



DATE: October 31, 1984  
TO: Sherry Otto  
FROM: Tim Greetis  
SUBJECT: Preliminary Hydrogeologic Investigation of Wedron/Hoxsey  
L09982903

The investigation of the referenced site revolves around the contamination of several residential wells with components characteristic of a hazardous material, originally believed to be gasoline. This memo will provide a brief report concerning this situation.

Introduction/History of Problem

Located in east-central LaSalle County of Illinois is the small community of Wedron. Since April 16, 1982, several residents have complained of gasoline type odors occurring in the water of their private wells. Since then, several water sampling programs of the affected residences occurred along with pressure tests of underground storage tanks in the immediate vicinity of the area of concern. Each tank that was pressure tested revealed no indication of leakage. The drill rig was requested and thus began a preliminary investigation on April 10, 1984 and completed on May 2, 1984. Three (3) monitor wells were installed with a set of water samples collected from these wells fifteen (15) days later. These results are not yet available.

RELEASABLE

FEB 14 2008

REVIEWER MD

Method of Study

Drilling was performed using the Agency's CME-55 drill rig for the entire study utilizing 3 1/4 inch inside diameter hollow stem augers. Within the lead auger, a sampling device was used to retrieve a continuous soil specimen for geologic classification and soil sampling for chemical analysis. This sampler consists of three inch diameter split tube with a tapered head which allows retrieval of a 2 1/4 inch diameter nearly undisturbed sample up to a five foot length.

The general locations of proposed monitor wells were determined prior to locating underground utility lines and clearance was then obtained at those specific points. Three wells were installed, arranged such that a hydraulic gradient could be determined. In all three borings, subsurface lithologies were visually classified using the Sheppard System and are not the result of laboratory classification tests (See Figure). In borings 2 and 3, which represent wells G101 and G102 respectively, no evidence of soil contamination was encountered during drilling. Also, no obvious odors occurred either. In boring 4 (same location as B5/G103), odors began to occur at a depth of 14.7 feet and continued to a depth of approximately 15.8 feet where a clay lithology was encountered that was much less permeable than the overlying strata. Of the three wells installed, this location was the only area where odors of contamination were detected.

For a detailed description of geologic lithologies encountered, refer to the boring logs at the rear of this memo.

Geology/Hydrogeology

Generally, the stratigraphy of the area is relatively simple and fairly straightforward. Existing from the surface down to a depth of 10 to 20 feet, loess deposits occur mainly consisting of fine sand to clay size materials. These loess deposits overlay the massive St. Peter Sandstone of Ordovician Age. From boring records, the thickness of the St. Peter in the general vicinity of Wedron is approximately 125 feet. Most private wells in Wedron withdraw water from this formation mostly from a depth between 35 to 45 feet below ground surface. A well at the Martin Marietta Technical Services Building is cased to a depth of 170 feet and is withdrawing water from the New Richmond Sandstone Formation with no contamination detected. Water samples collected from the IEPA monitor wells on May 17, 1984 have yet to be completed. The two recordings of water levels in the IEPA monitor wells are as follows:

<u>Date</u>	<u>G101</u>	<u>G102</u>	<u>G103</u>
05/17/84	495.64	499.75	501.05
07/17/84	496.30	499.83	500.46

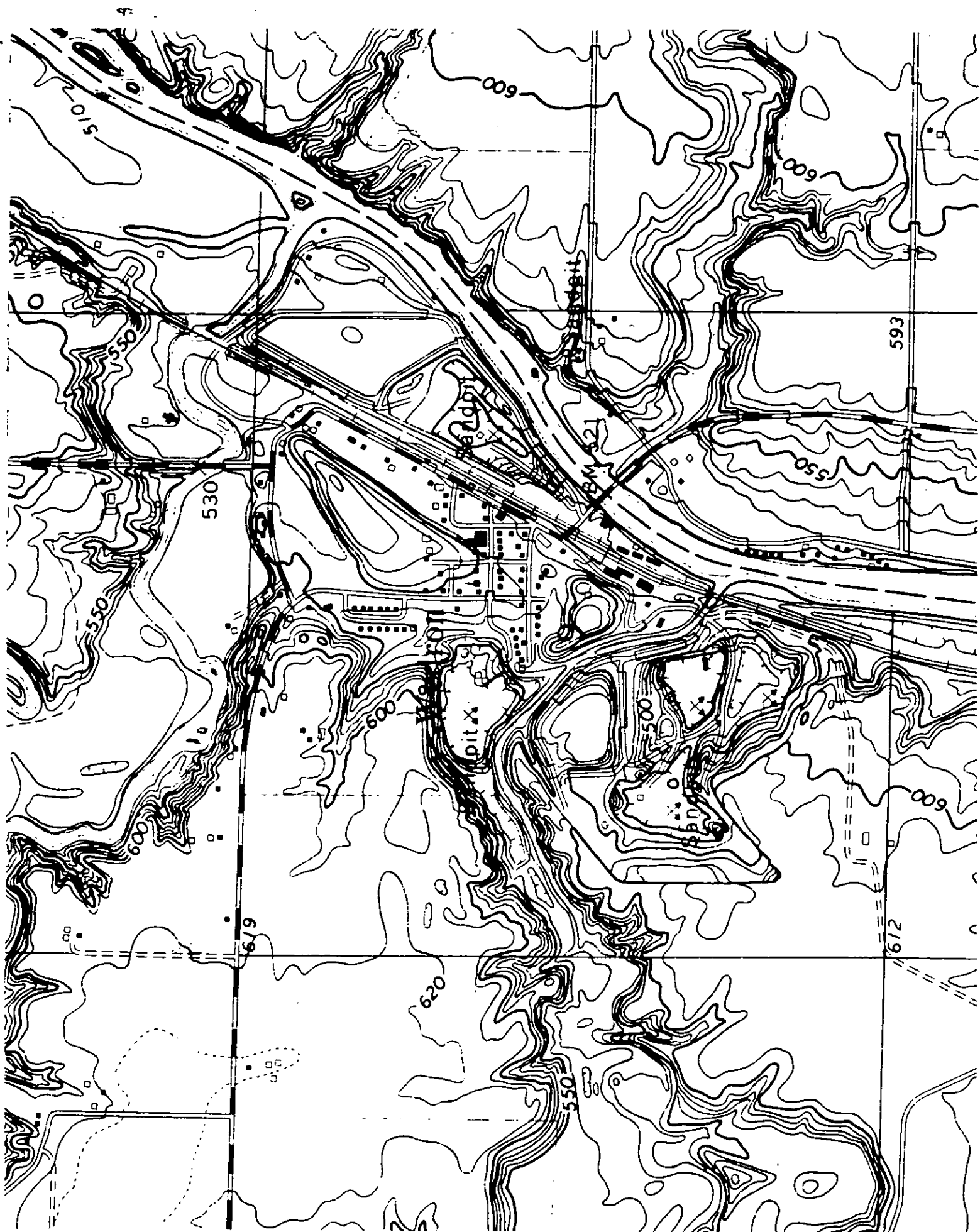
Page 4.

### Conclusions

To this date, seven residential wells are affected by organic substance contamination. The well at the Martin Marietta Scale House is the most severely contaminated, and due to this, has not been used since its installation (a Table including all wells sampled and analysis is included). Presently, an alternate water supply for those affected homes is proposed to be installed using funds granted to Department of Commerce and Community Affairs. Also, assistance from the USEPA is being sought for aid in source identification, since to this date it is yet to be determined.

TAG:tk/29-30

Attachments



FILE NO. L 0998290003

EXEMPT DOCUMENT NO. 010

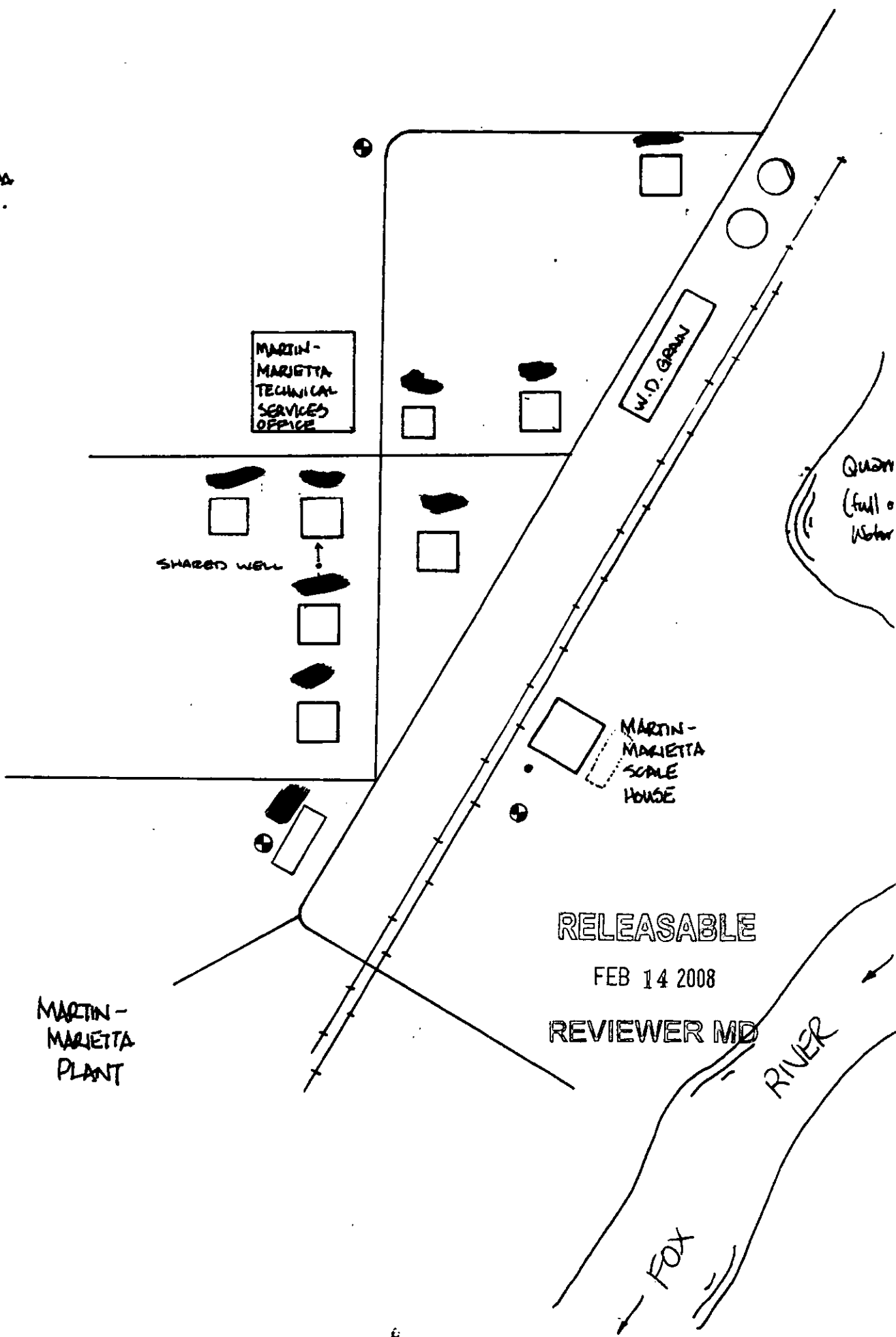
**THE AGENCY HAS DETERMINED THIS DOCUMENT  
IS EXEMPT IN PART FROM PUBLIC DISCLOSURE**

**EXEMPT  
IN  
PART  
DOCUMENT**

FILE CATEGORY GROUNDWATER ANALYTICAL

DOCUMENT DATE 10-31-84

⊕ INDICATES IEPA  
MONITOR WELL.



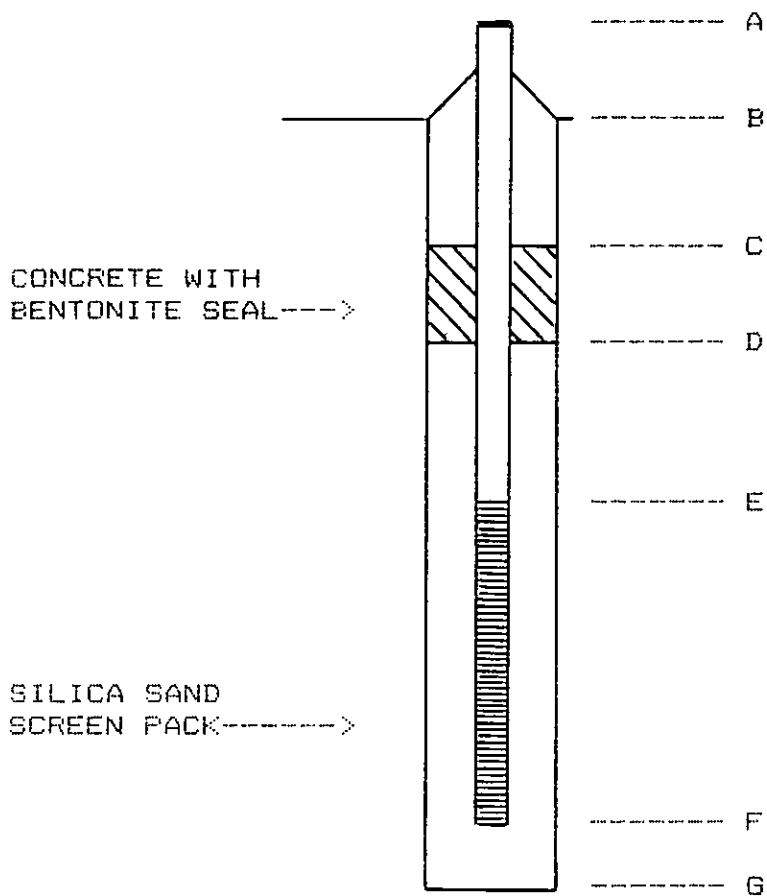
Quarry

# WEDROM RESIDENTIAL WELL ANALYSIS

SAMPLE DATE	PARAMETER	(6201)	(6202)	(6203)	(6204)	(6205)	(6206)	MARTIN MARIETTA TECH. CENTER (6207)	MARTIN MARIETTA SCALE HOUSE (6208)	WEDROM METH. CHURCH (6210)	(6211)	(6212)
04/28/82	C3-SUB. BENZENE	ND	45	2000	110	ND						
	C4-SUB. BENZENE	ND	ND	100	ND	ND						
	NAPHTHALENE	ND	ND	90	ND	ND						
	TOLUENE	ND	ND	4300	880	ND						
	UNIDENTIFIED CMPDS.	ND	ND	200	100	ND						
	XYLENE	ND	280	4500	640	ND						
06/24/82	C3-SUB. BENZENE	ND	70	800	2300	ND						
	C4-SUB. BENZENE	ND	35	400	1200	ND						
	TOLUENE	ND	15	150	8100	ND						
	XYLENE	ND	180	250	4800	ND						
06/01/83	BENZENE	ND	6	550	700	10	3					
	DICHLOROETHANE	ND	ND	ND	300	ND	ND					
	TOLUENE	ND	ND	500	800	20	4					
	XYLENE	ND	ND	680	2300	ND	ND					
08/11/83	BENZENE								430			
	TOLUENE								9800			
	XYLENE								13000			
	C3-SUB. BENZENE								3600			
	C4-SUB. BENZENE								300			
	PROPENYLBENZENE								240			
	METHYLINDENE								30			
	NAPHTHALENE								180			
	METHYLNAPHTHALENE								40			
	ALIPHATIC HYDROCARBONS								10			
11/16/83	DIETHYLDISULFIDE								130			
	ACETONE								110			
	ALIPHATIC HYDROCARBONS								6700			
	BENZENE								960			
	DICHLOROETHANE								ND			
	TOLUENE								690			
	XYLENE								6400			
									110			
									20			
									ND			
01/25/84	VOLATILE ORGANICS								ND			
	GASOLINE								ND			

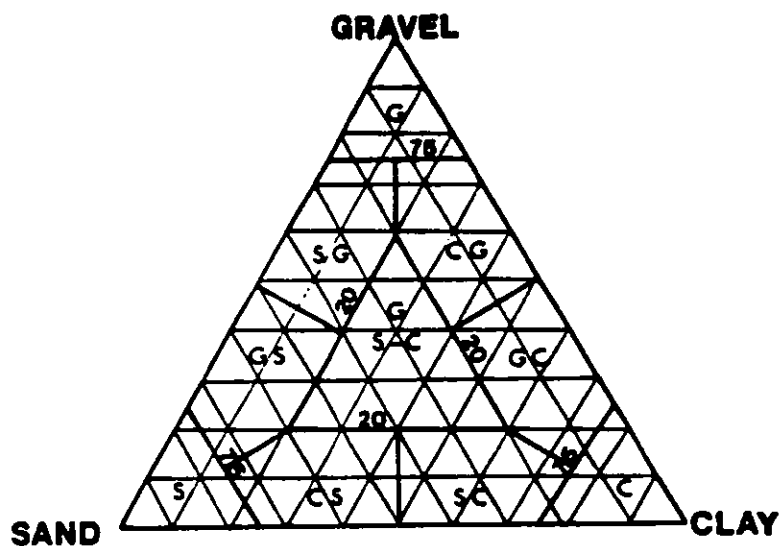
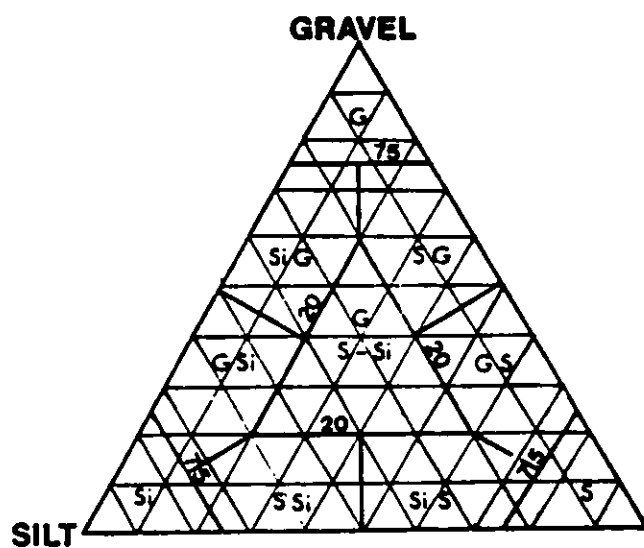
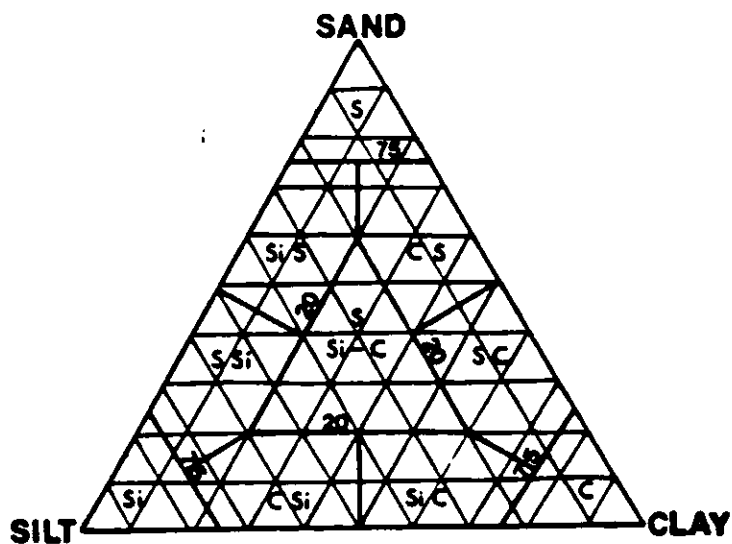


# MONITOR WELL SPECIFICS



A=TOP OF CASING  
 B=GROUND SURFACE  
 C=TOP OF PACKING PLUG  
 D=PLUG/SCREEN PACK INTERFACE  
 E=TOP OF WELL SCREEN  
 F=BOTTOM OF CASING  
 G=BOTTOM OF BOREHOLE

WELL NUMBER	ELEVATION		DEPTH FROM GROUND SURFACE TO:				
	A	B	C	D	E	F	G
G101	536.50	534.50	13.5	16.4	34.0	49.0	49.0
G102	525.17	522.77	16.0	18.0	19.3	36.8	36.8
G103	525.40	522.40	11.4	14.4	17.5	32.5	32.5



Percent grain size	Adjective modifiers for minor grain sizes <sup>a</sup>
>15%	Included in major textural class
10-15%	Some
5-10%	Little
< 5%	Trace

TEXTURAL TRIANGLES (ADOPTED BY SHEPARD, 1954) AND TERMINOLOGY  
APPLICABLE TO SOILS CLASSIFIED BY THE IEPA



# Illinois Environmental Protection Agency

BORING NO. <b>B1</b>		WELL NO.		GROUNDLEVEL ELEV. <b>~ 541.96</b>		PAGE <b>1</b> OF <b>1</b>	
COUNTY <b>LA SALLE</b>		SITE NO. <b>09982903</b>		DATE <b>April 17, 1984</b>		ANNULUS FILL MATERIAL ABOVE PACKING	
SITE <b>WEDRON / HUXSEY</b>				TIME START <b>7:45 am</b> FINISH <b>4:30 pm</b>		PACKING <b>N / A</b>	
BORING LOCATION <b>NORTH EDGE OF PARKING LOT AT MARTIN MARZETTA TECH. CENTER</b>				SCREEN		PERSONNEL	
DRILLING EQUIPMENT <b>CME 55 3.25" ID HOLLOW STEM AUGER</b>						L. <b>TIM GREETIS</b> D. <b>DOUG TOLAN</b> H. <b>KEN BOSIE</b>	
COMPLETION DEPTH <b>17.15</b>		BEDROCK DEPTH <b>~ 13.15'</b>		TOP OF CASING <b>-</b>			
WELL CASING <b>N / A</b>				SAMPLES			
SCREEN INTERVAL <b>N / A</b>				TYPE AND QUANTITY <b>A</b>			
ELEV.		DESCRIPTION		DEPTH		REMARKS	
0.0 - 0.17		TOPSOIL - SANDY SILT, BROWN, ROOTS, MOIST.		0			
0.17 - 0.4		LIMESTONE GIZAVEL FILL - WHITE		1			
0.4 - 5.0		CLAYEY SILT - BROWN TO GRAY, UNIFORM, SEMI BLOCKY STRUCTURE, LOCAL AREA OF SAND FROM 3.2 TO 3.4, SLIGHTLY MOIST AT TOP.		2 3		5.0 5.0	
5.0 - 7.1		SILTY CLAY - BROWN, BLOCKY, MOIST AT TOP, DAMPER WITH DEPTH.		4 5 6		2.7 2.7	
7.1 - 7.7		SILTY SAND - BROWN, SOME GRAVEL, LARGE COBBLE PRESENT, INCREASE SILT WITH DEPTH.		7			
7.7 - 8.2		SANDS & GRAVELS - SOME SILTS & CLAYS, LOOSE, BROWN TO TAN, NO SORTING, SLIGHTLY MOIST.		8 9		1.3 2.3	
8.2 - 12.0		SAND - MEDIUM TO FINE GRAINED, BROWN, LOOSE, GRAINS ANGULAR TO ROUNDED, TRACE GRAVEL, DAMP.		10 11		2.2 3.15	
12.0 - 12.2		SANDS & GRAVELS - LOOSE, GRAVEL CONTAINS FRAGMENTS OF CHERT, LIMESTONE GRANITE; MOIST.		12 13 14		AUGER REFUSAL AT 13.15' - BEGAN USING CORE BARREL. CORED 4.0' - LOST H2O/REVERT SWERNY TO PUTN & UP OUTSIDE OF AUGER. ABANDONED BOREHOLE	



# Illinois Environmental Protection Agency

BORING NO. <b>B2</b>		WELL NO. <b>G101</b>		GROUNDLEVEL ELEV. <b>534.50</b>		PAGE <b>1</b> OF <b>1</b>	
COUNTY <b>LA SALLE</b>		SITE NO. <b>09982903</b>		DATE <b>4/18/84</b> <b>4/23/84</b>		ANNULUS FILL MATERIAL ABOVE PACKING: <b>CUTTINGS</b>	
SITE <b>WEIDRON / HOXSEY</b>		BORING LOCATION <b>APPROXIMATELY 3' EAST OF B1</b>		START TIME <b>9:15am</b> <b>4:45pm</b>		FINISH TIME <b>12:15pm</b> <b>3pm</b>	
DRILLING EQUIPMENT <b>CME 55</b>		SIZE <b>3.25" ID</b>		TYPE <b>HOLLOW STEM AUGER</b>		PACKING: <b>CONCRETE/BENTONITE</b>	
COMPLETION DEPTH <b>49.0</b>		BEDROCK DEPTH <b>-13.0'</b>		TOP OF CASING <b>536.50</b>		SCREEN: <b>NATURAL MATERIALS</b>	
WELL CASING <b>51.0' 2" ID PVC</b>		TYPE AND QUANTITY <b>SCHEDULE 40 SCREEN JOINT</b>		SAMPLES		PERSONNEL	
SCREEN INTERVAL <b>15.0'</b>		TYPE AND QUANTITY <b>HACK SAW SCREEN</b>		Sample No.		L. T. GREETIS	
ELEV. <b>534.50</b>		DESCRIPTION		DEPTH		D. D. TOLAN	
						H. K. BOSIE	
						REMARKS	
		Augered down to 49.0'					
		Very Hard Drilling Below 25'					
		Encountered H <sub>2</sub> O at 43'					
		Boring Complete at 49.0'					
		DTW = 41.0' (at completion of drilling.)					
		Left Borehole Open - Returned					
		04/23 - Installed Well.					
		DTW 30.0' (at completion of well installation).					



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BORING NO. <b>B3</b>		WELL NO. <b>G102</b>		GROUNDLEVEL ELEV. <b>522.77</b>		PAGE <b>1</b> OF <b>1</b>	
COUNTY <b>LA SALLE</b>		SITE NO. <b>09982903</b>		DATE <b>April 23, 1984</b>		ANNULUS FILL MATERIAL <b>CUTTINGS</b>	
SITE <b>WEDRON / HOXSEY</b>				START <b>April 23, 1984</b>		FINISH <b>April 23, 1984</b>	
BORING LOCATION <b>~ 10' WEST OF WD GRAIN CO GRAY STORAGE SHED - SOUTH SIDE OF</b>				TOWN <b>START</b>		TIME <b>FINISH</b>	
DRILLING EQUIPMENT <b>CME 55 3.25" ID HOLLOW STEM AUGER</b>				TOWN <b>START</b>		TIME <b>FINISH</b>	
COMPLETION DEPTH <b>36.8'</b>		BEDROCK DEPTH <b>~ 10.0'</b>		TOP OF CASING <b>525.17</b>		PACKING: <b>CONCRETE / BENTONITE</b>	
WELL CASING <b>39.2' 2" ID PVC SCHEDULE 40 SCREEN JOINT</b>						SCREEN: <b>NATURAL MATERIALS</b>	
SCREEN INTERVAL <b>17.5' HACK SAW SCREEN</b>						PERSONNEL	
ELEV. <b>522.77</b>		DESCRIPTION		DEPTH		REMARKS	
0.0 - 2.7		SANDY SILT - BROWN TO GRAY, TRACE GRAVEL, INCREASE IN SAND IN BOTTOM 0.5', MOIST.		1			
2.7 - 4.0		CLAYEN SILT - BROWN TO GRAY AT BASE, IRON STAINING AT 3.3 & 4.0, BLACK MOTTLING BOTTOM 0.6'.		3			
4.0 - 5.5		SILT - BLACK, FRAGILE, DAMP.		4			
5.5 - 7.7		SILTY SAND - BROWN TO RED, SOME GRAVEL, LOCAL AREAS OF CLAY, MOIST		5			
7.7 - 8.5		SILTY CLAY - BROWN TO RED, SOME SAND, SOME GRAVEL, IRON STAINING, FLINT, SLIGHTLY MOIST.		7			
8.5 - 9.0		SAND & GRAVEL - LIGHT TO DARK BROWN, SAND GRAINS ROUNDED TO SUBANGULAR, MOIST.		9			
Angered down to 36.8'				11			
Boring Complete at 36.8'				12			
DTW = 18.55' (AT COMPLETION OF DRILLING)							



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BORING NO. <u>B4</u>		WELL NO.	GROUNDLEVEL ELEV.	PAGE <u>1</u> OF <u>2</u>				
COUNTY <u>LA SALLE</u>	SITE NO. <u>09982903</u>	DATE <u>April 25/1984</u>	FINISH	ANNULUS FILL MATERIAL				
SITE <u>WEDRON / HOXSEY</u>		START	TIME	ABOVE PACKING				
BORING LOCATION <u>~ 50' SOUTH OF MARTIN MARIETTA SCALE HOUSE</u>		START	FINISH	PACKING				
DRILLING EQUIPMENT <u>CME 55</u>	SIZE <u>3.25" ID</u>	TYPE <u>HOLLOW STEM AUGER</u>		SCREEN				
COMPLETION DEPTH <u>32.5'</u>	BEDROCK DEPTH <u>?</u>	TOP OF CASING <u>-</u>						
WELL CASING	TYPE AND QUANTITY		SAMPLES					
SCREEN INTERVAL	TYPE AND QUANTITY		PERSONNEL					
ELEV.	DESCRIPTION	DEPTH	Sample No.	Sampler Type	Sample Recovery Ft.	Penetrometer (Strength)	N Value (Blows)	REMARKS
		0						
	0.0-0.6 CLAYEY SILT - DARK BROWN TO BLACK, SOME ROOTS, MOIST, (FILL).	1	45	10/15	5/5			
	0.6-1.0 SAND - BROWN, ORGANIC MATERIALS, V. MOIST, (FILL).	2	55	15/15	21/21			
	1.0-3.0 SANDS & GRAVELS - LIGHT BROWN TO DARK BROWN, DRY.	3	55	15/15	18/19			
	3.0-3.3 SAND - DARK BROWN, SOME GRAVEL, DRY.	4	55	15/15	19/18			
	3.3-3.55 SAND - VERY FINE, WHITE, WET.	5	55	11/15	20/20			
	3.55-4.5 SAND - TAN TO DARK BROWN, SOME GRAVEL, MOIST.	6	55	13/15	6/11			
	4.5-4.7 SAND - GRAY, SOME GRAVEL, DAMP.	7	55	12/15	14/15			
	4.7-7.5 SANDS & GRAVELS - TAN TO RED, LOCAL BEDDING OF CLAYS & SILTS, MOIST.	8	55	12/15	20/22			
	7.5-8.0 SAND - BROWN TO TAN, SOME GRAVEL, MOIST.	9	55	14/15				
	8.0-8.5 CLAYEY SILT - LIGHT TO DARK BROWN, SOME GRAVEL, SLIGHTLY MOIST.	10	55	12/15				
	8.5-8.8 SAND WITH SOME GRAVEL - COARSE SAND, LIGHT BROWN, SLIGHTLY MOIST.	11	55	12/15				
	9.0-9.35 SILTY SAND - SOME GRAVEL, BROWN TO RED, MOIST.	12	55	12/15				
	9.35-9.6 SAND - MEDIUM GRAINED, GRAY, SLIGHT ORGANIC ODOOR, MOIST.	13	55	12/15				
	9.6-11.5 SAND WITH GRAVEL - TAN TO RED, LARGE COBBLE AT TIP, DAMP.	14	55	12/15				
	11.5-12.1 SAND - DARK BROWN TO RED, SLIGHT ODOOR, VERY MOIST.							
	12.1-14.7 SANDS & GRAVELS - LIGHT BROWN TO GRAY, SAND GRAINS ARE ROUNDED, COARSE SAND LAYER 12.65-12.9							



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BORING NO. B4 WELL NO. \_\_\_\_\_ GROUNDLEVEL ELEV. \_\_\_\_\_ PAGE 2 OF 2

COUNTY LA SALLE SITE NO. 09982903

SITE WEDRON / HOXSEY

BORING LOCATION

DRILLING EQUIPMENT

SIZE

TYPE

COMPLETION DEPTH

32.5'

BEDROCK DEPTH

TOP OF CASING

WELL CASING

TYPE AND QUANTITY

DATE

FINISH

ANNULUS FILL MATERIAL

ABOVE PACKING

TIME

FINISH

PACKING

SCREEN

## SAMPLES

PERSONNEL

SCREEN INTERVAL

TYPE AND QUANTITY

ELEV.

DESCRIPTION

DEPTH

Sample No.

Sample Type

Sample Recovery Ft.

Penetrometer (Strength)

N Value (Blows)

L- TAG.  
D- DMT.  
H- KWB.

REMARKS

14.7-14.8 SAND - BLACK, ODD, WET.

14.8-15.3 SAND - COARSE TO FINE GRAVEL, BROWN, WET.

15.3-15.8 SAND - GRAY TO BLACK, SOME GRAVEL, ODD, WET.

15.8-15.95 CLAY - RED, TIGHT, DAMP.

15.95-16.2 SANDS & GRAVELS - GRAY, MOIST.

16.2-16.4 FRAGMENTS OF LIMESTONE / SANDST.

BORING COMPLETE AT 32.5

- DIFFICULTY REMOVING AUGER FROM BOREHOLE. DREW RIG FAILURE - HAD TO ABANDON BOREHOLE.

15

13/1.5

13/13

15

14/15

7/100

BEGAN AUGERING WITHOUT CONTINUOUS SAMPLER.



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BORING NO. <b>B5</b>		WELL NO. <b>G103</b>		GROUNDLEVEL ELEV. <b>522.40</b>		PAGE <b>1</b> OF <b>1</b>	
COUNTY <b>LA SALLE</b>		SITE NO. <b>09982903</b>		DATE <b>MAY 02, 1984</b>		ANNULUS FILL MATERIAL <b>CUTTINGS</b>	
SITE <b>WEDRON / HOXSEY</b>				START TIME <b>7am</b>		FINISH TIME <b>9:30am</b>	
BORING LOCATION <b>~ 5' SOUTH OF B4</b>				PACKING: <b>CONCRETE / BENTONITE</b>		SCREEN: <b>NATURAL MATERIALS</b>	
DRILLING EQUIPMENT <b>CME 55</b>		SIZE <b>3.25" ID</b>		TYPE <b>HOLLOW STEM AUGER</b>			
COMPLETION DEPTH <b>32.5'</b>		BEDROCK DEPTH <b>?</b>		TOP OF CASING <b>525.40</b>			
WELL CASING <b>35.55' 2" ID PVC SCHEDULE 40 SCREEN JOINT</b>		TYPE AND QUANTITY <b>(TEFLON TAPED JOINTS, 1 LAP, 1 DRIVE CONE)</b>		SAMPLES		PERSONNEL <b>L.T. GREET'S D.D. TOAN H.K. BOSIE</b>	
SCREEN INTERVAL <b>15.0' HACK SAW SCREEN.</b>		TYPE AND QUANTITY		Sample No.		REMARKS	
ELEV. <b>522.40</b>		DESCRIPTION		DEPTH			
		AUGERED DOWN TO 32.5'					
		BORING COMPLETE AT 32.3'					
		INSTALLED WELL.					



John Endy, weedon silica.

matt,  
schiffbine

Jay Gibbins Rockford Region

815-987-7418

Dave Follally 815-252-4141  
Ill,