Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

BOREHOLE LOG

PROJECT: Tower Standard LUST Site	BOREHOLE LOCATION: 45.913713467° N, -89.913093495° W	DRILLING COMPANY: Coleman Engineering
CLIENT: EPA Region 5	COORDINATE SYSTEM AND DATUM: Lat/Long, WGS84	DRILL RIG: Geoprobe 6620 DT
JOB NUMBER: 34160024	ELEVATION AT TOP OF HOLE: 479.462239 feet	DRILLING METHOD: Direct Push
SITE: Tower Standard	ELEVATION AT TOP OF CASING: Not Applicable	DRILLER: Randy Ochs
LOCATION: Lac du Flambeau	ELEVATION DATUM: height above ellipsoid	BOREHOLE DIAMETER: 3 inches
	TOTAL DEPTH: 30 feet / DEPTH TO WATER: 8.5 feet	LOGGED BY: Lyndsey Kleppin
	GROUNDWATER ELEVATION: 470.962239 feet	DATE HOLE: STARTED 3/30/2016 / COMPLETED 3/30/2016

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	PID SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
0.0 – 5.0		**(GW)** sandy gravel with clay, reddish brown, moist, slight fuel odor		30%	8.2		
5.0 – 8.5		**(SW)** gravelly sand with silt, brown, moist, loose, moderate fuel odor		40%	14.1 720		
8.5 – 11.0		**(SW)** sand, brown, wet, loose, very fine to coarse grained, strong fuel odor, sheen			1290		
11.0 – 14.0		**(SW)** sand with gravel, brown, wet, loose, trace clay, stong fuel odor, sheen		60%	1790	16TSSL01	

Depth scale: 0.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0, 14.0

BOREHOLE LOG (Cont)

ELEVATION TOP OF HOLE
479.462239 feet

Borehole No. 16BH01

PROJECT
Tower Standard LUST Site

SITE
Tower Standard

SHEET 2 OF 2 SHEETS

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
15.0		**(SW)** sand with silt, brown, wet, loose, medium grained, moderate fuel odor			111.5		
16.0		**(SP)** sand, brown, wet, loose, medium grained, slight fuel odor			59.9		
18.0		**(SW)** sand, brown, wet, loose, medium to coarse grained, slight fuel odor		60%	32.7		
19.0		**(SP)** sand, brown, wet, loose, fine grained, slight fuel odor			52		
20.0		**(SP)** sand, brown, wet , loose, medium grained, slight fuel odor			32		
24.0		**(SP)** sand, brown, wet, loose, medium grained, slight fuel odor [possibly slough]		90%	30.8 9.5		
30.0		**(SW)** sand with gravel, brown, wet, loose, coarse to medium grained sand, slight fuel odor Bottom of Borehole		20%	18.7 18.7		

Bristol
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BOREHOLE LOG

PROJECT: Tower Standard LUST Site	BOREHOLE LOCATION: 45.91373049° N, -89.913159829° W	DRILLING COMPANY: Coleman Engineering
CLIENT: EPA Region 5	COORDINATE SYSTEM AND DATUM: Lat/Long, WGS84	DRILL RIG: Geoprobe 6620 DT
JOB NUMBER: 34160024	ELEVATION AT TOP OF HOLE: 479.494875 feet	DRILLING METHOD: Direct Push
SITE: Tower Standard	ELEVATION AT TOP OF CASING: Not Applicable	DRILLER: Randy Ochs
LOCATION: Lac du Flambeau	ELEVATION DATUM: height above ellipsoid	BOREHOLE DIAMETER: 3 inches
	TOTAL DEPTH: 30 feet / DEPTH TO WATER: 9 feet	LOGGED BY: Lyndsey Kleppin
	GROUNDWATER ELEVATION: 470.494875 feet	DATE HOLE: STARTED 3/30/2016 / COMPLETED 3/30/2016

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	PID SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
0.0		**(SM)** silty sand with clay, brown, moist, dense, trace gravel, no fuel odor					
2.0				30%	2.5		
4.0							
5.0		**(SW)** sand with clay and gravel, brown, moist, loose, no fuel odor					
6.0				20%			
8.0					3.8		
9.5					5.7		
10.0		**(SW)** gravelly sand, brown, wet, loose, no fuel odor					
		(SW) sand, brown, wet, loose, fine to medium grained, trace clay, moderate fuel odor			353	16TSSL02	
12.0					9.2		
				50%	15.9		

BOREHOLE LOG (Cont)

ELEVATION TOP OF HOLE
479.494875 feet

Borehole No. 16BH02

PROJECT
Tower Standard LUST Site

SITE
Tower Standard

SHEET 2 OF 2 SHEETS

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
15.0		**(SW)** sand, brown, wet, loose, fine to medium grained, trace clay, moderate fuel odor *(continued)*					
16.0		**(SP)** sand, brown, wet, loose, medium grained, slight fuel odor			11.7		
				80%	7.4		
18.0							
19.0					23		
20.0		**(SW)** sand with clay and gravel, brown, loose, wet, grey clay inclusion with strong fuel odor, slight fuel odor in sand					
22.0		**(SW)** sand, greyish brown, wet, loose, medium to coarse grained, slight fuel odor		30%	6.2	16TSSL03	
24.0					2.7		
25.0		**(GW)** gravel with sand, greyish brown, wet, loose, slight fuel odor			20		
26.0		No Recovery		0%			
28.0							
30.0		Bottom of Borehole					

BERS Borehole Log Version: 0413

PROJECT
Tower Standard LUST Site

HOLE NO.
16BH02

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

BOREHOLE LOG

PROJECT: Tower Standard LUST Site	BOREHOLE LOCATION: 45.913683436° N, -89.913124832° W	DRILLING COMPANY: Coleman Engineering
CLIENT: EPA Region 5	COORDINATE SYSTEM AND DATUM: Lat/Long, WGS84	DRILL RIG: Geoprobe 6620 DT
JOB NUMBER: 34160024	ELEVATION AT TOP OF HOLE: 479.488087 feet	DRILLING METHOD: Direct Push
SITE: Tower Standard	ELEVATION AT TOP OF CASING: Not Applicable	DRILLER: Randy Ochs
LOCATION: Lac du Flambeau	ELEVATION DATUM: height above ellipsoid	BOREHOLE DIAMETER: 3 inches
	TOTAL DEPTH: 20 feet; DEPTH TO WATER: 9 feet	LOGGED BY: Lyndsey Kleppin
	GROUNDWATER ELEVATION: 470.488087 feet	DATE HOLE: STARTED 3/30/2016; COMPLETED 3/30/2016

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	PID SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
0.0		**(GW)** sandy gravel, brownigh grey, moist, loose					
2.0				10%			
4.0					22.3		
5.0		**(GW)** sandy gravel, olive grey, moist, loose, strong fuel odor					
6.0					465.9		
7.0		**(SW)** sand, brown, moist, loose, fine to coarse garined, moderate fuel odor		50%	730.2		
8.0						16TSSL04	
9.0		**(SW)** sand with gravel, greyish brown, wet, loose, coarse grained sand, moderate fuel odor			640.5		
10.0							
12.0				20%			
13.0		**(SW)** sand, greyish brown, wet, loose, medium to coarse grained, strong fuel odor			1451		

BOREHOLE LOG (Cont)

ELEVATION TOP OF HOLE
479.488087 feet

Borehole No. 16BH03

PROJECT
Tower Standard LUST Site

SITE
Tower Standard

SHEET 2 OF 2 SHEETS

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
		(SW) sand, greyish brown, wet, loose, medium to coarse grained, strong fuel odor *(continued)*			1908	16TSSL05	
16.0 / 16.0		**(SP)** sand, brown, wet, loose, medium grained, slight fuel odor			22.5		
17.0		**(SW)** gravelly sand, brown, wet, loose, fine to coarse grained sand, slight fuel odor heaving sand at 20' bgs, boring terminated at 20' bgs		70%	10.7		
18.0					15.5		
					24.6		
20.0 / 20.0		Bottom of Borehole					

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

BOREHOLE LOG

	BOREHOLE LOCATION 45.913698811° N, -89.912972296° W	DRILLING COMPANY Coleman Engineering
	COORDINATE SYSTEM AND DATUM Lat/Long, WGS84	DRILL RIG Geoprobe 6620 DT
PROJECT Tower Standard LUST Site	ELEVATION AT TOP OF HOLE 479.432530 feet	DRILLING METHOD Direct Push
CLIENT EPA Region 5	ELEVATION AT TOP OF CASING Not Applicable	DRILLER Randy Ochs
JOB NUMBER 34160024	ELEVATION DATUM height above ellipsoid	BOREHOLE DIAMETER 3 inches
SITE Tower Standard	TOTAL DEPTH 20 feet / DEPTH TO WATER 8.5 feet	LOGGED BY Lyndsey Kleppin
LOCATION Lac du Flambeau	GROUNDWATER ELEVATION 470.93253 feet	DATE HOLE STARTED 3/31/2016 COMPLETED 3/31/2016

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	PID SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
0.0		**(GW)** sandy gravel with silt and clay, brown, moist, loose, slight fuel odor		50%	78.6	16TSSL07	
2.0							
4.0		**(GW)** sandy gravel, brown, moist, loose, slight fuel odor			52.1		
6.0		**(SW)** gravelly sand with silt, brown, moist, loose, moderate fuel odor		50%	18.6		
8.0		**(SW)** gravelly sand with silt, brown, wet, loose, strong fuel odor, sheen			40 1878	16TSSL06	
10.0		**(GW)** sandy gravel, brown, wet, loose, trace silt and clay, fine to coarse gravel		60%	1210 1314		
12.0							
14.0							

BOREHOLE LOG (Cont)

ELEVATION TOP OF HOLE
479.432530 feet

Borehole No. 16BH04

PROJECT
Tower Standard LUST Site

SITE
Tower Standard

SHEET 2 OF 2 SHEETS

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
		(GW) sandy gravel, brown, wet, loose, trace silt and clay, fine gravel heaving sand at 20' bgs, boring terminated at 20' bgs			117.5		
16.0					82.2		
				60%	24.3		
18.0							
					42		
20.0	20.0	Bottom of Borehole					

BERS Borehole Log Version: 0413

PROJECT
Tower Standard LUST Site

HOLE NO.
16BH04

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

BOREHOLE LOG

PROJECT: Tower Standard LUST Site	BOREHOLE LOCATION: 45.913662247° N, -89.913051165° W	DRILLING COMPANY: Coleman Engineering
CLIENT: EPA Region 5	COORDINATE SYSTEM AND DATUM: Lat/Long, WGS84	DRILL RIG: Geoprobe 6620 DT
JOB NUMBER: 34160024	ELEVATION AT TOP OF HOLE: 479.464763 feet	DRILLING METHOD: Direct Push
SITE: Tower Standard	ELEVATION AT TOP OF CASING: Not Applicable	DRILLER: Randy Ochs
LOCATION: Lac du Flambeau	ELEVATION DATUM: height above ellipsoid	BOREHOLE DIAMETER: 3 inches
	TOTAL DEPTH: 30 feet / DEPTH TO WATER: 8.5 feet	LOGGED BY: Lyndsey Kleppin
	GROUNDWATER ELEVATION: 470.964763 feet	DATE HOLE: STARTED 3/31/2016 / COMPLETED 3/31/2016

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	PID SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
0.0		**(SW)** gravelly sand with clay, brown, moist, loose, grey silty clay inclusions, no fuel odor					
2.0				20%		16TSSL08	
4.0					15.5		
6.0					18.7		
7.0		**(GW)** sandy gravel, greyish brown, moist, loose		30%			
8.0					1066		
8.5 ▼		**(SW)** gravelly sand, brown, wet, loose, strong fuel odor			1648		
10.0		**(SW)** gravelly sand with silt, brown, wet, loose, strong fuel odor, sheen			1542		
12.0				50%	2566	16TSSL09 and 16TSSL10 (Duplicate)	

BOREHOLE LOG (Cont)

ELEVATION TOP OF HOLE
479.464763 feet

Borehole No. 16BH05

PROJECT
Tower Standard LUST Site

SITE
Tower Standard

SHEET 2 OF 2 SHEETS

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
		(SW) gravelly sand with silt, brown, wet, loose, strong fuel odor, sheen *(continued)*			117.5		
16.0	16.0	**(SW)** sand, brown, wet, loose, fine to coarse grained, slight fuel odor		20%	50.1		
18.0							
					70.7		
20.0	20.0	No Recovery- heaving sand					
22.0							
24.0							
26.0							
28.0							
	29.8						
30.0	30.0	**(GW)** sandy gravel, wet, loose, no fuel odor Bottom of Borehole					

BOREHOLE LOG

SHEET 1 OF 2 SHEETS

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

PROJECT: Tower Standard LUST Site	BOREHOLE LOCATION: 45.913606619° N, -89.913215927° W	DRILLING COMPANY: Coleman Engineering
CLIENT: EPA Region 5	COORDINATE SYSTEM AND DATUM: Lat/Long, WGS84	DRILL RIG: Geoprobe 6620 DT
JOB NUMBER: 34160024	ELEVATION AT TOP OF HOLE: 479.719090 feet	DRILLING METHOD: Direct Push
SITE: Tower Standard	ELEVATION AT TOP OF CASING: Not Applicable	DRILLER: Randy Ochs
LOCATION: Lac du Flambeau	ELEVATION DATUM: height above ellipsoid	BOREHOLE DIAMETER: 3 inches
	TOTAL DEPTH: 20 feet; DEPTH TO WATER: 9 feet	LOGGED BY: Lyndsey Kleppin
	GROUNDWATER ELEVATION: 470.71909 feet	DATE HOLE: STARTED 3/31/2016; COMPLETED 3/31/2016

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	PID SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
0.0 – 2.5		**(SW)** sand, brown, moist, loose, fine to coarse grained, no fuel odor			7		
2.5 – 5.0		**(SW)** gravelly sand with silt, reddish brown, moist, loose, trace clay, no fuel odor		20%	6.4 3.6		
5.0 – 10.0		No Recovery- rock lodged in sample tube		0%			
10.0 – 20.0		**(SW)** sand, brown, wet, loose, fine to medium grained, no fuel odor		50%	7.4 2.2		

BOREHOLE LOG (Cont)	ELEVATION TOP OF HOLE 479.719090 feet	Borehole No. 16BH06

PROJECT	SITE	SHEET 2 OF 2 SHEETS
Tower Standard LUST Site	Tower Standard	

DEPTH (FEET)	GRAPHIC LOG	LITHOLOGY DESCRIPTION	SAMPLE INTERVAL	RECOVERY	PID (ppm)	ANALYTICAL SAMPLE	DRILLING NOTES
		(SW) sand, brown, wet, loose, fine to medium grained, no fuel odor *(continued)*			1.4		
16.0							
16.5		**(SW)** gravelly sand, brown, wet, loose, trace silt, no fuel odor		70%		16TSSL11	
18.0							
20.0		Bottom of Borehole					