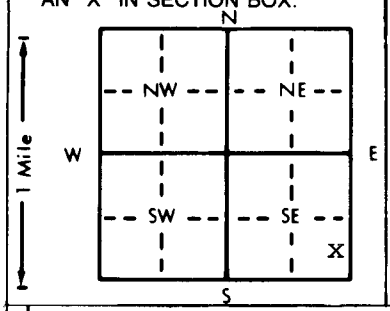
WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: Jackson | Fraction: NE ¼ SE ¼ SE ¼ | Section Number: 16 | Township Number: T 6 S | Range Number: R 15 E/W

Distance and direction from nearest town or city street address of well if located within city?

2 WATER WELL OWNER: U.S.Army corp of Engineers
RR#, St. Address, Box # : p.o.box 59 Louisville Ky.40201
City, State, ZIP Code :
Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL. 60 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 49 ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 38.17 ft. below land surface measured on mo/day/yr 4-03-02
Pump test data: Well water was n/a ft. after hours pumping gpm
Est. Yield gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 8 in. to ft., and in. to ft.
WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Lawn and garden only 10 Monitoring well
Was a chemical/bacteriological sample submitted to Department? Yes No X; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes No X

5 TYPE OF BLANK CASING USED: 5 Wrought iron 8 Concrete tile CASING JOINTS: Glued Clamped
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) Welded
2 PVC 4 ABS 7 Fiberglass Threaded X
Blank casing diameter 2 in. to ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface in., weight lbs./ft. Wall thickness or gauge No. 40

TYPE OF SCREEN OR PERFORATION MATERIAL: 7 PVC 10 Asbestos-cement
1 Steel 3 Stainless steel 5 Fiberglass 8 RMP (SR) 11 Other (specify)
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 5 Gauzed wrapped 8 Saw cut 11 None (open hole)
1 Continuous slot 3 Mill slot 6 Wire wrapped 9 Drilled holes
2 Louvered shutter 4 Key punched 7 Torch cut 10 Other (specify)

SCREEN-PERFORATED INTERVALS: From 60 ft. to 50 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 60 ft. to 48 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other cement/bentonite
Grout Intervals: From 48 ft. to 3 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/Gas well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage 16 Other (specify below)
13 Insecticide storage
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	10	stiff silty clay/gravel			
10	20	yellowish brown clay			
20	30	hard silty clay			
30	40	olive,hard silty clay			
40	50	moist,fine to medium sand			
50	60	dark gray fine to med.sand			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 4-02-02 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 597 This Water Well Record was completed on (mo/day/yr) 4-19-02 under the business name of prosonic corporation by (signature)

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

HTW DRILLING LOG

Hole No. MW-911

1. Company Name Ellis Environmental Group, LC	2. Drilling Subcontractor Prosonic
3. Project Forbes Atlas S-9	4. Location Holton, Kansas
5. Name of Driller Bear	6. Manufacturers Designation of Drill Hawk 70-150
7. Sizes and Types of Drilling and Sampling Equipment: Sonic; Sonic; 8 inch outer core, 6 inch inner core barrel; 6 inch stainless steel core barrel	8. Hole Location MW-911
	9. Surface Elevation 10000
	10. Date started 3-29-02 / 11. Date Completed 4-2-02
12. Overburdened Thickness undetermined	15. Depth Ground Water Encountered 49 ft/bgs, 4-2-02
13. Depth Drilled into Rock 0	16. Depth to Water and Elapsed Time after Drilling Completed 38.17 ft, 4-3-02 @ 0755
14. Total Depth of Hole 60ft	17. Over Water Level Measurements (Specify)

18. Geotechnical Samples	Disturbed	Undisturbed	19. Total Number of Core Boxes			
MW-911-G1, 15-16 ft, 4-2-02 @1520	0	0	0			
20. Samples for Chemical Analysis	VOC	Metals	Other (Specify)	Other (Specify)	Other (Specify)	21. Total Core Recovery 100%
MWS-911-01,02, 03, 04, 05	5	0	4	2, (1) replicate	0	
22. Disposition of Hole	Backfilled	Monitoring Well	Other (Specify)	23. Signature of Inspector		
Converted to monitoring well	NO	MW-911	Forbes Atlas S-9			

Elev a	Depth b	Lith	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
1000.0	0.0		TOPSOIL: rounded to subangular rock fragments throughout, wet, silty clay, dark grayish brown, 10YR 4/3, homogeneous, roots throughout, no odor.		100% recovered		1.0 TFS	
999.0	1.0					MWS-911-01, 3-29-02 @ 1435		
			TILL-CH: moist, high plasticity, blocky, stiff, silty clay, dark grayish brown 10 YR 4/4 mottled with light brownish gray 2.5Y 6/2, rounded to subangular rock fragments and small pebbles throughout, roots throughout, no odor.			MWS-911-02, 3-29-02 @ 1445 (PAH, VOCs replicate)	2.50 TFS	
998.0	2.0			Headspace: 17.5 ppm				
997.0	3.0							
996.0	4.0					MWS-991-03, 3-29-02 @ 1505		
995.0	5.0		TILL-CH: moist, high plasticity, stiff, very clayey sand, dark grayish brown 10 YR 4/4 mottled with light brownish gray 2.5Y 6/2, occassional gravel (rounded), roots throughout, no odor.	Headspace: 5.60 ppm	100% recovered		4.00 TFS	
994.0	6.0		TILL-CH: moist, high plasticity, hard, silty clay, yellowish brown 10 YR 5/6 mottled with light brownish gray 2.5Y 6/2, occassional gravel (rounded to subrounded), small pebbles					

HTW DRILLING LOG

Hole No. MW-911

1. Project Forbes Atlas S-9

2. Inspector Jeffrey Finn

Sheet 2 of Sheets 8

Elev a	Depth b	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
993.0	7.0	subrounded), small pebbles throughout, occasional calcareous nodules, traces of iron oxide, roots throughout, no odor.					
		TILL-CH: becomes pale olive 5Y 6/4, silty clay, with slickensides.					
992.0	8.0						
991.0	9.0						
990.0	10.0	TILL-CH: becomes light yellowish brown silty clay 2.5Y 6/2, vertical sand stringers.	Headspace: 5.20 ppm			3.50 TFS	
989.0	11.0	TILL-CL: SAA increasing sand content, coarse sand.					
988.0	12.0	TILL-CL: SAA, Iron oxide staining from 12 to 14.8 ft, occassional weathered rock from 14 to 14.8 ft					
987.0	13.0						
986.0	14.0						
985.0	15.0	TILL-CH: dry to moist, high plasticity, very stiff, silty clay, yellowish brown 10	Headspace: 3.10	100% recovered,		2.50 TFS	

HTW DRILLING LOG

Hole No. MW-911

1. Project Forbes Atlas S-9

2. Inspector Jeffrey Finn

Sheet 3 of Sheets 8

Elev a	Depth b	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
984.0	16.0	YR 5/6 mottled with light brownish gray 2.5Y 6/2, occassional small,l rounded pebbles, no odor.	ppm	collected MW-911-61, 4-2-02 @1520.		3.50 TFS	
983.0	17.0					4.25 TFS	
982.0	18.0		Headspace: 7.50 ppm				
981.0	19.0						
980.0	20.0	TILL-CH: moist, high plasticity, hard, silty clay, yellowish brown 10 YR 5/8 mottled with light brownish gray 2.5Y 6/2, Traces of dark gray 10YR 4/1 clay, small rounded pebbles scattered throughout, occassional small rounded gravel, no odor.					
979.0	21.0						
978.0	22.0						
977.0	23.0					4.50 TFS	
976.0	24.0						

HTW DRILLING LOG

Hole No. MW-911

1. Project: Forbes Atlas S-9
2. Inspector: Jeffrey Finn
Sheet 4 of Sheets 8

Elev a	Depth b	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
						3.50 TFS	
975.0	25.0		Headspace: 3.00 ppm	100% recovered, commenceddrilling to allow water to seep into hole, dry hole at this point.	MWS-911-04, 3-29-02 @ 1710		
					MWS-911-05, 3-29-02 @ 1720, (TOC replicate)		
974.0	26.0						
973.0	27.0						
972.0	28.0	TILL-CH: dry to moist, high plasticity, hard, silty clay, olive 5 Y 4/4 mottled with very dark gray 5Y 3/1, small rounded pebbles scattered throughout, no odor.	Headspace: 3.40 ppm			>4.50 TFS	
971.0	29.0						
970.0	30.0						
969.0	31.0		Headspace: 0.00 ppm				
968.0	32.0						

HTW DRILLING LOG

Hole No. MW-911

1. Project Forbes Atlas S-9 | 2. Inspector Jeffrey Finn | Sheet 5 of Sheets 8

Elev a	Depth b	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
967.0	33.0						
966.0	34.0	TILL-SP: moist, fine to medium grain sand, dark gray 10 YR 4/1, sand lense, no odor.					
965.0	35.0			4-2-02 resumed drilling after resetting drill rig on hole, lower clay layers swelled shut, driller advanced to 35 ft/bgs		1.00 TFS	
964.0	36.0	TILL-CL: dry to moist, med. plasticity, hard, silty clay, dark gray 10 YR 4/1, small rounded pebbles scattered throughout, no odor.				>4.50 TFS	
963.0	37.0	TILL-SM: moist, fine to medium grain sand, dark gray 10 YR 4/1, silty sand, no odor.					
962.0	38.0	TILL-SP: moist, fine to medium grain sand, dark gray 10 YR 4/1, sand lense, no odor.					
961.0	39.0	TILL-CH: dry to moist, high plasticity, hard, silty clay, dark gray 10 YR 4/1, no odor.					
960.0	40.0	TILL-SP: moist, fine to medium grain sand, dark gray 10 YR 4/1, sand lense, no odor.				1.00 TFS	
959.0	41.0	TILL-SM: moist to wet, fine to medium grain sand, soft to medium, dark gray 10 YR 4/1, sandy silty, no odor.				>4.50 TFS	
		TILL-CH: dry to moist, high plasticity, hard, overconsolidated, silty clay, dark gray 10 YR 4/1, no odor.					

HTW DRILLING LOG

Hole No. MW-911

1. Project Forbes Atlas S-9 | 2. Inspector Jeffrey Finn | Sheet 6 of Sheets 8

Elev a	Depth b	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
958.0	42.0						
957.0	43.0	TILL-SM: wet, fine to medium grain sand, medium, dark gray 10 YR 4/1, sandy silty, rapid dilatancy, no odor.				1.00 TFS	
956.0	44.0	TILL-CH: dry to moist, high plasticity, hard, overconsolidated, silty clay, dark gray 10 YR 4/1, small, rounded pebbles throughout, no odor.				>4.50 TFS	
955.0	45.0		Headspace: 0.00 ppm	100% recovered			
954.0	46.0						
953.0	47.0						
952.0	48.0						
951.0	49.0	TILL-SP: wet, fine to medium grain sand, gray 10 YR 5/1, basal sand, rounded to subrounded gravel from 59 to 60 f, no odor.				0.50 TFS	groundwater was first encountered at approximately 49 ft/bgs
950.0	50.0		Headspace: 0.00 ppm	100% recovered			

HTW DRILLING LOG

Hole No. MW-911

1. Project Forbes Atlas S-9

2. Inspector Jeffrey Finn

Sheet 7 of Sheets 8

Elev a	Depth b	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
949.0	51.0						
948.0	52.0						
947.0	53.0						
946.0	54.0						
945.0	55.0		Headspace: 0.00 ppm	100% recovered			
944.0	56.0						
943.0	57.0						
942.0	58.0						well set @ 60 ft/bgs, 3.34 ft. of riser
941.0	59.0	TILL-GP: wet, Gravel with fine to medium grain sand, gray 10 YR 5/1, rounded to subrounded, , large limestone rock fragments, no odor.				1.0 TFS	

HTW DRILLING LOG

Hole No. MW-911

1. Project Forbes Atlas S-9

2. Inspector Jeffrey Finn

Sheet 8 of Sheets 8

Elev a	Depth b	Descriptions of Materials c	Field Screening Results d	Geo-Tech Sample or Core Box No. e	Analytical Sample No. f	Pocket Penetrometer g	Remarks h
940.0	60.0