

**Illinois Environmental Protection Agency**

**Well Completion Report**

Site Number: 1191150002

County: Madison

Site Name: Roxana, IL

Well #: MW-7

State

Plane Coordinate: X 432249.33 Y 792014.62 (or) Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Borehole #: B-7

Surveyed by: Scott M. Spayer, Environmental Design, International, Inc.

IL Registration #: 035-003645

Drilling Contractor: Roberts Environmental Drilling, Inc

Driller: P. Seymour

Consulting Firm: URS Corporation

Geologist: M. Corbett / W. Pennington

Drilling Method: Hollow Stem Auger

Drilling Fluid (Type): Water

Logged By: M. Corbett / W. Pennington

Date Started: 07/09/09 Date Finished: 07/09/09

Report Form

Completed By: M. Miller

Date: 12/03/09

**ANNULAR SPACE DETAILS**

Type of Surface Seal: Concrete

Type of Annular Sealant: High Solids Bentonite GROUT

Installation Method: Gravity Feed

Setting Time: 1215

Type of Bentonite Seal - - Granular, PeMet, Slurry  
(Choose One)

Installation Method: Gravity Feed

Setting Time: 1110

Type of Sand Pack: ANSI/NSF quartz sand

Grain Size: 61 grade (Sieve Size)

Installation Method: Gravity Feed

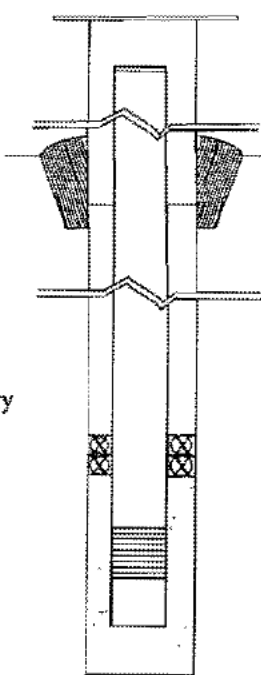
Type of Backfill Material: ANSI/NSF quartz sand  
(if applicable)

Installation Method: Gravity Feed

**WELL CONSTRUCTION MATERIAL**

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other



Elevations (MSL)*	Depths (BGS)	(.01ft.)
443.46	n/a	Top of Protective Casing
443.10	0.36	Top of Riser Pipe
443.46	n/a	Ground Surface
442.46	1.00	Top of Annular Sealant
400.45	43.01	Static Water Level (After Completion)
405.18	38.28	Top of Seal
402.18	41.28	Top of Sand Pack
400.18	43.28	Top of Screen
390.18	53.28	Bottom of Screen
390.18	53.28	Bottom of Well
388.46	55.00	Bottom of Borehole

\* Referenced to a National Geodetic Datum

**CASING MEASUREMENTS**

Diameter of Borehole (inches)	6 in
ID of Riser Pipe (inches)	2 in
Protective Casing Length (feet)	n/a ft
Riser Pipe Length (feet)	42.92 ft
Bottom of Screen to End Cap (feet)	n/a
Screen Length (1" slot to last slot) (feet)	10 ft
Total Length of Casing (feet)	52.92 ft
Screen Slot Size **	0.010 in

\*\*Hand-Slotted Well Screens are Unacceptable

### LOG OF BORING AND WELL CONSTRUCTION DETAIL B-7

Completion Date: 7/9/09  
Casing Elevation: 443.10  
Ground Elevation: 443.46

Coordinates  
Northing: 792024.82  
Easting: 2322181.25

Depth in feet	Well Construction	Inches Driven	Inches Recovered	PID (ppm)	Sampler Graphic	Symbol	USCS	DESCRIPTION	
								DESCRIPTION	NOTES
0	MW-7							Air knifed to 5' bgs	Boring advanced to a depth of 5', via air knife to clear utilities, then continued with 4.25" HSA.
5		24	18	0.4				Loose, moist, brown, fine to medium grained, SAND (SP)	
7.5		24	12	0.3					
10		24	12	0.3					
12.5		24	18	0.3				Becomes medium dense	
15		24	18	0.2			SP		
17.5		24	18	0.2				1" sandy clay seam at 16.5' bgs	
20		24	22	0.1				Becomes grayish brown	
22.5		24	20	0.1					
25		24	18	0.1					

Completion Depth: 55.00 Ft bgs  
 Project No.: 21562175  
 Project Name: Roxana Dissolved Phase Investigation  
 Drilling Contractor: Roberts Environmental Drilling, Inc.  
 Drilling method: Hollow Stem Auger Rig Type: CME  
 Drilled by: P. Sevmour  
 Logged by: M. Corbett/W. Pennington

Water Depth: 45 ft., After ATD hrs.  
 Water Depth: \_\_\_\_\_ ft., After \_\_\_\_\_ hrs.  
 Water level at time of drilling  Geoprobe Macro Sampler  
 Water level after drilling  Air Knife/Hand Auger Sampler  
 ATD - At time of drilling  Air Rotary  
 Spitspoon Sampler  3" Clear Acetate Liner  
 Hollow Stem Auger-Soil samples not collected  USC based on field visual observations



URS (ENVRON) LOG#1 WELL: 21562175.00003.GPJ URS\$SIT.EV.GDT 12/15/09



### LOG OF BORING AND WELL CONSTRUCTION DETAIL B-7

Depth In feet	Well Construction	Inches Driven	Inches Recovered	PID (ppm)	Sampler Graphic	Symbol	USCS	Completion	
								Coordinates	
								Date: 7/9/09 Casing Elevation: 443.10 Ground Elevation: 443.46	Northing: 792024.62 Easting: 2322181.25
	MW-7							DESCRIPTION	NOTES
55		24	16	1015			SP	Becomes medium dense, gray, medium, grained SAND (SP), with fine grains, some coarse grains, trace gravel  Becomes dense	Bottom of boring at 55' bgs at time of drilling. Monitoring well installed.  Screened interval based on the ground surface at the time of installation was 43' to 53' bgs (shown).  Survey data of the existing ground surface shows the screen interval from 43.28' to 53.28' bgs.
60								Bottom of boring at 55' bgs	
65									
70									

URS (EMP/ONS) LOG-B1 WELL 21562175.DDD/B3.GPJ UPSS/LEV/SDT 12/15/09

Completion Depth: 55.00 Ft bgs  
 Project No.: 21562175  
 Project Name: Roxana Dissolved Phase Investigation  
 Drilling Contractor: Roberts Environmental Drilling, Inc.  
 Drilling method: Hollow Stem Auger Rig Type: CME  
 Drilled by: P. Seymour  
 Logged by: M. Corbett/W. Pennington



Water Depth: 45 ft., After ATD hrs.  
 Water Depth: \_\_\_\_\_ ft., After \_\_\_\_\_ hrs.  
 Water level at time of drilling  Geoprobe Macro Sampler  
 Water level after drilling  Air Knife/Hand Auger Sampler  
 ATD - At time of drilling  Air Rotary  
 Splitspoon Sampler  3" Clear Acetate Liner  
 Hollow Stem Auger - Soil samples not collected USC based on field visual observations

Site Number: 1191150002

County: Madison

Site Name: Roxana, IL

Well #: MW-8

State

Plane Coordinate: X                      Y                      (or) Latitude:                      Longitude:                     

Borehole #: B-8

Surveyed by: Scott M. Spayer, Environmental Design, International, Inc.

IL Registration #: 035-003645

Drilling Contractor: Roberts Environmental Drilling, Inc

Driller: P. Seymour

Consulting Firm: URS Corporation

Geologist: W. Pennington / C. Smith

Drilling Method: Hollow Stem Auger

Drilling Fluid (Type): Water

Logged By: W. Pennington / C. Smith

Date Started: 07/06/09

Date Finished: 07/06/09

Report Form

Completed By: M. Miller

Date: 12/03/09

**ANNULAR SPACE DETAILS**

Type of Surface Seal: Concrete

Type of Annular Sealant: High Solids Bentonite Grout

Installation Method: Gravity Feed

Setting Time: 1615

Type of Bentonite Seal - - Granular, PeNet, Slurry  
(Choose One)

Installation Method: Gravity Feed

Setting Time: 1510

Type of Sand Pack: ANSI/NSF quartz sand

Grain Size: 61 grade (Sieve Size)

Installation Method: Gravity Feed

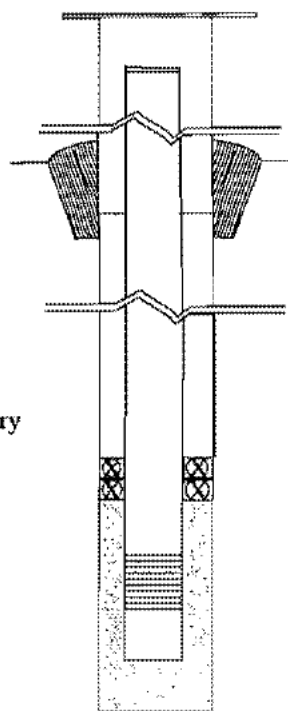
Type of Backfill Material: ANSI/NSF quartz sand  
(if applicable)

Installation Method: Gravity Feed

**WELL CONSTRUCTION MATERIAL**

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other



Elevations (MSL)*	Depths (BGS)	(.01ft.)
434.40	n/a	Top of Protective Casing
434.11	0.29	Top of Riser Pipe
434.40	n/a	Ground Surface
433.40	1.00	Top of Annular Sealant
403.91	30.49	Static Water Level (After Completion)
406.80	27.60	Top of Seal
403.30	31.10	Top of Sand Pack
400.90	33.50	Top of Screen
400.80	33.60	Bottom of Screen
390.80	43.60	Bottom of Well
390.40	44.00	Bottom of Borehole

\* Referenced to a National Geodetic Datum

**CASING MEASUREMENTS**

Diameter of Borehole (inches)	6 in
ID of Riser Pipe (inches)	2 in
Protective Casing Length (feet)	n/a ft
Riser Pipe Length (feet)	33.50 ft
Bottom of Screen to End Cap (feet)	0 ft
Screen Length (1" slot to last slot) (feet)	10.10 ft
Total Length of Casing (feet)	43.60 ft
Screen Slot Size **	0.01in

\*\*Hand-Slotted Well Screens are Unacceptable

### LOG OF BORING AND WELL CONSTRUCTION DETAIL B-8

Completion Date: 7/6/09  
Casing Elevation: 434.11  
Ground Elevation: 434.40

Coordinates  
Northing: 791930.86  
Easting: 2321984.79

Depth in feet	Well Construction	Inches Driven	Inches Recovered	PIC (ppm)	Sampler Graphic	Symbol	USCS	DESCRIPTION		NOTES
	MW-3							Air knife to 5' bgs		Boring advanced to a depth of 5', via air knife to clear utilities, then continued with 4.25" HSA.
5								Loose to medium dense, moist, brown, fine to medium grained, SAND (SP)		
		24	12	0.2						
		24	24	0.2						
10								Becomes grayish brown		
		24	18	0.1						
		24	18	0.4						
15							SP			
		24	20	1.4						
		24	12	22.1						
		24	12	29.8						
20								Medium dense to dense, moist, gray, fine to medium grained, SAND (SP), trace black banding in upper 6"		
		24	16	112						
		24	20	75.0						
		24	18	271						

URS (ENVIRON) LOG-1 WELL 2160275.00003.GPJ URSSTLEV.GDT 12/15/09

Completion Depth: 44.00 Ft bgs  
 Project No.: 21562175  
 Project Name: Roxana Dissolved Phase Investigation  
 Drilling Contractor: Roberts Environmental Drilling, Inc.  
 Drilling method: Hollow Stem Auger Rig Type: CME  
 Drilled by: P. Seymour  
 Logged by: W. Pennington/C. Smith



Water Depth: 35 ft., After ATD hrs.  
 Water Depth: \_\_\_\_\_ ft., After \_\_\_\_\_ hrs.  
 Water level at time of drilling  Geoprobe Macro Sampler  
 Water level after drilling  Air Knife/Hand Auger Sampler  
 ATD - At time of drilling  Air Rotary  
 Splitspoon Sampler  3" Clear Acetate Liner  
 Hollow Stem Auger-  USC based on field visual observations  
 Soil samples not collected

### LOG OF BORING AND WELL CONSTRUCTION DETAIL B-8

Completion Date: 7/6/09  
Casing Elevation: 434.11  
Ground Elevation: 434.40

Coordinates  
Northing: 791930.86  
Easting: 2321984.79

Depth in feet	Well Construction	Inches Driven	Inches Recovered	PID (ppm)	Sampler Graphic	Symbol	USCS	DESCRIPTION	NOTES
	MW-8								
		24	18	729				SAME: Medium dense to dense, moist, gray, fine to medium grained, SAND (SP), trace black banding in upper 6"      Becomes wet	End split spoon sampling at 37' bgs. Blind drill to 44' bgs.
		24	20	1437					
30		24	20	1179					
		24	18	4002					
		24	20	3439					
35		24	18	491					
40							\$		
45								Bottom of boring at 44' bgs	Bottom of boring at 44' bgs at time of drilling. Monitoring well installed.  Screened interval based on the ground surface at the time of installation was 33.5' to 43.5' bgs (shown).  Survey data of the existing ground surface shows the screen interval from 33.50' to 43.60' bgs.

URS (ENV/IRON) LOG#1 WELL 21562175.D003.GPJ URSSTLEV.GDT 12/15/09

Completion Depth: 44.00 Ft bgs  
 Project No.: 21562175  
 Project Name: Roxana Dissolved Phase Investigation  
 Drilling Contractor: Roberts Environmental Drilling, Inc.  
 Drilling method: Hollow Stem Auger Rig Type: CME  
 Drilled by: P. Seymour  
 Logged by: W. Pennington/C. Smith

Water Depth: 35 ft., After ATD hrs.  
 Water Depth: \_\_\_\_\_ ft., After \_\_\_\_\_ hrs.  
 Water level at time of drilling  Geoprobe Macro Sampler  
 Water level after drilling  Air Knife/Hand Auger Sampler  
 ATD - At time of drilling  Air Rotary  
 Splitspoon Sampler  3" Clear Acetate Liner  
 Hollow Stem Auger-Soil samples not collected  USC based on field visual observations

