLE 09057158 MANHOLE 9B RELEASE.GPJ TERRACON.GDT 3/24/08

# LOG OF BORING NO. 9B INV 4: Sta 142+97.5 41 L

CLIENT		ARCHITECT / ENGINEER										
<b>AMEREN UE</b>												
SITE		PROJECT										
<b>MANHOLE 9B</b>		<b>OCTOBER 2007 RELEASE INVESTIGATION</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS					
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY		
4	<u>SILT</u> : brown, with gravel				DP							
5	<u>LEAN TO FAT CLAY</u> : gray, with silt		ML	1	DP	24				X	< 157	
10	-: with red mottles -: trace sand and gravel, wet		CL CH	2	DP	24					X	< 157
13	<u>FAT CLAY</u> : gray, with red mottles, with silt, wet		CH	3	DP	24					X	< 157
15	-: brown, with sand and gravel				DP							
18	<u>SILTY LEAN CLAY</u> : gray, wet		CL ML	4	DP	24					X	< 157
20	<u>SAND</u> : gray, fine to medium grained, wet				DP							
25	-: with gravel		SW	5	DP	24					X	< 157
	BOTTOM OF BORING AT 25 FEET NO REFUSAL	25										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 9	WS	▽ 10.3
			5 min
WL	▽		▽
WL			



BORING STARTED	11-9-07
BORING COMPLETED	11-9-07
RIG Geoprobe	FOREMAN RT
APPROVED TLB	JOB # 09057158

BOREHOLE# 09057158 MANHOLE 9B RELEASE.GPJ TERRACON.GDT 3/24/08

**LOG OF BORING NO. CA-SOL-Sta 105+00 400 L**

CLIENT <b>Ameren UE</b>		ARCHITECT / ENGINEER									
SITE <b>Pipeline Corridor Callaway County, Missouri</b>		PROJECT <b>PIPELINE MANHOLE TRITIUM INVESTIGATION</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
1.7	<u>LEAN TO FAT CLAY</u> : brown		CL	1	DP	48			X	< 144	
	<u>SAND</u> : brown		CH								
			5	SP	2	DP	48			X	< 144
			10	SP	3	DP	38			X	< 144
			15	SP	4	DP	40			X	< 144
			20	SP	5	DP	48			X	< 144
	∇	25	SP	6	DP	42			X	< 144	
28	BOTTOM OF BORING AT 28 FEET NO REFUSAL										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	∇ 13.5	WS	∇
WL	∇		∇
WL			



BORING STARTED	12-3-07
BORING COMPLETED	12-3-07
RIG Geoprobe	FOREMAN AS
APPROVED TLB	JOB # 09067011T

BOREHOLE2\_09067011T\_LOGS\_USED.GPJ TERRACON.GDT 3/21/08

## APPENDIX D

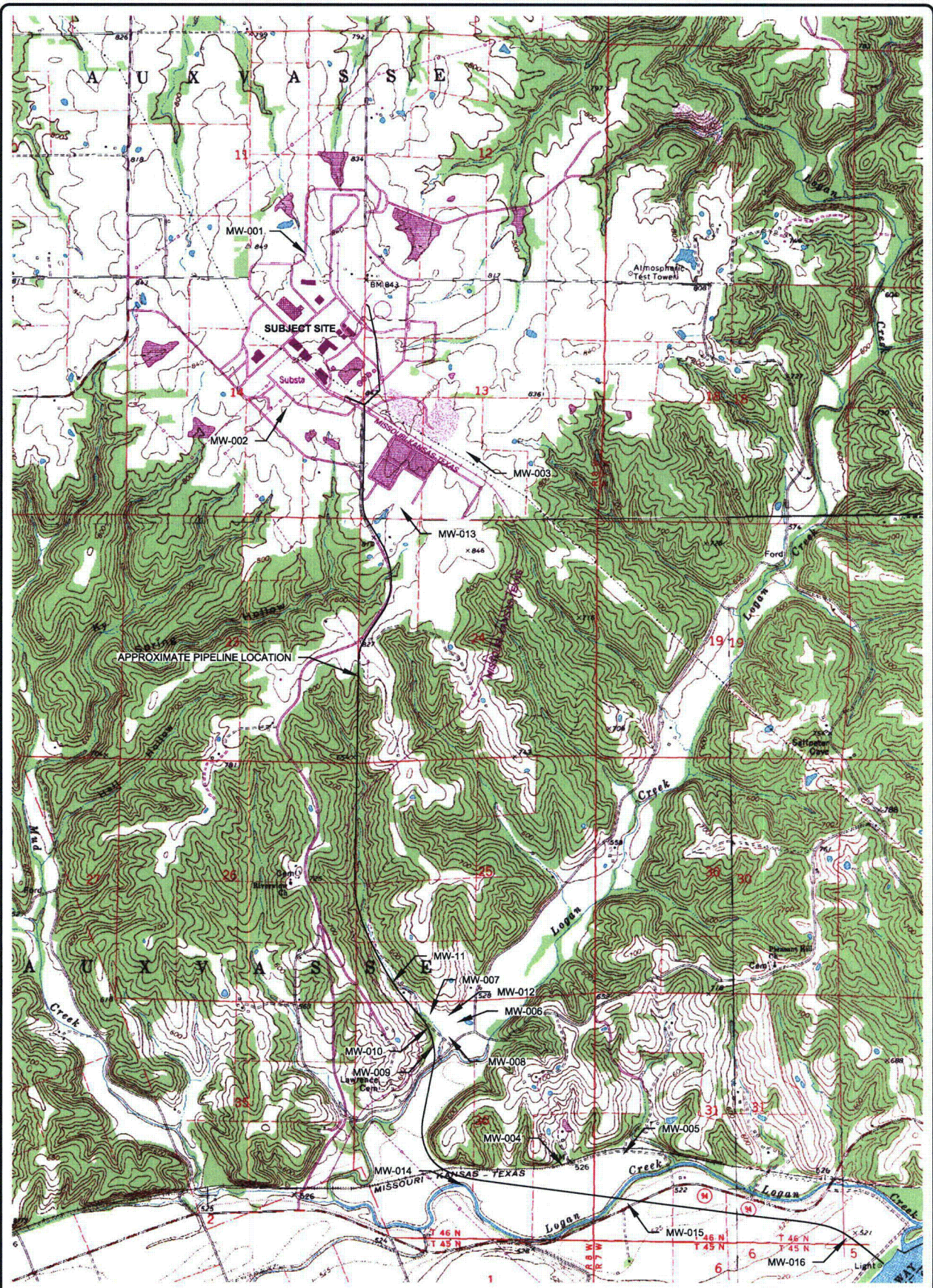
**MONITORING WELL DATES OF INSTALLATION AND LOCATIONS TABLE  
CALLAWAY POWER PLANT  
TERRACON PROJECT NO. 09067011T**

**MONITORING WELLS**

Monitoring Well	Date of Installation	DD Latitude	DD Longitude	UTM Easting	UTM Northing
MW-001	6/5/2006	38.7662	-91.7840	1844567.96	1068638.70
MW-002	6/6/2006	38.7571	-91.7842	1844536.86	1065324.11
MW-003	6/7/2006	38.7554	-91.7750	1847165.26	1064725.64
MW-004	8/29/2006	38.7101	-91.7635	1850777.40	1048254.03
MW-005	8/29/2006	38.7106	-91.7573	1852345.09	1048450.41
MW-006	8/29/2006	38.7186	-91.7728	1847899.07	1051328.43
MW-007	8/29/2006	38.7185	-91.7742	1847499.92	1051288.85
MW-008	8/29/2006	38.718	-91.7726	1847957.87	1051110.37
MW-009	8/31/2006	38.7171	-91.7744	1847446.9	1050778.53
MW-010	8/31/2006	38.7177	-91.7744	1847445.16	1050997.04
MW-011	8/31/2006	38.7738	-91.7784	1846142.83	1071419.10
MW-012	9/27/2006	38.7186	-91.7731	1847813.48	1051327.75
MW-013	7/18/2007	38.7512	-91.7761	1846863.67	1063193.55
MW-014	7/19/2007	38.7086	-91.7709	1848470.16	1047690.86
MW-015	7/20/2007	38.7075	-91.7585	1852011.81	1047318.65
MW-016	10/3/2007	38.7093	-91.7577	1852011.94	1047973.94

NOTES:

- 1) MW = Monitoring Well
- 2) DD = Decimal Degrees.



REFORM QUADRANGLE  
 MISSOURI - CALLAWAY COUNTY  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 1975 - PHOTO REVISED IN 1985

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT  
 FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

**MONITORING WELL LOCATION MAP**  
**DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**  
 CALLAWAY POWER PLANT  
 CALLAWAY COUNTY, MISSOURI

Project Mgr: TLB  
 Designed By: TLB/JMW  
 Checked By: TLB  
 Approved By: TLB  
 Drawn By: BCB

**Terracon**  
 3601 Mojave Court, Suite A  
 Columbia, Missouri 65202  
 Phone: (573) 214-2677  
 Fax: (573) 214-2714

Scale: SHOWN  
 Date: 03/20/08  
 Project No: 09067011T  
 File Name: 701IF2.DWG  
 Figure No: D-2

# LOG OF WELL NO. CA-SOL-Sta 20+62 60 LT (MW-016)

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	SAMPLES				TESTS		
				USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
	BOREHOLE DIAMETER: 8.5 in WELL DIAMETER: 2 in TOP OF RISER PIPE: + 3.6 ft									
8	<u>LEAN CLAY</u> : gray, with silt  -: with reddish brown		5			WB				
				CL 1	SS	17				<145
						WB				
13	<u>SANDY CLAY</u> : gray		10	CL 2	SS	11				<145
						WB				
	<u>SAND</u> : gray, fine to medium grained  -: medium to coarse grained		15	SW 3	SS	16				<145
						WB				
			20	SW 4	SS	24				<145
						WB				
			25	SW 5	SS	16				<145
						WB				
			30	SW 6	SS	16				<145
						WB				
			35	SW 7	SS	18				<145
						WB				
			40	SW 8	SS	16				<145
						WB				
	BOTTOM OF BORING AT 40 FEET NO REFUSAL CAVE IN AT 39 FEET AFTER BORING		40							

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL	WS 13.4118 Hr AB
WL	
WL	



BORING STARTED		10-3-07	
BORING COMPLETED		10-3-07	
RIG	MRK 54	FOREMAN	DG
APPROVED	EHL	JOB #	09067011T

WELL2\_09067011\_WELLS.GPJ TERRACON.GDT 3/27/08



# LOG OF WELL NO. MW-001

CLIENT <p style="text-align: center;"><b>Ameren UE</b></p>	ARCHITECT / ENGINEER
SITE <p style="text-align: center;"><b>Pipeline Corridor Borings Callaway County, Missouri</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH (psf)	
0.3	4" TOPSOIL	844.9										
6	LEAN CLAY: gray and brown to reddish brown, stiff	839.2	5			PA						
	FAT CLAY: gray with brown and reddish brown, stiff to very stiff		10			2	ST	22	24	105	4000*	
	-: trace black and sand		15				PA					
			20				3	ST	20	24	102	4000*
	-: with sand, trace gravel, trace white		25				PA					
			30				4	ST	24	18	114	8000*
	-: trace cobbles, hard		35				5	ST	21	16	116	8000*
31.2	BOTTOM OF BORING AT 31.2 FEET AUGER REFUSAL ON APPARENT LIMESTONE***	814	30				6	SS	24	33	11	9000+*
								PA				

\*\*\*Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	∇ NONE	WS	∇ 22.7 24 Hr AB
WL	∇		∇
WL			



BORING STARTED		6-5-06	
BORING COMPLETED		6-5-06	
RIG	994	FOREMAN	DN
APPROVED	JPT	JOB #	09067011T

WELL2\_09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-002

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	SAMPLES				TESTS		
				USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
	BOREHOLE DIAMETER: 6 in WELL DIAMETER: 2 in TOP OF RISER PIPE: + 3.9 ft									
0.3	4" TOPSOIL	842.5								
2	LEAN CLAY: gray, trace root hairs, medium stiff	840.8		1	ST	19		24	102	2000*
	LEAN TO FAT CLAY: gray with brown, very stiff		5		PA					
			10	2	ST	18		21	109	5500*
			15		PA					
	-: trace black, trace sand		20	3	ST	17		20	108	5500*
			25		PA					
	-: trace gravel		30	4	SS	24	14	17		6000*
			35		PA					
23		819.8		5	SS	13	33	14		2000*
25	SAND: fine to medium, reddish brown, with brown lean clay, stiff	817.8			PA					
	LEAN TO FAT CLAY: sandy, reddish brown and gray, trace gravel, hard		20	6	SS	24	32	17		9000+*
			25		PA					
34	-: with cobbles	808.8								
34.5	LIMESTONE***: moderately weathered	808.5		7	SS	4	50/4"	8		
	BOTTOM OF BORING AT 34.5 FEET AUGER REFUSAL ON APPARENT LIMESTONE***				PA					

\*\*\*Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	∇ NONE	WS	∇ 22.6 24 Hr AB
WL	∇		∇
WL			



BORING STARTED	6-6-06
BORING COMPLETED	6-6-06
RIG	994 FOREMAN DN
APPROVED	JPT JOB # 09067011T

WELL2 09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-003

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	SAMPLES				TESTS		
				USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
	BOREHOLE DIAMETER: <b>6 in</b> WELL DIAMETER: <b>2 in</b> TOP OF RISER PIPE: <b>+ 3.1 ft</b>									
	0.5 <b>6" TOPSOIL</b> 848.2					PA				
	<b>LEAN TO FAT CLAY:</b> gray with reddish brown, stiff		5	1	ST	17		28	96	4000*
	-: trace black, very stiff		10	2	ST	21		23	105	5000*
	13 <b>FAT CLAY:</b> gray, trace brown, stiff 835.7		15	3	ST	19		22	105	4000*
	16 <b>LEAN TO FAT CLAY:</b> gray, trace brown, very stiff 832.7		20	4	ST	14		21	108	7000*
	-: trace black and white, trace sand		25	5	ST	23		25	99	7500*
	32 <b>FAT CLAY:</b> gray and brown with sand, trace gravel, very stiff 816.7		30	6	ST	24		21	108	7500*
	-: with cobbles		35	7	ST	24		19	114	8000*
	39.5 <b>LIMESTONE***:</b> weathered 809.2		40	8	SS	7	82/6*	16		
	41.6 <b>LIMESTONE***:</b> weathered 807.1				PA					
	BOTTOM OF BORING AT 41.6 FEET AUGER REFUSAL ON APPARENT LIMESTONE*** APPARENT CAVE-IN AT 39.5 FEET AFTER BORING  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft	
WL $\nabla$ 34	WS $\nabla$ 29.3 2 Hr AB
WL $\nabla$	$\nabla$
WL	




BORING STARTED		6-7-06	
BORING COMPLETED		6-7-06	
RIG	994	FOREMAN	DN
APPROVED	JPT	JOB #	09067011T

WELL2 09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-004

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS	
					NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
	BOREHOLE DIAMETER: 6 in WELL DIAMETER: 2 in TOP OF RISER PIPE: + 2.8 ft									
0.4	5" TOPSOIL	523.6								
3	SILTY LEAN CLAY: brown, trace sand	521								
	SAND: brown, very fine grained		5		1	SS	12	7		
			10		2	ST	22			
	-: with gray		15		3	SS	22	16		
18	BOTTOM OF BORING AT 18 FEET NO REFUSAL	506								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft		BORING STARTED	8-29-06
WL $\nabla$ WS $\nabla$ 12 AB		BORING COMPLETED	8-29-06
WL $\nabla$		RIG	994 FOREMAN DN
WL		APPROVED	JPT JOB # 09067011T



WELL2 09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-005

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
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SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>
--	--

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS	
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
	BOREHOLE DIAMETER: 6 in WELL DIAMETER: 2 in TOP OF RISER PIPE: + 2.6 ft									
3	<u>SILT</u> : brown -: trace sand -: sandy <u>SILTY SAND</u> : brown, medium grained		522.7							
8	<u>SAND</u> : gray and reddish brown, very fine grained		517.7							
13	BOTTOM OF BORING AT 13 FEET NO REFUSAL		512.7							

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.


\*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			<h1 style="font-size: 2em; margin: 0;">Terracon</h1>		BORING STARTED		8-29-06			
WL	▽	WS			▽ 8	AB	BORING COMPLETED		8-29-06	
WL	▽				▽		RIG	994	FOREMAN	DN
WL							APPROVED	JPT	JOB #	09067011T

WELL2\_09067011\_WELLS.GPJ TERRACON.GDT\_3/27/08

# LOG OF WELL NO. MW-006

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	SAMPLES				TESTS	
				USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %
	BOREHOLE DIAMETER: 6 in WELL DIAMETER: 2 in TOP OF RISER PIPE: + 2.7 ft								
0.5	<b>6" TOPSOIL</b> <b>LEAN TO FAT CLAY:</b> reddish brown -: with yellow-brown, trace white and black	537.2	5			PA			
	-: gray-brown and brown, trace roots and sand		10		1	SS	24	16	
12.3	<b>LEAN CLAY:</b> gray, with sand -: with chert cobbles	525.4	15		2	SS	20	24	
19	<b>CHERTY SANDSTONE***:</b> yellow-brown, with white, severely weathered -: moderately weathered	518.7	20		3	SS	18	18	
	-: slightly weathered		25			PA			
30.5	<b>BOTTOM OF BORING AT 30.5 FEET AUGER REFUSAL ON APPARENT SANDSTONE*** CAVE-IN AT 25 FEET AFTER BORING</b>	507.2	30		4	SS	0	17	
	***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.					PA			

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft		<b>BORING STARTED</b>	8-29-06
WL <input checked="" type="checkbox"/>	WS <input checked="" type="checkbox"/> 15.5 AB	<b>BORING COMPLETED</b>	8-29-06
WL <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RIG	994 FOREMAN DN
WL <input type="checkbox"/>		APPROVED	JPT JOB # 09067011T



WELL2 09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-007

CLIENT <p style="text-align: center;"><b>Ameren UE</b></p>	ARCHITECT / ENGINEER
SITE <p style="text-align: center;"><b>Pipeline Corridor Borings Callaway County, Missouri</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS	
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
0.5	6" TOPSOIL LEAN CLAY: reddish brown, trace roots  -: trace chert gravel and cobbles	6 in 2 in + 2.4 ft	532.7			PA				
8	CHERT***: white, severely weathered  -: slightly weathered		525.2			1	SS	24	33	
13.5	BOTTOM OF BORING AT 13.5 FEET AUGER REFUSAL ON APPARENT CHERT***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.		519.7			2	SS	24	30	
						3	SS	24	6	
							PA			

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	▽	WS	▽ 13.5 AB
WL	▽		▽
WL			



BORING STARTED		8-29-06	
BORING COMPLETED		8-29-06	
RIG	994	FOREMAN	DN
APPROVED	JPT	JOB #	09067011T

WELL2\_09067011\_WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-008

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
12	<b>LEAN TO FAT CLAY:</b> reddish brown, with roots  -: with gray-brown, trace black   -: trace sand	12	520.5		PA					
				1	SS	23	6			
					PA					
				2	SS	22	25			
13	<b>SANDY SILT:</b> gray  <b>SAND:</b> gray, fine to medium grained -: with clay	13	519.5		PA					
				3	SS	20	28			
20.2	<b>CHERT***:</b> moderately weathered  BOTTOM OF BORING AT 21 FEET AUGER REFUSAL ON APPARENT CHERT***  ***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.	20.2	512.3		PA					
				4	SS	0				
21	21	511.5								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	▽	WS	▽ 8.9 AB
WL	▽		▽
WL			



BORING STARTED	8-29-06
BORING COMPLETED	8-29-06
RIG	994 FOREMAN DN
APPROVED	JPT JOB # 09067011T








WELL2\_09067011\_WELLS.GPJ\_TERRACON.GDT\_3/27/08



# LOG OF WELL NO. MW-009

CLIENT: **Ameren UE** ARCHITECT / ENGINEER:

SITE: **Pipeline Corridor Borings  
Callaway County, Missouri** PROJECT: **Callaway Power Plant**

GRAPHIC LOG	Boring Location: 7 feet left of center DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	STA 145+62.5
	BOREHOLE DIAMETER: 6 in WELL DIAMETER: 2 in TOP OF RISER PIPE: + 2.4 ft										
	<b>FILL:</b> lean clay, dark brown, with roots -: brown lean clay and gravel -: with medium grained sand					PA					
	5.8 <b>LEAN CLAY:</b> gray, with sand		5			1	SS	17	15		
	7.3 <b>SAND:</b> gray, medium grained					2	SS	12	7		
						3	SS	10	3		
			10			4	SS	6	5		
	12						PA				
	BOTTOM OF BORING AT 12 FEET NO REFUSAL APPARENT CAVE-IN AT 11.5 FEET AFTER BORING										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	∇	WS	∇ 5.7 AB
WL	∇		∇
WL			



BORING STARTED	8-31-06
BORING COMPLETED	8-31-06
RIG	994 FOREMAN DN
APPROVED	JPT JOB # 09067011T

WELL2\_09067011\_WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-010

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
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SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>
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GRAPHIC LOG	Boring Location: 5 feet left of center DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS	
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
5.5	<p><u>FILL</u>: lean clay, brown -: limestone gravel</p>	6 in 2 in + 1.8 ft	5		PA					
14	<p><u>SAND</u>: gray</p>	524.9	10		1	SS	20	22		
	<p>BOTTOM OF BORING AT 14 FEET NO REFUSAL</p>	516.4								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	▽	WS	▽ 5 AB
WL	▽	▽	▽
WL	▽	▽	▽



BORING STARTED	8-31-06
BORING COMPLETED	8-31-06
RIG	994 FOREMAN DN
APPROVED	JPT JOB # 09067011T

WELL2\_09067011\_WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-011

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
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SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>
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GRAPHIC LOG	Boring Location: 5 feet left of center DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES		TESTS			
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
16	<p><u>FILL</u>: gravel, trace reddish brown clay, with cobbles</p>				PA					
	<p>BOTTOM OF BORING AT 16 FEET AUGER REFUSAL ON APPARENT LIMESTONE*** APPARENT CAVE-IN AT 13 FEET AFTER BORING</p> <p>***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.</p>									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	▽	WS	▽ 15.3 AB
WL	▽		▽
WL			




BORING STARTED		8-31-06	
BORING COMPLETED		8-31-06	
RIG	994	FOREMAN	DN
APPROVED	JPT	JOB #	09067011T

WELL2\_09067011\_WELLS.GPJ\_TERRACON.GDT\_3/27/08

# LOG OF WELL NO. MW-012

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
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SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>
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GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS	
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %
	BOREHOLE DIAMETER: 8 in WELL DIAMETER: 2 in TOP OF RISER PIPE: + 2.6 ft								
X	<b>FILL:</b> gravel, trace reddish brown clay, with cobbles		5						
X	14	▼	10	1	AD				
X	<b>LIMESTONE***:</b> brown with black		15						
X	-: grayish brown		20	2	AD				
X	-: gray		25						
X	-: with interbedded green shale		30	3	AD				
X	50	▼	40	4	AD				
X	<b>DOLOMITE***:</b> gray to grayish brown, hard, shaley		45						
X	50	▼	50	5	AD				
X	50	▼	55						
X	50	▼	60	6	AD				
X	50	▼	65						

Continued Next Page

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	▼	WS	▼ 11 AB
WL	▼		▼
WL			



BORING STARTED		9-27-06	
BORING COMPLETED		9-27-06	
RIG	DK25	FOREMAN	DS
APPROVED	JPT	JOB #	09067011T

WELL2\_09067011\_WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-012

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS	
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
[Brick pattern]	-: cherty, with interbedded green shale	[Solid black]	70		7	AD				
[Brick pattern]	-: gray and brown, cherty	[Dotted]	80		8	AD				
[Brick pattern]	-: less chert	[Dotted]	90		9	AD				
[Brick pattern]	-: gray, with black chert	[Dotted]	100		10	AD				
[Brick pattern]	-: with interbedded green shale	[Dotted]	110		11	AD				
[Brick pattern]	120	416.6	120							
	BOTTOM OF BORING AT 120 FEET									
	***Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft		BORING STARTED	9-27-06
WL <input checked="" type="checkbox"/> WS <input checked="" type="checkbox"/> 11 AB		BORING COMPLETED	9-27-06
WL <input checked="" type="checkbox"/>		RIG	DK25 FOREMAN DS
WL		APPROVED	JPT JOB # 09067011T



WELL2 09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-013

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
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SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>
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GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
					NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
0.3	<b>4" TOPSOIL</b>									
	<b>LEAN TO FAT CLAY:</b> reddish brown and yellow brown (Glacial Drift)									
	-: trace gravel									
			5		1	SS				
						HS				
			10		2	SS				
						HS				
			15		3	SS				
						HS				
			20		4	SS				
						HS				
22	<b>LIMESTONE***:</b> yellow, hard BOTTOM OF BORING AT 22 FEET AUGER REFUSAL ON APPARENT LIMESTONE***									

\*\*\*Classifications and stratigraphic boundaries estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types and stratigraphic classifications.

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	▽	WS	▽ 14 AB
WL	▽		▽
WL			



BORING STARTED		7-18-07	
BORING COMPLETED		7-18-07	
RIG	550X	FOREMAN	SS
APPROVED	JPT	JOB #	09067011T

WELL2 09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-014

CLIENT <b>Ameren UE</b>	ARCHITECT / ENGINEER
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SITE <b>Pipeline Corridor Borings Callaway County, Missouri</b>	PROJECT <b>Callaway Power Plant</b>
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GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	SAMPLES				TESTS	
				USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N ** BLOWS / ft.	WATER CONTENT, %
0.5	6" TOPSOIL	0.5	0						
3	SILTY LEAN CLAY: dark brown	3	3						
9	FAT CLAY: gray, stiff	9	9						
30	SAND: brown, fine to medium grained, with silt	30	30						
	BOTTOM OF BORING AT 30 FEET NO REFUSAL APPARENT CAVE-IN AT 28 FEET AFTER DRILLING		30						

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft			
WL	▽	WS	▽ 12 AB
WL	▽	▽	▽
WL	▽	▽	▽



BORING STARTED	7-19-07
BORING COMPLETED	7-19-07
RIG 550X	FOREMAN SS
APPROVED JPT	JOB # 09067011T

WELL 2 09067011 WELLS.GPJ TERRACON.GDT 3/27/08

# LOG OF WELL NO. MW-015

CLIENT <p style="text-align: center;"><b>Ameren UE</b></p>	ARCHITECT / ENGINEER
SITE <p style="text-align: center;"><b>Pipeline Corridor Borings Callaway County, Missouri</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	SAMPLES				TESTS	
				USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT = N** BLOWS / ft.	WATER CONTENT, %
0.8	10" TOPSOIL								
	SANDY LEAN CLAY: trace silt								
	-: with silt		5		1	SS			
						HS			
			10		2	SS			
						HS			
			15		3	SS			
	SAND: brown, fine to medium grained, trace silt					HS			
			20		4	SS			
						HS			
			25		5	SS			
						HS			
			30		6	SS			
						HS			
			35		7	SS			
						HS			
	BOTTOM OF BORING AT 35 FEET NO REFUSAL		35						

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \*Calibrated Hand Penetrometer  
\*\*CME 140H SPT automatic hammer.

WATER LEVEL OBSERVATIONS, ft		
WL	▽	WS
		▽ 15
		AB
WL	▽	▽
WL	▽	▽



BORING STARTED	
BORING COMPLETED	
RIG	FOREMAN
APPROVED JPT	JOB # 09067011T

WELL2\_09067011\_WELLS.GPJ TERRACON.GDT 3/27/08





MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
GEOLOGICAL SURVEY AND RESOURCE  
ASSESSMENT DIVISION  
(573) 388-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>316191</b>		
C.A. NO.	CHECK NO. <b>010118</b>	
STATE WELL NUMBER <b>4147071</b>	REVENUE NO. <b>130306</b>	
ENTERED <b>Ph 1 11 Ph 2 11 Ph 3 11</b>	APPROVED BY <b>JED</b>	ROUTE <b>1</b>

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Ameren UE Callaway Plant</b>	WELL NUMBER <b>mW-003</b>	VARIANCE GRANTED BY THE D.N.R. <input type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>P.O. Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
ZIP CODE <b>65251</b>		
SITE NAME <b>Ameren UE Callaway Plant</b>	CONTACT NAME <b>Chris Graham</b>	
SITE ADDRESS <b>P.O. Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
ZIP CODE <b>65251</b>		

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> V.O.C. <input type="checkbox"/> PESTICIDES/HERBICIDES
--	---	--	--	--

SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS.  <b>See Attached Map</b>	LOCATION OF WELL LAT. <b>38 45 19.8</b> LONG. <b>91 46 28.8</b>	AREA <b>41</b> ELEV <b>842'</b> COUNTY <b>Callaway</b>
SMALLEST <b>SE 1/4 NW 1/4 SW 1/4</b>		LARGEST
SEC. <b>13</b> TWN. <b>46</b> N. RND. <b>8</b> E OF TV		

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE  
DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>5</b> FT.	DIAMETER OF PROTECTIVE CASING <b>4x4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>12</b> IN. <b>2.1</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LENGTH OF FLUSH MOUNT <b>N/A</b> FT.	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER

RISER PIPE DETAIL	LENGTH <b>32.75</b> FT.	DIAMETER <b>2</b> IN.	WEIGHT OR SDR# <b>40</b>	DIAMETER OF DRILL HOLE <b>0.5</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL <b>24.3</b> FT.	LENGTH OF SEAL <b>24.3</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input checked="" type="checkbox"/> PELLETS <input type="checkbox"/> GRANULAR <input type="checkbox"/> CHIPS																																						
	<table border="1"> <thead> <tr> <th colspan="3">SECONDARY FILTER PACK</th> <th colspan="2">DEPTH</th> <th rowspan="2">FORMATION DESCRIPTION</th> </tr> <tr> <th>LENGTH</th> <th>DIAMETER</th> <th>DEPTH TO TOP OF PRIMARY FILTER PACK</th> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td><b>15.2</b> FT.</td> <td><b>2</b> IN.</td> <td><b>26.4</b> FT.</td> <td><b>0</b></td> <td><b>0.5</b></td> <td rowspan="4">Topsoil Red brn/gray CL-CH, poss. Glacial Drift Rd brn/gray into gray CH, glacial Drift Red brn/gray CL-CH, tr. sand &amp; gravel, wet chert</td> </tr> <tr> <td></td> <td></td> <td></td> <td><b>0.5</b></td> <td><b>8</b></td> </tr> <tr> <td></td> <td></td> <td></td> <td><b>8</b></td> <td><b>34</b></td> </tr> <tr> <td></td> <td></td> <td></td> <td><b>34</b></td> <td><b>39.5</b></td> </tr> <tr> <td></td> <td></td> <td></td> <td><b>39.5</b></td> <td><b>41.6</b></td> <td></td> </tr> </tbody> </table>									SECONDARY FILTER PACK			DEPTH		FORMATION DESCRIPTION	LENGTH	DIAMETER	DEPTH TO TOP OF PRIMARY FILTER PACK	FROM	TO	<b>15.2</b> FT.	<b>2</b> IN.	<b>26.4</b> FT.	<b>0</b>	<b>0.5</b>	Topsoil Red brn/gray CL-CH, poss. Glacial Drift Rd brn/gray into gray CH, glacial Drift Red brn/gray CL-CH, tr. sand & gravel, wet chert				<b>0.5</b>	<b>8</b>				<b>8</b>	<b>34</b>				<b>34</b>	<b>39.5</b>				<b>39.5</b>	<b>41.6</b>
SECONDARY FILTER PACK			DEPTH		FORMATION DESCRIPTION																																									
LENGTH	DIAMETER	DEPTH TO TOP OF PRIMARY FILTER PACK	FROM	TO																																										
<b>15.2</b> FT.	<b>2</b> IN.	<b>26.4</b> FT.	<b>0</b>	<b>0.5</b>	Topsoil Red brn/gray CL-CH, poss. Glacial Drift Rd brn/gray into gray CH, glacial Drift Red brn/gray CL-CH, tr. sand & gravel, wet chert																																									
			<b>0.5</b>	<b>8</b>																																										
			<b>8</b>	<b>34</b>																																										
			<b>34</b>	<b>39.5</b>																																										
			<b>39.5</b>	<b>41.6</b>																																										
ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input type="checkbox"/> NON SLURRY BENTONITE TYPE	<input checked="" type="checkbox"/> CEMENT/BENTONITE SLURRY	BAGS OF CEMENT USED <b>4.0</b>	% OF BENTONITE USED	LENGTH <b>2.4</b> FT.																																									
WELL SCREEN	LENGTH <b>10</b> FT.	DIAMETER <b>2</b> IN.	DIAMETER OF DRILL HOLE <b>6</b> IN.	DEPTH TO TOP OF SCREEN <b>29</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER																																									

MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO  
SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

SIGNATURE (PRIMARY CONTRACTOR) **[Signature]** PERMIT NUMBER **804074M** STATIC WATER LEVEL **18.85** FEET FROM MEASURING POINT DATE WELL DRILLING WAS COMPLETED **6-7-6**

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) **[Signature]** PERMIT NUMBER **061226-WPMM** DATE **7-25-06** SIGNATURE (PUMP INSTALLER) **[Signature]** PERMIT NUMBER DATE

MAIL ORIGINAL ENCLOSE \$75.00 CERTIFICATION FEE  
NOTICE: WHITE DIVISION CANARY CONTRACTOR PINK OWNED  
D: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402  
RING WELL CERTIFICATION FEE WITHIN 30 DAYS AFTER WELL COMPLETION



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
GEOLOGICAL SURVEY AND RESOURCE  
ASSESSMENT DIVISION  
(573) 368-2185  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>316190</b>		CHECK NO. <b>0160918</b>
C.R. NO.	REVENUE NO. <b>080306</b>	
STATE WELL NUMBER <b>1147079</b>	APPROVED BY <b>PC</b> ROUTE <b>1</b>	
ENTERED PR. 1 <b>MS</b> PR. 2 <b>MS</b> PR. 3 <b>MS</b>		

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Ameren UE Callaway Plant</b>	WELL NUMBER <b>MW-002</b>	VARIANCE GRANTED BY THE D.N.R. <input type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>P.O. Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
CITY <b>Fulton</b>	STATE <b>MO</b>	ZIP CODE <b>65251</b>
SITE NAME <b>Ameren UE Callaway Plant</b>	CONTACT NAME <b>Chris Graham</b>	VARIANCE NUMBER
SITE ADDRESS <b>P.O. Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
CITY <b>Fulton</b>	STATE <b>MO</b>	ZIP CODE <b>65251</b>
PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES
<input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETERS <input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.		
SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS.  <b>See Attached Map</b>		LOCATION OF WELL LAT. <b>39 45 35.8</b> LONG. <b>91 47 3.6</b> AREA <b>A1</b> ELEV <b>829'</b> COUNTY <b>Callaway</b> SMALLEST <b>NE</b> LARGEST <b>SE</b> SEC. <b>14</b> TWN. <b>46</b> N. RANG. <b>8</b> E OF W

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input type="checkbox"/> FLUSH MOUNT	<input checked="" type="checkbox"/> ABOVE GROUND	LENGTH OF PROTECTIVE CASING <b>5</b> FT.	DIAMETER OF PROTECTIVE CASING <b>4x4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>12</b> IN. <b>2.1</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
WEEP HOLE? <input checked="" type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES	LENGTH OF FLUSH MOUNT <b>N/A</b> FT.	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER	

RISER PIPE DETAIL	LENGTH <b>26</b> FT.	DIAMETER <b>2</b> IN.	WEIGHT OR SDRP <b>40</b>	DIAMETER OF DRILL HOLE <b>0.15</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL <b>20.2</b> FT.	LENGTH OF SEAL <b>20.2</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input checked="" type="checkbox"/> PELLETS <input type="checkbox"/> GRANULAR <input type="checkbox"/> CHIPS
	GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> BOTH ZONES <input type="checkbox"/> IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO		DEPTH FROM TO FORMATION DESCRIPTION			
PRIMARY FILTER PACK	LENGTH <b>12.2</b> FT.	DEPTH TO TOP OF PRIMARY FILTER PACK <b>22.3</b> FT.		SECONDARY FILTER PACK LENGTH <b>2</b> FT.				
ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input type="checkbox"/> NON SLURRY BENTONITE TYPE		<input checked="" type="checkbox"/> CEMENT/BENTONITE SLURRY		BAGS OF CEMENT USED <b>3.5</b>	LENGTH <b>2.1</b> FT.		
WELL SCREEN	LENGTH <b>10</b> FT.	DIAMETER <b>2</b> IN.	DIAMETER OF DRILL HOLE <b>6</b> IN.	DEPTH TO TOP OF SCREEN <b>24</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER			

MULTIPLE CASSED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

**TOTAL DEPTH: 34.5**

SIGNATURE (PRIMARY CONTRACTOR) <b>T. B. ...</b>	PERMIT NUMBER <b>004074 M</b>	STATIC WATER LEVEL <b>22.6</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>6-6-6</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREBIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>X Alan ...</b>	PERMIT NUMBER <b>001226-NPNA</b>	DATE <b>7-15-06</b>	SIGNATURE (PUMP INSTALLER)	PERMIT NUMBER	DATE
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MAIL ORIGINAL  
ENCLOSE \$75.00  
CERTIFICATION FEE

NOTE: WHITE DIVISION, CANARY CONTRACTOR, P.O. BOX 280, ROLLA, MO 65403  
RING WELL CERTIFICATION FEE WITHIN 30 DAYS AFTER WELL COMPLETION



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
GEOLOGICAL SURVEY AND RESOURCE  
ASSESSMENT DIVISION  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>316189</b>		
C.R. NO.	CHECK NO. <b>0101548</b>	
STATE WELL NUMBER <b>4147060</b>	REVENUE NO. <b>030210</b>	
ENTERED Pr. <b>M</b> Pn2 <b>11</b> Pn3 <b>11</b>	APPROVED BY <b>PCB</b>	ROUTE <b>1</b>

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Ameren UE Callaway Plant</b>	WELL NUMBER <b>MW-001</b>	VARIANCE GRANTED BY THE DNR <input type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>P.O. Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
	ZIP CODE <b>65251</b>	VARIANCE NUMBER
SITE NAME <b>Ameren UE Callaway Plant</b>	CONTACT NAME <b>Chris Graham</b>	
SITE ADDRESS <b>P.O. Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
	ZIP CODE <b>65251</b>	

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL	<input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETER	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> V.O.C. <input type="checkbox"/> PESTICIDES/HERBICIDES
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS  <b>See Attached Map</b>	LOCATION OF WELL LAT. <b>38 45 54.6</b> LONG. <b>91 47 1.9</b>	AREA <b>41</b>	ELEV <b>834'</b>
	SMALLEST <b>SE 1/4</b>	LARGEST <b>SW 1/4</b>	
	SEC. <b>11</b>	TWN. <b>46</b>	N. RANG. <b>8</b> E. OF <b>8</b>

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>5</b> FT.	DIAMETER OF PROTECTIVE CASING <b>4 x 4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>12</b> IN. <b>2.1</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LENGTH OF FLUSH MOUNT <b>N/A</b> FT.	DIAMETER OF FLUSH MOUNT <b>0.5</b> IN.	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED <b>0.5</b> IN. <b>2.1</b> FT.	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISE PIPE DETAIL LENGTH <b>25.8</b> FT. DIAMETER <b>2</b> IN. WEIGHT OR SDRP <b>40</b>	DIAMETER OF DRILL HOLE <b>0.5</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL LENGTH OF SEAL <b>15.2</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input checked="" type="checkbox"/> PELLETS <input type="checkbox"/> GRANULAR <input type="checkbox"/> CHIPS
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GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM <b>0</b> TO <b>0.3</b>	FORMATION DESCRIPTION <b>Topsoil</b>
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PRIMARY FILTER PACK LENGTH <b>14</b> FT.	DEPTH TO TOP OF PRIMARY FILTER PACK <b>17.3</b> FT.	SECONDARY FILTER PACK LENGTH <b>6</b> FT.	DEPTH FROM <b>0.3</b> TO <b>6</b>	FORMATION DESCRIPTION <b>Gr/Adbn. CL</b>
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ANNULAR SEAL <input type="checkbox"/> BENTONITE SLURRY <input type="checkbox"/> NON SLURRY BENTONITE TYPE	<input checked="" type="checkbox"/> CEMENT-BENTONITE SLURRY BAGS OF CEMENT USED <b>3.5</b> % OF BENTONITE USED WATER USED/BAG <b>2</b> GAL	LENGTH <b>2.1</b> FT.	DEPTH FROM <b>6</b> TO <b>23</b>	FORMATION DESCRIPTION <b>Glacial Drift / Gr + Adbn CH</b>
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WELL SCREEN LENGTH <b>10</b> FT. DIAMETER <b>2</b> IN. DIAMETER OF DRILL HOLE <b>6</b> IN. DEPTH TO TOP OF SCREEN <b>21.2</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	DEPTH FROM <b>23</b> TO <b>30</b>	FORMATION DESCRIPTION <b>Chert cobbles + gravel</b>
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION:  YES  NO

SUBMIT ADDITIONAL AS-BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

TOTAL DEPTH: **31.3'**

SIGNATURE (PRIMARY CONTRACTOR) <b>J. B. ...</b>	PERMIT NUMBER <b>004074 M</b>	STATIC WATER LEVEL <b>22.7</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>6-5-6</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>X. Alan ...</b>	PERMIT NUMBER <b>001236 R/PMH</b>	DATE <b>7-25-06</b>	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MAIL ORIGINAL ENCLOSE \$75.00

NOTION: WHITE DIVISION CANARY CONTRACTOR PINKOWNER DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402 RING WELL CERTIFICATION FEE WITHIN 30 DAYS AFTER WELL COMPLETION



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>383177</b>	C.R. NO.	CHECK NO.
STATE WELL NUMBER	REVENUE NO.	
ENTERED Pr 1      Fh 2      Ph 3	APPROVED BY	ROUTE /      /

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>AMERONVE</b>	WELL NUMBER <b>MW-004</b>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
SITE NAME <b>AMERONVE Calloway Plant</b>	CONTACT NAME <b>Corey Jutting</b>	ZIP CODE <b>65251</b>
SITE ADDRESS	CITY <b>Reform</b>	STATE <b>MO</b>
		ZIP CODE
		VARIANCE NUMBER

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> V.O.C. <input type="checkbox"/> PESTICIDES/HERBICIDES
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS. 	LOCATION OF WELL LAT. <b>38.42.36.</b> LONG. <b>91.45.48.</b>	AREA ELEV.
	COUNTY <b>Calloway</b>	
	SMALLEST <b>SE 1/4 A1E 1/4</b> LARGEST <b>SE 1/4</b> SEC. <b>36</b> TWN. <b>46</b> N. RANG. <b>8</b> E OR W <b>(W)</b>	

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE	DRILLER NOTES:
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TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>3</b> FT.	DIAMETER OF PROTECTIVE CASING <b>4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24</b> IN. <b>2.08</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LENGTH OF FLUSH MOUNT — FT.	DIAMETER OF FLUSH MOUNT — IN.	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED — IN. — FT.	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISER PIPE DETAIL LENGTH <b>9.53</b> FT. DIAMETER <b>2</b> IN. WEIGHT OR SDRA <b>SD.40</b>	DIAMETER OF DRILL HOLE <b>6</b> IN.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL LENGTH OF SEAL <b>4.92</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
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GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO BOTH ZONES <input type="checkbox"/> IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM <b>0</b> TO <b>17</b>	FORMATION DESCRIPTION <b>cl/ch</b>
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PRIMARY FILTER PACK LENGTH <b>11</b> FT. DEPTH TO TOP OF PRIMARY FILTER PACK <b>7</b> FT. SECONDARY FILTER PACK LENGTH — FT.	ANNULAR SEAL <input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>Chips</b> BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAG _____ GAL.	LENGTH <b>4.92</b> FT.
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WELL SCREEN LENGTH <b>10</b> FT. DIAMETER <b>2</b> IN. DIAMETER OF DRILL HOLE <b>6</b> IN. DEPTH TO TOP OF SCREEN <b>9.53</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	PUMP INSTALLED FOR REMEDIATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED	

SIGNATURE (PRIMARY CONTRACTOR) <i>[Signature]</i>	PERMIT NUMBER <b>004074-M</b>	STATIC WATER LEVEL <b>9.03</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>8/29/2006</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <i>[Signature]</i>	PERMIT NUMBER <b>00736-1000</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
DIVISION OF GEOLOGY AND  
LAND SURVEY  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>285851</b>		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED	APPROVED BY	ROUTE
Pg 1	Pg 2	Pg 3

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Amesville</b>	WELL NUMBER <b>MW-005</b>	VARIANCE GRANTED BY THE D.N.R.
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
	ZIP CODE <b>65251</b>	<input checked="" type="checkbox"/> NO
SITE NAME <b>Amesville Callaway Plant</b>	CONTACT NAME <b>Corey Jettig</b>	<input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
SITE ADDRESS	CITY <b>Reform</b>	STATE <b>MO</b>
	ZIP CODE	VARIANCE NUMBER

PROPOSED USE OF WELL	TYPE OF POTENTIAL SITE	MONITORING FOR: (CHECK ALL THAT APPLY)
<input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL	<input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs
<input checked="" type="checkbox"/> MONITORING WELL <input type="checkbox"/> PIEZOMETERS	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES

SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS	LOCATION OF WELL	AREA	SLEV
	LAT. <b>38° 42' 38"</b> LONG. <b>93° 45' 26"</b>	COUNTY <b>Callaway</b>	
	SMALLEST <b>NE 1/4</b>	LARGEST <b>SE 1/4</b>	
	SEC. <b>30 31</b>	TWN. <b>46</b>	N. RING. <b>07</b> E OR W

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION	<input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>3</b> FT.	DIAMETER OF PROTECTIVE CASING <b>4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24</b> IN. <b>2.25</b> FT.	PROTECTIVE CASING MATERIAL	<input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
WEEP HOLE?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT	<input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER

RISER PIPE DETAIL	LENGTH <b>6.76</b> FT.	DIAMETER <b>2</b> IN.	WEIGHT OR SDR# <b>SDR 40</b>	DIAMETER OF DRILL HOLE <b>0.5</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL	LENGTH OF SEAL <b>2.75</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> PELLETS <input checked="" type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
	GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO			DEPTH FROM <b>0</b> TO <b>13</b> FORMATION DESCRIPTION <b>cl/ch</b>		

PRIMARY FILTER PACK	LENGTH <b>12</b> FT.	DEPTH TO TOP OF PRIMARY FILTER PACK <b>5</b> FT.	SECONDARY FILTER PACK LENGTH _____ FT.
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ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>Chips</b>	<input type="checkbox"/> CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAGS _____ GAL	LENGTH <b>92</b> <b>2.75</b> FT.
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WELL SCREEN	LENGTH <b>10</b> FT.	DIAMETER <b>2</b> IN.	DIAMETER OF DRILL HOLE <b>6</b> IN.	DEPTH TO TOP OF SCREEN <b>6.76</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

TOTAL DEPTH: **17.63** FT.

SIGNATURE (PRIMARY CONTRACTOR) <b>[Signature]</b>	PERMIT NUMBER <b>004074-111</b>	STATIC WATER LEVEL <b>14.18</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>8/29/2006</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>[Signature]</b>	PERMIT NUMBER <b>00526-0000</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
DIVISION OF GEOLOGY AND  
LAND SURVEY

(573) 368-2165

**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>285855</b>		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Ph 1      Ph 2      Ph 3	APPROVED BY	ROUTE

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Ambridge</b>	WELL NUMBER <b>MW-006</b>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
SITE NAME <b>Ambridge Calloway Plant</b>	CONTACT NAME <b>Corey Tutting</b>	VARIANCE NUMBER
SITE ADDRESS	CITY <b>Reform</b>	STATE <b>MO</b>

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING WELL <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES <input type="checkbox"/> V.O.C.
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS 	LOCATION OF WELL LAT. <b>38° 43' 20"</b> LONG. <b>91° 46' 22"</b>	AREA ELEV
	SMALLEST <b>SE 1/4 SW 1/4</b>	LARGEST <b>NW 1/4</b>
	SEC. <b>36</b> TWN. <b>46</b> N. RANG. <b>8</b> E OR W.	COUNTY <b>Calloway</b>

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>3</b> FT.	DIAMETER OF PROTECTIVE CASING <b>24</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24</b> IN. <b>2.25</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LENGTH OF FLUSH MOUNT FT.	DIAMETER OF FLUSH MOUNT IN.	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED IN. FT.	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISER PIPE DETAIL	LENGTH <b>14.74</b> FT.	DIAMETER <b>2</b> IN.	WEIGHT OR SDR# <b>SDR 40</b>	DIAMETER OF DRILL HOLE <b>0.5</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL <b>10.75</b> FT.	LENGTH OF SEAL <b>10.75</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
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GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM TO <b>0 24</b>	FORMATION DESCRIPTION <b>cl/ch</b>
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PRIMARY FILTER PACK	LENGTH <b>12</b> FT.	DEPTH TO TOP OF PRIMARY FILTER PACK <b>13</b> FT.	SECONDARY FILTER PACK LENGTH FT.
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ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>chips</b>	<input type="checkbox"/> CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED: BAG _____ GAL.	LENGTH <b>10.75</b> FT.
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WELL SCREEN	LENGTH <b>10</b> FT.	DIAMETER <b>2</b> IN.	DIAMETER OF DRILL HOLE <b>6</b> IN.	DEPTH TO TOP OF SCREEN <b>14.74</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

TOTAL DEPTH: **23-28 25 feet**

SIGNATURE (PRIMARY CONTRACTOR) <b>JTS</b>	PERMIT NUMBER <b>004074-11</b>	STATIC WATER LEVEL <b>12.61</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>8/29/2006</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>X [Signature]</b>	PERMIT NUMBER <b>001226</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED	
REF. NO. <b>383172</b>			
C.R. NO.		CHECK NO.	
STATE WELL NUMBER		REVENUE NO.	
ENTERED Ph 1      Ph 2      Ph 3		APPROVED BY	ROUTE

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Ameserve</b>		WELL NUMBER <b>MW-007</b>		VARIANCE GRANTED BY THE D.N.R.	
OWNER ADDRESS <b>PO Box 670</b>		CITY <b>Fulton</b>	STATE <b>MO</b>	ZIP CODE <b>65251</b>	<input checked="" type="checkbox"/> NO
SITE NAME <b>Ameserve Calloway Plant</b>		CONTACT NAME <b>Cathy Tutting</b>			
SITE ADDRESS		CITY <b>Raymond</b>	STATE <b>MO</b>	ZIP CODE	VARIANCE NUMBER

PROPOSED USE OF WELL		TYPE OF POTENTIAL SITE		MONITORING FOR: (CHECK ALL THAT APPLY)	
<input type="checkbox"/> GAS MONITORING WELL	<input checked="" type="checkbox"/> MONITORING	<input type="checkbox"/> HAZARDOUS MATERIAL	<input type="checkbox"/> LANDFILL	<input checked="" type="checkbox"/> RADIONUCLIDES	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY
<input type="checkbox"/> EXTRACTION WELL	<input type="checkbox"/> PIEZOMETERS	<input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT	<input type="checkbox"/> L.U.S.T.	<input type="checkbox"/> EXPLOSIVES	<input type="checkbox"/> METALS <input type="checkbox"/> V.O.C.
		<input type="checkbox"/> WATER LEVEL DRAWDOWN			<input type="checkbox"/> SVOCs <input type="checkbox"/> PESTICIDES/HERBICIDES

SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS. 	LOCATION OF WELL		AREA	ELEV
	LAT. <b>38° 43' 60"</b>		COUNTY <b>Calloway</b>	
	LONG. <b>91° 46' 27"</b>		SMALLEST <b>50' 1/4 NW 1/4 NW 1/4</b>	
		LARGEST		
		SEC. <b>36</b> TWN. <b>41</b> N. RNG. <b>8</b> E OR W		

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION	<input checked="" type="checkbox"/> ABOVE GROUND	LENGTH OF PROTECTIVE CASING	DIAMETER OF PROTECTIVE CASING	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED	PROTECTIVE CASING MATERIAL	<input checked="" type="checkbox"/> STEEL	LOCKING CAP?
	<input type="checkbox"/> FLUSH MOUNT	<b>2.75</b> FT	<b>4</b> IN	<b>24</b> IN <b>2.08</b> FT	<input type="checkbox"/> ALUMINUM	<input checked="" type="checkbox"/> YES	
WEEP HOLE?	VENTED CAP?	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT		
<input type="checkbox"/> YES	<input type="checkbox"/> YES				<input checked="" type="checkbox"/> CONCRETE		
<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> NO				<input type="checkbox"/> OTHER		

RISER PIPE DETAIL	LENGTH	DIAMETER	WEIGHT OR SDR#	DIAMETER OF DRILL HOLE	MATERIAL	BENTONITE SEAL	LENGTH OF SEAL	MATERIAL
	<b>4</b> FT	<b>2</b> IN	<b>SD 40</b>	<b>0.5</b> IN	<input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC)		<b>1</b> FT	<input type="checkbox"/> SLURRY <input type="checkbox"/> PELLETS <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
GLUED		SECONDARY FILTER PACK				DEPTH		FORMATION DESCRIPTION
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE...HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO				FROM <b>0</b> TO <b>13</b>		

PRIMARY FILTER PACK	LENGTH	DEPTH TO TOP OF PRIMARY FILTER PACK	SECONDARY FILTER PACK LENGTH
	<b>11</b> FT	<b>3</b> FT	

ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY	<input type="checkbox"/> CEMENT/BENTONITE SLURRY	LENGTH
	<input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE	BAGS OF CEMENT USED	
	<b>Chips</b>	% OF BENTONITE USED	
		WATER USED/BAG	

WELL SCREEN	LENGTH	DIAMETER	DIAMETER OF DRILL HOLE	DEPTH TO TOP OF SCREEN	MATERIAL
	<b>10</b> FT	<b>2</b> IN	<b>6</b> IN	<b>4.05</b> FT	<input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC)

MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

**TOTAL DEPTH: 13.59 FT**

SIGNATURE (PRIMARY CONTRACTOR)	PERMIT NUMBER	STATIC WATER LEVEL	DATE WELL DRILLING WAS COMPLETED
<i>[Signature]</i>	<b>004074-11</b>	<b>6.35</b> FEET FROM MEASURING POINT	<b>8/29/2006</b>

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER)	PERMIT NUMBER	DATE	SIGNATURE (PUMP INSTALLER)	PERMIT NUMBER	DATE
<b>X NO LONGER EMPLOYED</b>	<b>00276 WPMH</b>		<b>X</b>		



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED	
REF. NO. <b>383171</b>			
C.R. NO.	CHECK NO.		
STATE WELL NUMBER	REVENUE NO.		
ENTERED Ph 1      Ph 2      Ph 3	APPROVED BY	ROUTE /      /	

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Amtravue</b>	WELL NUMBER <b>MW-008</b>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
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OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>	ZIP CODE <b>65251</b>
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SITE NAME <b>Amtravue Callaway Plant</b>	CONTACT NAME <b>CORY JUTING</b>	VARIANCE NUMBER
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SITE ADDRESS	CITY <b>FULTON</b>	STATE <b>MO</b>	ZIP CODE	VARIANCE NUMBER
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PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL	<input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES <input type="checkbox"/> V.O.C.
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS. 	LOCATION OF WELL LAT. <b>38.43.40</b> LONG. <b>91.46.21</b>	AREA	ELEV
	COUNTY <b>Callaway</b>		
	SMALLEST <b>SE 1/4 SW 1/4 NW 1/4</b>	LARGEST	

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE	DRILLER NOTES:
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TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>3</b> FT.	DIAMETER OF PROTECTIVE CASING <b>4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>2.4</b> IN. <b>2.03</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISER PIPE DETAIL	LENGTH <b>8</b> FT.	DIAMETER <b>2</b> IN.	WEIGHT OR SDR# <b>SDR 40</b>	DIAMETER OF DRILL HOLE <b>0.59</b> IN.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL <b>3</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
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GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM TO <b>0 18</b>	FORMATION DESCRIPTION <b>cl/ch</b>
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PRIMARY FILTER PACK	LENGTH <b>11.5</b> FT.	DEPTH TO TOP OF PRIMARY FILTER PACK <b>6.5</b> FT.	SECONDARY FILTER PACK LENGTH
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ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>Chips</b>	<input type="checkbox"/> CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAG _____ GAL	LENGTH <b>3</b> FT.
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WELL SCREEN	LENGTH <b>10</b> FT.	DIAMETER <b>2</b> IN.	DIAMETER OF DRILL HOLE <b>6</b> IN.	DEPTH TO TOP OF SCREEN <b>8.19</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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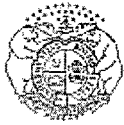
MULTIPLE CASED WELLS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	PUMP INSTALLED FOR REMEDIATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	TOTAL DEPTH: <b>18.07</b> FT
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SIGNATURE (PRIMARY CONTRACTOR) <i>[Signature]</i>	PERMIT NUMBER <b>604074-W</b>	STATIC WATER LEVEL <b>9.34</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>X NO LONGER EMPLOYED</b>	PERMIT NUMBER <b>00226 WPM</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>383170</b>		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Pb 1    Pb 2    Pb 3	APPROVED BY	ROUTE /    /

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>AMPSOLVE</b>	WELL NUMBER <b>MW-009</b>	VARIANCE GRANTED BY THE D.M.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
SITE NAME <b>AMPSOLVE Callaway Plant</b>	CONTACT NAME <b>Corey Jutting</b>	ZIP CODE <b>65751</b>
SITE ADDRESS	CITY <b>Reform</b>	STATE <b>MO</b>
		ZIP CODE
		VARIANCE NUMBER

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES <input type="checkbox"/> V.O.C.
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS. 	LOCATION OF WELL LAT. <b>38° 43' 10"</b> LONG. <b>91° 46' 27"</b>	AREA SMALLEST <b>NW 1/4</b> LARGEST <b>SW 1/4</b>	S.E.V.
		COUNTY <b>Callaway</b>	
		SEC. <b>3 1/2</b> TWN. <b>46</b> N. RNG. <b>8</b> E OR W <input checked="" type="checkbox"/>	

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>2.8</b> FT	DIAMETER OF PROTECTIVE CASING <b>4</b> IN	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24</b> IN <b>2.25</b> FT	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LENGTH OF FLUSH MOUNT - FT	DIAMETER OF FLUSH MOUNT - IN	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED - IN - FT	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISER PIPE DETAIL	LENGTH <b>5.3</b> FT	DIAMETER <b>2</b> IN	WEIGHT OR SDR# <b>SDR 40</b>	DIAMETER OF DRILL HOLE <b>0.5625</b> IN	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL <b>1.75</b> FT	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> PELLETS <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
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GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO BOTH ZONES <input type="checkbox"/> IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM <b>0</b> TO <b>115</b>	FORMATION DESCRIPTION <b>cl/ch</b>
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PRIMARY FILTER PACK	LENGTH <b>10</b> FT	DEPTH TO TOP OF PRIMARY FILTER PACK <b>4</b> FT	SECONDARY FILTER PACK LENGTH - FT
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ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>Chips</b>	<input type="checkbox"/> CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAG _____ GAL	LENGTH <b>1.75</b> FT
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WELL SCREEN	LENGTH <b>9</b> FT	DIAMETER <b>2</b> IN	DIAMETER OF DRILL HOLE <b>6</b> IN	DEPTH TO TOP OF SCREEN <b>5.3</b> FT	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

TOTAL DEPTH: **14.04** FT

SIGNATURE (PRIMARY CONTRACTOR) <i>[Signature]</i>	PERMIT NUMBER <b>064074-111</b>	STATIC WATER LEVEL <b>4.82</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>8/31/2006</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>X NO LONGER EMPLOYED</b>	PERMIT NUMBER <b>0076 WPMH</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>383173</b>		CHECK NO.
C.R. NO.		REVENUE NO.
STATE WELL NUMBER		APPROVED BY
ENTERED: Ph 1 Ph 2 Ph 3	ROUTE	

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>AMMOIVE</b>	WELL NUMBER <b>MW-010</b>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
SITE NAME <b>AMMOIVE Callaway Plant</b>	CONTACT NAME <b>Crew Jutting</b>	VARIANCE NUMBER
SITE ADDRESS	CITY <b>Reform</b>	STATE <b>MO</b>

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL	<input checked="" type="checkbox"/> MONITORS <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS. 	LOCATION OF WELL LAT. <b>38-03-30</b> LONG. <b>91-46-28</b>	AREA ELEV
	SMALLEST SEC. <b>36</b> TWN. <b>46</b>	LARGEST N. RING. <b>8</b> E OR D

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>3</b> FT	DIAMETER OF PROTECTIVE CASING <b>4</b> IN	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24</b> IN <b>2.08</b> FT	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	VENTED CAP? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISER PIPE DETAIL	LENGTH <b>5.81</b> FT	DIAMETER <b>2</b> IN	WEIGHT OR SDR# <b>5lb. 40</b>	DIAMETER OF DRILL HOLE <b>6</b> IN	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL <b>2.42</b> FT	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
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GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> BOTH ZONES	HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM <b>0</b> TO <b>14</b>	FORMATION DESCRIPTION <b>cl/ch</b>
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PRIMARY FILTER PACK	LENGTH <b>10.5</b> FT	DEPTH TO TOP OF PRIMARY FILTER PACK <b>4.5</b> FT	SECONDARY FILTER PACK LENGTH _____ FT
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ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE	<input type="checkbox"/> CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAG _____ GAL	LENGTH <b>2.42</b> FT
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WELL SCREEN	LENGTH <b>10</b> FT	DIAMETER <b>2</b> IN	DIAMETER OF DRILL HOLE <b>6</b> IN	DEPTH TO TOP OF SCREEN <b>5.81</b> FT	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED.

TOTAL DEPTH: **8/31/15.89** **2000** FT

SIGNATURE (PRIMARY CONTRACTOR) <b>[Signature]</b>	PERMIT NUMBER <b>104074-R1</b>	STATIC WATER LEVEL <b>5.70</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>8/31/2006</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>X NO LONGER EMPLOYED</b>	PERMIT NUMBER <b>001226 WDMH</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>383174</b>		CHECK NO.
C.R. NO.	REVENUE NO.	
STATE WELL NUMBER	APPROVED BY	
ENTERED Ph 1 Ph 2 Ph 3	ROUTE / /	

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>ARROWAYE</b>		WELL NUMBER <b>MW-011</b>	VARIANCE GRANTED BY THE DNR
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>	ZIP CODE <b>65251</b>
SITE NAME <b>ARROWAYE Callaway Plant</b>		CONTACT NAME <b>Cory Jutting</b>	
SITE ADDRESS		CITY <b>Reform</b>	STATE <b>MO</b>
VARIANCE NUMBER		VARIANCE GRANTED BY THE DNR	

PROPOSED USE OF WELL	TYPE OF POTENTIAL SITE	MONITORING FOR: (CHECK ALL THAT APPLY)
<input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETERS	<input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN <input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	<input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SWOCS <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES <input type="checkbox"/> V.O.C.

SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS	LOCATION OF WELL	AREA	ELEV
	LAT. <b>38° 46' 25"</b> LONG. <b>91° 46' 42"</b>	COUNTY <b>Callaway</b>	
	SMALLEST SEC. <b>36</b> TWN. <b>46</b> N. RANG. <b>9</b> E OR <b>W</b>	LARGEST 1/4 <b>SW</b> 1/4 <b>SW</b> 1/4 <b>SW</b>	

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE	DRILLER NOTES:
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TYPE OF SURFACE COMPLETION	LENGTH OF PROTECTIVE CASING	DIAMETER OF PROTECTIVE CASING	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED	PROTECTIVE CASING MATERIAL	LOCKING CAP?
<input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	<b>2.8</b> FT.	<b>4</b> IN.	<b>24</b> IN. <b>2.08</b> FT.	<input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

WEEP HOLE?	VENTED CAP?	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	— FT.	— IN.	— IN. — FT.	<input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER

RISE PIPE DETAIL	LENGTH	DIAMETER	WEIGHT OR SDR#	DIAMETER OF DRILL HOLE	MATERIAL	BENTONITE SEAL	LENGTH OF SEAL	MATERIAL
	<b>8.11</b> FT.	<b>2</b> IN.	<b>SDR-40</b>	<b>6</b> IN.	<input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER			<input type="checkbox"/> SLURRY <input type="checkbox"/> PELLETS <input checked="" type="checkbox"/> GRANULAR <input type="checkbox"/> CHIPS

GLUED	SECONDARY FILTER PACK		DEPTH	FORMATION DESCRIPTION
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE—HYDRATED— <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> BOTH ZONES <input type="checkbox"/> IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	FROM	TO	
			<b>0</b>	<b>16</b>

PRIMARY FILTER PACK	LENGTH	DEPTH TO TOP OF PRIMARY FILTER PACK	SECONDARY FILTER PACK LENGTH
	<b>11</b> FT.	<b>7.0</b> FT.	

ANNULAR SEAL	LENGTH
<input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <input type="checkbox"/> CEMENT/BENTONITE SLURRY	<b>Chips</b>

WELL SCREEN	LENGTH	DIAMETER	DIAMETER OF DRILL HOLE	DEPTH TO TOP OF SCREEN	MATERIAL
	<b>10</b> FT.	<b>2</b> IN.	<b>6</b> IN.	<b>8.11</b> FT.	<input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER

MULTIPLE CASED WELLS	PUMP INSTALLED FOR REMEDIATION	TOTAL DEPTH:
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<b>18.49 FT</b>

SIGNATURE (PRIMARY CONTRACTOR)	PERMIT NUMBER	STATIC WATER LEVEL	DATE WELL DRILLING WAS COMPLETED
<i>[Signature]</i>	<b>4074-117</b>	<b>17.76</b> FEET FROM MEASURING POINT	<b>8/31/2006</b>
I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.			
SIGNATURE (WELL DRILLER)	PERMIT NUMBER	DATE	SIGNATURE (PUMP INSTALLER)
<b>X NO LONGER EMPLOYED</b>	<b>001226</b>		<b>X</b>



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

OFFICE USE ONLY		DATE RECEIVED	
REF. NO. 383176			
C.R. NO.		CHECK NO.	
STATE WELL NUMBER		REVENUE NO.	
ENTERED Ph 1    Ph 2    Ph 3	APPROVED BY	ROUTE	

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <i>Amadio VE</i>		WELL NUMBER <i>MW-002</i>		VARIANCE GRANTED BY THE D.N.R.	
OWNER ADDRESS <i>PO Box 620</i>		CITY <i>Fulton</i>	STATE <i>MO</i>	ZIP CODE <i>65251</i>	<input checked="" type="checkbox"/> NO
SITE NAME <i>Amadio VE Calloway Man+</i>		CONTACT NAME <i>Corey Tutting</i>		<input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE	
SITE ADDRESS		CITY <i>Rolla</i>	STATE <i>MO</i>	ZIP CODE	VARIANCE NUMBER

PROPOSED USE OF WELL		TYPE OF POTENTIAL SITE		MONITORING FOR: (CHECK ALL THAT APPLY)	
<input type="checkbox"/> GAS MONITORING WELL	<input checked="" type="checkbox"/> MONITORING	<input type="checkbox"/> HAZARDOUS MATERIAL	<input type="checkbox"/> LANDFILL	<input checked="" type="checkbox"/> RADIONUCLIDES	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY
<input type="checkbox"/> EXTRACTION WELL	<input type="checkbox"/> PIEZOMETERS	<input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT	<input type="checkbox"/> L.U.S.T.	<input type="checkbox"/> EXPLOSIVES	<input type="checkbox"/> METALS <input type="checkbox"/> V.O.C.
		<input type="checkbox"/> WATER LEVEL DRAWDOWN		<input type="checkbox"/> SVCCS	<input type="checkbox"/> PESTICIDES/HERBICIDES

SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS.		LOCATION OF WELL		AREA	ELEV
		LAT. <i>38.43.70</i>		COUNTY <i>Calloway</i>	
		LONG. <i>91.41.23</i>		SMALLEST <i>SE 1/4 SW 1/4 MW 1/4</i>	
				SEC. <i>36</i> TWN. <i>46</i> N. RING. <i>8</i> E OR W <input checked="" type="checkbox"/>	

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE	DRILLER NOTES:
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TYPE OF SURFACE COMPLETION	<input checked="" type="checkbox"/> ABOVE GROUND	LENGTH OF PROTECTIVE CASING	DIAMETER OF PROTECTIVE CASING	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED	PROTECTIVE CASING MATERIAL	<input checked="" type="checkbox"/> STEEL	LOCKING CAP?
	<input type="checkbox"/> FLUSH MOUNT	<i>3</i> FT.	<i>4</i> IN.	<i>24</i> IN. <i>3</i> FT.	<input type="checkbox"/> ALUMINUM	<input type="checkbox"/> YES	
					<input type="checkbox"/> PLASTIC	<input type="checkbox"/> NO	

WEEP HOLE?	VENTED CAP?	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT
<input type="checkbox"/> YES	<input type="checkbox"/> YES				<input checked="" type="checkbox"/> CONCRETE
<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> NO				<input type="checkbox"/> OTHER

RISER PIPE DETAIL	LENGTH	DIAMETER	WEIGHT OR SDR#	DIAMETER OF DRILL HOLE	MATERIAL	BENTONITE SEAL	LENGTH OF SEAL	MATERIAL
	<i>92.35</i> FT.	<i>2</i> IN.	<i>SD. 40</i>	<i>8</i> IN.	<input checked="" type="checkbox"/> THERMOPLASTIC (PVC)		<i>87</i> FT.	<input type="checkbox"/> SLURRY <input type="checkbox"/> PELLETS
	<input type="checkbox"/> GLUED	SECONDARY FILTER PACK			DEPTH		FORMATION DESCRIPTION	
	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE - HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO			FROM TO		<i>cl ch limestone ls w/shale Do Do w/shale + chert</i>	
		<input type="checkbox"/> BOTH ZONES <input type="checkbox"/> IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO			0 14			
PRIMARY FILTER PACK	LENGTH	DEPTH TO TOP OF PRIMARY FILTER PACK	SECONDARY FILTER PACK LENGTH		14 44			
	<i>47</i> FT.	<i>90</i> FT.			44 52			
ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY	<input type="checkbox"/> CEMENT/BENTONITE SLURRY	LENGTH		54 74			
	<input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE	BAGS OF CEMENT USED	<i>87</i> FT.		74 122			
	<i>chips</i>	% OF BENTONITE USED						
		WATER USED/BAG	GAL					

WELL SCREEN	LENGTH	DIAMETER	DIAMETER OF DRILL HOLE	DEPTH TO TOP OF SCREEN	MATERIAL
	<i>30</i> FT.	<i>2</i> IN.	<i>8</i> IN.	<i>92.35</i> FT.	<input checked="" type="checkbox"/> STEEL <input type="checkbox"/> THERMOPLASTIC (PVC)
					<input type="checkbox"/> OTHER

MULTIPLE CASED WELLS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		PUMP INSTALLED FOR REMEDIATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED			
SIGNATURE (PRIMARY CONTRACTOR) <i>L.D.H.</i>		PERMIT NUMBER <i>004674-M</i>	STATIC WATER LEVEL <i>13.61</i> FEET FROM MEASURING POINT
		DATE WELL DRILLING WAS COMPLETED <i>9/27/2006</i>	
TOTAL DEPTH: <i>122.23 feet</i>			

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.			
SIGNATURE (WELL DRILLER)	PERMIT NUMBER	DATE	SIGNATURE (PUMP INSTALLER)
<i>X</i> <i>NO LONGER EMPLOYED</i>	<i>00226WPMH</i>		<i>X</i>
			PERMIT NUMBER
			DATE



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
DIVISION OF GEOLOGY AND  
LAND SURVEY  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>285890</b>		
CR NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED	APPROVED BY	ROUTE
Pr 1	Pr 2	Pr 3

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Amgen DE</b>	WELL NUMBER <b>MW-013</b>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
SITE NAME <b>Amgen DE Callaway Plant</b>	CONTACT NAME <b>Cory Jutting</b>	VARIANCE NUMBER
SITE ADDRESS <b>Reform</b>	STATE <b>MO</b>	ZIP CODE <b>65251</b>

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING WELL <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES <input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T. <input type="checkbox"/> V.O.C.
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS 	LOCATION OF WELL LAT. <b>38.45.40</b> LONG. <b>91.46.34</b>	AREA <b>Callaway</b>
SMALLEST <b>NE 1/4 NW 1/4</b>		LARGEST <b>NN 1/4</b>
SEC. <b>24</b> TWN <b>40</b> N. RING. <b>8</b> E OR. <b>W</b>		

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE  
**South of sludge lagoons**

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>82.88</b> FT	DIAMETER OF PROTECTIVE CASING <b>4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24</b> IN. <b>2.25</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED <b>2.25</b> FT.	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER

RISER PIPE DETAIL	LENGTH <b>15.98</b> FT.	DIAMETER <b>2</b> IN.	WEIGHT OF SDR# <b>sch 40</b>	DIAMETER OF DRILL HOLE <b>6 5/8</b> IN.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL <b>6.75</b> FT.	LENGTH OF SEAL <b>6.75</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS	
GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> BOTH ZONES <input type="checkbox"/> IF YES HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO			DEPTH FROM TO <b>0 15.98</b> <b>22</b>		FORMATION DESCRIPTION <b>cl/ch</b>

PRIMARY FILTER PACK	LENGTH <b>12</b> FT.	DEPTH TO TOP OF PRIMARY FILTER PACK <b>9</b> FT.	SECONDARY FILTER PACK LENGTH _____ FT.
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ANNULAR SEAL	<input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>chips</b>	<input type="checkbox"/> CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAG _____ GAL	LENGTH <b>6.75</b> FT.
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WELL SCREEN	LENGTH <b>10</b> FT.	DIAMETER <b>2</b> IN.	DIAMETER OF DRILL HOLE <b>6</b> IN.	DEPTH TO TOP OF SCREEN <b>15.98</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

**TOTAL DEPTH: 25.98 ft**

SIGNATURE (PRIMARY CONTRACTOR) <b>L. B. T. D.</b>	PERMIT NUMBER <b>004074-M</b>	STATIC WATER LEVEL <b>17.08</b>	DATE WELL DRILLING WAS COMPLETED <b>6/7/2007</b>
		FEET FROM MEASURING POINT	

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <b>X L. L.</b>	PERMIT NUMBER <b>004277-M</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
DIVISION OF GEOLOGY AND  
LAND SURVEY  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>285889</b>		
C.R.NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Pr. 1 Pr. 2 Pr. 3	APPROVED BY	ROUTE / /

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>AmproVE</b>	WELL NUMBER <b>MW-014</b>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>PO Box 670</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
SITE NAME <b>AmproVE Calloway Plant</b>	CONTACT NAME <b>Corey Tutting</b>	ZIP CODE <b>65251</b>
SITE ADDRESS <b>Reform</b>	CITY <b>Reform</b>	STATE <b>MO</b>

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING WELL <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs <input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T. <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES <input type="checkbox"/> V.O.C.
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS. 	LOCATION OF WELL LAT. <b>38° 42' 31"</b> LONG. <b>91° 46' 15"</b>	AREA ELEV
	SMALLEST <b>SW 1/4</b>	LARGEST <b>SW 1/4</b>
	SEC. <b>36</b> TWN. <b>46</b> N. R. <b>8</b> E. OR <b>W</b>	COUNTY <b>Calloway</b>

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>2.6 FT</b>	DIAMETER OF PROTECTIVE CASING <b>4 IN.</b>	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24 IN. 2.25 FT.</b>	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
WEEP HOLE? <input checked="" type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> NO	LENGTH OF FLUSH MOUNT FT.	DIAMETER OF FLUSH MOUNT IN.	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED IN. FT.	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER

RISE RPIPE DETAIL LENGTH <b>19.82</b>	DIAMETER <b>2 IN.</b>	WEIGHT OR SDR# <b>50 40</b>	DIAMETER OF DRILL HOLE <b>6.625 IN.</b>	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL LENGTH OF SEAL <b>14.75 FT.</b>	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO		DEPTH FROM TO	FORMATION DESCRIPTION

PRIMARY FILTER PACK LENGTH <b>12 FT.</b>	DEPTH TO TOP OF PRIMARY FILTER PACK <b>17 FT.</b>	SECONDARY FILTER PACK LENGTH FT.
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ANNULAR SEAL <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>chips</b>	CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED % OF BENTONITE USED WATER USED/BAG GAL	LENGTH <b>14.75 FT.</b>
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WELL SCREEN LENGTH <b>10 FT.</b>	DIAMETER <b>2 IN.</b>	DIAMETER OF DRILL HOLE <b>6 IN.</b>	DEPTH TO TOP OF SCREEN <b>19.82 FT.</b>	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

TOTAL DEPTH: **29.82 FT**

SIGNATURE (PRIMARY CONTRACTOR) <b>T. B. [Signature]</b>	PERMIT NUMBER <b>004074-M</b>	STATIC WATER LEVEL <b>13.25</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>7/19/2007</b>
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SIGNATURE (WELL DRILLER) <b>X O - [Signature]</b>	PERMIT NUMBER <b>004277-M</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
DIVISION OF GEOLOGY AND  
LAND SURVEY  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>285888</b>		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Ph 1      Ph 2      Ph 3	APPROVED BY	ROUTE /      /

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <b>Ameren VE</b>	WELL NUMBER <b>MW-015</b>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <b>PO Box 620</b>	CITY <b>Fulton</b>	STATE <b>MO</b>
SITE NAME <b>Ameren VE Callaway Plant</b>	CONTACT NAME <b>Carey Jutting</b>	VARIANCE NUMBER
SITE ADDRESS	CITY <b>Reform</b>	STATE <b>MO</b>

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL	<input checked="" type="checkbox"/> MONITORING WELL <input type="checkbox"/> PREZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	<input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T.	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs	<input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> PESTICIDES/HERBICIDES <input type="checkbox"/> V.O.C.
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELLED FROM NEAREST TOWNS. 	LOCATION OF WELL LAT. <b>38.42.27.</b> LONG. <b>91.45.30.</b>	AREA ELEV
	SMALLEST <b>NE 1/4</b>	LARGEST <b>SW 1/4</b>
	SEC. <b>31</b> TWN. <b>46</b> N. RNG. <b>7</b> E OR <b>0</b>	COUNTY <b>Callaway</b>

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE

DRILLER NOTES:

TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <b>3</b> FT.	DIAMETER OF PROTECTIVE CASING <b>4</b> IN.	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <b>24</b> IN. <b>2.25</b> FT.	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LENGTH OF FLUSH MOUNT FT.	DIAMETER OF FLUSH MOUNT IN.	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED IN. FT.	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISE PIPE DETAIL LENGTH <b>28</b> FT. DIAMETER <b>2</b> IN. WEIGHT OR SDR# <b>Sdr. 40</b>	DIAMETER OF DRILL HOLE <b>6.625</b> IN.	MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL LENGTH OF SEAL <b>25.75</b> FT.	MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> GRANULAR <input checked="" type="checkbox"/> CHIPS
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GLUED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE <input type="checkbox"/> HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM <b>0</b> TO <b>35</b>	FORMATION DESCRIPTION <b>cl/ch</b>
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PRIMARY FILTER PACK LENGTH <b>12</b> FT.	DEPTH TO TOP OF PRIMARY FILTER PACK <b>26</b> FT.	SECONDARY FILTER PACK LENGTH FT.
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ANNULAR SEAL <input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE <b>Chips</b>	CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAG _____ GAL	LENGTH <b>25.75</b> FT.
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WELL SCREEN LENGTH <b>10</b> FT. DIAMETER <b>2</b> IN. DIAMETER OF DRILL HOLE <b>6</b> IN. DEPTH TO TOP OF SCREEN <b>28.08</b> FT.	MATERIAL <input type="checkbox"/> STEEL <input type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
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MULTIPLE CASED WELLS  YES  NO PUMP INSTALLED FOR REMEDIATION  YES  NO

SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS AND GROUT USED

TOTAL DEPTH: **38.08 Ft**

SIGNATURE (PRIMARY CONTRACTOR) 	PERMIT NUMBER <b>004074-M</b>	STATIC WATER LEVEL <b>21.49</b> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <b>7/20/2007</b>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) 	PERMIT NUMBER <b>004277-M</b>	DATE	SIGNATURE (PUMP INSTALLER) <b>X</b>	PERMIT NUMBER	DATE
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MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
(573) 368-2165  
**MONITORING WELL  
CERTIFICATION RECORD**

<b>OFFICE USE ONLY</b>		DATE RECEIVED
REF. NO. <b>383622</b>		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Pr 1 Pr 2 Pr 3	APPROVED BY	ROUTE

**INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR**

OWNER NAME <i>Amigos WE</i>	WELL NUMBER <i>MW-016</i>	VARIANCE GRANTED BY THE D.N.R. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, ATTACH A COPY OF THE VARIANCE
OWNER ADDRESS <i>P.O. Box 620</i>	CITY <i>Fulton</i>	STATE <i>MO</i>
SITE NAME <i>Amigos WE Callaway Plant</i>	CONTACT NAME <i>Cathy Johnson</i>	VARIANCE NUMBER
SITE ADDRESS	CITY <i>Fulton</i>	STATE <i>MO</i>

PROPOSED USE OF WELL <input type="checkbox"/> GAS MONITORING WELL <input type="checkbox"/> EXTRACTION WELL <input checked="" type="checkbox"/> MONITORING <input type="checkbox"/> PIEZOMETERS	TYPE OF POTENTIAL SITE <input type="checkbox"/> HAZARDOUS MATERIAL <input checked="" type="checkbox"/> INITIAL SITE ASSESSMENT <input type="checkbox"/> WATER LEVEL DRAWDOWN	MONITORING FOR: (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> RADIONUCLIDES <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> SVOCs <input type="checkbox"/> LANDFILL <input type="checkbox"/> L.U.S.T. <input type="checkbox"/> PETROLEUM PRODUCTS ONLY <input type="checkbox"/> METALS <input type="checkbox"/> V.O.C. <input type="checkbox"/> PESTICIDES/HERBICIDES
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SKETCH LOCATION OF WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS. <i>Mo River</i>	LOCATION OF WELL LAT. <i>38° 42' 33.2"</i> LONG. <i>91° 45' 28.0"</i>	AREA ELEV
	SMALLEST LARGEST	COUNTY <i>CALLAWAY</i>
	SEC. _____ TWN. _____ N. RANG. _____ E OR W	

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL SITE	DRILLER NOTES:
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TYPE OF SURFACE COMPLETION <input checked="" type="checkbox"/> ABOVE GROUND <input type="checkbox"/> FLUSH MOUNT	LENGTH OF PROTECTIVE CASING <i>5</i> FT	DIAMETER OF PROTECTIVE CASING <i>4</i> IN	DIAMETER AND DEPTH OF THE HOLE PROTECTIVE CASING WAS PLACED <i>10</i> IN <i>2.5</i> FT	PROTECTIVE CASING MATERIAL <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> ALUMINUM <input type="checkbox"/> PLASTIC	LOCKING CAP? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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WEEP HOLE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	VENTED CAP? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	LENGTH OF FLUSH MOUNT	DIAMETER OF FLUSH MOUNT	DIAMETER AND DEPTH OF THE HOLE FLUSH MOUNT WAS PLACED	SURFACE COMPLETION GROUT <input checked="" type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER
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RISER PIPE DETAIL LENGTH <i>25.5</i> FT DIAMETER <i>2</i> IN WEIGHT OR SDR# <i>50140</i> DIAMETER OF DRILL HOLE <i>8 1/2</i> IN MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER	BENTONITE SEAL LENGTH OF SEAL <i>21</i> FT MATERIAL <input type="checkbox"/> SLURRY <input type="checkbox"/> PELLETS <input checked="" type="checkbox"/> GRANULAR CHIPS
--	--

SECONDARY FILTER PACK <input type="checkbox"/> SATURATED ZONE <input type="checkbox"/> UNSATURATED ZONE - HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> BOTH ZONES <input type="checkbox"/> IF YES, HYDRATED <input type="checkbox"/> YES <input type="checkbox"/> NO	DEPTH FROM TO <i>0</i> <i>40'</i>	FORMATION DESCRIPTION <i>S. Sa</i>
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PRIMARY FILTER PACK LENGTH <i>18</i> FT DEPTH TO TOP OF PRIMARY FILTER PACK <i>22</i> FT SECONDARY FILTER PACK LENGTH
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ANNULAR SEAL <input type="checkbox"/> BENTONITE SLURRY <input checked="" type="checkbox"/> NON SLURRY BENTONITE TYPE BAGS OF CEMENT USED _____ % OF BENTONITE USED _____ WATER USED/BAG _____ GAL	LENGTH <i>21</i> FT
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WELL SCREEN LENGTH <i>4.5</i> FT DIAMETER <i>2</i> IN DIAMETER OF DRILL HOLE <i>8 1/2</i> IN DEPTH TO TOP OF SCREEN <i>25</i> FT MATERIAL <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> THERMOPLASTIC (PVC) <input type="checkbox"/> OTHER
---

MULTIPLE CASED WELLS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	PUMP INSTALLED FOR REMEDIATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	TOTAL DEPTH: <i>40'</i>
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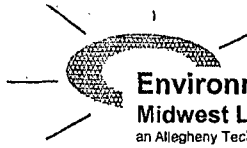
SIGNATURE (PRIMARY CONTRACTOR) <i>[Signature]</i>	PERMIT NUMBER <i>004074 M</i>	STATIC WATER LEVEL <i>16.42</i> FEET FROM MEASURING POINT	DATE WELL DRILLING WAS COMPLETED <i>10/3/07</i>
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I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (WELL DRILLER) <i>[Signature]</i>	PERMIT NUMBER <i>002974 P</i>	DATE <i>10/10/07</i>	SIGNATURE (PUMP INSTALLER) <i>[Signature]</i>	PERMIT NUMBER	DATE
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## APPENDIX E



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 564-0700 • fax (847) 564-4517

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Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-294  
DATE: 12-11-2006  
SAMPLES RECEIVED: 11-30-2006  
PURCHASE ORDER NO.: 139754

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Dear Mr. Graham,

Enclosed are the results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,

Bronia Grob, M. S.  
Laboratory Manager

APPROVED BY

Tony Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Sample Description	CA-SOL-B-4 Sta 233+35-78' RT 3-5'	CA-SOL-B-5 Sta 232+83-78' RT 3-5'	CA-SOL-B-5 Sta 232+83-123' RT 8-10'	CA-SOL-B-5 Sta 141+24.5-56' LT 4-6'	CA-SOL-B-5 Sta 141+24.5-56' LT 9-11'	CA-SOL-B-5 Sta 141+24.5-56' LT 14-16'
Date Collected	11-20-06	11-20-06	11-20-06	11-21-06	11-21-06	11-21-06
Time Collected	@ 12:47	@ 13:20	@ 13:40	@ 09:48	@ 10:04	@ 10:12
Lab Code	CASO-8579	CASO-8580	CASO-8581	CASO-8582	CASO-8583	CASO-8584
Isotope	Concentration (pCi/L)					
H-3	< 170	< 170	< 170	1537 ± 138 <sup>a</sup>	< 170	< 170
Isotope	Concentration (pCi/g)					
K-40	3.74 ± 0.34	10.67 ± 0.52	26.37 ± 0.79	11.45 ± 0.56	4.22 ± 0.49	12.69 ± 0.74
Mn-54	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fe-59	< 0.02	< 0.02	< 0.04	< 0.03	< 0.04	< 0.05
Co-58	< 0.02	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02
Co-60	< 0.01	< 0.01	< 0.02	< 0.01	< 0.02	< 0.01
Zr-Nb-95	< 0.02	< 0.02	< 0.03	< 0.02	< 0.02	< 0.05
Cs-134	< 0.02	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Cs-137	< 0.01	0.02 ± 0.01	< 0.02	< 0.01	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.02	< 0.02	< 0.02	< 0.03	< 0.01

<sup>a</sup> Re-analysis: 1605 ± 138 pCi/L.

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Sample Description	CA-SOL-B-5 Sta 141+24.5-56' LT 19-21'	CA-SOL-B-5 Sta 141+24.5-56' LT 24-26'	CA-SOL-B-6 Sta 142+06-88' RT 4-6'	CA-SOL-B-6 Sta 142+06-88' RT 9-11'	CA-SOL-B-6 Sta 142+06-88' RT 14-18'	CA-SOL-B-6 Sta 142+06-88' RT 19-21'
Date Collected	11-21-06	11-21-06	11-21-06	11-21-06	11-21-06	11-21-06
Time Collected	@ 10:25	@ 10:37	@ 13:30	@ 13:58	@ 14:18	@ 14:25
Lab Code	CASO-8585	CASO-8586	CASO-8587	CASO-8588	CASO-8589	CASO-8590
<b>Isotope</b>	<b>Concentration (pCi/L)</b>					
H-3	< 178	< 170	253 ± 95 <sup>a</sup>	< 170	< 170	< 170
<b>Isotope</b>	<b>Concentration (pCi/g)</b>					
K-40	11.28 ± 0.75	3.82 ± 0.30	8.73 ± 0.65	8.04 ± 0.58	11.70 ± 0.64	11.89 ± 0.71
Mn-54	< 0.03	< 0.01	< 0.02	< 0.01	< 0.02	< 0.02
Fe-59	< 0.06	< 0.02	< 0.05	< 0.04	< 0.04	< 0.05
Co-58	< 0.03	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02
Co-60	< 0.03	< 0.01	< 0.02	< 0.02	< 0.03	< 0.02
Zr-Nb-95	< 0.04	< 0.01	< 0.03	< 0.03	< 0.05	< 0.02
Cs-134	< 0.04	< 0.01	< 0.03	< 0.03	< 0.03	< 0.03
Cs-137	< 0.03	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02
Ba-La-140	< 0.05	< 0.01	< 0.03	< 0.01	< 0.03	< 0.03

<sup>a</sup> Re-analysis: 350 ± 101 pCi/L.

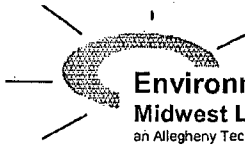
The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Sample Description	CA-SOL-B-6 Sta 142+06-88'RT 24-26'	CA-SOL-B-6 Sta 230+95-25'RT 3-5'	CA-SOL-B-6 Sta 230+95-25'RT 8-10'	CA-SOL-B-6 Sta 230+95-25'RT 13-15'
Date Collected	11-21-06	11-20-06	11-20-06	11-20-06
Time Collected	@ 14:42	@ 14:11	@ 14:18	@ 14:30
Lab Code	CASO-8591	CASO-8592	CASO-8593	CASO-8594
<u>Isotope</u>	<u>Concentration (pCi/L)</u>			
H-3	< 170	< 170	< 170	247 ± 95 <sup>a</sup>
<u>Isotope</u>	<u>Concentration (pCi/g)</u>			
K-40	9.07 ± 0.57	10.23 ± 0.58	7.98 ± 0.57	10.85 ± 0.69
Mn-54	< 0.02	< 0.01	< 0.02	< 0.02
Fe-59	< 0.06	< 0.02	< 0.03	< 0.03
Co-58	< 0.02	< 0.02	< 0.02	< 0.02
Co-60	< 0.01	< 0.02	< 0.02	< 0.02
Zr-Nb-95	< 0.03	< 0.01	< 0.02	< 0.04
Cs-134	< 0.03	< 0.01	< 0.03	< 0.03
Cs-137	< 0.01	< 0.02	< 0.02	< 0.02
Ba-La-140	< 0.05	< 0.01	< 0.03	< 0.06

<sup>a</sup> Re-analysis: 343 ± 101 pCi/L.

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.



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Ameren UE  
P.O. Box 620  
Fulton, MO 65251

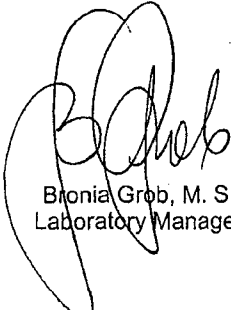
LABORATORY REPORT NO. 8036-100-297  
DATE: 12-13-2006  
SAMPLES RECEIVED: 12-04-2006  
PURCHASE ORDER NO.: 139754

Dear Mr. Graham,

Enclosed are the results of the analyses for tritium and gamma-emitting isotopes in nineteen soil samples.

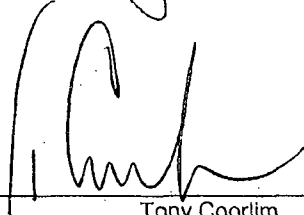
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



Blonia Grob, M. S.  
Laboratory Manager

APPROVED BY



Tony Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in nineteen soil samples.

Sample Description	CA-SOL-B-5 Sta 140+20-90' RT 4-6'	CA-SOL-B-5 Sta 140+20-90' RT 9-11'	CA-SOL-B-5 Sta 140+20-90' RT 9-11'	CA-SOL-B-5 Sta 140+20-90' RT 14-16'	CA-SOL-B-5 Sta 140+20-90' RT 19-21'	CA-SOL-B-6 Sta 139+17-62' RT 4-6'
Date Collected	11-28-06	11-28-06	11-28-06	11-28-06	11-28-06	11-28-06
Time Collected	@ 10:50	@ 11:10	@ 11:10	@ 11:20	@ 11:25	@ 13:00
Lab Code	CASO-8706	CASO-8707	CASO-8708	CASO-8709	CASO-8710	CASO-8711
Isotope	Concentration (pCi/L)					
H-3	< 161	< 161	< 161	< 161	< 161	< 161
Isotope	Concentration (pCi/g)					
K-40	10.69 ± 0.62	11.06 ± 0.78	10.64 ± 0.55	11.18 ± 0.76	11.64 ± 0.69	13.22 ± 0.66
Mn-54	< 0.02	< 0.02	< 0.02	< 0.03	< 0.02	< 0.01
Fe-59	< 0.05	< 0.05	< 0.03	< 0.03	< 0.04	< 0.02
Co-58	< 0.02	< 0.03	< 0.02	< 0.02	< 0.02	< 0.02
Co-60	< 0.01	< 0.03	< 0.02	< 0.03	< 0.01	< 0.02
Zr-Nb-95	< 0.03	< 0.02	< 0.02	< 0.01	< 0.03	< 0.01
Cs-134	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	< 0.01
Cs-137	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.01
Ba-La-140	< 0.01	< 0.02	< 0.04	< 0.03	< 0.02	< 0.02

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in nineteen soil samples.

Sample Description	CA-SOL-B-6 Sta 139+17-62' RT 9-11'	CA-SOL-B-6 Sta 139+17-62' RT 14-16'	CA-SOL-B-6 Sta 139+17-62' RT 19-21'	CA-SOL-B-7 Sta 139+17-137' RT 4-6'	CA-SOL-B-7 Sta 139+17-137' RT 9-11'	CA-SOL-B-7 Sta 139+17-137' RT 14-16'
Date Collected	11-28-06	11-28-06	11-28-06	11-27-06	11-27-06	11-27-06
Time Collected	@ 13:10	@ 13:15	@ 13:30	@ 12:45	@ 13:03	@ 13:21
Lab Code	CASO-8712	CASO-8713	CASO-8714	CASO-8715	CASO-8716	CASO-8717
Isotope	Concentration (pCi/L)					
H-3	< 161	< 161	< 161	< 161	< 161	< 161
Isotope	Concentration (pCi/g)					
K-40	10.84 ± 0.71	11.81 ± 0.81	7.10 ± 0.52	10.53 ± 0.67	9.89 ± 0.56	10.92 ± 0.61
Mn-54	< 0.02	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02
Fe-59	< 0.05	< 0.03	< 0.03	< 0.03	< 0.02	< 0.03
Co-58	< 0.02	< 0.03	< 0.01	< 0.02	< 0.01	< 0.02
Co-60	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.04	< 0.01	< 0.01	< 0.01	< 0.01
Cs-134	< 0.03	< 0.04	< 0.02	< 0.02	< 0.01	< 0.01
Cs-137	< 0.01	< 0.02	< 0.02	0.37 ± 0.04	0.09 ± 0.02	< 0.01
Ba-La-140	< 0.02	< 0.04	< 0.03	< 0.01	< 0.01	< 0.02

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.



Table 1. Results of the analyses for tritium and gamma-emitting isotopes in nineteen soil samples.

Sample Description	CA-SOL-B-7 Sta 139+17-137' RT 19-21'	CA-SOL-B-7 Sta 142+17.5-127'LT 4-6'	CA-SOL-B-7 Sta 142+17.5-127'LT 9-11'	CA-SOL-B-7 Sta 142+17.5-127'LT 14-16'	CA-SOL-B-8 Sta 138+90-28'LT 4.5-6.5'	CA-SOL-B-8 Sta 138+90-28'LT 9.5-11.5'
Date Collected	11-27-06	11-27-06	11-27-06	11-27-06	11-28-06	11-28-06
Time Collected	@ 13:47	@ 09:00	@ 09:16	@ 09:30	@ 08:00	@ 08:100
Lab Code	CASO-8718	CASO-8719	CASO-8720	CASO-8721	CASO-8722	CASO-8723
Isotope	Concentration (pCi/L)					
H-3	< 161	< 161	< 161	< 172	< 172	273 ± 101
Isotope	Concentration (pCi/L)					
K-40	2.86 ± 0.33	13.27 ± 0.74		9.84 ± 0.50	9.65 ± 0.56	9.99 ± 0.55
Mn-54	< 0.01	< 0.02	Sta 142+75+127 LT	< 0.01	< 0.01	< 0.02
Fe-59	< 0.02	< 0.05		< 0.02	< 0.03	< 0.03
Co-58	< 0.01	< 0.02		< 0.01	< 0.01	< 0.02
Co-60	< 0.01	< 0.02		< 0.01	< 0.02	< 0.01
Zr-Nb-95	< 0.01	< 0.04		< 0.01	< 0.02	< 0.01
Cs-134	< 0.01	< 0.04		< 0.01	< 0.02	< 0.02
Cs-137	< 0.01	< 0.03		< 0.01	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.03		< 0.02	< 0.02	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in nineteen soil samples.

Sample Description	CA-SOL-B-8 Sta 138+90-28'LT 14.5-16.5'	CA-SOL-B-8 Sta 138+90-28'LT 19.5-21.5'
Date Collected	11-28-06	11-28-06
Time Collected	@ 08:30	@ 08:40
Lab Code	CASO-8724	CASO-8725
Isotope	Concentration (pCi/L)	
H-3	< 172	< 172
Isotope	Concentration (pCi/g)	
K-40	11.69 ± 0.56	10.79 ± 0.57
Mn-54	< 0.01	< 0.01
Fe-59	< 0.02	< 0.02
Co-58	< 0.02	< 0.01
Co-60	< 0.01	< 0.01
Zr-Nb-95	< 0.02	< 0.01
Cs-134	< 0.02	< 0.02
Cs-137	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in ten soil samples.

Sample Description	CA-SOL-MH-6B Sta 109+85-67' LT 4-6'	CA-SOL-MH-6B Sta 109+85-67' LT 9-11'	CA-SOL-MH-6B Sta 109+85-67' LT 14-16'	CA-SOL-MH-6B Sta 109+85-67' LT 19-21'	CA-SOL-MH-6B Sta 109+85-67' LT 19-21'	CA-SOL-MH-6B Sta 109+85-67' LT 24-26'
Date Collected	12-06-06	12-06-06	12-06-06	12-06-06	12-06-06	12-06-06
Time Collected	@ 10:00	@ 10:24	@ 10:43	@ 10:52	@ 10:52	@ 11:00
Lab Code	CASO-8788	CASO-8789	CASO-8790	CASO-8791	CASO-8792	CASO-8793
Isotope	Concentration (pCi/L)					
H-3	< 177	< 177	3,116 ± 185	1,662 ± 149	1,531 ± 146	2,343 ± 167
Isotope	Concentration (pCi/g)					
K-40	17.35 ± 0.83	16.67 ± 0.81	13.00 ± 0.61	12.17 ± 0.56	12.84 ± 0.83	11.38 ± 0.55
Mn-54	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.01
Fe-59	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.04
Co-58	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02
Co-60	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01
Cs-134	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.01
Cs-137	< 0.03	< 0.02	< 0.01	< 0.01	< 0.03	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.



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 Ameren UE  
 P.O. Box 620  
 Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-298  
 DATE: 01-11-2006  
 SAMPLES RECEIVED: 12-07-2006  
 PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on six ground water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-MH-5 sta 104+94 60' LT	CAW-8782	468 ± 104 <sup>a</sup>	12-05-06
CA-GWA-MH-5 sta 104+96 71' RT	CAW-8783	< 177	12-05-06
CA-GWA-MH-8 sta 138+86 137' LT	CAW-8784	< 177	12-05-06
CA-GWA-MH-8 sta 138+90 28' LT	CAW-8785	< 177	12-05-06
CA-GWA-MH-8 sta 140+20 90' RT	CAW-8786	< 170	12-22-06
CA-GWA-MH-8 sta 139+17 62' RT	CAW-8787	< 177	12-05-06

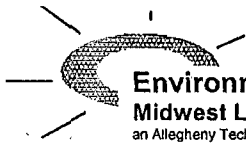
<sup>a</sup> Result of the re-analysis: 437 ± 105 pCi/L  
 The error given is the probable counting error at 95% confidence level. The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,

Eronia Glob,  
 Laboratory Manager

APPROVED BY \_\_\_\_\_

Tony Coorlim,  
 Quality Assurance



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Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-308  
DATE: 01-15-2007  
SAMPLES RECEIVED: 01-02-2007  
PURCHASE ORDER NO.: 139754

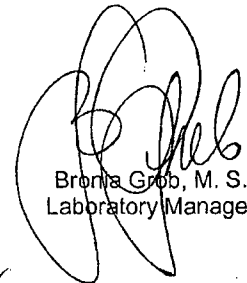
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Dear Mr. Graham,

Enclosed are the results of the analyses for tritium and gamma-emitting isotopes in twenty-five soil samples.

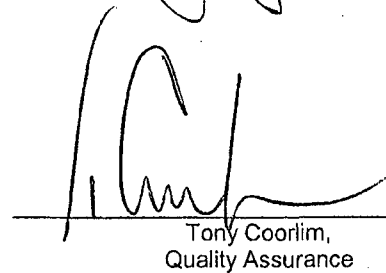
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



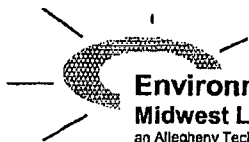
Bronja Grob, M. S.  
Laboratory Manager

APPROVED BY



Tony Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS



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---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-299  
DATE: 12-21-2006  
SAMPLES RECEIVED: 12-07-2006  
PURCHASE ORDER NO.: 139754

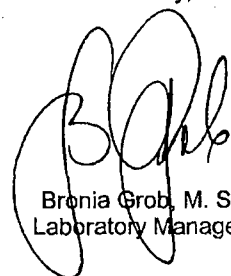
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Dear Mr. Graham,

Enclosed are the results of the analyses for tritium and gamma-emitting isotopes in ten soil samples.

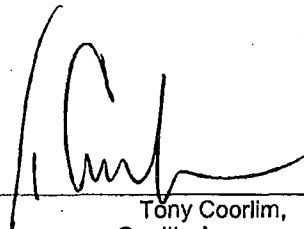
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



Bronia Grob, M. S.  
Laboratory Manager

APPROVED BY



---

Tony Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in ten soil samples.

Sample Description	CA-SOL-MH-6B Sta 107+62-110' LT 4-6'	CA-SOL-MH-6B Sta 107+62-110' LT 9-11'	CA-SOL-MH-6B Sta 107+62-110' LT 14-16'	CA-SOL-MH-6B Sta 107+62-110' LT 19-21'	CA-SOL-MH-6B Sta 107+62-110' LT 19-21'	CA-SOL-MH-6B Sta 107+62-110' LT 24-26'
Date Collected	12-06-06	12-06-06	12-06-06	12-06-06	12-06-06	12-06-06
Time Collected	@ 10:00	@ 10:24	@ 10:43	@ 10:52	@ 10:52	@ 11:00
Lab Code	CASO-8788	CASO-8789	CASO-8790	CASO-8791	CASO-8792	CASO-8793
Isotope	Concentration (pCi/L)					
H-3	< 177	< 177	3,116 ± 185	1,662 ± 149	1,531 ± 146	2,343 ± 167
Isotope	Concentration (pCi/g)					
K-40	17.35 ± 0.83	16.67 ± 0.81	13.00 ± 0.61	12.17 ± 0.56	12.84 ± 0.83	11.38 ± 0.55
Mn-54	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.01
Fe-59	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.04
Co-58	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02
Co-60	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01
Cs-134	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.01
Cs-137	< 0.03	< 0.02	< 0.01	< 0.01	< 0.03	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in ten soil samples.

Sample Description	CA-SOL-MH-6B Sta 110+65-70' LT 4-6'	CA-SOL-MH-6B Sta 110+65-70' LT 9-11'	CA-SOL-MH-6B Sta 110+65-70' LT 14-16'	CA-SOL-MH-6B Sta 110+65-70' LT 19-21'	CA-SOL-MH-6B Sta 110+65-70' LT 24-26'
Date Collected	12-06-06	12-06-06	12-06-06	12-06-06	12-06-06
Time Collected	@ 13:11	@ 13:23	@ 13:30	@ 13:38	@ 13:49
Lab Code	CASO-8794	CASO-8795	CASO-8796	CASO-8797	CASO-8798
Isotope	Concentration (pCi/L)				
H-3	228 ± 103	< 177	< 177	< 177	< 177
Isotope	Concentration (pCi/g)				
K-40	16.53 ± 0.78	14.81 ± 0.74	12.07 ± 0.60	12.44 ± 0.57	12.14 ± 0.55
Mn-54	< 0.03	< 0.02	< 0.02	< 0.02	< 0.02
Fe-59	< 0.04	< 0.04	< 0.03	< 0.03	< 0.03
Co-58	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Co-60	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01
Cs-134	< 0.02	< 0.02	< 0.01	< 0.02	< 0.01
Cs-137	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.





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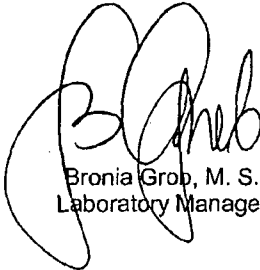
LABORATORY REPORT NO. 8036-100-300  
DATE: 12-26-2006  
SAMPLES RECEIVED: 12-12-2006  
PURCHASE ORDER NO.: 139754

Dear Mr. Graham,

Enclosed are the results of the analyses for tritium and gamma-emitting isotopes in thirteen soil samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



Bronia Grob, M. S.  
Laboratory Manager

APPROVED BY



Tony Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in thirteen soil samples.

Sample Description	CA-SOL-MH-6 Sta 107+62-110' LT 4-6'	CA-SOL-MH-6 Sta 107+62-110' LT 9-11'	CA-SOL-MH-6 Sta 107+62-110' LT 14-16'	CA-SOL-MH-6 Sta 107+62-110' LT 14-16'	CA-SOL-MH-6 Sta 107+62-110' LT 19-21'	CA-SOL-MH-6 Sta 107+62-110' LT 24-26'
Date Collected	12-11-06	12-11-06	12-11-06	12-11-06	12-11-06	12-11-06
Time Collected	@ 13:03	@ 13:14	@ 13:23	@ 13:23	@ 13:35	@ 13:47
Lab Code	CASO-8864	CASO-8865	CASO-8866	CASO-8867	CASO-8868	CASO-8869
Isotope	Concentration (pCi/L)					
H-3	< 181	< 181	< 181	< 181	< 181	< 181
Isotope	Concentration (pCi/g)					
K-40	14.88 ± 1.00	13.56 ± 0.85	12.99 ± 0.89	13.55 ± 0.77	13.46 ± 0.70	11.89 ± 0.73
Mn-54	< 0.03	< 0.03	< 0.03	< 0.03	< 0.02	< 0.02
Fe-59	< 0.03	< 0.04	< 0.05	< 0.03	< 0.06	< 0.05
Co-58	< 0.03	< 0.02	< 0.02	< 0.02	< 0.01	< 0.02
Co-60	< 0.03	< 0.03	< 0.03	< 0.02	< 0.02	< 0.02
Zr-Nb-95	< 0.03	< 0.03	< 0.02	< 0.03	< 0.03	< 0.03
Cs-134	< 0.04	< 0.04	< 0.04	< 0.04	< 0.03	< 0.04
Cs-137	< 0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ba-La-140	< 0.03	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in thirteen soil samples.

Sample Description	CA-SOL-MH-6 Sta 108+03-100' RT 4-6'	CA-SOL-MH-6 Sta 108+03-100' RT 9-11'	CA-SOL-MH-6 Sta 108+03-100' RT 14-16'	CA-SOL-MH-6B Sta 109+39-63' RT 4-6'	CA-SOL-MH-6B Sta 109+39-63' RT 9-11'	CA-SOL-MH-6B Sta 109+39-63' RT 14-16'
Date Collected	12-11-06	12-11-06	12-11-06	12-11-06	12-11-06	12-08-06
Time Collected	@ 10:59	@ 11:07	@ 11:37	@ 12:39	@ 12:39	@ 12:52
Lab Code	CASO-8870	CASO-8871	CASO-8872	CASO-8873	CASO-8874	CASO-8875
Isotope	Concentration (pCi/L)					
H-3	< 181	< 181	< 181	< 181	< 181	< 181
Isotope	Concentration (pCi/g)					
K-40	15.18 ± 0.99	13.37 ± 0.79	13.44 ± 0.84	16.19 ± 0.77	13.74 ± 0.50	11.89 ± 0.44
Mn-54	< 0.04	< 0.02	< 0.03	< 0.02	< 0.02	< 0.02
Fe-59	< 0.07	< 0.06	< 0.04	< 0.02	< 0.04	< 0.04
Co-58	< 0.02	< 0.02	< 0.03	< 0.02	< 0.01	< 0.01
Co-60	< 0.03	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.02	< 0.04	< 0.06	< 0.02	< 0.03	< 0.01
Cs-134	< 0.05	< 0.04	< 0.04	< 0.02	< 0.02	< 0.02
Cs-137	< 0.03	< 0.03	< 0.02	< 0.02	< 0.01	< 0.01
Ba-La-140	< 0.03	< 0.03	< 0.04	< 0.01	< 0.03	< 0.03

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in thirteen soil samples.

Sample Description	CA-SOL-MH-6B Sta 109+39-63' RT 19-21'	CA-SOL-MH-6B Sta 109+39-63' RT 24-26'
Date Collected	12-08-06	12-08-06
Time Collected	@ 13:07	@ 13:27
Lab Code	CASO-8886	CASO-8887
Isotope	Concentration (pCi/L)	
H-3	< 181	< 181
Isotope	Concentration (pCi/g)	
K-40	12.23 ± 0.52	11.29 ± 0.46
Mn-54	< 0.02	< 0.01
Fe-59	< 0.03	< 0.03
Co-58	< 0.01	< 0.01
Co-60	< 0.02	< 0.01
Zr-Nb-95	< 0.02	< 0.02
Cs-134	< 0.02	< 0.02
Cs-137	< 0.02	< 0.02
Ba-La-140	< 0.01	< 0.02

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.



700 Landwehr Road - Northbrook, IL 60062-2310  
ph. (847) 564-0700 - fax (847) 564-4517

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Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-305  
DATE: 1/3/2007  
SAMPLES RECEIVED: 12/15/2006  
PURCHASE ORDER NO.: 139754


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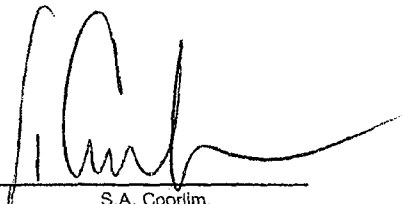
Dear Mr. Graham,

Enclosed are results of the analyses for tritium and gamma-emitting isotopes for fifteen soil samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,

  
\_\_\_\_\_  
Bronia Grob, M. S.  
Laboratory Manager

  
\_\_\_\_\_  
S.A. Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in fifteen soil samples.

Sample Description	CA-SOL-MH-2 Sta 72 + 61 34' LT 4-6'	CA-SOL-MH-2 Sta 72 + 61 34' LT 9-11'	CA-SOL-MH-2 Sta 72 + 61 34' LT 14-16'	CA-SOL-MH-2 Sta 72 + 61 34' LT 19-21'	CA-SOL-MH-2 Sta 72 + 61 34' LT 24-26'	CA-SOL-MH-2 Sta 72 + 61 34' LT 29-31'
Date Collected	12/15/2006	12/15/2006	12/15/2006	12/15/2006	12/15/2006	12/15/2006
Time Collected	10:48	10:55	11:09	11:16	11:31	11:44
Lab Code	CASO-9052	CASO-9053	CASO-9054	CASO-9055	CASO-9056	CASO-9057
Isotope	Concentration (pCi/L)					
H-3	< 167	< 167	< 167	429 ± 105	451 ± 106	431 ± 105
Isotope	Concentration (pCi/g)					
K-40	13.72 ± 0.70	14.26 ± 0.72	15.24 ± 0.72	13.88 ± 0.86	12.94 ± 0.60	12.53 ± 0.61
Mn-54	< 0.021	< 0.023	< 0.021	< 0.017	< 0.016	< 0.018
Fe-59	< 0.035	< 0.045	< 0.046	< 0.037	< 0.018	< 0.022
Co-58	< 0.017	< 0.018	< 0.018	< 0.024	< 0.021	< 0.018
Co-60	< 0.024	< 0.019	< 0.022	< 0.015	< 0.015	< 0.016
Zr-Nb-95	< 0.024	< 0.035	< 0.033	< 0.034	< 0.011	< 0.017
Cs-134	< 0.017	< 0.032	< 0.030	< 0.029	< 0.014	< 0.012
Cs-137	0.035 ± 0.017	< 0.018	< 0.010	< 0.021	< 0.019	< 0.015
Ba-La-140	< 0.013	< 0.032	< 0.012	< 0.033	< 0.012	< 0.010

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in fifteen soil samples.

Sample Description	CA-SOL-MH-5 Sta 104 + 94 60' LT 4-6'	CA-SOL-MH-5 Sta 104 + 94 60' LT 9-11'	CA-SOL-MH-5 Sta 104 + 94 60' LT 14-16'	CA-SOL-MH-5 Sta 104 + 96 71' RT 19-21'	CA-SOL-MH-5 Sta 104 + 96 71' RT 24-26'	CA-SOL-MH-5 Sta 104 + 96 71' RT 29-31'
Date Collected	12/4/2006	12/4/2006	12/4/2006	12/4/2006	12/4/2006	12/4/2006
Time Collected	10:35	10:42	10:45	13:50	13:56	14:03
Lab Code	CASO-9058	CASO-9059	CASO-9060	CASO-9061	CASO-9062	CASO-9063
Isotope	Concentration (pCi/L)					
H-3	< 167	< 167	556 ± 110	< 167	< 167	< 167
Isotope	Concentration (pCi/g)					
K-40	14.52 ± 0.73	13.12 ± 0.64	13.57 ± 0.64	14.96 ± 0.67	13.35 ± 0.61	13.01 ± 0.60
Mn-54	< 0.023	< 0.023	< 0.020	< 0.020	< 0.019	< 0.021
Fe-59	< 0.035	< 0.032	< 0.023	< 0.038	< 0.026	< 0.056
Co-58	< 0.023	< 0.018	< 0.019	< 0.021	< 0.016	< 0.014
Co-60	< 0.013	< 0.007	< 0.012	< 0.024	< 0.012	< 0.013
Zr-Nb-95	< 0.031	< 0.026	< 0.029	< 0.051	< 0.019	< 0.018
Cs-134	< 0.033	< 0.015	< 0.015	< 0.034	< 0.017	< 0.018
Cs-137	< 0.018	< 0.016	< 0.008	< 0.022	< 0.008	< 0.017
Ba-La-140	< 0.054	< 0.031	< 0.019	< 0.089	< 0.025	< 0.043

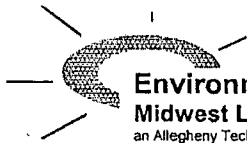
The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in fifteen soil samples.

Sample Description	CA-SOL-MH-6 Sta 107 + 00 90' LT 4-6'	CA-SOL-MH-6 Sta 107 + 00 90' LT 9-11'	CA-SOL-MH-6 Sta 107 + 00 90' LT 14-16'
Date Collected	12/13/2006	12/13/2006	12/13/2006
Time Collected	13:01	13:27	13:38
Lab Code	CASO-9064	CASO-9065	CASO-9066
Isotope	Concentration (pCi/L)		
H-3	< 167	171 ± 95	< 167
Isotope	Concentration (pCi/g)		
K-40	14.82 ± 0.69	14.22 ± 0.70	13.25 ± 0.62
Mn-54	< 0.024	< 0.022	< 0.018
Fe-59	< 0.046	< 0.038	< 0.017
Co-58	< 0.023	< 0.014	< 0.015
Co-60	< 0.011	< 0.016	< 0.011
Zr-Nb-95	< 0.033	< 0.025	< 0.017
Cs-134	< 0.034	< 0.014	< 0.016
Cs-137	< 0.017	< 0.021	< 0.014
Ba-La-140	< 0.062	< 0.025	< 0.025

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.





**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

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---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-308  
DATE: 01-15-2007  
SAMPLES RECEIVED: 01-02-2007  
PURCHASE ORDER NO.: 139754

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Dear Mr. Graham,

Enclosed are the results of the analyses for tritium and gamma-emitting isotopes in twenty-five soil samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,

Bronia Grob, M. S.  
Laboratory Manager

APPROVED BY \_\_\_\_\_

Tony Coorim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-five soil samples.

Sample Description	CA-SOL-MH-2 Sta 72+61 34' LT 34-36'	CA-SOL-MH-10 -30 20' LT 0-2.5'	CA-SOL-MH-11 Sta 230+45 R25' 4- 6'	CA-SOL-MH-11 Sta 230+45 R25' 8-10'	CA-SOL-MH-8 138+40 28' LT 4-6'	CA-SOL-MH-8 Sta 138+40 28' LT 4-6'
Date Collected	12-15-06	12-21-06	12-21-06	12-21-06	12-22-06	12-22-06
Time Collected	@ 16:00	@ 11:25	@ 13:20	@ 13:26	@ 11:18	@ 11:45
Lab Code	CASO-9447	CASO-9448	CASO-9449	CASO-9450	CASO-9451	CASO-9452
<b>Isotope</b>	<b>Concentration (pCi/L)</b>					
H-3	274 ± 99	920 ± 121	< 165	< 165	403 ± 102	249 ± 97
<b>Isotope</b>	<b>Concentration (pCi/g)</b>					
K-40	11.55 ± 0.76	6.33 ± 0.44	8.95 ± 0.46	18.11 ± 0.77	10.75 ± 0.62	11.99 ± 0.55
Mn-54	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02
Fe-59	< 0.06	< 0.02	< 0.02	< 0.03	< 0.02	< 0.02
Co-58	< 0.03	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01
Co-60	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01
Zr-Nb-95	< 0.02	< 0.02	< 0.02	< 0.03	< 0.03	< 0.01
Cs-134	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01
Cs-137	< 0.02	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01
Ba-La-140	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-five soil samples.

Sample Description	CA-SOL-MH-8 Sta 138+40 28' LT 9-11'	CA-SOL-MH-8 Sta 138+40 28' LT 9-11'	CA-SOL-MH-8 Sta 138+40 28' LT 14-16'	CA-SOL-MH-8 138+40 28' LT 14-16'	CA-SOL-MH-2 Sta 74+03 117' LT 4- 6'	CA-SOL-MH-2 Sta 74+03 117' LT 4- 6'
Date Collected	12-22-06	12-22-06	12-22-06	12-22-06	12-27-06	12-27-06
Time Collected	@ 11:28	@ 12:10	@ 13:11	@ 11:32	@ 09:31	@ 09:31
Lab Code	CASO-9453	CASO-9454	CASO-9455	CASO-9456	CASO-9457	CASO-9458*
<b>Isotope</b>	<b>Concentration (pCi/L)</b>					
H-3	213 ± 96	< 165	< 165	216 ± 96	< 167	< 165
<b>Isotope</b>	<b>Concentration (pCi/g)</b>					
K-40	12.10 ± 0.86	11.59 ± 0.57	12.41 ± 0.58	10.75 ± 0.58	13.59 ± 0.64	13.64 ± 0.65
Mn-54	< 0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fe-59	< 0.03	< 0.02	< 0.02	< 0.04	< 0.04	< 0.05
Co-58	< 0.02	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01
Co-60	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02
Zr-Nb-95	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.03
Cs-134	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.03
Cs-137	< 0.02	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02
Ba-La-140	< 0.03	< 0.01	< 0.02	< 0.02	< 0.01	< 0.02

\*Denotes a duplicate.

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-five soil samples.

Sample Description	CA-SOL-MH-2 Sta 74+03 117' LT 9-11'	CA-SOL-MH-2 Sta 74+03 117' LT 14-16'	CA-SOL-MH-2 Sta 74+03 117' LT 19-21'	CA-SOL-MH-2 Sta 74+03 117' LT 24-26'	CA-SOL-MH-2 Sta 69+45 45' RT 4-6'	CA-SOL-MH-2 Sta 69+45 45' RT 14-16'
Date Collected	12-27-06	12-27-06	12-27-06	12-27-06	12-28-06	12-28-06
Time Collected	09:42	@ 09:49	@ 10:13	@ 10:19	@ 09:10	@ 09:50
Lab Code	CASO-9459	CASO-9460	CASO-9461	CASO-9462	CASO-9463	CASO-9464
Isotope	Concentration (pCi/L)					
H-3	< 165	< 165	< 171	< 171	< 171	< 171
Isotope	Concentration (pCi/g)					
K-40	14.56 ± 0.79	14.02 ± 0.72	12.50 ± 0.83	12.35 ± 0.70	15.11 ± 0.93	13.02 ± 0.76
Mn-54	< 0.02	< 0.02	< 0.03	< 0.02	< 0.03	< 0.02
Fe-59	< 0.05	< 0.05	< 0.04	< 0.03	< 0.05	< 0.05
Co-58	< 0.02	< 0.01	< 0.02	< 0.02	< 0.03	< 0.03
Co-60	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02	< 0.03
Zr-Nb-95	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.03
Cs-134	< 0.02	< 0.02	< 0.03	< 0.02	< 0.04	< 0.03
Cs-137	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ba-La-140	< 0.02	< 0.01	< 0.03	< 0.03	< 0.07	< 0.02

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-five soil samples.

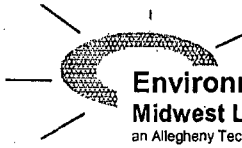
Sample Description	CA-SOL-MH-2 Sta 69+45 45' RT 19-21'	CA-SOL-MH-2 Sta 69+45 45' RT 4- 6'	CA-SOL-MH-2 Sta 69+45 45' RT 24-26'	CA-SOL-MH-2 Sta 73+94 100' RT 4-6'	CA-SOL-MH-2 Sta 73+94 100' RT 9-11'	CA-SOL-MH-2 Sta 73+94 100' RT 14-16'
Date Collected	12-28-06	12-28-06	12-28-06	12-28-06	12-28-06	12-28-06
Time Collected	10:00	@ 09:20	@ 10:15	@ 12:34	@ 12:44	@ 12:54
Lab Code	CASO-9465	CASO-9466	CASO-9467	CASO-9468	CASO-9469	CASO-9470
Isotope	Concentration (pCi/L)					
H-3	< 171	< 171	< 171	< 171	< 171	< 171
Isotope	Concentration (pCi/g)					
K-40	12.00 ± 0.84	15.99 ± 0.78	11.48 ± 0.76	13.47 ± 0.98	13.34 ± 0.70	12.85 ± 0.62
Mn-54	< 0.03	< 0.02	< 0.02	< 0.04	< 0.02	< 0.02
Fe-59	< 0.07	< 0.04	< 0.07	< 0.06	< 0.05	< 0.04
Co-58	< 0.02	< 0.02	< 0.02	< 0.03	< 0.01	< 0.02
Co-60	< 0.02	< 0.03	< 0.03	< 0.04	< 0.01	< 0.02
Zr-Nb-95	< 0.02	< 0.03	< 0.02	< 0.04	< 0.01	< 0.01
Cs-134	< 0.03	< 0.02	< 0.03	< 0.05	< 0.01	< 0.02
Cs-137	< 0.03	< 0.02	< 0.02	< 0.03	< 0.01	< 0.01
Ba-La-140	< 0.03	< 0.01	< 0.02	< 0.05	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-five soil samples.

Sample Description	CA-SOL-MH-2 Sta 73+94 100' RT 19- 21'	CA-SOL-MH-2 Sta 73+94 100' RT 24-26'
Date Collected	12-28-06	12-28-06
Time Collected	@ 13:02	@ 13:09
Lab Code	CASO-9471	CASO-9472
Isotope	Concentration (pCi/L)	
H-3	< 171	< 171
Isotope	Concentration (pCi/g)	
K-40	11.43 ± 0.52	11.64 ± 0.58
Mn-54	< 0.01	< 0.01
Fe-59	< 0.02	< 0.03
Co-58	< 0.01	< 0.01
Co-60	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.01
Cs-134	< 0.01	< 0.01
Cs-137	< 0.01	< 0.01
Ba-La-140	< 0.03	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

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Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-312  
DATE: 01-25-2007  
SAMPLES RECEIVED: 01-17-2007  
PURCHASE ORDER NO.: 139754

Dear Mr. Graham,

Enclosed are the results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,

Bionia Grob, M. S.  
Laboratory Manager

APPROVED BY

Tony Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Sample Description	CA-SOL-MH-86-5 Sta 2303+98 20' LT 4-6'	CA-SOL-MH-86-5 Sta 2303+98 20' LT 9-11'	CA-SOL-MH-86-5 Sta 2303+98 20' LT 14- 16'	CA-SOL-MH-86-5 Sta 2303+98 20' LT 19-21'	CA-SOL-MH-86-5 Sta 2303+98 20' LT 24-26'	CA-SOL-MH-86-5 Sta 2303+98 20' LT 29-31'
Date Collected	01-11-07	01-11-07	01-11-07	01-11-07	01-11-07	01-11-07
Time Collected	@ 11:42	@ 12:02	@ 12:30	@ 13:02	@ 13:22	@ 13:49
Lab Code	CASO-245	CASO-246	CASO-247	CASO-248	CASO-249	CASO-250
Isotope	Concentration (pCi/L)					
H-3	< 167	< 167	< 167	< 167	< 167	< 167
Isotope	Concentration (pCi/g)					
K-40	6.20 ± 0.48	6.88 ± 0.43	7.04 ± 0.4	5.49 ± 0.4	7.57 ± 0.6	8.22 ± 0.51
Mn-54	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fe-59	< 0.01	< 0.01	< 0.02	< 0.01	< 0.04	< 0.03
Co-58	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02
Co-60	< 0.01	< 0.01	< 0.01	< 0.03	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02
Cs-134	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02
Cs-137	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02
Ba-La-140	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.



Table 1. Results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Sample Description	CA-SOL-MH-86-5 Sta 2303+98 20' LT 29-31'	CA-SOL-Between MH-9B & 10A North 3.5-5.5'	CA-SOL-Between MH-9B & 10A South 3.5-5.5'	CA-SOL-Between MH-9B & 10A Central 3.5-5.5'	CA-SOL-MH-86-6 Sta 2294+30 35'RT 4- 6'	CA-SOL-MH-86-6 Sta 2294+30 35'RT 9-11'
Date Collected	01-11-07	01-09-07	01-09-07	01-09-07	01-10-07	01-10-07
Time Collected	@ 13:49	@ 09:15	@ 13:15	@ 11:42	@ 10:37	@ 10:47
Lab Code	CASO-251	CASO-252	CASO-253	CASO-254	CASO-255	CASO-256
<b>Isotope</b>	<b>Concentration (pCi/L)</b>					
H-3	< 167	< 167	< 167	< 167	< 167	< 171
<b>Isotope</b>	<b>Concentration (pCi/g)</b>					
K-40	8.36 ± 0.56	6.88 ± 0.44	6.90 ± 0.45	7.32 ± 0.46	12.01 ± 0.57	6.98 ± 0.44
Mn-54	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02
Fe-59	< 0.03	< 0.01	< 0.02	< 0.03	< 0.02	< 0.03
Co-58	< 0.02	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01
Co-60	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.03	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02
Cs-134	< 0.03	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02
Cs-137	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02	< 0.01
Ba-La-140	< 0.03	< 0.01	< 0.01	< 0.02	< 0.02	< 0.04

\* Denotes a duplicate.

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in sixteen soil samples.

Sample Description	CA-SOL-MH-86-6 Sta 2294+30 35'RT 14-16'	CA-SOL-MH-86-6 Sta 2294+30 35'RT 19-21'	CA-SOL-MH-86-6 Sta 2294+30 35'RT 24-26'	CA-SOL-MH-86-6 Sta 2294+30 35'RT 29-31'	CA-SOL-MH-86-6 Sta 2294+30 35'RT 34-35.5'
Date Collected	01-10-07	01-10-07	01-10-07	01-10-07	01-10-07
Time Collected	@ 10:58	@ 11:14	@ 11:29	@ 12:03	@ 12:34
Lab Code	CASO-257	CASO-258	CASO-259	CASO-260	CASO-261
Isotope	Concentration (pCi/L)				
H-3	1,616 ± 145	< 171	< 171	< 171	< 171
Isotope	Concentration (pCi/g)				
K-40	10.12 ± 0.52	6.05 ± 0.39	7.91 ± 0.53	8.01 ± 0.55	9.78 ± 0.51
Mn-54	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fe-59	< 0.03	< 0.03	< 0.04	< 0.03	< 0.02
Co-58	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01
Co-60	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01
Zr-Nb-95	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02
Cs-134	< 0.02	< 0.03	< 0.02	< 0.02	< 0.01
Cs-137	0.03 ± 0.02	< 0.01	< 0.01	< 0.01	< 0.02
Ba-La-140	< 0.01	< 0.02	< 0.01	< 0.02	< 0.03

The error given is the probable counting error at the 95% confidence level. Less than (<), value is based on a 4.66 sigma counting error for the background sample.



**Environmental, Inc.**  
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an Allegheny Technologies Co.

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Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-326-1  
DATE: 3/6/2007  
SAMPLES RECEIVED: 2/14/2007  
PURCHASE ORDER NO.: 139754

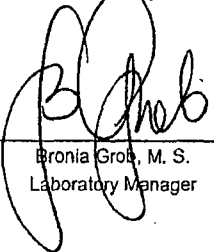
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Dear Mr. Graham,

Enclosed are results of the analyses for tritium and gamma-emitting isotopes for fifteen soil samples.  
(Table 1 through 3).

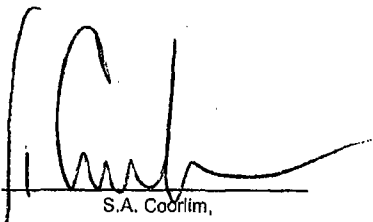
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



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Bronia Grob, M. S.  
Laboratory Manager



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S.A. Coorim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in six soil samples.

Sample Description	CA-SOL- Dock Haul Road Sta 19 + 35 27' LT 0-5'	CA-SOL- Dock Haul Road Sta 19 + 35 27' LT 5-10'	CA-SOL- Dock Haul Road Sta 19 + 35 27' LT 10-15'	CA-SOL- Dock Haul Road Sta 19 + 35 27' LT 15-20'	CA-SOL- Dock Haul Road Sta 19 + 35 27' LT 20-25'	CA-SOL- Dock Haul Road Sta 19 + 35 27' LT 25-30'
Date Collected	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007
Time Collected	12:37	12:47	12:55	13:05	13:13	13:26
Lab Code	CASO-725	CASO-726	CASO-727	CASO-728	CASO-729	CASO-730
Isotope	Concentration (pCi/L)					
H-3	< 166	< 166	< 166	< 166	< 166	657 ± 113
Isotope	Concentration (pCi/g)					
K-40	12.42 ± 0.61	15.15 ± 1.03	13.25 ± 0.65	11.69 ± 0.57	12.54 ± 0.59	12.31 ± 0.57
Mn-54	< 0.019	< 0.026	< 0.019	< 0.019	< 0.019	< 0.017
Fe-59	< 0.026	< 0.071	< 0.034	< 0.026	< 0.034	< 0.031
Co-58	< 0.019	< 0.028	< 0.021	< 0.012	< 0.006	< 0.013
Co-60	< 0.013	< 0.024	< 0.005	< 0.010	< 0.014	< 0.015
Zr-Nb-95	< 0.011	< 0.046	< 0.015	< 0.012	< 0.016	< 0.014
Cs-134	< 0.015	< 0.049	< 0.012	< 0.015	< 0.012	< 0.014
Cs-137	< 0.021	< 0.025	< 0.015	< 0.010	< 0.009	< 0.012
Ba-La-140	< 0.024	< 0.039	< 0.008	< 0.008	< 0.007	< 0.007

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 2. Results of the analyses for tritium and gamma-emitting isotopes in four soil samples.

Sample Description	CA-SOL-MH-2 Sta 73 + 70 75' LT 0-5'	CA-SOL-MH-2 Sta 73 + 70 75' LT 5-10'	CA-SOL-MH-2 Sta 73 + 70 75' LT 10-15'	CA-SOL-MH-2 Sta 73 + 70 75' LT 15-20'
Date Collected	2/7/2007	2/7/2007	2/7/2007	2/7/2007
Time Collected	13:47	13:55	13:59	14:08
Lab Code	CASO-731	CASO-732	CASO-733	CASO-734
Isotope	Concentration (pCi/L)			
H-3	< 167	< 167	< 167	< 167
Isotope	Concentration (pCi/g)			
K-40	12.29 ± 0.63	12.94 ± 0.84	13.39 ± 0.66	12.86 ± 0.64
Mn-54	< 0.019	< 0.024	< 0.018	< 0.019
Fe-59	< 0.038	< 0.065	< 0.046	< 0.027
Co-58	< 0.020	< 0.025	< 0.015	< 0.015
Co-60	< 0.008	< 0.036	< 0.012	< 0.009
Zr-Nb-95	< 0.014	< 0.024	< 0.015	< 0.015
Cs-134	< 0.017	< 0.040	< 0.014	< 0.013
Cs-137	< 0.017	< 0.034	< 0.013	< 0.011
Ba-La-140	< 0.014	< 0.053	< 0.014	< 0.017

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 3. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL-MH-2 Sta 73 + 47 69' LT 0-5'	CA-SOL-MH-2 Sta 73 + 47 69' LT 5-10'	CA-SOL-MH-2 Sta 73 + 47 69' LT 10-15'	CA-SOL-MH-2 Sta 73 + 47 69' LT 15-20'	CA-SOL-MH-2 Sta 73 + 47 69' LT 20-25'
Date Collected	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007
Time Collected	14:29	14:33	14:41	14:47	14:54
Lab Code	CASO-735	CASO-736	CASO-737	CASO-738	CASO-739
Isotope	Concentration (pCi/L)				
H-3	< 167	< 167	< 167	< 167	< 167
Isotope	Concentration (pCi/g)				
K-40	11.07 ± 0.54	12.26 ± 0.58	13.28 ± 0.65	12.65 ± 0.60	11.83 ± 0.54
Mn-54	< 0.018	< 0.014	< 0.017	< 0.019	< 0.017
Fe-59	< 0.020	< 0.017	< 0.026	< 0.017	< 0.020
Co-58	< 0.010	< 0.014	< 0.017	< 0.015	< 0.012
Co-60	< 0.013	< 0.012	< 0.014	< 0.008	< 0.012
Zr-Nb-95	< 0.015	< 0.024	< 0.011	< 0.012	< 0.013
Cs-134	< 0.015	< 0.016	< 0.014	< 0.012	< 0.010
Cs-137	< 0.015	< 0.013	< 0.018	< 0.014	< 0.010
Ba-La-140	< 0.008	< 0.008	< 0.018	< 0.013	< 0.012

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.



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LABORATORY REPORT NO. 8036-100-326-2  
DATE: 3/8/2007  
SAMPLES RECEIVED: 2/14/2007  
PURCHASE ORDER NO.: 139754

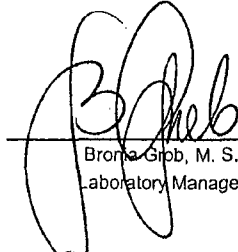
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Dear Mr. Graham,

Enclosed are results of the analyses for tritium and gamma-emitting isotopes for fifty-six soil samples.  
(Table 4 through 16).

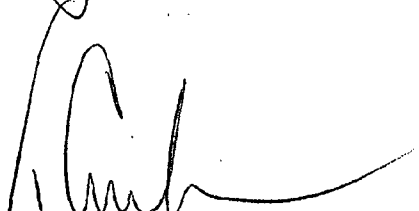
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



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Bronie Gribb, M. S.  
Laboratory Manager



---

S.A. Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 4. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL (MH-2) STA 72+82 70` LT 0-5`	CA-SOL (MH-2) STA 72+82 70` LT 5-10`	CA-SOL (MH-2) STA 72+82 70` LT 10-15`	CA-SOL (MH-2) STA 72+82 70` LT 10-15`	CA-SOL (MH-2) STA 72+82 70` LT 15-20`	CA-SOL (MH-2) STA 72+82 70` LT 20-25`
Date Collected	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007
Time Collected	15:25	15:33	15:45	15:45	15:54	15:59
Lab Code	CASO-740	CASO-741	CASO-742	CASO-743 duplicate of CASO-742	CASO-744	CASO-745
Isotope	Concentration (pCi/L)					
H-3	< 162	< 181	< 162	< 162	< 162	238 ± 91
Isotope	Concentration (pCi/g)					
K-40	12.61 ± 0.89	12.35 ± 0.59	14.60 ± 0.66	14.11 ± 0.68	13.09 ± 0.93	12.20 ± 0.59
Mn-54	< 0.033	< 0.017	< 0.022	< 0.020	< 0.036	< 0.018
Fe-59	< 0.052	< 0.016	< 0.040	< 0.045	< 0.050	< 0.021
Co-58	< 0.022	< 0.019	< 0.023	< 0.017	< 0.023	< 0.014
Co-60	< 0.016	< 0.007	< 0.016	< 0.013	< 0.026	< 0.018
Zr-Nb-95	< 0.020	< 0.007	< 0.013	< 0.019	< 0.025	< 0.015
Cs-134	< 0.035	< 0.012	< 0.026	< 0.013	< 0.042	< 0.012
Cs-137	< 0.028	< 0.015	< 0.019	< 0.007	< 0.028	< 0.008
Ba-La-140	< 0.036	< 0.008	< 0.027	< 0.009	< 0.038	< 0.010

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.



Table 5. Results of the analyses for tritium and gamma-emitting isotopes in six soil samples.

Sample Description	CA-SOL (MH-2) STA 72+80 25' LT 0-5'	CA-SOL (MH-2) STA 72+80 30' LT 0-5'	CA-SOL (MH-2) STA 72+80 30' LT 5-10'	CA-SOL (MH-2) STA 72+80 30' LT 10-15'	CA-SOL (MH-2) STA 72+80 30' LT 15-20'	CA-SOL (MH-2) STA 72+80 30' LT 20-25'
Date Collected	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007
Time Collected	16:13	16:17	16:26	16:33	16:56	17:03
Lab Code	CASO-746	CASO-747	CASO-748	CASO-749	CASO-750	CASO-751
Isotope	Concentration (pCi/L)					
H-3	< 181	< 162	< 165	< 165	< 162	< 181
Isotope	Concentration (pCi/g)					
K-40	12.87 ± 0.63	11.86 ± 0.79	12.04 ± 0.61	14.18 ± 1.02	13.78 ± 0.67	10.77 ± 0.71
Mn-54	< 0.020	< 0.023	< 0.018	< 0.031	< 0.016	< 0.016
Fe-59	< 0.036	< 0.070	< 0.016	< 0.072	< 0.029	< 0.040
Co-58	< 0.016	< 0.027	< 0.007	< 0.031	< 0.016	< 0.018
Co-60	< 0.013	< 0.024	< 0.012	< 0.022	< 0.017	< 0.016
Zr-Nb-95	< 0.020	< 0.029	< 0.018	< 0.023	< 0.011	< 0.022
Cs-134	< 0.017	< 0.036	< 0.012	< 0.041	< 0.014	< 0.029
Cs-137	< 0.021	< 0.033	< 0.015	< 0.020	< 0.017	< 0.020
Ba-La-140	< 0.024	< 0.051	< 0.016	< 0.036	< 0.022	< 0.032

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 6. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL (MH-2) STA 73+57 57' RT 0-5'	CA-SOL (MH-2) STA 73+57 57' RT 5-10'	CA-SOL (MH-2) STA 73+57 57' RT 10-15'	CA-SOL (MH-2) STA 73+57 57' RT 15-20'	CA-SOL (MH-2) STA 73+57 57' RT 20-25'
Date Collected	2/7/2007	2/7/2007	2/7/2007	2/7/2007	2/7/2007
Time Collected	17:31	17:36	17:46	17:57	18:02
Lab Code	CASO-752	CASO-753	CASO-754	CASO-755	CASO-756
Isotope	Concentration (pCi/L)				
H-3	497 ± 108	< 167	< 167	< 168	229 ± 97
Isotope	Concentration (pCi/g)				
K-40	12.15 ± 0.61	11.99 ± 0.59	13.09 ± 0.60	11.84 ± 0.57	12.04 ± 0.61
Mn-54	< 0.019	< 0.021	< 0.018	< 0.017	< 0.017
Fe-59	< 0.037	< 0.031	< 0.029	< 0.017	< 0.015
Co-58	< 0.016	< 0.017	< 0.013	< 0.015	< 0.015
Co-60	< 0.015	< 0.012	< 0.009	< 0.010	< 0.011
Zr-Nb-95	< 0.008	< 0.015	< 0.011	< 0.010	< 0.017
Cs-134	< 0.015	< 0.012	< 0.013	< 0.013	< 0.014
Cs-137	< 0.016	< 0.011	< 0.021	< 0.013	< 0.014
Ba-La-140	< 0.014	< 0.031	< 0.009	< 0.013	< 0.015

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 7. Results of the analyses for tritium and gamma-emitting isotopes in three soil samples.

Sample Description	CA-SOL (MH-3A) STA 75+82 26' RT 0-5'	CA-SOL (MH-3A) STA 75+82 26' RT 5-10'	CA-SOL (MH-3A) STA 75+82 26' RT 10-15'
Date Collected	2/8/2007	2/8/2007	2/8/2007
Time Collected	9:37	9:45	9:52
Lab Code	CASO-757	CASO-758	CASO-759
Isotope	Concentration (pCi/L)		
H-3	< 181	< 167	< 181
Isotope	Concentration (pCi/g)		
K-40	12.76 ± 0.73	13.78 ± 0.76	12.42 ± 0.69
Mn-54	< 0.027	< 0.025	< 0.023
Fe-59	< 0.049	< 0.069	< 0.052
Co-58	< 0.022	< 0.028	< 0.024
Co-60	< 0.015	< 0.012	< 0.025
Zr-Nb-95	< 0.022	< 0.025	< 0.023
Cs-134	< 0.034	< 0.037	< 0.032
Cs-137	0.086 ± 0.036	< 0.025	< 0.020
Ba-La-140	< 0.037	< 0.045	< 0.033

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 8. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL (MH-3A) STA 75+93 37' LT 0-5'	CA-SOL (MH-3A) STA 75+93 37' LT 5-10'	CA-SOL (MH-3A) STA 75+93 37' LT 10-15'	CA-SOL (MH-3A) STA 75+93 37' LT 15-20'	CA-SOL (MH-3A) STA 75+93 37' LT 15-20'	CA-SOL (MH-3A) STA 75+93 37' LT 20-25'
Date Collected	2/8/2007	2/8/2007	2/8/2007	2/8/2007	2/8/2007	2/8/2007
Time Collected	9:55	9:59	10:11	10:15	10:15	10:19
Lab Code	CASO-760	CASO-761	CASO-762	CASO-763	CASO-764 duplicate CASO-763	CASO-765
Isotope	Concentration (pCi/L)					
H-3	< 167	< 181	< 168	< 169	< 181	< 181
Isotope	Concentration (pCi/g)					
K-40	12.17 ± 0.60	11.89 ± 0.55	12.05 ± 0.59	10.72 ± 0.56	11.95 ± 0.55	10.76 ± 0.61
Mn-54	< 0.018	< 0.019	< 0.020	< 0.019	< 0.017	< 0.016
Fe-59	< 0.029	< 0.016	< 0.022	< 0.032	< 0.038	< 0.020
Co-58	< 0.017	< 0.015	< 0.018	< 0.015	< 0.018	< 0.014
Co-60	< 0.014	< 0.006	< 0.014	< 0.004	< 0.010	< 0.007
Zr-Nb-95	< 0.028	< 0.013	< 0.013	< 0.025	< 0.032	< 0.011
Cs-134	< 0.031	< 0.012	< 0.016	< 0.013	< 0.028	< 0.012
Cs-137	< 0.020	< 0.015	< 0.017	< 0.012	< 0.011	< 0.009
Ba-La-140	< 0.031	< 0.015	< 0.019	< 0.009	< 0.027	< 0.018

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 9. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL MH-3B TO MH-4 EAST STA 83+37 52' RT 0-5'	CA-SOL MH-3B TO MH-4 EAST STA 83+37 52' RT 5-10'	CA-SOL MH-3B TO MH-4 EAST STA 83+37 52' RT 10-15'	CA-SOL MH-3B TO MH-4 EAST STA 83+37 52' RT 15-20'	CA-SOL MH-3B TO MH-4 EAST STA 83+37 52' RT 20-25'
Date Collected	2/8/2007	2/8/2007	2/8/2007	2/8/2007	2/8/2007
Time Collected	10:42	10:45	10:52	10:58	11:05
Lab Code	CASO-766	CASO-767	CASO-768	CASO-769	CASO-770
Isotope	Concentration (pCi/L)				
H-3	< 167	< 167	< 167	< 167	< 167
Isotope	Concentration (pCi/g)				
K-40	13.02 ± 0.63	12.70 ± 0.58	11.98 ± 0.59	12.02 ± 0.56	13.38 ± 0.62
Mn-54	< 0.020	< 0.017	< 0.016	< 0.016	< 0.016
Fe-59	< 0.025	< 0.036	< 0.018	< 0.018	< 0.028
Co-58	< 0.016	< 0.017	< 0.014	< 0.013	< 0.014
Co-60	< 0.013	< 0.010	< 0.013	< 0.014	< 0.015
Zr-Nb-95	< 0.015	< 0.019	< 0.014	< 0.022	< 0.011
Cs-134	< 0.011	< 0.013	< 0.013	< 0.017	< 0.015
Cs-137	< 0.017	< 0.013	< 0.018	< 0.008	< 0.017
Ba-La-140	< 0.010	< 0.012	< 0.024	< 0.013	< 0.022

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 10. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL (MH-3B TO MH-4 WEST STA 95+09 63' RT 0-5'	CA-SOL (MH-3B TO MH-4 WEST STA 95+09 63' RT 5-10'	CA-SOL (MH-3B TO MH-4 WEST STA 95+09 63' RT 10-15'	CA-SOL (MH-3B TO MH-4 WEST STA 95+09 63' RT 15-20'	CA-SOL (MH-3B TO MH-4 WEST STA 95+09 63' RT 20-25'
Date Collected	2/8/2007	2/8/2007	2/8/2007	2/8/2007	2/8/2007
Time Collected	11:28	11:33	11:39	11:47	11:57
Lab Code	CASO-771	CASO-772	CASO-773	CASO-774	CASO-775
Isotope	Concentration (pCi/L)				
H-3	< 167	< 167	< 167	< 167	< 169
Isotope	Concentration (pCi/g)				
K-40	14.06 ± 0.65	12.02 ± 0.59	11.84 ± 0.56	12.82 ± 0.79	11.16 ± 0.57
Mn-54	< 0.021	< 0.019	< 0.017	< 0.030	< 0.021
Fe-59	< 0.038	< 0.025	< 0.022	< 0.062	< 0.047
Co-58	< 0.019	< 0.016	< 0.013	< 0.020	< 0.013
Co-60	< 0.006	< 0.005	< 0.011	< 0.019	< 0.012
Zr-Nb-95	< 0.021	< 0.023	< 0.015	< 0.034	< 0.010
Cs-134	< 0.013	< 0.011	< 0.013	< 0.036	< 0.011
Cs-137	< 0.022	< 0.011	< 0.014	< 0.023	< 0.008
Ba-La-140	< 0.011	< 0.024	< 0.021	< 0.024	< 0.015

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 11. Results of the analyses for tritium and gamma-emitting isotopes in four soil samples.

Sample Description	CA-SOL (MH-5) STA 104+30 100' LT 0-5'	CA-SOL (MH-5) STA 104+30 100' LT 5-10'	CA-SOL (MH-5) STA 104+30 100' LT 10-15'	CA-SOL (MH-5) STA 104+30 100' LT 15-20'
Date Collected	2/8/2007	2/8/2007	2/8/2007	2/8/2007
Time Collected	12:37	12:44	12:59	13:08
Lab Code	CASO-776	CASO-777	CASO-778	CASO-779
Isotope	Concentration (pCi/L)			
H-3	< 169	< 169	< 169	< 169
Isotope	Concentration (pCi/g)			
K-40	13.32 ± 0.63	13.03 ± 0.65	12.97 ± 0.59	12.53 ± 0.61
Mn-54	< 0.022	< 0.017	< 0.018	< 0.019
Fe-59	< 0.023	< 0.036	< 0.021	< 0.051
Co-58	< 0.014	< 0.017	< 0.015	< 0.016
Co-60	< 0.006	< 0.008	< 0.019	< 0.010
Zr-Nb-95	< 0.014	< 0.016	< 0.014	< 0.029
Cs-134	< 0.014	< 0.013	< 0.013	< 0.013
Cs-137	< 0.020	< 0.018	< 0.011	< 0.015
Ba-La-140	< 0.011	< 0.041	< 0.010	< 0.021

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 12. Results of the analyses for tritium and gamma-emitting isotopes in four soil samples.

Sample Description	CA-SOL (MH-5) STA 109+93 116' LT 0-5'	CA-SOL (MH-5) STA 109+93 116' LT 5-10'	CA-SOL (MH-5) STA 109+93 116' LT 10-15'	CA-SOL (MH-5) STA 109+93 116' LT 15-20'
Date Collected	2/8/2007	2/8/2007	2/8/2007	2/8/2007
Time Collected	13:15	13:15	13:33	13:47
Lab Code	CASO-780	CASO-781	CASO-782	CASO-783
Isotope	Concentration (pCi/L)			
H-3	< 169	< 169	< 169	< 169
Isotope	Concentration (pCi/g)			
K-40	12.51 ± 0.58	13.97 ± 0.68	13.10 ± 0.62	11.86 ± 0.61
Mn-54	< 0.019	< 0.020	< 0.022	< 0.020
Fe-59	< 0.028	< 0.024	< 0.025	< 0.039
Co-58	< 0.019	< 0.016	< 0.020	< 0.017
Co-60	< 0.013	< 0.014	< 0.009	< 0.008
Zr-Nb-95	< 0.012	< 0.019	< 0.017	< 0.019
Cs-134	< 0.013	< 0.014	< 0.014	< 0.014
Cs-137	< 0.014	< 0.016	< 0.015	< 0.013
Ba-La-140	< 0.017	< 0.032	< 0.019	< 0.027

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.



Table 13. Results of the analyses for tritium and gamma-emitting isotopes in four soil samples.

Sample Description	CA-SOL (MH-5) STA 105+39 100' LT 0-5'	CA-SOL (MH-5) STA 105+39 100' LT 0-5'	CA-SOL (MH-5) STA 105+39 100' LT 5-10'	CA-SOL (MH-5) STA 105+39 100' LT 10-15'	CA-SOL (MH-5) STA 105+39 100' LT 15-20'
Date Collected	2/8/2007	2/8/2007	2/8/2007	2/8/2007	2/8/2007
Time Collected	14:01	14:01	14:04	14:09	14:15
Lab Code	CASO-784	CASO-785 duplicate CASO-784	CASO-786	CASO-787	CASO-788
Isotope	Concentration (pCi/L)				
H-3	< 169	< 169	402 ± 100	2,890 ± 171	1,706 ± 142
Isotope	Concentration (pCi/g)				
K-40	13.28 ± 0.60	13.85 ± 0.83	12.62 ± 0.59	12.23 ± 0.57	11.54 ± 0.59
Mn-54	< 0.019	< 0.029	< 0.021	< 0.017	< 0.018
Fe-59	< 0.037	< 0.055	< 0.031	< 0.042	< 0.028
Co-58	< 0.015	< 0.022	< 0.021	< 0.016	< 0.021
Co-60	< 0.008	< 0.031	< 0.006	< 0.012	< 0.010
Zr-Nb-95	< 0.010	< 0.024	< 0.027	< 0.009	< 0.015
Cs-134	< 0.014	< 0.035	< 0.015	< 0.011	< 0.012
Cs-137	< 0.017	< 0.022	< 0.009	< 0.012	< 0.012
Ba-La-140	< 0.011	< 0.034	< 0.017	< 0.013	< 0.028

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 14. Results of the analyses for tritium and gamma-emitting isotopes in three soil samples.

Sample Description	CA-SOL (MH-6) STA 107+13 21` LT 0-5`	CA-SOL (MH-6) STA 107+13 21` LT 5-10`	CA-SOL (MH-6) STA 107+13 21` LT 10-15`
Date Collected	2/8/2007	2/8/2007	2/8/2007
Time Collected	14:52	14:59	15:09
Lab Code	CASO-789	CASO-790	CASO-791
Isotope	Concentration (pCi/L)		
H-3	< 169	< 169	< 169
Isotope	Concentration (pCi/g)		
K-40	14.26 ± 0.62	12.12 ± 0.58	13.76 ± 0.67
Mn-54	< 0.021	< 0.015	< 0.020
Fe-59	< 0.057	< 0.030	< 0.051
Co-58	< 0.021	< 0.014	< 0.020
Co-60	< 0.014	< 0.008	< 0.008
Zr-Nb-95	< 0.014	< 0.011	< 0.011
Cs-134	< 0.017	< 0.012	< 0.017
Cs-137	< 0.019	< 0.013	< 0.014
Ba-La-140	< 0.023	< 0.022	< 0.012

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 15. Results of the analyses for tritium and gamma-emitting isotopes in three soil samples.

Sample Description	CA-SOL (MH-6) STA 107108+45 28' RT 0-5'	CA-SOL (MH-6) STA 107108+45 28' RT 5-10'	CA-SOL (MH-6) STA 107108+45 28' RT 10-15'
Date Collected	2/8/2007	2/8/2007	2/8/2007
Time Collected	15:35	15:47	15:59
Lab Code	CASO-792	CASO-793	CASO-794
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	14.12 ± 0.64	13.18 ± 0.63	13.41 ± 0.65
Mn-54	< 0.017	< 0.020	< 0.015
Fe-59	< 0.028	< 0.045	< 0.021
Co-58	< 0.012	< 0.014	< 0.020
Co-60	< 0.009	< 0.010	< 0.015
Zr-Nb-95	< 0.010	< 0.015	< 0.015
Cs-134	< 0.018	< 0.012	< 0.014
Cs-137	0.056 ± 0.024	< 0.018	< 0.015
Ba-La-140	< 0.017	< 0.017	< 0.016

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 16. Results of the analyses for tritium and gamma-emitting isotopes in four soil samples.

Sample Description	CA-SOL (MH-12 TO MH-13) STA 266+95 10.5' RT 0-5'	CA-SOL (MH-12 TO MH-13) STA 266+95 10.5' RT 5-10'	CA-SOL (MH-12 TO MH-13) STA 266+95 10.5' RT 10-15'	CA-SOL (MH-12 TO MH-13) STA 266+95 10.5' RT 15-18.2'
Date Collected	2/9/2007	2/9/2007	2/9/2007	2/9/2007
Time Collected	9:15	9:22	9:29	9:44
Lab Code	CASO-795	CASO-796	CASO-797	CASO-798
Isotope	Concentration (pCi/L)			
H-3	< 163	< 157	< 157	< 157
Isotope	Concentration (pCi/g)			
K-40	7.93 ± 0.45	5.28 ± 0.42	6.00 ± 0.43	5.87 ± 0.49
Mn-54	< 0.020	< 0.020	< 0.016	< 0.021
Fe-59	< 0.017	< 0.030	< 0.011	< 0.020
Co-58	< 0.014	< 0.020	< 0.017	< 0.015
Co-60	< 0.016	< 0.011	< 0.006	< 0.009
Zr-Nb-95	< 0.014	< 0.013	< 0.028	< 0.010
Cs-134	< 0.010	< 0.017	< 0.012	< 0.015
Cs-137	0.040 ± 0.020	< 0.009	< 0.016	< 0.007
Ba-La-140	< 0.014	< 0.095	< 0.030	< 0.014

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.



700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 584-0700 • fax (847) 584-4517

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Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-326-4  
DATE: 3/21/2007  
SAMPLES RECEIVED: 2/14/2007  
PURCHASE ORDER NO.: 139754

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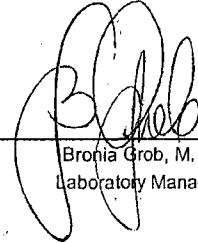
Dear Mr. Graham,

Enclosed are results of the analyses for tritium and gamma-emitting isotopes for twenty-three soil samples:  
(Table 22 through 26).

Enclosed are results of the re-analyses for tritium and gamma-emitting isotopes for one soil sample.  
(Table 1).

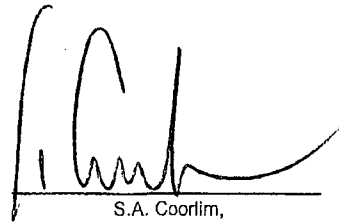
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



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Bronia Grob, M. S.  
Laboratory Manager



---

S.A. Coorlim,  
Quality Assurance

Table 22. Results of the analyses for tritium and gamma-emitting isotopes in four soil samples.

Sample Description	CA-SOL (MH-13) STA 270+60 42' LT 0-5'	CA-SOL (MH-13) STA 270+60 42' LT 5-10'	CA-SOL (MH-13) STA 270+60 42' LT 10-15'	CA-SOL (MH-13) STA 270+60 42' LT 15-20'
Date Collected	2/9/2007	2/9/2007	2/9/2007	2/9/2007
Time Collected	14:05	14:09	14:16	14:28
Lab Code	CASO-815	CASO-816	CASO-817	CASO-818
Isotope	Concentration (pCi/L)			
H-3	< 164	< 164	< 171	< 171
Isotope	Concentration (pCi/g)			
K-40	6.43 ± 0.41	9.11 ± 0.50	9.38 ± 0.54	8.25 ± 0.49
Mn-54	< 0.018	< 0.018	< 0.020	< 0.022
Fe-59	< 0.021	< 0.038	< 0.039	< 0.025
Co-58	< 0.014	< 0.011	< 0.020	< 0.019
Co-60	< 0.004	< 0.014	< 0.006	< 0.010
Zr-Nb-95	< 0.011	< 0.031	< 0.013	< 0.015
Cs-134	< 0.013	< 0.012	< 0.012	< 0.016
Cs-137	0.049 ± 0.022	< 0.016	< 0.019	< 0.019
Ba-La-140	< 0.033	< 0.025	< 0.021	< 0.022

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 23. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL (MH-86-2) STA 2320+70 20' RT 0-5'	CA-SOL (MH-86-2) STA 2320+70 20' RT 5-10'	CA-SOL (MH-86-2) STA 2320+70 20' RT 10-15'	CA-SOL (MH-86-2) STA 2320+70 20' RT 15-20'	CA-SOL (MH-86-2) STA 2320+70 20' RT 20-25'
Date Collected	2/9/2007	2/9/2007	2/9/2007	2/9/2007	2/9/2007
Time Collected	15:01	15:03	15:06	15:13	15:17
Lab Code	CASO-819	CASO-820	CASO-821	CASO-822	CASO-823
Isotope	Concentration (pCi/L)				
H-3	< 156	< 165	< 165	< 165	< 158
Isotope	Concentration (pCi/g)				
K-40	6.60 ± 0.45	6.93 ± 0.52	7.04 ± 0.47	6.27 ± 0.47	5.80 ± 0.48
Mn-54	< 0.019	< 0.021	< 0.024	< 0.023	< 0.022
Fe-59	< 0.020	< 0.040	< 0.019	< 0.027	< 0.050
Co-58	< 0.016	< 0.022	< 0.017	< 0.019	< 0.024
Co-60	< 0.008	< 0.012	< 0.007	< 0.015	< 0.007
Zr-Nb-95	< 0.031	< 0.021	< 0.027	< 0.023	< 0.028
Cs-134	< 0.015	< 0.012	< 0.011	< 0.013	< 0.014
Cs-137	0.031 ± 0.015	< 0.013	< 0.015	< 0.016	< 0.017
Ba-La-140	< 0.032	< 0.026	< 0.045	< 0.050	< 0.084

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 24. Results of the analyses for tritium and gamma-emitting isotopes in four soil samples.

Sample Description	CA-SOL (MH-86-4A) STA 2310+47.7 33' LT 0-5'	CA-SOL (MH-86-4A) STA 2310+47.7 33' LT 5-10'	CA-SOL (MH-86-4A) STA 2310+47.7 33' LT 10-15'	CA-SOL (MH-86-4A) STA 2310+47.7 33' LT 10-15'	CA-SOL (MH-86-4A) STA 2310+47.7 33' LT 15-20'
Date Collected	2/9/2007	2/9/2007	2/9/2007	2/9/2007	2/9/2007
Time Collected	15:22	15:24	15:27	15:27	15:29
Lab Code	CASO-824	CASO-825	CASO-826	CASO-827 duplicate of CASO-826	CASO-828
Isotope	Concentration (pCi/L)				
H-3	< 158	< 158	< 158	< 158	< 158
Isotope	Concentration (pCi/g)				
K-40	10.05 ± 0.62	8.95 ± 0.53	6.30 ± 0.46	6.67 ± 0.44	5.93 ± 0.50
Mn-54	< 0.023	< 0.023	< 0.016	< 0.015	< 0.016
Fe-59	< 0.046	< 0.051	< 0.043	< 0.026	< 0.032
Co-58	< 0.029	< 0.020	< 0.014	< 0.013	< 0.016
Co-60	< 0.007	< 0.013	< 0.007	< 0.010	< 0.008
Zr-Nb-95	< 0.025	< 0.027	< 0.015	< 0.017	< 0.025
Cs-134	< 0.015	< 0.018	< 0.013	< 0.013	< 0.015
Cs-137	< 0.022	< 0.008	< 0.010	< 0.015	< 0.013
Ba-La-140	< 0.099	< 0.041	< 0.023	< 0.040	< 0.046

The error given is the probable counting error at the 95% confidence level.  
 Less than (<), value is based on a 4.66 sigma counting error for the background sample.



Table 25. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

Sample Description	CA-SOL (MH-86-3) STA 2316+66.7 22' RT 0-5'	CA-SOL (MH-86-3) STA 2316+66.7 22' RT 5-10'	CA-SOL (MH-86-3) STA 2316+66.7 22' RT 10-15'	CA-SOL (MH-86-3) STA 2316+66.7 22' RT 15-20'	CA-SOL (MH-86-3) STA 2316+66.7 22' RT 20-25'
Date Collected	2/9/2007	2/9/2007	2/9/2007	2/9/2007	2/9/2007
Time Collected	15:35	15:39	15:41	15:44	15:46
Lab Code	CASO-829	CASO-830	CASO-831	CASO-832	CASO-833
Isotope	Concentration (pCi/L)				
H-3	< 155	< 158	< 158	< 158	< 158
Isotope	Concentration (pCi/g)				
K-40	5.02 ± 0.64	7.26 ± 0.45	8.85 ± 0.50	6.66 ± 0.43	5.79 ± 0.47
Mn-54	< 0.016	< 0.019	< 0.019	< 0.018	< 0.019
Fe-59	< 0.025	< 0.041	< 0.043	< 0.035	< 0.028
Co-58	< 0.016	< 0.008	< 0.016	< 0.023	< 0.019
Co-60	< 0.013	< 0.005	< 0.005	< 0.007	< 0.010
Zr-Nb-95	< 0.016	< 0.016	< 0.020	< 0.020	< 0.021
Cs-134	< 0.015	< 0.013	< 0.011	< 0.017	< 0.013
Cs-137	< 0.017	< 0.013	< 0.015	< 0.009	< 0.015
Ba-La-140	< 0.040	< 0.047	< 0.051	< 0.053	< 0.074

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 26. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

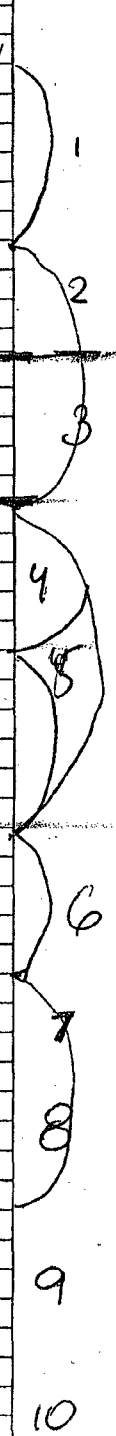
Sample Description	CA-SOL (MH-86-3) STA 2316+1.7 37' RT 0-5'	CA-SOL (MH-86-3) STA 2316+1.7 37' RT 5-10'	CA-SOL (MH-86-3) STA 2316+1.7 37' RT 10-15'	CA-SOL (MH-86-3) STA 2316+1.7 37' RT 15-20'	CA-SOL (MH-86-3) STA 2316+1.7 37' RT 20-25'
Date Collected	2/9/2007	2/9/2007	2/9/2007	2/9/2007	2/9/2007
Time Collected	15:46	15:46	15:55	15:57	15:59
Lab Code	CASO-834	CASO-835	CASO-836	CASO-837	CASO-838
Isotope	Concentration (pCi/L)				
H-3	< 158	< 158	< 158	< 158	< 158
Isotope	Concentration (pCi/g)				
K-40	8.60 ± 0.51	7.31 ± 0.46	10.88 ± 0.54	5.53 ± 0.41	6.83 ± 0.39
Mn-54	< 0.021	< 0.019	< 0.021	< 0.018	< 0.017
Fe-59	< 0.056	< 0.024	< 0.019	< 0.044	< 0.017
Co-58	< 0.022	< 0.020	< 0.016	< 0.017	< 0.016
Co-60	< 0.010	< 0.006	< 0.011	< 0.012	< 0.012
Zr-Nb-95	< 0.016	< 0.020	< 0.021	< 0.014	< 0.016
Cs-134	< 0.013	< 0.015	< 0.012	< 0.013	< 0.013
Cs-137	< 0.022	< 0.016	< 0.016	< 0.016	< 0.012
Ba-La-140	< 0.035	< 0.025	< 0.037	< 0.047	< 0.034

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Callaway Pipeline Soil Sampling		Required Analysis: H3 and Principal Gamma Emitters			
ID	Sample Description	Depth	Date	Time	Sampled By
A-1	CA-SOL-Sta 19+35 27' LT Dock Haul Road	0-5'	2/7/2007	12:37	JPT
A-2	CA-SOL-Sta 19+35 27' LT Dock Haul Road	5-10'	2/7/2007	12:47	JPT
A-3	CA-SOL-Sta 19+35 27' LT Dock Haul Road	10-15'	2/7/2007	12:55	JPT
A-4	CA-SOL-Sta 19+35 27' LT Dock Haul Road	15-20'	2/7/2007	13:05	JPT
A-5	CA-SOL-Sta 19+35 27' LT Dock Haul Road	20-25'	2/7/2007	13:13	JPT
A-6	CA-SOL-Sta 19+35 27' LT Dock Haul Road	25-30'	2/7/2007	13:26	JPT
B-1	CA-SOL-Sta 73+70 75' LT (MH-2)	0-5'	2/7/2007	13:47	JPT
B-2	CA-SOL-Sta 73+70 75' LT (MH-2)	5-10'	2/7/2007	13:55	JPT
B-3	CA-SOL-Sta 73+70 75' LT (MH-2)	10-15'	2/7/2007	13:59	JPT
B-4	CA-SOL-Sta 73+70 75' LT (MH-2)	15-20'	2/7/2007	14:08	JPT
C-1	CA-SOL-Sta 73+47 69' LT (MH-2)	0-5'	2/7/2007	14:29	JPT
C-2	CA-SOL-Sta 73+47 69' LT (MH-2)	5-10'	2/7/2007	14:33	JPT
C-3	CA-SOL-Sta 73+47 69' LT (MH-2)	10-15'	2/7/2007	14:41	JPT
C-4	CA-SOL-Sta 73+47 69' LT (MH-2)	15-20'	2/7/2007	14:47	JPT
C-5	CA-SOL-Sta 73+47 69' LT (MH-2)	20-25'	2/7/2007	14:54	JPT
D-1	CA-SOL-Sta 72+82 70' LT (MH-2)	0-5'	2/7/2007	15:25	JPT
D-2	CA-SOL-Sta 72+82 70' LT (MH-2)	5-10'	2/7/2007	15:33	JPT
D-3	CA-SOL-Sta 72+82 70' LT (MH-2)	10-15'	2/7/2007	15:45	JPT
D-4	CA-SOL-Sta 72+82 70' LT (MH-2)	15-20'	2/7/2007	15:54	JPT
D-5	CA-SOL-Sta 72+82 70' LT (MH-2)	20-25'	2/7/2007	15:59	JPT
E-1	CA-SOL-Sta 72+80 25' LT (MH-2)	0-5'	2/7/2007	16:13	JPT
F-1	CA-SOL-Sta 72+80 30' LT (MH-2)	0-5'	2/7/2007	16:17	JPT
F-2	CA-SOL-Sta 72+80 30' LT (MH-2)	5-10'	2/7/2007	16:26	JPT
F-3	CA-SOL-Sta 72+80 30' LT (MH-2)	10-15'	2/7/2007	16:33	JPT
F-4	CA-SOL-Sta 72+80 30' LT (MH-2)	15-20'	2/7/2007	16:56	JPT
F-5	CA-SOL-Sta 72+80 30' LT (MH-2)	20-25'	2/7/2007	17:03	JPT
G-1	CA-SOL-Sta 73+57 57' RT (MH-2)	0-5'	2/7/2007	17:31	JPT
G-2	CA-SOL-Sta 73+57 57' RT (MH-2)	5-10'	2/7/2007	17:36	JPT
G-3	CA-SOL-Sta 73+57 57' RT (MH-2)	10-15'	2/7/2007	17:46	JPT
G-4	CA-SOL-Sta 73+57 57' RT (MH-2)	15-20'	2/7/2007	17:57	JPT
G-5	CA-SOL-Sta 73+57 57' RT (MH-2)	20-25'	2/7/2007	18:02	JPT
H-1	CA-SOL-Sta 75+82 26' RT (MH-3A)	0-5'	2/8/2007	9:37	JPT
H-2	CA-SOL-Sta 75+82 26' RT (MH-3A)	5-10'	2/8/2007	9:45	JPT
H-3	CA-SOL-Sta 75+82 26' RT (MH-3A)	10-15'	2/8/2007	9:52	JPT
I-1	CA-SOL-Sta 75+93 37' LT (MH-3A)	0-5'	2/8/2007	9:55	JPT
I-2	CA-SOL-Sta 75+93 37' LT (MH-3A)	5-10'	2/8/2007	9:59	JPT
I-3	CA-SOL-Sta 75+93 37' LT (MH-3A)	10-15'	2/8/2007	10:11	JPT
I-4	CA-SOL-Sta 75+93 37' LT (MH-3A)	15-20'	2/8/2007	10:15	JPT
I-5	CA-SOL-Sta 75+93 37' LT (MH-3A)	20-25'	2/8/2007	10:19	JPT
J-1	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	0-5'	2/8/2007	10:42	JPT
J-2	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	5-10'	2/8/2007	10:45	JPT
J-3	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	10-15'	2/8/2007	10:52	JPT
J-4	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	15-20'	2/8/2007	10:58	JPT
J-5	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	20-25'	2/8/2007	11:05	JPT
K-1	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	0-5'	2/8/2007	11:28	JPT
K-2	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	5-10'	2/8/2007	11:33	JPT
K-3	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	10-15'	2/8/2007	11:39	JPT
K-4	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	15-20'	2/8/2007	11:47	JPT

FEB 14 2007



K-5	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	20-25'	2/8/2007	11:57	JPT	FEB
L-1	CA-SOL-Sta 104+30 100' LT (MH-5)	0-5'	2/8/2007	12:37	JPT	
L-2	CA-SOL-Sta 104+30 100' LT (MH-5)	5-10'	2/8/2007	12:44	JPT	
L-3	CA-SOL-Sta 104+30 100' LT (MH-5)	10-15'	2/8/2007	12:59	JPT	
L-4	CA-SOL-Sta 104+30 100' LT (MH-5)	15-20'	2/8/2007	13:08	JPT	
M-1	CA-SOL-Sta 109+93 116' LT (MH-5)	0-5'	2/8/2007	13:15	JPT	
M-2	CA-SOL-Sta 109+93 116' LT (MH-5)	5-10'	2/8/2007	13:26	JPT	
M-3	CA-SOL-Sta 109+93 116' LT (MH-5)	10-15'	2/8/2007	13:33	JPT	
M-4	CA-SOL-Sta 109+93 116' LT (MH-5)	15-20'	2/8/2007	13:47	JPT	
N-1	CA-SOL-Sta 105+39 100' LT (MH-5)	0-5'	2/8/2007	14:01	JPT	
N-2	CA-SOL-Sta 105+39 100' LT (MH-5)	5-10'	2/8/2007	14:04	JPT	
N-3	CA-SOL-Sta 105+39 100' LT (MH-5)	10-15'	2/8/2007	14:09	JPT	
N-4	CA-SOL-Sta 105+39 100' LT (MH-5)	15-20'	2/8/2007	14:15	JPT	
O-1	CA-SOL-Sta 107+13 21' LT (MH-6)	0-5'	2/8/2007	14:52	JPT	
O-2	CA-SOL-Sta 107+13 21' LT (MH-6)	5-10'	2/8/2007	14:59	JPT	
O-3	CA-SOL-Sta 107+13 21' LT (MH-6)	10-15'	2/8/2007	15:09	JPT	
P-1	CA-SOL-Sta 107108+45 28' RT (MH-6)	0-5'	2/8/2007	15:35	JPT	
P-2	CA-SOL-Sta 107108+45 28' RT (MH-6)	5-10'	2/8/2007	15:47	JPT	
P-3	CA-SOL-Sta 107108+45 28' RT (MH-6)	10-15'	2/8/2007	15:59	JPT	
Q-1	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	0-5'	2/9/2007	9:15	JPT	
Q-2	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	5-10'	2/9/2007	9:22	JPT	
Q-3	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	10-15'	2/9/2007	9:29	JPT	
Q-4	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	15-18.2	2/9/2007	9:44	JPT	
R-1	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	0-5'	2/9/2007	10:15	JPT	
R-2	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	5-10'	2/9/2007	10:26	JPT	
R-3	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	10-15'	2/9/2007	10:33	JPT	
S-1	CA-SOL-Sta 139+47 70' LT (MH-8)	0-5'	2/9/2007	10:59	JPT	
S-2	CA-SOL-Sta 139+47 70' LT (MH-8)	5-10'	2/9/2007	11:13	JPT	
S-3	CA-SOL-Sta 139+47 70' LT (MH-8)	10-15'	2/9/2007	11:28	JPT	
T-1	CA-SOL-Sta 138+76 75' LT (MH-8)	0-5'	2/9/2007	11:43	JPT	
T-2	CA-SOL-Sta 138+76 75' LT (MH-8)	5-10'	2/9/2007	11:53	JPT	
T-3	CA-SOL-Sta 138+76 75' LT (MH-8)	10-15'	2/9/2007	12:05	JPT	
U-1	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	0-5'	2/9/2007	12:42	JPT	
U-2	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	5-10'	2/9/2007	12:53	JPT	
U-3	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	10-15'	2/9/2007	12:58	JPT	
V-1	CA-SOL-Sta 270+60 39' RT (MH-13)	0-5'	2/9/2007	13:33	JPT	
V-2	CA-SOL-Sta 270+60 39' RT (MH-13)	5-10'	2/9/2007	13:42	JPT	
V-3	CA-SOL-Sta 270+60 39' RT (MH-13)	10-15'	2/9/2007	13:49	JPT	
W-1	CA-SOL-Sta 270+60 42' LT (MH-13)	0-5'	2/9/2007	14:05	JPT	
W-2	CA-SOL-Sta 270+60 42' LT (MH-13)	5-10'	2/9/2007	14:09	JPT	
W-3	CA-SOL-Sta 270+60 42' LT (MH-13)	10-15'	2/9/2007	14:16	JPT	
W-4	CA-SOL-Sta 270+60 42' LT (MH-13)	15-20'	2/9/2007	14:28	JPT	
X-1	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	0-5'	2/9/2007	15:01	JPT	
X-2	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	5-10'	2/9/2007	15:03	JPT	
X-3	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	10-15'	2/9/2007	15:06	JPT	
X-4	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	15-20'	2/9/2007	15:13	JPT	
X-5	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	20-25'	2/9/2007	15:17	JPT	
Y-1	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	0-5'	2/9/2007	15:22	JPT	
Y-2	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	5-10'	2/9/2007	15:24	JPT	
Y-3	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	10-15'	2/9/2007	15:27	JPT	
Y-4	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	15-20'	2/9/2007	15:29	JPT	
Z-1	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	0-5'	2/9/2007	15:35	JPT	

14<sup>10</sup> 2007

11

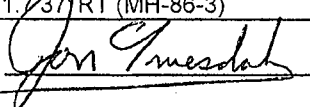
do

12

13

14

Z-2	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	5-10'	2/9/2007	15:39	JPT	FEB 14 2007
Z-3	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	10-15'	2/9/2007	15:41	JPT	
Z-4	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	15-20'	2/9/2007	15:44	JPT	
Z-5	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	20-25'	2/9/2007	15:46	JPT	
AA-1	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	0-5'	2/9/2007	15:51	JPT	
AA-2	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	5-10'	2/9/2007	15:53	JPT	
AA-3	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	10-15'	2/9/2007	15:55	JPT	
AA-4	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	15-20'	2/9/2007	15:57	JPT	
AA-5	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	20-25'	2/9/2007	15:59	JPT	

Submitted to lab by 

Plant Name: Callaway Plant  
 Contact Person: Chris Graham  
 Telephone: 573-676-8380  
 Fax: 573-676-4484

Purchase Order: 139754  
 Results To: Chris Graham  
 Address: Callaway Nuclear Plant  
 P.O. Box 620  
 Fulton, MO 65251



**Environmental, Inc.**  
**Midwest Laboratory**  
 an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310  
 ph. (847) 584-0700 • fax (847) 584-4517

Mr. Christopher C. Graham  
 Ameren UE  
 P.O. Box 620  
 Fulton, MO 65251

LABORATORY REPORT NO.: 8036-100-361  
 DATE: 09-06-2007  
 SAMPLES RECEIVED: 08-14-2007  
 PURCHASE ORDER NO.: 139754

Below are the results of the analyses for tritium on twenty-six soil samples.

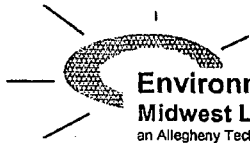
Sample ID	Sample Description	Lab Code	H-3 Concentration (pCi/L)	Collection Date
A-1	CA-SOL-Sta 140+78 159' LT (MH-9B)	CASO-5313	< 190	06-20-07
A-2	CA-SOL-Sta 140+78 159' LT (MH-9B)	CASO-5314	< 193	06-20-07
A-3	CA-SOL-Sta 140+78 159' LT (MH-9B)	CASO-5315	< 193	06-20-07
A-4	CA-SOL-Sta 140+78 159' LT (MH-9B)	CASO-5316	< 193	06-20-07
B-1	CA-SOL-Sta 140+58 102.5' RT (MH-8)	CASO-5317	< 193	06-20-07
B-2	CA-SOL-Sta 140+58 102.5' RT (MH-8)	CASO-5318	< 193	06-20-07
B-3	CA-SOL-Sta 140+58 102.5' RT (MH-8)	CASO-5319	< 193	06-20-07
B-4	CA-SOL-Sta 140+58 102.5' RT (MH-8)	CASO-5320	< 193	06-20-07
C-1	CA-SOL-Sta 137+85 62' LT (MH-8)	CASO-5321	< 190	06-21-07
C-2	CA-SOL-Sta 137+85 62' LT (MH-8)	CASO-5322	< 190	06-21-07
C-3	CA-SOL-Sta 137+85 62' LT (MH-8)	CASO-5323	< 190	06-21-07
D-1	CA-SOL-Sta 137+85 12' RT (MH-8)	CASO-5324	< 190	06-21-07
D-2	CA-SOL-Sta 137+85 12' RT (MH-8)	CASO-5325	< 193	06-21-07
D-3	CA-SOL-Sta 137+85 12' RT (MH-8)	CASO-5326	< 193	06-21-07
E-1	CA-SOL-Sta 104+64 60' LT (MH-4)	CASO-5327	< 193	06-21-07
E-2	CA-SOL-Sta 104+64 60' LT (MH-4)	CASO-5328	< 190	06-21-07
E-3	CA-SOL-Sta 104+64 60' LT (MH-4)	CASO-5329	< 192	06-21-07
E-4	CA-SOL-Sta 104+64 60' LT (MH-4)	CASO-5330	< 192	06-21-07
E-5	CA-SOL-Sta 104+64 60' LT (MH-4)	CASO-5331	< 192	06-21-07
E-5	CA-SOL-Sta 104+64 60' LT (MH-4)	CASO-5332(dup)	< 192	06-21-07
E-6	CA-SOL-Sta 104+64 60' LT (MH-4)	CASO-5333	< 190	06-21-07
F-1	CA-SOL-Sta 107+00 90' LT (MH-4)	CASO-5334	< 193	06-21-07
F-2	CA-SOL-Sta 107+00 90' LT (MH-4)	CASO-5335	< 190	06-21-07
F-3	CA-SOL-Sta 107+00 90' LT (MH-4)	CASO-5336	967 ± 136	06-21-07
F-4	CA-SOL-Sta 107+00 90' LT (MH-4)	CASO-5337	691 ± 126	06-21-07
F-5	CA-SOL-Sta 107+00 90' LT (MH-4)	CASO-5338	< 191	06-21-07
F-6	CA-SOL-Sta 107+00 90' LT (MH-4)	CASO-5339	< 191	06-21-07

The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,  
  
 Barbara Grob,  
 Laboratory Manager

APPROVED BY \_\_\_\_\_

Tony Coorlim,  
 Quality Assurance



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 564-0700 • fax (847) 564-4517

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

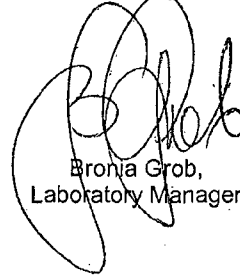
LABORATORY REPORT NO.: 8036-100-369  
DATE: 10-18-2007  
SAMPLES RECEIVED: 10-09-2007  
PURCHASE ORDER NO.: 139754

Below are the results of the analyses for tritium in two soil samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
RA-1	CASO-6792	< 146	09-27-07
RA-2	CASO-6793	< 146	09-27-07

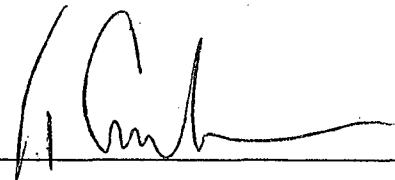
The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,



Bronja Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_



Tony Coorlim,  
Quality Assurance

# Terracon

RUSH TURNAROUND!!

Client Contact Name: Chris L. Segefred  
 Company Name: Terracon  
 Address: 3601 Mojave Court, Suite A  
 City, State, Zip: Columbia, MD 21042  
 Phone Number: 573-214-2677

Fax Number: 573-214-2714  
 E-Mail: c.segefred@terracon.com  
 Project Name: Ameren Radiological  
 Project Number: 0905715E  
 Purchase Order Number: \_\_\_\_\_

Project Due Date: \_\_\_\_\_  
 Project Comments: Ameren NE  
CALLAWAY PLANT  
 Sampler's Name (please print): Chris L. Segefred  
 Sampler's Signature: Chris L. Segefred

**FOR OFFICE USE ONLY:**  
 DELIVERY METHOD: \_\_\_\_\_  
 CUSTODY SEALS:  YES  NO  CONTACT  BROKEN  
 COOLANT LIQ:  BLUE ICE  NONE  
 COOLER TEMPERATURE: \_\_\_\_\_ °C  TEMPERATURE BLANK  COOLER  
 RECEIVING COMMENTS: \_\_\_\_\_

LAB NUMBER	Sample Number	Date	Title	Matrix
1	MW 013	10/08/07	9.43	GW
2	MW 014	10/8/07	1034	GW
3	MW 015	10/9/07	1120	GW
4	MW 016	10/8/07	1210	GW
5				
6	RA-1 (Sta. 232+ 25, 25' LT)	9/27/07	1606	Soil
7	RA-2 (Sta. 224+ 34, 23' LT)	9/27/07	1620	Soil
8				
9				
10				

Method # →		REQUIRED ANALYSES																		
Group # - compare to	Total # Containers	ANALYSES																		
		INCH	HNO <sub>3</sub>	HClOH	H <sub>2</sub> SO <sub>4</sub>	TSP	Asphalt Pk	Other:	Totals (H <sub>3</sub> )	GAMMA-SPEC										

**REQUIRED ANALYSES**

Please include any information that may be useful in the analysis of the sample such as expected concentrations, required detection limits, and method of collection.

**COMMENTS:**

Relinquished By: <u>Chris L. Segefred</u>	Date: <u>10/8/07</u>	Time: <u>15:00</u>	Received By: _____	Date: _____	Time: _____
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____





700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 584-0700 • fax (847) 584-4517

---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-370  
DATE: 11/20/2007  
SAMPLES RECEIVED: 10/18/2007  
PURCHASE ORDER NO.: 139754

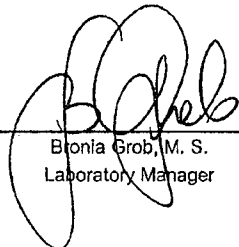
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Dear Mr. Graham,

Enclosed are results of the analyses for tritium on seventy-five soil samples.

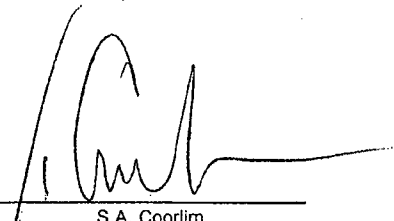
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



---

Bionia Grob, M. S.  
Laboratory Manager



---

S.A. Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium in seventy-five soil samples.

ID	Sample Description	Depth	Collection Date	Lab Code	Concentration (pCi/L) H-3			
A-1	Sta 24+82, 64' LT (W. of Dock Haul Road)	3-5'	9/28/2007	CASO-6944	< 147			
A-2	Sta 24+82, 64' LT (W. of Dock Haul Road)	8-10'	9/28/2007	CASO-6945	< 147			
A-3	Sta 24+82, 64' LT (W. of Dock Haul Road)	13-15'	9/28/2007	CASO-6946	< 147			
A-4	Sta 24+82, 64' LT (W. of Dock Haul Road)	18-20'	9/28/2007	CASO-6947	< 147			
A-5	Sta 24+82, 64' LT (W. of Dock Haul Road)	23-25'	9/28/2007	CASO-6948	< 147			
A-6	Sta 24+82, 64' LT (W. of Dock Haul Road)	28-30'	9/28/2007	CASO-6949	< 147			
A-7	Sta 24+82, 64' LT (W. of Dock Haul Road)	33-35'	9/28/2007	CASO-6950	< 147			
B-1	Sta 72+80, 105' RT (MH-2)	3-5'	9/28/2007	CASO-6951	< 147			
B-2	Sta 72+80, 105' RT (MH-2)	8-10'	9/28/2007	CASO-6952	< 147			
B-3	Sta 72+80, 105' RT (MH-2)	13-15'	9/28/2007	CASO-6953	< 147			
B-4	Sta 72+80, 105' RT (MH-2)	18-20'	9/28/2007	CASO-6954	< 147			
B-4	Sta 72+80, 105' RT (MH-2)	18-20'	9/28/2007	CASO-6955	< 147	duplicate-6954		
B-5	Sta 72+80, 105' RT (MH-2)	23-25'	9/28/2007	CASO-6956	< 147			
B-6	Sta 72+80, 105' RT (MH-2)	28-30'	9/28/2007	CASO-6957	< 147			
C-1	Sta 72+05, 40' LT (MH-2)	3-5'	10/1/2007	CASO-6958	< 147			
C-2	Sta 72+05, 40' LT (MH-2)	8-10'	10/1/2007	CASO-6959	< 147			
C-3	Sta 72+05, 40' LT (MH-2)	13-15'	10/1/2007	CASO-6960	< 147			
C-4	Sta 72+05, 40' LT (MH-2)	18-20'	10/1/2007	CASO-6961	< 147			
C-5	Sta 72+05, 40' LT (MH-2)	23-25'	10/1/2007	CASO-6962	< 147			
C-6	Sta 72+05, 40' LT (MH-2)	28-30'	10/1/2007	CASO-6963	< 147			
C-7	Sta 72+05, 40' LT (MH-2)	33-35'	10/1/2007	CASO-6964	< 147			
C-8	Sta 72+05, 40' LT (MH-2)	38-40'	10/1/2007	CASO-6965	< 147			
D-1	Sta 105+24, 200' LT (MH-4)	3-5'	10/1/2007	CASO-6989	< 147			
D-2	Sta 105+24, 200' LT (MH-4)	8-10'	10/1/2007	CASO-6990	< 147			
D-3	Sta 105+24, 200' LT (MH-4)	13-15'	10/1/2007	CASO-6991	1,046 ± 117	975 ± 117	reanalysis	
D-4	Sta 105+24, 200' LT (MH-4)	18-20'	10/1/2007	CASO-6992	616 ± 103	525 ± 101	reanalysis	
D-5	Sta 105+24, 200' LT (MH-4)	23-25'	10/1/2007	CASO-6993	< 147			

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium in seventy-five soil samples.

ID	Sample Description	Depth	Collection Date	Lab Code	Concentration (pCi/L) H-3	
E-1	Sta 140+24, 40' LT (MH-8)	3-5'	10/2/2007	CASO-6994	< 147	
E-2	Sta 140+24, 40' LT (MH-8)	8-10'	10/2/2007	CASO-6995	< 147	
E-3	Sta 140+24, 40' LT (MH-8)	13-15'	10/2/2007	CASO-6996	< 147	
E-3	Sta 140+24, 40' LT (MH-8)	13-15'	10/2/2007	CASO-6997	< 147	duplicate-6996
F-1	Sta 143+17, 40' RT (MH-9B)	3-5'	10/2/2007	CASO-6998	< 147	
F-2	Sta 143+17, 40' RT (MH-9B)	8-10'	10/2/2007	CASO-6999	< 147	
F-3	Sta 143+17, 40' RT (MH-9B)	13-15'	10/2/2007	CASO-7000	< 147	
G-1	Sta 2294+59, 80' LT (86-6)	3-5'	10/2/2007	CASO-7001	< 147	
G-2	Sta 2294+59, 80' LT (86-6)	8-10'	10/2/2007	CASO-7002	< 147	
G-3	Sta 2294+59, 80' LT (86-6)	13-15'	10/2/2007	CASO-7003	< 147	
G-4	Sta 2294+59, 80' LT (86-6)	18-20'	10/2/2007	CASO-7004	< 147	
G-5	Sta 2294+59, 80' LT (86-6)	23-25'	10/2/2007	CASO-7005	< 147	
H-1	Sta 2293+94, 50' RT (86-6)	3-5'	10/2/2007	CASO-7006	< 145	
H-2	Sta 2293+94, 50' RT (86-6)	8-10'	10/2/2007	CASO-7007	< 145	
H-3	Sta 2293+94, 50' RT (86-6)	13-15'	10/2/2007	CASO-7008	< 145	
H-4	Sta 2293+94, 50' RT (86-6)	18-20'	10/2/2007	CASO-7009	< 145	
H-5	Sta 2293+94, 50' RT (86-6)	23-25'	10/2/2007	CASO-7010	< 145	
I-1	MW-016	3-5'	10/3/2007	CASO-7011	< 145	
I-2	MW-016	8-10'	10/3/2007	CASO-7012	< 145	
I-3	MW-016	13-15'	10/3/2007	CASO-7013	< 145	
I-4	MW-016	18-20'	10/3/2007	CASO-7014	< 145	
I-5	MW-016	23-25'	10/3/2007	CASO-7015	< 145	
I-6	MW-016	28-30'	10/3/2007	CASO-7016	< 145	
I-7	MW-016	33-35'	10/3/2007	CASO-7017	< 145	
I-7	MW-016	33-35'	10/3/2007	CASO-7018	< 145	duplicate-7017
I-8	MW-016	38-40'	10/3/2007	CASO-7019	< 145	

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium in seventy-five soil samples.

ID	Sample Description	Depth	Collection Date	Lab Code	Concentration (pCi/L) H-3
J-1	Sta 2294+89, 45' RT (86-6)	3-5'	10/4/2007	CASO-7020	< 145
J-2	Sta 2294+89, 45' RT (86-6)	8-10'	10/4/2007	CASO-7021	< 145
J-3	Sta 2294+89, 45' RT (86-6)	13-15'	10/4/2007	CASO-7022	< 145
J-4	Sta 2294+89, 45' RT (86-6)	18-20'	10/4/2007	CASO-7023	< 145
J-5	Sta 2294+89, 45' RT (86-6)	23-25'	10/4/2007	CASO-7024	< 145
K-1	MH-86-1	3-5'	10/4/2007	CASO-7025	< 145
K-2	MH-86-1	8-10'	10/4/2007	CASO-7026	< 145
K-3	MH-86-1	13-15'	10/4/2007	CASO-7027	< 156
K-4	MH-86-1	18-20'	10/4/2007	CASO-7028	< 156
K-5	MH-86-1	23-25'	10/4/2007	CASO-7029	< 156
K-6	MH-86-1	28-29'	10/4/2007	CASO-7030	< 156
L-1	Sta 106+50, 200' LT (MH-4,5,6)	3-5'	10/12/2007	CASO-7031	< 156
L-2	Sta 106+50, 200' LT (MH-4,5,6)	8-10'	10/12/2007	CASO-7032	< 156
L-3	Sta 106+50, 200' LT (MH-4,5,6)	13-15'	10/12/2007	CASO-7033	< 156
L-4	Sta 106+50, 200' LT (MH-4,5,6)	18-20'	10/12/2007	CASO-7034	< 156
L-5	Sta 106+50, 200' LT (MH-4,5,6)	23-25'	10/12/2007	CASO-7035	339 ± 96
L-6	Sta 106+50, 200' LT (MH-4,5,6)	28-30'	10/12/2007	CASO-7036	< 156
A-GW	Sta 24+82, 64' LT (W. of Dock Haul Road)	NA	10/3/2007	CASO-7037	< 156
C-GW	Sta 72+05, 40' LT (MH-2)	NA	10/3/2007	CASO-7038	< 156
C-GW	Sta 72+05, 40' LT (MH-2)	NA	10/3/2007	CASO-7039	< 156
B-GW	Sta 72+80, 105' RT (MH-2)	NA	10/9/2007	CASO-7040	< 156
D-GW	Sta 105+24, 200' LT (MH-4)	NA	10/9/2007	CASO-7041	473 ± 101
E-GW	Sta 140+24, 40' LT (MH-8)	NA	10/9/2007	CASO-7042	< 156
F-GW	Sta 143+17, 40' RT (MH-9B)	NA	10/9/2007	CASO-7043	< 156
K-GW	MH-86-1	NA	10/12/2007	CASO-7044	< 156
L-GW	Sta 106+50, 200' LT (MH-4,5,6)	NA	10/12/2007	CASO-7045	< 156

duplicate-7038

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in five soil samples.

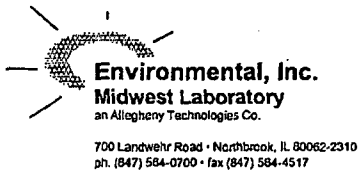
Sample Location	ca-sol-sta 105 + 24, 300 lt 3.-5'	ca-sol-sta 105 + 24, 300 lt 8-10'	ca-sol-sta 105 + 24, 300 lt 13-15'	ca-sol-sta 105 + 24, 300 lt 18-20'	ca-sol-sta 105 + 24, 300 lt 23-25'
Date Collected	11/9/2007	11/9/2007	11/9/2007	11/9/2007	11/9/2007
Time Collected	15:50	15:54	15:58	16:05	16:15
Lab Code	CASO-7808	CASO-7809	CASO-7810	CASO-7811	CASO-7813
Isotope	Concentration (pCi/L)				
H-3	< 144	< 144	< 144	644 ± 103	215 ± 87
Isotope	Concentration (pCi/g)				
K-40	13.57 ± 0.67	11.94 ± 0.55	12.56 ± 0.61	11.48 ± 0.52	11.99 ± 0.73
Mn-54	< 0.02	< 0.02	< 0.02	< 0.01	< 0.02
Fe-59	< 0.05	< 0.03	< 0.04	< 0.04	< 0.04
Co-58	< 0.02	< 0.01	< 0.02	< 0.01	< 0.02
Co-60	< 0.02	< 0.01	< 0.02	< 0.01	< 0.02
Zr-Nb-95	< 0.03	< 0.01	< 0.03	< 0.02	< 0.02
Cs-134	< 0.02	< 0.01	< 0.02	< 0.01	< 0.02
Cs-137	< 0.03	< 0.01	< 0.01	< 0.01	< 0.02
Ba-La-140	< 0.02	< 0.01	< 0.02	< 0.03	< 0.02

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 2. Results of the duplicate analyses for tritium and gamma-emitting isotopes in one soil samples.

Sample Location	ca-sol-sta 105 + 24, 300 lt 18-20'
Date Collected	11/9/2007
Time Collected	16:05
Lab Code	CASO-7812 duplicate CASO-7811
Isotope	Concentration (pCi/L)
H-3	535 ± 99
Isotope	Concentration (pCi/g)
K-40	11.00 ± 0.56
Mn-54	< 0.01
Fe-59	< 0.01
Co-58	< 0.01
Co-60	< 0.01
Zr-Nb-95	< 0.01
Cs-134	< 0.02
Cs-137	< 0.01
Ba-La-140	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.



---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-381-2  
DATE: 12/14/2007  
SAMPLES RECEIVED: 11/14/2007  
PURCHASE ORDER NO.: 139754

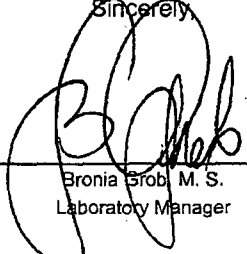
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Dear Mr. Graham,

Enclosed are results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

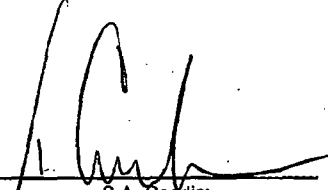
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



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Bronia Grob, M. S.  
Laboratory Manager



---

S.A. Coorin,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 1 ca-sol-sta 142 +77.5, 55 rt 3.-5'	9b inv 1 ca-sol-sta 142 +77.5, 55 rt	9b inv 1 ca-sol-sta 142 +77.5, 55 rt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	10:00	10:20	10:25
Lab Code	CASO-7814	CASO-7815	CASO-7816
Isotope	Concentration (pCi/L)		
H-3	< 144	< 157	< 144
isotope	Concentration (pCi/g)		
K-40	10.12 ± 0.53	9.58 ± 0.50	10.40 ± 0.48
Mn-54	< 0.02	< 0.02	< 0.01
Fe-59	< 0.03	< 0.03	< 0.03
Co-58	< 0.01	< 0.01	< 0.02
Co-60	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.02	< 0.02	< 0.02
Cs-134	< 0.01	< 0.02	< 0.01
Cs-137	0.07 ± 0.03	< 0.02	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.02

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.



Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 1 ca-sol-sta 142 +77.5, 55 rt 3.-5'	9b inv 1 ca-sol-sta 142 +77.5, 55 rt	9b inv 2 ca-sol-sta 142 +22.5, 23 rt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	10:35	10:47	11:25
Lab Code	CASO-7817	CASO-7818	CASO-7819
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	12.06 ± 0.64	8.59 ± 0.47	9.39 ± 0.52
Mn-54	< 0.02	< 0.01	< 0.02
Fe-59	< 0.03	< 0.01	< 0.01
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.01	< 0.00	< 0.02
Zr-Nb-95	< 0.02	< 0.01	< 0.02
Cs-134	< 0.02	< 0.01	< 0.02
Cs-137	< 0.02	0.06 ± 0.02	< 0.02
Ba-La-140	< 0.00	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 2 ca-sol-sta 142 +22.5, 23 rt 3.-5'	9b inv 2 ca-sol-sta 142 +22.5, 23 rt	9b inv 2 ca-sol-sta 142 +22.5, 23 rt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	11:28	11:35	11:46
Lab Code	CASO-7820	CASO-7821	CASO-7822
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 144
Isotope	Concentration (pCi/g)		
K-40	10.83 ± 0.80	7.76 ± 0.44	9.95 ± 0.49
Mn-54	< 0.03	< 0.01	< 0.02
Fe-59	< 0.08	< 0.02	< 0.03
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.02	< 0.01	< 0.01
Zr-Nb-95	< 0.03	< 0.01	< 0.03
Cs-134	< 0.02	< 0.01	< 0.02
Cs-137	< 0.03	< 0.01	< 0.01
Ba-La-140	< 0.04	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 2 ca-sol-sta 142 +22.5, 23 rt 3.-5'	9b inv 3 ca-sol-sta 142 +20.5, 75 lt	9b inv 3 ca-sol-sta 142 +20.5, 75 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	12:00	13:40	13:46
Lab Code	CASO-7824	CASO-7825	CASO-7826
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	5.76 ± 0.39	9.68 ± 0.51	9.55 ± 0.49
Mn-54	< 0.01	< 0.02	< 0.02
Fe-59	< 0.03	< 0.03	< 0.01
Co-58	< 0.01	< 0.01	< 0.02
Co-60	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.01	< 0.01
Cs-134	< 0.01	< 0.01	< 0.01
Cs-137	< 0.01	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 3 ca-sol-sta 142 +20.5, 75 lt 3.-5'	9b inv 3 ca-sol-sta 142 +20.5, 75 lt	9b inv 3 ca-sol-sta 142 +20.5, 75 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	13:52	13:57	14:13
Lab Code	CASO-7827	CASO-7828	CASO-7829
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	10.84 ± 0.52	9.08 ± 0.60	3.93 ± 0.31
Mn-54	< 0.02	< 0.02	< 0.01
Fe-59	< 0.03	< 0.04	< 0.02
Co-58	< 0.01	< 0.02	< 0.01
Co-60	< 0.01	< 0.02	< 0.01
Zr-Nb-95	< 0.01	< 0.03	< 0.01
Cs-134	< 0.01	< 0.01	< 0.01
Cs-137	< 0.01	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 4 ca-sol-sta 142 +97.5, 41 lt 3.-5'	9b inv 4 ca-sol-sta 142 +97.5, 41 lt	9b inv 4 ca-sol-sta 142 +97.5, 41 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	14:40	14:44	14:50
Lab Code	CASO-7830	CASO-7831	CASO-7832
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	11.02 ± 0.62	5.22 ± 0.39	11.69 ± 0.57
Mn-54	< 0.02	< 0.01	< 0.02
Fe-59	< 0.01	< 0.02	< 0.02
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.01	< 0.01
Cs-134	< 0.02	< 0.01	< 0.02
Cs-137	0.05 ± 0.02	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 4 ca-sol-sta 142 +97.5, 41 lt 3.-5'	9b inv 4 ca-sol-sta 142 +97.5, 41 lt	9b inv 4 ca-sol-sta 142 +97.5, 41 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	14:50	14:57	15:06
Lab Code	CASO-7833	CASO-7834	CASO-7835
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	11.87 ± 0.61	11.20 ± 0.57	5.40 ± 0.37
Mn-54	< 0.02	< 0.02	< 0.01
Fe-59	< 0.04	< 0.01	< 0.02
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.02	< 0.01	< 0.01
Zr-Nb-95	< 0.03	< 0.01	< 0.01
Cs-134	< 0.02	< 0.01	< 0.01
Cs-137	< 0.01	< 0.02	< 0.01
Ba-La-140	< 0.02	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

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---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-379  
DATE: 11/27/2007  
SAMPLES RECEIVED: 11/14/2007  
PURCHASE ORDER NO.: 139754

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Dear Mr. Graham,

Enclosed are results of the analyses for tritium and gamma-emitting isotopes in four water samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,

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Bronia Grob, M. S.  
Laboratory Manager

---

S.A. Coorlim,  
Quality Assurance

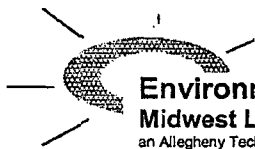
SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in four water samples.

Sample Location	9B INV 1 GW-A/B	9B INV 2 GW-A/B	9B INV 3 GW-A/B	9B INV 4 GW-A/B
Date Collected	11/9/2007	11/9/2007	11/9/2007	11/9/2007
Time Collected	11:00	12:20	14:20	15:20
Lab Code	CAXWW-7796	CAXWW-7797	CAXWW-7798	CAXWW-7799
Isotope	Concentration (pCi/L)			
H-3	< 172	< 172	< 172	< 172
Mn-54	< 4.1	< 4.4	< 5.5	< 3.3
Fe-59	< 10.2	< 9.1	< 9.1	< 9.9
Co-58	< 4.9	< 3.8	< 6.0	< 5.2
Co-60	< 4.2	< 2.8	< 5.8	< 4.1
Zr-Nb-95	< 7.2	< 4.5	< 5.2	< 6.0
Cs-134	< 6.6	< 4.4	< 6.3	< 5.4
Cs-137	< 5.8	< 4.4	< 4.6	< 5.7
Ba-La-140	< 12.1	< 6.7	< 12.2	< 9.8

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.





**Environmental, Inc.**  
**Midwest Laboratory**  
 an Allegheny Technologies Co.

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 ph. (847) 564-0700 • fax (847) 564-4517

Mr. Christopher C. Graham  
 Ameren UE  
 P.O. Box 620  
 Fulton, MO 65251

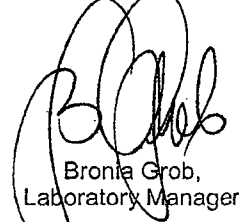
LABORATORY REPORT NO.: 8036-100-384  
 DATE: 12-19-2007  
 SAMPLES RECEIVED: 12-06-2007  
 PURCHASE ORDER NO.: 139754

Below are the results of the analyses for tritium in six soil samples and one water sample.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-SOL-STA 105+00, 400 LT, 0-5 ft	CASO-8232	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 5-10 ft	CASO-8233	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 10-15 ft	CASO-8234	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 15-20 ft	CASO-8235	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 20-25 ft	CASO-8236	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 25-28 ft	CASO-8237	< 144	12-04-07
CA-GW-STA 105+00, 400 LT	CAW-8238	< 188	12-03-07

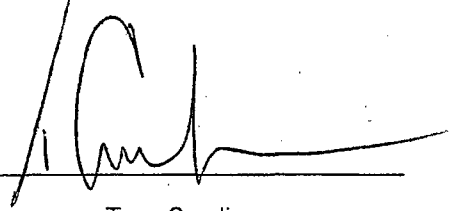
The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,



Bronia Grob,  
 Laboratory Manager

APPROVED BY \_\_\_\_\_



Tony Coorlim,  
 Quality Assurance



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

709 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 564-0700 • fax (847) 564-4517

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-297  
DATE: 12-11-2006  
SAMPLES RECEIVED: 12-07-2006  
PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on six ground water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-MH-5 sta 104+94 60' LT	CAW-8782	468 ± 104	12-05-06
CA-GWA-MH-5 sta 104+96 71' RT	CAW-8783	< 177	12-05-06
CA-GWA-MH-8 sta 138+86 137' LT	CAW-8784	< 177	12-05-06
CA-GWA-MH-8 sta 138+90 28' LT	CAW-8785	< 177	12-05-06
CA-GWA-MH-8 sta 140+20 90' RT	CAW-8786	343 ± 100	12-05-06
CA-GWA-MH-8 sta 139+17 62' RT	CAW-8787	< 177	12-05-06

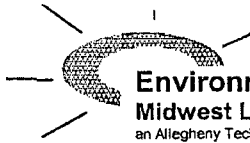
The error given is the probable counting error at 95% confidence level. The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,

Bionda Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_

Tony Coorlim,  
Quality Assurance



**Environmental, Inc.**  
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Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO. 65251


LABORATORY REPORT NO. 8036-100-296  
DATE: 12-11-2006  
SAMPLES RECEIVED: 12-04-2006  
PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on two ground water samples.

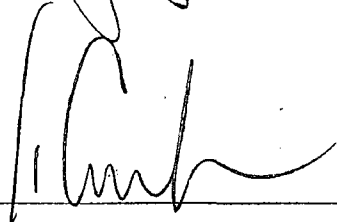
Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-Sta 141+24.5 56'LT	CAW-8726	211 ± 96	11-27-06
CA-GWA-Sta 142+06 88'RT	CAW-8727	191 ± 95	11-27-06

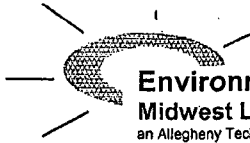
The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,

  
Bronia Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_

  
Tony Coorlim,  
Quality Assurance



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

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Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-298  
DATE: 01-11-2006  
SAMPLES RECEIVED: 12-07-2006  
PURCHASE ORDER NO.: 139754

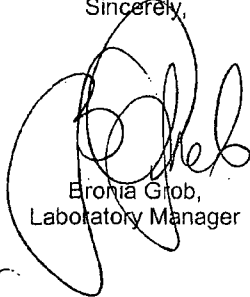
Below are the results of tritium analyses on six ground water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-MH-5 sta 104+94 60' LT	CAW-8782	468 ± 104 <sup>a</sup>	12-05-06
CA-GWA-MH-5 sta 104+96 71' RT	CAW-8783	< 177	12-05-06
CA-GWA-MH-8 sta 138+86 137' LT	CAW-8784	< 177	12-05-06
CA-GWA-MH-8 sta 138+90 28' LT	CAW-8785	< 177	12-05-06
CA-GWA-MH-8 sta 140+20 90' RT	CAW-8786	< 170	12-22-06
CA-GWA-MH-8 sta 139+17 62' RT	CAW-8787	< 177	12-05-06

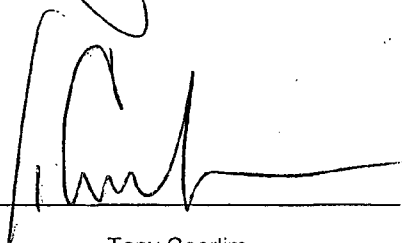
<sup>a</sup> Result of the re-analysis: 437 ± 105 pCi/L

The error given is the probable counting error at 95% confidence level. The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,

  
Eronia Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_

  
Tony Coorlim,  
Quality Assurance



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Ameren UE  
P.O. Box 620  
Fulton, MO 65251

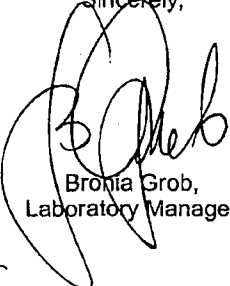
LABORATORY REPORT NO. 8036-100-301  
DATE: 12-21-2006  
SAMPLES RECEIVED: 12-12-2006  
PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on one ground water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-MW-6 sta 110+65 70' LT	CAWW-8863	< 176	12-08-06

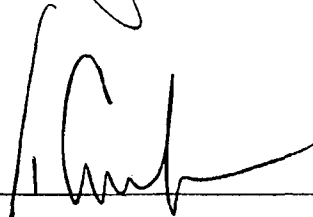
The error given is the probable counting error at 95% confidence level. The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,



Bronia Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_



Tony Coorlim,  
Quality Assurance



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Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-302  
DATE: 12-20-2006  
SAMPLES RECEIVED: 12-15-2006  
PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on five ground water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-MH-6 sta 107+62 110' LT	CAWW-8974	< 184	12-13-06
CA-GWA-MH-6 sta 108+03 100' RT	CAWW-8975	< 184	12-13-06
CA-GWA-MH-6B sta 109+39 63' RT	CAWW-8976	< 184	12-13-06
CA-GWA-MH-6B sta 109+85 67' LT	CAWW-8977	2,518 ± 171	12-13-06
CA-GWA-MH-6 sta 107+00 90' LT	CAWW-8978	< 184	12-13-06

The error given is the probable counting error at 95% confidence level. The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,

Bronia Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_

Tony Coorlim,  
Quality Assurance

SCHEDULE FOR SPECIAL SAMPLES

Date Received 12-15-06

Client Ameren

Preparer's Initials L.B.

Sample Type Well Water

Lab Code	
CAWW-8974	Collection Date: 12/13/2006 Location: CA-GWA-MH-6 STA 107 + 62 110'LT Requested Analysis: H-3
CAWW-8975	Collection Date: 12/13/2006 Location: CA-GWA-MH-6 STA 108 + 03 100'RT Requested Analysis: H-3
CAWW-8976	Collection Date: 12/13/2006 Location: CA-GWA-MH-6B STA 109 + 39 63'RT Requested Analysis: H-3
CAWW-8977	Collection Date: 12/13/2006 Location: CA-GWA-MH-6B STA 109 + 85 67'LT Requested Analysis: H-3
CAWW-8978	Collection Date: 12/13/2006 Location: CA-GWA-MH-6 STA 107 + 00 90'LT Requested Analysis: H-3

NO CHAIN OF CUSTODY

# Material Shipping Report

Return Number: 09182

Created By: PAINTER, WILLIAM D

on 12/14/2006 11:07:19

Closed By:

on

Supplier:

SRR: 184198

Carrier: UPS RED

PRO:

RO:

PO:

Rls: 0

BOM:

Ship Qty:

Pkg Type:

Collect Freight: No

Charges:

Weight: 9

Date Shipped:

Ship To Address: Environmental, Inc.; Midwest Laboratories

700 Landwehr Road

Northbrook, IL 60062

Bronia Grob

Reason for Return:

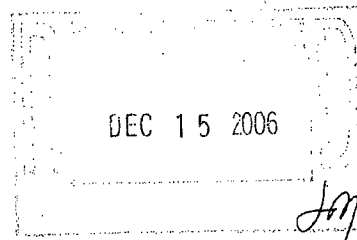
Authorization Nbr:

Mat Location:

### Return Report Problem Description

Line	Item	Unit	Description	Qty
1		EA	1 Cooling Tower Blow Down and 4 Manhole Water Samples to be shipped for testing	5

NO CHAIN OF CUSTODY  
12/15/06 JM







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P.O. Box 620  
Fulton, MO 65251

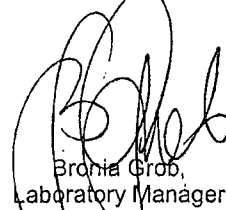
LABORATORY REPORT NO. 8036-100-296  
DATE: 12-11-2006  
SAMPLES RECEIVED: 12-04-2006  
PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on two ground water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-Sta 141+24.5 56'LT	CAW-8726	211 ± 96	11-27-06
CA-GWA-Sta 142+06 88'RT	CAW-8727	191 ± 95	11-27-06


The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,

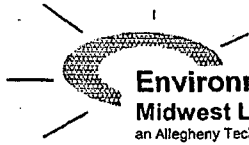


Bronia Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_



Tony Coorlim,  
Quality Assurance



**Environmental, Inc.**  
**Midwest Laboratory**  
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Christopher C. Graham,  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO.: 8036-100-327A  
DATE: 03-28-2007  
SAMPLES RECEIVED: 03-02-2007  
PURCHASE ORDER NO.: 139754

Below are the results of the analyses for strontium-90 and gamma-emitting isotopes on one water sample as per your request.

Location CA-GWA-Sta 105+39 100' LT (MH-5)

Collection Date 02-09-07

Lab Code CAW-1138

Isotope Concentration (pCi/L)

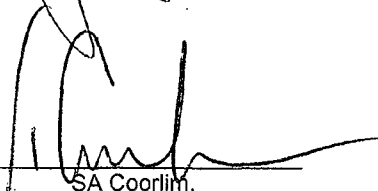
Sr-90	< 1.1
Mn-54	< 7.5
Fe-59	< 15.4
Co-58	< 8.9
Co-60	< 7.4
Zr-Nb-95	< 12.4
Cs-134	< 9.4
Cs-137	< 5.8
Ba-La-140	< 31.5

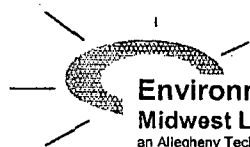
Less than (<), value is based on a 4.66 sigma counting error for the background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,

  
Bronia Grob,  
Laboratory Manager

APPROVED BY: \_\_\_\_\_

  
SA Coorlin,  
Quality Assurance



**Environmental, Inc.**  
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 Ameren UE  
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 Fulton, MO 65251

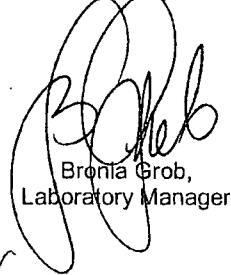
LABORATORY REPORT NO.: 8036-100-313  
 DATE: 01-25-2007  
 SAMPLES RECEIVED: 01-17-2007  
 PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on two water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-MH-2 sta 73+9 <sup>4</sup> / <sub>1</sub> 100' RT	CAW-262	< 143	01-03-07
CA-GWA-HWY 94/UE property boundary Sta 69+45 45' RT	CAW-263	< 143	01-03-07

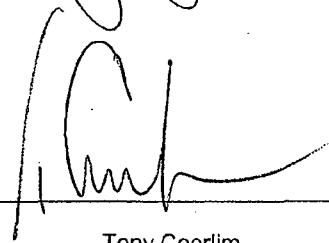
The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,



Bronia Grob,  
 Laboratory Manager

APPROVED BY \_\_\_\_\_



Tony Coorlim,  
 Quality Assurance



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Mr. Christopher C. Graham  
Ameren UE  
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Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-304  
DATE: 12-21-2006  
SAMPLES RECEIVED: 12-15-2006  
PURCHASE ORDER NO.: 139754

Below are the results of tritium analyses on four ground water samples.

Sample Description	Lab Code	Concentration : H-3 (pCi/L)	Collection Date
MANHOLE 86-1	CAWW-8963	< 184	12-13-06
MANHOLE 86-3	CAWW-8964	609,232 ± 2,068 <sup>a</sup>	12-13-06
MANHOLE 86-4A	CAWW-8965	< 184	12-13-06
MANHOLE 86-6	CAWW-8966	< 184	12-13-06

<sup>a</sup> Re-analysis: 621,025 ± 2,088 pCi/L.

The error given is the probable counting error at 95% confidence level. The less than, (<), value is based on 4.66 counting error for background sample.

Sincerely,

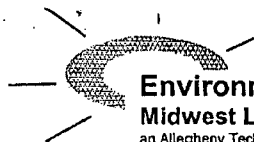
A handwritten signature in black ink, appearing to read "Bronia Grob", is written over the printed name.

Bronia Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_

A handwritten signature in black ink, appearing to read "Tony Coorlim", is written over the printed name.

Tony Coorlim,  
Quality Assurance



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 564-0700 • fax (847) 564-4517

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-327  
DATE: 03-07-2007  
SAMPLES RECEIVED: 03-02-2007  
PURCHASE ORDER NO.: 139754

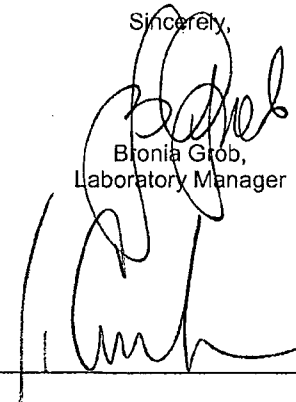
Below are the results of the analyses for tritium on seventeen samples.

Sample Description	Lab Code	Concentration (pCi/L) H-3	Collection Date
CA-GWA-Sta 19+35 27' LT (Dock Haul Rd)	CAW-1130	< 145	02-09-07
CA-GWA-Sta 72+82 70' LT (MH-2)	CAW-1131	313 ± 87	02-09-07
CA-GWA-Sta 73+57 57' RT (MH-2)	CAW-1132	162 ± 80	02-09-07
CA-GWA-Sta 75+93 37' LT (MH-3A)	CAW-1133	< 145	02-09-07
CA-GWA-Sta 83+37 52' RT (MH-3B to MH-4 E)	CAW-1134	< 145	02-09-07
CA-GWA-Sta 95+09 63' RT (MH-3B to MH-4 W)	CAW-1135	< 145	02-09-07
CA-GWA-Sta 104+30 100' LT (MH-5)	CAW-1136	< 145	02-09-07
CA-GWA-Sta 109+93 116' LT (MH-5)	CAW-1137	< 145	02-09-07
CA-GWA-Sta 105+39 100' LT (MH-5)	CAW-1138	2,707 ± 161	02-09-07
CA-GWA-Sta 105+39 100' LT (MH-5)	CAW-1139 <sup>a</sup>	2,700 ± 161	02-09-07
CA-GWA-Sta 107+13 21' LT (MH-6)	CAW-1140	< 145	02-09-07
CA-GWA-Sta 107+108+45 28' RT (MH-6)	CAW-1141	< 145	02-09-07
CA-GWA-Sta 132+87 30' RT (MH-6 to MH-8)	CAW-1142	< 145	02-10-07
CA-GWA-Sta 139+47 70' LT (MH-8)	CAW-1143	< 145	02-10-07
CA-GWA-Sta 138+76 75' LT (MH-8)	CAW-1144	< 145	02-10-07
CA-GWA-Sta 143+65.5 26' LT (MH-9B)	CAW-1145	< 145	02-10-07
CA-GWA-Sta 270+60 39' RT (MH-13)	CAW-1146	< 145	02-10-07
CA-GWA-Sta 270+60 42' LT (MH-13)	CAW-1147	< 145	02-10-07

<sup>a</sup> Denotes a duplicate.

The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

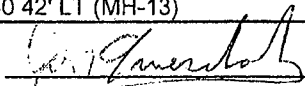
Sincerely,

  
Bronia Grob,  
Laboratory Manager

APPROVED BY \_\_\_\_\_

Tony Coorlim,  
Quality Assurance

Callaway Pipeline Soil Sampling		Required Analysis:			
		H3			
	<i>GWA</i>				
ID	Sample Description	Date	Time	Sampled By	
A	CA-SOL-Sta 19+35 27' LT Dock Haul Road	2/9/2007	9:05	AW	
D	CA-SOL-Sta 72+82 70' LT (MH-2)	2/9/2007	10:05	AW	
G	CA-SOL-Sta 73+57 57' RT (MH-2)	2/9/2007	11:05	AW	
I	CA-SOL-Sta 75+93 37' LT (MH-3A)	2/9/2007	11:40	AW	
J	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	2/9/2007	12:40	AW	
K	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	2/9/2007	13:10	AW	
L	CA-SOL-Sta 104+30 100' LT (MH-5)	2/9/2007	13:30	AW	
M	CA-SOL-Sta 109+93 116' LT (MH-5)	2/9/2007	14:00	AW	
N	CA-SOL-Sta 105+39 100' LT (MH-5)	2/9/2007	14:30	AW	
O	CA-SOL-Sta 107+13 21' LT (MH-6)	2/9/2007	15:30	AW	
P	CA-SOL-Sta 107108+45 28' RT (MH-6)	2/9/2007	16:00	AW	
R	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	2/10/2007	8:27	JPT	
S	CA-SOL-Sta 139+47 70' LT (MH-8)	2/10/2007	10:55	JPT	
T	CA-SOL-Sta 138+76 75' LT (MH-8)	2/10/2007	11:42	JPT	
U	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	2/10/2007	12:40	JPT	
V	CA-SOL-Sta 270+60 39' RT (MH-13)	2/10/2007	13:37	JPT	
W	CA-SOL-Sta 270+60 42' LT (MH-13)	2/10/2007	15:03	JPT	

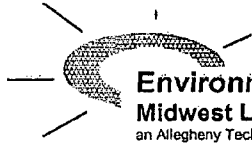
Submitted to lab by 

Plant Name: Callaway Plant  
 Contact Person: Chris Graham  
 Telephone: 573-676-8380  
 Fax: 573-676-4484

Purchase Order: 139754  
 Results To: Chris Graham  
 Address: Callaway Nuclear Plant  
 P.O. Box 620  
 Fulton, MO 65251

MAR - 2 2007

*AB*



**Environmental, Inc.**  
**Midwest Laboratory**  
 an Allegheny Technologies Co.

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Mr. Christopher C. Graham  
 Ameren UE  
 P.O. Box 620  
 Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-307  
 DATE: 01-08-2007  
 SAMPLES RECEIVED: 12-27-2006  
 PURCHASE ORDER NO.: 139754

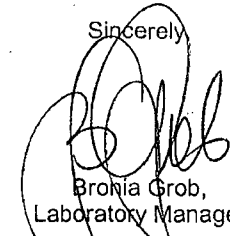
Below are the results of tritium analyses on fourteen drinking water samples.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-GWA-MH 2 72'+61' L34'	CAWW-9408	583 ± 105	12-18-06
CA-GWA-MH 6	CAWW-9409	< 154	12-20-06
CA-GWA-MH 9A	CAWW-9410	< 154	12-20-06
CA-GWA-MH 86-4A	CAWW-9411	< 154	12-20-06
CA-GWA-MH 6A	CAWW-9412	277 ± 93	12-20-06
CA-GWA-MH 11	CAWW-9413	< 154	12-20-06
CA-GWA-MH 3	CAWW-9414	809 ± 108	12-20-06
CA-GWA-MH 3A	CAWW-9415	< 142	12-20-06
CA-GWA-MH 3A	CAWW-9416 <sup>a</sup>	< 142	12-20-06
CA-GWA-MH 86-6	CAWW-9417	< 142	12-20-06
CA-GWA-MH 13	CAWW-9418	< 142	12-20-06
CA-GWA-MH 10A	CAWW-9419	< 142	12-20-06
CA-GWA-MH 86-3	CAWW-9420	1,110,239 ± 2,891	12-21-06
CA-GWA-MH 8 STA 138+40 L28'	CAWW-9421	< 142	12-26-06
CA-GWA-MH 2 74+03	CAWW-9422	< 142	12-28-06

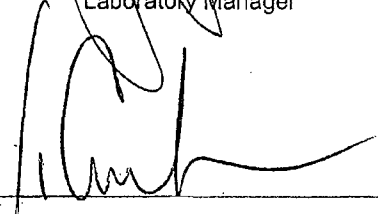
<sup>a</sup> Denotes a duplicate.

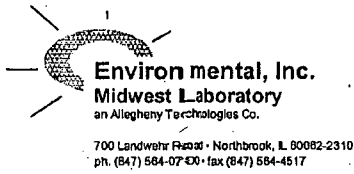
The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,

  
 Bronia Grob,  
 Laboratory Manager

APPROVED BY \_\_\_\_\_

  
 Tony Coorlim,  
 Quality Assurance



---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-380  
DATE: 11/20/2007  
SAMPLES RECEIVED: 11/14/2007  
PURCHASE ORDER NO.: 139754

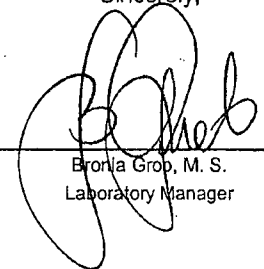
---

Dear Mr. Graham,

Enclosed are results of the analyses for tritium in seven water samples.  
Table 1.

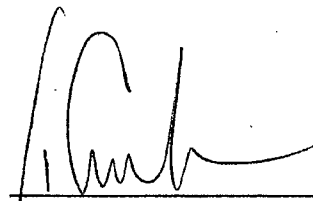
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



---

Bronia Grob, M. S.  
Laboratory Manager



---

S.A. Coorlim,  
Quality Assurance

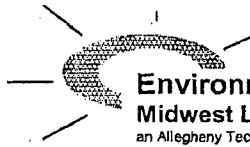


Table 1. Results of the analyses for tritium in seven water samples.

Sample Description	Collection Date	Lab Code	Concentration (pCi/L) H-3	
GW1 1 CA-SOL-STA 104+90, 21 LT	11/8/2007	CAXWW-7800	429 ± 113	
GW1 2 CA-SOL-STA 104+20, 46 LT	11/8/2007	CAXWW-7801	367 ± 111	
GW1 3 CA-SOL-STA 103+50, 69 LT	11/8/2007	CAXWW-7802	< 172	
BG CA-SOL-STA 101+80, 210 RT	11/8/2007	CAXWW-7803	< 172	
3WI-A CA-SOL-STA 105+24, 300 L	10/9/2007	CAXWW-7804	< 160	
3WI-A CA-SOL-STA 105+24, 300 L	11/9/2007	CAXWW-7805	< 160	duplicate-7804
FMW 5	11/8/2007	CAXWW-7806	320 ± 103	
MW-15	11/8/2007	CAXWW-7807	< 160	

The error given is the probable counting error at the 95% confidence level.

Less than (<), value is based on a 4.66 sigma counting error for the background sample.



**Environmental, Inc.**  
**Midwest Laboratory**  
 an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310  
 ph. (847) 564-0700 • fax (847) 564-4517

Mr. Christopher C. Graham  
 Ameren UE  
 P.O. Box 620  
 Fulton, MO 65251

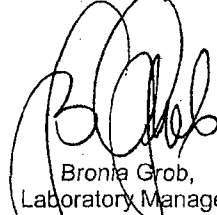
LABORATORY REPORT NO.: 8036-100-384  
 DATE: 12-19-2007  
 SAMPLES RECEIVED: 12-06-2007  
 PURCHASE ORDER NO.: 139754

Below are the results of the analyses for tritium in six soil samples and one water sample.

Sample Description	Lab Code	Concentration H-3 (pCi/L)	Collection Date
CA-SOL-STA 105+00, 400 LT, 0-5 ft	CASO-8232	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 5-10 ft	CASO-8233	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 10-15 ft	CASO-8234	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 15-20 ft	CASO-8235	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 20-25 ft	CASO-8236	< 144	12-04-07
CA-SOL-STA 105+00, 400 LT, 25-28 ft	CASO-8237	< 144	12-04-07
CA-GW-STA 105+00, 400 LT	CAW-8238	< 188	12-03-07 <sup>2</sup>

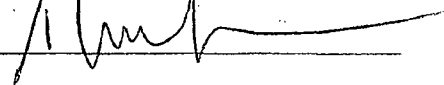
The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,



Bronia Grob,  
 Laboratory Manager

APPROVED BY \_\_\_\_\_



Tony Coorlim,  
 Quality Assurance















## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- B-5 Sta 141+24.5 56'LT
DATE/TIME SAMPLED: 11-21-06 / 9:48
SAMPLE DESCRIPTION: 4-6'

Collected by: QGDate: 11-21-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T\_\_\_\_\_  
\_\_\_\_\_

11/21/06 2:35

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- B-5 sta 141724, 5 56'LT
DATE/ TIME SAMPLED:	11-21-06 / 10:04
SAMPLE DESCRIPTION:	9-11'

Collected by:   JG   Date:   11-21-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T  

NOV 30 2006  
*JG*

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- B-5 sta 141 + 24.5	56'LT
DATE/ TIME SAMPLED:	11-21-06 / 10:12	
SAMPLE DESCRIPTION:	14-16'	

Collected by:   JG   Date:   11-21-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T    
\_\_\_\_\_  
\_\_\_\_\_

NOV 30 2006  
*[Signature]*

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-B-5 stg 141+24.5 56'LT
DATE/ TIME SAMPLED:	11-21-06 / 10:25
SAMPLE DESCRIPTION:	19-21'

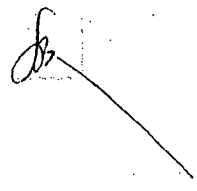
Collected by: 09

Date: 11-21-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

NOV 30 2006



ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-B-5 sta 141+24.5 56'27
DATE/ TIME SAMPLED:	11-21-06 / 10:37
SAMPLE DESCRIPTION:	24-28'

Collected by:   J.G.   Date:   11-21-06  

Shipping tracking number #                                 

Comments:   09067011T  

NOV 30 2006

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- B-6 sta 142+06 -88'RT
DATE/TIME SAMPLED: 11-21-06 / 13:30
SAMPLE DESCRIPTION: 4-6'

Collected by:   JG   Date:   11-21-06  

Shipping tracking number #                                   

Comments:   09067011T  

NOV 30 2006

*JG*

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- B-6 142106 - 88'RT
DATE/ TIME SAMPLED: 11-21-06 / 13:58
SAMPLE DESCRIPTION: 9-11'

Collected by:   GG   Date:   11-21-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T    
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 \_\_\_\_\_

NOV 30 2006

*GG*

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$  and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- B-G sta 142+06-88'RT
DATE/ TIME SAMPLED: 11-21-06 / 14:18
SAMPLE DESCRIPTION: 14-18"

Collected by:   JG  

Date:   11-21-06  

Shipping tracking number #                                 

Comments:   09067011T  

NOV 30 2006

*dm*



ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$  and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- <u>B-6</u> sta <u>142406-88'A7</u>
DATE/ TIME SAMPLED: <u>11-21-06</u> / <u>14:25</u>
SAMPLE DESCRIPTION: <u>19-21'</u>

Collected by: Q9 Date: 11-21-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

NOV 30 2006

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
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Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- B-6 Sta 142+06 88'RT
DATE/ TIME SAMPLED:	11-21-06 / 14:42
SAMPLE DESCRIPTION:	24-26'

Collected by:   JG   Date:   11-21-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T  

NOV 30 2006

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA- Sta 141+24, S 56' L 7
DATE/ TIME SAMPLED: 11-27-06 / 8:39
SAMPLE DESCRIPTION: groundwater

Collected by: 09

Date: 11-27-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- Sta 142 + 06 88' RT
DATE/ TIME SAMPLED:	11/27 / 9:45
SAMPLE DESCRIPTION:	groundwater

Collected by:   09   Date:   11-27-06  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-B-7 sta 142+17.5 127'LT
DATE/ TIME SAMPLED: 11-27-06 / 09:00
SAMPLE DESCRIPTION: 4-6'

Collected by: 09 Date: 11-27-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

\_\_\_\_\_

\_\_\_\_\_

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- B-7 sta 142+17.5 127' LT
DATE/ TIME SAMPLED:	11-27-06 / 9:16
SAMPLE DESCRIPTION:	9-111

Collected by: 09 Date: \_\_\_\_\_

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

\_\_\_\_\_

\_\_\_\_\_

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$  and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- B-7 sta 142+17.5 127' L
DATE/ TIME SAMPLED:	11-27-06 169:30
SAMPLE DESCRIPTION:	<del>90</del> 14-16'

Collected by: 09

Date: \_\_\_\_\_

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-B-8	sta	138+90	28'LT
DATE/ TIME SAMPLED:	11-28-06	/	09:00	
SAMPLE DESCRIPTION:	4.5-6.5'			

Collected by: 09 Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T



## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- B-8 site 138 + 90 28'LT
DATE/ TIME SAMPLED: 11-28-06 / 08110
SAMPLE DESCRIPTION: 9.5-11.5'

Collected by: 09

Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- B-8	sta	138+90	28' LT
DATE/ TIME SAMPLED:	11-28-06		108130	
SAMPLE DESCRIPTION:	14.5-16.5'			

Collected by: EMH Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-B-8 sta 138+90 28' LT
DATE/ TIME SAMPLED: 11-28-06 / 08:40
SAMPLE DESCRIPTION: 19.5 - 21.5'

Collected by: EMH Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- B-6 sta 139+17 62'RT
DATE/ TIME SAMPLED: 11-28-06 / 13:00
SAMPLE DESCRIPTION: 4-6'

Collected by: EMH Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-B-6 Sta 139+17 62'RT
DATE/TIME SAMPLED: 11-29-06 / 13:10
SAMPLE DESCRIPTION: 9-11'

Collected by: EMH Date: 11-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$  and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- B-6 sta 139717 62' RT
DATE/ TIME SAMPLED:	11-28-06 / <del>11-28-06</del> 1315
SAMPLE DESCRIPTION:	14-16"

Collected by:

OG E M H

Date:

11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-B-6 sta 139+17 62' R 7
DATE/ TIME SAMPLED:	11-29-06 / 13:30
SAMPLE DESCRIPTION:	19-21'

Collected by: EMH Date: 11-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-B-5 sta 140+20 90'RT
DATE/ TIME SAMPLED:	11-28-06 / 10:56
SAMPLE DESCRIPTION:	4-6'

Collected by: EMH Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T



## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- B- 5 sta 140+20 90' RT
DATE/ TIME SAMPLED: 11-28-06 / 11:10
SAMPLE DESCRIPTION: 9-11'

Collected by:

~~EMH~~ EMH

Date:

11-28-06

Shipping tracking number #

\_\_\_\_\_

Comments:

09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-B-5 Sta 140+20 90'RT
DATE/ TIME SAMPLED: 11-28-06 / 11:20
SAMPLE DESCRIPTION: 14-16'

Collected by: ~~OG~~ E M H Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-β-5 sta 140+20 90' RT
DATE/ TIME SAMPLED:	11-28-06 / 11125
SAMPLE DESCRIPTION:	19-21'

Collected by: ~~EG~~ EMH Date: 11-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T  
\_\_\_\_\_  
\_\_\_\_\_

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- MH-8 sta 140 + 20 90' AT
DATE/ TIME SAMPLED:	12-5-06 / 11:37
SAMPLE DESCRIPTION:	H <sub>2</sub> O - light sed

Collected by: 99Date: 12-5-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E160.0602

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- MH-8 sta 140 + 20 90' AT
DATE/ TIME SAMPLED:	12-5-06 / 11137
SAMPLE DESCRIPTION:	H <sub>2</sub> O - light sed

Collected by: 99 Date: 12-5-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DEC - 7 2006

*JB*

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to:	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- MH-8	sta	139+17	62' A7
DATE/ TIME SAMPLED:	12-5-06	/	12:52	
SAMPLE DESCRIPTION:	H <sub>2</sub> O - light sed			

Collected by: JG Date: 12-5-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA-MH-8 sta 138 + 86 137' LT
DATE/ TIME SAMPLED:	12-5-06 / 11:31
SAMPLE DESCRIPTION:	water - light sed

Collected by: 99 Date: 12-5-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E160.0602

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>  
 Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA-MH-8 sta 138+86 137'67
DATE/TIME SAMPLED:	12-9-06 / 11:31
SAMPLE DESCRIPTION:	water-light sed

Collected by: 99 Date: 12-9-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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 \_\_\_\_\_

DEC - 7 2006

*dm*



### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to:	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- MH-8	sta	139+17	621 A7
DATE/ TIME SAMPLED:	12-5-06		12:53	
SAMPLE DESCRIPTION:	H <sub>2</sub> O - light sed			

Collected by: JG Date: 12-5-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
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DEC -7 2005

*JG*

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA-MH-5 sta 104+94 60'LT
DATE/TIME SAMPLED:	12-5-06 / 9:35
SAMPLE DESCRIPTION:	H <sub>2</sub> O - mod sed

Collected by:   JG   Date:   12-5-06  

Shipping tracking number # \_\_\_\_\_

Comments:   please fax copy of C.O.C.'s to 573-214-2714 Attn: Jon Truesdale  

DEC - 7 2006

*JG*

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA-MAH-5	sta	104+96	71'RT
DATE/TIME SAMPLED:	12-5-06		19145	
SAMPLE DESCRIPTION:	H <sub>2</sub> O - Heavy sed			

Collected by:   JG   Date:   12-5-06  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DEC -7 2006

*JG*

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- <i>H-8</i> sta <i>138+90</i> <i>28'LT</i>
DATE/TIME SAMPLED:	<i>12-5-06 / 12137</i>
SAMPLE DESCRIPTION:	<i>H<sub>2</sub>O - med sed</i>

Collected by: *JG* Date: *12-5-06*

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DEC - 7 2006

*JG*

E160.0602

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
		Fulton, Mo. 65251	

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-6B Sta 110+65 70'LT
DATE/ TIME SAMPLED:	12-6-06 / 13:11
SAMPLE DESCRIPTION:	4-6'

Collected by: 09 Date: 12-6-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

DEC - 7 2006  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-MH-6B sta 110+65 70'LT
DATE/TIME SAMPLED: 12-6-06 / 13123
SAMPLE DESCRIPTION: 9-11'

Collected by: 09 Date: 12-6-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

DEC - 7 2006

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 675-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 675-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

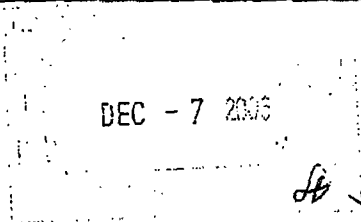
Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-63	Sta 110+65	70' LT
DATE/TIME SAMPLED:	12-6-06 / 13:30		
SAMPLE DESCRIPTION:	14-16'		

Collected by: 09 Date: 12-6-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T



ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 675-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-GB sta 110469 70'LT
DATE/TIME SAMPLED: 12-6-06 / 13:38
SAMPLE DESCRIPTION: 19-21'

Collected by: 09 Date: 12-6-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

DEC -7 2006



ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 675-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-MH-6B sta 110+6 S 70'LT
DATE/TIME SAMPLED: 12-6-08 / 13:49
SAMPLE DESCRIPTION: 24-26'

Collected by: 09 Date: 12-6-08

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

BEC - 7

E160.0602

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-GB sta 107+62 110'LT
DATE/ TIME SAMPLED: 12-6-06 / 10:00
SAMPLE DESCRIPTION: U-6

Collected by: 09 Date: 12-6-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011 T

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DEC - 7 2006



E160.0602

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-6B	sta	107462	110'LT
DATE/ TIME SAMPLED:	12-6-06 / 10324			
SAMPLE DESCRIPTION:	9-11'			

Collected by:   JG   Date:   12-6-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T    
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DEC -7 2006

*ds*

E160.0602

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-GB Sta 107+62 110' LT
DATE/TIME SAMPLED: 12-6-06 / 10:43
SAMPLE DESCRIPTION: 14-16'

Collected by: 09 Date: 12-6-06

Shipping tracking number # \_\_\_\_\_

Comments: 09 067011 T

SEC - 7 2003

E160.0602

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 675-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-MH-6B sta 107+63 110'LT
DATE/TIME SAMPLED: 12-6-06 / 10:52
SAMPLE DESCRIPTION: 19-21'

Collected by:   09   Date:   12-6-06  

Shipping tracking number #                                 

Comments:   09 06 7011 T  

DEC - 7 2006  
*JK*

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-5B sta 107+62 110' LT
DATE/TIME SAMPLED:	12-6-06 / 11:00
SAMPLE DESCRIPTION:	24-26'

Collected by: 09 Date: 12-6-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

DEC -7 2006  
*[Signature]*

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- MH-6	sta	108+03	100'R	7
DATE/ TIME SAMPLED:	12-13-06	/	12:13		
SAMPLE DESCRIPTION:	light secl				

Collected by:   JG   Date:   12-13-06  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-MH-2 sta 72+61 34'LT
DATE/TIME SAMPLED: 12-15-06 10:48
SAMPLE DESCRIPTION: 4-6'

Collected by: 09 Date: 12-15-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$  and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-MH-2 g+a 72+61 34'LT
DATE/TIME SAMPLED: 12-15-06 10:55
SAMPLE DESCRIPTION: 9-11'

Collected by:   09  

Date:   12-15-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T  

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-2 9 <sub>top</sub> 72+61 34'LT
DATE/ TIME SAMPLED:	12-15-06 11:09
SAMPLE DESCRIPTION:	14-16'

Collected by: 09 Date: 12-15-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2 g/a 72+61 34'LT
DATE/ TIME SAMPLED:	12-15-06 / 11:16
SAMPLE DESCRIPTION:	19-211

Collected by: 09 Date: 12-15-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to:	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2 sta 72+61 34'LT
DATE/TIME SAMPLED:	12-15-06 / 11:31
SAMPLE DESCRIPTION:	24-26'

Collected by: 09

Date: 12-15-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2	sta	72 + 61	34' L T
DATE/ TIME SAMPLED:	12-15-06	/	11:44	
SAMPLE DESCRIPTION:	09-31'			

Collected by: 09

Date: 12-15-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$  and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-2	9/27/06	34'LT
DATE/TIME SAMPLED:	12-15-06	/ 16:00
SAMPLE DESCRIPTION:	34-36'	

Collected by: 09

Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 2 72+61 L34'
DATE/ TIME SAMPLED:	12/18/06 16:00
SAMPLE DESCRIPTION:	cloudy w/ drk brn sediment

Collected by: JT Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 6
DATE/ TIME SAMPLED:	12/20/06 13:06
SAMPLE DESCRIPTION:	clear

Collected by: JT Date: 12.29.06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_

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### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-11 sta 230+45 R25'
DATE/TIME SAMPLED:	12-21-06 / 13:20
SAMPLE DESCRIPTION:	4-6'

Collected by: 09 Date: 12-21-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-11	sta 230+49	R25'
DATE/ TIME SAMPLED:	12-21-06	/ 13:26
SAMPLE DESCRIPTION:	8-10'	

Collected by:   JG   Date:   12/21/06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T

# ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-8	sta 138+40	28'LT
DATE/TIME SAMPLED:	12-22-06/11:45		
SAMPLE DESCRIPTION:	4-6'		

Collected by:   09   Date:   12-22-06  

Shipping tracking number #                                 

Comments:   090670117

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-8	sta 138+40	28'LT
DATE/ TIME SAMPLED:	12-22-06	/	12:10
SAMPLE DESCRIPTION:	9-11'		

Collected by: 09

Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-8 sta 138+40 28' L 7
DATE/TIME SAMPLED:	12-22-06 / 13:11
SAMPLE DESCRIPTION:	14-16'

Collected by: 09 Date: 12-22-06

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-8	<del>138</del> 138+40	28'LT
DATE/ TIME SAMPLED:	12-22-06 / 11:18		
SAMPLE DESCRIPTION:	4-6'		

Collected by: 09

Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-6	sta 138+40	28'LT
DATE/TIME SAMPLED:	12-22-06	11:28
SAMPLE DESCRIPTION:	9-11'	

Collected by: 09

Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T



### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-8	138+40	28'LT
DATE/ TIME SAMPLED:	12-22-06 / 11:32		
SAMPLE DESCRIPTION:	14-16'		

Collected by: 09 Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

**ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET**

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

**Required analysis:** H<sup>3</sup>

**Sample type:** Water from monitoring wells

SAMPLE ID: CA-GWA-	<i>MH 8 sta. 138 + 40 L28</i>
DATE/ TIME SAMPLED:	<i>12/26/06 12:45</i>
SAMPLE DESCRIPTION:	<i>cloudy w/ drk brn sediment</i>

**Collected by:**     *JT*     **Date:**     *12-29-06*    

**Shipping tracking number #** \_\_\_\_\_

**Comments:**  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-2 74+03 117'LT
DATE/ TIME SAMPLED:	12-27-06 1:31
SAMPLE DESCRIPTION:	U-6'

Collected by: 09

Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2 S1a 74+03 117'LT
DATE/ TIME SAMPLED:	12-27-06 / 9:42
SAMPLE DESCRIPTION:	9-11'

Collected by:     JG     Date: \_\_\_\_\_

Shipping tracking number # \_\_\_\_\_

Comments:     09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-2	74103	117'LT
DATE/ TIME SAMPLED:	12-27-06 / 9:49		
SAMPLE DESCRIPTION:	14-16'		

Collected by:   09  

Date:   12-29-06  

Shipping tracking number #                                 

Comments:   09067011T  

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2 sta 74403 117'LT
DATE/TIME SAMPLED:	12-27-06 / 10:13
SAMPLE DESCRIPTION:	19-21'

Collected by: 09 Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-2 sta 74+03 117'LT
DATE/ TIME SAMPLED: 12-27-06 / 10:19
SAMPLE DESCRIPTION: 24-26'

Collected by:   09  

Date:   12-29-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-2 69+45 45'RT
DATE/ TIME SAMPLED: 12-28-06 19:10
SAMPLE DESCRIPTION: 4-6'

Collected by:   09   Date:   12-29-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T



ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-2 69+49 45' A7
DATE/ TIME SAMPLED: 12-28-06 / 9:20
SAMPLE DESCRIPTION: 4-6'

Collected by: 09 Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2-69+45 45'RT
DATE/TIME SAMPLED:	12-28-06 / 9:50
SAMPLE DESCRIPTION:	14-16'

Collected by: 09 Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2 69+45 45'AT
DATE/ TIME SAMPLED:	12-28-06 / 10:00
SAMPLE DESCRIPTION:	19-21'

Collected by:   09   Date:   12-28-06  

Shipping tracking number # \_\_\_\_\_

Comments:   09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2 69+45 45'R7
DATE/ TIME SAMPLED:	12-28-06 / 10:15
SAMPLE DESCRIPTION:	24-26'

Collected by: 09 Date: 12-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 090670117

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-2 73+94 100'RT
DATE/TIME SAMPLED:	12-28-06 / 12:34
SAMPLE DESCRIPTION:	4-6'

Collected by: 09

Date: 12-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-2 73+0M 100'R7
DATE/ TIME SAMPLED: 12-28-06 / 12:44
SAMPLE DESCRIPTION: 9-11'

Collected by:   09   Date:   12-28-06  

Shipping tracking number # \_\_\_\_\_

Comments:   090670117    
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-MH-2	72+94	100' R7
DATE/ TIME SAMPLED:	12-28-06	12:54
SAMPLE DESCRIPTION:	14-161	

Collected by: 09 Date: 12-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL- MH-2 73+94 100'R7
DATE/ TIME SAMPLED: 12-28-06 / 13:02
SAMPLE DESCRIPTION: 19-21'

Collected by: 09

Date: 12-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T



ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID: CA-SOL-MH-2 73+94 <del>0</del> 100'RT
DATE/TIME SAMPLED: 12-28-06 / 13109
SAMPLE DESCRIPTION: 24-26'

Collected by: 09

Date: 12-28-06

Shipping tracking number # \_\_\_\_\_

Comments: 09067011T

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA-	74+03	MH2
DATE/ TIME SAMPLED:		12/28/06	11:45 am
SAMPLE DESCRIPTION:	Cloudy, drk brown sediment		

Collected by: JT

Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 86-3
DATE/ TIME SAMPLED:	12/21/06 10:50 am
SAMPLE DESCRIPTION:	<del>Water</del> slightly cloudy, light sediment

Collected by: JT

Date: 12.29.06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH-86-4A
DATE/ TIME SAMPLED:	12/20/06 - 11:15
SAMPLE DESCRIPTION:	clear w/ light lt brown sediment

Collected by: JT

Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 86-6
DATE/ TIME SAMPLED:	12/20/06 11:30 am
SAMPLE DESCRIPTION:	cloudy, yellowish w/ light sediment

Collected by: JT Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 9A
DATE/ TIME SAMPLED:	12/20/06 13:16
SAMPLE DESCRIPTION:	clear

Collected by: JTDate: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 6A
DATE/ TIME SAMPLED:	12/20/06 13:09
SAMPLE DESCRIPTION:	clear

Collected by: JT Date: 12.29.06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- MH-10 A
DATE/ TIME SAMPLED:	12-20-06 / 14:06
SAMPLE DESCRIPTION:	light sed

Collected by: JT Date: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 11
DATE/ TIME SAMPLED:	12/20/06 13:28
SAMPLE DESCRIPTION:	clear w/ light yellowish sediment

Collected by: JT Date: 12.29.06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH3
DATE/ TIME SAMPLED:	12/20/06 12:50
SAMPLE DESCRIPTION:	clear

Collected by: JTDate: 12-29-06

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 3A
DATE/ TIME SAMPLED:	12/20/06 - 12:55
SAMPLE DESCRIPTION:	slightly cloudy

Collected by: J-T

Date: 12.29.06

Shipping tracking number #

Comments:

## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup>

Sample type: Water from monitoring wells

SAMPLE ID: CA-GWA-	MH 13
DATE/ TIME SAMPLED:	12/20/06 - 17:18
SAMPLE DESCRIPTION:	<del>cloudy</del> cloudy / yellowish

Collected by: JTDate: 12/29/06

Shipping tracking number # \_\_\_\_\_

Comments:  
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### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

**Required analysis:** H<sup>3</sup>

**Sample type:** Water from monitoring wells

SAMPLE ID: CA-GWA- MH-2 sta 73+91 100'RT
DATE/TIME SAMPLED: 1-3-07 / 11:37
SAMPLE DESCRIPTION: Light sed H <sub>2</sub> O

**Collected by:**   Q9   **Date:**   1-3-07  

**Shipping tracking number #** \_\_\_\_\_

**Comments:** \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- Between MH-9B and MH-10A South
DATE/ TIME SAMPLED:	1-9-07 13:15
SAMPLE DESCRIPTION:	3.5-5.5'

Collected by: BC

Date: 1-9-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis:  $H^3$ 

Sample type: Water from monitoring wells

SAMPLE ID:	CA-GWA- HWY 94/UE property boundary sta 69+45 45'RT
DATE/ TIME SAMPLED:	1-3-07 / 13:22
SAMPLE DESCRIPTION:	Light sed H <sub>2</sub> O.

Collected by: 99Date: 1-3-07

Shipping tracking number # \_\_\_\_\_

Comments:  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- Between MH-9B and MH-10A	Central
DATE/ TIME SAMPLED:	1-9-07	11:42
SAMPLE DESCRIPTION:	3.5-5.5'	

Collected by:

QY

Date:

1-9-07

Shipping tracking number # \_\_\_\_\_

Comments:



ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters.

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- Between MH-9B and MH-10A North
DATE/ TIME SAMPLED:	1-9-07 9:15
SAMPLE DESCRIPTION:	<del>4.6</del> 3.5-5.5'

Collected by:   99   Date:   1-9-07  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-86-6	sta 2294 + 30	35' RT
DATE/ TIME SAMPLED:	1/10/07	/	10:37
SAMPLE DESCRIPTION:	4-6'		

Collected by:

99

Date:

1-10-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-86-6	Sta 2294+30	35' RT
DATE/TIME SAMPLED:	1-10-07	10:47	
SAMPLE DESCRIPTION:	Q-11'		

Collected by: Q9

Date: 1-10-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-86-6	sta 2294+30	35' AT
DATE/ TIME SAMPLED:	1-10-07	10:58	
SAMPLE DESCRIPTION:	14-16'		

Collected by:   99   Date:   1-10-07  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-86-6	sta 2294+30	35'R7
DATE/ TIME SAMPLED:	1-10-07	11:14	
SAMPLE DESCRIPTION:	19-21'		

Collected by: 99 Date: 1-10-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-86-6	sta 2294+30	35' RT
DATE/ TIME SAMPLED:	1-10-07	11:29	
SAMPLE DESCRIPTION:	24-26'		

Collected by: 1-10-07 Date: 1/10/07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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### ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

<b>Plant name:</b>	Callaway Plant	<b>Purchase Order</b>	139754
<b>Contact person:</b>	Chris Graham	<b>Results to</b>	Chris Graham
<b>Telephone:</b>	(573) 676-8380	<b>Address:</b>	Callaway Nuclear Plant
<b>Fax:</b>	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

**Required analysis:** H<sup>3</sup> and Principal Gamma Emitters

**Sample type:** Soil from borings

<b>SAMPLE ID:</b>	CA-SOL-MH-86-6	sta 2294+30	35' RT
<b>DATE/ TIME SAMPLED:</b>	1-10-07		12103
<b>SAMPLE DESCRIPTION:</b>	29-31'		

**Collected by:**   QG   **Date:**   1-10-07  

**Shipping tracking number #** \_\_\_\_\_

  Comments:    
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address,	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-86-6	sta 2294+30	35' RT
DATE/ TIME SAMPLED:	1-10-07		12:34
SAMPLE DESCRIPTION:	34 - 35.5		

Collected by: AG

Date: 1-10-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH-86-5 sta 2303 + 98 20' LT
DATE/ TIME SAMPLED:	1-11-07 / 11:42
SAMPLE DESCRIPTION:	4-6'

Collected by:   99   Date:   1-11-07  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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## ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-86-5	sta	2303+98	20'LT
DATE/ TIME SAMPLED:	1-11-07		12:03	
SAMPLE DESCRIPTION:	9-11'			

Collected by: Q9

Date: 1-11-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_

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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-86-5 sta 2303+98 20'LT
DATE/ TIME SAMPLED:	1-11-07 12:30
SAMPLE DESCRIPTION:	14-16'

Collected by:   J.G.   Date:   1-11-07  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL-MH-86-5	sta 2303+98	20'LT
DATE/ TIME SAMPLED:	1-11-07	13:02	
SAMPLE DESCRIPTION:	19-21'		

Collected by: ~~\_\_\_\_\_~~ JG Date: 1-11-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

<b>Plant name:</b>	Callaway Plant	<b>Purchase Order</b>	139754
<b>Contact person:</b>	Chris Graham	<b>Results to</b>	Chris Graham
<b>Telephone:</b>	(573) 676-8380	<b>Address:</b>	Callaway Nuclear Plant
<b>Fax:</b>	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

<b>SAMPLE ID:</b>	CA-SOL- MH 86-5	sta 2303+98	20' LT
<b>DATE/ TIME SAMPLED:</b>	1-11-07	13:22	
<b>SAMPLE DESCRIPTION:</b>	24-26'		

Collected by: 99 Date: 1-11-07

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
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\_\_\_\_\_

ENVIRONMENTAL SAMPLE COLLECTION DATA SHEET

Plant name:	Callaway Plant	Purchase Order	139754
Contact person:	Chris Graham	Results to	Chris Graham
Telephone:	(573) 676-8380	Address:	Callaway Nuclear Plant
Fax:	(573) 676-4484		P.O. Box 620
			Fulton, Mo. 65251

Required analysis: H<sup>3</sup> and Principal Gamma Emitters

Sample type: Soil from borings

SAMPLE ID:	CA-SOL- MH 86-5 sta 2303 + 98	20' L7
DATE/ TIME SAMPLED:	1-11-07	13:49
SAMPLE DESCRIPTION:	29-31	

Collected by:   AG   Date:   1-11-07  

Shipping tracking number # \_\_\_\_\_

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
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Callaway Pipeline Soil Sampling		Required Analysis:		
		H3		
ID	Sample Description	Date	Time	Sampled By
A	CA-SOL-Sta 19+35 27' LT Dock Haul Road	2/9/2007	9:05	AW
D	CA-SOL-Sta 72+82 70' LT (MH-2)	2/9/2007	10:05	AW
G	CA-SOL-Sta 73+57 57' RT (MH-2)	2/9/2007	11:05	AW
I	CA-SOL-Sta 75+93 37' LT (MH-3A)	2/9/2007	11:40	AW
J	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	2/9/2007	12:40	AW
K	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	2/9/2007	13:10	AW
L	CA-SOL-Sta 104+30 100' LT (MH-5)	2/9/2007	13:30	AW
M	CA-SOL-Sta 109+93 116' LT (MH-5)	2/9/2007	14:00	AW
N	CA-SOL-Sta 105+39 100' LT (MH-5)	2/9/2007	14:30	AW
O	CA-SOL-Sta 107+13 21' LT (MH-6)	2/9/2007	15:30	AW
P	CA-SOL-Sta 107108+45 28' RT (MH-6)	2/9/2007	16:00	AW
R	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	2/10/2007	8:27	JPT
S	CA-SOL-Sta 139+47 70' LT (MH-8)	2/10/2007	10:55	JPT
T	CA-SOL-Sta 138+76 75' LT (MH-8)	2/10/2007	11:42	JPT
U	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	2/10/2007	12:40	JPT
V	CA-SOL-Sta 270+60 39' RT (MH-13)	2/10/2007	13:37	JPT
W	CA-SOL-Sta 270+60 42' LT (MH-13)	2/10/2007	15:03	JPT

Submitted to lab by \_\_\_\_\_

Plant Name: Callaway Plant  
Contact Person: Chris Graham  
Telephone: 573-676-8380  
Fax: 573-676-4484

Purchase Order: 139754  
Results To: Chris Graham  
Address: Callaway Nuclear Plant  
P.O. Box 620  
Fulton, MO 65251

Callaway Pipeline Soil Sampling		Required Analysis: H3 and Principal Gamma Emitters			
ID	Sample Description	Depth	Date	Time	Sampled By
A-1	CA-SOL-Sta 19+35 27' LT Dock Haul Road	0-5'	2/7/2007	12:37	JPT
A-2	CA-SOL-Sta 19+35 27' LT Dock Haul Road	5-10'	2/7/2007	12:47	JPT
A-3	CA-SOL-Sta 19+35 27' LT Dock Haul Road	10-15'	2/7/2007	12:55	JPT
A-4	CA-SOL-Sta 19+35 27' LT Dock Haul Road	15-20'	2/7/2007	13:05	JPT
A-5	CA-SOL-Sta 19+35 27' LT Dock Haul Road	20-25'	2/7/2007	13:13	JPT
A-6	CA-SOL-Sta 19+35 27' LT Dock Haul Road	25-30'	2/7/2007	13:26	JPT
B-1	CA-SOL-Sta 73+70 75' LT (MH-2)	0-5'	2/7/2007	13:47	JPT
B-2	CA-SOL-Sta 73+70 75' LT (MH-2)	5-10'	2/7/2007	13:55	JPT
B-3	CA-SOL-Sta 73+70 75' LT (MH-2)	10-15'	2/7/2007	13:59	JPT
B-4	CA-SOL-Sta 73+70 75' LT (MH-2)	15-20'	2/7/2007	14:08	JPT
C-1	CA-SOL-Sta 73+47 69' LT (MH-2)	0-5'	2/7/2007	14:29	JPT
C-2	CA-SOL-Sta 73+47 69' LT (MH-2)	5-10'	2/7/2007	14:33	JPT
C-3	CA-SOL-Sta 73+47 69' LT (MH-2)	10-15'	2/7/2007	14:41	JPT
C-4	CA-SOL-Sta 73+47 69' LT (MH-2)	15-20'	2/7/2007	14:47	JPT
C-5	CA-SOL-Sta 73+47 69' LT (MH-2)	20-25'	2/7/2007	14:54	JPT
D-1	CA-SOL-Sta 72+82 70' LT (MH-2)	0-5'	2/7/2007	15:25	JPT
D-2	CA-SOL-Sta 72+82 70' LT (MH-2)	5-10'	2/7/2007	15:33	JPT
D-3	CA-SOL-Sta 72+82 70' LT (MH-2)	10-15'	2/7/2007	15:45	JPT
D-4	CA-SOL-Sta 72+82 70' LT (MH-2)	15-20'	2/7/2007	15:54	JPT
D-5	CA-SOL-Sta 72+82 70' LT (MH-2)	20-25'	2/7/2007	15:59	JPT
E-1	CA-SOL-Sta 72+80 25' LT (MH-2)	0-5'	2/7/2007	16:13	JPT
F-1	CA-SOL-Sta 72+80 30' LT (MH-2)	0-5'	2/7/2007	16:17	JPT
F-2	CA-SOL-Sta 72+80 30' LT (MH-2)	5-10'	2/7/2007	16:26	JPT
F-3	CA-SOL-Sta 72+80 30' LT (MH-2)	10-15'	2/7/2007	16:33	JPT
F-4	CA-SOL-Sta 72+80 30' LT (MH-2)	15-20'	2/7/2007	16:56	JPT
F-5	CA-SOL-Sta 72+80 30' LT (MH-2)	20-25'	2/7/2007	17:03	JPT
G-1	CA-SOL-Sta 73+57 57' RT (MH-2)	0-5'	2/7/2007	17:31	JPT
G-2	CA-SOL-Sta 73+57 57' RT (MH-2)	5-10'	2/7/2007	17:36	JPT
G-3	CA-SOL-Sta 73+57 57' RT (MH-2)	10-15'	2/7/2007	17:46	JPT
G-4	CA-SOL-Sta 73+57 57' RT (MH-2)	15-20'	2/7/2007	17:57	JPT
G-5	CA-SOL-Sta 73+57 57' RT (MH-2)	20-25'	2/7/2007	18:02	JPT
H-1	CA-SOL-Sta 75+82 26' RT (MH-3A)	0-5'	2/8/2007	9:37	JPT
H-2	CA-SOL-Sta 75+82 26' RT (MH-3A)	5-10'	2/8/2007	9:45	JPT
H-3	CA-SOL-Sta 75+82 26' RT (MH-3A)	10-15'	2/8/2007	9:52	JPT
I-1	CA-SOL-Sta 75+93 37' LT (MH-3A)	0-5'	2/8/2007	9:55	JPT
I-2	CA-SOL-Sta 75+93 37' LT (MH-3A)	5-10'	2/8/2007	9:59	JPT
I-3	CA-SOL-Sta 75+93 37' LT (MH-3A)	10-15'	2/8/2007	10:11	JPT
I-4	CA-SOL-Sta 75+93 37' LT (MH-3A)	15-20'	2/8/2007	10:15	JPT
I-5	CA-SOL-Sta 75+93 37' LT (MH-3A)	20-25'	2/8/2007	10:19	JPT
J-1	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	0-5'	2/8/2007	10:42	JPT
J-2	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	5-10'	2/8/2007	10:45	JPT
J-3	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	10-15'	2/8/2007	10:52	JPT
J-4	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	15-20'	2/8/2007	10:58	JPT
J-5	CA-SOL-Sta 83+37 52' RT (MH-3B to MH-4 east)	20-25'	2/8/2007	11:05	JPT
K-1	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	0-5'	2/8/2007	11:28	JPT
K-2	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	5-10'	2/8/2007	11:33	JPT
K-3	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	10-15'	2/8/2007	11:39	JPT
K-4	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	15-20'	2/8/2007	11:47	JPT



K-5	CA-SOL-Sta 95+09 63' RT (MH-3B to MH-4 west)	20-25'	2/8/2007	11:57	JPT
L-1	CA-SOL-Sta 104+30 100' LT (MH-5)	0-5'	2/8/2007	12:37	JPT
L-2	CA-SOL-Sta 104+30 100' LT (MH-5)	5-10'	2/8/2007	12:44	JPT
L-3	CA-SOL-Sta 104+30 100' LT (MH-5)	10-15'	2/8/2007	12:59	JPT
L-4	CA-SOL-Sta 104+30 100' LT (MH-5)	15-20'	2/8/2007	13:08	JPT
M-1	CA-SOL-Sta 109+93 116' LT (MH-5)	0-5'	2/8/2007	13:15	JPT
M-2	CA-SOL-Sta 109+93 116' LT (MH-5)	5-10'	2/8/2007	13:26	JPT
M-3	CA-SOL-Sta 109+93 116' LT (MH-5)	10-15'	2/8/2007	13:33	JPT
M-4	CA-SOL-Sta 109+93 116' LT (MH-5)	15-20'	2/8/2007	13:47	JPT
N-1	CA-SOL-Sta 105+39 100' LT (MH-5)	0-5'	2/8/2007	14:01	JPT
N-2	CA-SOL-Sta 105+39 100' LT (MH-5)	5-10'	2/8/2007	14:04	JPT
N-3	CA-SOL-Sta 105+39 100' LT (MH-5)	10-15'	2/8/2007	14:09	JPT
N-4	CA-SOL-Sta 105+39 100' LT (MH-5)	15-20'	2/8/2007	14:15	JPT
O-1	CA-SOL-Sta 107+13 21' LT (MH-6)	0-5'	2/8/2007	14:52	JPT
O-2	CA-SOL-Sta 107+13 21' LT (MH-6)	5-10'	2/8/2007	14:59	JPT
O-3	CA-SOL-Sta 107+13 21' LT (MH-6)	10-15'	2/8/2007	15:09	JPT
P-1	CA-SOL-Sta 107108+45 28' RT (MH-6)	0-5'	2/8/2007	15:35	JPT
P-2	CA-SOL-Sta 107108+45 28' RT (MH-6)	5-10'	2/8/2007	15:47	JPT
P-3	CA-SOL-Sta 107108+45 28' RT (MH-6)	10-15'	2/8/2007	15:59	JPT
Q-1	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	0-5'	2/9/2007	9:15	JPT
Q-2	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	5-10'	2/9/2007	9:22	JPT
Q-3	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	10-15'	2/9/2007	9:29	JPT
Q-4	CA-SOL-Sta 266+95 10.5' RT (MH12 to MH-13)	15-18.2	2/9/2007	9:44	JPT
R-1	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	0-5'	2/9/2007	10:15	JPT
R-2	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	5-10'	2/9/2007	10:26	JPT
R-3	CA-SOL-Sta 132+87 30' RT (MH-6 to MH-8)	10-15'	2/9/2007	10:33	JPT
S-1	CA-SOL-Sta 139+47 70' LT (MH-8)	0-5'	2/9/2007	10:59	JPT
S-2	CA-SOL-Sta 139+47 70' LT (MH-8)	5-10'	2/9/2007	11:13	JPT
S-3	CA-SOL-Sta 139+47 70' LT (MH-8)	10-15'	2/9/2007	11:28	JPT
T-1	CA-SOL-Sta 138+76 75' LT (MH-8)	0-5'	2/9/2007	11:43	JPT
T-2	CA-SOL-Sta 138+76 75' LT (MH-8)	5-10'	2/9/2007	11:53	JPT
T-3	CA-SOL-Sta 138+76 75' LT (MH-8)	10-15'	2/9/2007	12:05	JPT
U-1	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	0-5'	2/9/2007	12:42	JPT
U-2	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	5-10'	2/9/2007	12:53	JPT
U-3	CA-SOL-Sta 143+65.5 26' LT (MH-9B)	10-15'	2/9/2007	12:58	JPT
V-1	CA-SOL-Sta 270+60 39' RT (MH-13)	0-5'	2/9/2007	13:33	JPT
V-2	CA-SOL-Sta 270+60 39' RT (MH-13)	5-10'	2/9/2007	13:42	JPT
V-3	CA-SOL-Sta 270+60 39' RT (MH-13)	10-15'	2/9/2007	13:49	JPT
W-1	CA-SOL-Sta 270+60 42' LT (MH-13)	0-5'	2/9/2007	14:05	JPT
W-2	CA-SOL-Sta 270+60 42' LT (MH-13)	5-10'	2/9/2007	14:09	JPT
W-3	CA-SOL-Sta 270+60 42' LT (MH-13)	10-15'	2/9/2007	14:16	JPT
W-4	CA-SOL-Sta 270+60 42' LT (MH-13)	15-20'	2/9/2007	14:28	JPT
X-1	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	0-5'	2/9/2007	15:01	JPT
X-2	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	5-10'	2/9/2007	15:03	JPT
X-3	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	10-15'	2/9/2007	15:06	JPT
X-4	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	15-20'	2/9/2007	15:13	JPT
X-5	CA-SOL-Sta 2320+70 20' RT (MH-86-2)	20-25'	2/9/2007	15:17	JPT
Y-1	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	0-5'	2/9/2007	15:22	JPT
Y-2	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	5-10'	2/9/2007	15:24	JPT
Y-3	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	10-15'	2/9/2007	15:27	JPT
Y-4	CA-SOL-Sta 2310+47.7 33' LT (MH-86-4A)	15-20'	2/9/2007	15:29	JPT
Z-1	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	0-5'	2/9/2007	15:35	JPT

Z-2	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	5-10'	2/9/2007	15:39	JPT
Z-3	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	10-15'	2/9/2007	15:41	JPT
Z-4	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	15-20'	2/9/2007	15:44	JPT
Z-5	CA-SOL-Sta 2316+66.7 22' RT (MH-86-3)	20-25'	2/9/2007	15:46	JPT
AA-1	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	0-5'	2/9/2007	15:51	JPT
AA-2	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	5-10'	2/9/2007	15:53	JPT
AA-3	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	10-15'	2/9/2007	15:55	JPT
AA-4	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	15-20'	2/9/2007	15:57	JPT
AA-5	CA-SOL-Sta 2316+1.7 37' RT (MH-86-3)	20-25'	2/9/2007	15:59	JPT

Submitted to lab by \_\_\_\_\_

Plant Name: Callaway Plant  
Contact Person: Chris Graham  
Telephone: 573-676-8380  
Fax: 573-676-4484

Purchase Order: 139754  
Results To: Chris Graham  
Address: Callaway Nuclear Plant  
P.O. Box 620  
Fulton, MO 65251

Callaway Pipeline Soil Sampling		Required Analysis:		
		H3		
ID	Sample Description	Date	Time	Sampled By
A-1	CA-SOL-Sta 140+78 159' LT (MH-9B)	6/20/2007	9:42	JPT
A-2	CA-SOL-Sta 140+78 159' LT (MH-9B)	6/20/2007	10:07	JPT
A-3	CA-SOL-Sta 140+78 159' LT (MH-9B)	6/20/2007	10:22	JPT
A-4	CA-SOL-Sta 140+78 159' LT (MH-9B)	6/20/2007	10:55	JPT
B-1	CA-SOL-Sta 140+58 102.5' RT (MH-8)	6/20/2007	12:39	JPT
B-2	CA-SOL-Sta 140+58 102.5' RT (MH-8)	6/20/2007	13:08	JPT
B-3	CA-SOL-Sta 140+58 102.5' RT (MH-8)	6/20/2007	13:30	JPT
B-4	CA-SOL-Sta 140+58 102.5' RT (MH-8)	6/20/2007	13:37	JPT
C-1	CA-SOL-Sta 137+85 62' LT (MH-8)	6/21/2007	14:42	JPT
C-2	CA-SOL-Sta 137+85 62' LT (MH-8)	6/21/2007	15:59	JPT
C-3	CA-SOL-Sta 137+85 62' LT (MH-8)	6/21/2007	16:08	JPT
D-1	CA-SOL-Sta 137+85 12' RT (MH-8)	6/21/2007	8:53	JPT
D-2	CA-SOL-Sta 137+85 12' RT (MH-8)	6/21/2007	8:58	JPT
D-3	CA-SOL-Sta 137+85 12' RT (MH-8)	6/21/2007	9:27	JPT
E-1	CA-SOL-Sta 104+64 60' LT (MH-4)	6/21/2007	9:55	JPT
E-2	CA-SOL-Sta 104+64 60' LT (MH-4)	6/21/2007	10:10	JPT
E-3	CA-SOL-Sta 104+64 60' LT (MH-4)	6/21/2007	10:25	JPT
E-4	CA-SOL-Sta 104+64 60' LT (MH-4)	6/21/2007	10:40	JPT
E-5	CA-SOL-Sta 104+64 60' LT (MH-4)	6/21/2007	11:10	JPT
E-6	CA-SOL-Sta 104+64 60' LT (MH-4)	6/21/2007	11:25	JPT
F-1	CA-SOL-Sta 107+00 90' LT (MH-4)	6/21/2007	11:50	JPT
F-2	CA-SOL-Sta 107+00 90' LT (MH-4)	6/21/2007	12:55	JPT
F-3	CA-SOL-Sta 107+00 90' LT (MH-4)	6/21/2007	13:15	JPT
F-4	CA-SOL-Sta 107+00 90' LT (MH-4)	6/21/2007	13:30	JPT
F-5	CA-SOL-Sta 107+00 90' LT (MH-4)	6/21/2007	13:45	JPT
F-6	CA-SOL-Sta 107+00 90' LT (MH-4)	6/21/2007	14:15	JPT

Submitted to lab by     JPT    

Plant Name: Callaway Plant  
Contact Person: Chris Graham  
Telephone: 573-676-8380  
Fax: 573-676-4484

Purchase Order: 139754  
Results To: Chris Graham  
Address: Callaway Nuclear Plant  
P.O. Box 620  
Fulton, MO 65251

**CHAIN OF CUSTODY**

Callaway Pipeline Soil Sampling		Required Analysis:			
		H3 Using Vacuum Distillation followed by			
		EPA Method 905.0 2 TIMES			
ID	Sample Description	Depth	Date	Time	Sampled By
A-1	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	3-5'	9/28/2007	10:00	TB
A-2	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	8-10'	9/28/2007	10:10	TB
A-3	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	13-15'	9/28/2007	10:20	TB
A-4	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	18-20'	9/28/2007	10:35	TB
A-5	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	23-25'	9/28/2007	11:26	TB
A-6	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	28-30'	9/28/2007	12:05	TB
A-7	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	33-35'	9/28/2007	12:15	TB
B-1	CA-SOL-Sta 72+80, 105' RT (MH-2)	3-5'	9/28/2007	13:50	TB
B-2	CA-SOL-Sta 72+80, 105' RT (MH-2)	8-10'	9/28/2007	14:00	TB
B-3	CA-SOL-Sta 72+80, 105' RT (MH-2)	13-15'	9/28/2007	14:05	TB
B-4	CA-SOL-Sta 72+80, 105' RT (MH-2)	18-20'	9/28/2007	14:14	TB
B-5	CA-SOL-Sta 72+80, 105' RT (MH-2)	23-25'	9/28/2007	14:20	TB
B-6	CA-SOL-Sta 72+80, 105' RT (MH-2)	28-30'	9/28/2007	14:59	TB
C-1	CA-SOL-Sta 72+05, 40' LT (MH-2)	3-5'	10/1/2007	9:50	AW
C-2	CA-SOL-Sta 72+05, 40' LT (MH-2)	8-10'	10/1/2007	10:03	AW
C-3	CA-SOL-Sta 72+05, 40' LT (MH-2)	13-15'	10/1/2007	10:10	AW
C-4	CA-SOL-Sta 72+05, 40' LT (MH-2)	18-20'	10/1/2007	10:20	AW
C-5	CA-SOL-Sta 72+05, 40' LT (MH-2)	23-25'	10/1/2007	10:40	AW
C-6	CA-SOL-Sta 72+05, 40' LT (MH-2)	28-30'	10/1/2007	11:00	AW
C-7	CA-SOL-Sta 72+05, 40' LT (MH-2)	33-35'	10/1/2007	11:10	AW
C-8	CA-SOL-Sta 72+05, 40' LT (MH-2)	38-40'	10/1/2007	11:30	AW
D-1	CA-SOL-Sta 105+24 200' LT (MH-4)	3-5'	10/1/2007	14:05	AW
D-2	CA-SOL-Sta 105+24 200' LT (MH-4)	8-10'	10/1/2007	14:20	AW
D-3	CA-SOL-Sta 105+24 200' LT (MH-4)	13-15'	10/1/2007	14:30	AW
D-4	CA-SOL-Sta 105+24 200' LT (MH-4)	18-20'	10/1/2007	14:40	AW
D-5	CA-SOL-Sta 105+24 200' LT (MH-4)	23-25'	10/1/2007	15:00	AW
E-1	CA-SOL-Sta 140+24 40' LT (MH-8)	3-5'	10/2/2007	10:00	AW
E-2	CA-SOL-Sta 140+24 40' LT (MH-8)	8-10'	10/2/2007	10:05	AW
E-3	CA-SOL-Sta 140+24 40' LT (MH-8)	13-15'	10/2/2007	10:10	AW
F-1	CA-SOL-Sta 143+17, 40' RT (MH-9B)	3-5'	10/2/2007	11:20	AW
F-2	CA-SOL-Sta 143+17, 40' RT (MH-9B)	8-10'	10/2/2007	11:35	AW
F-3	CA-SOL-Sta 143+17, 40' RT (MH-9B)	13-15'	10/2/2007	11:45	AW
G-1	CA-SOL-Sta 2294+59, 80' LT (86-6)	3-5'	10/2/2007	14:15	AW
G-2	CA-SOL-Sta 2294+59, 80' LT (86-6)	8-10'	10/2/2007	14:25	AW
G-3	CA-SOL-Sta 2294+59, 80' LT (86-6)	13-15'	10/2/2007	14:35	AW
G-4	CA-SOL-Sta 2294+59, 80' LT (86-6)	18-20'	10/2/2007	14:45	AW
G-5	CA-SOL-Sta 2294+59, 80' LT (86-6)	23-25'	10/2/2007	14:55	AW
H-1	CA-SOL-Sta 2293+94, 50' RT (86-6)	3-5'	10/2/2007	15:40	AW
H-2	CA-SOL-Sta 2293+94, 50' RT (86-6)	8-10'	10/2/2007	15:50	AW
H-3	CA-SOL-Sta 2293+94, 50' RT (86-6)	13-15'	10/2/2007	15:55	AW
H-4	CA-SOL-Sta 2293+94, 50' RT (86-6)	18-20'	10/2/2007	16:10	AW
H-5	CA-SOL-Sta 2293+94, 50' RT (86-6)	23-25'	10/2/2007	16:20	AW
I-1	MW-016	3-5'	10/3/2007	11:30	AW
I-2	MW-016	8-10'	10/3/2007	11:35	AW
I-3	MW-016	13-15'	10/3/2007	11:45	AW

**CHAIN OF CUSTODY**

Callaway Pipeline Soil Sampling		Required Analysis:			
		H3 Using Vacuum Distillation followed by			
		EPA Method 905.0 <b>2 TIMES</b>			
ID	Sample Description	Depth	Date	Time	Sampled By
I-4	MW-016	18-20'	10/3/2007	11:55	AW
I-5	MW-016	23-25'	10/3/2007	12:30	AW
I-6	MW-016	28-30'	10/3/2007	12:45	AW
I-7	MW-016	33-35'	10/3/2007	13:05	AW
I-8	MW-016	38-40'	10/3/2007	13:20	AW
J-1	CA-SOL-Sta 2294+89, 45' RT (86-6)	3-5'	10/4/2007	10:35	AW
J-2	CA-SOL-Sta 2294+89, 45' RT (86-6)	8-10'	10/4/2007	10:45	AW
J-3	CA-SOL-Sta 2294+89, 45' RT (86-6)	13-15'	10/4/2007	10:50	AW
J-4	CA-SOL-Sta 2294+89, 45' RT (86-6)	18-20'	10/4/2007	11:00	AW
J-5	CA-SOL-Sta 2294+89, 45' RT (86-6)	23-25'	10/4/2007	11:10	AW
K-1	CA-SOL-(MH-86-1)	3-5'	10/4/2007	12:15	AW
K-2	CA-SOL-(MH-86-1)	8-10'	10/4/2007	12:25	AW
K-3	CA-SOL-(MH-86-1)	13-15'	10/4/2007	12:30	AW
K-4	CA-SOL-(MH-86-1)	18-20'	10/4/2007	12:35	AW
K-5	CA-SOL-(MH-86-1)	23-25'	10/4/2007	12:45	AW
K-6	CA-SOL-(MH-86-1)	28-29'	10/4/2007	13:05	AW
L-1	CA-SOL-Sta 106+50, 200' LT (MH-4,5,6)	3-5'	10/12/2007	10:00	AW
L-2	CA-SOL-Sta 106+50, 200' LT (MH-4,5,6)	8-10'	10/12/2007	10:10	AW
L-3	CA-SOL-Sta 106+50, 200' LT (MH-4,5,6)	13-15'	10/12/2007	10:20	AW
L-4	CA-SOL-Sta 106+50, 200' LT (MH-4,5,6)	18-20'	10/12/2007	10:30	AW
L-5	CA-SOL-Sta 106+50, 200' LT (MH-4,5,6)	23-25'	10/12/2007	10:40	AW
L-6	CA-SOL-Sta 106+50, 200' LT (MH-4,5,6)	28-30'	10/12/2007	11:20	AW
A-GW	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	NA	10/3/2007	15:00	AW
C-GW	CA-SOL-Sta 72+05, 40' LT (MH-2)	NA	10/3/2007	16:30	AW
B-GW	CA-SOL-Sta 72+80, 105' RT (MH-2)	NA	10/9/2007	11:00	AW
D-GW	CA-SOL-Sta 105+24 200' LT (MH-4)	NA	10/9/2007	12:00	AW
E-GW	CA-SOL-Sta 140+24 40' LT (MH-8)	NA	10/9/2007	12:45	AW
F-GW	CA-SOL-Sta 143+17, 40' RT (MH-9B)	NA	10/9/2007	13:30	AW
K-GW	CA-SOL-(MH-86-1)	NA	10/12/2007	15:30	AW
L-GW	CA-SOL-Sta 106+50, 200' LT (MH-4,5,6)	NA	10/12/2007	13:27	AW

Released by: Adam White

Date: 10/17/07 Time: 12:00

Received by: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Plant Name: Callaway Plant  
 Contact Person: Chris Graham  
 Telephone: 573-676-8380  
 Fax: 573-676-4484

Purchase Order: 139754  
 Results To: Chris Graham  
 Address: Callaway Nuclear Plant  
 P.O. Box 620  
 Fulton, MO 65251

**CHAIN OF CUSTODY**

Callaway Pipeline Soil Sampling		Required Analysis:			
		H3 Using Vacuum Distillation followed by			
		EPA Method 905.0 2 TIMES			
ID	Sample Description	Depth	Date	Time	Sampled By
	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	3-5'	9/28/2007	10:00	TB
	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	8-10'	9/28/2007	10:10	TB
	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	13-15'	9/28/2007	10:20	TB
	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	18-20'	9/28/2007	10:35	TB
	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	23-25'	9/28/2007	11:26	TB
	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	28-30'	9/28/2007	12:05	TB
	CA-SOL-Sta 24+82, 64' LT (W. of Dock Haul Road)	33-35'	9/28/2007	12:15	TB
	CA-SOL-Sta 72+80, 105' RT (MH-2)	3-5'	9/28/2007	13:50	TB
	CA-SOL-Sta 72+80, 105' RT (MH-2)	8-10'	9/28/2007	14:00	TB
	CA-SOL-Sta 72+80, 105' RT (MH-2)	13-15'	9/28/2007	14:05	TB
	CA-SOL-Sta 72+80, 105' RT (MH-2)	18-20'	9/28/2007	14:14	TB
	CA-SOL-Sta 72+80, 105' RT (MH-2)	23-25'	9/28/2007	14:20	TB
	CA-SOL-Sta 72+80, 105' RT (MH-2)	28-30'	9/28/2007	14:59	TB
	CA-SOL-Sta 72+05, 40' LT (MH-2)	3-5'	10/1/2007	9:50	AW
	CA-SOL-Sta 72+05, 40' LT (MH-2)	8-10'	10/1/2007	10:03	AW
	CA-SOL-Sta 72+05, 40' LT (MH-2)	13-15'	10/1/2007	10:10	AW
	CA-SOL-Sta 72+05, 40' LT (MH-2)	18-20'	10/1/2007	10:20	AW
	CA-SOL-Sta 72+05, 40' LT (MH-2)	23-25'	10/1/2007	10:40	AW
	CA-SOL-Sta 72+05, 40' LT (MH-2)	28-30'	10/1/2007	11:00	AW
	CA-SOL-Sta 72+05, 40' LT (MH-2)	33-35'	10/1/2007	11:10	AW
	CA-SOL-Sta 72+05, 40' LT (MH-2)	38-40'	10/1/2007	11:30	AW
	CA-SOL-Sta 105+24 200' LT (MH-4)	3-5'	10/1/2007	14:05	AW
	CA-SOL-Sta 105+24 200' LT (MH-4)	8-10'	10/1/2007	14:20	AW
	CA-SOL-Sta 105+24 200' LT (MH-4)	13-15'	10/1/2007	14:30	AW
	CA-SOL-Sta 105+24 200' LT (MH-4)	18-20'	10/1/2007	14:40	AW
	CA-SOL-Sta 105+24 200' LT (MH-4)	23-25'	10/1/2007	15:00	AW
	CA-SOL-Sta 140+24 40' LT (MH-8)	3-5'	10/2/2007	10:00	AW
	CA-SOL-Sta 140+24 40' LT (MH-8)	8-10'	10/2/2007	10:05	AW
	CA-SOL-Sta 140+24 40' LT (MH-8)	13-15'	10/2/2007	10:10	AW
	CA-SOL-Sta 143+17, 40' RT (MH-9B)	3-5'	10/2/2007	11:20	AW
	CA-SOL-Sta 143+17, 40' RT (MH-9B)	8-10'	10/2/2007	11:35	AW
	CA-SOL-Sta 143+17, 40' RT (MH-9B)	13-15'	10/2/2007	11:45	AW
	CA-SOL-Sta 2294+59, 80' LT (86-6)	3-5'	10/2/2007	14:15	AW
	CA-SOL-Sta 2294+59, 80' LT (86-6)	8-10'	10/2/2007	14:25	AW
	CA-SOL-Sta 2294+59, 80' LT (86-6)	13-15'	10/2/2007	14:35	AW
	CA-SOL-Sta 2294+59, 80' LT (86-6)	18-20'	10/2/2007	14:45	AW
	CA-SOL-Sta 2294+59, 80' LT (86-6)	23-25'	10/2/2007	14:55	AW
	CA-SOL-Sta 2293+94, 50' RT (86-6)	3-5'	10/2/2007	15:40	AW
	CA-SOL-Sta 2293+94, 50' RT (86-6)	8-10'	10/2/2007	15:50	AW
H-3	CA-SOL-Sta 2293+94, 50' RT (86-6)	13-15'	10/2/2007	15:55	AW
H-4	CA-SOL-Sta 2293+94, 50' RT (86-6)	18-20'	10/2/2007	16:10	AW
H-5	CA-SOL-Sta 2293+94, 50' RT (86-6)	23-25'	10/2/2007	16:20	AW
I-1	MW-016	3-5'	10/3/2007	11:30	AW
I-2	MW-016	8-10'	10/3/2007	11:35	AW
I-3	MW-016	13-15'	10/3/2007	11:45	AW

Callaway Pipeline Soil Sampling		Required Analysis:		
		H3		
ID	Sample Description	Date	Time	Sampled By
RA-1	CA-SOL-Sta. 232+29, 25 LT (B2A)	9-27	1602	AJW
RA-2	CA-SOL-Sta. 224+34, 23 LT	9-27	1620	AJW
A-1	CA-SOL-Sta. 24+82, 64 LT (3-5)	9-28	1000	TB
A-2	CA-SOL-Sta. (8-10)		1010	TB
A-3	CA-SOL-Sta. (13-15)		1020	
A-4	CA-SOL-Sta. (18-20)		1035	
A-5	CA-SOL-Sta. (23-25)		1126	
A-6	CA-SOL-Sta. (28-30)		1205	
A-7	CA-SOL-Sta. (33-35)		1215	
B-1	CA-SOL-Sta. 72+80, 105 RT (3-5)	9/28	1350	AJW
B-2	CA-SOL-Sta. (8-10)		1400	
B-3	CA-SOL-Sta. (13-15)		1405	
B-4	CA-SOL-Sta. (18-20)		1414	
B-5	CA-SOL-Sta. (23-25)		1420	
B-6	CA-SOL-Sta. (28-30)		1459	
C-1	CA-SOL-Sta. 72+05, 40 LT (3-5)	10/1	950	AJW
C-2	CA-SOL-Sta. (8-10)		1003	
C-3	CA-SOL-Sta. (13-15)		1010	
C-4	CA-SOL-Sta. (18-20)		1020	
C-5	CA-SOL-Sta. (23-25)		1040	
C-6	CA-SOL-Sta. (28-30)		1100	
C-7	CA-SOL-Sta. (33-35)		1110	
C-8	CA-SOL-Sta. (38-40)		1130	
D-1	CA-SOL-Sta. 105+23.5, 200 LT (3-5)	10/1	205	AJW
D-2	CA-SOL-Sta. (8-10)		220	
D-3	CA-SOL-Sta. (13-15)		230	
D-4	CA-SOL-Sta. (18-20)		240	
D-5	CA-SOL-Sta. (23-25)		300	
E1	CA-SOL-Sta. 140+24, 40 LT (3-5)	10/2	1000	AJW
E2	CA-SOL-Sta. (8-10)		1005	
E3	CA-SOL-Sta. (13-15)		1010	
F-1	CA-SOL-Sta. 104+80, 40 RT (3-5)	10/2	1120	AJW
F-2	CA-SOL-Sta. (8-10)		1135	
F-3	CA-SOL-Sta. (13-15)		1145	
G-1	CA-SOL-Sta. 2294+59, 80 RT (3-5)	10/2	215	AJW
G-2	CA-SOL-Sta. (8-10)		225	
G-3	CA-SOL-Sta. (13-15)		235	
G-4	CA-SOL-Sta. (18-20)		245	
G-5	CA-SOL-Sta. (23-25)		255	
H-1	CA-SOL-Sta. 2293+94, 50 RT (3-5)	10/2		AJW
H-2	CA-SOL-Sta. (8-10)			
H-3	CA-SOL-Sta. (13-15)			
H-4	CA-SOL-Sta. (18-20)			
H-5	CA-SOL-Sta. (23-25)			
	CA-SOL-Sta.			

Dock  
Haul  
RD

MH2

Submitted to lab by \_\_\_\_\_

Callaway Pipeline Soil Sampling		Required Analysis:		
		H3		
ID	Sample Description	Date	Time	Sampled By
I-1	CA-SOL-Sta. MW-016 (3-5)	10/3	1130	AJW
I-2	CA-SOL-Sta. (8-10)	↓	1135	↓
I-3	CA-SOL-Sta. (13-15)	↓	1145	↓
I-4	CA-SOL-Sta. (18-20)	↓	1155	↓
I-5	CA-SOL-Sta. (23-25)	↓	1230	↓
I-6	CA-SOL-Sta. (28-30)	↓	1245	↓
I-7	CA-SOL-Sta. (33-35)	↓	105	↓
I-8	CA-SOL-Sta. (38-39)	↓	120	↓
J-1	CA-SOL-Sta. 2294+89, 4SRT (3-5)	10/4	1035	AJW
J-2	CA-SOL-Sta. (8-10)	↓	1045	↓
J-3	CA-SOL-Sta. (13-15)	↓	1050	↓
J-4	CA-SOL-Sta. (18-20)	↓	1100	↓
J-5	CA-SOL-Sta. (23-25)	↓	1110	↓
K-1	CA-SOL-Sta. 86-1 (3-5)	10/4	1215	AJW
K-2	CA-SOL-Sta. (8-10)	↓	1225	↓
K-3	CA-SOL-Sta. (13-15)	↓	1230	↓
K-4	CA-SOL-Sta. (18-20)	↓	1235	↓
K-5	CA-SOL-Sta. (23-25)	↓	1245	↓
K-6	CA-SOL-Sta. (28-29)	↓	105	↓
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
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	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			
	CA-SOL-Sta.			

Submitted to lab by \_\_\_\_\_



Callaway Pipeline Soil Sampling		Required Analysis:			
ID	Sample Description	H3	Date	Time	Sampled By
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
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	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				
	CA-SOL-Sta.				

Submitted to lab by \_\_\_\_\_



CHAIN OF CUSTODY

Callaway Pipeline Sampling		Required Analysis:			
ID	Sample Description	Depth	Date	Time	Sampled By

Released by: Adam White

Date: 11/13/07 Time: 11:45

Received by: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Plant Name: Callaway Plant  
 Contact Person: Chris Graham  
 Telephone: 573-676-8380  
 Fax: 573-676-4484

Purchase Order: 139754  
 Results To: Chris Graham  
 Address: Callaway Nuclear Plant  
 P.O. Box 620  
 Fulton, MO 65251



### CHAIN OF CUSTODY

Callaway Pipeline Sampling		Required Analysis:			
ID	Sample Description	Depth	Date	Time	Sampled By

Released by: *Adam White*

Date: 11/13/07 Time: 11:45

Received by: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Plant Name: Callaway Plant  
 Contact Person: Chris Graham  
 Telephone: 573-676-8380  
 Fax: 573-676-4484

Purchase Order: 139754  
 Results To: Chris Graham  
 Address: Callaway Nuclear Plan  
 P.O. Box 620  
 Fulton, MO 65251

Graham

CHAIN OF CUSTODY

Callaway Pipeline Sampling		Required Analysis:			
ID	Sample Description	Depth	Date	Time	Sampled By
1	9B INV 1 CA-SOL-STA 142+77.5, 55RT	3-5	11/9/07	10:00	AJW
2	9B INV 1	8-10		10:20	
3	9B INV 1	13-15		10:25	
4	9B INV 1	18-20		10:35	
5	9B INV 1	23-25		10:47	
1	9B INV 2 CA-SOL-STA 142+22.5, 23RT	3-5	11/9/07	11:25	AJW
2	9B INV 2	8-10		11:28	
3	9B INV 2	13-15		11:35	
4	9B INV 2	18-20		11:46	
5	9B INV 2	23-25		12:00	
1	9B INV 3 CA-SOL-STA 142+20.5, 75LT	3-5	11/9/07	13:40	AJW
2	9B INV 3	8-10		13:46	
3	9B INV 3	13-15		13:52	
4	9B INV 3	18-20		13:57	
5	9B INV 3	23-25		14:13	
1	9B INV 4 CA-SOL-STA 142+97.5, 41LT	3-5	11/9/07	14:40	AJW
2	9B INV 4	8-10		14:44	
3	9B INV 4	13-15		14:50	
4	9B INV 4	18-20		14:57	
5	9B INV 4	23-25		15:06	
	9B INV 1 GW-A (500 mL)		11/9/07	11:00	AJW
	9B INV 1 GW-B (1 gal)		11/9/07	11:00	AJW
	9B INV 2 GW-A (500 mL)		11/9/07	12:20	AJW
	9B INV 2 GW-B (1 gal)		11/9/07	12:20	AJW
	9B INV 3 GW-A (500 mL)		11/9/07	14:20	AJW
	9B INV 3 GW-B (1 gal)		11/9/07	14:20	AJW
	9B INV 4 GW-A (500 mL)		11/9/07	15:20	AJW
	9B INV 4 GW-B (1 gal)		11/9/07	15:20	AJW

**CHAIN OF CUSTODY**

Callaway Pipeline Sampling		Required Analysis:			
ID	Sample Description	Depth	Date	Time	Sampled By

Released by: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Plant Name: Callaway Plant  
 Contact Person: Chris Graham  
 Telephone: 573-676-8380  
 Fax: 573-676-4484

Purchase Order: 139754  
 Results To: Chris Graham  
 Address: Callaway Nuclear Plant  
 P.O. Box 620  
 Fulton, MO 65251







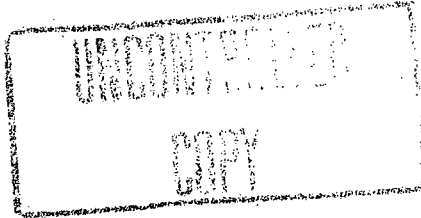




## **APPENDIX F**



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ph. (847) 564-0700 • fax (847) 564-4517



DETERMINATION OF TRITIUM IN WATER  
(DIRECT METHOD)

PROCEDURE NO. T-02

Prepared by

Environmental Inc.  
Midwest Laboratory

Copy No. \_\_\_\_\_

<u>Revision #</u>	<u>Date</u>	<u>Pages</u>	<u>Prepared by</u>	<u>Approved by</u>
<u>3</u>	<u>07-07-98</u>	<u>4</u>	<u>D. Rieter</u>	<u>B Grob</u>
<u>4</u>	<u>06-06-00</u>	<u>4</u>	<u>R. Amromin</u>	<u>B Grob</u>
<u>5</u>	<u>01-29-02</u>	<u>4</u>	<u>SA Coorlim</u>	<u>B Grob</u>
<u>6</u>	<u>09-11-06</u>	<u>5</u>	<u>SA Coorlim</u>	<u>B Grob</u>

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## DETERMINATION OF TRITIUM IN WATER (DIRECT METHOD)

### Principle of Method

Water from a liquid or solid (soil, vegetation, food product) matrix is purified by distillation, a portion of the distillate is transferred to a counting vial and the scintillation fluid added. The contents of the vial are thoroughly mixed and counted in a liquid scintillation counter.

6

### Reagents

Scintillation medium, Ultima-Gold LLT, Packard Instruments Co.  
Tritium standard solution  
Dead water  
Ethyl alcohol  
Sodium Hydroxide (pellets)  
Potassium permanganate (crystals)

### Apparatus

Condenser  
Distillation flask, 250-mL capacity  
Liquid scintillation counter  
Pipette and disposable tips (0.1ml., 5-10 ml.)

### Procedure

**NOTE 1:** All glassware must be dry. Set drying oven for 100-125°C.

1. For liquid samples, transfer 60-70 mL directly to a 250-mL distillation flask. For solid samples distill approximately 100 -400 grams of sample into a 250 ml. distillation flask.

6

Add a boiling chip to the distillation flask. Add one NaOH pellet and about 0.02g  $\text{KMnO}_4$ . Connect a side arm adapter and a condenser to the outlet of the flask. Place a receptacle at the outlet of the condenser. Heat to boiling to distill. Discard the first 5-10mL of distillate. Collect next 20-25mL of distillate for analysis. Do not distill to dryness.

2. Mark the vial caps with the sample number and date.

NOTE: Use the same type of vial for the whole batch (samples, background and standard.)

3. Mark three vial caps "BKG-1", " BKG-2", " BKG-3", and date.
4. Mark three vial caps "ST-1", " ST-2", " ST-3"; standard number, and date.
5. Dispense 13 mL of sample into marked vials and "dead" water into vials marked BKG-1, BKG-2, BKG-3.

### **NOTE 2: Pipettes:**

The Pipette is set (and calibrated) to deliver 6.5 mL, so pipette twice into each vial. Use a new tip for each sample and a new tip (one) for three background samples. Make sure the pipette has not been reset. If it has been reset, or if you are not sure, do not use it; check with your supervisor. When using the pipette, make sure the plastic tip is pushed all the way on the pipette and is tight. If it is not, the air will be draw in and the volume withdrawn will not be correct (it will be smaller).

**DETERMINATION OF TRITIUM IN WATER (DIRECT METHOD)****Procedure (cont.)**

6. Dispense (Note 2) 13 mL of "dead" water into each vial marked "ST-1", "ST-2", and "ST-3".
7. Using a 0.1 mL pipette, withdraw water from each of the three standard vials. Discard this 0.1 mL of water.
8. Take a new 0.1 mL tip. Dispense 0.1 mL of standard into each of the three vials marked "ST-1", "ST-2", and "ST-3".
9. Take all vials containing samples, background, and standard to the counting room.
10. Dispense 10 mL of scintillation fluid into each vial (one at a time), cap tightly, and shake VIGOROUSLY for at least 30 seconds. Recheck the cap for tightness.

**NOTE 3:** To avoid spurious counts, scintillation fluid should not be added under fluorescent light.

11. Wet a Kimwipe with alcohol and wipe-off each vial in the following order:

Background  
Samples  
Standard

12. Load the vials in the following order:

BKG-1  
ST-1  
Samples  
BKG -2\*  
ST -2\*  
Samples  
BKG-3  
ST -3

\*BKG-2 and ST-2 should be approximately  
in the middle of the batch

13. Let the vials dark- and temperature-adapt for about one hour.

**NOTE 4:**

The temperature inside the counter should be between 10° and 14°C (check thermometer). To check if vials have reached counter temperature, inspect one vial (Bkg). The liquid should be transparent. If the temperature is too high (or too low), the liquid will be white and very viscous.

14. Set the counter for a 100-minute counting time.

**DETERMINATION OF TRITIUM IN WATER (DIRECT METHOD)****Procedure (cont.)**

15. Fill out the loading sheet, being sure to indicate the date and time counting started, and your initials.

**NOTE 5:**

Do not use the prepared background and standard sets for samples counted in plastic vials. Prepare new backgrounds and standards for each batch.

If glass vials are used, the prepared background and standard sets can be counted with other batches up to one month after preparation, provided they are not taken out of the counter (not warmed up) and the same vial type from the same manufacturing batch (the same carton) is used. After one month prepare new sets of backgrounds and standards.

**Calculations**

$$pCi/L = \frac{\frac{A}{t_1} - \frac{B}{t_2}}{2.22EVe^{-\lambda t_3}} + \frac{2 \sqrt{\frac{A}{t_1^2} + \frac{B}{t_2^2}}}{2.22EVe^{\lambda t_3}}$$

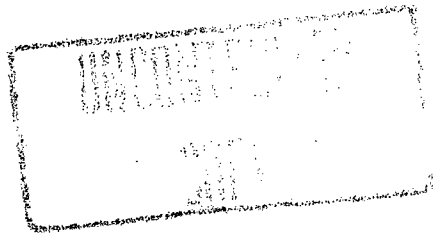
Where:

- A = Total counts, sample  
 B = Total counts, background  
 E = Efficiency, (cpm/dpm)  
 V = Volume (liter)  
 e = Base of the natural logarithm = 2.71828  
 $\lambda = \frac{0.693}{12.26} = 0.5652$   
 $t_1$  = Counting time, sample  
 $t_2$  = Counting time, background  
 $t_3$  = Elapsed time from the time of collection to the time of counting (in years)





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**WATER EXTRACTION from SOLID SAMPLES and MILK  
for TRITIUM ANALYSIS**

PROCEDURE NO. T-06

Prepared by

Environmental Inc.;  
Midwest Laboratory

Copy No. \_\_\_\_\_

<u>Revision #</u>	<u>Date</u>	<u>Pages</u>	<u>Prepared by</u>	<u>Approved by</u>
<u>0</u>	<u>08-19-93</u>	<u>4</u>	<u>B. Grob</u>	<u>LG Huebner</u>

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## PROCEDURE FOR EXTRACTING WATER FROM SOLID SAMPLES AND MILK

### Principle of Method

Water is extracted from samples using vacuum distillation technique. It is then purified by distillation and counted in accordance with Procedure No. T-02.

### Apparatus

Distillation flask, 2L. capacity  
Flask with stopper, 250mL capacity  
Cold trap  
Heating mantle  
Variac

### Other

Liquid nitrogen  
Vacuum grease

1. Assemble apparatus as shown in Figure 1. Start with cold trap assembly. Grease the joint, attach cold trap and then attach whole assembly to vacuum line. Close stopcock #3 and open stopcocks numbers 1, and 2. Hold the trap with your hand until vacuum is established, otherwise the cold trap might fall and break.
2. Weigh 2-liter flask. Place the sample into the flask and reweigh. Record wet weight of the sample. Assemble as shown in Figure 1.

**Note 1:** Use the following amounts of sample:

Soil: approx. 50-200 g  
Vegetation: approx. 50-200 g, depending on dryness  
Meat, fish (flesh): ca. 50-100 g  
Milk: 150 mL

**Note 2:** For milk, do not weigh the flasks before and after distillation. Measure out 150 mL of milk and place in the flask.

3. Place the dewar all the way to the joint of the cold trap.
4. Slowly fill with liquid N<sub>2</sub> to the top. (See Figure 1).
5. When liquid N<sub>2</sub> stops boiling, slowly open stopcock #3.
6. Turn variac on and set it at 50. Pump for about ten minutes.

**PROCEDURE FOR EXTRACTING WATER FROM SOLID SAMPLES AND MILK (cont.)**

7. Close stopcock #2 and vacuum distill for about 1.0 hour. Check level of liquid N<sub>2</sub> periodically and add, if needed.
8. After one hour, lower the dewar to about 1" above the bottom of the trap. Let ice at the top of the trap melt and refreeze at the bottom. Use hair dryer to speed up melting.
9. After all the ice at the top of the trap has melted, raise the dewar to the top again, and add liquid N<sub>2</sub>, if needed.
10. Open stopcock #2 and pump for about ten minutes. After ten minutes, close stopcock #2 and continue vacuum distillation for about thirty minutes.
11. After about thirty minutes, test for completeness. Close the stopcock #3 for about 10 minutes. If water droplets collect in the tube from the flask to the cold trap, distillation is not complete. Open stopcock #3 and continue distilling for another 30 minutes.
12. Check for completeness (Step 11).
13. If distillation is complete, close stopcock #3, turn off variac and remove distillation flask.  
**NOTE:** For milk, do not distill to dryness. Collect 40-50 mL and stop the distillation.
14. Remove the dewar and let the ice in the trap melt. Use hair dryer to speed up melting.
15. Weigh 250 mL flask, write sample I.D. on the flask.
16. After the ice has melted, release the vacuum in the trap by opening stopcock #3.
17. Remove the trap and transfer water to the 250 mL flask. Stopper it. Weigh the flask and record weight of water.
18. Proceed with analysis for tritium, using procedure No. T-02.

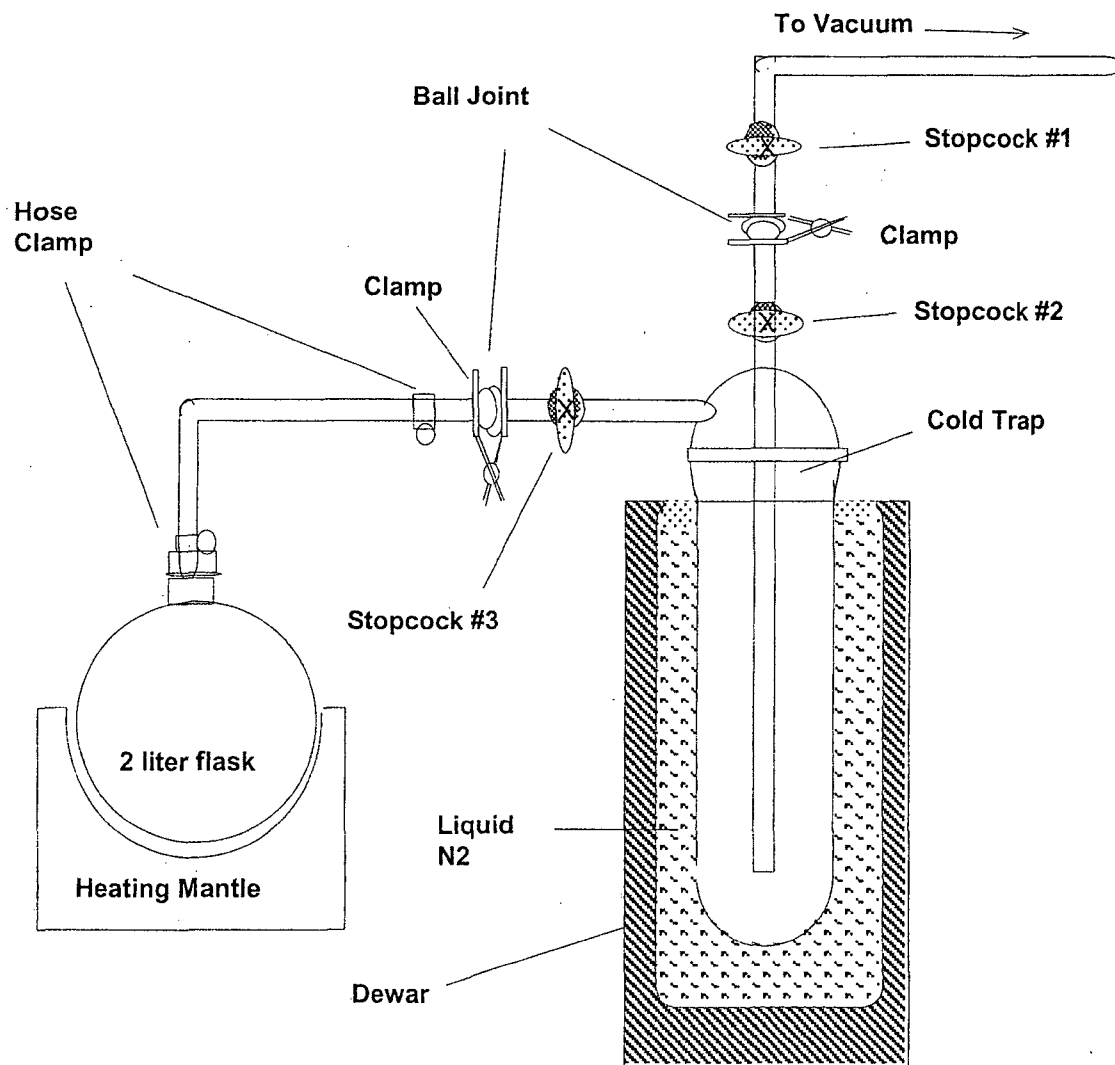


Figure 1. Vacuum Distillation Apparatus

## APPENDIX G

**DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION  
Phase I (MTI-PI)**

**AmerenUE  
Callaway Plant  
Reform, Missouri**

**Terracon Project No. 09067011T  
August 28, 2006**

*Prepared for:*

**AmerenUE  
Callaway Plant  
% Mr. Chris Graham  
Reform, Missouri**

*Prepared by:*

**Terracon**  
Columbia, Missouri

**Terracon**

## TABLE OF CONTENTS

<b>1.0 INTRODUCTION</b> .....	<b>1</b>
<b>2.0 PHASE I CONTAMINANT DELINEATION</b> .....	<b>2</b>
<b>2.1 Borehole Investigation</b> .....	<b>2</b>
2.1.1 Soils.....	3
2.1.2 Groundwater.....	3
<b>3.0 Results</b> .....	<b>3</b>
3.1 Geology/Hydrogeology.....	3
3.2 Groundwater Elevations.....	3
3.3 Soil Results.....	4
3.4 Groundwater Results.....	4
<b>4.0 SUMMARY AND CONCLUSIONS</b> .....	<b>5</b>
<b>5.0 GENERAL COMMENTS</b> .....	<b>5</b>

### Tables

Table 1: Borehole Identification and Pipeline Reference Location

Table 2: Soil and Groundwater Analytical Results

### Figures

Figure 1: Site location Map

Figure 2: Manhole 2 - Groundwater Elevations

Figure 3: Manhole 2 - Soil Analytical Results

Figure 4: Manhole 2 - Groundwater Analytical Results

Figure 5: Manhole 3B - Groundwater Elevations

Figure 6: Manhole 3B - Soil Analytical Results

Figure 7: Manhole 3B - Groundwater Analytical Results

Figure 8: Manhole 5 - Groundwater Elevations

Figure 9: Manhole 5 - Soil Analytical Results

Figure 10: Manhole 5 - Groundwater Analytical Results

Figure 11: Manholes 6 and 6B - Groundwater Elevations

Figure 12: Manholes 6 and 6B - Soil Analytical Results

Figure 13: Manholes 6 and 6B - Groundwater Analytical Results

Figure 14: Manhole 8 - Groundwater Elevations

Figure 15: Manhole 8 - Soil Analytical Results

Figure 16: Manhole 8 - Groundwater Analytical Results

Figure 17: Manhole 9B - Groundwater Elevations

Figure 18: Manhole 9B - Soil Analytical Results

Figure 19: Manhole 9B - Groundwater Analytical Results

Figure 20: Manhole 11A - Soil Analytical Results

Figure 21: Manhole 11A - Groundwater Analytical Results

**Manhole Tritium Investigation – Phase I**  
**Callaway Plant**  
**Project No. 009067011T**  
**September 8, 2006**  
**Page 2**

**Terracon**

**APPENDIX A**

Boring Logs

**APPENDIX B**

Analytical Laboratory Testing Procedure No. T-06  
Analytical Laboratory Testing Procedure No. T-02



**DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**  
**Phase I (MTI-PI)**

**AmerenUE**  
**Callaway Plant**  
**Reform, Missouri**

**Terracon Project No. 09067011T**  
**September 8, 2006**

## **1.0 INTRODUCTION**

At the AmerenUE Callaway Plant in Reform Missouri, the Water Intake Pipeline transports water from the Missouri River to the Plant; the Water Discharge Pipeline returns water back to the Missouri River. These two pipelines are generally collocated in the pipeline corridor, a backfilled trench containing both pipelines. The pipelines are approximately 6 miles long and have numerous manholes for inspection and maintenance access. Integral to operation of the manholes are Air Release Valves (ARVs).

Discharge water from the Plant contains low levels of tritium ( $H^3$ ), which Callaway is authorized to discharge to the Missouri River under existing permits. However, direct releases into soil and groundwater are not allowed under the permit conditions and are of concern due to the potential for migration to receptors.

According to the U.S. Environmental Protection Agency (USEPA),  $H^3$  occurs naturally in the environment in very low concentrations, is in the form of tritiated water, which is colorless and odorless, and easily disburses in the atmosphere, water bodies, soil, and rock. With a half-life of 12.3 years,  $H^3$  is one of the least dangerous radionuclides because it emits very weak radiation and leaves the body relatively quickly. As it undergoes radioactive decay,  $H^3$  transforms to stable, non-radioactive helium.

Samples obtained and analyzed by AmerenUE in May and June, 2006 indicated the presence of  $H^3$  contamination in water collected from several manholes in the Water Discharge Pipeline. Terracon Consultants, Inc. (Terracon), on behalf AmerenUE (client), conducted a soil and groundwater investigation at select Water Discharge Pipeline access manholes equipped with ARVs as directed by Chris Graham of AmerenUE.

Terracon's initial efforts have focused on H<sup>3</sup> contamination delineation related to Manholes 2, 3B, 5, 6, 6B, 8, 9B and 11A. A general site location map is shown in Figure 1. This report documents Phase I of the H<sup>3</sup> contamination delineation efforts conducted by Terracon. In general, the investigation work scope included the following activities:

- Thirty-four borings were performed near selected manholes along the pipeline;
- Soil and groundwater samples were collected and submitted for laboratory analysis;
- Groundwater level measurements (and resulting flow directions) were estimated for borings in which groundwater was encountered.

## **2.0 PHASE I CONTAMINANT DELINEATION**

Phase I contaminant delineation consisted of performing borings into the shallow overburden, installation of temporary piezometers and collecting soil and groundwater samples for laboratory analysis. Prior to Plant access and field activities, Terracon personnel were provided with on-site safety training, provided by AmerenUE, including Plant access policies and procedures, general safety, and confined space entry. All field activities were conducted in general accordance with these safety policies and procedures.

### **2.1 Borehole Investigation**

A CME 550 all-terrain vehicle (ATV) drill rig equipped with solid flight and hollow-stem augers was used to perform 34 borings near Manholes 2, 3B, 5, 6, 6B, 8, 9B and 11A. Three or 4 borings were conducted at each manhole; each advanced to either shallow bedrock or a depth of approximately 25 feet below ground surface (bgs). Borehole locations were designated by manhole and boring number, and with pipeline coordinates (e.g., MH-3B B-1, 78+10 17L). Table 1 presents the borehole identification and pipeline location for the boreholes advanced during this study.

To avoid any potential for cross-contamination, all down-hole equipment was properly cleaned using a pressurized steam cleaner between borings. All samples were collected and shipped to the analytical laboratory, Environmental, Inc. (EI), selected by AmerenUE, under standard chain-of-custody procedures.

### 2.1.1 Soils

During drilling, discrete soil samples were collected at approximately 5-foot intervals from ground surface to the total depth of the boring. The soil samples were collected using a split-spoon sampler and logged for lithology and visible contamination (based on visual and tactual observations) (see Boring Logs, Appendix A). The soil samples obtained were placed in zip-lock plastic bags provided by AmerenUE and shipped to the EI.

### 2.1.2 Groundwater

Upon reaching total depth for each borehole, 2-inch diameter well screen and riser pipe were placed temporarily into the boreholes to obtain water level measurements and water samples. A total of 10-feet of well-screen was used for each boring. Water level measurements were referenced to top-of-casing (TOC) and were obtained with a cleaned, electronic water-level indicator. Water samples were obtained using a clean disposable bailer and placed in previously unused, clean sealed containers and shipped to EI.

## 3.0 Results

### 3.1 Geology/Hydrogeology

Lithologic information for each borehole is included in the Boring Logs in Appendix A. As delineated by the boring logs, shallow overburden material at the site generally consists of clays, silty and sandy clays and sands with occasional stringers of gravel or fractured-cherty limestone. Auger refusal (presumed depth to bedrock) was encountered near Manholes 8, 9B, and 11A, and ranged from about 20 to 28.5 feet bgs. Bedrock was not encountered for borings near Manholes 2, 3B, 5, 6, and 6B where drilling was stopped at total depths ranging from about 20 to 25 feet bgs. It was determined in the field and with consultation with AmerenUE representatives that deeper drilling was outside the scope of this investigation.

### 3.2 Groundwater Elevations

To estimate groundwater elevations and flow direction at the manholes, temporary casing was placed in each boring. Groundwater was allowed to develop in the temporary casings for approximately 12 to 24 hours prior to measurement. The top of each manhole cover was used as an arbitrary benchmark with an elevation previously assigned by others. The TOC and ground-level at each temporary cased boring was surveyed using standard leveling

techniques (the limitation of the survey methods used must be recognized, more accurate elevations require the services of a Registered Land Surveyor).

Measured water level information is noted on the boring logs in Appendix A and presented graphically in Figures 2, 5, 8, 11, 14, and 17 for Manholes 2, 3B, 5, 6, 6B, 8, and 9B, respectively. Borings at Manhole 11A were dry after allowing the system to equalize for 24 hours. Because of the relatively large distances between sampling locations, the figures have been grouped by manhole.

### **3.3 Soil Results**

Tritium contamination in soil consists of  $H^3$  contaminated water held as soil moisture. Testing for tritium in soil typically includes extracting the water held as soil moisture using distillation procedures by the laboratory; the distillate is then tested by the laboratory for tritium in water. EI's procedures for performing this testing are: Procedure T-06: Water Extraction from Solid Samples and Milk for Tritium Analysis, followed by Procedure T-02: Determination of Tritium in Water (see Appendix B).

Analytical laboratory results for water extracted from soil samples are summarized in Table 2 and shown graphically in Figures 3, 6, 9, 12, 15, 18, and 20. As indicated in Table 2,  $H^3$  concentrations from water extracted from soil samples from MH-2, MH-3B, MH-5, MH-6B, MH-8, MH-9B are in excess of USEPA Drinking Water Standards of 20,000 picoCuries/liter (pCi/L). The highest levels of  $H^3$  were collected from locations within the horizontal confines of the manhole structures. The only water extracted from soil samples located outside the confines of a manhole which exceeded the USEPA Drinking Water Standards came from MH-6B B-4 (109+60 L18, 8-10 feet bgs),

### **3.4 Groundwater Results**

Laboratory results for the groundwater samples collected from the boreholes are included in the Table 2 and shown graphically in Figures 4, 7, 10, 13, 16, 19 and 21. Water samples collected at several other locations are provided in Table 2 as: Miscellaneous Sampling Results. Detectable levels of  $H^3$ , ranging from less than 128 to 1554 pCi/L were reported; however no water samples from this investigation were reported to which exceed USEPA Drinking Water Standards. The testing for tritium in groundwater samples was conducted by the laboratory as per EI's Procedure T-02: Determination of Tritium in Water (Appendix B).

#### 4.0 SUMMARY AND CONCLUSIONS

The results from the initial phase of the Discharge Pipeline Manhole Tritium Investigation indicate that soil and groundwater in the vicinity of the effluent pipeline have been impacted by H<sup>3</sup> contamination. H<sup>3</sup> in water extracted in soil samples collected from within the horizontal confines of MH-2, MH-3B, MH-5, MH-6B, MH-8, MH-9B exceed USEPA Drinking Water Standards. However, water samples collected from groundwater did not exceed the EPA regulatory criteria. Based on the data generated in this investigation, there is not enough information to determine if H<sup>3</sup> contamination is limited to within Plant property boundaries or if off-site migration is occurring.

Because of the observed presence of H<sup>3</sup> in the majority of samples tested, the concentrations observed in the groundwater extracted from soil samples, and the lack of identified limits of contamination, Terracon recommends further delineation of the observed H<sup>3</sup> contamination, and testing of soils and groundwater in and around manholes without ARVs to further define the nature and extent of H<sup>3</sup> related to the pipelines. Because the pipeline corridor is a potential conduit for H<sup>3</sup> migration, additional testing should also be conducted at periodic intervals along the pipeline. All borehole locations and elevations should be professionally surveyed to provide more accurate information on horizontal and vertical extent of contamination and further refine shallow groundwater flow directions.

#### 5.0 GENERAL COMMENTS

The Discharge Pipeline Manhole Tritium Investigation work scope was designed to further delineate contamination previously observed on the site. This work scope should not be considered a comprehensive assessment. Collecting samples at different times and locations, and collecting samples from permanently installed monitor wells versus uncased borings/probes may yield different results. If additional information is developed in the future, this report should be reviewed and modified, if appropriate. Terracon does not warrant the work of regulatory agencies or other third parties who may have provided information during the preparation of this report.

This report has been prepared for the exclusive use of our client for specific applications as discussed. It has been prepared in accordance with generally accepted environmental assessment practices within the constraints of the client's directives. No warranties, either express or implied, are intended or made. Others drawing conclusions from the results of this assessment should recognize the limitations of the assessment methods used.

**Tables**

**Table 1: Manhole Boring Locations**

MH-2	B-1	74+20 R25
	B-2	73+03 L34
	B-3	73+68 R25
	B-4	73+39 L16
MH-3B	B-1	78+10 L17
	B-2	78+55 L50
	B-3	78+52 L14
	B-4	78+55 R50
MH-5	B-1	105+51 L13
	B-1A	3 feet from B-1
	B-2	105+87 L49
	B-3	105+29 R50
	B-4	106+21 L21
	B-4A	3 feet from B-4
MH-6	B-1	108+00 L12
	B-2	108+03 L50
	B-3	108+03 R40
	B-4	107+62 L16
MH-6B	B-1A	109+85 L17
	B-1B	3 feet from B-1
	B-2	109+90 R34
	B-3	109+90 L46
	B-4	109+60 L18
MH-8	B-1	139+70 L65
	B-2	139+85 L30
	B-3	140+35 R45
	B-4	140+20 L50
MH-9B	B-1	142+25 00
	B-2	142+90 R50
	B-3	141+85 L70
	B-4	141+30 L15
MH-11A	B-1	232+40 L20
	B-2	232+25 L25
	B-3	231+95 R40

**Table 2: Manhole 2 - Borehole Sampling Results**

MH-2 <sup>1</sup>		74+07.5	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date	
0-1':	219,003	6/30/2006	
1-2':	249,630	6/30/2006	
unspecified	118,988	6/14/2006	
Tritium in Water	no sample	dry	

MH-2 B-1		74+20 R25	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date	
3-5':	673	6/30/2006	
8-10':	791	6/30/2006	
13-15':	966	6/30/2006	
18-20':	1374	6/30/2006	
23-25':	1381	6/30/2006	
Composite	500	6/30/2006	
Tritium in Water	590	6/30/2006	
Tritium in Water	<128 <sup>1</sup>	7/5/2006	

MH-2 B-2		73+03 L34	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date	
3-5':	174	7/11/2006	
8-10':	175	7/11/2006	
13-15':	879	7/11/2006	
Tritium in Water	337	7/11/2006	

MH-2 B-3		73+68 R25	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date	
5.5-7.5':	6,378	7/11/2006	
14-16':	2,361	7/11/2006	
Tritium in Water	340	7/11/2006	

MH-2 B-4		73+39 L16	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date	
3-5':	<165	7/11/2006	
8-10':	<165	7/11/2006	
13-15':	<165	7/11/2006	
Tritium in Water	435	7/11/2006	

<sup>1</sup> location MH-2 B-1B



**Table 2: Manhole 3B - Borehole Sampling Results**

MH-3B		78+55
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
0-1':	43,304	7/10/2006
1-2':	117,359	7/10/2006
unspecified	19,257	6/14/2006
Tritium in Water	no sample	dry

MH-3B B-1		78+10 L17
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	187	7/10/2006
8-10':	<159	7/10/2006
13-15':	<159	7/10/2006
19-20':	<159	7/10/2006
Tritium in Water	138	7/10/2006

MH-3B B-2		78+55 L50
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
4-6':	<167	7/12/2006
9-11':	<167	7/12/2006
17-19':	<167	7/12/2006
Tritium in Water	<139	7/12/2006

MH-3B B-3		78+52 L14
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	<167	7/12/2006
8-10':	<167	7/12/2006
13-15':	<167	7/12/2006
Tritium in Water	<139	7/12/2006

MH-3B B-4		78+55 R50
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	<167	7/12/2006
8-10':	<167	7/12/2006
13-15':	<167	7/12/2006
Tritium in Water	<139	7/12/2006

**Table 2: Manhole 5 - Borehole Sampling Results**

MH-5	105+50	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
0-1':	141,170	6/30/2006
1-2':	96,036	6/30/2006
unspecified	214,455	6/14/2006
Tritium in Water	no sample	dry

MH-5 B-1	105+51 L13	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	174	7/5/2006
8-10':	387 <sup>1</sup>	7/5/2006
13-15':	<165	7/5/2006
18-20':	<166	7/5/2006
Tritium in Water	<128 <sup>2</sup>	7/5/2006

MH-5 B-2	105+87 L49	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
4-6':	<165	7/5/2006
9-11':	<165	7/5/2006
14-16':	<165	7/5/2006
19.5-21.5':	<165	7/5/2006
Tritium in Water	<129	7/5/2006

MH-5 B-3	105+29 R50	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
4-6':	<166	7/6/2006
9-11':	No Recovery	
14-16':	<166	7/6/2006
18-20':	<166	7/6/2006
Tritium in Water	<128	7/6/2006

MH-5 B-4	106+21 L21	
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
4.5-6.5':	<166	7/6/2006
9-11':	<166	7/6/2006
14-16':	<166	7/6/2006
19.5 20.5	<166	7/6/2006
Tritium in Water	<128	7/6/2006

<sup>1</sup> MH-5 B-1, B-1A Comp

<sup>2</sup> MH-5 B-1A

**Table 2: Manhole 6 - Borehole Sampling Results**

MH-6		108+03
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
unspecified	~300 <sup>1</sup>	
unspecified	<160	7/13/2006
Tritium in Water	<138	7/13/2006
Tritium in Water	<160	7/28/2006

MH-6 B-1		108+00 L12
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	188	7/13/2006
8-10':	236	7/13/2006
13-15':	272	7/13/2006
Tritium in Water	<138	7/13/2006

MH-6 B-2		108+03 L50
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	<163	7/13/2006
8-10':	215	7/13/2006
13-15':	230	7/13/2006
Tritium in Water	188	7/13/2006

MH-6 B-3		108+03 R40
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	<163	7/13/2006
8-10':	221	7/13/2006
13-15':	<163	7/13/2006
Tritium in Water	<138	7/13/2006

MH-6 B-4		107+62 L16
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	1,204	7/13/2006
8-10':	2,303	7/13/2006
13-15':	<163	7/13/2006
Tritium in Water	281	7/13/2006

<sup>1</sup> Reported by AmerenUE

**Table 2: Manhole 6B - Borehole Sampling Results**

MH-6B		109+90
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
0-1':	64,704	7/6/2006
1-2':	53,981	7/6/2006
unspecified	144,060	6/14/2006
Tritium in Water	no sample	dry

MH-6B B-1		109+85 L17
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3.5-5.5':	249 <sup>1</sup>	7/6/2006
8.5-10.5':	731 <sup>1</sup>	7/6/2006
13.5-15.5':	3384 <sup>1</sup>	7/6/2006
18.5-20.5':	<165	7/6/2006
Tritium in Water	1554	7/6/2006

MH-6B B-2		109+90 R34
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	<166	7/6/2006
8-10':	<166	7/6/2006
13-15':	<166	7/6/2006
20-21':	<166	7/6/2006
Tritium in Water	158	7/6/2006

MH-6B B-3		109+90 L46
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
4.5-6.5':	<159	7/10/2006
13-15':	8,743	7/10/2006
Tritium in Water	1306	7/10/2006

MH-6B B-4		109+60 L18
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	194	7/10/2006
8-10':	25,863	7/10/2006
13-15':	5,284	7/10/2006
18-20':	793	7/10/2006
Tritium in Water	910	7/10/2006

<sup>1</sup> Composite of B-1 and B-1B

**Table 2: Manhole 8 - Borehole Sampling Results**

MH-8		139+90
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
0-1	230,868	6/28/2006
1-2	147,428	6/28/2006
unspecified	57,178	6/14/2006
Tritium in Water	no sample	dry

MH-8 B-1		139+70 L65
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5'	761	6/28/2006
8-10'	1,889	6/28/2006
13-15'	<171	6/28/2006
18-20'	<171	6/28/2006
23-25"	<162	6/28/2006
Tritium in Water	<124	6/28/2006

MH-8 B-2		139+85 L30
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5'	<162	6/28/2006
8-10'	924	6/28/2006
13-15'	714	6/28/2006
18-20'	<162	6/28/2006
23-25"	<171	6/28/2006
Tritium in Water	<124	6/28/2006

MH-8 B-3		140+35 R45
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5'	<162	6/28/2006
8-10'	290	6/28/2006
13-15'	<162	6/28/2006
18-20'	<162	6/28/2006
23-25"	<163	6/28/2006
Tritium in Water	<124	6/28/2006

MH-8 B-4		140+20 L50
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
9-11'	3,651	6/29/2006
13.5-15.5'	<176	6/29/2006
Tritium in Water	159	6/29/2006

**Table 2: Manhole 9B - Borehole Sampling Results**

MH-9B		142+47.5
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
0-1':	154,956	6/27/2006
1-2':	53,735	6/27/2006
Tritium in Water	<138	5/4/2006
Tritium in Water	<124	6/28/2006

MH-9B B-1		142+25 00
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3.5-5.5':	480	6/27/2006
8.5-10.5':	<166	6/27/2006
13.5-15.5':	<166	6/27/2006
Tritium in Water	<124	6/28/2006

MH-9B B-2		142+90 R50
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	197	6/27/2006
8-10':	<171	6/27/2006
13-15':	<171	6/27/2006
18-20':	<171	6/27/2006
23-25':	<171	6/27/2006
Tritium in Water	<124	6/28/2006

MH-9B B-3		141+85 L70
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	5,223	6/27/2006
8-10':	<171	6/27/2006
13-15':	302	6/27/2006
18-20':	588	6/27/2006
23-23':	569	6/27/2006
Tritium in Water	<124	6/28/2006

MH-9B B-4		141+30 L15
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3.5-5.5':	204	6/27/2006
8-9':	665	6/27/2006
Tritium in Water	155	6/28/2006

**Table 2: Manhole 11A - Borehole Sampling Results**

MH-11A		232+80
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
0-1':	816	6/29/2006
1-2':	669	6/29/2006
unspecified	885	6/15/2006
Tritium in Water		
	no sample	dry

MH-11A B-1		232+40 L20
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	<176	6/29/2006
8-10':	<176	6/29/2006
13-15':	<176	6/29/2006
Tritium in Water		
	no sample	dry

MH-11A B-2		232+25 L25
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	722	6/29/2006
8-10':	<176	6/29/2006
13-14':	<165	6/29/2006
17-18':	<165	6/29/2006
Tritium in Water		
	<173	7/11/2006

MH-11A B-3		231+95 R40
Sample Interval (feet bgs)	Tritium (pCi/L)	Date
3-5':	<176	6/29/2006
8-10':	992	6/29/2006
13-15':	<165	6/29/2006
18-19.5':	<165	6/29/2006
Tritium in Water		
	<173	7/11/2006

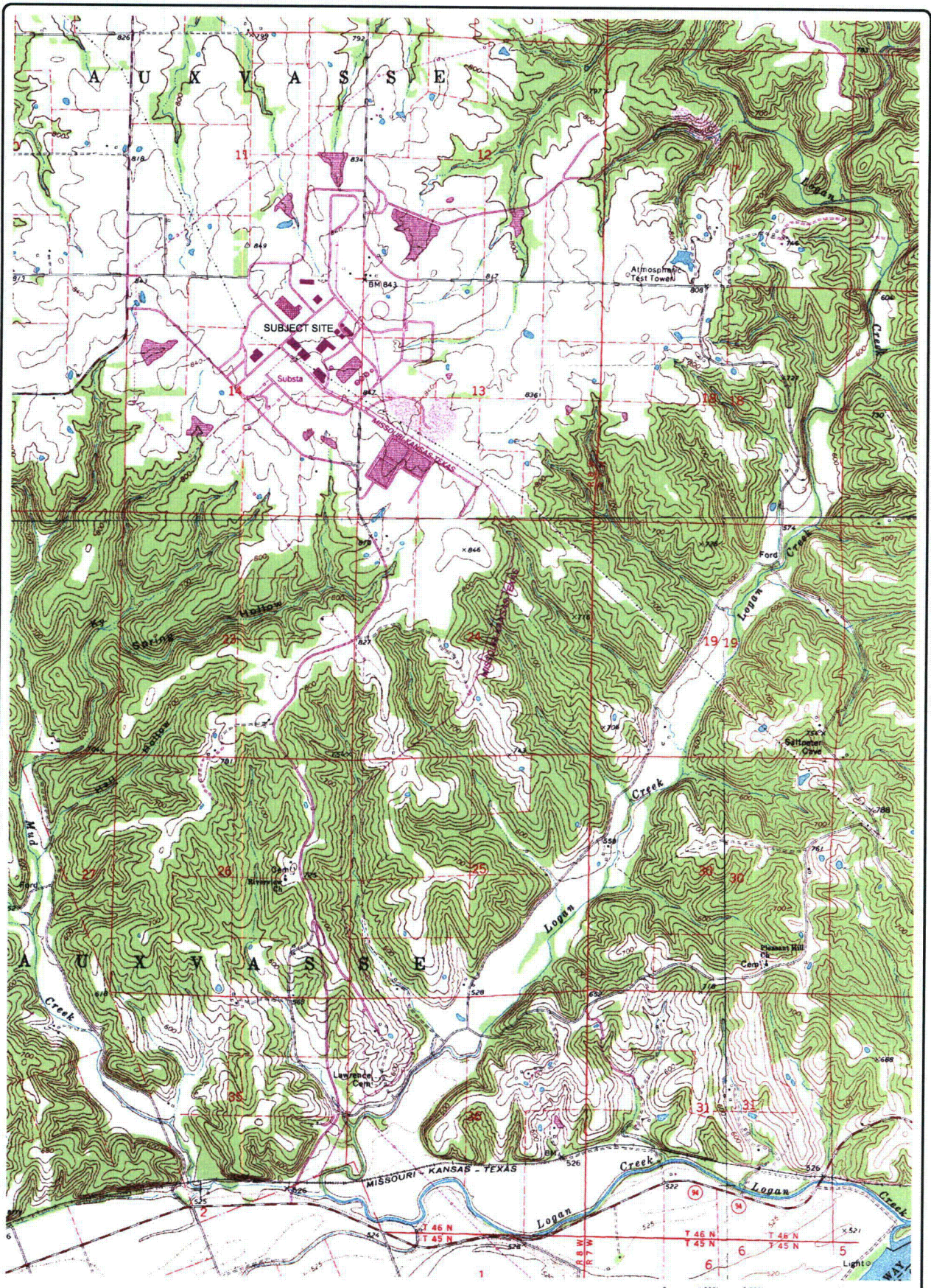
Manhole Tritium Investigation – Phase I Terracon  
Callaway Plant  
Project No. 009067011T  
September 8, 2006

**Table 2: Miscellaneous Sampling Results**

Sample Identity	Tritium (pCi/L)	Medium	Date
Manhole 3	1,045	Water	7/28/2006
Manhole 9	186	Water	7/28/2006
Manhole 6A	335	Water	7/13/2006
LC9B/8	981	Water	6/28/2006
Borehole 9B (2-9" bgs)	<138	Water	5/4/2006
Ditch 9B (ground level)	<138	Water	5/4/2006
937A	<173	Water	7/6/2006
937D	<173	Water	7/6/2006
MW 003	<173	Water	7/6/2006
MW 002	<173	Water	7/6/2006
RW-1	191	Water	7/6/2006
Ground Water Sump	<173	Water	7/6/2006



**Figures**



REFORM QUADRANGLE  
 MISSOURI - CALLAWAY COUNTY  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 1975 - PHOTO REVISED IN 1985

APPROXIMATE NW/4  
 OF SECTION 14, TOWNSHIP 46  
 NORTH, RANGE 8 WEST.

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT  
 FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

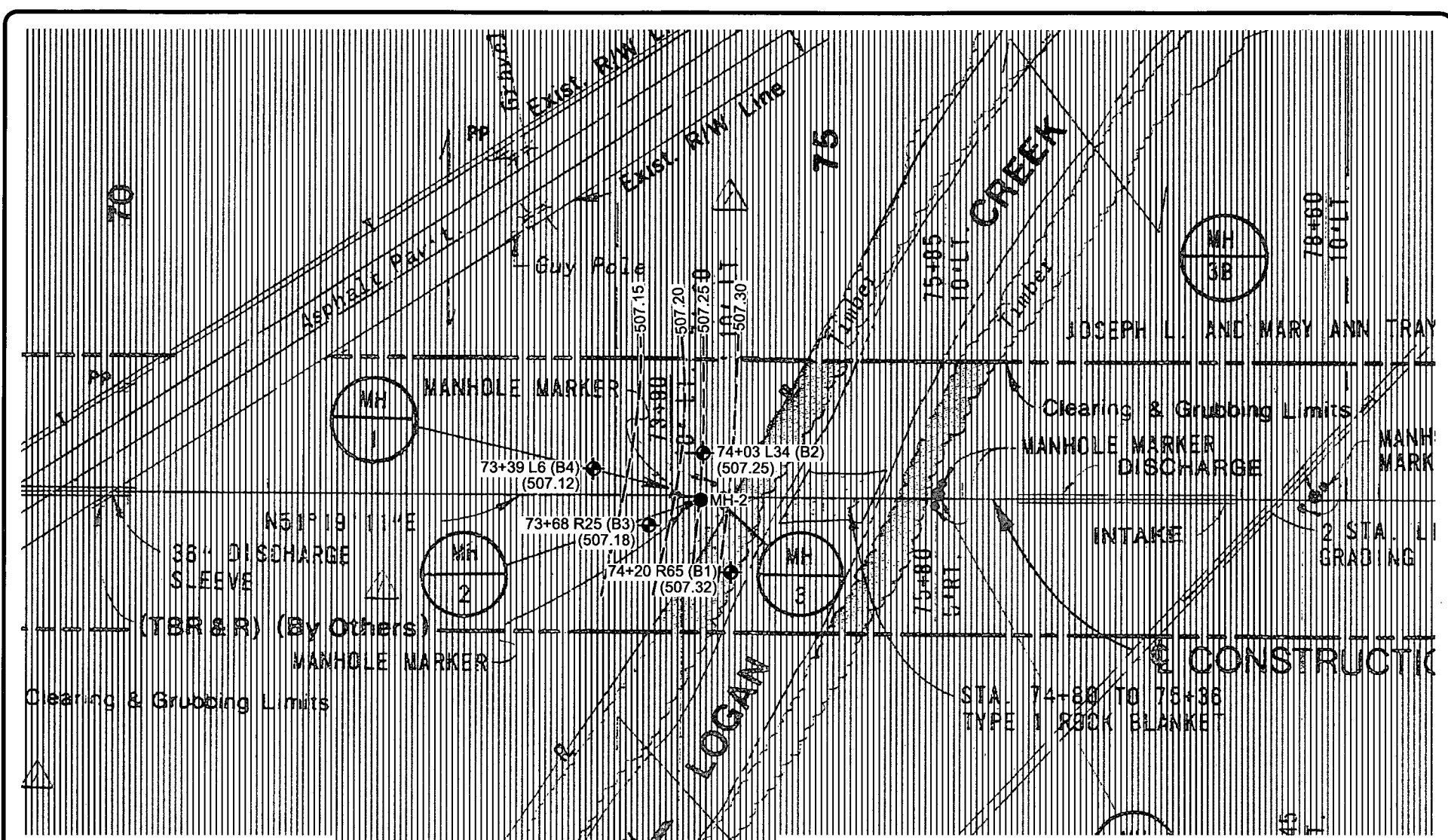


**SITE LOCATION MAP**  
**DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**  
 COUNTY ROAD 448  
 STEEDMAN, MISSOURI 65077  
 CALLAWAY COUNTY

Project Mgr: JMW  
 Designed By: JMW  
 Checked By: JMW  
 Approved By: JMW  
 Drawn By: BCB

**Terracon**  
 1815 S. Eisenhower  
 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

Scale: SHOWN  
 Date: 09/12/06  
 Project No. 09087011T  
 File Name: 70\IFL.DWG  
 Figure No. 1



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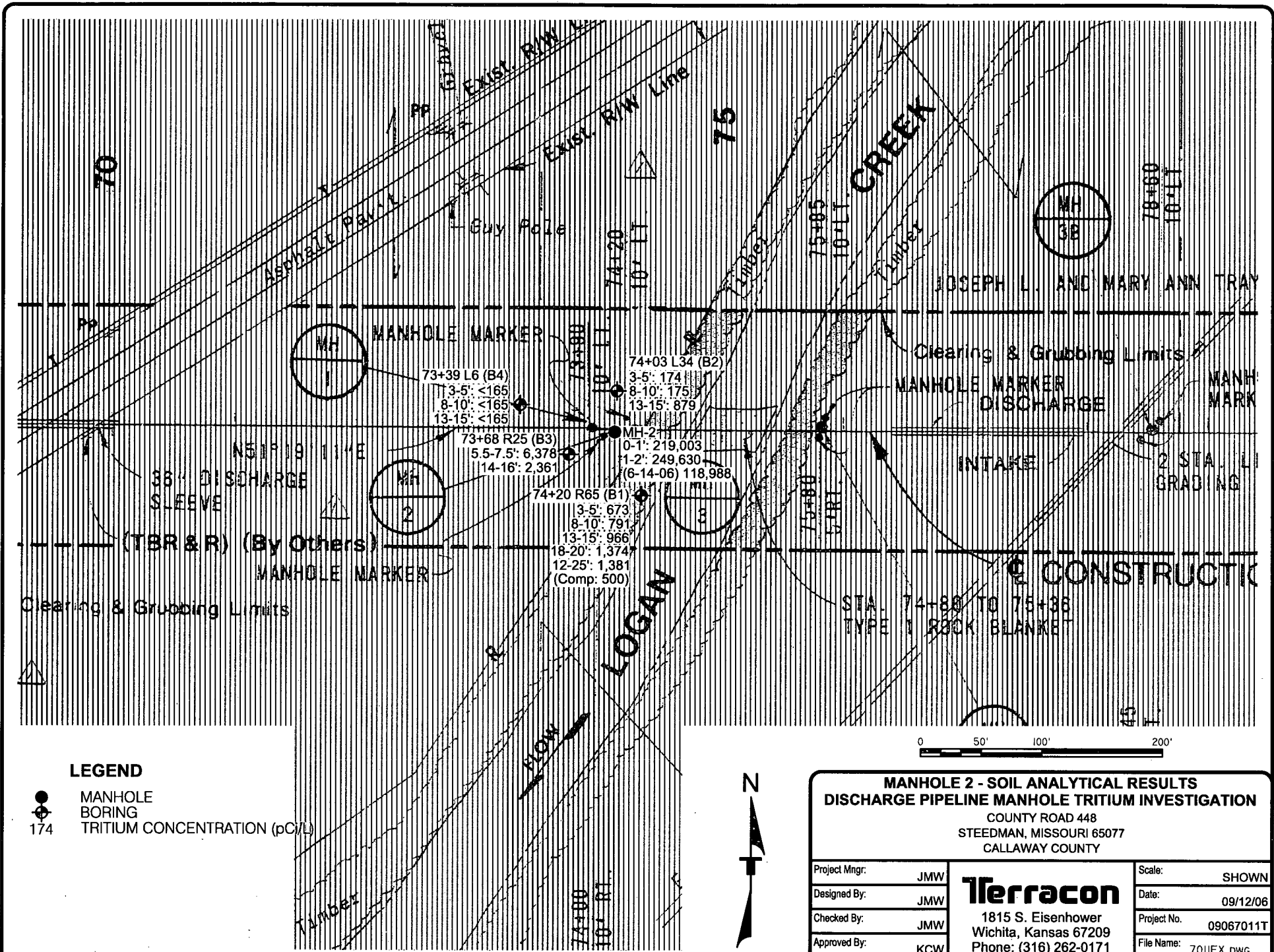
- MANHOLE BORING
- (507.32) GROUNDWATER ELEVATION (FT)

**NOTE**  
 1) CONTOURS ARE BASED ON INTERPOLATION BETWEEN DATA POINTS; ACTUAL CONDITIONS MAY VARY. CONTOURS EXTRAPOLATED BEYOND DATA POINTS ARE SUBJECTIVE AND DASHED WHERE INFERRED.  
 2) C. I. = 0.05 FT

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

<b>MANHOLE 2 - GROUNDWATER ELEVATIONS DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>		COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY	
Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.	09067011T
Approved By:	KCW	File Name:	7011FX.DWG
Drawn By:	BCB	Figure No.	2

**Terracon**  
 1815 S. Eisenhower  
 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997



**LEGEND**

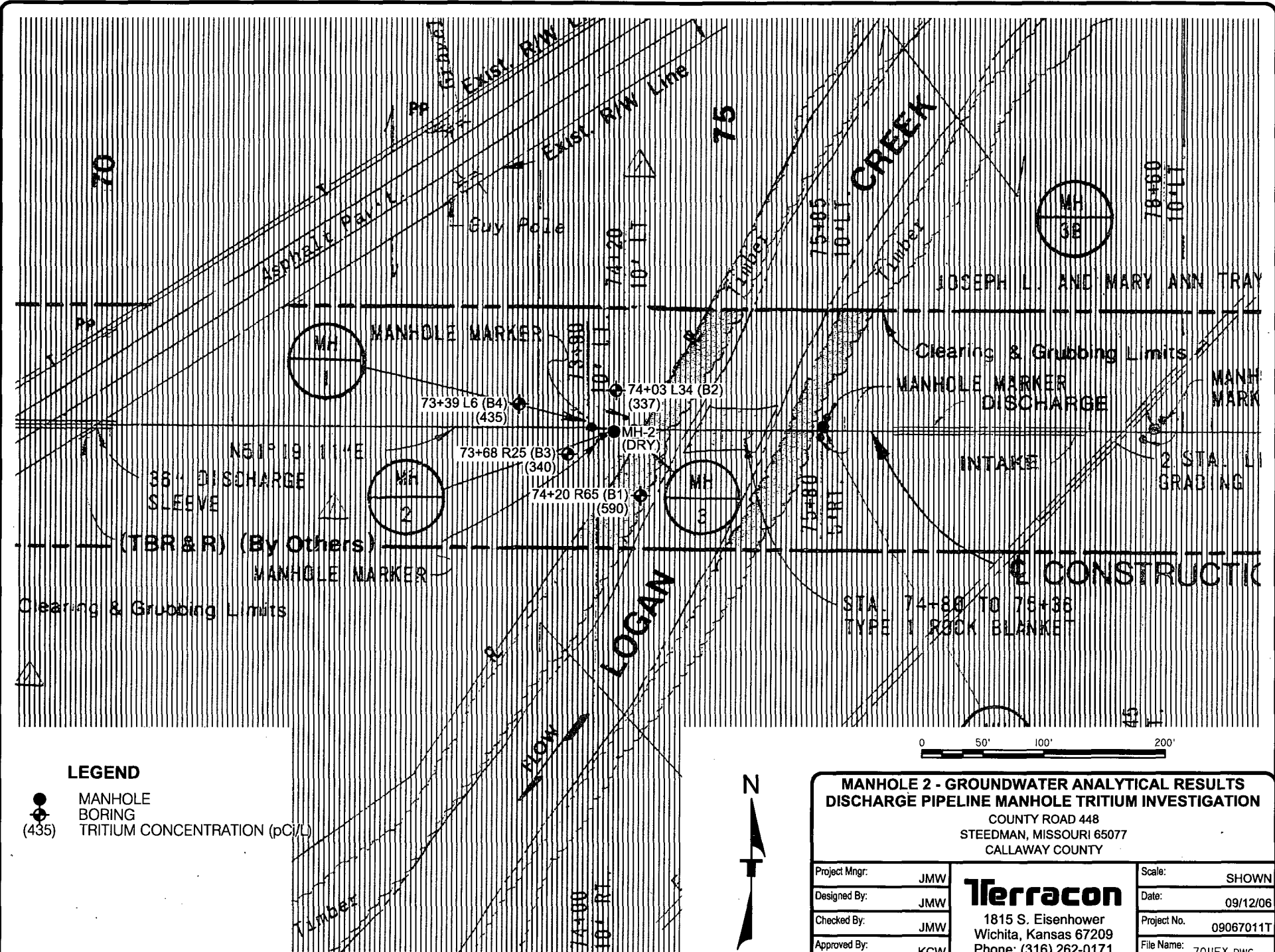
- MANHOLE
- ⊕ BORING
- 174 TRITIUM CONCENTRATION (pCi/L)

**MANHOLE 2 - SOIL ANALYTICAL RESULTS**  
**DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**

COUNTY ROAD 448  
 STEEDMAN, MISSOURI 65077  
 CALLAWAY COUNTY

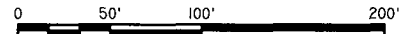
Project Mngr:	JMW	<p>1815 S. Eisenhower        Wichita, Kansas 67209        Phone: (316) 262-0171        Fax: (316) 262-6997</p>	Scale:	SHOWN
Designed By:	JMW		Date:	09/12/06
Checked By:	JMW		Project No.:	09067011T
Approved By:	KCW		File Name:	701IFX.DWG
Drawn By:	BCB		Figure No.:	3

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

● MANHOLE BORING  
 (435) TRITIUM CONCENTRATION (pCi/L)



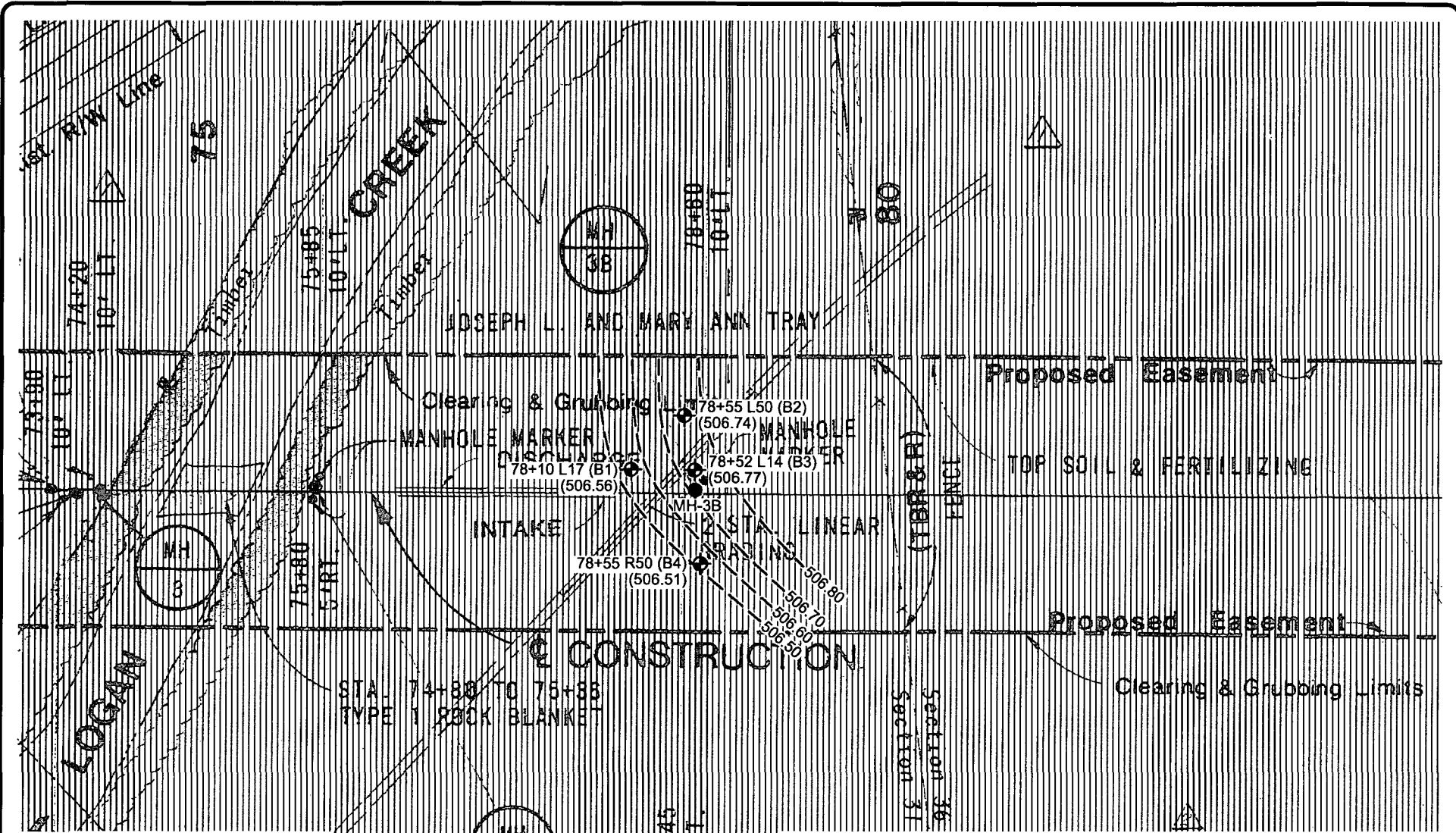
**MANHOLE 2 - GROUNDWATER ANALYTICAL RESULTS  
 DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**

COUNTY ROAD 448  
 STEEDMAN, MISSOURI 65077  
 CALLAWAY COUNTY

Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.	09067011T
Approved By:	KCW	File Name:	701FX.DWG
Drawn By:	BCB	Figure No.	4

**Terracon**  
 1815 S. Eisenhower  
 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

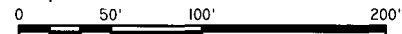
MANHOLE BORING  
 GROUNDWATER ELEVATION (FT)

**NOTE**

1) CONTOURS ARE BASED ON INTERPOLATION BETWEEN DATA POINTS. ACTUAL CONDITIONS MAY VARY. CONTOURS EXTRAPOLATED BEYOND DATA POINTS ARE SUBJECTIVE AND DASHED WHERE INFERRED.

2) C.I. = 0.10 FT

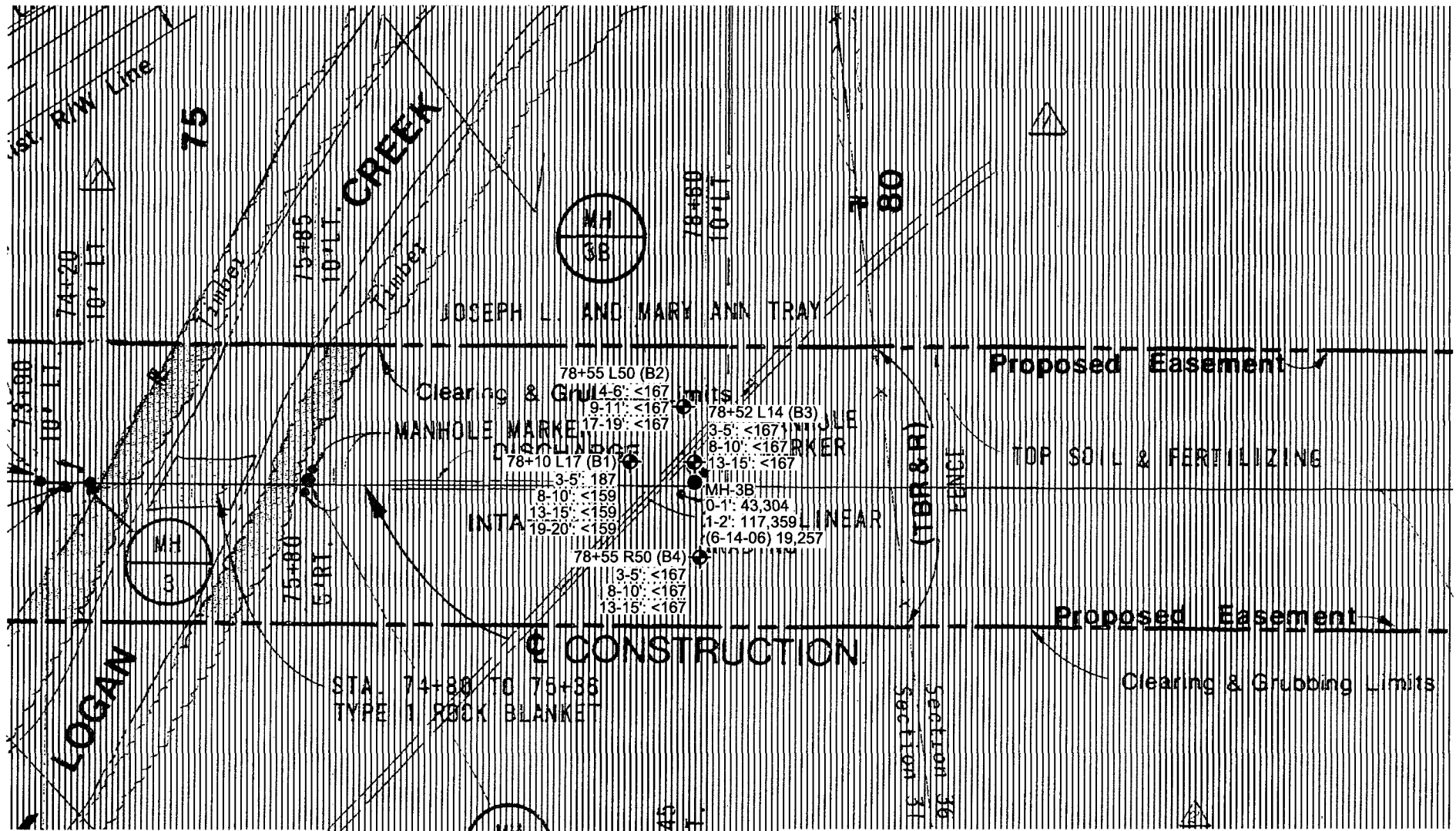
DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



<b>MANHOLE 3B - GROUNDWATER ELEVATIONS DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>	
COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY	
Project Mngr:	JMW
Designed By:	JMW
Checked By:	JMW
Approved By:	KCW
Drawn By:	BCB
Scale:	SHOWN
Date:	09/12/06
Project No.:	09067011T
File Name:	701IFX.DWG
Figure No.:	<b>5</b>

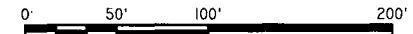
**Terracon**

1815 S. Eisenhower  
Wichita, Kansas 67209  
Phone: (316) 262-0171  
Fax: (316) 262-6997



**LEGEND**

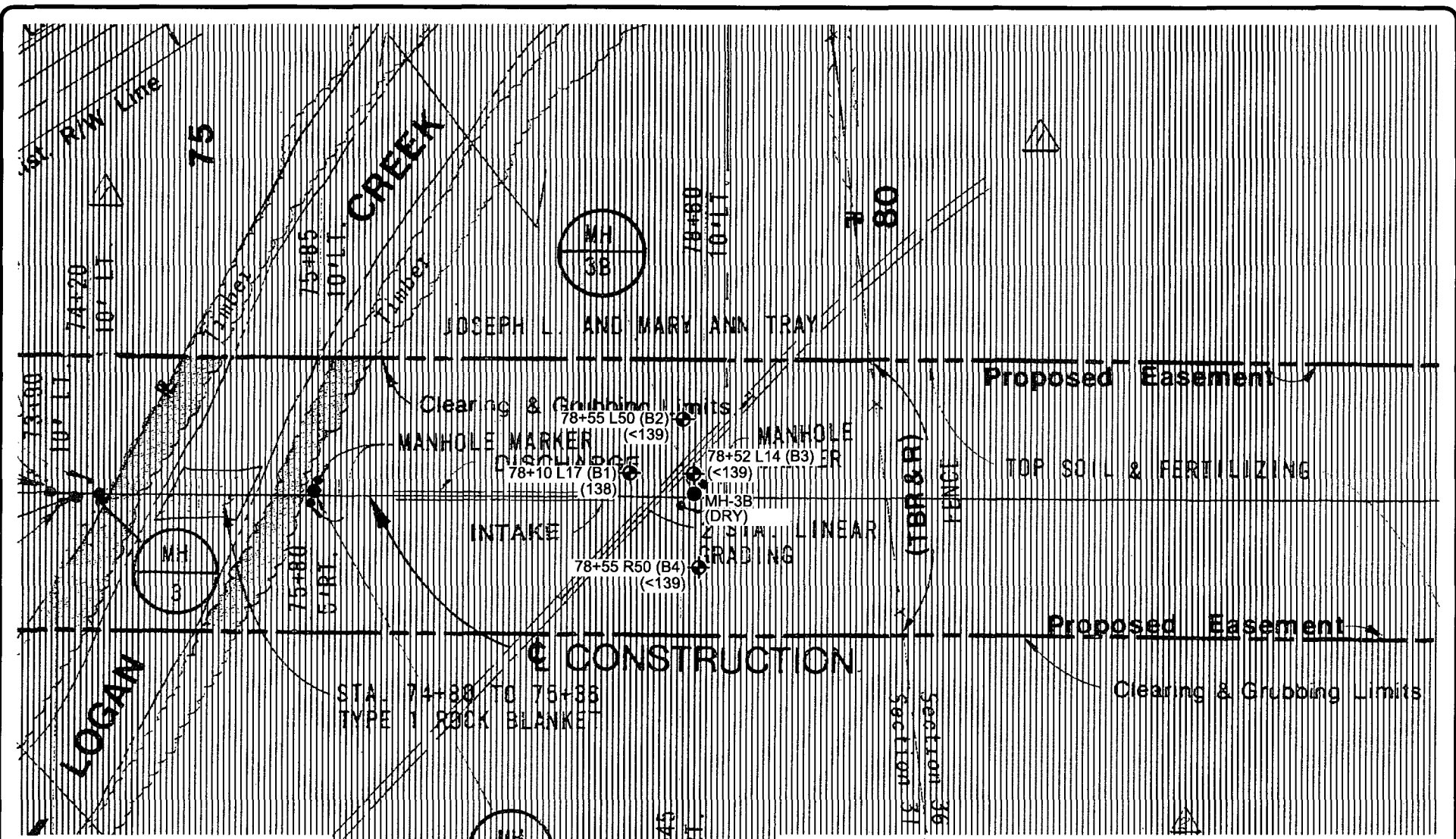
- MANHOLE
- ⊕ BORING
- 187 TRITIUM CONCENTRATION (pCi/L)



<b>MANHOLE 3B - SOIL ANALYTICAL RESULTS</b>		
<b>DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>		
COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY		
Project Mngr:	JMW	Scale: SHOWN
Designed By:	JMW	Date: 09/12/06
Checked By:	JMW	Project No. 09067011T
Approved By:	KCW	File Name: 7011FX.DWG
Drawn By:	BCB	Figure No. 6

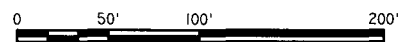
**Terracon**  
 1815 S. Eisenhower  
 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

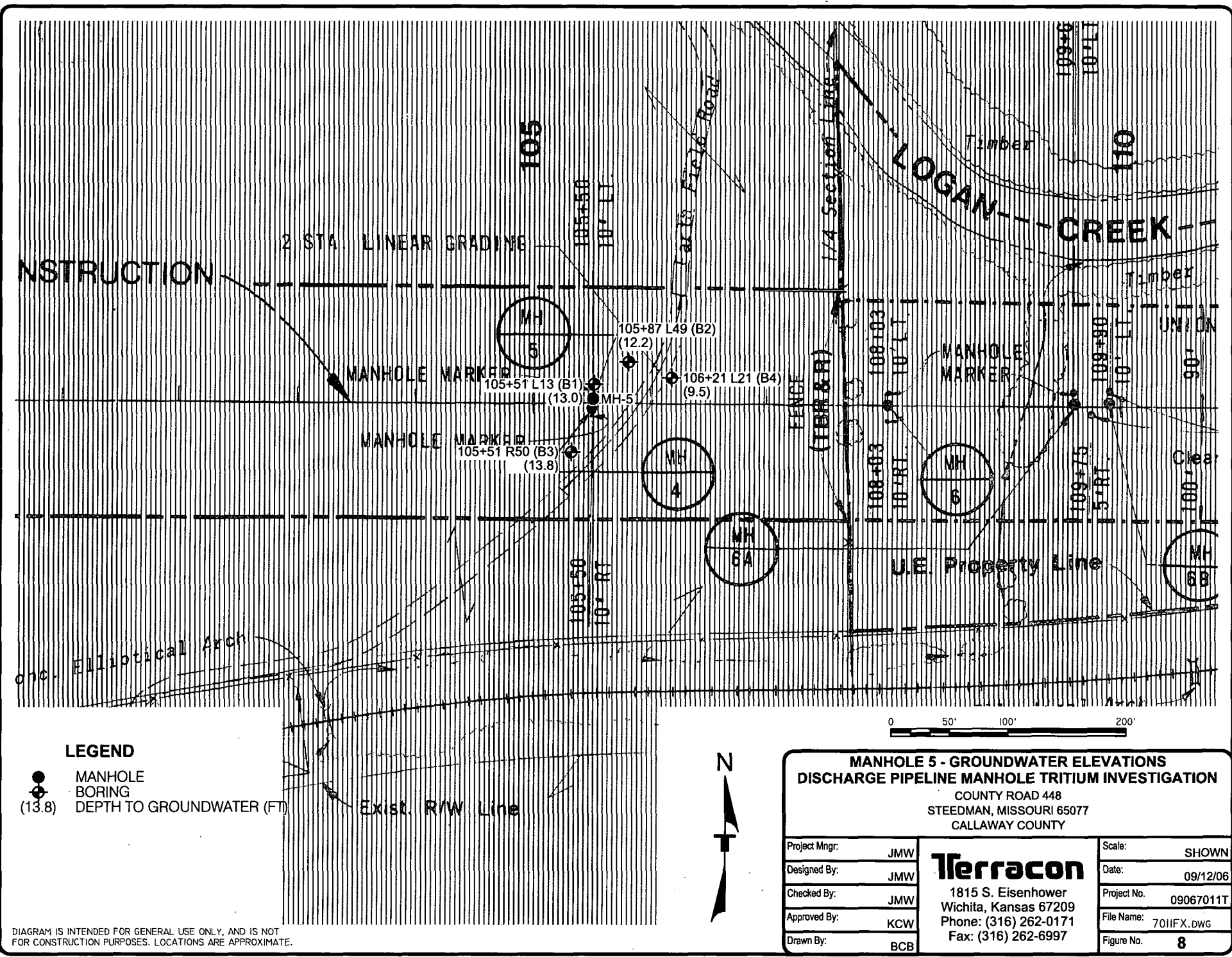
● MANHOLE  
 ● BORING  
 (138) TRITIUM CONCENTRATION (pCi/L)



<b>MANHOLE 3B - GROUNDWATER ANALYTICAL RESULTS DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>		
COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY		
Project Mngr:	JMW	Scale: SHOWN
Designed By:	JMW	Date: 09/12/06
Checked By:	JMW	Project No. 09067011T
Approved By:	KCW	File Name: 7011FX.DWG
Drawn By:	BCB	Figure No. 7

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.





CONSTRUCTION

2 STA. LINEAR GRADING

105

110

LOGAN CREEK

MANHOLE MARKER

MANHOLE MARKER

MANHOLE MARKER

U.E. Property Line



Elliptical Arch

Exist. R/W Line

0 50' 100' 200'



**LEGEND**

-  MANHOLE
-  BORING
- (13.8) DEPTH TO GROUNDWATER (FT)

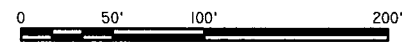
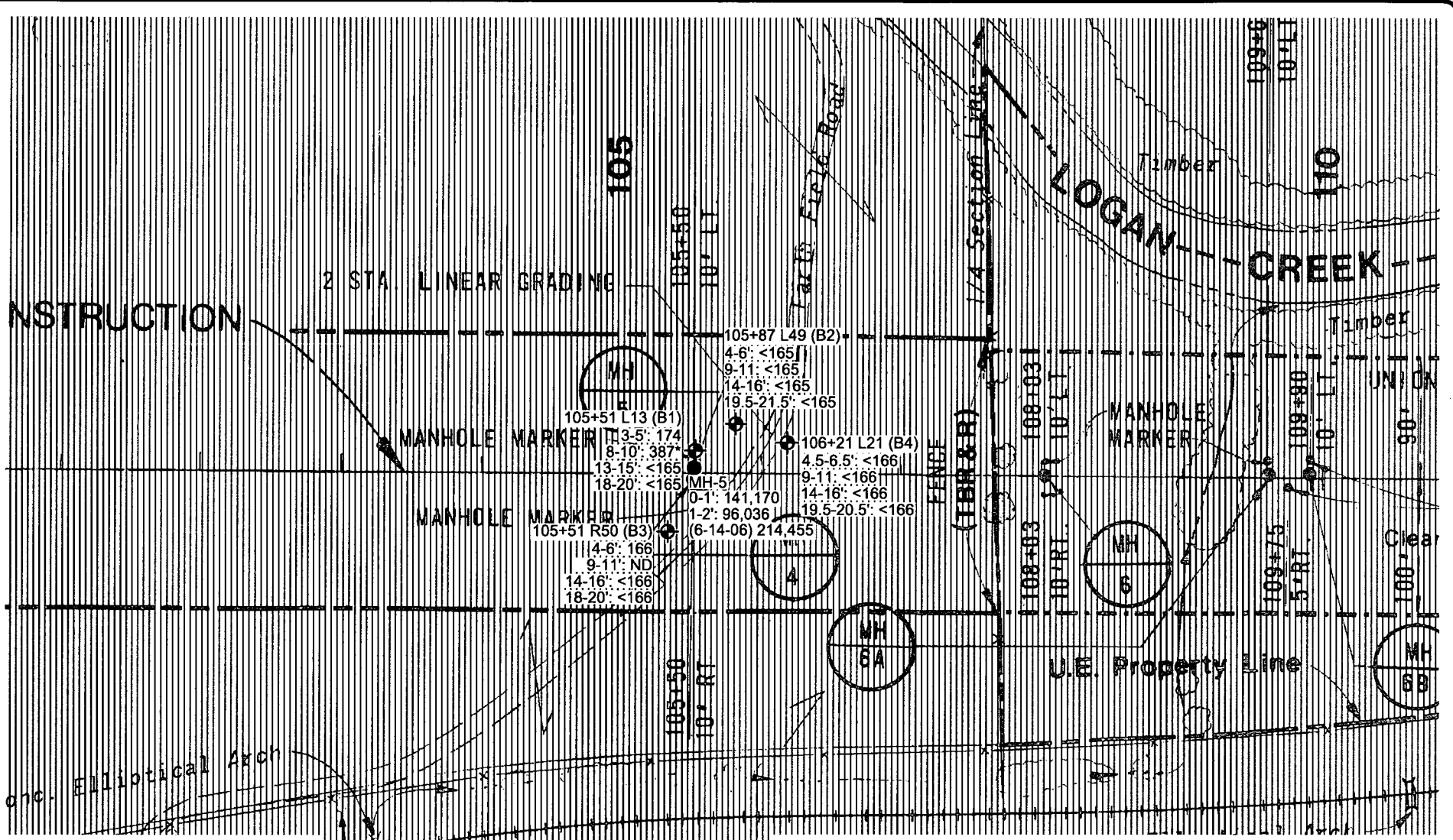
**MANHOLE 5 - GROUNDWATER ELEVATIONS  
DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**  
COUNTY ROAD 448  
STEEDMAN, MISSOURI 65077  
CALLAWAY COUNTY

Project Mngr:	JMW
Designed By:	JMW
Checked By:	JMW
Approved By:	KCW
Drawn By:	BCB

**Terracon**  
1815 S. Eisenhower  
Wichita, Kansas 67209  
Phone: (316) 262-0171  
Fax: (316) 262-6997

Scale:	SHOWN
Date:	09/12/06
Project No.	09067011T
File Name:	701IFX.DWG
Figure No.	8

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

- MANHOLE
- ⊕ BORING
- 174 TRITIUM CONCENTRATION (pCi/L)
- ND NON DETECT

**NOTE**  
 1) \* = COMPOSITE SAMPLE FROM B-1A,B



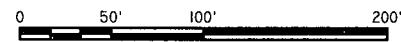
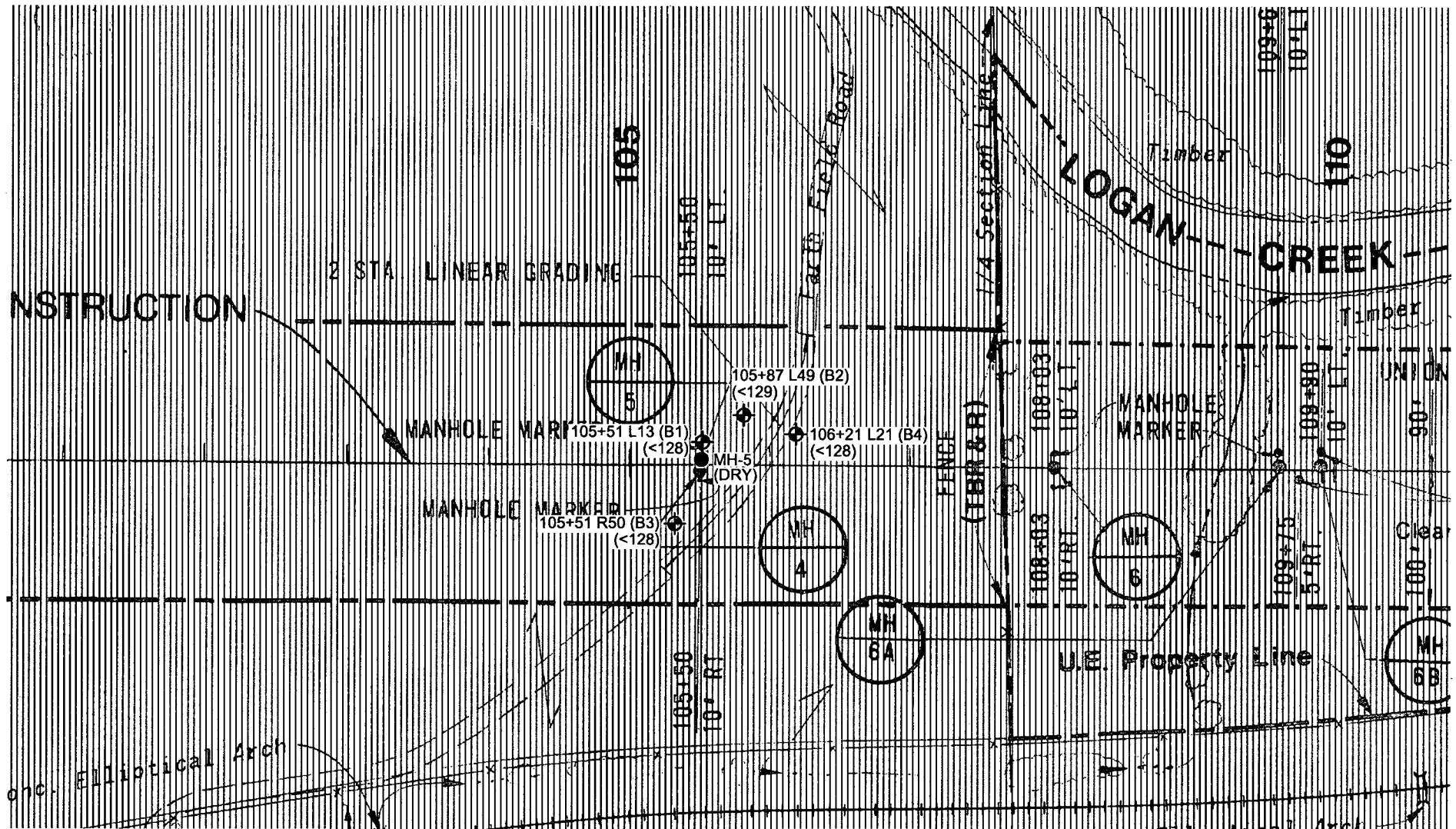
**MANHOLE 5 - SOIL ANALYTICAL RESULTS  
 DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**  
 COUNTY ROAD 448  
 STEEDMAN, MISSOURI 65077  
 CALLAWAY COUNTY

Project Mngr:	JMW
Designed By:	JMW
Checked By:	JMW
Approved By:	KCW
Drawn By:	BCB

**Terracon**  
 1815 S. Eisenhower  
 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

Scale:	SHOWN
Date:	09/12/06
Project No.	09067011T
File Name:	701IFX.DWG
Figure No.	9

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

- MANHOLE
- BORING
- TRITIUM CONCENTRATION (pCi/L)

Exist. R/W Line



**MANHOLE 5 - GROUNDWATER ANALYTICAL RESULTS  
DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**

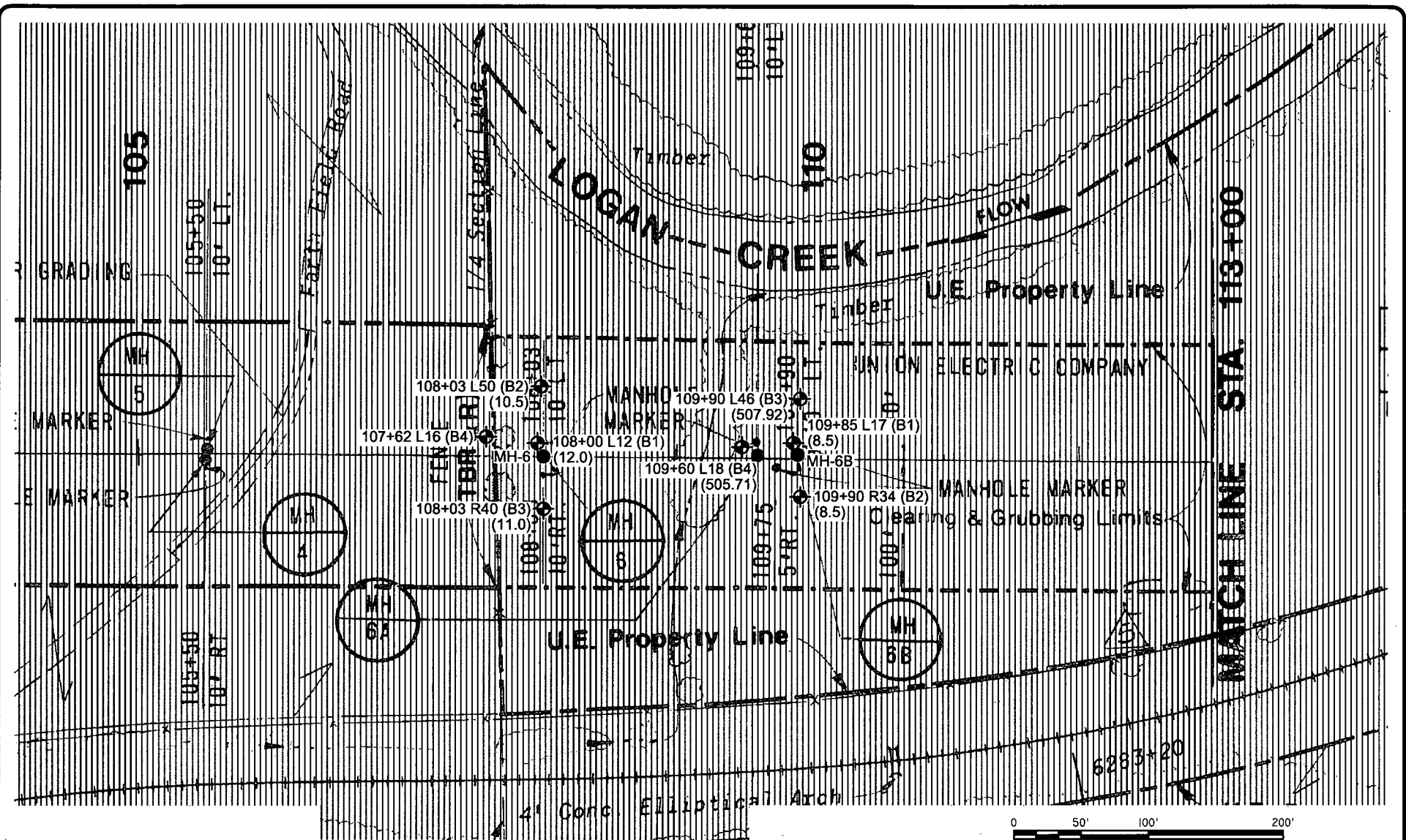
COUNTY ROAD 448  
STEEDMAN, MISSOURI 65077  
CALLAWAY COUNTY

Project Mngr:	JMW
Designed By:	JMW
Checked By:	JMW
Approved By:	KCW
Drawn By:	BCB




**Terracon**  
1815 S. Eisenhower  
Wichita, Kansas 67209  
Phone: (316) 262-0171  
Fax: (316) 262-6997

Scale:	SHOWN
Date:	09/12/06
Project No.	09067011T
File Name:	7011FX.DWG
Figure No.	10

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.




**LEGEND**

-  MANHOLE
-  BORING
-  (10.5) DEPTH TO GROUNDWATER (FT)

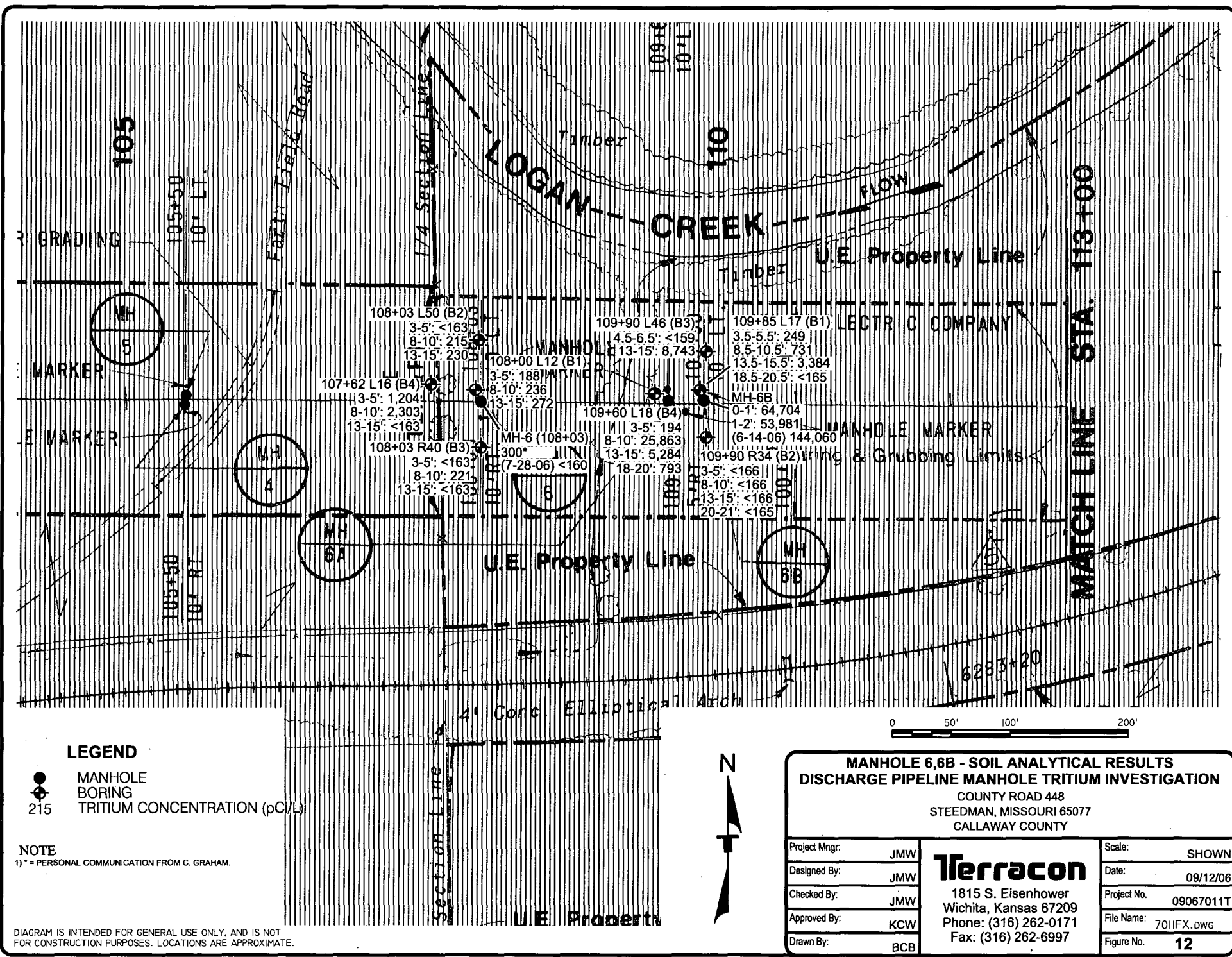
**NOTE**  
 1) DATA SHOWN FOR B-3 & B-4 IS GROUNDWATER ELEVATION.

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

<b>MANHOLE 6,6B - GROUNDWATER ELEVATIONS DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>	
COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY	
Project Mngr: <b>JMW</b>	Scale: <b>SHOWN</b>
Designed By: <b>JMW</b>	Date: <b>09/12/06</b>
Checked By: <b>JMW</b>	Project No. <b>09067011T</b>
Approved By: <b>KCW</b>	File Name: <b>70HFX.DWG</b>
Drawn By: <b>BCB</b>	Figure No. <b>11</b>



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 Fax: (316) 262-6997



**MANHOLE 6,6B - SOIL ANALYTICAL RESULTS**  
**DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**  
 COUNTY ROAD 448  
 STEEDMAN, MISSOURI 65077  
 CALLAWAY COUNTY

Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.:	09067011T
Approved By:	KCW	File Name:	7011FX.DWG
Drawn By:	BCB	Figure No.:	12

**Terracon**  
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 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

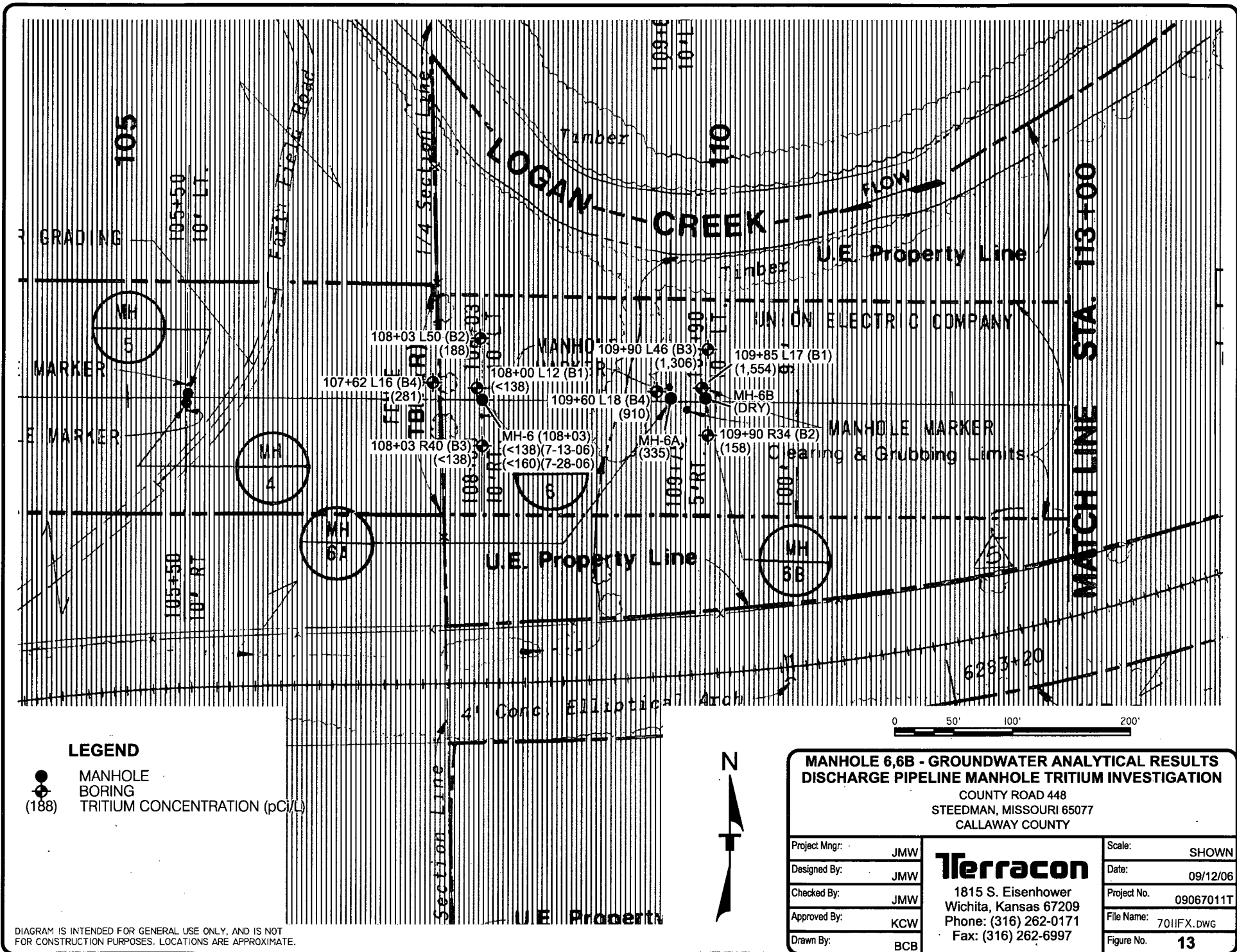
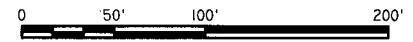
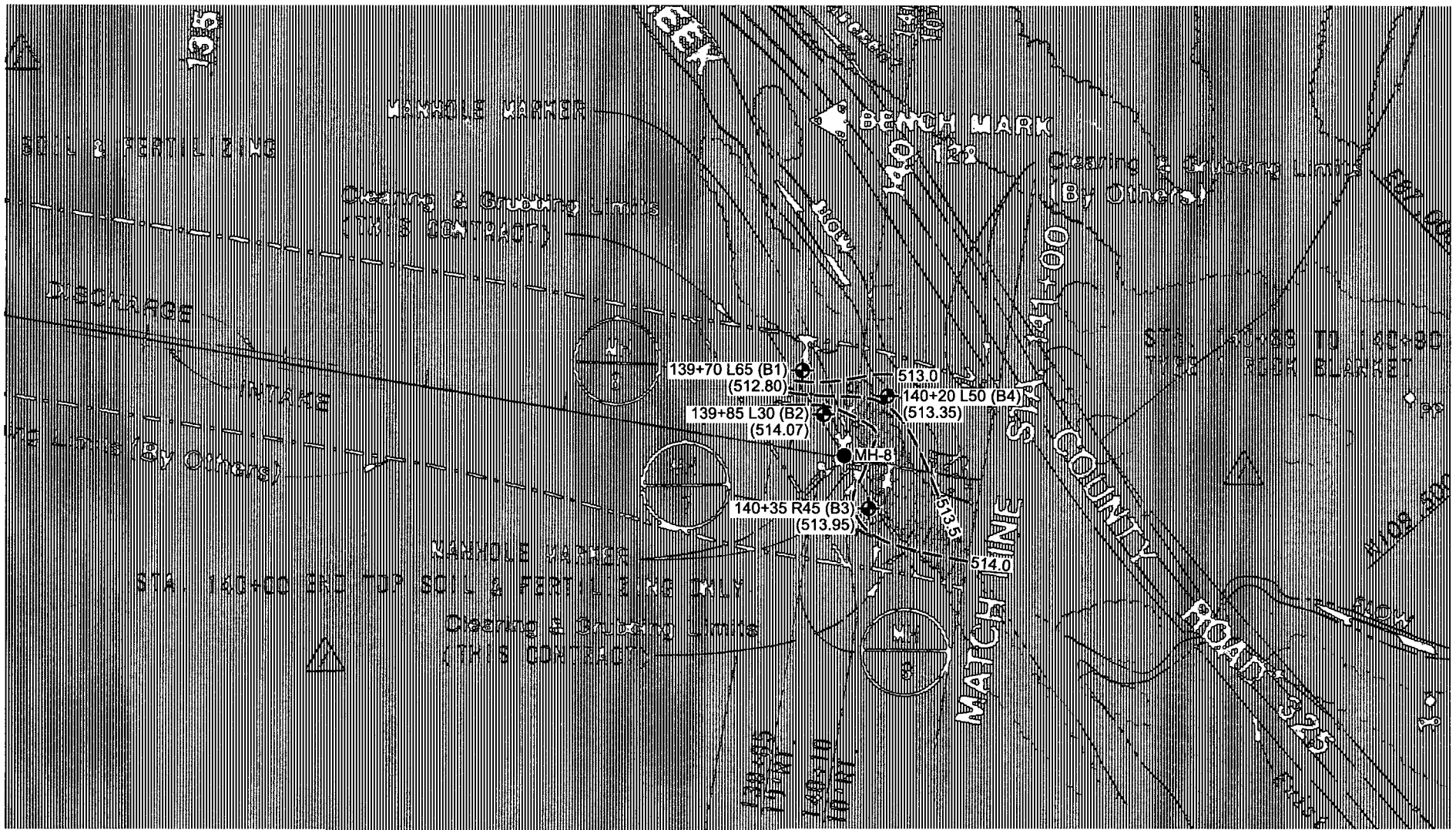


DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

● MANHOLE BORING  
 (513.95) GROUNDWATER ELEVATION (FT)

**NOTE**

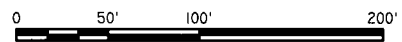
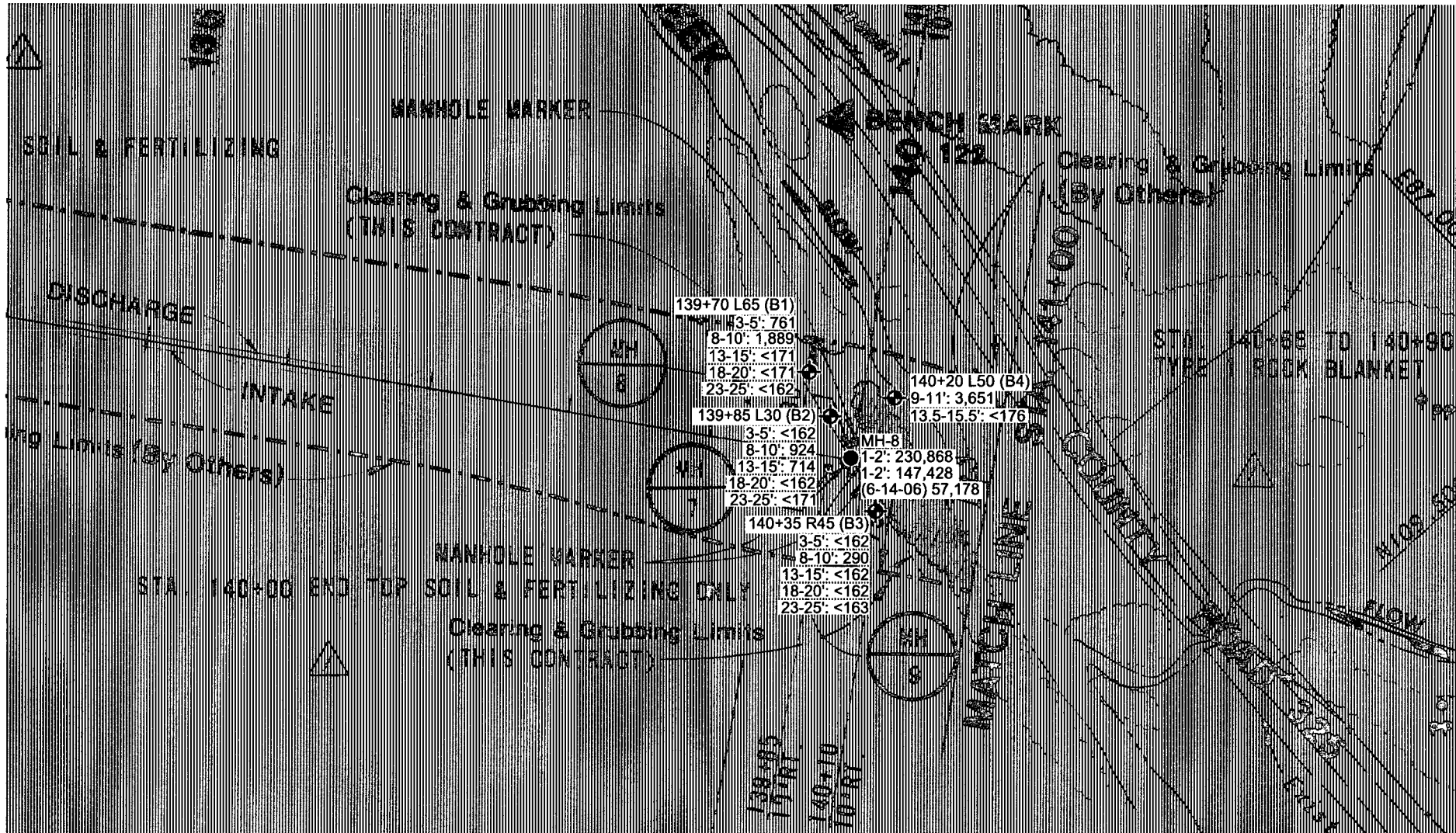
1) CONTOURS ARE BASED ON INTERPOLATION BETWEEN DATA POINTS: ACTUAL CONDITIONS MAY VARY. CONTOURS EXTRAPOLATED BEYOND DATA POINTS ARE SUBJECTIVE AND DASHED WHERE INFERRED.  
 2) C. I. = 0.50 FT

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



<b>MANHOLE 8 - GROUNDWATER ELEVATIONS DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>	
COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY	
Project Mngr:	JMW
Designed By:	JMW
Checked By:	JMW
Approved By:	KCW
Drawn By:	BCB
Scale:	SHOWN
Date:	09/12/06
Project No.:	09067011T
File Name:	7011FX.DWG
Figure No.:	14

**Terracon**  
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 Wichita, Kansas 67209  
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 Fax: (316) 262-6997



**LEGEND**

- MANHOLE
- BORING
- TRITIUM CONCENTRATION (pCi/L)

139+50 END  
RESTRICTED AREA  
140+00

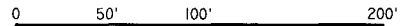
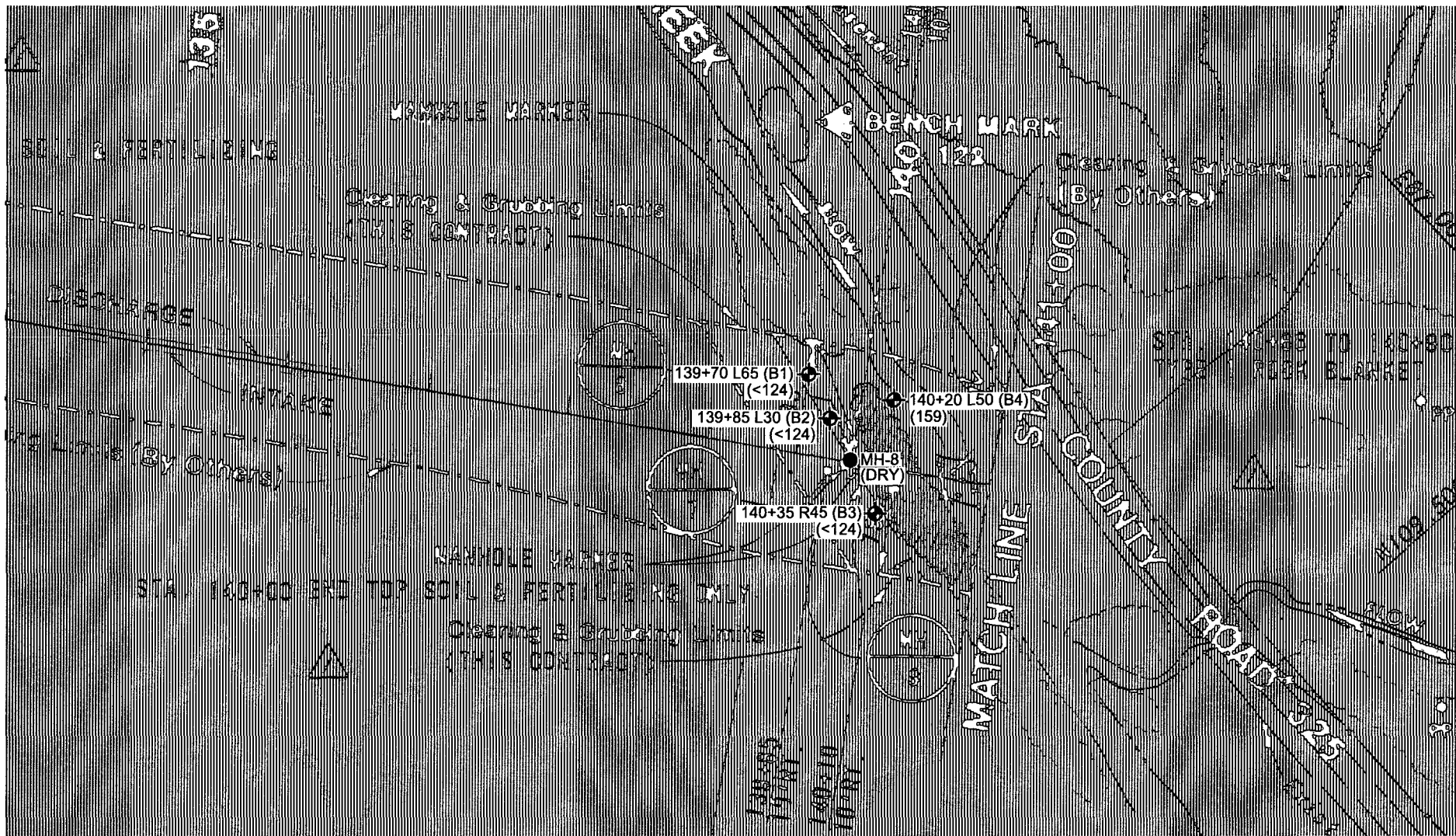


<b>MANHOLE 8 - SOIL ANALYTICAL RESULTS</b> <b>DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>			
COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY			
Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.	09067011T
Approved By:	KCW	File Name:	70HFX.DWG
Drawn By:	BCB	Figure No.	15

**Terracon**  
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 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.





**LEGEND**

- MANHOLE BORING
- TRITIUM CONCENTRATION (pCi/L)



**MANHOLE 8 - GROUNDWATER ANALYTICAL RESULTS  
DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**

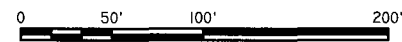
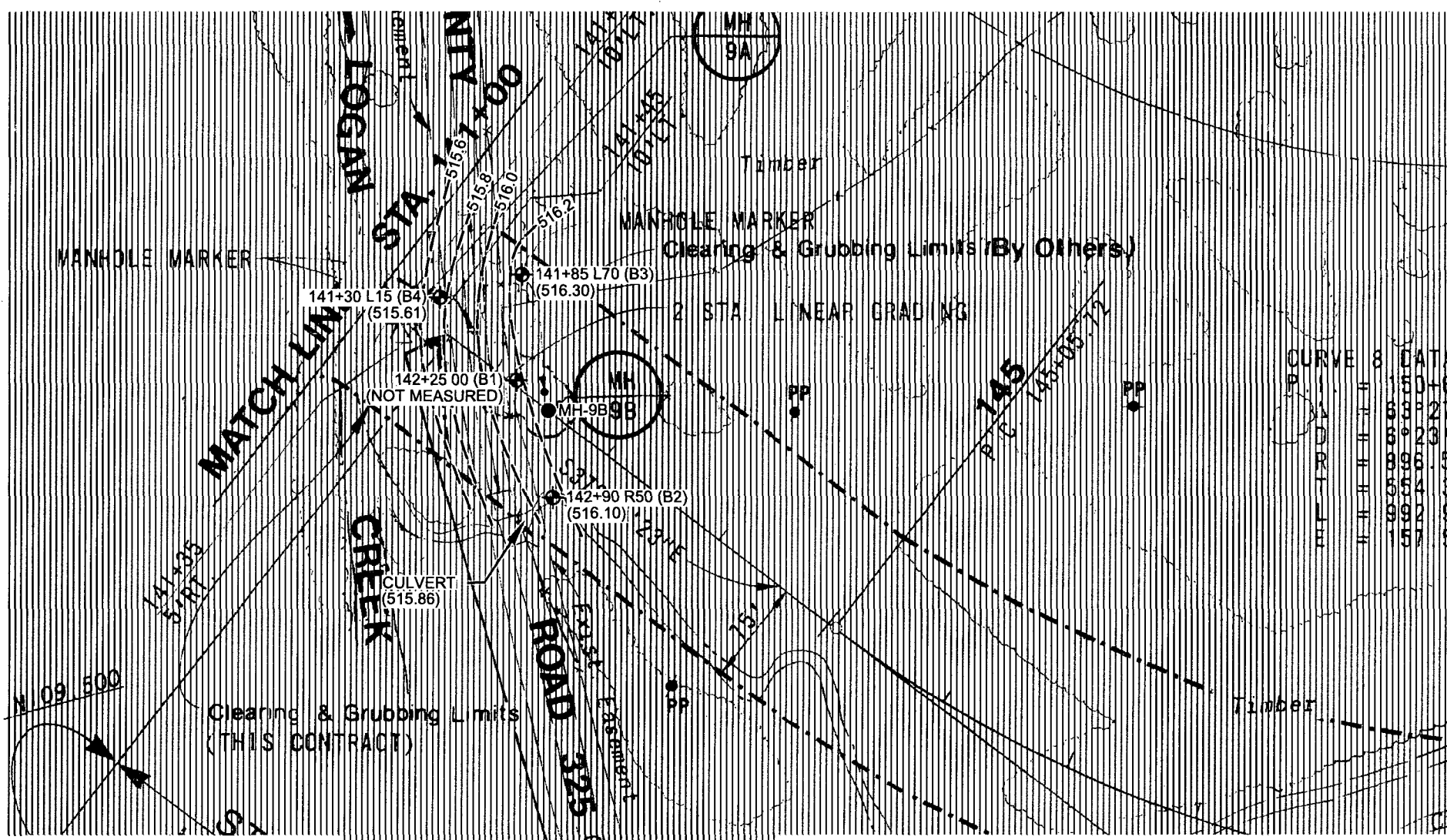
COUNTY ROAD 448  
STEEDMAN, MISSOURI 65077  
CALLAWAY COUNTY

Project Mngr:	JMW
Designed By:	JMW
Checked By:	JMW
Approved By:	KCW
Drawn By:	BCB

**Terracon**  
1815 S. Eisenhower  
Wichita, Kansas 67209  
Phone: (316) 262-0171  
Fax: (316) 262-6997

Scale:	SHOWN
Date:	09/12/06
Project No.	09067011T
File Name:	701IFX.DWG
Figure No.	16

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

● MANHOLE BORING  
 (515.61) GROUNDWATER ELEVATION (FT)

**NOTE**  
 1) CONTOURS ARE BASED ON INTERPOLATION BETWEEN DATA POINTS; ACTUAL CONDITIONS MAY VARY. CONTOURS EXTRAPOLATED BEYOND DATA POINTS ARE SUBJECTIVE AND DASHED WHERE INFERRED.  
 2) C.I. = 0.20 FT

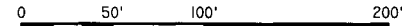
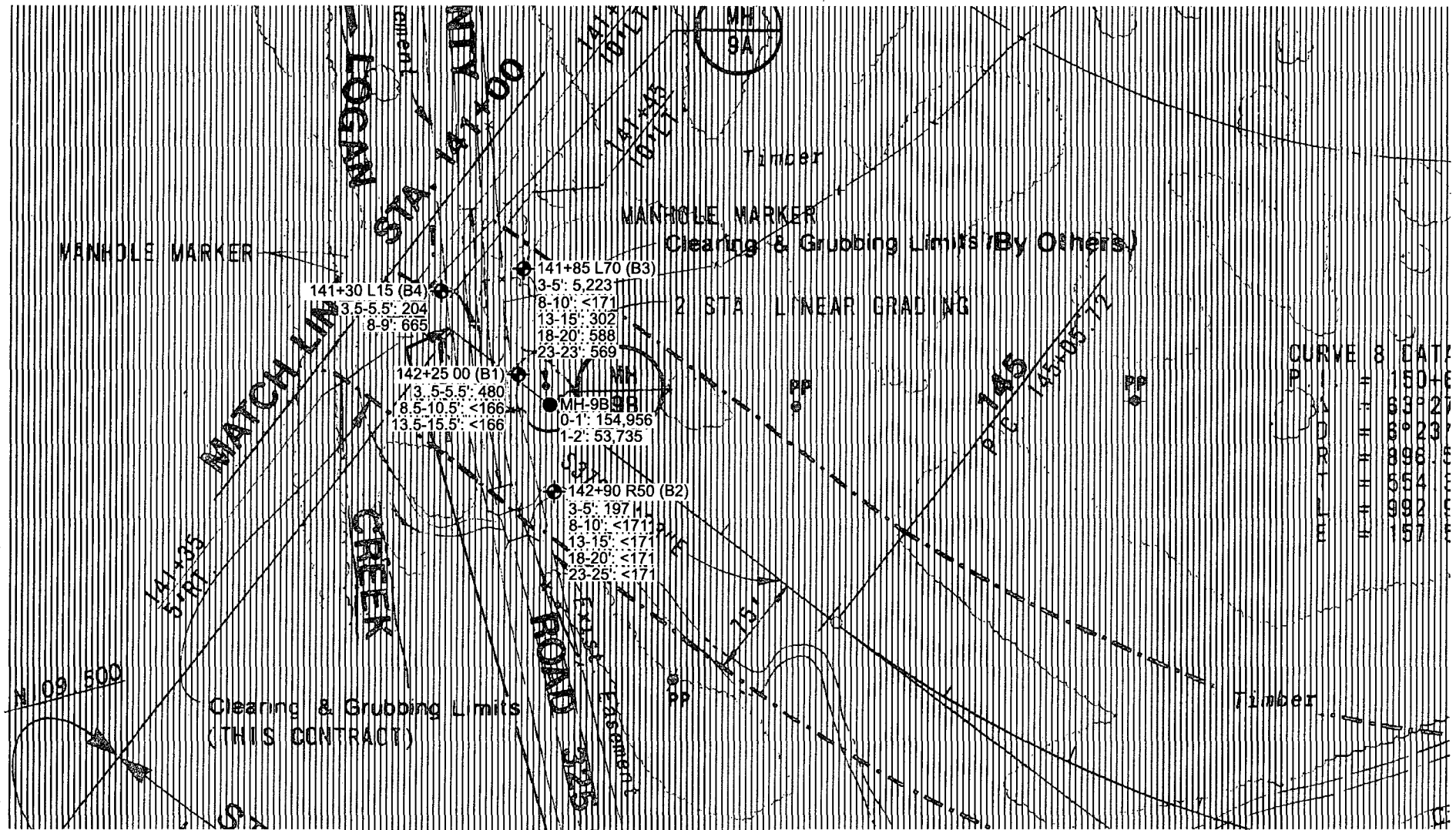
DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**MANHOLE 9B - GROUNDWATER ELEVATIONS  
 DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**

COUNTY ROAD 448  
 STEEDMAN, MISSOURI 65077  
 CALLAWAY COUNTY

Project Mngr:	JMW	 1815 S. Eisenhower Wichita, Kansas 67209 Phone: (316) 262-0171 Fax: (316) 262-6997	Scale:	SHOWN
Designed By:	JMW		Date:	09/12/06
Checked By:	JMW		Project No.:	09067011T
Approved By:	KCW		File Name:	701IFX.DWG
Drawn By:	BCB		Figure No.:	17



**LEGEND**

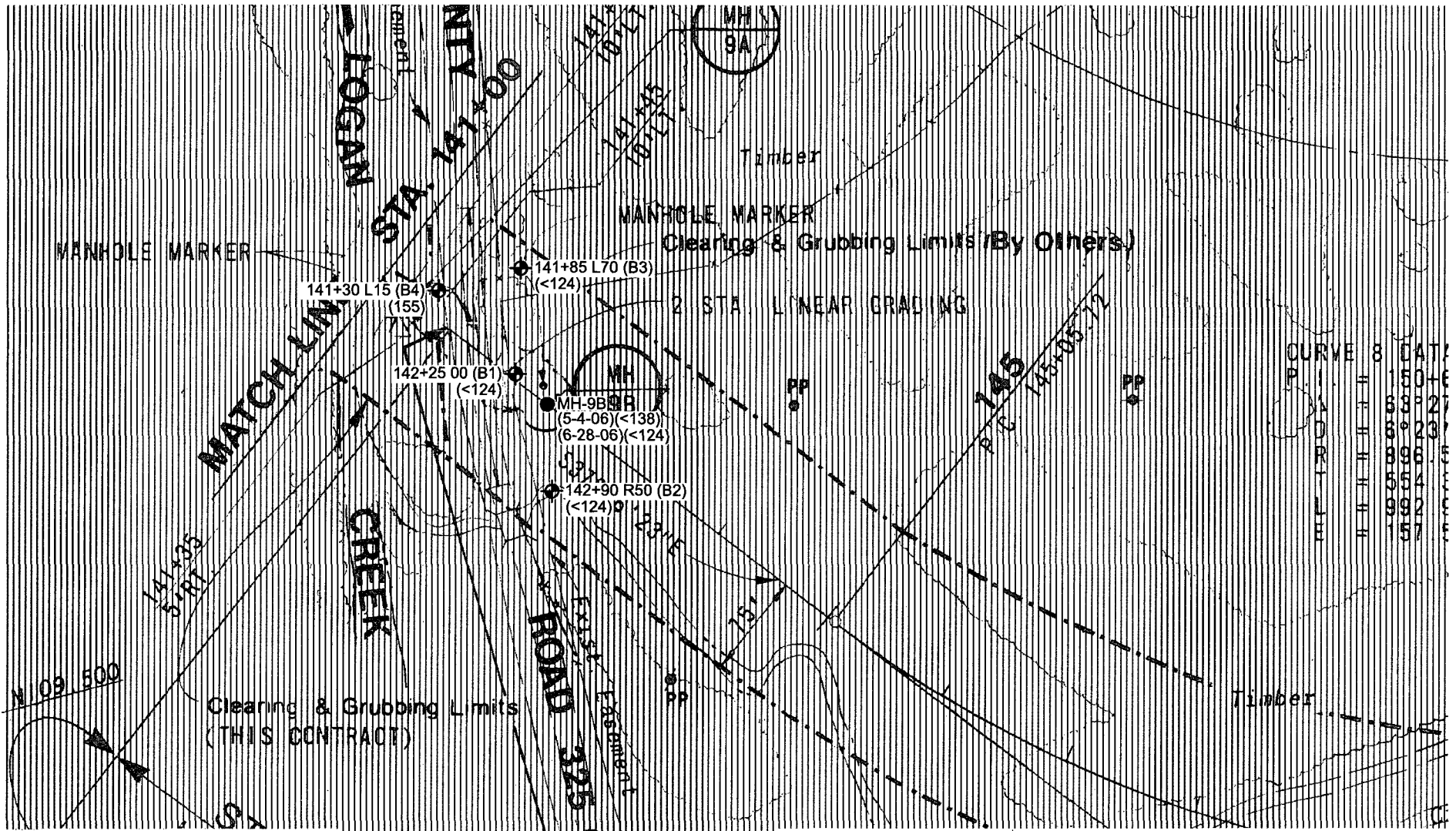
- MANHOLE
- ⊕ BORING
- 665 TRITIUM CONCENTRATION (pCi/L)



<b>MANHOLE 9B - SOIL ANALYTICAL RESULTS</b> <b>DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b> COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY			
Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.:	09067011T
Approved By:	KCW	File Name:	701IFX.DWG
Drawn By:	BCB	Figure No.:	18

**Terracon**  
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 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**


	MANHOLE BORING
(155)	TRITIUM CONCENTRATION (pCi/L)

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

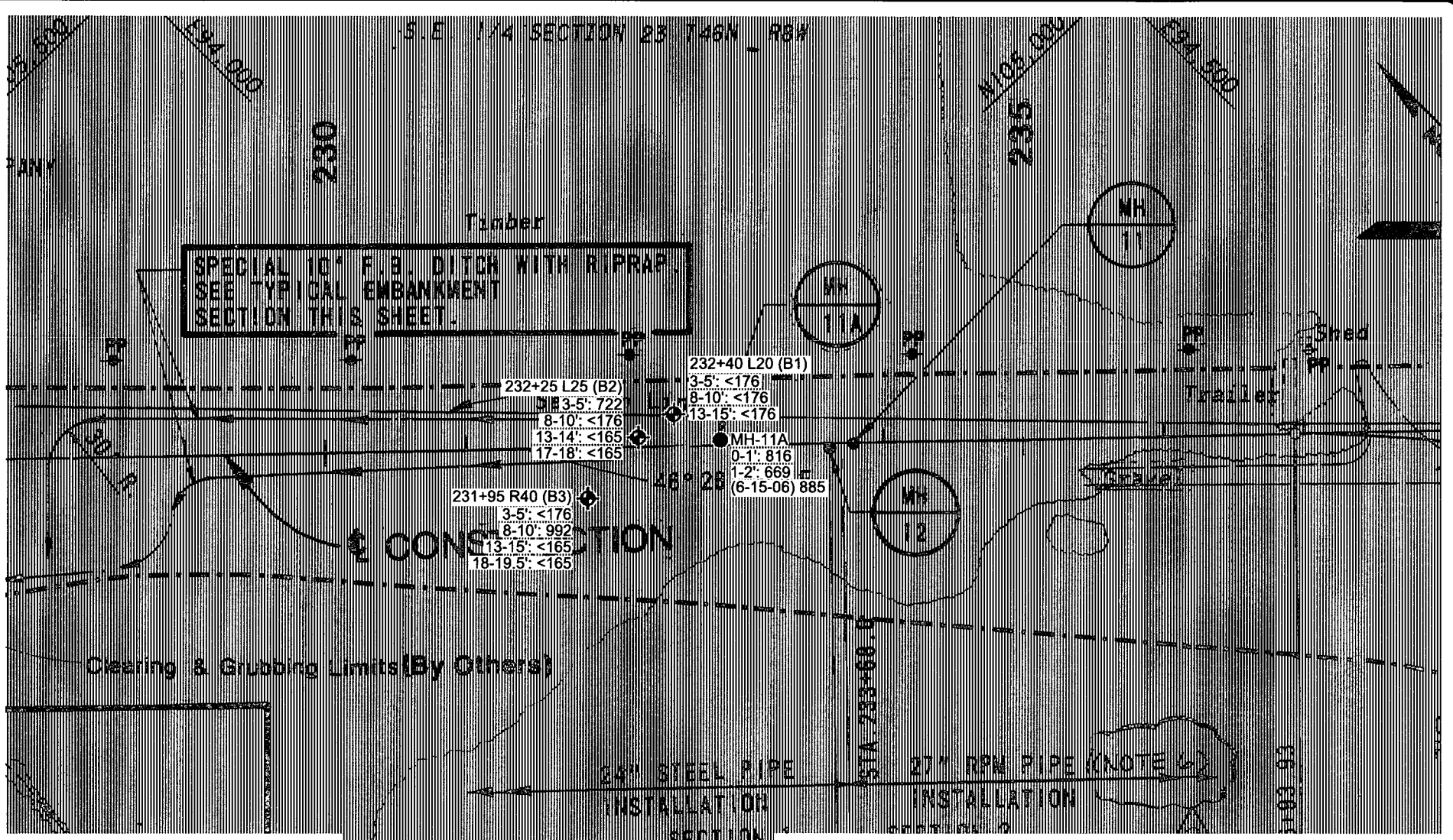
**MANHOLE 9B - GROUNDWATER ANALYTICAL RESULTS  
DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**

COUNTY ROAD 448  
STEEDMAN, MISSOURI 65077  
CALLAWAY COUNTY

Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.:	09067011T
Approved By:	KCW	File Name:	701FX.DWG
Drawn By:	BCB	Figure No.:	19

**Terracon**  
1815 S. Eisenhower  
Wichita, Kansas 67209  
Phone: (316) 262-0171  
Fax: (316) 262-6997

S. E. 1/4 SECTION 23 T46N R8W



SEE SPECIAL LOCATION SHEET FOR F.B. DITCH WITH RIPRAP EMBANKMENT SECTION THIS SHEET.

231+95 R40 (B3)  
 3-5': <176  
 8-10': 992  
 13-15': <165  
 18-19.5': <165

232+40 L20 (B1)  
 3-5': <176  
 8-10': <176  
 13-15': <176  
 MH-11A  
 0-1': 816  
 1-2': 669  
 (6-15-06) 885

**LEGEND**

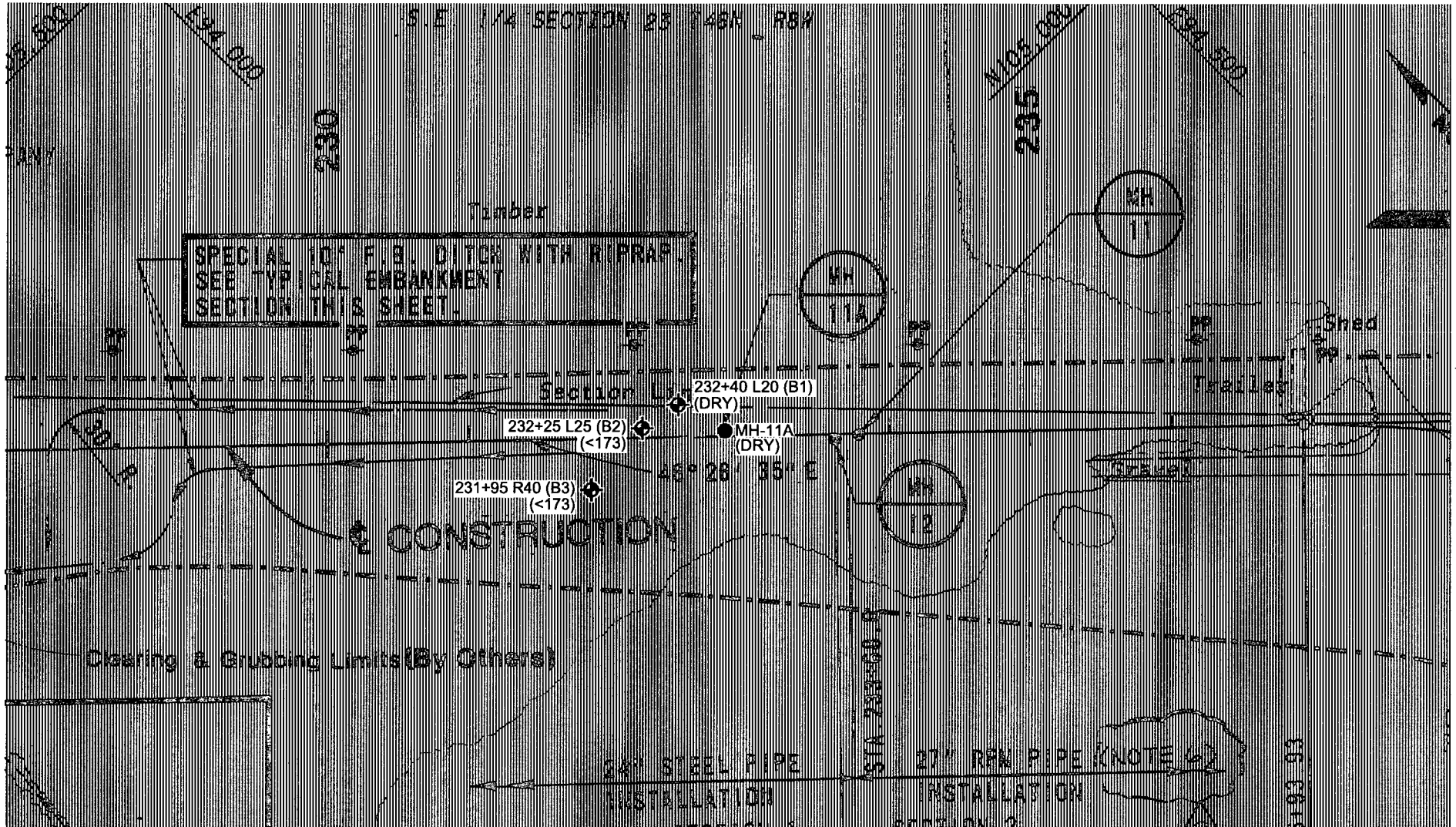
- MANHOLE
- ⊕ BORING
- 722 TRITIUM CONCENTRATION (pCi/L)



<b>MANHOLE 11A - SOIL ANALYTICAL RESULTS DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION</b>		COUNTY ROAD 448 STEEDMAN, MISSOURI 65077 CALLAWAY COUNTY	
Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.:	09067011T
Approved By:	KCW	File Name:	701IFX.DWG
Drawn By:	BCB	Figure No.:	20

**Terracon**  
 1815 S. Eisenhower  
 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

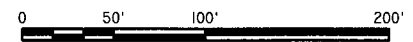
DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**LEGEND**

● MANHOLE  
 ◆ BORING  
 (<173) TRITIUM CONCENTRATION (pCi/L)

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



**MANHOLE 11A - GROUNDWATER ANALYTICAL RESULTS  
 DISCHARGE PIPELINE MANHOLE TRITIUM INVESTIGATION**

COUNTY ROAD 448  
 STEEDMAN, MISSOURI 65077  
 CALLAWAY COUNTY

Project Mngr:	JMW	Scale:	SHOWN
Designed By:	JMW	Date:	09/12/06
Checked By:	JMW	Project No.:	09067011T
Approved By:	KCW	File Name:	7011FX.DWG
Drawn By:	BCB	Figure No.:	21

**Terracon**  
 1815 S. Eisenhower  
 Wichita, Kansas 67209  
 Phone: (316) 262-0171  
 Fax: (316) 262-6997

**Appendix A**

# LOG OF BORING NO. 105+29 50 R (MH-5 B-3)

CLIENT <b>Ameren UE</b>												
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT-N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
5	<b>SILTY CLAY:</b> brown, moist	5	CL ML		AS							
14	<b>SILTY SAND:</b> very fine, trace clay, brown, slightly moist, laminated	14	CL ML	1	SS	24					x	<166
19	<b>SANDY, SILTY CLAY:</b> sand very fine, gray, saturated	19	SM		AS							
20	<b>SILTY SAND:</b> very fine, trace clay, gray, saturated	20	SM	2	SS	0						
20	<b>BOTTOM OF BORING</b>	20	CL ML	3	SS	15					x	<166
			CL ML		AS							
			SM	4	AS						x	<166
	Tritium in Water: <128 pCi/L											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	14	WS	13.8
			AB
WL			
WL			



BORING STARTED		7-6-06	
BORING COMPLETED		7-6-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 09\_09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06



# LOG OF BORING NO. 105+51 13 L (MH-5 B-1)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
13	<b>LEAN TO SILTY CLAY:</b> brown, moist	5	CL	1	SS	24				x	174
14.2	<b>SILTY CLAY:</b> gray, saturated	10	CL	2	SS	5				x	387
18	<b>SAND:</b> medium to very coarse, trace gravel, gray, saturated	15	CL ML	3	SS					x	<165
20	<b>SILTY CLAY WITH SAND:</b> sand medium to very coarse, trace gravel, gray, saturated	20	SW		AS						
	<b>BOTTOM OF BORING</b>  Tritium in Water: <128 pCi/L		CL ML	4	SS	24				x	<165

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 13	WS	▽
WL	▽		▽
WL			



BORING STARTED		6-30-06	
BORING COMPLETED		6-30-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 105+87 49 L (MH-5 B-2)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
5	<b>SILTY CLAY:</b> brown, moist	5	CL		AS						
9	<b>SILT:</b> brown, moist, laminated	9	CL ML	1	SS	24				x	<165
14	<b>SILTY CLAY:</b> brown, moist	14	CL ML		AS						
19.5	<b>SILTY CLAY AND CLAYEY SILT:</b> gray, saturated	19.5	CL ML	2	SS	10				x	<165
25	<b>SILTY SAND:</b> very fine, trace clay, gray, saturated	25	CL ML	3	SS	9				x	<165
25	<b>BOTTOM OF BORING</b>	25	SM SM	4	SS	24				x	<165
Tritium in Water: <129 pCi/L											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	14	WS	12.2
			AB
WL			
WL			



BORING STARTED		7-5-06	
BORING COMPLETED		7-5-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/05

# LOG OF BORING NO. 106+21 21 L (MH-5 B-4)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
4.5	<b>LEAN TO SILTY CLAY:</b> brown, moist		CL		AS						
9.5	<b>SANDY, SILTY CLAY:</b> sand very fine, brown, moist, laminated	5	CL ML	1	SS	24				x	<166
9.5	<b>SANDY, SILTY CLAY:</b> sand very fine, gray-brown, wet, laminated		CL ML		AS						
19.5	<b>SANDY, SILTY CLAY:</b> sand very fine, gray-brown, wet, laminated	10		2	SS	2				x	<166
19.5	<b>SANDY, SILTY CLAY:</b> sand very fine, gray-brown, wet, laminated				AS						
20	<b>SAND:</b> very fine to fine, trace clay, gray, saturated <b>BOTTOM OF BORING</b>	15		3	SS	0				x	<166
20	<b>SAND:</b> very fine to fine, trace clay, gray, saturated <b>BOTTOM OF BORING</b>				AS						
20	<b>SAND:</b> very fine to fine, trace clay, gray, saturated <b>BOTTOM OF BORING</b>	20	SP	4	SS	24				x	<166
Tritium in Water: <128 pCi/L											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 9.5	WS	▽ 13.3 AB
WL	▽		▽
WL			



BORING STARTED		7-6-06	
BORING COMPLETED		7-6-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

# LOG OF BORING NO. 106+21 24 L (MH-5 B-4A)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
9	<b>LEAN TO SILTY CLAY:</b> brown, moist	5	CL		AS						
14	<b>SILTY CLAY:</b> brown with iron mottles, wet	10	CL ML	1	ST	24				x	<166
16	<b>SANDY, SILTY CLAY:</b> sand very fine, gray, wet	15	CL ML		AS						
16	<b>SANDY, SILTY CLAY:</b> sand very fine, gray, wet	15	CL ML	2	ST	15				x	<166
	<b>BOTTOM OF BORING</b>										
	Tritium in Water: No Sample (Dry)										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 9	WS	▼
WL	▽		▼
WL			



BORING STARTED		7-6-06	
BORING COMPLETED		7-6-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

# LOG OF BORING NO. 107+62 16 L (MH-6 B-4)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
2.5	<b>SILTY CLAY:</b> light brown, moist	1	CL ML	AS							
5	<b>SILTY CLAY:</b> dark gray, mottled, moist	2	CL ML	ST					x		1204
10		3	CL ML	AS							
12		4	CL ML	ST					x		2303
15	<b>SILTY CLAY WITH SAND:</b> sand very fine, dark gray, wet	5	CL ML	AS							
18.5		6	CL ML	ST					x		<163
20		7	CL ML	AS							
25	<b>SAND:</b> fine, dark gray, saturated										
	<b>BOTTOM OF BORING</b>										
	Tritium in Water: 281 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 12	WS	▽
WL	▽		▽
WL			



BORING STARTED		7-13-06	
BORING COMPLETED		7-13-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 89 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 108+00 12 L (MH-6 B-1)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
2.5	<b>SILTY CLAY:</b> light brown, mottled, moist	CL ML	1	AS							
5	<b>SILTY CLAY:</b> dark gray, mottled, moist	CL ML	2	ST					x		188
10		CL ML	3	AS							
12		CL ML	4	ST					x		236
13	<b>SAND:</b> fine, light gray, wet	CL ML	5	AS							
15	<b>SAND:</b> fine to coarse, light gray, saturated	SW	6	ST					x		272
20		SW	7	AS							
25	<b>BOTTOM OF BORING</b>										
	Tritium in Water: <138 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 12	WS	▽
WL	▽		▽
WL			



BORING STARTED		7-13-06	
BORING COMPLETED		7-13-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 108+03 40 R (MH-6 B-3)

CLIENT <b>Ameren UE</b>													
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>											
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES					TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)		
2.5	<b>SILTY CLAY:</b> dark brown, moist	1	CL ML	AS									
7	<b>SILTY CLAY:</b> dark gray, mottled	2	CL ML	ST						x		<163	
9.5	<b>SILTY CLAY WITH SAND:</b> dark gray, mottled	3	CL ML	AS									
11	<b>SAND:</b> very fine, dark gray, wet saturated at 11 feet	4	CL ML	ST						x		221	
15		5	SP	AS									
17		6	SP	ST						x		<163	
21		7	SP	AS									
25	<b>BOTTOM OF BORING</b>												
Tritium in Water: <138 pCi/L													

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	11	WS	11
WL		WS	
WL		WS	



BORING STARTED		7-13-06	
BORING COMPLETED		7-13-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 108+03 50 L (MH-6 B-2)

CLIENT <b>Ameren UE</b>												
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
9.5	<b>SILTY CLAY:</b> dark brown, mottled	5	CL ML	1	AS							
		5	CL ML	2	ST					x		<163
		5	CL ML	3	AS							
		10	CL ML	4	ST					x		215
12	<b>SANDY, SILTY CLAY:</b> dark gray, mottled, wet saturated at 10.5 feet	10	CL ML	5	AS							
		15	SC SM	6	ST					x		230
		15	SC SM	7	AS							
25	<b>BOTTOM OF BORING</b>	25										
	Tritium in Water: 188 pCi/L											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 10.5	WS	▽
WL	▽		▽
WL			



BORING STARTED		7-13-06	
BORING COMPLETED		7-13-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06



# LOG OF BORING NO. 109+60 18 L (MH-6B B-4)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
4.5	<b>SANDY SILT:</b> light brown, dry	1	ML	AS							
5	<b>SILTY CLAY:</b> gray to dark gray, dry	2	ML	SS						x	194
11.5	<b>SANDY, SILTY CLAY:</b> gray to dark gray	3	CL ML	AS							
17.5	<b>SANDY, SILTY CLAY:</b> gray to dark gray	4	CL ML	ST						x	25863
17.5	<b>SANDY, SILTY CLAY:</b> gray to dark gray	5	CL ML	AS							
17.5	<b>SANDY, SILTY CLAY:</b> gray to dark gray	6	CL ML	ST						x	5284
17.5	<b>SANDY, SILTY CLAY:</b> gray to dark gray	7	CL ML	AS							
17.5	<b>SANDY, SILTY CLAY:</b> gray to dark gray	8	CL ML	AS							
21	<b>SAND:</b> fine, dark gray, saturated	8	SP	SS						x	793
<b>BOTTOM OF BORING</b>											
Tritium in Water: 910 pCi/L											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 17.5	WS	▽ 15.67
WL	▽	AB	
WL			



BORING STARTED		7-11-06	
BORING COMPLETED		7-11-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 98 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 109+85 17 L (MH-6B B-1A)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
3.5	<b>FILL:</b> silty clay, light brown	CL ML		AS							
5	<b>FILL:</b> silty clay, light brown, with fragments of dark brown fat clay, dry	CL ML	1	SS	24				x		249
8.5		CL ML		AS							
10	<b>SANDY, SILTY CLAY:</b> sand very fine, gray, wet	CL ML	2	SS	10				x		731
13.5		CL ML		AS							
15	<b>SILTY CLAY WITH SAND:</b> sand very fine, gray, wet	CL ML	3	SS	6				x		3384
18.5		CL ML		AS							
20.5	<b>SILTY SAND WITH CLAY:</b> very fine, gray, saturated, laminated	SM	4	SS	24				x		<165
	<b>BOTTOM OF BORING</b>										
	Tritium in Water: 1554 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	8.5	WS	13.3
			AB
WL			
WL			



BORING STARTED		7-6-06	
BORING COMPLETED		7-6-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

**LOG OF BORING NO. 109+88 17 L (MH-6B B-1B)**

CLIENT  
**Ameren UE**

SITE  
**Callaway County, Missouri**

PROJECT  
**Callaway Power Plant**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
	<b>FILL:</b> silty clay, light brown	3.5	CL ML		AS					
	<b>FILL:</b> silty clay, light brown, dry		CL ML	1	SS	24				
			CL ML		AS					
	<b>SANDY, SILTY CLAY:</b> sand very fine, gray, wet	8.5	CL ML	2	ST	12				
			CL ML		AS					
	<b>SILTY CLAY WITH SAND:</b> sand very fine, gray, wet	13.5	CL ML	3	ST	12				
<b>BOTTOM OF BORING</b>		15.5								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 8.5	WS	▽ 13.5 AB
WL	▽		▽
WL			



BORING STARTED	7-6-06
BORING COMPLETED	7-6-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

# LOG OF BORING NO. 109+90 34 R (MH-6B B-2)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				Tritium Analytical Results (pCi/L)
			NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY		
3.5	3.5	CL ML		AS							
8.5	8.5	SM	1	SS	24				x		<166
13.5	13.5	CL ML	2	ST	6				x		<166
19.5	19.5	SM	3	ST	24				x		<166
20.5	20.5	SP	4	SS	20				x		<166
<b>BOTTOM OF BORING</b>  Tritium in Water: 158 pCi/L											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 8.5	WS	▽ 12.5 AB
WL	▽		▽
WL			



BORING STARTED		7-6-06	
BORING COMPLETED		7-6-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

# LOG OF BORING NO. 109+90 46 L (MH-6B B-3)

CLIENT: Ameren UE

SITE: Callaway County, Missouri      PROJECT: Callaway Power Plant

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS				
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
8.5	<b>SANDY SILT:</b> light brown, dry	5	ML	1	AS						
		5	ML	2	SS				x		<159
			ML	3	AS						
19	<b>SANDY, SILTY CLAY:</b> dark gray, dry	10	CL ML	4	SS	0					
	wet at 12.5 feet		CL ML	5	AS						
			CL ML	6	ST				x		8743
		15	CL ML	7	AS						
21	<b>SILTY SAND:</b> silty to medium, dark gray, saturated	20	SM	8	ST						
	<b>BOTTOM OF BORING</b>										
	Tritium in Water: 1306 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 12.5	WS	▽ 16.44 AB
WL	▽	WS	▽
WL		WS	



BORING STARTED		7-10-06	
BORING COMPLETED		7-10-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 98 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 139+70 65 L (MH-8 B-1)

CLIENT <p style="text-align: center;"><b>Ameren UE</b></p>	
SITE <p style="text-align: center;"><b>Callaway County, Missouri</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
10	<b>LEAN CLAY:</b> dark brown, dry	5	CL 1	AS						
		5	CL 2	SS				x		761
		5	CL 3	AS						
10	<b>SILTY, CLAYEY SAND:</b> silty to medium, with some chert gravel, light gray, wet	10	CL 4	SS				x		1889
		10	SC SM 5	AS						
		15	SC SM 6	SS				x		<171
		15	SC SM 7	AS						
18	<b>LEAN CLAY:</b> dark brown, saturated	20	CL 8	SS				x		<171
	chert gravel layer at 20.2 feet	20	CL 9	AS						
23.5	<b>WEATHERED LIMESTONE:</b> light gray, cherty fractured	25	10	SS				x		<162
25.5	<b>LIMESTONE:</b> light gray, cherty, hard, dense	25	11	AS						
28.5	<b>BOTTOM OF BORING - AUGER REFUSAL</b>									
	Tritium in Water: <124 pCi/L									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 10	WS	▽ 7.82 AB
WL	▽	▽	
WL			



BORING STARTED	6-28-06
BORING COMPLETED	6-28-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 139+85 30 L (MH-8 B-2)

CLIENT <b>Ameren UE</b>										
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
3.5	<b>LEAN CLAY:</b> dark brown, dry		CL	1	AS					
5.5	<b>LEAN CLAY:</b> red-brown		CL	2	SS				x	<162
9	<b>LEAN CLAY:</b> dark brown		CL	3	AS					
14.8	<b>LEAN CLAY:</b> with limestone gravel, red-brown, wet		CL	4	SS				x	924
18	<b>SILTY, CLAYEY SAND:</b> silty to fine, dark gray, saturated		CL	5	AS					
19.5	<b>LIMESTONE GRAVEL:</b> light brown, cherty, chalky, soft, fractured		CL	6	SS				x	714
19.8	<b>LEAN CLAY WITH LIMESTONE &amp; CHERT GRAVEL:</b> dark brown, soft		SC SM	7	AS					
22	<b>WEATHERED LIMESTONE:</b> light brown, hard, fractured			8	SS				x	<162
25	<b>WEATHERED SHALE</b> dark brown, soft			9	AS					
28	<b>LIMESTONE:</b> light brown, cherty, hard, dense			10	SS				x	<171
28	<b>BOTTOM OF BORING - AUGER REFUSAL</b>			11	AS					
Tritium in Water: <124 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 9	WS	▽
WL	▽		▽
WL			



BORING STARTED	6-28-06
BORING COMPLETED	6-28-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 140+20 50 L (MH-8 B-4)

CLIENT <p style="text-align: center;"><b>Ameren UE</b></p>	
SITE <p style="text-align: center;"><b>Callaway County, Missouri</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
3.5	<b>LEAN CLAY:</b> light brown, dry	5	CL	1	AS					
7.5	<b>LEAN CLAY:</b> dark brown	10	CL	2	SS				x	3651
9	wet at 7 feet <span style="float: right;">▽</span> <b>SILTY SAND:</b> silty to fine with chert gravel, dark gray, saturated	11.5	SM	3	AS					
10	<b>LEAN CLAY:</b> dark gray, saturated	14	CL	4	SS				x	<176
11.5	<b>SILTY SAND:</b> silty to fine with chert gravel, dark gray, saturated									
14	<b>LEAN CLAY:</b> dark gray, saturated									
15.5	<b>SILTY SAND:</b> silty to fine with chert gravel, dark gray, saturated									
	<b>BOTTOM OF BORING - AUGER REFUSAL</b>									
	Tritium in Water: 159 pCi/L									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

BORING STARTED 6-29-06

WL	▽ 7	WS	▽
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BORING COMPLETED 6-29-06

WL	▽	WS	▽
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RIG	CME 550X	DRILLER	DN
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WL		WS	
----	--	----	--

GEOLOGIST	DDM	JOB #	09067011T
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BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06



# LOG OF BORING NO. 140+35 45 R (MH-8 B-3)

CLIENT <p style="text-align: center;"><b>Ameren UE</b></p>	
SITE <p style="text-align: center;"><b>Callaway County, Missouri</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
4	<b>SILTY CLAY:</b> red-brown, with limestone gravel		CL ML	1	AS						
7	<b>SILT:</b> dark gray		CL ML	2	SS					x	<162
8.5	<b>SILTY SAND:</b> silty to medium with chert gravel, dark gray, saturated		SM	4	SS					x	290
10	<b>LEAN CLAY:</b> dark brown, with chert gravel, wet		CL	5	AS						
17	<b>LEAN CLAY:</b> dark brown, wet		CL	6	SS					x	<162
23	<b>LEAN CLAY:</b> blue-gray, wet		CL	7	AS						
25	<b>LEAN CLAY:</b> dark gray, with abundant limestone and chert gravel, wet		CL	8	SS					x	<162
27	<b>WEATHERED LIMESTONE:</b> light brown, chalky, soft, saturated			11	AS						
28	<b>LIMESTONE:</b> light gray, hard, dense, saturated										
	<b>BOTTOM OF BORING - AUGER REFUSAL</b>										
	Tritium in Water: <124 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 8.5	WS	▽
WL	▽	WS	▽
WL		WS	



BORING STARTED	6-28-06
BORING COMPLETED	6-28-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 141+30 15 L (MH-9B B-4)

CLIENT <b>Ameren UE</b>									
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS	
				NUMBER	TYPE	RECOVERY, in.	SPT-N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
2	<b>SILTY CLAY:</b> light brown, dry	1	CL ML	AS					
5	<b>FILL:</b> silty to coarse sand, light brown, wet	2	SW	SS				x	204
9		3	SW	AS					
	<b>BOTTOM OF BORING - AUGER REFUSAL</b>	4	SW	SS				x	665
Tritium in Water: 155 pCi/L									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 5	WS	▽ 5.12	AB
WL	▽		▽	
WL				



BORING STARTED		6-27-06
BORING COMPLETED		6-27-06
RIG	CME 550X	DRILLER
		DN
GEOLOGIST	DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 141+85 70 L (MH-9B B-3)

CLIENT <p style="text-align: center;"><b>Ameren UE</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>
SITE <p style="text-align: center;"><b>Callaway County, Missouri</b></p>	PROJECT <p style="text-align: center;"><b>Callaway Power Plant</b></p>

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			Tritium Analytical Results (pCi/L)
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	
2	<b>SILTY CLAY:</b> light brown, dry		CL ML	1	AS						
5	<b>SILTY CLAY:</b> dark brown, dry		CL ML	2	SS					x	5223
8	saturated at 5 feet		CL ML	3	AS						
13	<b>LEAN CLAY:</b> red-brown, saturated		CL	4	SS					x	<171
15	<b>LEAN CLAY:</b> dark brown, saturated		CL	5	AS						
19			CL	6	SS					x	301
22	<b>CHERT RUBBLE</b>		CL	7	AS						
29	<b>WEATHERED LIMESTONE:</b> light gray, cherty, soft, fractured		CL	8	SS					x	588
29.4	<b>LIMESTONE:</b> hard, dense		GW	9	AS						
	<b>BOTTOM OF BORING - AUGER REFUSAL</b>			10	SS					x	569
				11	AS						
				12	SS						
	Tritium in Water: <124 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	5	WS	5.11 AB
WL			
WL			



BORING STARTED	6-27-06
BORING COMPLETED	6-27-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 142+25 00 (MH-9B B-1)

CLIENT		Ameren UE								
SITE		Callaway County, Missouri								
PROJECT		Callaway Power Plant								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
1.5	<b>SILTY CLAY:</b> light brown, dry	1	CL ML	AS						
5	<b>FILL:</b> medium to coarse sand, light brown, moist	2	SP	SS					x	480
10		3	SP	AS						
15		4	SP	SS					x	<166
15		5	SP	AS						
15	<b>SILTY CLAY:</b> dark brown, saturated	6	SP	SS					x	<166
20		7	CL ML	AS						
20		8	CL ML	SS					x	
20.3	<b>CHERT GRAVEL</b>	9	CL ML	AS						
20.3	<b>SILTY CLAY:</b> dark brown, saturated	10	CL ML	SS					x	
25		11	CL ML	AS						
25	<b>WEATHERED LIMESTONE:</b> light gray, cherty									
27.5	<b>BOTTOM OF BORING - AUGER REFUSAL</b>									
	Tritium in Water: <124 pCi/L									

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 5	WS	▽ 5.21 AB
WL	▽	WS	▽
WL		WS	



BORING STARTED		6-27-06
BORING COMPLETED		6-27-06
RIG	CME 550X	DRILLER
GEOLOGIST	DDM	JOB # 09067011T

# LOG OF BORING NO. 142+90 50 R (MH-9B B-2)

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				Tritium Analytical Results (pCi/L)
			NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY		
	2.5	CL ML	1	AS							
	5	CL ML	2	SS					x		197
	8	CL ML	3	AS							
	10	CL ML	4	SS					x		<171
	13	CL ML	5	AS							
	15	CL ML	6	SS					x		<171
	18	CL ML	7	AS							
	20		8	SS					x		<171
	22		9	AS							
	24		10	SS					x		<171
	25		11	AS							
	27.3										
	27.5	<b>LIMESTONE:</b> cherty, hard, dense <b>BOTTOM OF BORING - AUGER REFUSAL</b>  Tritium in Water: <124 pCi/L									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 9.5	WS	▽ 5.09 AB
WL	▽		▽
WL			



BORING STARTED		6-27-06	
BORING COMPLETED		6-27-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 231+95 40 R (MH-11A B-3)

CLIENT		Ameren UE		PROJECT		Callaway Power Plant				
SITE		Callaway County, Missouri		DEPTH, ft.		SAMPLES		TESTS		
GRAPHIC LOG	DESCRIPTION	USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
7.5	<b>SILTY CLAY:</b> with limestone and sandstone gravel, red-brown, dry	CL ML	1	AS						
10	<b>LEAN CLAY:</b> dark gray, moist	CL	2	SS					x	<176
14.5	<b>LEAN CLAY:</b> with limestone and sandstone gravel, red-brown, moist	CL ML	3	AS						
18	<b>WEATHERED SHALE:</b> yellow-brown, blocky	CL	4	SS					x	922
19.3	<b>SHALE:</b> yellow-brown, with calcite veins	CL	5	AS						
	<b>WEATHERED SHALE:</b> yellow-brown, blocky	CL	6	SS					x	<165
	<b>SHALE:</b> yellow-brown, with calcite veins	CL	7	AS						
	<b>SHALE:</b> yellow-brown, with calcite veins	CL	8	SS					x	<165
	<b>BOTTOM OF BORING - AUGER REFUSAL</b>									
	Tritium in Water: <174 pCi/L									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	DRY	WS	▽
WL	▽		▽	
WL			▽	



BORING STARTED	6-29-06
BORING COMPLETED	6-29-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 232+25 25 L (MH-11A B-2)

CLIENT <b>Ameren UE</b>										
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
3.5	<b>LEAN CLAY:</b> dark gray, dry		CL	1	AS					
9.8	<b>LEAN CLAY:</b> with sandstone gravel, brown		CL	2	SS				x	722
12.5	<b>WEATHERED SHALE:</b> yellow-brown, dry, platy		CL	3	AS					
17	<b>WEATHERED SHALE:</b> red, dry, blocky		CL	4	SS				x	<176
18	<b>WEATHERED SHALE:</b> red, dry, blocky			5	AS					
	<b>LIMESTONE:</b> brown, dry, hard			6	SS				x	<165
	<b>BOTTOM OF BORING - AUGER REFUSAL</b>			7	AS				x	<165
	Tritium in Water: <173 pCi/L									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▼	DRY	WS	▼
WL	▼			▼
WL				



BORING STARTED	6-29-06
BORING COMPLETED	6-29-06
RIG	CME 550X
DRILLER	DN
GEOLOGIST	DDM
JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 232+40 20 L (MH-11A B-1)

CLIENT <b>Ameren UE</b>												
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
1.5	<b>SILT:</b> brown, dry		ML	1	AS							
14.4	<b>LEAN CLAY:</b> with sandstone gravel, brown, mottled, dry	5	CL	2	SS					x	<176	
14.8		10	CL	3	AS							
14.4		14.8	14.4	CL	4	SS					x	<176
14.8		14.8	14.8	CL	5	AS						
14.8		14.8	14.8	CL	6	SS					x	<176
	<b>WEATHERED SHALE:</b> yellow-brown, soft, platy <b>BOTTOM OF BORING - AUGER REFUSAL (LIMESTONE)</b>											
	Tritium in Water: No sample (Dry)											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ DRY	WS	▽
WL	▽		▽
WL			



BORING STARTED		6-29-06	
BORING COMPLETED		6-29-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T



# LOG OF BORING NO. 73+39 16 L (MH-2 B-4)

CLIENT

Ameren UE

SITE

Callaway County, Missouri

PROJECT

Callaway Power Plant

GRAPHIC LOG

DESCRIPTION

DEPTH, ft.

USCS SYMBOL

NUMBER

TYPE

RECOVERY, in.

SPT - N  
BLOWS / ft.

WATER  
CONTENT, %

FIELD VAPOR  
TEST (PPM)\*

SOIL SAMPLE  
SENT TO  
LABORATORY

Tritium Analytical  
Results  
(pCi/L)

SAMPLES

TESTS

**SILTY CLAY:** light brown, moist

4

**LEAN CLAY:** dark gray, mottled, moist

9.5

**SANDY CLAY:** dark gray, mottled, moist

13

**SAND:** fine to medium, wet

saturated at 16 feet

25

**BOTTOM OF BORING**

Tritium in Water: 435 pCi/L

4  
5  
10  
15  
20  
25

CL ML  
CL ML  
CL  
CL  
CL  
SP  
SP

1  
2  
3  
4  
5  
6  
7

AS  
ST  
AS  
ST  
AS  
ST  
AS

x  
x  
x

<165  
<165  
<165

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft

WL	▽ 13	WS	▽ 18.33	AB
WL	▽		▽	
WL				

# Terracon

BORING STARTED	7-11-06
BORING COMPLETED	7-11-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 73+68 25 R (MH-2 B-3)

CLIENT <b>Ameren UE</b>										
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
3.5	<b>silty clay:</b> light brown, moist	0	CL ML	1	AS					
5	<b>LEAN CLAY:</b> dark gray, mottled	5	CL	2	SS	0				
10		CL	3	ST				x	6378	
12		CL	4	AS						
15	<b>SILTY SAND:</b> very fine, dark gray wet at 13 feet  saturated at 15 feet	15	SM	5	ST				x	2361
20		SM	6	AS						
25	<b>BOTTOM OF BORING</b>  Tritium in Water: 340 pCi/L	25								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 13	WS	▽ 16.65 AB
WL	▽	WS	▽
WL		WS	



BORING STARTED		7-11-06
BORING COMPLETED		7-11-06
RIG	CME 550X	DRILLER
GEOLOGIST	DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 74+20 65 R (MH-2 B-1)

CLIENT		Ameren UE								
SITE		Callaway County, Missouri								
PROJECT		Callaway Power Plant								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		Tritium Analytical Results (pCi/L)
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	
0.5	<b>GRAVEL SILTY CLAY:</b> with limestone gravel, light brown	0.5	CL ML	1	AS					
9	<b>LEAN CLAY:</b> with limestone gravel, dark brown, moist	9	CL ML	2	SS				x	673
13.3	<b>SAND:</b> fine to medium, light brown, wet	13.3	CL ML	3	AS					
15	<b>SAND:</b> fine to medium, dark gray, saturated; with clay lenses	15	CL ML	4	SS				x	791
25	<b>SAND:</b> fine to medium, dark gray, saturated; with clay lenses	25	CL ML	5	AS					
25	<b>SAND:</b> fine to medium, light brown, wet	25	CL ML	6	SS				x	966
25	<b>SAND:</b> fine to medium, dark gray, saturated; with clay lenses	25	SP	7	AS					
25	<b>SAND:</b> fine to medium, dark gray, saturated; with clay lenses	25	SP	8	SS				x	1374
25	<b>SAND:</b> fine to medium, dark gray, saturated; with clay lenses	25	SP	9	AS					
25	<b>SAND:</b> fine to medium, dark gray, saturated; with clay lenses	25	SP	10	SS				x	1381
<b>BOTTOM OF BORING</b>		25								
Tritium in Water: 590 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 13.3	WS	▽
WL	▽		▽
WL			



BORING STARTED		6-30-06	
BORING COMPLETED		6-30-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 74+3 34 L (MH-2 B-2)

CLIENT <b>Ameren UE</b>										
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>								
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
2.5	<b>SILTY CLAY:</b> light brown, moist	1	CL ML	AS						
	<b>LEAN CLAY:</b> dark brown, moist	2	CL	SS				x		174
		3	CL	AS						
10		4	CL	SS				x		175
	<b>SANDY CLAY WITH GRAVEL:</b> dark brown, moist	5	CL	AS						
		6	CL	SS				x		879
14	<b>SANDY CLAY WITH GRAVEL:</b> dark brown, moist	7	CL	SS						
	<b>SILTY, CLAYEY SAND:</b> very fine, dark gray, wet	SM	7	AS						
20										
	<b>SAND:</b> fine, dark gray, saturated									
25										
	<b>BOTTOM OF BORING</b>									
	Tritium in Water: 337 pCi/L									

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 14	WS	▽ 16.62
		AB	
WL	▽		▽
WL			



BORING STARTED		7-11-06
BORING COMPLETED		7-11-06
RIG	CME 550X	DRILLER
		DN
GEOLOGIST	DDM	JOB # 09067011T

# LOG OF BORING NO. 78+10 17 L (MH-3B B-1)

CLIENT  
**Ameren UE**

SITE  
**Callaway County, Missouri**

PROJECT  
**Callaway Power Plant**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
7.5	<b>SILTY CLAY:</b> dark brown, moist	5	CL ML	1	AS						
		5	CL ML	2	ST					x	187
		5	CL ML	3	AS						
7.5	<b>SILTY CLAY:</b> dark gray, moist	10	CL ML	4	ST					x	<159
		10	CL ML	5	AS						
15	<b>SILTY SAND:</b> very fine, light gray, wet	15	CL ML	6	ST					x	<159
		15	SM	7	AS						
18.5	<b>SAND:</b> fine, light gray, saturated	20	SP	8	SS					x	<159
20	<b>BOTTOM OF BORING</b>	20									
	Tritium in Water: 138 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 15	WS	▽
WL	▽		▽
WL			



BORING STARTED		7-10-06	
BORING COMPLETED		7-10-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 78+52 14 L (MH-3B B-3)

CLIENT  
**Ameren UE**

SITE  
**Callaway County, Missouri**

PROJECT  
**Callaway Power Plant**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY
8.5	<b>SILTY CLAY:</b> light brown, mottled, moist	5	CL ML	1	AS					
		5	CL ML	2	ST				x	<167
		5	CL ML	3	AS					
8.5	<b>SILTY CLAY:</b> trace sand, light brown, mottled, moist	10	CL ML	4	ST				x	<167
		10	CL ML	5	AS					
14	wet at 13 feet <span style="float: right;">▽</span>	15	CL ML	6	ST				x	<167
		15	SP	7	AS					
25	<b>SAND:</b> very fine, dark gray, saturated	20								
		25								
	<b>BOTTOM OF BORING</b>	25								
	Tritium in Water: <139 pCi/L									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 13	WS	▽
WL	▽		▽
WL			



BORING STARTED	7-11-06
BORING COMPLETED	7-11-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 78+55 50 L (MH-3B B-2)

CLIENT <b>Ameren UE</b>												
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)	
10.8	<b>SILTY CLAY:</b> light brown, mottled, moist	5	CL ML	1	AS							
		5	CL ML	2	ST					x		<167
		5	CL ML	3	AS							
		10	CL ML	4	ST					x		<167
15.5	<b>SAND:</b> very fine, light brown, dry	15	SP	5	AS							
		15	SP	6	ST	0						
15.5	<b>CLAYEY SAND:</b> very fine, dark gray, wet  saturated at 19 feet	15	SC	7	AS							
		15	SC	8	ST					x		<167
		20		9	AS							
25	<b>BOTTOM OF BORING</b>  Tritium in Water: <139 pCi/L	25										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 15.5	WS	▽
WL	▽		▽
WL			



BORING STARTED		7-12-06	
BORING COMPLETED		7-12-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. 78+55 50 R (MH-3B B-4)

CLIENT  
**Ameren UE**

SITE  
**Callaway County, Missouri**

PROJECT  
**Callaway Power Plant**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			Tritium Analytical Results (pCi/L)
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	
9	<b>SILTY CLAY:</b> light brown, mottled, moist	5	CL ML	1	AS						
		5	CL ML	2	ST					x	<167
		5	CL ML	3	AS						
		10	CL ML	4	ST					x	<167
13	<b>SILTY CLAY:</b> trace sand, light brown, mottled, moist	10	CL ML	5	AS						
	wet at 12 feet	13									
	<b>SAND:</b> very fine, dark gray, saturated	15	SP	6	ST					x	<167
		15	SP	7	AS						
25	<b>BOTTOM OF BORING</b>	25									
	Tritium in Water: <139 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 12	WS	▽
WL	▽		▽
WL			



BORING STARTED	7-12-06
BORING COMPLETED	7-12-06
RIG CME 550X	DRILLER DN
GEOLOGIST DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06



# LOG OF BORING NO. MH-5 B-1A

CLIENT <b>Ameren UE</b>									
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
8	<b>LEAN TO SILTY CLAY:</b> brown, moist	5	CL		AS				
14.2	<b>SILTY, CLAYEY SAND:</b> sand very fine, brown, wet	10	SC SM	1	SS				
18	<b>SAND:</b> medium to very coarse, trace gravel, gray, saturated	15	SC SM	2	SS	8			
25	<b>SILTY CLAY WITH SAND:</b> sand medium to very coarse, trace gravel, gray, saturated	20	SC SM		AS				
	<b>BOTTOM OF BORING</b>	25							

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 8	WS	▽ 11
			AB
WL	▽	▽	
WL			



BORING STARTED		6-30-06	
BORING COMPLETED		7-5-06	
RIG	CME 550X	DRILLER	DN
GEOLOGIST	DDM	JOB #	09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. MH-5 B-1B

CLIENT

Ameren UE

SITE

Callaway County, Missouri

PROJECT

Callaway Power Plant

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS				
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
8	<b>LEAN TO SILTY CLAY:</b> brown, moist	8	CL		AS						
13	<b>SILTY, SANDY CLAY:</b> with sand layers <1 inch thick, brown, wet	13	CL ML	1	SS	9					
14.2	<b>SILTY CLAY:</b> gray, saturated	14.2	CL ML		AS						
18	<b>SAND:</b> medium to very coarse, trace gravel, gray, saturated	18									
25	<b>SILTY CLAY WITH SAND:</b> sand medium to very coarse, trace gravel, gray, saturated	25									
	<b>BOTTOM OF BORING</b>	25									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽ 8	WS	▽ 12	AB
WL	▽	WS	▽	
WL				



BORING STARTED		7-5-06
BORING COMPLETED		7-5-06
RIG	CME 550X	DRILLER
		DN
GEOLOGIST	DDM	JOB # 09067011T

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. MH-6B

CLIENT  
**Ameren UE**

SITE  
**Callaway County, Missouri**

PROJECT  
**Callaway Power Plant**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
0.6	<b>LEAN TO SILTY CLAY:</b> trace sand, brown, moist		CL	1	HA						
2	<b>GRAVEL WITH CLAY:</b> hard		GW	2	HA						
	<b>BOTTOM OF BORING</b>										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \* ND indicates a-reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft		
WL	▽ DRY	▽
WL	▽	▽
WL		



BORING STARTED		7-6-06
BORING COMPLETED		7-6-06
RIG HAND AUGER	DRILLER	DN
GEOLOGIST DDM	JOB # 09067011T	

BOREHOLE 99 09067011T BORING LOGS.GPJ TERRACON.GDT 8/9/06

# LOG OF BORING NO. MH-9B

CLIENT <b>Ameren UE</b>											
SITE <b>Callaway County, Missouri</b>		PROJECT <b>Callaway Power Plant</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*	SOIL SAMPLE SENT TO LABORATORY	Tritium Analytical Results (pCi/L)
2	<b>GRAVEL:</b> brown		GP	1	HA	12				x	154956
	<b>BOTTOM OF BORING</b>		GP	2	HA	12				x	53735
	Tritium in Water: <138 pCi/L										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	DRY	▽
WL	▽		▽
WL			



BORING STARTED		6-27-96
BORING COMPLETED		6-27-06
RIG HAND AUGER	DRILLER	DN
GEOLOGIST	DDM	JOB # 09067011T

## GENERAL NOTES

### DRILLING & SAMPLING SYMBOLS:

SS : Split Spoon - 1 7/8" I.D., 2" O.D., unless otherwise noted	PS : Piston Sample
ST : Thin-Walled Tube - 2" O.D., Unless otherwise noted	WS : Wash Sample
PA : Power Auger	FT : Fish Tail Bit
HA : Hand Auger	RB : Rock Bit
DB : Diamond Bit - 4", N, B	BS : Bulk Sample
AS : Auger Sample	PM : Pressuremeter
HS : Hollow Stem Auger	DC : Dutch Cone
	WB : Wash Bore

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch OD split spoon, except where noted.

### WATER LEVEL MEASUREMENT SYMBOLS:

WL : Water Level	WS : While Sampling
WCI : Wet Cave In	WD : While Drilling
DCI : Dry Cave In	BCR : Before Casing Removal
AB : After Boring	ACR : After Casing Removal

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of ground water levels is not possible with only short term observations.

### DESCRIPTIVE SOIL CLASSIFICATION:

Soil Classification is based on the Unified Soil Classification System and ASTM Designations D-2487 and D-2488. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays, if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse grained soils are defined on the basis of their relative in-place density and fine grained soils on the basis of their consistency. Example: Lean clay with sand, trace gravel, stiff (CL); silty sand, trace gravel, medium dense (SM).

### CONSISTENCY OF FINE-GRAINED SOILS:

Unconfined Compressive Strength, Qu, psf	Consistency
< 500	Very Soft
500 - 1,000	Soft
1,001 - 2,000	Medium
2,001 - 4,000	Stiff
4,001 - 8,000	Very Stiff
8,001 - 16,000	Hard
> -16,000	Very Hard

### RELATIVE DENSITY OF COARSE-GRAINED SOILS:

N-Blows/ft.	Relative Density
0-3	Very Loose
4-9	Loose
10-29	Medium Dense
30-49	Dense
50-80	Very Dense
80+	Extremely Dense

### RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) (of Components Also Present in Sample)	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

### RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) (of Components Also Present in Sample)	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

### GRAIN SIZE TERMINOLOGY

Major Component Of Sample	Size Range
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

## GENERAL NOTES

### Sedimentary Rock Classification

#### DESCRIPTIVE ROCK CLASSIFICATION:

Sedimentary rocks are composed of cemented clay, silt and sand sized particles. The most common minerals are clay, quartz and calcite. Rock composed primarily of calcite is called limestone; rock of sand size grains is called sandstone, and rock of clay and silt size grains is called mudstone or claystone, siltstone, or shale. Modifiers such as shaly, sandy, dolomitic, calcareous, carbonaceous, etc. are used to describe various constituents. Examples: sandy shale; calcareous sandstone.

LIMESTONE	Light to dark colored, crystalline to fine-grained texture, composed of $\text{CaCO}_3$ , reacts readily with HCl.
DOLOMITE	Light to dark colored, crystalline to fine-grained texture, composed of $\text{CaMg}(\text{CO}_3)_2$ , harder than limestone, reacts with HCl when powdered.
CHERT	Light to dark colored, very fine-grained texture, composed of micro-crystalline quartz ( $\text{SiO}_2$ ), brittle, breaks into angular fragments, will scratch glass.
SHALE	Very fine-grained texture, composed of consolidated silt or clay, bedded in thin layers. The unlaminated equivalent is frequently referred to as siltstone, claystone or mudstone.
SANDSTONE	Usually light colored, coarse to fine texture, composed of cemented sand size grains of quartz, feldspar, etc. Cement usually is silica but may be such minerals as calcite, iron-oxide, or some other carbonate.
CONGLOMERATE	Rounded rock fragments of variable mineralogy varying in size from near sand to boulder size but usually pebble to cobble size ( $\frac{1}{2}$ inch to 6 inches). Cemented together with various cementing agents. Breccia is similar but composed of angular, fractured rock particles cemented together.

#### DEGREE OF WEATHERING:

SLIGHT	Slight decomposition of parent material on joints. May be color change.
MODERATE	Some decomposition and color change throughout.
HIGH	Rock highly decomposed, may be extremely broken.

Classification of rock materials has been estimated from disturbed samples.  
Core samples and petrographic analysis may reveal other rock types.

**Terracon**

# UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests<sup>A</sup>

				Soil Classification	
				Group Symbol	Group Name <sup>B</sup>
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines <sup>C</sup>	$Cu \geq 4$ and $1 \leq Cc \leq 3^E$	GW	Well-graded gravel <sup>F</sup>
			$Cu < 4$ and/or $1 > Cc > 3^E$	GP	Poorly graded gravel <sup>F</sup>
		Gravels with Fines More than 12% fines <sup>C</sup>	Fines classify as ML or MH	GM	Silty gravel <sup>F, G, H</sup>
			Fines classify as CL or CH	GC	Clayey gravel <sup>F, G, H</sup>
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines <sup>E</sup>	$Cu \geq 6$ and $1 \leq Cc \leq 3^E$	SW	Well-graded sand <sup>I</sup>
			$Cu < 6$ and/or $1 > Cc > 3^E$	SP	Poorly graded sand <sup>I</sup>
		Sands with Fines More than 12% fines <sup>D</sup>	Fines classify as ML or MH	SM	Silty sand <sup>G, H, I</sup>
			Fines classify as CL or CH	SC	Clayey sand <sup>G, H, I</sup>
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silt and Clays Liquid limit less than 50	inorganic	$PI > 7$ and plots on or above "A" line <sup>J</sup>	CL	Lean clay <sup>K, L, M</sup>
			$PI < 4$ or plots below "A" line <sup>J</sup>	ML	Silt <sup>K, L, M</sup>
		organic	$\frac{\text{Liquid limit — oven dried}}{\text{Liquid limit — not dried}} < 0.75$	OL	Organic clay <sup>K, L, M, N</sup> Organic silt <sup>K, L, M, O</sup>
	Silt and Clays Liquid limit 50 or more	inorganic	$PI$ plots on or above "A" line	CH	Fat clay <sup>K, L, M</sup>
			$PI$ plots below "A" line	MH	Elastic silt <sup>K, L, M</sup>
		organic	$\frac{\text{Liquid limit — oven dried}}{\text{Liquid limit — not dried}} < 0.75$	OH	Organic clay <sup>K, L, M, P</sup> Organic silt <sup>K, L, M, Q</sup>
Highly organic soils	Primarily organic matter, dark in color, and organic odor			PT	Peat

<sup>A</sup>Based on the material passing the 3-in. (75-mm) sieve.

<sup>B</sup>If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup>Gravels with 5 to 12% fines require dual symbols:  
GW-GM well-graded gravel with silt  
GW-GC well-graded gravel with clay  
GP-GM poorly graded gravel with silt  
GP-GC poorly graded gravel with clay

<sup>D</sup>Sands with 5 to 12% fines require dual symbols:  
SW-SM well-graded sand with silt  
SW-SC well-graded sand with clay  
SP-SM poorly graded sand with silt  
SP-SC poorly graded sand with clay

$$C_u = D_{60}/D_{10} \quad C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

If soil contains  $\geq 15\%$  sand, add "with sand" to group name.

<sup>G</sup>If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

<sup>H</sup>If fines are organic, add "with organic fines" to group name.

<sup>I</sup>If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.

<sup>J</sup>If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

<sup>K</sup>If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.

<sup>L</sup>If soil contains  $\geq 30\%$  plus No. 200 predominantly sand, add "sandy" to group name.

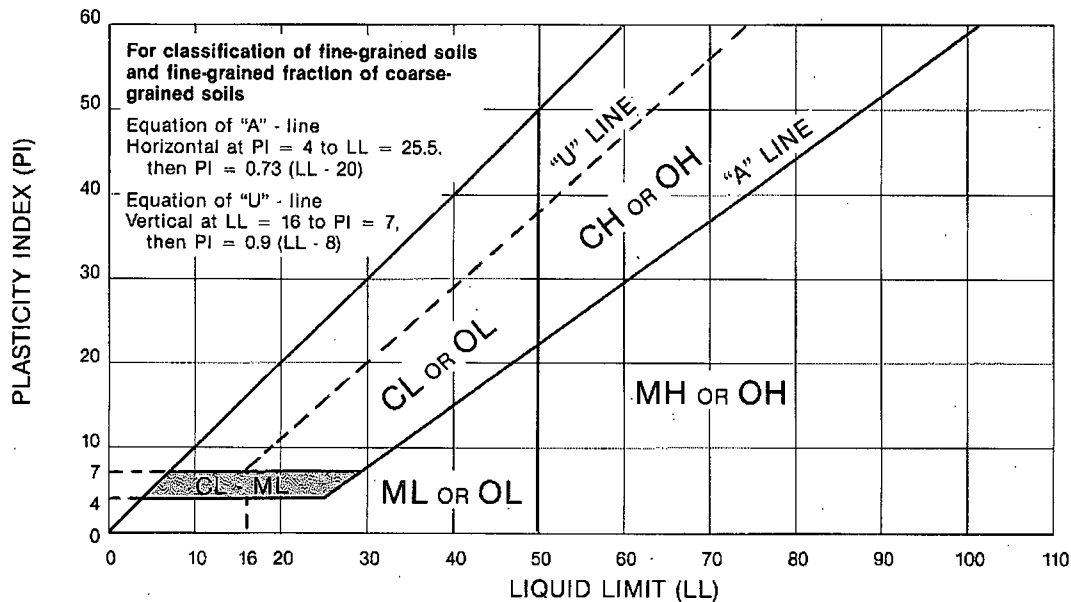
<sup>M</sup>If soil contains  $\geq 30\%$  plus No. 200, predominantly gravel, add "gravelly" to group name.

<sup>N</sup> $PI \geq 4$  and plots on or above "A" line.

<sup>O</sup> $PI < 4$  or plots below "A" line.

<sup>P</sup> $PI$  plots on or above "A" line.

<sup>Q</sup> $PI$  plots below "A" line.



**Terracon**

**Appendix B**





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DETERMINATION OF TRITIUM IN WATER  
(DIRECT METHOD)

PROCEDURE NO. T-02

Prepared by

Environmental Inc.  
Midwest Laboratory

Copy No. \_\_\_\_\_

<u>Revision #</u>	<u>Date</u>	<u>Pages</u>	<u>Prepared by</u>	<u>Approved by</u>
<u>3</u>	<u>07-07-98</u>	<u>4</u>	<u>D. Rieter</u>	<u>B Grob</u>
<u>4</u>	<u>06-06-00</u>	<u>4</u>	<u>R. Amromin</u>	<u>B Grob</u>
<u>5</u>	<u>01-29-02</u>	<u>4</u>	<u>SA Coorlim</u>	<u>B Grob</u>
<u>6</u>	<u>09-11-06</u>	<u>5</u>	<u>SA Coorlim</u>	<u>B Grob</u>

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## DETERMINATION OF TRITIUM IN WATER (DIRECT METHOD)

### Principle of Method

Water from a liquid or solid (soil, vegetation, food product) matrix is purified by distillation, a portion of the distillate is transferred to a counting vial and the scintillation fluid added. The contents of the vial are thoroughly mixed and counted in a liquid scintillation counter.

6

### Reagents

Scintillation medium, Ultima-Gold LLT, Packard Instruments Co.  
Tritium standard solution  
Dead water  
Ethyl alcohol  
Sodium Hydroxide (pellets)  
Potassium permanganate (crystals)

### Apparatus

Condenser  
Distillation flask, 250-mL capacity  
Liquid scintillation counter  
Pipette and disposable tips (0.1ml., 5-10 ml.)

### Procedure

**NOTE 1:** All glassware must be dry. Set drying oven for 100-125°C.

1. For liquid samples, transfer 60-70 mL directly to a 250-mL distillation flask. For solid samples distill approximately 100 -400 grams of sample into a 250 ml. distillation flask.

6

Add a boiling chip to the distillation flask. Add one NaOH pellet and about 0.02g  $\text{KMnO}_4$ . Connect a side arm adapter and a condenser to the outlet of the flask. Place a receptacle at the outlet of the condenser. Heat to boiling to distill. Discard the first 5-10mL of distillate. Collect next 20-25mL of distillate for analysis. Do not distill to dryness.

2. Mark the vial caps with the sample number and date.

NOTE: Use the same type of vial for the whole batch (samples, background and standard.)

3. Mark three vial caps "BKG-1", " BKG-2", " BKG-3", and date.
4. Mark three vial caps "ST-1", " ST-2", " ST-3"; standard number, and date.
5. Dispense 13 mL of sample into marked vials and "dead" water into vials marked BKG-1, BKG-2, BKG-3.

### **NOTE 2: Pipettes:**

The Pipette is set (and calibrated) to deliver 6.5 mL, so pipette twice into each vial. Use a new tip for each sample and a new tip (one) for three background samples. Make sure the pipette has not been reset. If it has been reset, or if you are not sure, do not use it; check with your supervisor. When using the pipette, make sure the plastic tip is pushed all the way on the pipette and is tight. If it is not, the air will be draw in and the volume withdrawn will not be correct (it will be smaller).

**DETERMINATION OF TRITIUM IN WATER (DIRECT METHOD)****Procedure (cont.)**

6. Dispense (Note 2) 13 mL of "dead" water into each vial marked "ST-1", "ST-2", and "ST-3".
7. Using a 0.1 mL pipette, withdraw water from each of the three standard vials. Discard this 0.1 mL of water.
8. Take a new 0.1 mL tip. Dispense 0.1 mL of standard into each of the three vials marked "ST-1", "ST-2", and "ST-3".
9. Take all vials containing samples, background, and standard to the counting room.
10. Dispense 10 mL of scintillation fluid into each vial (one at a time), cap tightly, and shake VIGOROUSLY for at least 30 seconds. Recheck the cap for tightness.

**NOTE 3:** To avoid spurious counts, scintillation fluid should not be added under fluorescent light.

11. Wet a Kimwipe with alcohol and wipe off each vial in the following order:

Background  
Samples  
Standard

12. Load the vials in the following order:

BKG-1  
ST-1  
Samples  
BKG -2\*  
ST -2\*  
Samples  
BKG-3  
ST -3

\*BKG-2 and ST-2 should be approximately  
in the middle of the batch

13. Let the vials dark- and temperature-adapt for about one hour.

**NOTE 4:**

The temperature inside the counter should be between 10° and 14°C (check thermometer). To check if vials have reached counter temperature, inspect one vial (Bkg). The liquid should be transparent. If the temperature is too high (or too low), the liquid will be white and very viscous.

14. Set the counter for a 100-minute counting time.

**DETERMINATION OF TRITIUM IN WATER (DIRECT METHOD)****Procedure (cont.)**

15. Fill out the loading sheet, being sure to indicate the date and time counting started, and your initials.

**NOTE 5:**

Do not use the prepared background and standard sets for samples counted in plastic vials. Prepare new backgrounds and standards for each batch.

If glass vials are used, the prepared background and standard sets can be counted with other batches up to one month after preparation, provided they are not taken out of the counter (not warmed up) and the same vial type from the same manufacturing batch (the same carton) is used. After one month prepare new sets of backgrounds and standards.

**Calculations**

$$pCi/L = \frac{\frac{A}{t_1} - \frac{B}{t_2}}{2.22EVe^{-\lambda t_3}} + \frac{2\sqrt{\frac{A}{t_1^2} + \frac{B}{t_2^2}}}{2.22EVe^{\lambda t_3}}$$

Where:

- A = Total counts, sample
- B = Total counts, background
- E = Efficiency, (cpm/dpm)
- V = Volume (liter)
- e = Base of the natural logarithm = 2.71828
- $\lambda = \frac{0.693}{12.26} = 0.5652$
- $t_1$  = Counting time, sample
- $t_2$  = Counting time, background
- $t_3$  = Elapsed time from the time of collection to the time of counting (in years)



700 Landwehr Road • Northbrook, IL 60062-2310  
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**WATER EXTRACTION from SOLID SAMPLES and MILK  
for TRITIUM ANALYSIS**

PROCEDURE NO. T-06

Prepared by

Environmental Inc.,  
Midwest Laboratory

Copy No.     /    

<u>Revision #</u>	<u>Date</u>	<u>Pages</u>	<u>Prepared by</u>	<u>Approved by</u>
<u>    0    </u>	<u>08-19-93</u>	<u>    4    </u>	<u>    B. Grob    </u>	<u>    LG Huebner    </u>

(This procedure, or any portion thereof, shall not be reproduced in any manner or distributed to any third party without the written permission of Environmental Inc., Midwest Laboratory.)

## PROCEDURE FOR EXTRACTING WATER FROM SOLID SAMPLES AND MILK

### Principle of Method

Water is extracted from samples using vacuum distillation technique. It is then purified by distillation and counted in accordance with Procedure No. T-02.

### Apparatus

Distillation flask, 2L. capacity  
Flask with stopper, 250mL capacity  
Cold trap  
Heating mantle  
Variac

### Other

Liquid nitrogen  
Vacuum grease

1. Assemble apparatus as shown in Figure 1. Start with cold trap assembly. Grease the joint, attach cold trap and then attach whole assembly to vacuum line. Close stopcock #3 and open stopcocks numbers 1, and 2. Hold the trap with your hand until vacuum is established, otherwise the cold trap might fall and break.
2. Weigh 2-liter flask. Place the sample into the flask and reweigh. Record wet weight of the sample. Assemble as shown in Figure 1.

**Note 1:** Use the following amounts of sample:  
Soil: approx. 50-200 g  
Vegetation: approx. 50-200 g, depending on dryness  
Meat, fish (flesh): ca. 50-100 g  
Milk: 150 mL

**Note 2:** For milk, do not weigh the flasks before and after distillation. Measure out 150 mL of milk and place in the flask.

3. Place the dewar all the way to the joint of the cold trap.
4. Slowly fill with liquid N<sub>2</sub> to the top. (See Figure 1).
5. When liquid N<sub>2</sub> stops boiling, slowly open stopcock #3.
6. Turn variac on and set it at 50. Pump for about ten minutes.

**PROCEDURE FOR EXTRACTING WATER FROM SOLID SAMPLES AND MILK (cont.)**

7. Close stopcock #2 and vacuum distill for about 1.0 hour. Check level of liquid N<sub>2</sub> periodically and add, if needed.
8. After one hour, lower the dewar to about 1" above the bottom of the trap. Let ice at the top of the trap melt and refreeze at the bottom. Use hair dryer to speed up melting.
9. After all the ice at the top of the trap has melted, raise the dewar to the top again, and add liquid N<sub>2</sub>, if needed.
10. Open stopcock #2 and pump for about ten minutes. After ten minutes, close stopcock #2 and continue vacuum distillation for about thirty minutes.
11. After about thirty minutes, test for completeness. Close the stopcock #3 for about 10 minutes. If water droplets collect in the tube from the flask to the cold trap, distillation is not complete. Open stopcock #3 and continue distilling for another 30 minutes.
12. Check for completeness (Step 11).
13. If distillation is complete, close stopcock #3, turn off variac and remove distillation flask.  
**NOTE:** For milk, do not distill to dryness. Collect 40-50 mL and stop the distillation.
14. Remove the dewar and let the ice in the trap melt. Use hair dryer to speed up melting.
15. Weigh 250 mL flask, write sample I.D. on the flask.
16. After the ice has melted, release the vacuum in the trap by opening stopcock #3.
17. Remove the trap and transfer water to the 250 mL flask. Stopper it. Weigh the flask and record weight of water.
18. Proceed with analysis for tritium, using procedure No. T-02.

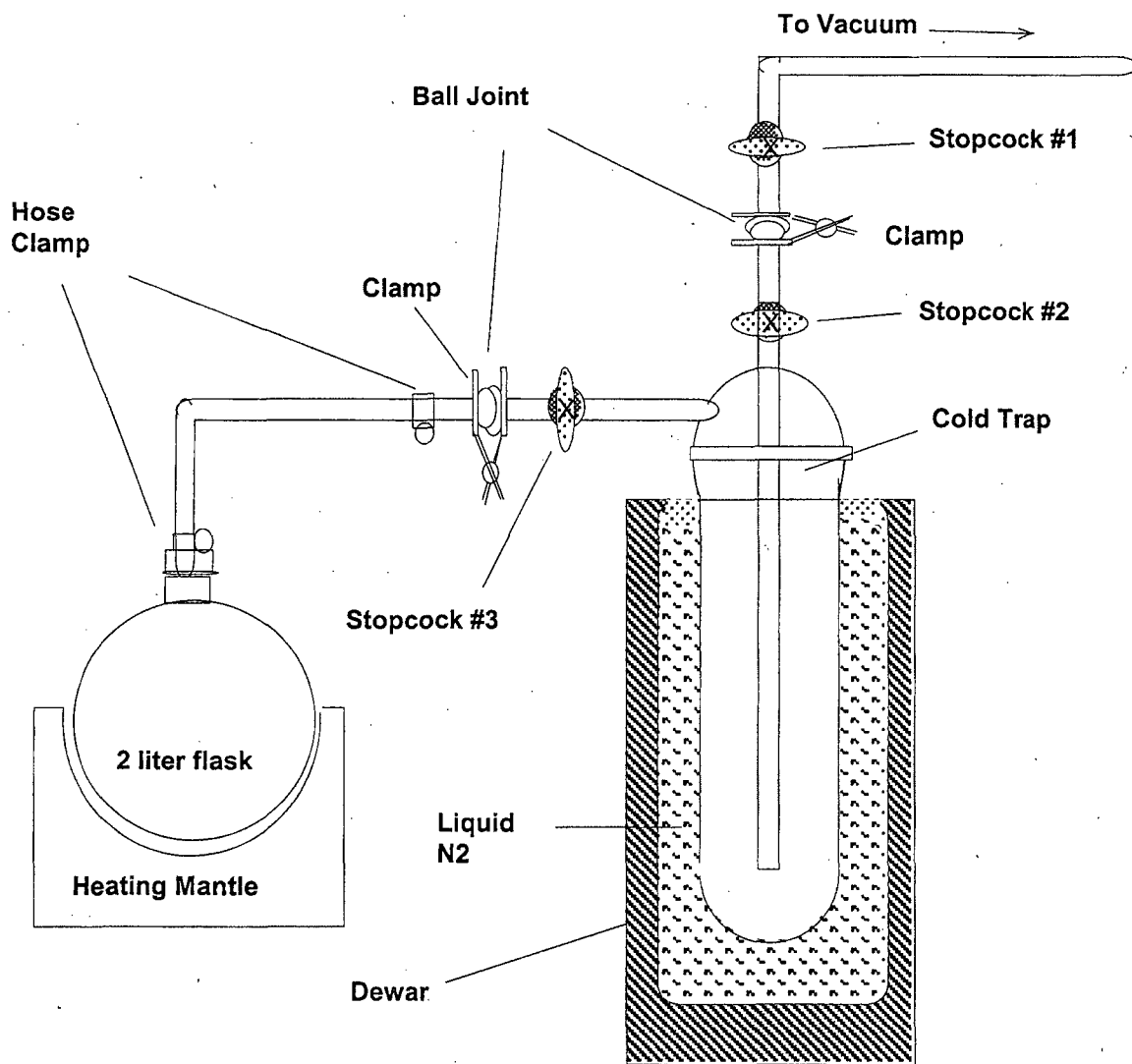


Figure 1. Vacuum Distillation Apparatus



LIMITED SITE INVESTIGATION  
OCTOBER 2007 RELEASE  
CALLAWAY POWER PLANT INTAKE/DISCHARGE PIPELINES MANHOLE 9B  
REFORM, MISSOURI

Terracon Project No. 09057158  
February 7, 2008

*Prepared for:*

AmerenUE – Callaway Plant  
Box 620, M/C CA-460  
Fulton, MO 65251

*Prepared by:*

TERRACON CONSULTANTS, INC.  
Columbia, Missouri

**Terracon**

February 7, 2008

**Terracon**  
Consulting Engineers & Scientists

Chris Graham  
AmerenUE – Callaway Plant  
Box 620, M/C CA-460  
Fulton, MO 65251

Terracon Consultants, Inc.  
3601 Mojave Court, Suite A  
Columbia, Missouri 65202  
Phone 573.214.2677  
Fax 573.214.2714  
www.terracon.com


Re: October 2007 Release  
Callaway Power Plant Intake/Discharge Pipelines Manhole 9B  
North of County Road 468  
Reform, Missouri  
Terracon Project No. 09057158

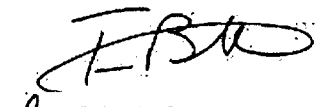
Dear Mr. Graham:

Terracon is pleased to submit the Limited Site Investigation (LSI) report for the above referenced site. This investigation was performed in general accordance with Terracon's proposal dated November 7, 2007.

We appreciate the opportunity to perform these services for AmerenUE. Please contact Tim Bennett at (573) 214-2677 if you have any questions regarding the information provided in the attached report.

Sincerely,  
Terracon Consultants, Inc.

  
Hugh Murrell  
Environmental Project Manager

  
for Eric J. Gorman, CHMM, P.G.  
Assistant Department Manager –  
Environmental Services

Enclosure

## TABLE OF CONTENTS

Terracon

Page No.

<b>1.0 INTRODUCTION .....</b>	<b>1</b>
<b>2.0 FIELD ACTIVITIES .....</b>	<b>2</b>
<b>3.0 LABORATORY ANALYTICAL METHODS .....</b>	<b>4</b>
<b>4.0 DATA EVALUATION .....</b>	<b>4</b>
<b>5.0 FINDINGS AND RECOMMENDATIONS .....</b>	<b>5</b>

### LIST OF APPENDICES

- Appendix A: Figure 1 – Topographic Map  
Figure 2 – Site Diagram
- Appendix B: Boring Logs
- Appendix C: Laboratory Data Sheets and Chain of Custody

**LIMITED SITE INVESTIGATION REPORT  
OCTOBER 2007 RELEASE  
CALLAWAY POWER PLANT INTAKE/DISCHARGE PIPELINES MANHOLE 9B**

**REFORM, MISSOURI**

**Terracon Project No. 09057158  
February 7, 2008**

**1.0 INTRODUCTION**

**1.1 Site Description**

<b>Site Name</b>	Callaway Power Plant Intake/Discharge Pipelines Manhole 9B
<b>Site Location/Address</b>	Callaway Power Plant Intake/Discharge Pipelines Manhole 9B, North of County Road 468 in Reform, Callaway County, Missouri
<b>General Site Description</b>	The subject area is the location of Manhole 9B associated with the intake and discharge water pipelines. The area is predominantly undeveloped wooded and grass-covered land. County Road 468 is a gravel road located south of the manhole and an unimproved dirt road is located east of the manhole. Logan Creek is located south of County Road 468.

A topographic map is included as Figure 1, and a site plan is included as Figure 2 of Appendix A.

**1.2 Scope of Work**

Terracon conducted a Limited Site Investigation (LSI) at the above-referenced site. At your request, Terracon's LSI was undertaken to evaluate potential tritium and gamma-emitting isotope contamination in the vicinity of the Manhole 9B (MH-9B) resulting from a release of approximately 850 liters of water into MH-9B from an air release valve (ARV) between October 5, 2007 and October 9, 2007. Analysis of the water released to MH-9B indicated a concentration of 13,500 pCi/L tritium. The ARV was isolated and the released water was removed from the MH-9B. It was observed that seals installed in the manhole had broken and that some water released from the ARV may have potentially leaked to the soils in the vicinity of the manhole.

**1.3 Standard of Care**

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of

laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These LSI services were performed in accordance with the scope of work agreed with our proposal dated November 7, 2007, and were not restricted by ASTM E1903-97.

#### **1.4 Additional Scope Limitations**

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

#### **1.5 Reliance**

This report has been prepared for the exclusive use of AmerenUE and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of AmerenUE and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, LSI report, and Master Service Agreement. The limitation of liability defined in the Master Service Agreement is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

### **2.0 FIELD ACTIVITIES**

#### **2.1 Borings**

Terracon's field activities were conducted on November 9, 2007, by Mr. Adam White, a Terracon environmental scientist. As part of the approved scope of work, a total of four (4) soil borings were advanced on-site. Four (4) soil borings labeled 9B INV 1, 9B INV 2, 9B INV 3, and 9B INV 4 were advanced around intake and discharge pipelines MH-9B located north of County Road 468.

Due to previous tritium levels having been identified in this area from borings associated with a separate investigation that is currently in progress, the intent was to advance borings as access allowed to collect soil and groundwater samples in the vicinity of MH 9B and evaluate and compare the laboratory data with the historic pCi/L concentrations vs. the LSI data, if detections were identified, to determine if the October 2007 release event potentially affected the soils and groundwater in the vicinity of MH 9B.

Figure 1 presents the general location and topography of the site on portions of the USGS topographic quadrangle map of Mokane East, Missouri. Figure 2 is a site diagram that indicates the approximate locations of the soil borings in relation to pertinent site features. Figures 1 and 2 are provided in Appendix A of this report.

Drilling services were performed using a track-mounted Geoprobe® drilling rig. Soil samples were collected using a four-foot direct push sampler. Drilling equipment was cleaned using a high-pressure washer prior to beginning the project and between samples. Sampling equipment was also dried between sampling intervals to prevent dilution or cross contamination of tritium. The borings were advanced to a depth of 25 feet. Soil samples were collected and observed to document soil lithology, color, and moisture content.

Detailed lithologic descriptions are presented on the soil boring logs included in Appendix B. Groundwater was encountered during the advancement of boring 9B INV 1 at a depth of 11 feet, boring 9B INV 2 at a depth of 13 feet, boring 9B INV3 at a depth of 15 feet, and boring 9B INV 4 at a depth of 9 feet below grade surface. The groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and depth to the soil/bedrock interface. Without the benefit of groundwater monitoring wells surveyed to a datum, groundwater flow direction beneath the MH-9B area cannot be ascertained.

## **2.2 Soil and Groundwater Sampling**

Terracon's soil sampling program involved submitting a soil sample from designated two-foot intervals from within the soil borings for analysis. Samples were collected from several intervals within each boring consisting of the 3-5, 8-10, 13-15, 18-20, and 23-25 foot depths in each soil boring. The borings extended from the ground surface to a depth of 25 feet.

Groundwater samples were collected from each soil boring using dedicated disposable bailers.

The soil and groundwater samples were placed in one (1) 500-mL sealed plastic container and one (1) one-gallon sealed plastic container. The sample coolers and completed chain-of-custody forms

October 2007 Release  
Callaway Power Plant Intake/Discharge Pipelines  
Manhole 9B  
Project Number: 09057158  
February 7, 2008

Terracon

were submitted to Environmental Inc. – Midwest Lab, located in Northbrook, Illinois for laboratory analysis.

### 3.0 LABORATORY ANALYTICAL METHODS

The soil and groundwater samples collected from within the soil borings were analyzed for the Tritium and Gamma emitting isotopes (Potassium-40, Manganese-54, Iron-59, Cobalt-58, Cobalt-60, Zirconium-Niobium-95, Cesium-134, Cesium-137, and Barium-Lanthanum-140) using EPA Method 906.0 (for Tritium), HASL modified (for gamma emitters) .

Laboratory analytical results were reported in picocuries per Liter (pCi/L) for the groundwater and Tritium results and picocuries per gram (pCi/g) for the soil results. The executed chain-of-custody form and laboratory data sheets are provided in Appendix C.

### 4.0 DATA EVALUATION

#### 4.1 Soil Samples

Soil samples collected from the soil borings advanced on-site did not exhibit Tritium or principal Gamma emitters at concentrations above laboratory detection limits, with the exception of Potassium-40 (K-40) in each of the soil samples (ranging from 3.93 pCi/g to 12.06 pCi/g) and Cesium 137 (Cs-137) in samples 9B INV 1 (3 – 5 ft.), 9B INV 1 (23 – 25 ft.), and 9B INV 4 (3 – 5 ft.); ranging from 0.05 pCi/g to 0.07 pCi/g.

K-40 is a naturally occurring nuclide and has a crustal abundance of 0.012%. K-40 is not a byproduct of nuclear plant operation. The amount of K-40 is solely dependent on the amount of potassium. K-40 is expected to be present and is used as a quality check on the laboratory data.

Cs-137 is present in soils around the world largely as the result of fallout from past atmospheric weapons tests. Cs-137 also can be a contaminant at certain locations such as nuclear reactors and facilities that process spent nuclear fuel.

The K-40 and Cs-137 concentrations were compared with the data provided in Argonne National Laboratory Environmental Science Division in collaboration the U.S. Department of Energy document titled *Radiological and Chemical Fact Sheets to Support Health Analyses for Contaminated Areas*, dated March 2007. According to the document, the natural activity of K-40 within soil is approximately 13 pCi/g, which is above the reported concentrations for K-40 in the soil samples. The document reported that Cs-137 that is found in soils due to fallout ranges from

October 2007 Release  
Callaway Power Plant Intake/Discharge Pipelines  
Manhole 9B  
Project Number: 09057158  
February 7, 2008

Terracon

approximately 0.1 pCi/g to 1 pCi/g. The detected Cs-137 results were below the ranges observed in nature from fallout.

Laboratory data sheets are provided in Appendix C.

#### **4.2 Groundwater Samples**

The groundwater samples collected from soil borings 9B INV 1 through 9B INV 4 did not exhibit Tritium or principal Gamma emitters at concentrations above laboratory detection limits. Laboratory data sheets are provided in Appendix C.

#### **5.0 FINDINGS AND RECOMMENDATIONS**

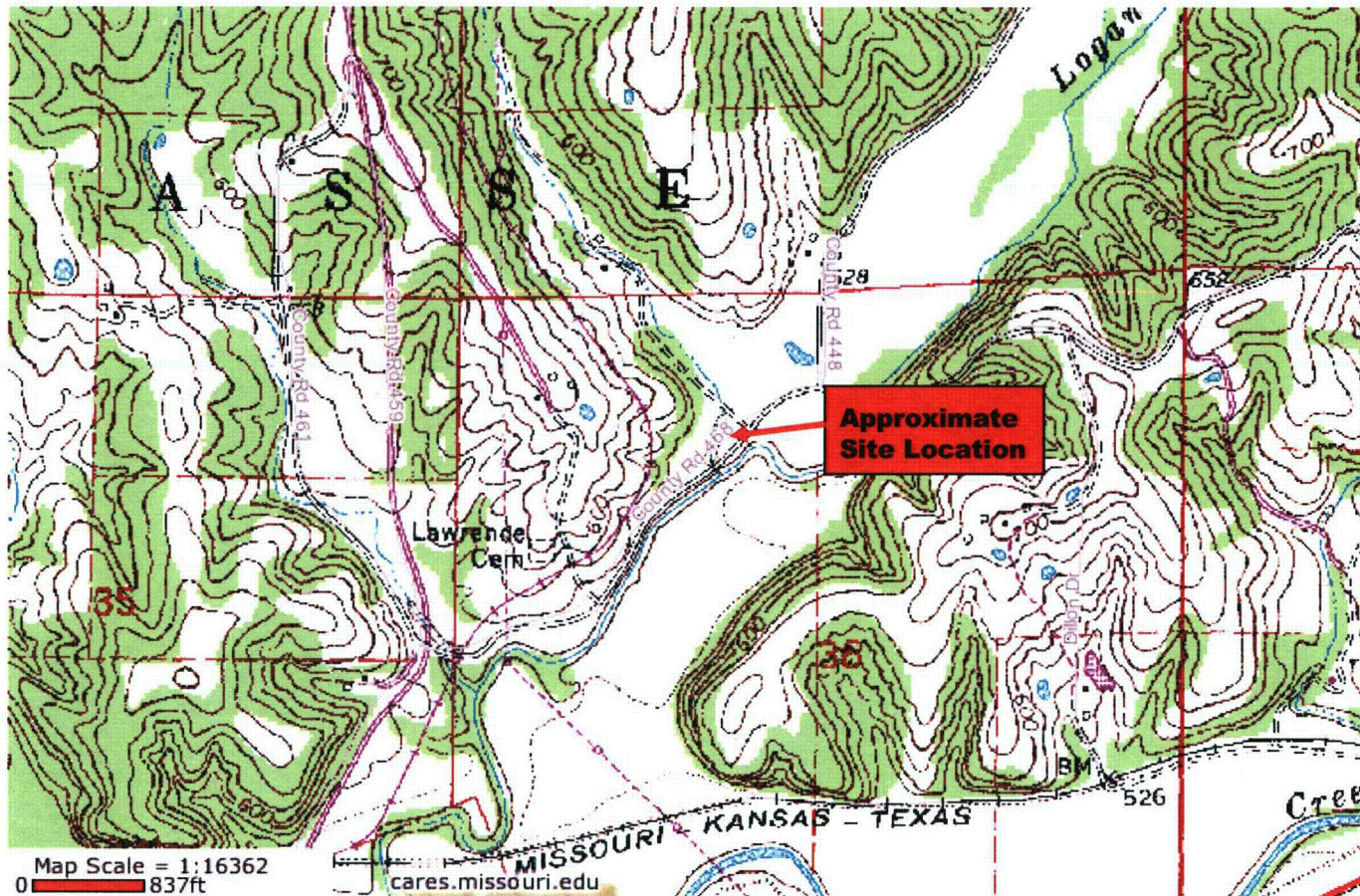
The findings and recommendations of this investigation are as follows:

- Based on the results of this LSI, additional site investigation activities do not appear to be warranted regarding the October 2007 ARV release event at MH-9B at this time.



**APPENDIX A**

**Figure 1 – Topographic Map**  
**Figure 2 – Site Diagram**



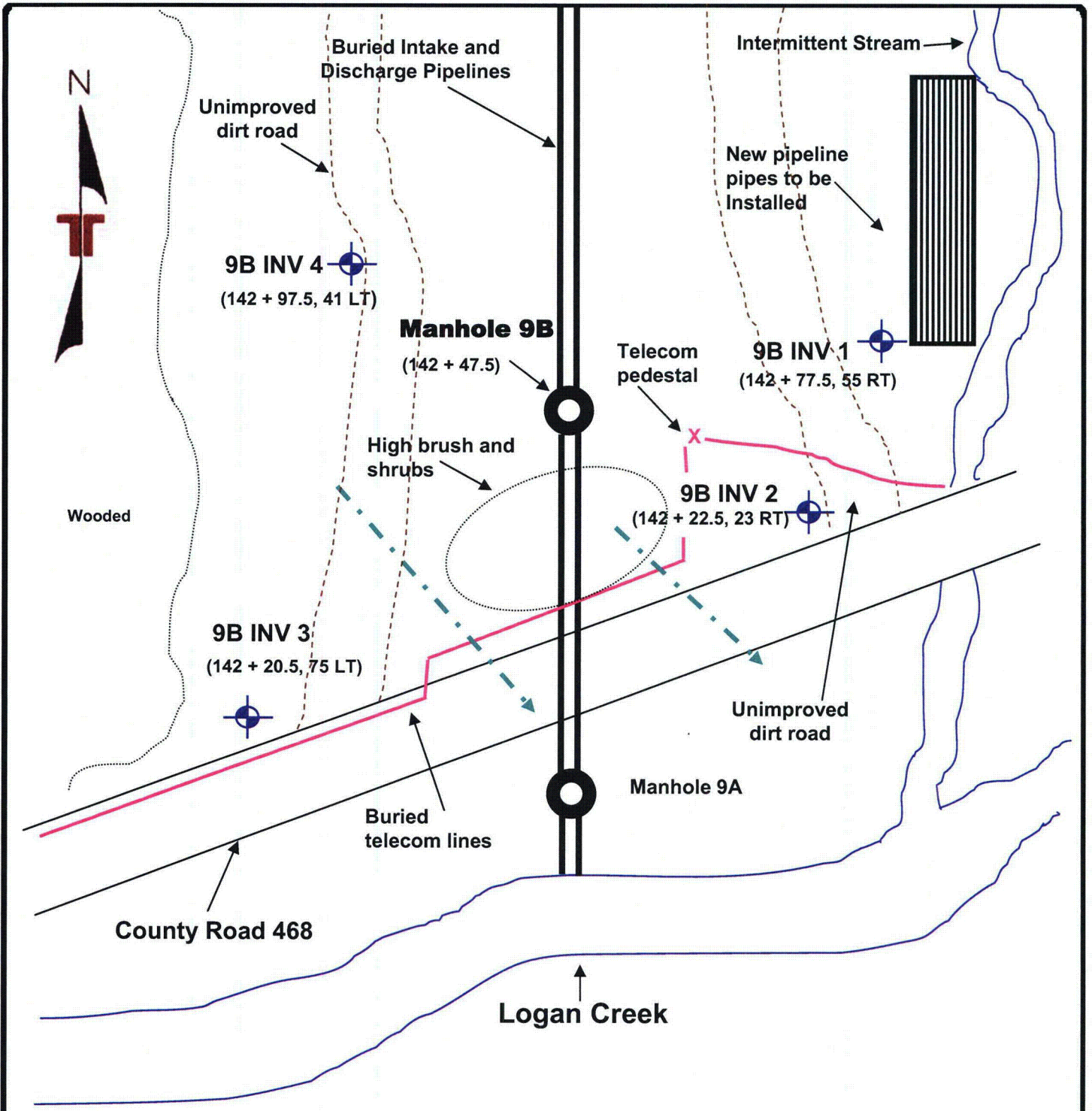
Missouri, Mokane East Quadrangle  
1985

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS  
NOT INTENDED FOR CONSTRUCTION PURPOSES.

NOT TO SCALE

FIGURE 1: SITE TOPOGRAPHIC MAP  
Manhole 9B – October 2007 Release Investigation  
Reform, Missouri

Project Manager: TLB	<b>Terracon</b> 3601 Mojave Court, Suite A Columbia, MO 65202	Project No. 09057158
Reviewed By: TLB		Figure 1.ppt
Drawn by: HRM		February 1, 2008



**Notes**




-  Boring Location
- (#) – Station Number Referenced to Location Along Pipeline
-  Topographic Gradient

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

<b>Figure 2: Site Diagram</b>		
Manhole 9B – October 2007 Release Investigation Reform, Missouri		
Project Mngr:	TLB	Project No.:
Designed By:	HRM	Scale:
Approved By:	TLB	NOT TO SCALE
Checked By:	TLB	Date:
File Name:	N:\Projects\2005\09057158\Manhole 9B	2-1-2008
 3601 Mojave Court, Suite A Columbia, Missouri 65202		Drawn By:
		HRM
		Figure No.:
		2

**APPENDIX B**

**Boring Logs**

# LOG OF BORING NO. 9B INV 1

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER							
SITE <b>MANHOLE 9B</b>		PROJECT <b>OCTOBER 2007 RELEASE INVESTIGATION</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
	<p><b>SILTY LEAN CLAY:</b> brown, with gravel</p> <p>-: gravel</p> <p>-: gray, trace gravel</p> <p style="text-align: right;">▼</p> <p>-: with reddish brown mottles</p> <p style="text-align: right;">▼</p> <p>-: wet</p>								
23	<p><b>SANDY LEAN CLAY:</b> grayish brown</p>								
24	<p><b>SAND:</b> grayish brown, fine to medium grained, trace gravel</p>								
25	<p><b>BOTTOM OF BORING AT 25 FEET</b> <b>NO REFUSAL</b></p>								

BOREHOLEZ\_09057158 MANHOLE 9B RELEASE.GPJ TERRACON.GDT 2/4/08

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▼ 11	WS	▼ 7.8    5 min
WL	▼	▼	
WL			



BORING STARTED		11-9-07	
BORING COMPLETED		11-9-07	
RIG	Geoprobe	FOREMAN	RT
APPROVED	TLB	JOB #	09057158

# LOG OF BORING NO. 9B INV 2

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER							
SITE <b>MANHOLE 9B</b>		PROJECT <b>OCTOBER 2007 RELEASE INVESTIGATION</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
	<p><u>SILTY LEAN CLAY</u>: brown, trace gravel</p> <p>-: gray lean to fat clay zone, 4'-8'</p> <p>-: with red mottles and black intrusions</p> <p style="text-align: right;">▽</p> <p>-: gray, trace sand and gravel</p> <p>10</p> <p><u>SANDY LEAN CLAY</u>: gray, trace red mottles, trace gravel, moist</p> <p>-: light brown, fine to medium grained, wet</p> <p style="text-align: right;">▽</p> <p>15</p> <p><u>SAND</u>: light brown, medium to coarse grained, wet</p> <p>17</p> <p><u>SANDY LEAN CLAY</u>: gray</p> <p>19.5</p> <p><u>SAND</u>: light brown, medium to coarse grained, wet</p> <p>-: gray, trace gravel</p> <p>25</p> <p>BOTTOM OF BORING AT 25 FEET NO REFUSAL</p>								
				1	DP	24			X
					DP				
				2	DP	24			X
					DP				
				3	DP	22			X
					DP				
				4	DP	24			X
					DP				
				5	DP	24			X

BOREHOLEZ 09057158 MANHOLE 9B RELEASE.GPJ TERRACON.GDT 2/4/08

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 13	WS	▽ 6.6    5 min
WL	▽		▽
WL			



BORING STARTED		11-9-07	
BORING COMPLETED		11-9-07	
RIG	Geoprobe	FOREMAN	RT
APPROVED	TLB	JOB #	09057158

# LOG OF BORING NO. 9B INV 3

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER						
SITE <b>MANHOLE 9B</b>		PROJECT <b>OCTOBER 2007 RELEASE INVESTIGATION</b>						
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS	
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %
0.7	<u>8" TOPSOIL</u>				DP			
1.7	<u>GRAVEL</u>							
	<u>LEAN TO FAT CLAY</u> : gray, with black intrusions, with silt  -: with red mottles	5			DP	24		X
	-: trace gravel, moist	10			DP	24		X
15	<u>SILTY LEAN CLAY</u> : gray, wet	15			DP	24		X
19	<u>SAND</u> : gray and brown, fine to medium grained, wet	20			DP	24		X
	-: medium to coarse grained, with gravel	25			DP	24		X
	<b>BOTTOM OF BORING AT 25 FEET NO REFUSAL</b>	25						

BOREHOLEZ 09057158 MANHOLE 9B RELEASE.GPJ TERRACON.GDT 2/4/08

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 15	WS	▽ 6.7    5 min
WL	▽		▽
WL			



BORING STARTED	11-9-07
BORING COMPLETED	11-9-07
RIG      Geoprobe	FOREMAN      RT
APPROVED    TLB	JOB #    09057158

# LOG OF BORING NO. 9B INV 4

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER							
SITE <b>MANHOLE 9B</b>		PROJECT <b>OCTOBER 2007 RELEASE INVESTIGATION</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
4	<u>SILT</u> : brown, with gravel	4		DP					
5	<u>LEAN TO FAT CLAY</u> : gray, with silt  -: with red mottles -: trace sand and gravel, wet	5		DP				X	
10		10		DP				X	
13	<u>FAT CLAY</u> : gray, with red mottles, with silt, wet  -: brown, with sand and gravel	13		DP				X	
18	<u>SILTY LEAN CLAY</u> : gray, wet	18		DP				X	
20	<u>SAND</u> : gray, fine to medium grained, wet  -: with gravel	20		DP				X	
25	<b>BOTTOM OF BORING AT 25 FEET NO REFUSAL</b>	25							

BOREHOLEZ\_09057158 MANHOLE 9B RELEASE.GPJ TERRACON.GDT 2/4/08

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	9	WS	10.3 5 min
WL		WS	
WL		WS	



BORING STARTED		11-9-07	
BORING COMPLETED		11-9-07	
RIG	Geoprobe	FOREMAN	RT
APPROVED	TLB	JOB #	09057158



## **APPENDIX C**

### **Laboratory Data Sheets and Chain of Custody Sheet**







700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 564-0700 • fax (847) 564-4517

---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-381-2  
DATE: 12/14/2007  
SAMPLES RECEIVED: 11/14/2007  
PURCHASE ORDER NO.: 139754

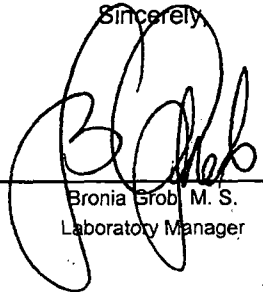
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Dear Mr. Graham,

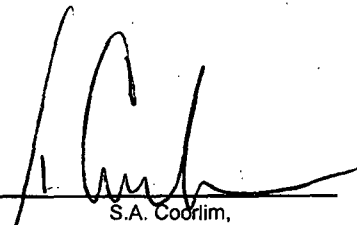
Enclosed are results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



Bronia Srob, M. S.  
Laboratory Manager



S.A. Coorim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 1 ca-sol-sta 142 +77.5, 55 rt 3.-5'	9b inv 1 ca-sol-sta 142 +77.5, 55 rt	9b inv 1 ca-sol-sta 142 +77.5, 55 rt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	10:00	10:20	10:25
Lab Code	CASO-7814	CASO-7815	CASO-7816
Isotope	Concentration (pCi/L)		
H-3	< 144	< 157	< 144
Isotope	Concentration (pCi/g)		
K-40	10.12 ± 0.53	9.58 ± 0.50	10.40 ± 0.48
Mn-54	< 0.02	< 0.02	< 0.01
Fe-59	< 0.03	< 0.03	< 0.03
Co-58	< 0.01	< 0.01	< 0.02
Co-60	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.02	< 0.02	< 0.02
Cs-134	< 0.01	< 0.02	< 0.01
Cs-137	0.07 ± 0.03	< 0.02	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.02

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 1 ca-sol-sta 142 +77.5, 55 rt 3.-5'	9b inv 1 ca-sol-sta 142 +77.5, 55 rt	9b inv 2 ca-sol-sta 142 +22.5, 23 rt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	10:35	10:47	11:25
Lab Code	CASO-7817	CASO-7818	CASO-7819
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	12.06 ± 0.64	8.59 ± 0.47	9.39 ± 0.52
Mn-54	< 0.02	< 0.01	< 0.02
Fe-59	< 0.03	< 0.01	< 0.01
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.01	< 0.00	< 0.02
Zr-Nb-95	< 0.02	< 0.01	< 0.02
Cs-134	< 0.02	< 0.01	< 0.02
Cs-137	< 0.02	0.06 ± 0.02	< 0.02
Ba-La-140	< 0.00	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 2 ca-sol-sta 142 +22.5, 23 rt 3.-5'	9b inv 2 ca-sol-sta 142 +22.5, 23 rt	9b inv 2 ca-sol-sta 142 +22.5, 23 rt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	11:28	11:35	11:46
Lab Code	CASO-7820	CASO-7821	CASO-7822
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 144
Isotope	Concentration (pCi/g)		
K-40	10.83 ± 0.80	7.76 ± 0.44	9.95 ± 0.49
Mn-54	< 0.03	< 0.01	< 0.02
Fe-59	< 0.08	< 0.02	< 0.03
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.02	< 0.01	< 0.01
Zr-Nb-95	< 0.03	< 0.01	< 0.03
Cs-134	< 0.02	< 0.01	< 0.02
Cs-137	< 0.03	< 0.01	< 0.01
Ba-La-140	< 0.04	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 2 ca-sol-sta 142 +22.5, 23 rt 3.-5'	9b inv 3 ca-sol-sta 142 +20.5, 75 lt	9b inv 3 ca-sol-sta 142 +20.5, 75 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	12:00	13:40	13:46
Lab Code	CASO-7824	CASO-7825	CASO-7826
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	5.76 ± 0.39	9.68 ± 0.51	9.55 ± 0.49
Mn-54	< 0.01	< 0.02	< 0.02
Fe-59	< 0.03	< 0.03	< 0.01
Co-58	< 0.01	< 0.01	< 0.02
Co-60	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.01	< 0.01
Cs-134	< 0.01	< 0.01	< 0.01
Cs-137	< 0.01	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.



Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 3 ca-sol-sta 142 +20.5, 75 lt 3.-5'	9b inv 3 ca-sol-sta 142 +20.5, 75 lt	9b inv 3 ca-sol-sta 142 +20.5, 75 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	13:52	13:57	14:13
Lab Code	CASO-7827	CASO-7828	CASO-7829
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	10.84 ± 0.52	9.08 ± 0.60	3.93 ± 0.31
Mn-54	< 0.02	< 0.02	< 0.01
Fe-59	< 0.03	< 0.04	< 0.02
Co-58	< 0.01	< 0.02	< 0.01
Co-60	< 0.01	< 0.02	< 0.01
Zr-Nb-95	< 0.01	< 0.03	< 0.01
Cs-134	< 0.01	< 0.01	< 0.01
Cs-137	< 0.01	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 4 ca-sol-sta 142 +97.5, 41 lt 3.-5'	9b inv 4 ca-sol-sta 142 +97.5, 41 lt	9b inv 4 ca-sol-sta 142 +97.5, 41 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	14:40	14:44	14:50
Lab Code	CASO-7830	CASO-7831	CASO-7832
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	11.02 ± 0.62	5.22 ± 0.39	11.69 ± 0.57
Mn-54	< 0.02	< 0.01	< 0.02
Fe-59	< 0.01	< 0.02	< 0.02
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.01	< 0.01	< 0.01
Zr-Nb-95	< 0.01	< 0.01	< 0.01
Cs-134	< 0.02	< 0.01	< 0.02
Cs-137	0.05 ± 0.02	< 0.01	< 0.01
Ba-La-140	< 0.01	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty soil samples.

Sample Location	9b inv 4 ca-sol-sta 142 +97.5, 41 lt 3.-5'	9b inv 4 ca-sol-sta 142 +97.5, 41 lt	9b inv 4 ca-sol-sta 142 +97.5, 41 lt
Date Collected	11/9/2007	11/9/2007	11/9/2007
Time Collected	14:50	14:57	15:06
Lab Code	CASO-7833	CASO-7834	CASO-7835
Isotope	Concentration (pCi/L)		
H-3	< 157	< 157	< 157
Isotope	Concentration (pCi/g)		
K-40	11.87 ± 0.61	11.20 ± 0.57	5.40 ± 0.37
Mn-54	< 0.02	< 0.02	< 0.01
Fe-59	< 0.04	< 0.01	< 0.02
Co-58	< 0.02	< 0.01	< 0.01
Co-60	< 0.02	< 0.01	< 0.01
Zr-Nb-95	< 0.03	< 0.01	< 0.01
Cs-134	< 0.02	< 0.01	< 0.01
Cs-137	< 0.01	< 0.02	< 0.01
Ba-La-140	< 0.02	< 0.01	< 0.01

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.



700 Landwehr Road - Northbrook, IL 60062-2310  
ph. (847) 564-0700 - fax (847) 594-4517

---

Mr. Christopher C. Graham  
Ameren UE  
P.O. Box 620  
Fulton, MO 65251

LABORATORY REPORT NO. 8036-100-379  
DATE: 11/27/2007  
SAMPLES RECEIVED: 11/14/2007  
PURCHASE ORDER NO.: 139754

---

Dear Mr. Graham,

Enclosed are results of the analyses for tritium and gamma-emitting isotopes in four water samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bronia Grob', written over a horizontal line.

Bronia Grob, M. S.  
Laboratory Manager

A handwritten signature in black ink, appearing to read 'S.A. Coorlim', written over a horizontal line.

S.A. Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in four water samples.

Sample Location	9B INV 1 GW-A/B	9B INV 2 GW-A/B	9B INV 3 GW-A/B	9B INV 4 GW-A/B
Date Collected	11/9/2007	11/9/2007	11/9/2007	11/9/2007
Time Collected	11:00	12:20	14:20	15:20
Lab Code	CAXWW-7796	CAXWW-7797	CAXWW-7798	CAXWW-7799
Isotope	Concentration (pCi/L)			
H-3	< 172	< 172	< 172	< 172
Mn-54	< 4.1	< 4.4	< 5.5	< 3.3
Fe-59	< 10.2	< 9.1	< 9.1	< 9.9
Co-58	< 4.9	< 3.8	< 6.0	< 5.2
Co-60	< 4.2	< 2.8	< 5.8	< 4.1
Zr-Nb-95	< 7.2	< 4.5	< 5.2	< 6.0
Cs-134	< 6.6	< 4.4	< 6.3	< 5.4
Cs-137	< 5.8	< 4.4	< 4.6	< 5.7
Ba-La-140	< 12.1	< 6.7	< 12.2	< 9.8

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

**LIMITED SITE INVESTIGATION  
HIGHWAY 94 TRACTS  
PORTLAND, MISSOURI**

**Terracon Project No. 09057158  
May 15, 2007**

*Prepared for:*

**AmerenUE – Callaway Plant  
Box 620, M/C CA-460  
Fulton, MO 65251**

*Prepared by:*

**TERRACON CONSULTANTS, INC.  
Columbia, Missouri**

**Terracon**

**LIMITED SITE INVESTIGATION  
HIGHWAY 94 TRACTS  
PORTLAND, MISSOURI**

**Terracon Project No. 09057158  
May 15, 2007**

*Prepared for:*

**AmerenUE – Callaway Plant  
Box 620, M/C CA-460  
Fulton, MO 65251**

*Prepared by:*

**TERRACON CONSULTANTS, INC.  
Columbia, Missouri**

**Terracon**

May 14, 2007

**Terracon**  
Consulting Engineers & Scientists

Chris Graham  
AmerenUE – Callaway Plant  
Box 620, M/C CA-460  
Fulton, MO 65251

3601 Mojave Court, Suite A  
Columbia, Missouri 65202  
Phone 573.214.2677  
Fax 573.214.2714  
www.terracon.com

Re: HWY 94 Property LSI – Preliminary Findings  
Near Bridge T-539 Adjacent to Highway 94  
Portland, Missouri  
Terracon Project No. 09057158

Dear Mr. Graham:

Terracon is pleased to submit the Limited Site Investigation (LSI) report for the above referenced site. This investigation was performed in general accordance with Terracon's Proposal Number E0905160, dated September 22, 2005.

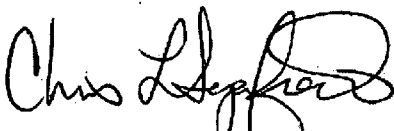
We appreciate the opportunity to perform these services for AmerenUE. Please contact Jon P. Truesdale at (573) 214-2677 if you have any questions regarding the information provided in the attached report.

Sincerely,  
Terracon Consultants, Inc.

Prepared by:

Reviewed by:

  
Jon P. Truesdale, G.R.I.T.  
Environmental Field Geologist

  
for: Eric J. Gorman, CHMM  
Environmental Due Diligence Manager

N:\PROJECT FILE 2005\ENV\7000\09067008\09057158\_LSI\_Report.doc

Enclosure



**TABLE OF CONTENTS**

**Terracon**

Page No.

**1.0 INTRODUCTION ..... 1**

**2.0 FIELD ACTIVITIES ..... 3**

**3.0 LABORATORY ANALYTICAL METHODS ..... 4**

**4.0 DATA EVALUATION ..... 5**

**5.0 FINDINGS AND RECOMMENDATIONS ..... 5**

**LIST OF APPENDICES**

- Appendix A: Figure 1- Site Diagram
- Appendix B: Boring Logs
- Appendix C: Laboratory Data Sheets

## LIMITED SITE INVESTIGATION REPORT

### HIGHWAY 94 TRACTS PORTLAND, MISSOURI

Terracon Project No. 09057158  
May 15, 2007

#### 1.0 INTRODUCTION

#### 1.1 Site Description

<b>Site Name</b>	Highway 94 Tracts
<b>Site Location/Address</b>	Two parcels of property adjacent to Bridge T-539 on Highway 94 in Callaway County, Missouri
<b>General Site Description</b>	The site consists of two distinct parcels of land on the south side of Highway 94 in Callaway County, Missouri near bridge T-539. The parcels are currently vacant land. The two tracts comprise a total of 0.83 acres of land currently owned by Union Electric Company d/b/a AmerenUE.

A topographic map is included as Figure 1, and a site plan is included as Figure 2 of Appendix A.

#### 1.2 Scope of Work

Terracon conducted a Limited Site Investigation (LSI) at the above-referenced site located on the south side of Highway 94 adjacent to Bridge T-539, near Portland, Missouri. At your request, Terracon's LSI was undertaken to evaluate potential Strontium-90, Tritium, and Gamma emitting isotope contamination of the site, either through emplacement of fill material during construction activities, or via migration of fluid from the Callaway Plant Blowdown/intake pipeline located approximately 500 feet south of the site.

#### 1.3 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These LSI services were performed in accordance with the scope of work agreed with our proposal dated September 22, 2005, and were not restricted by ASTM E1903-97.

#### **1.4 Additional Scope Limitations**

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

#### **1.5 Reliance**

This report has been prepared for the exclusive use of AmerenUE and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of AmerenUE and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, LSI report, and Master Service Agreement. The limitation of liability defined in the Master Service Agreement is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

### **2.0 FIELD ACTIVITIES**

#### **2.1 Borings**

Terracon's field activities were conducted on March 4, 2007, by Mr. Jon P. Truesdale, a Terracon field geologist. As part of the approved scope of work, a total of four (4) soil borings were advanced on-site. Three (3) soil borings (B1 through B3) labeled at Boring 1, 2 and 3 on figure 1 were advanced along the western portion of the subject site, to the west of bridge T-539. The remaining soil boring (B4) labeled at Boring 4 on figure 1 was advanced on the east portion of the site, to the east of bridge T-539. The locations of these borings are provided in Figure 2 in Appendix A of this report.

Figure 1 presents the general location and topography of the site on portions of the USGS topographic quadrangle map of Mokane East, Missouri (Appendix A). Figure 2 is a site plan that

indicates the approximate locations of the soil borings in relation to pertinent site features and approximate boundaries (Appendix A).

Drilling services were performed using a track-mounted Geoprobe drilling rig operated by PSA Environmental personnel. Soil samples were collected using a four-foot direct push sampler. Drilling equipment was cleaned using a high-pressure washer prior to beginning the project and between samples. Sampling equipment was also dried between sampling intervals to prevent dilution or cross contamination of radionuclides. The borings were advanced to a depth of 24 feet. Soil samples were collected and observed to document soil lithology, color, and moisture content.

Detailed lithologic descriptions are presented on the soil boring logs included in Appendix B. Groundwater was encountered during the advancement of boring B1 at a depth of 19.3 feet and borings B2 and B3 at a depth of approximately 21 feet below grade surface. The groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and depth to the soil/bedrock interface. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater flow direction beneath the site cannot be ascertained.

## **2.2 Soil and Groundwater Sampling**

Terracon's soil sampling program involved submitting a soil sample from each four-foot interval from within the soil borings for analysis. Samples consisted of four-foot intervals extending from the ground surface to a depth of 24 feet.

Groundwater samples were collected from soil borings which produced groundwater. Only one soil boring, B1 produced groundwater in sufficient quantities for analysis. Groundwater samples were collected from soil boring B1 using dedicated disposable bailers. The soil and groundwater samples were placed in one-gallon sealed plastic containers. The sample coolers and completed chain-of-custody forms were relinquished to Environmental Inc. – Midwest Lab, located in Northbrook, Illinois for laboratory analysis.

## **3.0 LABORATORY ANALYTICAL METHODS**

The soil and groundwater samples collected from within the soil borings were analyzed for the Strontium-90, Tritium, and Gamma emitting isotopes (Potassium-40, Manganese-54, Iron-59, Cobalt-58, Cobalt-60, Zirconium-Niobium-95, Cesium-134, Cesium-137, and Barium-Lanthanum-140) using EPA Method 906.0 (for Tritium), HASL modified (for gamma emitters), and EPA Method 901.1(for Strontium-90).

Laboratory analytical results were reported in picocuries per Liter (pCi/L) for groundwater and Tritium results and picocuries per gram (pCi/g) for the remaining soil results. The executed chain-of-custody form and laboratory data sheets are provided in Appendix C.

#### 4.0 DATA EVALUATION

##### 4.1 Soil Samples

Soil samples collected from the soil borings advanced on-site did not exhibit Strontium-90, Tritium, or principal Gamma emitters at concentrations above laboratory detection limits, with the exception of Potassium-40, which is below established EPA dose limits for ingestion. According to the USEPA, the ingestion dose conversion factor for  $^{40}\text{K}$  is  $2.29 \times 10^5$  mrem/pCi. Thus, the concentration corresponding to the dose limit would then be:

$$\text{Concentration} = 4 \text{ mrem/yr} / (2 \text{ L/d} \times 365.25 \text{ d/yr} \times 2.29 \times 10^5 \text{ mrem/pCi}) = 239 \text{ pCi/L}$$

Therefore, the Potassium-40 levels can be considered within reasonable exposure limits. Furthermore, according to the Argonne National laboratory, the natural activity of Potassium-40 within soil is approximately 13 pCi/g, which is near the reported value for potassium in all soil samples.

Laboratory data sheets are provided in Appendix C.

##### 4.2 Groundwater Samples

The groundwater samples collected from soil borings B1 did not exhibit Strontium-90, Tritium, or principal Gamma emitters at concentrations above laboratory detection limits. Laboratory data sheets are provided in Appendix C.

#### 5.0 FINDINGS AND RECOMMENDATIONS

The findings and recommendations of this investigation are as follows:

- Based on the results of this LSI, additional site investigation activities do not appear to be warranted at this site at this time.

**APPENDIX A**

**Figure 1 – Site Plan**

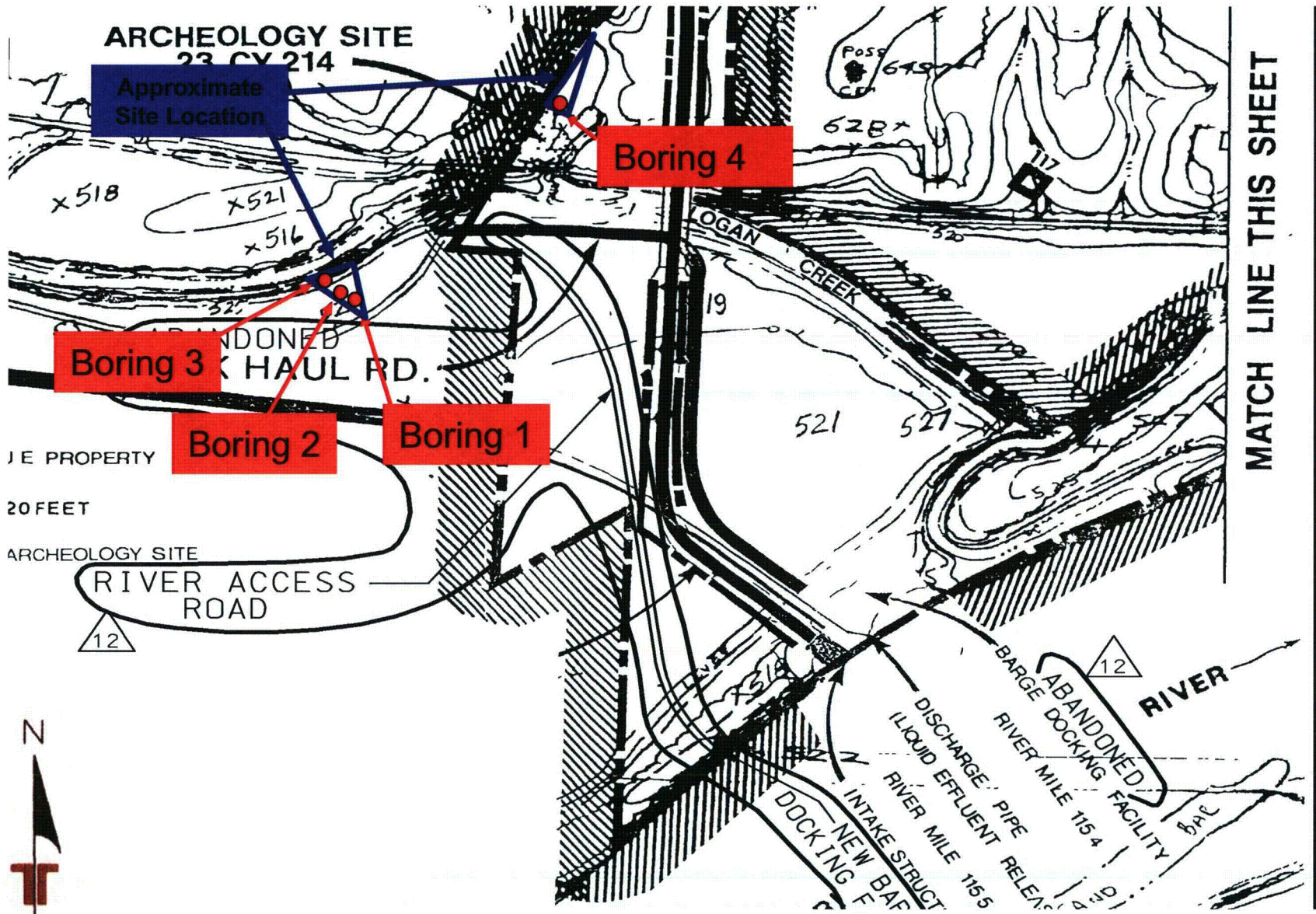


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

FIGURE 1 - SITE DIAGRAM  
HIGHWAY 94 LSI  
PORTLAND, MISSOURI

Proj. Mngr: JPT	<b>Terracon</b> 3601 MOJAVE COURT, SUITE A COLUMBIA, MISSOURI 65202	Project No. 09057158
Designed by: TLB		Figure1.ppt
Drawn by: JPT		Date: 05/15/05

## **APPENDIX B**

### **Boring Logs**



# LOG OF BORING NO. B-01

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER						
SITE <b>PORTLAND, MISSOURI</b>		PROJECT <b>HIGHWAY 94 LSI</b>						
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS	
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %
	Approx. Surface Elev.:							
2	<u>LEAN CLAY</u> : yellowish brown, with gravel	2	CL 1	DP				X
11	<u>SANDY LEAN CLAY</u> : brown	5	CL 2	DP				X
11		10	CL 3	DP				X
24	<u>SAND</u> : fine to medium grained	15	CL 4	DP				X
		20	SW 5	DP				X
		24	SW 6	DP				X
	BOTTOM OF BORING AT 24 FEET							

BOREHOLE 09057158.GPJ TERRACON.GDT 5/15/07

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual. \* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			BORING STARTED 5-4-07	
WL	▽ 19	WS	▽ 19	AB
WL	▽	WS	▽	
WL		WS		
<b>Terracon</b>			BORING COMPLETED 5-4-07	
		RIG	GP	FOREMAN JT
		LOGGED	JPT	JOB # 09057158

# LOG OF BORING NO. B-02

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER							
SITE <b>PORTLAND, MISSOURI</b>		PROJECT <b>HIGHWAY 94 LSI</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
	Approx. Surface Elev.: 0.3								
1	3" TOPSOIL:		CL CH	1	DP				X
	LEAN TO FAT CLAY: reddish brown								
	SAND: fine to medium grained, silty from 4 to 8 feet								
		5		SW	2	DP			X
				SW	3	DP			X
		10		SW	4	DP			X
				SW	5	DP			X
		15							
				SW	6	DP			X
		20							
		24							
	BOTTOM OF BORING AT 24 FEET								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	11	WS	NONE
AB			
WL			
WL			



BORING STARTED		5-4-07	
BORING COMPLETED		5-4-07	
RIG	GP	FOREMAN	JT
LOGGED	JPT	JOB #	09057158

BOREHOLE 09057158.GPJ TERRACON.GDT 5/15/07

# LOG OF BORING NO. B-03

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER							
SITE <b>PORTLAND, MISSOURI</b>		PROJECT <b>HIGHWAY 94 LSI</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES			TESTS			
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
	Approx. Surface Elev.:								
2	<u>SILT</u> : brown, trace very fine sand	ML	1	DP					X
5	<u>SILTY SAND</u> : very fine grained	SM	2	DP					X
8	<u>SAND</u> : fine to medium grained	SM	3	DP					X
	▽								
15		SW	4	DP					X
20		SW	5	DP					X
24		SW	6	DP					X
	BOTTOM OF BORING AT 24 FEET								

BOREHOLE 09057158.GPJ TERRACON.GDT 5/15/07

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 19	WS	▽ NONE AB
WL	▽		▽
WL			



BORING STARTED		5-4-07	
BORING COMPLETED		5-4-07	
RIG	GP	FOREMAN	JT
LOGGED	JPT	JOB #	09057158

# LOG OF BORING NO. B-04

CLIENT <b>AMEREN UE</b>		ARCHITECT / ENGINEER							
SITE <b>PORTLAND, MISSOURI</b>		PROJECT <b>HIGHWAY 94 LSI</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS		
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	FIELD VAPOR TEST (PPM)*
	Approx. Surface Elev.:								
4	<u>LEAN CLAY</u> : yellowish brown, with silt	4	CL	1	DP				X
8	<u>FAT CLAY</u> : yellowish brown	5	CL	2	DP				X
14	<u>LEAN CLAY</u> : yellowish brown	10	CL	3	DP				X
14	<u>SILTY SAND</u> : brown and gray brown	15	CL	4	DP				X
24	<u>SILTY SAND</u> : brown and gray brown	20	SW	5	DP				X
24	<u>SILTY SAND</u> : brown and gray brown	24	SW	6	DP				X
	BOTTOM OF BORING AT 24 FEET								

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

\* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft		
WL	∇ NONE	WS
WL	∇	AB
WL		



BORING STARTED	5-4-07
BORING COMPLETED	5-4-07
RIG	GP FOREMAN JT
LOGGED	JPT JOB # 09057158

BOREHOLE 09057158.GPJ TERRACON.GDT 5/15/07

## **APPENDIX C**

### **Laboratory Data Sheets**



**Environmental, Inc.**  
**Midwest Laboratory**  
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 564-0700 • fax (847) 564-4517

---

Mr. Jon P. Truesdale  
Terracon  
3601 Mojave Court Suite A  
Columbia, MO 65251

LABORATORY REPORT NO. 8100-7405  
DATE: 4/11/2007  
SAMPLES RECEIVED: 3/13/2007  
PURCHASE ORDER NO.: 139754

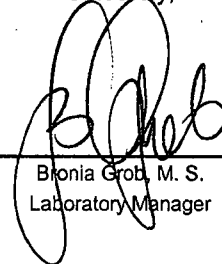
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Dear Mr. Truesdale,

Enclosed are results of the analyses for tritium, strontium-90 and gamma-emitting isotopes on one water sample.

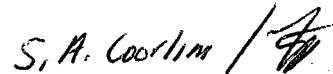
Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,



---

Bionia Grob, M. S.  
Laboratory Manager



---

S.A. Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

Table 1. Results of the analyses for tritiumstrontium-90 and gamma-emitting isotopes on one water sample.

Sample Description	GWA
Location	B-1
Date Collected	3/6/2007
Time Collected	15:03
Lab Code	SPWW-1353
Isotope	Concentration (pCi/L)
H-3	< 170
Sr-90	< 0.5
Mn-54	< 2.0
Fe-59	< 3.5
Co-58	< 2.9
Co-60	< 1.5
Zr-Nb-95	< 3.7
Cs-134	< 3.2
Cs-137	< 2.8
Ba-La-140	< 3.2

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.



700 Landwehr Road • Northbrook, IL 60062-2310  
ph. (847) 564-0700 • fax (847) 564-4517

---

Mr. Jon P. Truesdale  
Terracon  
3601 Mojave Court Suite A  
Columbia, MO 65251

LABORATORY REPORT NO. 8100-7404  
DATE: 5/11/2007  
SAMPLES RECEIVED: 3/13/2007  
PURCHASE ORDER NO.: 139754

---

Dear Mr. Truesdale,

Enclosed are results of the analyses for tritium, strontium-90 and gamma-emitting isotopes on twenty-four soil samples.

Should you have any questions or other concerns, please do not hesitate to call.

Sincerely,

Bronia Grob, M. S.  
Laboratory Manager

S.A. Coorlim,  
Quality Assurance

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS



Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-four soil samples.

Sample Description Location	SP-SO B-1 ( 0-4 )	SP-SO B-1 ( 4-8 )	SP-SO B-1 ( 8-12 )	SP-SO B-1 ( 12-16 )	SP-SO B-1 ( 12-16 )
Date Collected	3/4/2007	3/4/2007	3/4/2007	3/4/2007	3/4/2007
Time Collected	10:31	10:33	10:37	10:42	10:42
Lab Code	SPSO-1327	SPSO-1328	SPSO-1329	SPSO-1330	SPSO-1331 duplicate SPSO-1330
Isotope	Concentration (pCi/L)				
H-3	< 161	< 161	< 161	< 161	< 161
Isotope	Concentration (pCi/g)				
Sr-90	< 0.054	< 0.016	< 0.017	< 0.028	< 0.023
K-40	10.79 ± 0.74	12.92 ± 0.66	12.84 ± 0.61	13.24 ± 0.65	13.04 ± 0.62
Mn-54	< 0.031	< 0.019	< 0.017	< 0.014	< 0.019
Fe-59	< 0.060	< 0.052	< 0.053	< 0.020	< 0.034
Co-58	< 0.013	< 0.022	< 0.019	< 0.016	< 0.019
Co-60	< 0.020	< 0.015	< 0.004	< 0.016	< 0.015
Zr-Nb-95	< 0.034	< 0.036	< 0.019	< 0.017	< 0.024
Cs-134	< 0.033	< 0.031	< 0.013	< 0.013	< 0.026
Cs-137	< 0.028	< 0.011	< 0.011	< 0.014	< 0.014
Ba-La-140	< 0.057	< 0.033	< 0.020	< 0.020	< 0.029

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-four soil samples.

Sample Description	SP-SO	SP-SO	SP-SO	SP-SO	SP-SO
Location	B-1 ( 16-20 )	B-1 ( 20-24 )	B-2 ( 0-4 )	B-2 ( 4-8 )	B-2 ( 8-12 )
Date Collected	3/4/2007	3/4/2007	3/4/2007	3/4/2007	3/4/2007
Time Collected	10:48	10:55	11:02	11:05	11:11
Lab Code	SPSO-1332	SPSO-1333	SPSO-1334	SPSO-1335	SPSO-1336
Isotope	Concentration (pCi/L)				
H-3	< 161	< 161	< 161	< 161	< 164
Isotope	Concentration (pCi/g)				
Sr-90	< 0.025	< 0.029	< 0.018	< 0.028	< 0.019
K-40	10.47 ± 0.71	12.47 ± 0.56	12.02 ± 0.56	12.34 ± 0.58	12.44 ± 0.59
Mn-54	< 0.018	< 0.013	< 0.018	< 0.014	< 0.015
Fe-59	< 0.046	< 0.042	< 0.017	< 0.033	< 0.029
Co-58	< 0.022	< 0.010	< 0.015	< 0.019	< 0.017
Co-60	< 0.021	< 0.008	< 0.016	< 0.006	< 0.007
Zr-Nb-95	< 0.023	< 0.013	< 0.026	< 0.011	< 0.010
Cs-134	< 0.029	< 0.010	< 0.012	< 0.011	< 0.014
Cs-137	< 0.013	< 0.011	< 0.008	< 0.015	< 0.015
Ba-La-140	< 0.058	< 0.019	< 0.016	< 0.020	< 0.025

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-four soil samples.

Sample Description	SP-SO	SP-SO	SP-SO	SP-SO	SP-SO
Location	B-2 ( 12-16 )	B-2 ( 16-20 )	B-2 ( 20-24 )	B-3 ( 0-4 )	B-3 ( 4-8 )
Date Collected	3/4/2007	3/4/2007	3/4/2007	3/4/2007	3/4/2007
Time Collected	11:16	11:22	11:35	12:55	12:59
Lab Code	SPSO-1337	SPSO-1338	SPSO-1339	SPSO-1340	SPSO-1341
Isotope	Concentration (pCi/L)				
H-3	< 164	< 164	< 164	< 169	< 164
Isotope	Concentration (pCi/g)				
Sr-90	< 0.021	< 0.021	< 0.019	< 0.020	< 0.019
K-40	13.68 ± 0.66	12.27 ± 0.58	12.20 ± 0.52	11.15 ± 0.81	11.47 ± 0.79
Mn-54	< 0.016	< 0.017	< 0.014	< 0.018	< 0.019
Fe-59	< 0.058	< 0.018	< 0.030	< 0.042	< 0.030
Co-58	< 0.018	< 0.013	< 0.011	< 0.019	< 0.018
Co-60	< 0.016	< 0.012	< 0.008	< 0.015	< 0.010
Zr-Nb-95	< 0.030	< 0.016	< 0.011	< 0.014	< 0.018
Cs-134	< 0.026	< 0.014	< 0.009	< 0.015	< 0.017
Cs-137	< 0.016	< 0.012	< 0.010	< 0.015	< 0.012
Ba-La-140	< 0.021	< 0.017	< 0.021	< 0.025	< 0.017

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-four soil samples.

Sample Description Location	SP-SO B-3 ( 8-12 )	SP-SO B-3 ( 12-16 )	SP-SO B-3 ( 16-20 )	SP-SO B-3 ( 20-24 )	SP-SO B-4 ( 0-4 )
Date Collected	3/4/2007	3/4/2007	3/4/2007	3/4/2007	3/4/2007
Time Collected	13:11	13:22	13:29	13:38	13:55
Lab Code	SPSO-1342	SPSO-1343	SPSO-1344	SPSO-1345	SPSO-1346
Isotope	Concentration (pCi/L)				
H-3	< 164	< 164	< 164	< 164	< 169
Isotope	Concentration (pCi/g)				
Sr-90	< 0.019	< 0.026	< 0.026	< 0.025	< 0.023
K-40	11.27 ± 0.91	12.58 ± 0.77	9.99 ± 0.83	12.07 ± 0.74	10.55 ± 0.69
Mn-54	< 0.017	< 0.015	< 0.009	< 0.019	< 0.018
Fe-59	< 0.025	< 0.044	< 0.022	< 0.050	< 0.048
Co-58	< 0.016	< 0.017	< 0.015	< 0.022	< 0.017
Co-60	< 0.014	< 0.012	< 0.006	< 0.024	< 0.018
Zr-Nb-95	< 0.015	< 0.018	< 0.013	< 0.027	< 0.020
Cs-134	< 0.018	< 0.014	< 0.010	< 0.024	< 0.014
Cs-137	< 0.020	< 0.015	< 0.012	< 0.020	< 0.016
Ba-La-140	< 0.025	< 0.020	< 0.014	< 0.047	< 0.018

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.

Table 1. Results of the analyses for tritium and gamma-emitting isotopes in twenty-four soil samples.

Sample Description	SP-SO	SP-SO	SP-SO	SP-SO	SP-SO	SP-SO
Location	B-4 ( 4-8 )	B-4 ( 8-12 )	B-4 ( 12-16 )	B-4 ( 16-20 )	B-4 ( 20-24 )	B-4 ( 20-24 )
Date Collected	3/4/2007	3/4/2007	3/4/2007	3/4/2007	3/4/2007	3/4/2007
Time Collected	14:33	14:38	14:44	14:55	15:11	15:11
Lab Code	SPSO-1347	SPSO-1348	SPSO-1349	SPSO-1350	SPSO-1351	SPSO-1352 duplicate SPSO-1351
Isotope	Concentration (pCi/L)					
H-3	< 164	< 164	< 164	< 164	< 164	< 164
Isotope	Concentration (pCi/g)					
Sr-90	< 0.026	< 0.029	< 0.025	< 0.029	< 0.031	< 0.036
K-40	14.75 ± 0.71	14.56 ± 0.71	12.80 ± 0.90	14.10 ± 0.63	10.42 ± 0.66	11.93 ± 0.64
Mn-54	< 0.024	< 0.023	< 0.023	< 0.023	< 0.020	< 0.018
Fe-59	< 0.046	< 0.017	< 0.039	< 0.050	< 0.016	< 0.052
Co-58	< 0.015	< 0.020	< 0.022	< 0.022	< 0.020	< 0.022
Co-60	< 0.017	< 0.016	< 0.021	< 0.020	< 0.012	< 0.022
Zr-Nb-95	< 0.016	< 0.026	< 0.022	< 0.024	< 0.017	< 0.031
Cs-134	< 0.016	< 0.013	< 0.021	< 0.032	< 0.013	< 0.030
Cs-137	< 0.013	< 0.015	< 0.022	< 0.017	< 0.011	< 0.015
Ba-La-140	< 0.019	< 0.025	< 0.036	< 0.023	< 0.028	< 0.030

The error given is the probable counting error at the 95% confidence level.  
Less than (<), value is based on a 4.66 sigma counting error for the background sample.