Groundwater Flow and Advective Modeling of Contaminant Migration near Ripon, Wisconsin

by

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A thesis submitted in partial fulfillment of the requirements
for the degree of
Master of Science
(Geology)
University of Wisconsin-Madison
1991

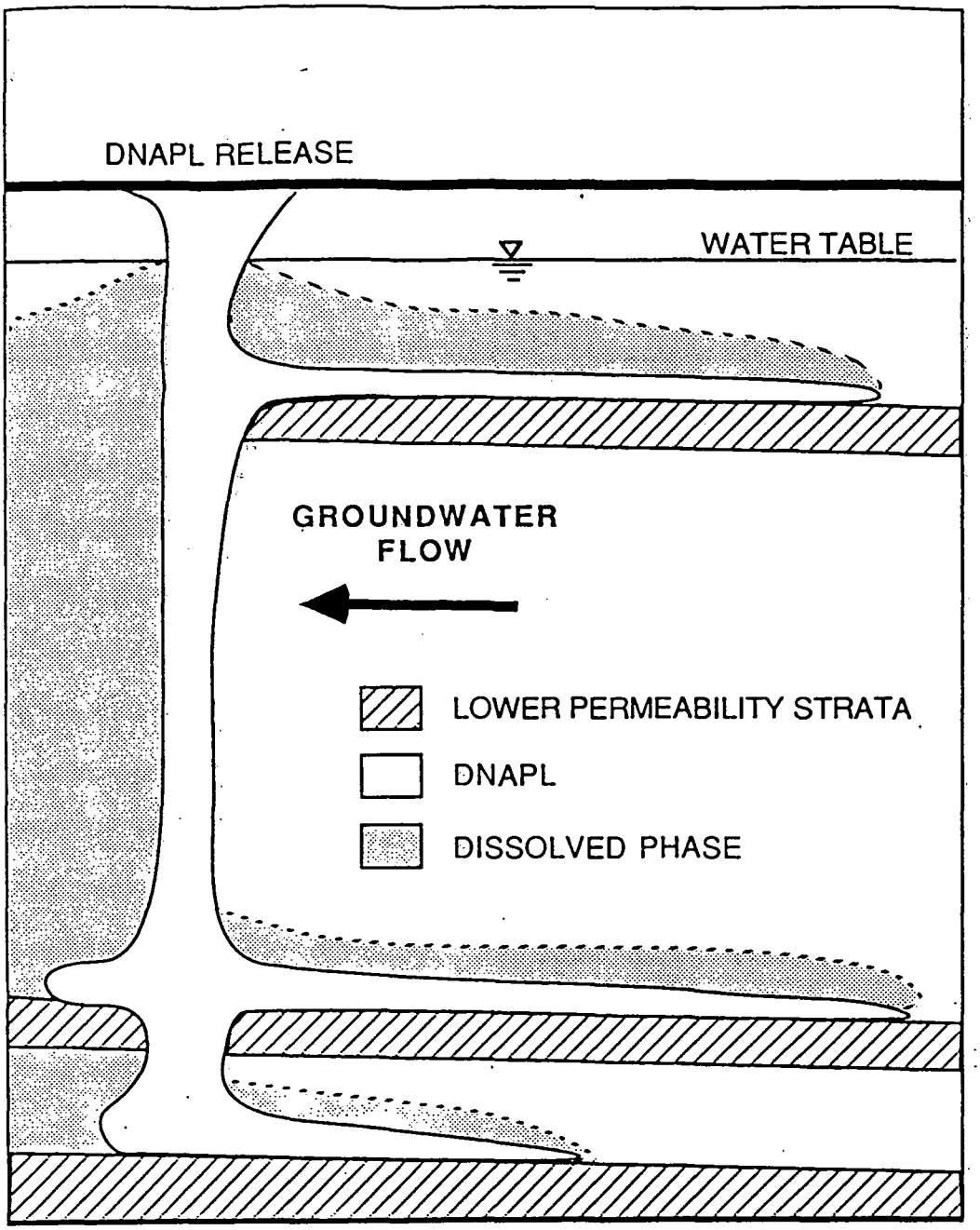


Figure 1.3. Schematic representation of DNAPL migration. (After Feenstra and Cherry, 1988)

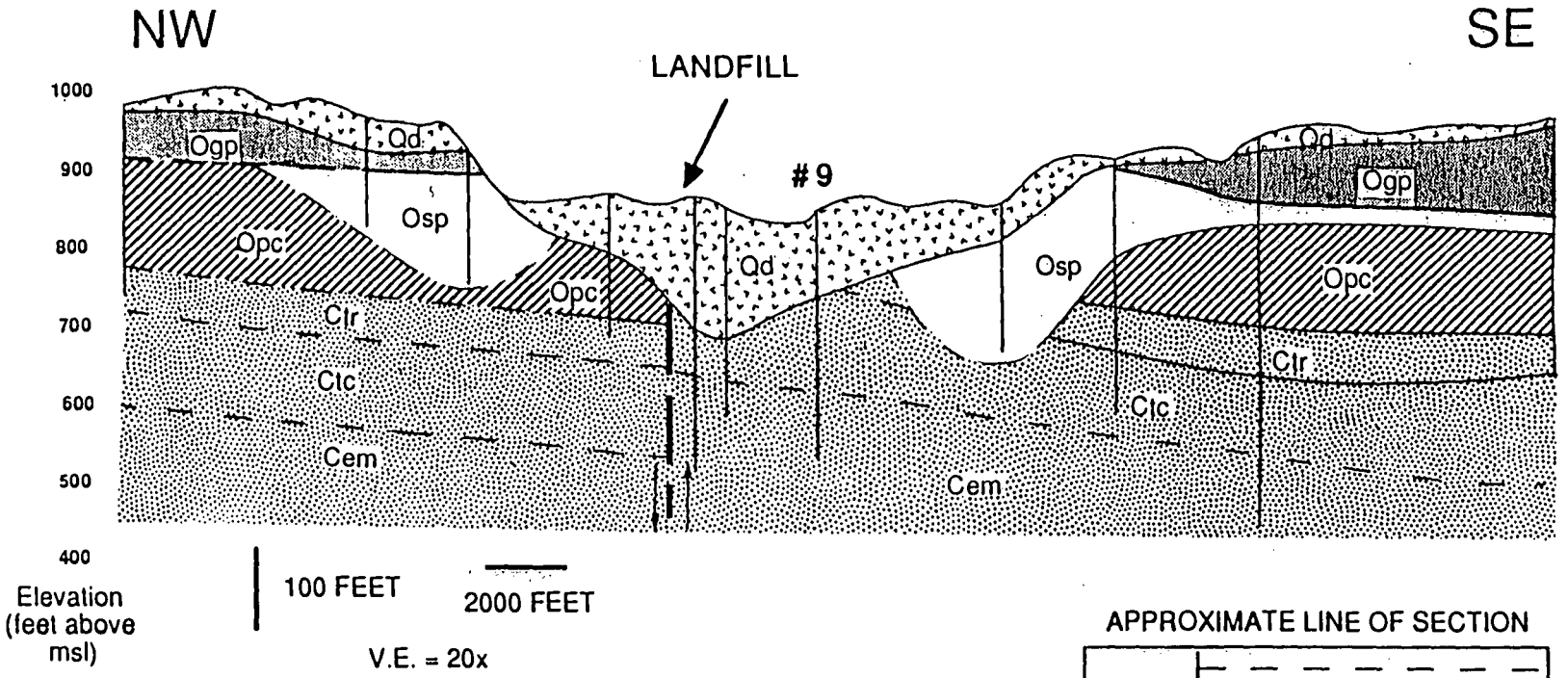


Figure 2.3. Cross section through modeled area. Vertical lines show location and depth of well control (squares on inset map). Contacts and fault dashed where inferred. Qd = drift; Ogp = Sinnipee Group; Osp = St. Peter Sandstone; Opc = Prairie du Chien Group; Ctr = Trempealeau Group; Ctc = Tunnel City Group; Cem = Elk Mound Group. See Figure 2.4 for more information.

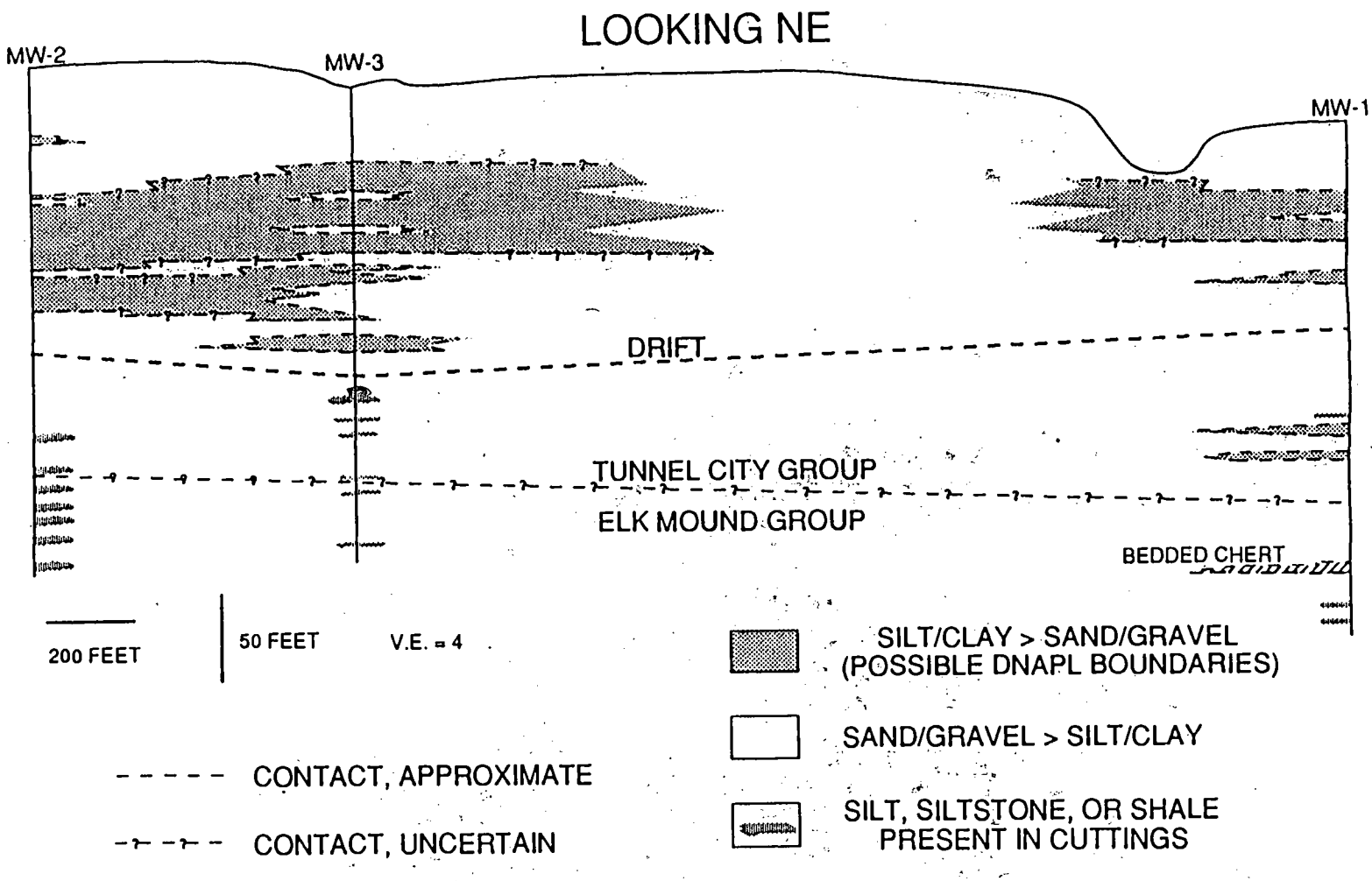


Figure 2.6. Cross section between monitoring wells. Correlation of the silt and clay units is difficult, especially between MW-3 and MW-1.

TABLE 2.1
SUMMARY OF SAMPLING RESULTS

WELL	DATE	VC (µg/l)	DCE (µg/l)	T (µg/l)
MW-1S	11/15/90	0	0	0
	5/5/91	0	0	0
MW-1I	11/15/90	0	0	0
	5/5/91	0	0	0
MW-1D	11/15/90	0	0	0
	5/5/91	0	0	0
MW-2S	11/15/90	4.2	4.2	0
	5/5/91	2.8	5.2	0
MW-2I	11/15/90	0	0	0
	5/5/91	0	0	0
MW-2D	11/15/90	3.4	3.3	0
	5/5/91	0	0	0
MW-3A	2/18/91	0	0	28
	5/7/91	0	0	35
MW-3B	2/18/91	0	0	25
	5/7/91	0	0	15

VC = vinyl chloride
DCE = 1,2-dichlorethylene
T = toluene

The third set of monitoring wells, MW-3A and MW-3B, are separate wells located within seven feet of each other. These were drilled and installed by CTW Corporation from January 7 - 25, 1991. In this case, the method employed was direct circulation rotary. While drilling through the drift, bentonite mud was the fluid, and air was used in bedrock. Casing through the drift was driven after the bit reached bedrock.

MW-3A is the deeper of the two holes, extending to 278 feet, while MW-3B extends to 182 feet deep. Each well was constructed with threaded, two-inch diameter schedule 40 PVC with five-foot number ten slot screens and two-foot blanks at the bottom. As before, a coarse sand filter pack was poured to two feet above the screen, but was topped with two feet of pure quartz sand and then two feet of bentonite pellets. The remaining portion of each hole was filled with bentonite grout.

The following figures are graphic logs and cartoons showing the stratigraphy and construction of each well. Abbreviations used in descriptions are as follows:

BRN = brown; CHT = chert; CRSE = coarse; F = fine; GLAUC = glauconite; GLAUCIC = glauconitic; GRN = green; MED = medium; OCC = occasional; ORGE = orange; SH = shale; SRTED = sorted; SS = sandstone; TR = trace; V = very; VF = very fine; W/ = with.

APPENDIX B
MONITORING WELL DEVELOPMENT AND SAMPLING

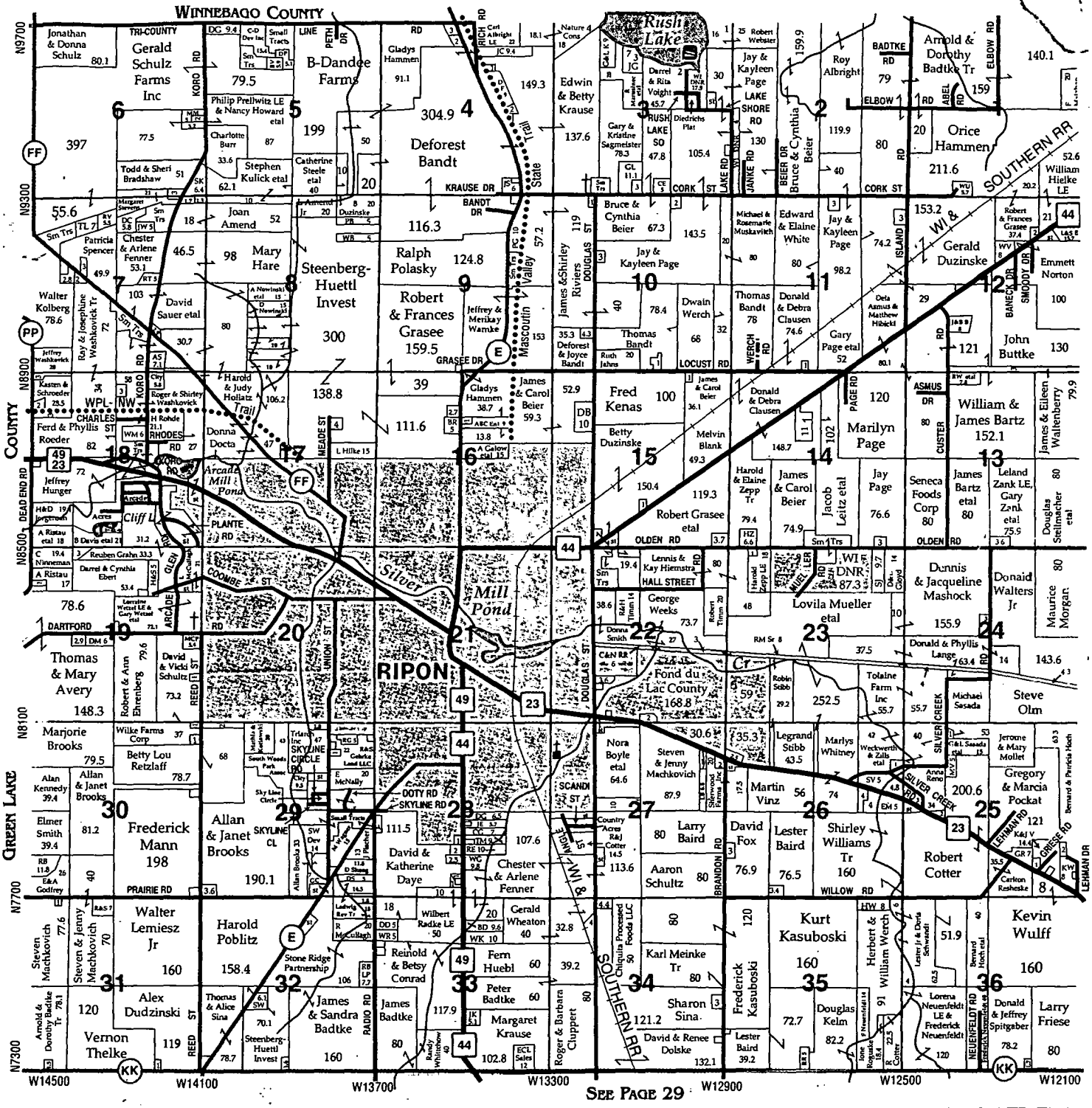
Nests MW-1 and MW-2 were developed on November 15, 1990. In each case, high purity nitrogen gas was pumped down the well to blow out standing water. This was repeated until approximately three well volumes were expelled. The well was then pumped by hand to remove an additional three volumes. After this, the first set of samples was collected with the hand pump.

The MW-3 wells were developed on February 8, 1991. Because of the larger diameter of these wells, it was possible to use a Fultz backpack pump, which promptly failed. A hand pump was then used to remove at least four well volumes and then sample the wells.

All wells were sampled once more, on May 5 or May 7, 1991. For this round, the hand pump was used to remove three well volumes prior to sample collection. Sampling results are in Table 2.1.

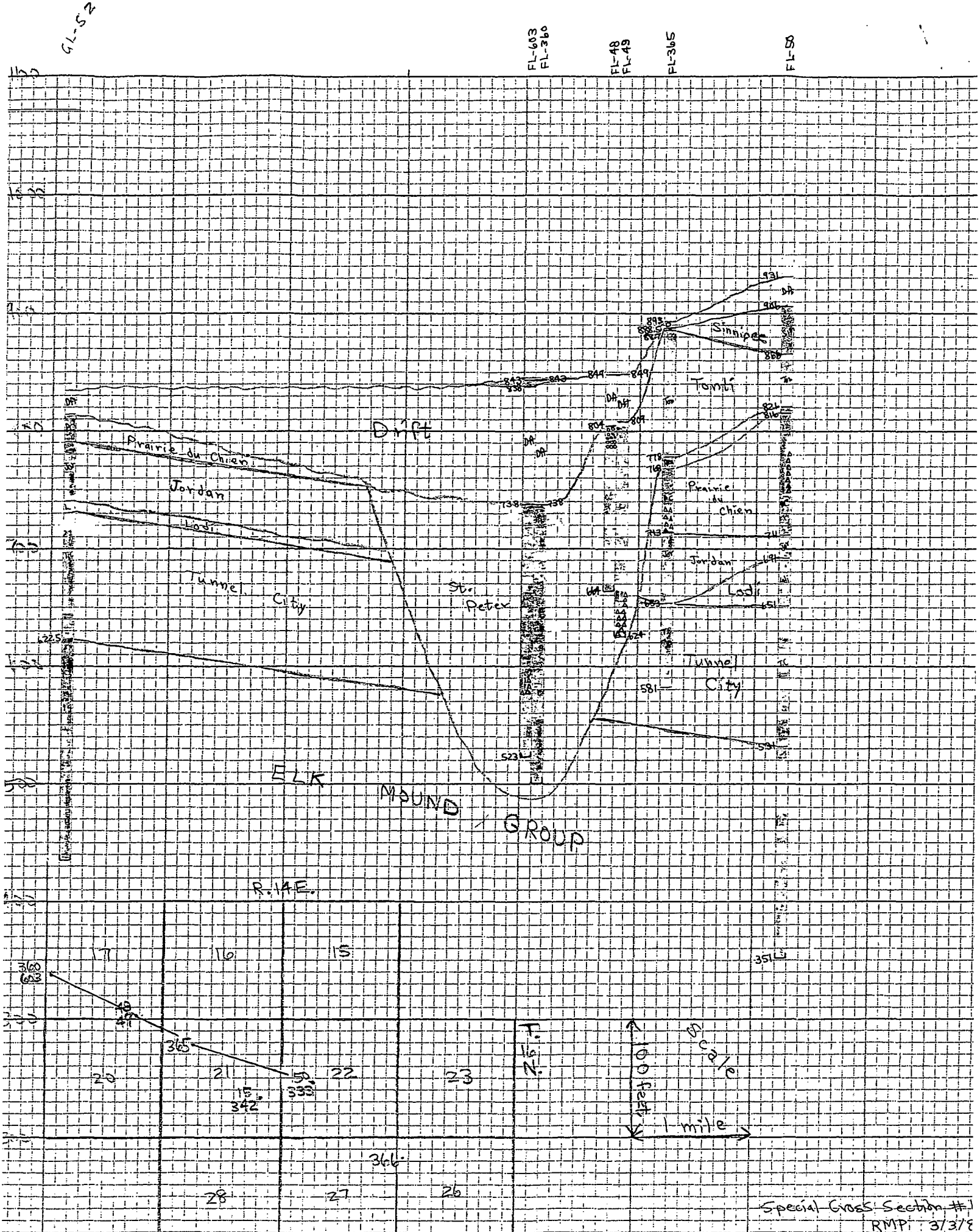
Ripon

T.16N. - R.14E



SEE PAGE 29

East - West Cross Section — Green Lake & Fond du Lac Counties — Green Lake to Ripon



Special Cross Section #1
RMP: 3/3/8

TEST WELL NO.2, WISCONSIN POWER AND LIGHT CO., RIPON, WIS.
SW¼NW¼ sec. 28, T. 16 N1 R. 14 E. Elevation about 970 ETM
I. E. Brown, Driller C. F. Dobson, Engineer, 1948
Samples examined by F. T. Thwaites, Nos. 141414-141485

DRIFT		0-5	5	Soil, black
		5-15	10	Till, yellow-gray
	25	15-25	10	Gravel, fine, much silt
PLATTEV.		25-45	20	Dolomite, light gray, some yellow-gray
		45-60	15	Dolomite, light gray, blue-gray, sandy
	50	60-75	15	Sandstone, coarse to fine, gray, very dolomitic
ST PETER		75-165	90	Sandstone, fine to medium, some silt, light gray
		165-180	15	Sandstone, medium to fine, light gray
		180-190	10	Sandstone, fine to medium, some silt , light gy
		190-210	20	Shale, red, light gray, purple
		210-225	15	Sandstone, fine to coarse, gray
		225-240	15	Shale, red
		240-245	5	Sandstone, fine to medium, red; shale, red
		245-250	5	Shale, red
		250-260	10	Sandstone, fine to medium, pink
		260-285	25	Sandstone, fine to medium, light gray
		285-290	5	Shale, red, some gray
		290-295	5	Sandstone, fine to medium, pink
		295-305	10	Sandstone, fine to medium, light gray
		305-325	20	Sandstone, fine to medium, silty, red
	260	325-330	5	Sandstone, fine to medium, light gray
		330-335	5	Sandstone, fine, silty, pink-gray
FRA		335-360	25	Sandstone, fine to medium, silty, pink, dolomitic
	25			

Formations: Drift; Platteville; St. Peter; Franconia
Dry hole

WISCONSIN GEOLOGICAL SURVEY, Science Hall, Madison 6, Wis. Log No. W1 - 5013

GREEN GIANT
~~CENTRAL WISCONSIN~~ CANNERIES WELL, RIPON, WIS.
NW¼SW¼ sec. 22, T. 16 N., R. 14 E. Elevation about 930
I. E. Brown, Driller, 1946
Samples examined by F. T. Thwaites, Nos. 134843-134935 (202192-202208)

	0-25	25		Drift, no samples (log: extends to 20)
25				
PLASTP	25-40	15		Dolomite, light gray, light blue-gray
	40-65	25		Dolomite, light gray to gray
40				
	65-70	5		Sandstone, fine to medium, light gray
	70-80	10		Sandstone, medium to fine, light gray
	80-110	30		Sandstone, fine to medium, light gray
50				
	110-115	5		Shale, light red
LOWER M	115-135	20		Dolomite, light gray
	135-145	10		Sandstone, fine to medium, lt.gy, dol; sh, gr
	145-185	40		Dolomite, light gray; chert, white
	185-210	25		Dolomite, gray and pink
105				
	210-220	10		Dolomite, gray
TREM	220-240	20		Sandstone, medium to fine, pink, gray, dol.
	240-260	20		Siltstone, sandy, light gray, dolomitic
60	260-280	20		Siltstone, light gray, dolomitic
FRANCONIA	280-305	25		Sandstone, fine to medium, pink, red, dolomitic, glauconitic
	305-310	5		Sandstone, very fine, lt.gray, very dol.
	310-315	5		Siltstone, sandy, gray, dolomitic
	315-320	5		Sandstone, fine to medium, lt.gray, dolomitic
	320-335	15		Sandstone, fine, lt.gray, pink, dolomitic
	335-340	5		Sandstone, medium to fine, light gray
	340-350	10		Sandstone, fine to medium, light gray, dol.
	350-370	20		Sandstone, medium to fine, light gray, dol.
	370-375	5		Sandstone, fine to medium, light gray, dol.
	375-360	5		Sandstone, very fine, pink, dolomitic
	380-395	15		Shale, sandy, gray, red, dolomitic, glauc.
130	395-400	5		Sandstone, fine, silty, pink, dolomitic
	400-410	10		Sandstone, medium to coarse, light gray
DEAU C 10	410-420	10		Sandstone, fine to medium, light gray
	420-430	10		Sandstone, fine, silty, red
	430-455	25		Sandstone, fine to medium, silty, light gray
	455-465	10		Sandstone, medium to fine, light gray
	465-475	10		Sandstone, fine, silty, pink
	475-480	5		Sandstone, medium to fine, white
75	480-495	15		Sandstone, fine to medium, light gray

15" pipe
21
12" hole
10" pipe cemented
80' water (original)
98' water after deepening
10" hole
8" liner
175'
hole cemented to 250' and drilled out to 8" hole
250'
water level was 26' in Dec. 1953, and from 87 to 19" in May - June, 1958 before deepening

Formations: Drift; Platteville: St. Peter ; ; Lower Magnesian (Prairie du Chien); Trempealeau; Franconia; Dresbach (Galesville); Eau Claire

Deepened in 1958 by Bergerson-Caswell, Inc., Drillers

DRESBACH	495-505	10		Sandstone, med. & fine gr., dark red, dolomitic
	505-540	35		Sandstone, medium grained, light pink-gray
	540-560	20		Sandstone, very fine & fine grained, pink
	560-570	10		Sandstone, fine grained, pink-gray
160	570-580	10		Sandstone, fine & medium grained, pink-gray

8" hole

Dresbach group undifferentiated entered 160'
Tested, after well was deepened, for 24 hours at 350 g.p.m., specific capacity = 11.7 g.p.m./ft. of drawdown. In March 1956 hole was shot at depths from 230' to 475' with a total of 610# of dynamite. Water level dropped from 41' to 72' after shooting at 455'. After shooting well was tested for 24 hours at 470 g.p.m., specific capacity = 7.5 g.p.m./ft. of drawdown.

TEST WELL NO. 2, WISCONSIN POWER AND LIGHT CO., RIPON, WIS.
SW¼NW¼ sec. 28, T. 16 N1 R. 14 E. Elevation about 970 ETM
I. E. Brown, Driller C. F. Dobson, Engineer, 1948
Samples examined by F. T. Thwaites, Nos. 141414-141485

DRIFT	0-5	5		Soil, black
	5-15	10		Till, yellow-gray
25	15-25	10		Gravel, fine, much silt
PLATTEV.	25-45	20		Dolomite, light gray, some yellow-gray
	45-60	15		Dolomite, light gray, blue-gray, sandy
50	60-75	15		Sandstone, coarse to fine, gray, very dolomitic
ST PETER	75-165	90		Sandstone, fine to medium, some silt, light gray
	165-180	15		Sandstone, medium to fine, light gray
	180-190	10		Sandstone, fine to medium, some silt, light gy
	190-210	20		Shale, red, light gray, purple
	210-225	15		Sandstone, fine to coarse, gray
	225-240	15		Shale, red
	240-245	5		Sandstone, fine to medium, red; shale, red
	245-250	5		Shale, red
	250-260	10		Sandstone, fine to medium, pink
	260-285	25		Sandstone, fine to medium, light gray
	285-290	5		Shale, red, some gray
	290-295	5		Sandstone, fine to medium, pink
	295-305	10		Sandstone, fine to medium, light gray
	305-325	20		Sandstone, fine to medium, silty, red
260	325-330	5		Sandstone, fine to medium, light gray
	330-335	5		Sandstone, fine, silty, pink-gray
FRA	335-360	25		Sandstone, fine to medium, silty, pink, dolomitic
25				

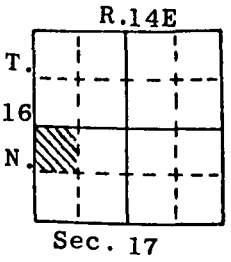
Formations: Drift; Platteville; St. Peter; Franconia
Dry hole

UNIVERSITY OF WISCONSIN GEOLOGICAL & NATURAL HISTORY SURVEY
1815 University Avenue, Madison, Wisconsin 53706

Log No. B58-FL-360
Sample Nos. Selective Retention

Well name Wisconsin Power & Light Co. Test Hole #9-A
Ripon Township
Owner.... Wisconsin Power & Light Co.
Address.. Ripon, Wisconsin
Driller.. Zoellner Well Drilling Co.
Engineer.

County: Fond du Lac
Completed... 1/26/71
Field check.
Altitude.... 840' ETM
Use..... Test
Static w.l.. 19'
Spec. cap... 4.5



Quad. Ripon 7½'

Drill Hole						Casing & Liner Pipe or Curbing							
Dia.	from	to	Dia.	from	to	Dia.	Wgt.& Kind	from	to	Dia.	Wgt.& Kind	from	to
8 3/4"	0'	133'	6"	133'	343'	6"	New Black, Steel 18.97 lbs. per ft. P.E. Rotary	+18"	133'				

Grout: Kind	from	to
Neat Cement	0'	120'

Samples from 0' to 343' Rec'd: 3/29/71 Studied by: M. Roshardt Issued: 1/5/72

Formations: Drift, Jordan Formation, Sandstone (Tunnel City Group and older formations)

Remarks: Well tested 72 hours at 288 gpm with 64 feet of drawdown.
Formations revised - 12/7/82 - RMP.

LOG OF WELL:

	Depths	Graphic Section	Rock Type	Color	Grain Size Mode	Grain Size Range	Miscellaneous Characteristics
DRIFT	0-5 S		Silt	Brown	--	--	Clayey. Trace sand.
	5-10		Gravel	Mixed	S peb	Gran/S peb	Little sand, calcareous clay.
	10-15 S		"	"	"	"	--
	15-20		"	"	Gran	"	--
	20-25		"	"	S peb	"	--
	25-30		"	"	Gran	"	--
	30-35		"	"	"	"	--
	35-40		"	"	S peb	"	Little calcareous clay, sand.
	40-45		"	"	"	"	--
	45-50 S		"	"	"	"	--
	50-55 S		Clay	Pnk brown	--	--	Calcareous. Little sand. Trace gravel.
	55-60		"	"	--	--	Same
	60-65 S		Gravel	Mixed	Gran	Gran/S peb	Trace calcareous clay.
	65-70 S		"	"	S peb	"	Same
	70-75 S		"	"	"	"	"
	75-80 S		"	"	"	"	"
	80-85 S		"	"	"	--	--
	85-90 S		"	"	"	--	--
	90-95 S		"	"	"	--	--
105'	95-100S		"	"	"	--	--
Jor. 15'	100-105S		Sand	Orange gry	M & C	Fn/C	--
	105-110S	G	Sandstone	Pink gray	C	Fn/VC	Trace dolomite cement. M glauconite.
	110-115	G	"	"	"	"	Same
	115-120	G	"	"	"	"	"
SANDSTONE	120-126S	Dom	Shale	Red brown	--	--	Little sand, hematitic-glauconitic dolomite.
	126-130S	Dm G	Sandstone	Pale gray	M	Fn/C	Trace M/C glauconite.
	130-135	G G	"	"	"	"	Little M/C glauconite.
	135-145	G G	"	"	M & C	"	Same
	145-148	G G	"	"	M	"	"
	148-150S	G Dm	"	Yellow gry	"	"	Same plus trace white chert.
	150-151S	Dm	"	Pl pur gry	"	"	Little M/C glauconite. Trace hematite coatings.
	151-160S	Dm	"	Orange bn	Fn &M	"	Little hematitic dolomite cement. Trace green shale.

Log No. B58-FL-360
Sample Nos. Selective Retention

Well name: Wisconsin Power & Light Co. Test Hole #9-A

Depths	Graphic Section	Rock Type	Color	Grain Size		Miscellaneous Characteristics
				Mode	Range	
160-170S		Sandstone	Pl yl gry	M	Fn/C	Trace dolomite cement.
170-173		"	"	"	"	Same
173-175		"	Yl or gry	C	"	Trace dolomite cement, orange chert, green micaceous sh.
175-180		"	"	"	"	Same but no shale.
180-185S		"	"	"	"	Same plus few feldspar grains.
185-195		"	"	"	Fn/VC	Same but no feldspar.
195-200		"	"	M &VC	"	Same plus trace green shale.
200-205S		"	"	M & C	"	Same but no shale.
205-208S		"	Red brown	"	Fn/C	Much dolomite cement, M/C glauconite.
208-210S		"	Yl gn gry	C	Fn/VC	Much M/C glauconite. Trace dolomite cement.
210-215S		"	Pl yl gry	C &VC	M/VC	--
215-220		"	"	C	"	Little M/C glauconite, orange & cream cherts.
220-225		"	"	"	"	Trace glauconite, chert.
225-230S		"	"	M & C	Fn/VC	Same
230-235S		"	"	"	Fn/C	Trace chert.
235-240S		"	"	"	"	Trace chert, glauconite.
240-248S		"	"	C	"	Trace chert.
248-250S		"	Purple bn	M	"	Much orange chert. Little red shale.
250-255S		"	Orange tan	"	"	Much orange chert. Trace red shale, muscovite.
255-265S		"	"	"	"	Much orange chert.
265-270S		"	"	M & C	"	Same
270-275S		"	Yellow gry	M	"	Little orange & white cherts.
275-280S		"	"	"	Fn/VC	Same
280-283S		"	Pink gray	"	"	Trace orange & white cherts, hematite coatings.
283-285S		"	Yellow gry	"	"	Little orange & white cherts.
285-290S		"	"	"	Fn/C	Same
290-295S		"	Pink gray	C	M/C	--
295-305S		"	Pl yl gry	M & C	Fn/C	Trace orange & white cherts.
305-310S		"	Pink gray	"	"	Same
310-315S		"	"	"	"	Trace white chert.
315-316S		"	"	M	"	Same
316-317S		"	Yellow gry	"	"	Trace white chert, purple-red mottled micaceous shale.
317-325S		"	"	M & C	"	Same
325-330S		"	"	C	Fn/VC	"
330-335S		"	"	M & C	Fn/C	"
335-340S		"	Red brown	M	"	Same plus much hematite coatings.
340-343S		"	Purple bn	"	"	Much siliceous mottled red-white shale. Tr white chert.

SANDSTONE

223

END OF LOG

*Unable to define sandstone formation on basis of samples without study of the area. The sandstone contains glauconite characteristic of the Tunnel City Group.

WISCONSIN GEOLOGICAL SURVEY, Science Hall, University of Wisconsin, Madison, Wis. Log No. ~~WW-359~~ FL-365

Duplicate Set of Samples

Wis. Power & Light, Ripon * Well #8, PACIFIC St.

C, NW, SE, NE, NW ~~SW, SW, SW~~ 4, Sec. 21, T 16N, R 14E

I. E. Brown, Driller - 9-1-64

Sample Nos. 248096-249161, Examined by M. E. Ostrom - Oct., 1964

D P		0-4½	4½	Cl, dk yl bn, Dol, P mch dol, st, tr snd
		4½-6	1½	Dol, MVl bn, fn, dns, tr sh, st
S T P E T E R		6-15	9	Ss, lt yl rd, M, C, rnd, Psrtg, tr fn, Vfn, mch dol, sh
		15-25	10	Ss, lt yl, M, rnd, Fsrtg, slt trC, mchFe-cem, dol
		25-30	5	Ss, lt yl rd, M, rnd, Fsrtg, slt frC, fn, mchFe-cem, dol
		30-35	5	Ss, lt yl rd, M, rnd, Fsrtg, slt trC, fn, mchFe-cem
		35-40	5	Ss, Vlt pl yl, M, rnd, Fsrtg, slt trC, fn tr stnd pyr
		40-60	20	Ss, Vlt pl yl, M, rnd, Fsrtg, slt trC, fn, tr stnd pyr
		60-65	5	Ss, lt yl M, rnd, Fsrtg, slt trC, fn, tr stnd pyr
		65-70	5	Ss, Vlt pl yl, M, rnd, Fsrtg, slt tr fn, Vfn
		70-75	5	Ss, lt yl, M, rnd, Fsrtg, slt tr fn, Vfn, slt tr stnd pyr
		75-80	5	Ss, lt yl, M, rnd, Fsrtg, tr fn, slt tr mxd snd
		80-90	10	Ss, lt yl, M, rnd, Fsrtg, tr fn, tr stnd pyr
		90-95	5	Ss, lt yl, M, rnd, Fsrtg, tr fn, C, tr stnd pyr
		95-100	5	Ss, lt yl, M, rnd, Fsrtg, tr fn
		100-105	5	Ss, Vlt yl, M, rnd, Fsrtg, tr fn, mchFe-cem
		105-110	5	Ss, Vlt ylrd, M, rnd, Fsrtg, tr fn, tr stnd pyr
		110-115	5	Ss, Vlt yl rd, M, rnd, Fsrtg, tr fn, tr stnd pyr
		115-120	5	Sh, Vmxd, Si, VG, mch hdSs
	119	120-125	5	Ss, lt rd, M, Srnd, Fsrtg, tr fn, mch sh
P d C		125-130	5	Dol, lt gry, M, dns, mch sh, Ss
		130-135	5	Dol, mxd, fn, dns, mch sh, Ss
		135-145	10	Dol, mxd, fn, dns, mch Ss, sh
		145-150	5	Dol, mxd, fn, dns, mch sh
		150-155	5	Dol, mxd, fn, dns, mchSs, sh
		155-180	25	Cht, gry&wh, pseudo oolc
	60	180-185	5	Ss, mxd, M, fn, Sang, Fsrtg, abund ools, cht
T R E M P		185-190	5	Ss, lt rd, M, C, srnd, Fsrtg, tr fn, Vfn
		190-205	15	Ss, Vlt rd, M, C, Srnd, Fsrtg, tr fn, Vfn
		205-215	10	Ss, Vlt rd, M, Srnd, Fsrtg, tr fn, C
		215-225	10	SS, Vlt rd, M, Srnd, Fsrtg, tr fn
		225-232	7	No Sample
		232-240	8	Ss, dk rd, fn, Vfn, Sang, Fsrtg, Si, VG
	60	240-245	5	Ss, mxd, M, fn, Sang, Fsrtg, Dol, VG, trVfn, mch dol
F R A N C O N I A		245-250	5	Ss, lt yl rd, M, Ang, Fsrtg, trVfn, fn, tr dol, glauc
		250-255	5	Ss, Vlt yl, M, Sang, Fsrtg, tr fn, tr dol, glauc, calc
		255-260	5	Ss, Vlt yl, M, Sang, Fsrtg, tr fn, tr dol, glauc, calc dol, calc
		260-270	10	Ss, lt pl yl or, M, C, Sang, Psrtg, tr fn, Vfn, mch
		270-275	5	Ss, mxd, C, VC, Sang, Psrtg, M, Vfn, mch dol, calc
		275-280	5	Ss, lt rd, M, Sang, Psrtg, M, Vfn, C, fn, mch dol, calc
		280-285	5	Ss, lt rd, M, fn, Sang, Psrtg, trC, Vfn, mch dol, calc
		285-300	15	Ss, lt yl rd, M, fn, Sang, Psrtg, trC, Vfn, mch dol, calc, tr sh
	67	300-302	2	Ss, lt yl, M, fn, Sang, Psrtg, trVfn, mch dol, calc
		302-308	6	No Sample
	70	308-312	4	Ss, lt rd, M, fn, Sang, Psrtg, trVfn, mch dol, calc
	3	312-315	3	No Sample

+36"

neat cement grout

20" Hole

16" O.D. P

45' Water L.

51'

15¾" Hole

315'

Formations: Drift, Platteville, St. Peter, Prairie du Chien, Trempealeau, Franconia

Well tested for 72 hrs. at 800 gpm with 49 feet of drawdown.

Specific capacity = 16.3 gpm per ft. of drawdown.

* Duplicate Sample Set See FL-365, 251501 - 251565

UNIVERSITY OF WISCONSIN GEOLOGICAL & NATURAL HISTORY SURVEY
1815 University Avenue, Madison, Wisconsin 53706

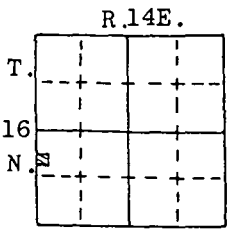
Log No. D119-FL-603

Well name Wisconsin Power & Light Co. Well #9

County: Fond du Lac

Owner.... Wisconsin Power & Light Co.
Address.. 112 Watson St., P.O. Box 203
Ripon, WI 54971
Driller.. Layne-Northwest Co.
Engineer. Wisconsin Power & Light Co.
Madison, Wisconsin

Completed... 6/72
Field check.
Altitude.... 843' ETM
Use..... Municipal
Static w.l.. 19' 5"
Spec. cap... 3.5 GPM/ft.



Quad. Ripon 7½'

Drill Hole						Casing & Liner Pipe or Curbing							
Dia.	From	to	Dia.	from	to	Dia.	Wgt.& Kind	from	to	Dia.	Wgt.& Kind	from	to
24"	0	114'	23"	114'	320'	24"	3/8 wall steel bk A53 Grade B welded	+6"	114'	16"	3/8 wall bk A53 Grade B welded	+12"	135'

Grout	from	to
Neat Cement	0	135'

Drilling method:
Samples from 0 to 320' Rec'd:1/5/73

Studied by: Kathleen Massie

Issued: 5/6/83

Formations: Surface, Drift, St. Peter Sandstone.

Remarks: Well tested for 12 hours at 395 GPM with 110' 7" of drawdown.

LOG OF WELL:

	Depths	Graphic Section	Rock Type	Color	Grain Size Mode	Grain Size Range	Miscellaneous Characteristics
Sur.	0-5		Soil	Dk brown	—	—	Little gravel. Trace organic material.
DRIFT	5-10		Gravel	Mxd brown	L peb	Gran/VL peb	Fos dolomite,dol,quartz,cht,dol cem ss,trap,granite. Ltl sand.
	10-15		"	Mxd grey	M peb	Gran/L peb	Same but much sand.
	15-20		Sand	"	C	Vfn/VC	Many dolomite frags. Much gravel. Ltl silt. Trace clay.
	20-25		Gravel	"	M peb	Gran/L peb	Fos dol,dol,qtz,cht,grnt,trap. Much sand(most dolic). Tr silt.
	25-30		Sand	"	C	Vfn/VC	Many dolomite fragments. Much gravel. Trace silt.
	30-35		Gravel	"	L peb	Gran/VL peb	Fos dolomite,dolomite,quartz,chert,trap,granite. Much sand.
	35-40		Sand	Brown	Fn	Vfn/VC	Dolomitic. Much silt. Little clay. Trace gravel.
	40-45		"	"	C	"	Many dolomite fragments. Much gravel. Trace silt.
	45-50		Clay	Gry brown	—	—	Calcareous. Much silt. Little sand.
	50-55		Silt & cl	"	—	—	Calcareous. Little sand. Trace gravel.
	55-60		Snd & silt	"	Fn	Vfn/VC	Calcareous. Much gravel, clay.
	60-65		"	"	"	"	Same.
	65-70		"	"	"	"	"
	70-75		"	"	Fn/M	"	Same but little gravel.
	75-80		Silt & cl	"	—	—	Calcareous. Much sand. Little gravel.
	80-85		Snd & silt	"	M	Vfn/VC	Calcareous. Much clay. Little gravel.
	85-90		Gravel	Bk & grey	Gran	Gran/M peb	Gab, dior, fos dol, dol, qtz, grnt. Much sand.
	90-95		Snd & silt	Gry brown	M	Vfn/VC	Calcareous. Much clay. Little gravel.
	95-100		"	"	"	"	Same but much gravel.
100'	100-105		"	Brown	"	"	Little dolomitic clay. Trace gravel.
ST. PETER	105-110		Sandstone	Pl gry bn	M/C	"	Rounded. Much caved gravel.
	110-115		"	V pl bn	M	"	Rounded. Tr G sil cem assoc w/pnk chert. Trace caved gvl & sand.
	115-120		"	Red	Fn	Vfn/VC	Srnd. Ltl V G sil cem,st. Mch hemic sh. Tr cvd gvl & snd,wh siliceous matx.
	120-125		"	Yl red	M	"	See end of log.
	125-130		"	Red	"	"	Same but much hematitic shale.
	130-135		"	Yl red	"	"	Srnd. Mch yl rd shale. Tr dk rd bn ss as above(cvd?),st,Fn glauconite.
	135-140		"	"	"	"	Same.
	140-145		"	Dull yl rd	"	"	Srnd. Ltl dull yl rd sh. Tr dk rd bn ss as above(cvd?),st,Fn/M glauconite.
	145-150		"	"	"	"	Same.
	150-155		"	Lt brown	"	"	Srnd to sang. Tr sil cem,Fn/M glauc,st,dk rd bn ss(as above,cvd).
	155-160		"	Yl red	"	"	Srnd. Mch yl rd dolic sh, Ltl yl calcus sh(occ in layers?). st. Ltl pl yl shale. Trace Fn/M glauconite.

Well name: Wisconsin Power & Light Co. Well #9

Depths	Graphic Section	Rock Type	Color	Grain Size		Miscellaneous Characteristics
				Mode	Range	
160-165		Sandstone	Yl red	Fn	Vfn/VC	Srnd. Mch yl rd dolic sh,st. Tr dol cem,Fn glauconite.
165-170		"	Rd yellow	M	"	Srnd. Mch red yellow dolic shale. Ltl silt. Tr Fn-glauconite.
170-175		"	"	Fn	"	Same plus trace good silica cement.
175-180		"	"	Fn&C	"	Srnd. Tr dol & lim cem,pnk cht,Fn glauc. Mch rd yl dolic sh,st.
180-185		"	"	C	"	Same plus trace pale yellow green dolomitic shale.
185-190		"	"	"	"	Same but no glauconite.
190-195		"	"	"	"	Srnd. Trace dolomite cem, pnk chert. Mch rd yl dolic sh, silt.
195-200		"	"	Fn&C	"	Same.
200-205		"	Strg bn	M	"	Same but strong brown shale.
205-210		"	Brown	C	"	Srnd. Tr G dol cem, Fn/M glauc, pl gn sh, pnk cht. Much dolic
210-215		"	"	"	"	Same. \ shale.
215-220		"	V pl brown	"	"	Srnd to sang. Tr P dol cem,Fn/M-glauc,mfc incl,pnk cht. Ltl
220-225		"	"	M/C	"	Srnd. Tr sil cem,Fn-glauc,mfc incl,pnk cht,silt. \ silt,shale.
225-230		"	"	"	"	Same.
230-235		"	"	"	"	Same but no cement.
235-240		"	"	C	"	Srnd. Tr pnk cht(w/tr fltg snd),Fn-glauc,mfc incl,pl gn micus
240-245		"	"	M/C	"	Same but much silt. \ shale. Ltl silt.
245-250		"	Lt rd brown	C	"	Srnd. Mch pnk dolic sh,pnk cht(w/tr rd bn hemic stng,bk hem,thin
250-255		"	"	"	"	Same plus tr pl gn shale. \ qtz layers,micus incl). Tr calc xls
255-260		Ss & chert	Rd yellow	M/C	"	See end of log.
260-265		"	"	"	"	Same plus tr mssv glauc, but tr dk rd bn hemic stng.
265-270		Chert	"	—	—	Ltl ss(as above),fltg snd,siliceous pnk sh. Few thin qtz layers.
270-275		Sandstone	Pink	M	Vfn/C	Srnd. Tr G to F \ Tr st,mssv glauc,bk hem,dk rd bn hemic stng.
275-280		"	"	"	"	Same. \ sil cem,mssv glauc. Mch pnk sh,st. Ltl cht(as above).
280-285		"	Rd yellow	"	Vfn/VC	Srnd. Tr G sil cem,dol,rd yl cht. Mch siliceous rd yl sh. Ltl
285-290		"	Lt red	"	"	Same plus tr wh siliceous & rd bn hemic shale. \ silt.
290-295		"	"	"	"	Same but much silt.
295-300		"	Rd yellow	M/C	"	Srnd. Mch rd yl siliceous cl. Ltl st. Tr wh siliceous & rd bn
300-305		"	"	"	"	Same. \ hemic shale.
305-310		"	Pink	M	"	Srnd. Tr G sil cem, dol, pl gn shale. Ltl pnk siliceous shale.
310-315		"	Rd yellow	"	"	Srnd. Mch wh silceous sh,pl gn micus sh,rd bn hemic sh. Tr st.
315-320		"	Pnk white	"	"	Subrounded. Little caved red yellow shale & sandstone. Trace silt, one quartz granule.

ST. PETER SANDSTONE

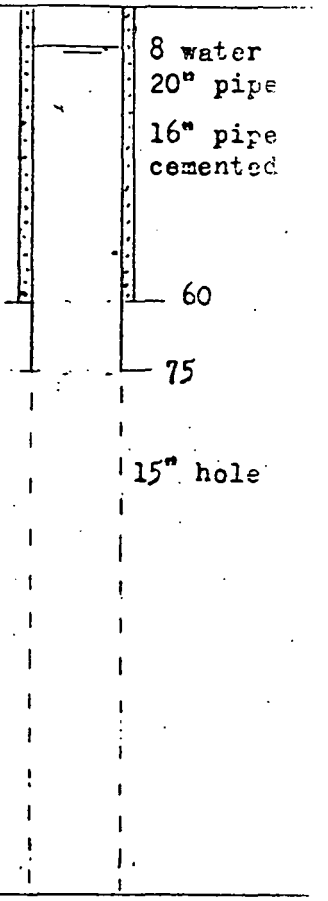
215'

END OF LOG

120-125		Sandstone	Yl red	M	Vfn/VC	Subangular. Little good silica cement. Trace hematitic shale. Much hard dark red brown hematitic very glauconitic Fn sandstone with trace fossil fragments, also with trace silica cemented micaceous & glauconitic sandstone.
255-260		Ss & chert	Rd yellow	M/C	Vfn/VC	Subrounded. Trace calcite cement, black hematite & floating sand (chert), pale green shale. Few quartz layers (chert). Little dark red brown hematitic staining. Much dolomitic pink shale.

UNIT WELL NO. 6, WISCONSIN POWER AND LIGHT CO., RIPON, WIS.
SE¼SE¼ sec. 17, T. 16 N., R. 14 E. 10' from test hole
C. F. Dobson, Engineer I. E. Brown, Driller, 1949
Samples examined by F. T. Thwaites, Nos. 147271-147307
Alt. = 850'

DRIFT		0-5	5	Soil, black, sandy
		5-10	5	Till, rusty grey, weathered
		10-35	25	Gravel, stony to sandy, some coarse
	45	35-45	10	Gravel, stony, red, some clay
ST PETER		45-65	20	Conglomerate, sandstone, fine, red; pebbles dolomite, chert; some shale, red
		65-77	12	Sandstone, medium to fine, light gray, pink
		77-85	8	Sandstone, fine to medium, light gray
		85-90	5	Sandstone, fine to medium, pink, dolomitic
		90-95	5	No sample
		95-100	5	Sandstone, medium to fine, light gray
		100-105	5	Sandstone, medium to fine, light pink
		105-120	15	Sandstone, medium to fine, light pink; shale, red
		120-130	10	Sandstone, fine to medium, light gray
		130-145	15	Sandstone, medium to fine, light gray
		145-155	10	Sandstone, medium to fine, pink
		155-175	20	Sandstone, fine to medium, light gray, dolomitic
	140	175-180	5	Sandstone, fine to medium, lt.gy, red, dol.
		180-185	5	Dolomite, sandy, gray, glauconitic



Tested 5 hours at 550 g.p.m. specific capacity = 10.5 g.p.m./ft.

TEST HOLE NO. 1, WISCONSIN POWER AND LIGHT CO., RIPON, WIS.
300' N. of creek on extension of Union St.; SE¼SE¼ sec. 17, T. 16 N., R. 14 E.
I. E. Brown, Driller, 1948 C. H. Dobson, Engineer
Samples examined by F. T. Thwaites, Nos. 140521-140565
Alt. = 850'

DRIFT	0-5	5		Soil, black
	5-10	5		Till, brown-gray, leached
	10-20	10		Till, yellow-gray, dolomitic
	20-30	10		Gravel, stony, gray
40	30-40	10		Gravel, some sand, pink
ST PETER	40-45	5		Sandstone, fine, pink
	45-50	5		Dolomite, light gray, pink; sh, red; ss, pink
	50-60	10		Sandstone, quartzitic, light gray; shale, red
	60-75	15		Sandstone, medium to fine, light gray, yellow-gray, part quartzitic
	75-95	20		Sandstone, medium to fine, light gray
	95-100	5		Sandstone, medium to fine, light pink
	100-110	10		Sandstone, fine to medium, light pink
	110-115	5		Sandstone, medium to fine, red; shale, red
	115-120	5		Sandstone, fine to medium, pink
	120-130	10		Sandstone, fine to medium, light gray
	130-145	15		Sandstone, medium to fine, light gray
	145-150	5		Sandstone, medium to fine, light gray, dol.
	150-160	10		Sandstone, fine to medium, light gray, dol.
	160-175	15		Sandstone, medium to fine, light gray, dol.
	175-185	10		Sandstone, fine to medium, light gray, dol.
	185-195	10		Shale, red; chert, gray, pink; dolomite, lt.gy
	195-200	5		Sandstone, medium to fine, pink; chert, gy, pk
185	200-225	25		Chert, gray, pink; some shale, red

4" hole. Water at 6 Tested at 300 g.p.m. specific capacity = 8.6 g.p.m./ft.

Test No. 1 is ^ well #6; see FL-48.
test hole for

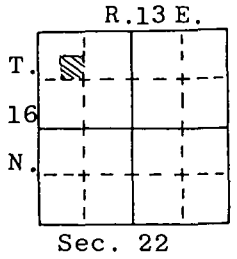
UNIVERSITY OF WISCONSIN GEOLOGICAL & NATURAL HISTORY SURVEY
1815 University Avenue, Madison, Wisconsin 53706

Log No.J9-GL-52

Well name Green Lake City Well #2

County: Green Lake

Completed... 2/5/76
Field check.
Altitude.... 835' ETM
Use..... Municipal
Static w.l.. 39'
Spec. cap... 10 GPM/ft



Owner.... City of Green Lake
Address.. 534 Mill St.
Green Lake, WI 54941
Driller.. Milaeger Well & Pump Co.
Engineer.

Quad. Green Lake 7½'

Drill Hole						Casing & Liner Pipe or Curbing							
Dia.	from	to	Dia.	from	to	Dia.	Wgt.& Kind	from	to	Dia.	Wgt.& Kind	from	to
18"	0	25'	12"	108'	396'	18"	steel-3/8"-70#/ft.	0	26'				
17"	25'	108'				12"	steel-3/8"-50#/ft. ASTM-53 Grade B	+18"	108'				

Grout	from	to
Neat Cement	0	108'

Drilling method: Cable Tool
Samples from 0 to 400' Rec'd: 5/25/79

Studied by: Kathleen Massie

Issued: 12/23/82

Formations: Drift, Prairie du Chien Group, Jordan Formation, St. Lawrence Formation (Lodi Siltstone), Tunnel City Group, Elk Mound Group.

Remarks: Well driller reports total well depth of 396'.
Well tested for 24 hours at 400 GPM with 39 feet of drawdown.
Most of the sandstone shows a secondary quartz growth that give the grains an irregular shape. This was not included in determining grain rounding.

LOG OF WELL:

	Depths	Graphic Section	Rock Type	Color	Grain Size Mode	Grain Size Range	Miscellaneous Characteristics
	0-5		Gravel	Lt yl bn	Gran	Gran/L peb	Dol,ool dol & cht,fos dol & cht,cht,grnt,trap. Mch snd. Ltl st.
Dft.	5-10		"	"	S peb	Gran/M peb	Same.
	10-15		"	"	"	"	"
20'	15-20		"	"	Gran	"	Same plus pink silica cemented sandstone.
	20-25	G	Dolomite	"	M	Fn/M	Tr Vfn/Fn fltg snd occuring in layers of high cncntrtn,Vfn-glauc,pyrolu,cvd snd & gvl.
P. du C.	25-30	Δ G	"	Pl brown	"	"	Same plus tr wh cht(some ool).
	30-35	G Δ	"	"	"	"	Same.
	35-40		"	Lt gray	"	"	Trace white to clear quartz crystals associated with pyrite.
25'	40-45	G	"	"	"	"	Tr wh qtz xls,Vfn-glauc,Vfn-fltg snd, glauc(in all types).
	45-50	G Hem M	Shale	Dusky red	—	—	Hemic. V micaceous. Mch wh to pnk dol,st. Ltl dolic sts. Tr Vfn
	50-52	G	Dolomite	"	Fn	Fn/M	Much micaceous hemic shale. Trace dolomite,siltstone,Vfn-glauc.
	52-55	Δ	"	Brown	"	"	Much micaceous hemic sh, silt. Ltl dolic sts. Tr Vfn-glauc.
JORDAN	55-65	Δ	Sandstone	Pnk white	M	Vfn/VC	See end of log. hem,cvd glaucic sh,well rnd qtz grans.
	65-70	Δ	"	"	"	"	Same. Mch G sil cem. Tr or stng,drsy qtz,cht,cvd
	70-75	Δ	"	"	Fn&C	"	Srnd & rnd(Grns are irrglr which might show secondary qtz grwth
	75-80	Δ	"	"	"	"	Same but cem assoc w/Fn snd,and mch ig frags(45% of samp) intro during drilling?
	80-85	Δ	"	Lt rd bn	Fn/M	"	See end of log.
	85-90	Δ G	"	"	Fn&C	"	Sang & rnd. Mch v G sil cem(assoc w/Vfn/Fn). Tr cht,Vfn-glauc,
50'	90-95	Δ G	"	"	Fn	"	See end of log. cvd hemic sh,wh cht,ig frag.
Lodi 10'	95-100	Hem Δ G M	Siltstone	Rd bn&rd yl	—	—	Calcus. Rd bn is v hemic & micaceous. Mch snd. Tr Vfn-glauc,wh
	100-105	Δ G Lt Hem M	"	"	—	—	Same but ltl limonite(rd yl siltstone). to pnk cht,lim.
	105-110	Hem Δ	Sandstone	Lt rd bn	Fn	Vfn/C	Srnd. Mch calcus cem. Ltl st,hem. Tr wh to pnk cht.
	110-115		NO SAMPLE. Driller reports same				as following intervals. w/rd bn).
	115-120	Hem G Hem G	Sandstone	Rd bn&rd yl	Fn	Vfn/C	Srnd. Mch v G dol cem(~45% of sample is dol),Fn-glauc,hem(assoc
	120-125	Hem G Hem G	"	Yellow	M	Vfn/VC	Sang. Mch v G dol cem(~25% of sample),hem. Ltl Fn-glauc. Tr silt
	125-130	Hem G G	"	Brown	M/C	"	Srnd. Mch v G(M-xls)dol cem. Ltl hem,C/VC-glauc. Tr silt.
	130-135	G	"	"	"	"	Srnd. Mch v G(M-xls)dol cem. Tr M/C glauc,hematite,silt.
	135-140	G	"	Lt rd yl	M	"	Rnd. Mch v G(M-xls)dol cem. Tr lim cement,Fn-glauc,mfc incl.
TUNNEL CITY	140-145	G	"	"	M/C	"	Same but little dolomite cement.
	145-150	G	"	"	"	"	Same but much dolomite cement.
	150-155		"	"	"	"	Same.
	155-160		"	"	"	"	Rounded. Trace good dolomite cement, limonite, silt.

Well name: Green Lake City Well #2

Depths	Graphic Section	Rock Type	Color	Grain Size Mode	Grain Size Range	Miscellaneous Characteristics
TUNNEL CITY GROUP						
160-165		Sandstone	Lt rd yl	M/C	Vfn/VC	Rounded. Trace good dolomite cement, limonite, silt.
165-170		"	"	"	"	Same.
170-175		"	"	"	"	"
175-180		"	Pl yellow	Fn/M	Vfn/C	Srnd. Tr cvd dolomite cement, mafic incl. Ltl fine silt.
180-185		"	"	"	"	Same.
185-190		"	"	"	"	" frags.
190-195		"	Lt brown	C	Vfn/VC	Rnd. Ltl G dol cem(assoc w/Fn/M snd). Tr cvd sts, dol, hem, ig
195-200	hem	"	"	M	"	Rnd to srnd. Ltl G dol & hem cem. Tr lim cem, M-zircon, mfc incl,
200-205		"	"	"	"	Same plus trace caved igneous fragments. pl gn sh,
205-210		Siltstone	Red brown	—	—	Mch rd bn dol, hemic sh, snd(some occrng as layers of ss). Ltl pl
107.5' 210-215		Sandstone	"	C/VC	Vfn/VC	See end of log. gn sh. Tr Fn-glauc, fos frags.
ELK MOUND GROUP						
215-220		"	Pink	C	"	Well rounded. Trace siltstone as above, mafic inclusions.
220-225		"	"	"	"	Well rnd. Trace mafic inclusions, cvd sts, wh siliceous shale.
225-230		"	Pnk white	"	"	Well rnd. Tr lim cem, mfc incl, wh sil sh, silt, cvd sts.
230-235		"	"	C/VC	"	Same.
235-240		"	"	"	"	"
240-245		"	White	C	"	Well rnd. Tr mfc incl, wh sil sh, st, cvd sts, M-zircon.
245-250		"	"	"	"	Rnd. Tr F sil cem, mfc & pyr incl, cvd sts, wh sil sh. Mch fine st
250-255		"	"	"	"	Same.
255-260		"	"	"	"	Rnd. Tr G sil cem, mfc & pyr incl, pyr, wh sil sh. Mch fine silt.
260-265		"	"	"	"	Same.
265-270		"	"	M/C	"	Same plus trace or stng on cement, plus tr pl gn shale.
270-275		"	"	"	"	Rnd. Trace G sil cement, mafic inclusions, fine silt.
275-280		"	"	"	"	Rnd. Tr F sil cem, mfc incl, cvd ig trap. Little fine silt.
280-285		"	"	"	"	Same.
285-290		"	"	M	"	"
290-295		"	"	Fn/M	"	Srnd. Tr F sil cem, mfc incl, wh sil shale, fine silt.
295-300		"	"	"	"	Srnd. Ltl F sil cem, fine silt. Tr mfc incl, wh sil shale lt gry
300-305		"	"	"	"	Same but trace cement & silt. shale.
305-310		"	"	M	"	Same.
310-315		"	"	"	"	Srnd. Tr F to G sil cem, mfc incl, wh sil sh, lt gry sh. Ltl fine
315-320		"	"	M/C	"	Same. silt.
320-325		"	"	M	"	"
325-330		"	"	"	"	"
330-335		"	"	M/C	"	Srnd. Tr fair silica cement, mafic inclusions. Mch fine silt.
335-340		"	"	"	"	Same plus trace white siliceous shale.
340-345		"	"	"	"	Same.
345-350		"	"	"	"	Srnd. Tr F sil cem, mfc incl, wh sil sh. Ltl fine silt.
350-355		"	"	"	"	Same.
355-360		"	"	"	"	"
360-365		"	"	"	"	Same but trace fine silt.
365-370		"	"	"	"	Srnd. Tr F sil cem, mafic incl, wh sil shale. Little fine st.
370-375		"	"	"	"	Same plus trace pyrite.
375-380		"	"	"	"	Same.
380-385		"	"	"	"	Same but trace fine silt.
385-390		"	"	"	"	Srnd. Tr F sil cem, mfc incl, M-zircon, wh sil sh. Ltl fine st.
390-395		"	"	"	"	Same.
187.5' 395-400		"	"	"	"	"
		END OF LOG				
55-65		Sandstone	Pnk white	M	Vfn/VC	Subrounded. (Grains are irregular which might indicate extensive secondary quartz growth.) Much good silica cement. Trace orange staining, orange chert, clear drusy quartz, caved oolitic chert & brown shale, Fn-zircon sand, mafic inclusions, pale green glauconitic shale.
80-85		Sandstone	Lt rd bn	Fn/M	Vfn/VC	Subrounded. Much very good silica cement. Little drusy quartz/chert, igneous fragments (from drilling?), light brown shale. Trace caved shale/siltstone, silt, mafic inclusions, white siliceous shale.

UNIVERSITY OF WISCONSIN GEOLOGICAL & NATURAL HISTORY SURVEY
1815 University Avenue, Madison, Wisconsin 53706

Log No.J9-GL-52

Well name: Green Lake City Well #2

Depths	Graphic Section	Rock Type	Color	Grain Size		Miscellaneous Characteristics
				Mode	Range	
90-95		Sandstone	Lt rd bn	Fn	Vfn/VC	Subangular. Little very good silica cement. Trace white chert, Vfn-glauconite, caved hematitic shale, Fn-zircon, mafic inclusions.
210-215		Sandstone	Red brown	C/VC	Vfn/VC	Well rounded. Much siltstone as above but with more dolomite and much M-glauconite.

State of Wisconsin \ DEPARTMENT OF HEALTH AND SOCIAL SERVICES

DIVISION OF HEALTH
MAIL ADDRESS:
1 WEST WILSON STREET
P.O. BOX 309
MADISON, WI 53701-0309

October 12 , 1989

Mr. Kenneth Bosveld
N8863 South Koro Road
Ripon, WI. 54971

Dear Mr. Bosveld:

On September 28, 1989, air sampling was conducted at your home for volatile organic compounds (VOC's). The high concentrations of VOC's in your private water supply can be transferred into the air and present further exposure risk through inhalation thus air monitoring was felt appropriate.

A previous letter on September 15, 1989, advised you how exposure to these chemical compounds can be hazardous to you and your childs health. In particular, vinyl chloride was of a major concern because of its cancer causing effects.

As you may recall, there were four pumps set up for testing. One was set in the basement while clothes washing was in progress. One was set at the doorway between the living room and the kitchen. Two were set up in the first floor bathroom. A shower simulation was also conducted in the bathroom using hot water from the shower head. The State Lab of Hygiene has provided us the results of the air samples. They were as follows:

Kitchen	<.01 parts per million vinyl chloride
Basement	.01 parts per million vinyl chloride
Bathroom	.03 parts per million vinyl chloride (10 liters)
Bathroom	.06 parts per million vinyl chloride (5 liters)

It was mentioned during the sampling process that vinyl chloride is a difficult compound to sample for because it is not easily captured on the charcoal tubes used. The fact that each sample area detected some amounts of this chemical indicates there is definite concern for the quality of the air in your home. These tests further provide data that hot water emits more vinyl chloride into the air than cold water.

The federal Occupational Safety and Health Administration recognizes a permissable exposure limit (PEL) of 1ppm vinyl

Mr. Kenneth Bosveld
N8863 South Koro Rd.
Ripon, WI.

chloride in an occupational workplace. This is based on an 8 hour work day for 5 days. The amount of time spent in ones home far exceeds this weighted measurement. This means home indoor exposures are more prolonged and frequent. Consequently, health effects from home indoor air exposure may be more severe.

Regarding the previous literature and letters provided you and the test sample results, it is quite clear that any domestic use of this water supply presents an exposure risk to residents.

Therefore it is advised that you discontinue any further domestic use of your water supply. If you have any questions concerning this advisory, you may contact this office at (608) 267-3861.

Sincerely,

FOR THE BUREAU OF COMMUNITY HEALTH AND PREVENTION

Gary Lindauer

Gary Lindauer, R.S.
Public Health Educator
Section of Environmental and Chronic
Disease Epidemiology

GL:gl

cc: Attorney William Hayes - City Attorney
100 Jackson St.
Ripon, WI. 54971

James A. McFellin - City Administrator
100 Jackson ST.
Ripon, WI. 54971

Mike Schmoller - Environmental Specialist - WDNR
Southern District Office, Fish Hatchery Rd. Madison, WI.

Dennis Hibray - Regional Director
Northeastern Regional Office

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

August 31, 1988

File Ref: 4190

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Kenneth and Linda Bosveld
246 South Koro Road
Ripon, WI 54971

Dear Mr. and Mrs. Bosveld:

Here is an Order issued by the Department of Natural Resources requiring that you abandon the well on your Town of Ripon property. If you wish to contest this Order please refer to the Notice at the end of the Order.

Please call Ronald Curtis at (608) 275-3307 or Patricia Hanz at (608) 266-9972 if you have questions about this.

Sincerely,

Kathryn A. Curtner

Kathryn A. Curtner
Assistant Administrator
Division of Enforcement

KAC:RFC:ps
8808\EE1BOS.RFC

cc: Ronald Curtis - SD
Patricia Hanz - LC/5
Private Water Supply - WS/2

Order + litigation
Correspondence

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

In the Matter of the Contaminated Private Water Supply on Property Located in the Town of Ripon, Fond du Lac County, that is owned by Kenneth J. and Linda S. Bosveld	)))))	ORDER SD-88-05

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

FINDINGS OF FACT

The Department finds that:

1. Kenneth J. and Linda S. Bosveld own the property located at 246 South Koro Road in the NE¼ of Section 18, T16N, R14E, Town of Ripon, Fond du Lac County (hereinafter the Bosveld property).

2. There is a private water supply, as defined in s. NR 112.03(38), Wis. Adm. Code, on the Bosveld property (hereinafter the well).

3. The Bosveld's well water is piped into the Bosveld home and is available for human consumption, bathing and other human exposure situations.

4. A water sample collected from the Bosveld's well on March 30, 1988 was analyzed by the State Laboratory of Hygiene and found to contain 78 micrograms per liter (ug/l) of vinyl chloride.

5. Other Bosveld property well water samples were collected and the State Laboratory of Hygiene's vinyl chloride analysis results include:

October 1, 1984	-	present, but not quantified
November 12, 1984	-	45.8 and 47.5 ug/l
February 18, 1985	-	34.1 ug/l
May 13, 1985	-	18.4 ug/l
September 17, 1985	-	42 ug/l
November 18, 1985	-	34 ug/l

6. The U.S. Environmental Protection Agency maximum contaminant level for vinyl chloride in drinking water is 2 ug/l above which the water should not be used for human consumption.

7. Other contaminants, 1,2-Dichloroethylene and trichloroethylene, were also found in the Bosveld's well water.

8. The Bosveld's well is located downgradient and in the contaminants impact area of an old City of Ripon landfill.

9. The Department believes the Bosveld's well serves as a conduit allowing contaminants, including vinyl chloride, 1,2-Dichloroethylene and trichloroethylene, to migrate deeper into the groundwater and thereby spreads contamination.

10. The Department believes it is necessary to properly abandon the Bosveld's well to protect human health and to protect the environment.

11. The Department informed the Bosvelds in a May 5, 1988 letter that they need to abandon the well, but the Bosvelds have not yet abandoned the well.

CONCLUSION OF LAW

The Department finds that:

1. Under ss. 144.025(1) and 162.01(1), Stats., the Department of Natural Resources (the Department) serves as the central unit of state government to protect, maintain, and improve the quality and management of the waters of this state, ground and surface, public and private, and has general supervision of all methods of obtaining groundwater for human consumption including sanitary conditions surrounding the same and construction or reconstruction of wells.

2. The Department has the authority under ss. 144.025(2)(c) and 162.01(1), Stats., to issue general orders and adopt rules applicable through the state for the construction, installation, use and operation of practicable and available systems, methods, and means for preventing and abating pollution of the waters of this state; to prescribe, publish, and enforce minimum and reasonable standards and rules for methods to be pursued in the obtaining of pure drinking water for human consumption and the establishing of all safeguards deemed necessary in protecting public health against the hazards of polluted sources of impure water supplies intended or used for human consumption. Such rules are contained in Chapter NR 112, Wis. Adm. Code.

3. The Department has the authority under ss. 144.025(2)(d) and 162.03(2)(c), Stats., to issue this order.

4. This order is reasonable and necessary to accomplish the purposes set forth in chps. 144 and 162, Stats.

ORDER

It is therefore ordered that Kenneth J. and Linda S. Bosveld shall have the well on the Bosveld's property physically disconnected from the Bosveld home and properly abandoned in accordance with s. NR 112.21, Wis. Adm. Code, within 30 days of the effective date of this order.

NOTICE OF APPEAL RIGHTS

This order shall become effective unless a verified petition for a hearing to contest the issuance of this order, or any of its terms, is filed with the Department pursuant to s. 144.025(7), Stats., within 60 days after the date this order is mailed. All petitions shall indicate the interest of the petitioners and the reasons why a hearing is warranted. All petitions shall be filed either by delivery to the Office of the Secretary of the Department at 101 South Webster Street, Madison, Wisconsin, 53703 or by certified mail addressed to the Office of the Secretary, Department of Natural Resources, P. O. Box 7921, Madison, Wisconsin 53707. If a hearing is requested, this order shall not become effective until the hearing examiner issues a decision affirming or modifying this order. This notice is provided pursuant to s. 227.48(2), Stats.

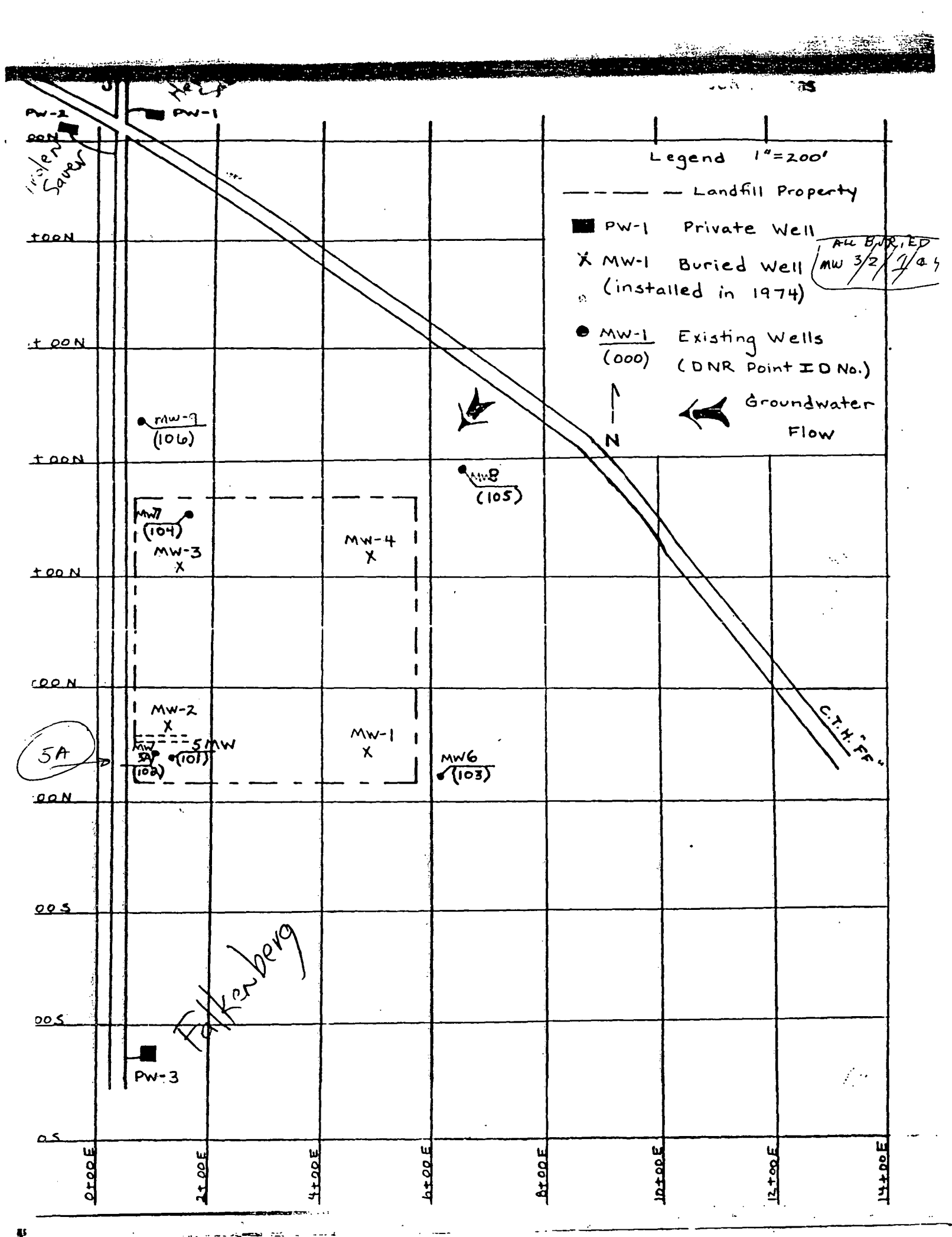
Dated at Madison, Wisconsin, this 29th day of August, 1988.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By

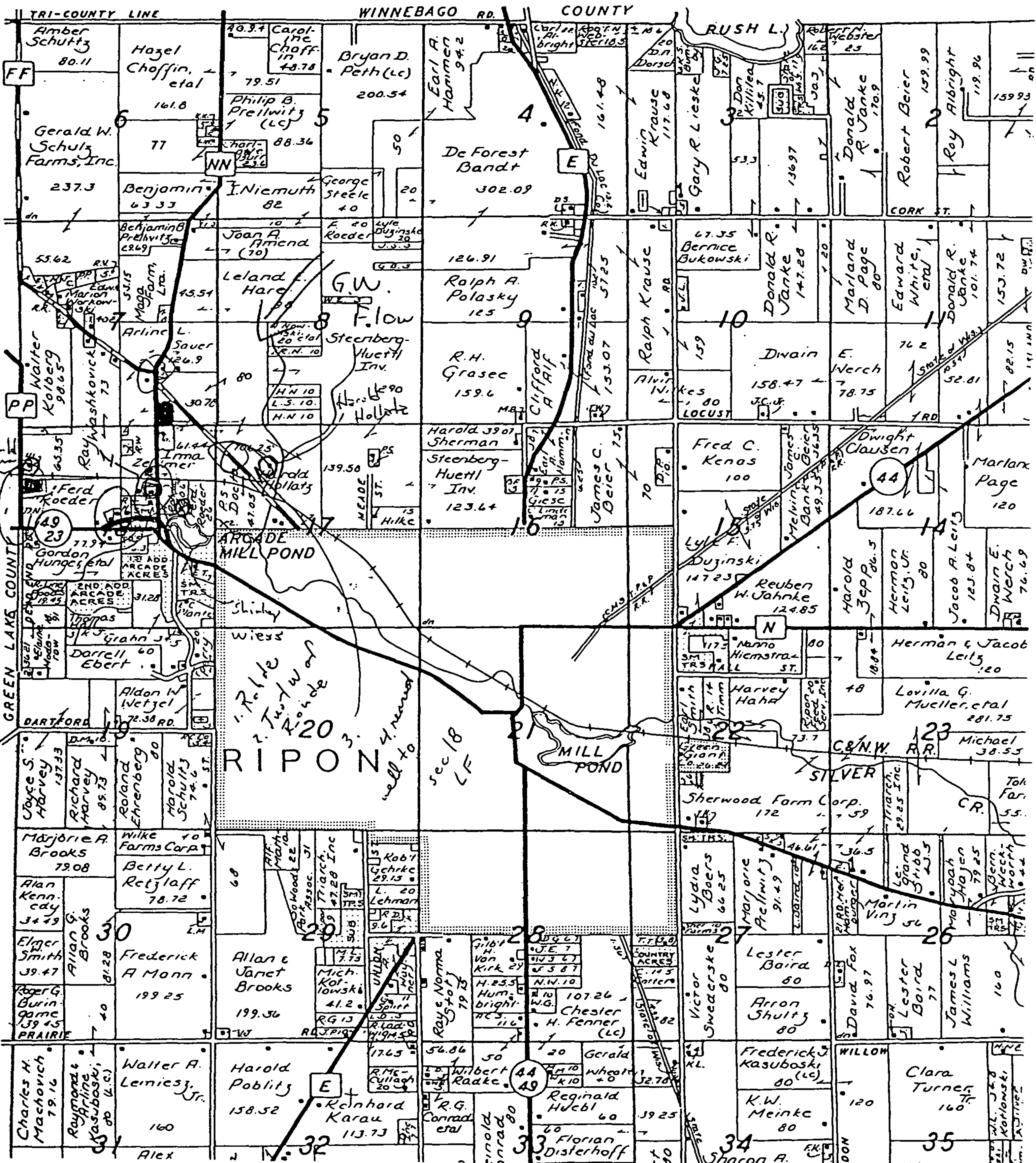
Kathryn A. Curtner
Assistant Administrator
Division of Enforcement

8809\EE1BOSVE.RFC

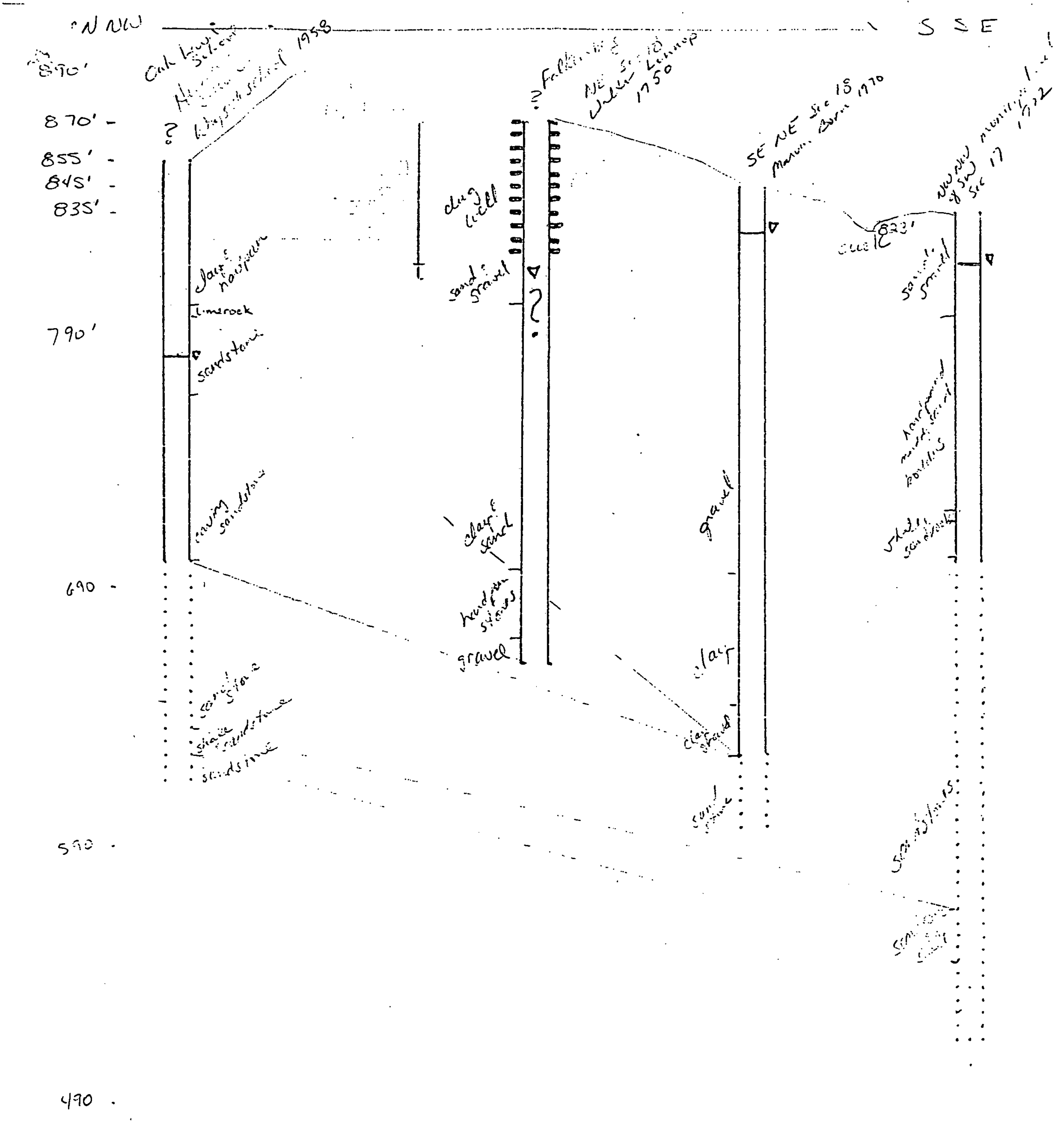

PW-2
PW-1
Legend 1"=200'
Landfill Property
PW-1 Private Well
MW-1 Buried Well (installed in 1974)
MW-1 (000) Existing Wells (DNR Point ID No.)
Groundwater Flow
N
ALL BURIED MW 3/2/1 & 4
MW-9 (106)
MW8 (105)
MW7 (104)
MW-3
MW-4
MW-2
MW-1
SMW (101)
MW6 (103)
5A
C.T.H. "FF"
PW-3
Falkenberg
0+00E
2+00E
4+00E
6+00E
8+00E
10+00E
12+00E
14+00E

RIPON

T. 16 N.



TRI-COUNTY LINE
WINNEBAGO RD.
COUNTY
RUSH L.
FF
PP
NN
E
N
44
49
23
Amber Schultz 80.11
Hazel Choffin, etal 161.8
Caroline Choffin 48.78
Bryan D. Peth (LC) 200.54
Earl A. Hammen 94.2
Philip B. Prellwitz (LC) 88.36
Gerald W. Schulz Farms, Inc. 237.3
De Forest Bandt 302.09
Edwin Krause 117.68
Gary R. Lieske
Donald R. Janke 170.9
Robert Beier 159.99
Roy Albright 119.96
Benjamin 63.33
I. Niemuth 82
George Steele 40
CORK ST.
Joan A. Amend (70)
Bernice Bukowski
Leland E. Hare
Ralph A. Polasky 125
Ralph Krause
Donald R. Janke 147.28
Marland D. Page 80
Edward White, etal
Donald R. Janke 101.74
Arline L. Sauer 26.9
Steenberg-Huettl Inv.
R.H. Grasee 159.6
Clifford A. Alf
Dwain E. Werch 158.47
Walter Kolberg 98.65
Ray Washkovick 73
Alvin Wilkes 80
LOCUST
Harold Sherman 39.07
Fred C. Kenas 100
Dwight Clausen
Marland Page 120
Irma Zellmer
Ferd Koeder
Steenberg-Huettl Inv. 123.64
James C. Beier 75
187.66
ARCADE MILL POND
Gordon Hunger, etal
2ND. ADD. ARCADE ACRES
Lyle F. Duzinski 147.23
Reuben W. Jahnke 124.85
Harold Jepp 86.5
Herman Leitz, Jr. 80
Jacob A. Leitz 123.84
Dwain E. Werch 76.49
Thomas
Grahn Jr.
Darrell Ebert 60
Wiess
Harvey Hahn
Herman & Jacob Leitz 120
GREEN LAKE COUNTY
Aldon W. Wetzel 72.38
DARTFORD RD.
RIPON
MILL POND
Lovilla G. Mueller, etal 281.75
Michael 38.55
C.&N.W. R.R.
SILVER
Joyce S. Harvey 77.33
Richard Harvey 85.73
Roland Ehrenberg 80
Harold Schultz 74.6
Sherwood Farm Corp. 172
Marjorie A. Brooks 79.08
Wilke Farms Corp.
Betty L. Retzlaff 78.72
Lydia Boers 64.25
Marjorie Prellwitz 91.49
Marlin Ving
Alan Kennedy 34.49
Elmer Smith 39.47
Allan G. Brooks 81.28
Frederick A Mann 199.25
Allan & Janet Brooks 199.56
Lester Baird 80
Arron Shultz 80
David Fox 76.97
Lester Baird 77
James L. Williams 100
Roger G. Burlingame 39.45
PRAIRIE
Victor Swedarske 80
Chester H. Fenner (LC)
Gerald Wheaton 40
Reginald Huebl 60
WILLOW
Charles H. Machovich 79.16
Raymond & Arline Kasuboski 80 (LC)
Walter A. Lemiesz, Jr. 160
Harold Poblitz 158.52
Reinhard Karau 113.73
R.G. Conrad etal
Wilbert Radke
Frederick J. Kasuboski 80 (LC)
K.W. Meinke 80
Clara Turner Tr. 160
Florian Disterhoff
6 5 4 3 2 7 8 9 10 11 17 16 15 14 19 20 21 22 23 30 29 28 27 26 31 32 33 34 35


N NW
S SE
870'
855'
845'
835'
790'
690
590
490
1958
1970
SE NE Sec 18
dug well
sand & gravel
clay & hardpan
limerock
sandstone
caving sandstone
clay & sand
hardpan stones
gravel
gravel
clay
833'
sand & gravel
shale sandstone
sandstone
sandstone

data 1976

N NW to S SE

~~1980~~

(A) 855' nope

Wayside School (Sauer) 1958 10" d.h. 0-70
6" 90-240' 6" casing 0-155' W.L. 76'
clay 0-18 hardpan & clay 18-56' limerock 56-60'
sandstone 60-90' caving sandstone 40'-155'
solid sandrock 150-220' shale and sand rock
220-230' sand rock 230-240'

(Bingo) 870'
1950 for Walter Lennop W.L. ? (Falkenberg)
6" 208' old dug well 0-50' sand & gravel 50-70'
clay and sand 70-172 hardpan & stones 172-200' gravel
200-209'

Landfill might be 890 880 870'

1970 (Marvin Born) Rhode well? 845' W.L 18' 6" casing 219'
gravel 0-150 clay 150-200' gravel & clay 200-218
sand rock 218-228'

(B) Muni well 1972 W.L 19' Elev 835'
16" casing 135' clay 0-3' sand & gravel 3-40'
(hardpan 40-43' fine muddy sand streaks clay & rock 43-58'
hardpan & boulders 58-101' stky hp muddy sand broken s.r 101-114')
(sandrock w/ shale 114-118 shale 122-127 sr w/ shale 127-133')
(red s.r. 133-154' yellow s.r. 154-170' y br s.r. 170-215' w hpk

formation → members (more specific within a larger genre)
Shale is somewhat like clay except very hard
(structure is similar to clay)

Wisconsin's Aquifers
Glacial (sand and gravel)
Dolomite (Niagra)
Cambrian - Ordovician (sandstone)
Precambrian - (crystaline rocks, igneons)

sandstone uniform size rounded
sand-gravel - unsorted
limestone/dolomite - fractures, cracks formed by dilution/dissolution

loss topsoil ("rock flour" blown over rock)

attenuation capabilities of soil (flawed only by the question "how much")
* nitrates-nitrogen very poorly attenuated in soil
high organic soils are best suited (wetlands,)
carbon source for de-nitrification

soil characteristics
- organics, prairie soils
chelating metals (ties up)

- texture - sand, silt and clay

Table 7 - Hydraulic Conductivities From Slug Tests for FF/NN Landfill Analyzed Using Aqtesolv ™

2004 Testing	
Well ID	**Hydraulic Conductivity (cm/sec)**
P-103D	8.53E-04
P-113A	1.31E-02
P-114	7.44E-03
P-115	4.77E-04
P-116	1.36E-02
MW-3A	3.83E-03
MW-3B	7.55E-04

2003 Testing	
Well ID	**Hydraulic Conductivity (cm/sec)**
P-111D	1.10E-03
P-113B	1.30E-06

Stratigraphic Groupings of Monitoring Wells
FF/NN Landfill, Ripon, WI

Layer	Well ID	Well Screen Elevation (ft msl)	Lithology at Well Screen
Layer 1 Wells	MW-106	821.0	sand
	MW-101	820.4	sand
	MW-104	819.3	sand & gravel
	MW-102	818.9	sand & gravel
	MW-103	818.7	sand
	MW-107	816.5	sand
	MW-108	814.9	sand
	MW-112	814.1	sand
	MW-111	812.3	sand
Layer 2 Wells	P-106	791.7	sand
	P-101	790.0	sand
	P-103	789.9	silt
	P-107	785.6	sand
	P-108	783.5	sand
	P-104	782.0	sand
	P-102	781.3	sand
	P-111	774.2	sand
Layer 3 Wells	P-111D	704.0	sand and gravel
	P-103D		sandstone
	MW-3B	665.0	sandstone
	P-113B	634.2	sandstone
	P-114	654.4	sandstone
	P-115		sandstone
	P-116		sandstone
Layer 4 wells	MW-3A	570.0	sandstone
	P-107D	544.0	granite
	P-113A	507.8	sandstone

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	MW-101

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/12/93	05/13/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	MW-101	_____ Feet MSL	882.55 Feet MSL	8 inches

Boring Location
State Plane 682,760.4975 N, 2,297,758.7006 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E or W
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
				0											
1	20	1,2 2,2		2	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist 0.5 - 1.0: SANDY CLAY, brown (10YR 4/4), moist	OL CL			1.0						
2	22	3,4 5,6		4	1.0 - 39.0: SAND, coarse, 15% gravel (90% limestone, <5% igneous), reddish yellow (7.5YR 6/6), moist (Till)				1.0						
3	20	4,5 5,6		6	13.0 - 14.0: very fine sand lense, pale brown (10YR 6/3), moist				1.0						
4	16	4,6 9,14		8					1.0						
5	18	6,10 11,10		10		SP			1.0						
6	14	10,13 19,20		12					1.0						
7	16	6,9 9,10		14					1.0						
8	12	10,12 10 50/2		16					1.0						
9	12	5,10 19,28		18					1.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
				18											
10	12		10,12 19,28	20					1.0						
11	16		10,12 19,20	22					1.0						
12	16		19,7 9,9	24					2.4						
13	12		26,22 22,24	26					1.4						
14	10		5,10 11,11	28					4.0						
15	12		7,8 11,11	30		SP			4.0						
16	12		10,15 50/1	32					3.8						
17	9		11,58 50/1	34					2.2						
18	12		6,12 -,-	36					1.2						
19	12		20,23 17,17	38					4.0						
20	16		10,9 11,12	40	39.0 - 58.0: SAND and GRAVEL, subangular to subrounded, pinkish white (7.5YR 8/2) to pinkish gray (7.5YR 6/2), moist to saturated at 56 ft. (Till)				2.2						
21	0		30 50/1	42					--						
22	10		5,5 7,9	44					2.8						
23	12		5,5 7,9	46		GP			2.5						
24	12		9,9 12,13	48					3.0						
25	16		9,11 11,17	50	49.0 - 51.0: Interbedded silt and fine sand, laminated light brown (7.5YR 6/4)				1.2						
26	12		10,15 15,17	52					3.5						
27	4		12,20 38 50/1	54					3.9						

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
				54											
28		4	50/6			GP			3.0						
				56											
29		6	31,11 7,5						1.2						
				58	58.0 - 63.0: SAND, medium, 10% limestone gravel, saturated (Till)										
30		12	10,2 3,5			SP			--						
				60											
31		12	5,5 6,7						--						
				62											
					EOB: 63.0 ft.										
				64	Well set at 62.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	P-101

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/26/93	05/26/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	P-101	_____ Feet MSL	882.91 Feet MSL	8 inches

Boring Location
State Plane 682,765.2414 N, 2,297,761.4189 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	SAMPLE BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist	SP									
1	20	20	1,2 2,2	2	0.5 - 1.0: SANDY CLAY, brown (10YR 4/4), moist	CL			1.0						
2	22	22	3,4 5,6	4	1.0 - 39.0: SAND, coarse, 15% gravel (90% limestone, <5% igneous), reddish yellow (7.5YR 6/6), moist (Till)				1.0						
3	20	20	4,5 5,6	6					1.0						
4	16	16	4,6 9,14	8					1.0						
5	18	18	6,10 11,10	10		SP			1.0						
6	14	14	10,13 19,20	12					1.0						
7	16	16	6,9 9,10	14					1.0						
8	12	12	10,12 10 50/2	16					1.0						
9	12	12	5,10 19,28	18					1.0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			18											
10	12	10,12 19,28	20					1.0						
11	16	10,12 19,20	22					1.0						
12	16	19,7 9,9	24					2.4						
13	12	26,22 22,24	26					1.4						
14	10	5,10 11,11	28					4.0						
15	12	7,8 11,11	30		SP			4.0						
16	12	10,15 50/1	32					3.8						
17	7	11,58 50/1	34					2.2						
18	12	6,12 -,-	36					1.2						
19	12	20,23 17,17	38					4.0						
20	16	10,9 11,12	40	39.0 - 58.0: SAND and GRAVEL, subangular to subrounded, pinkish white (7.5YR 8/2) to pinkish gray (7.5YR 6/2), moist to saturated at 56 ft. (Till)				2.2						
21	0	30 50/1	42					--						
22	10	5,5 7,9	44					2.8						
23	12	5,5 7,9	46		GP			2.5						
24	12	9,9 12,13	48					3.0						
25	16	9,11 11,17	50	49.0 - 51.0: Interbedded silt and fine sand, laminated, light brown (7.5YR 6/4)				1.2						
26	12	10,15 15,17	52					3.5						
27	4	12,20 38 50/1	54					3.9						

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	ROCK COMMENTS
				54											
28		4	50/6	56		GP			3.0						
29		6	31,11 7,5						1.2						
				58	58.0 - 81.0: SAND, medium, 10% limestone gravel, saturated (Till)										
30		12	10,2 3,5	60					--						
31		12	5,5 6,7	62					--						
1		2	8,9 10,12	64					--						
2		10	12,9 4,5	66					2.8						
3		24	7,2 3,9	68					2.8						
4		24	10,10 11,12	70		SP			2.8						
5		12	7,9 12,15	72					2.8						
6		18	28,12 12,10	74					2.8						
7		20	25,7 10,9	76					2.8						
8		22	28,25 12,10	78					2.8						
9		12	12,12 16,18	80					3.1						
10		18	3,2 2,3	82	81.0 - 83.0: SAND, medium, gray, saturated (Till)	SW			2.8						
11		18	6,12 18,20	84	83.0 - 95.0: SAND, medium to coarse, 15 to 20% gravel, saturated (Till)				2.8						
12		18	5,5 6,8	86		SP			2.8						
13		16	12,20 12,12	88					2.8						
14		20	5,6 5,6	90	89.0 - 91.0: fine gray sand lense	SW			2.8						

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD/ COMMENTS
			90											
15	20	15,18 18,20			SW			2.8						
			92											
16	18	12,13 25,43			SP			2.8						
			94											
				EOB: 95.0 ft.										
			96	Piezometer installed at 94.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of

Facility/Project Name	License/Permit/Monitoring Number	Boring Numl
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	MW-102

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05 / 07 / 93	05 / 07 / 93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___	MW-102	_____ Feet MSL	840.79 Feet MSL	8 inches

Boring Location
State Plane 682,481.2392 N, 2,298,110.4889 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	SAMPLE COUNTS (BLOWS)	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0	0.0 - 19.0: SAND, medium to coarse, angular to subrounded with 20% gravel (>90% limestone, some chert and igneous rocks), moist to saturated (Till)										
1	12		7,9 10,12	2					3.2						
2	6		4,2 4,4	4					1.9						
3	0		4,5 7,9	6					--						
4	6		10,5 15,18	8					2.0						
5	6		5,11 18,28	10		SP			2.9						
6	0		50/0	12					--						
7	12		20,5 18,25	14					1.4						
8	24		14,29 14,28	16					--						
9	24		24, 58/6	18					--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			18											
10	12	6,6 8,10		19.0 - 23.0: SAND and GRAVEL, coarse, well rounded, brown (10YR 5/6), saturated (Outwash)	SP			1.2						
			20											
11	16	6,8 11,13			GP			1.4						
			22											
				EOB: 23.0 ft.										
			24	Well installed at 22.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-102

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (M M D D Y Y)	Date Drilling Completed (M M D D Y Y)	Drilling Method
Wisconsin Test Drilling Paul Dickinson	05/27/93	05/28/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-102	_____ Feet MSL	840.71 Feet MSL	8 inches

Boring Location
State Plane 682,480.9731 N, 2,298,117.4157 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E or W
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0	0.0 - 19.0: SAND, medium to coarse, angular to subrounded with 20% gravel (>90% limestone, some chert and igneous rocks), moist to saturated (Till)										
1	12	12	7,9 10,12	2		SP			3.2						
2	6	6	4,2 4,4	4					1.9						
3	0	0	4,5 7,9	6					--						
4	6	6	10,5 15,18	8					2.0						
5	6	6	5,11 18,28	10					2.9						
6	0	0	50/0	12					--						
7	12	12	20,5 18,25	14					1.4						
8	24	24	14,29 14,28	16					--						
9	24	24	24, 58/6	18					--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: LIQUID LIMIT	SOIL PROPERTIES: PLASTIC LIMIT	SOIL PROPERTIES: P200	RQD/ COMMENTS
				18		SP									
10	12		6,6 8,10		19.0 - 27.5: SAND and GRAVEL, coarse, well rounded, brown (10YR 5/6), saturated (Outwash)				1.2						
				20											
11	16		6,8 11,13						1.4						
				22											
1	24		8,20 18,8			GP			2.6						
				24											
2	24		7,14 15,7						2.6						
				26											
3	24		10,5 6,15						2.4						
				28	27.5 - 52.0: SAND and GRAVEL, coarse, subrounded to subangular, gray (10YR 6/1) (Till)										
4	24		23,13 10,13						2.4						
				30											
5	4		7,10 13,25						2.4						
				32											
6	1		15,6 7,6						--						
				34											
7	6		9,5 6,6						2.6						
				36											
8	6		11,4 5,4						2.5						
				38											
9	12		10,12 8,9			GP			2.8						
				40											
10	18		9,5 6,6						2.4						
				42											
11	12		10,6 6,4						2.4						
				44											
12	12		15,10 7,4						2.4						
				46											
13	24		23,15 7,4						2.7						
				48											
14	12		15,10 7,5						2.6						
				50											
15	18		17,12 10,7						2.4						
				52	52.0 - 60.0: SAND, medium, brownish gray (10YR 6/2) (Till)										
16	18		5,10 23,36			SP			2.4						
				54											

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	REMARKS
				54												
17	6		36 50/1						2.4							
				56												
18	20		5,4 5,6			SP			2.4							
				58												
19	22		3,5 6,12						2.4							
				60	EOB: 60.0 ft. Piezometer installed at 59.0 ft.											

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	MW-103

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/11/93 M M D D Y Y	05/11/93 M M D D Y Y	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	MW-103	_____ Feet MSL	870.14 Feet MSL	8 inches

Boring Location
State Plane 682,103.2770 N, 2,297,754.8452 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E or W
Lat 43° 52′ ___
Long 88° 52′ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	SAMPLE COUNTS/BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
				0	0.0 - 1.0: TOPSOIL, dark brown silty clay, moist	OL										
1	12	12	1,1 2,3	2	1.0 - 7.5: SANDY CLAY, medium sand, subrounded, grayish brown (10YR 5/2), moist (Till)				2.6							
2	4	4	1,1 1,1	4		CL			1.0							
3	6	6	1,1 1,2	6					1.8							
4	12	12	6,10 10,12	8	7.5 - 18.0: SAND, medium, 25% well rounded to subangular gravel (>95% limestone, >5% igneous), reddish brown (5YR 5/4), moist (Till)				14.5							
5	12	12	8,10 10,12	10	13.6 - 13.9: silty clay lense				4.9							
6	6	6	7,9 50/0	12		SP			3.0							
7	12	12	4,4 5,10	14					4.2							
8	0	0	5,50 16,13	16					--							
9	0	0	50/2	18					--							

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD	COMMENTS
				18												
10	18		5,5 7,9		18.0 - 23.0: CLAYEY SAND, 15% subrounded, limestone gravel, reddish brown (5YR 4/4), moist (Till)	SC			5.2							
				20												
11	12		7,9 10 50/0						4.9							
				22												
12	12		5,7 7,7		23.0 - 38.0: SAND, coarse, angular to subrounded, 15% limestone gravel, light brown 7.5YR 6/4), very poorly sorted, moist (Till)				4.9							
				24												
13	12		6,9 12,15						7.0							
				26												
14	18		9,11 15,15						6.9							
				28												
15	12		9,14 14,17			SP			6.8							
				30												
16	10		8,8 10,12						7.0							
				32												
17	8		11,12 12 50/0						5.5							
				34												
18	10		6,7 12,12						5.7							
				36												
19	12		5,9 12,11						3.4							
				38	38.0 - 45.0: SAND, fine, well sorted, light brown (7.5YR 6/4), moist (Outwash)											
20	18		50/2		38.5 - 39.5: silt and fine sand lense				4.0							
				40												
21	18		7,10 10,10			SP			2.2							
				42												
22	12		5,5 7,7						2.5							
				44												
23	20		5,6 9,15		45.0 - 52.0: SAND, coarse, well sorted, 20% subrounded limestone gravel, light yellowish brown (7.5YR 6/2), saturated (Outwash)				3.1							
				46												
24	20		5,9 12,24						--							
				48												
25	15		5,9 23,20			SP			3.1							
				50												
26	17		10,10 13,6						--							
				52	EOB: 52.0 ft.											
					Well set at 51.0 ft.											

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-103

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/17/93	05/19/93	Hollow Stem Auger/Air Rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	P-103	_____ Feet MSL	870.55 Feet MSL	8.25 inches

Boring Location
State Plane 682,097.5317 N, 2,297,751.1454 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0											
1	12	12	1,1 2,3	2	0.0 - 1.0: TOPSOIL, dark brown silty clay, moist 1.0 - 7.5: SANDY CLAY, medium sand, subrounded, grayish brown (10YR 5/2), moist (Till)	OL			2.6						
2	4	4	1,1 1,1	4		CL			1.0						
3	6	6	1,1 1,2	6					1.8						
4	12	12	6,10 10,12	8	7.5 - 18.0: SAND, medium, 25% well rounded to subangular gravel (>95% limestone, >5% igneous), reddish brown (5YR 5/4), moist (Till)				14.5						
5	12	12	8,10 10,12	10	13.6 - 13.9: silty clay lense				4.9						
6	6	6	7,9 50/0	12					3.0						
7	12	12	4,4 5,10	14		ML			4.2						
8	0	0	5,50 16,13	16					--						
9	0	0	50/2	18					--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD COMMENTS
				18	18.0 - 23.0: CLAYEY SAND, 15% subrounded, limestone gravel, reddish brown (5YR 4/4), moist (Till)	SC									
10	18		5,5 7,9						5.2						
11	12		7,9 10 50/0	20 22					4.9						
12	12		5,7 7,7		23.0 - 38.0: SAND, coarse, angular to subrounded, 15% limestone gravel, light brown 7.5YR 6/4), very poorly sorted, moist (Till)				4.9						
13	12		6,9 12,15	24 26					7.0						
14	18		9,11 15,15						6.9						
15	12		9,14 14,17	28 30		SP			6.8						
16	10		8,8 10,12						7.0						
17	8		11,12 12 50/0	32 34					5.5						
18	10		6,7 12,12						5.7						
19	12		5,9 12,11	36 38					3.4						
20	18		50/2		38.0 - 45.0: SAND, fine, well sorted, light brown (7.5YR 6/4), moist (Outwash 38.5 - 39.5: silt and fine sand lense				4.0						
21	18		7,10 10,10	40 42		SP			2.2						
22	12		5,5 7,7						2.5						
23	20		5,6 9,15	44 46	45.0 - 58.5: SAND, coarse, 20% subrounded gravel, some silt lenses, pinkish gray (7.5YR 6/2), saturated (Till)				3.1						
24	20		5,9 12,24						--						
25	15		5,9 23,20	48 50					3.1						
26	17		10,10 13,6						--						
				52 54											

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				55											
1	0		6,8 15	57		SP			--						
2	24		5,7 8,10	59	58.5 - 60.0: SILT, light brownish gray (10YR 6/2), saturated (Till)	ML			1.8						
3	24		8,6 8,12	61	60.0 - 70.5: SAND, very fine, light brownish gray (7.5YR 6/2) to gray (7.5YR 6/0), saturated (Till)				1.8						
4	20		8,12 11,12	63					1.8						
5	22		1,1 2,2	65					2.0						
6	24		7,7 8,9	67		SP			1.8						
7	24		4,6 10,10	69					2.0						
8	24		5,6 8,10	71					1.8						
9	24		5,6 8,10	73	70.5 - 81.0: SILT, gray (7.5YR 6/0), laminated, moist (Till). 76.0 - 77.6: sand lamanie 77.6 - 78.6: coarse sand lense, saturated 79.0 - 81.0: silt with coarse sand seams (<1" in thickness, 2 to 3 per ft), seams are saturated, silt is moist				1.8						
10	22		5,10 17,17	75					1.8						
11	24		7,9 10,14	77		ML			1.8						
12	24		3,4 4,12	79					2.2						
13	24		5,6 6,7	81					1.8						
					EOB: 81.0 ft. Piezometer installed at 80.3 ft.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
FF/NN Landfill	000467	P-103D

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Stacy Kiweski Boart Longyear	12/8/2003	12/10/2003	vibratory

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
PG243	141	P-103D	Feet MSL	Feet MSL	6.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane N, E S/C/N
SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 E
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
431048200	Fond Du Lac	20	Town of Ripon

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Silt with some clay, greenish black, contains organic material (plowed layer)	ML									
			2	Silt, brown with some clay and granules	ML			0						
			3											
			4	Silt, organic rich	ML									
			5	Silt, greenish gray with some clay and gravel. Some organics in rootlike structures. Silty diamicton	ML									
			6											
			7											
			8	Sand, fine to coarse, light to dark brown with lots of subangular to subrounded gravel. Silt is also present.	SWG									
			9											
			10					7.5						
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi W Yantz

Firm: GeoTrans, Inc.
175 N. Corporate Drive, Suite 100 Brookfield, WI 53045

Tel: 262-792-1282
Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			13	Sand, fine to coarse, light to dark brown with lots of subangular to subrounded gravel. Silt is also present. *(continued)*	SWG			10.9						
			25	Silt, dark brown with some fine sand and granules. Organics present	ML									
			26	Sand, fine to coarse, light to dark brown with lots of gravel, subangular to subrounded and some silt. Assumed to be Holy Hill Formation	SWG			20.4						

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			33	Sand, fine to coarse, light to dark brown with lots of gravel, subangular to subrounded and some silt. Assumed to be Holy Hill Formation *(continued)*										
			34											
			35											
			36											
			37											
			38											
			39											
			40					16.9						
			41											
			42		SWG									
			43											
			44											
			45											
			46											
			47											
			48					91.6						
			49											
			50											
			51											
			52											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			53	Sand, fine to coarse, light to dark brown with lots of gravel, subangular to subrounded and some silt. Assumed to be Holy Hill Formation *(continued)*	SWG			31.7						
			54											
			55	Sand, silty with some gravel. Alternating layers of grey and red colors.	SM									
			56											
			57	Sand, reddish brown, with granules and some gravel and some thin silt layers. Faint odor.	SW			0.2						
			58											
			59	Silt, brownish gray, with some fine sand	ML									
			60											
			61	Sand, medium to fine, grayish brown, some faint silt zones	SW									
			62					0.2						
			63											
			64											
			65	No Recovery										
			66											
			67											
			68											
			69											
			70											
			71											
			72											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			73	No Recovery *(continued)*										
			74											
	240 38		75	Clay, grayish brown, with some silt (only 3' recovery for 10' interval)										
			76											
			77											
			78											
			79											
			80		CL									
			81											
			82											
			83											
			84											
			85	No Recovery				0						
			86											
			87											
			88											
			89											
			90											
			91											
			92											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			93	No Recovery *(continued)*										
			94											
			95											
	120 99		96	Sand, medium to coarse, grayish brown				0						
			97											
			98					0						
			99											
			100		SW									
			101											
			102					0.5						
			103											
			104											
			105											
	120 84			Sand, medium to fine with some gravel, grayish brown to reddish brown.	SW			0.5						
			106	Sand, medium to fine with some coarse zones, grayish brown to reddish brown				1.5						
			107											
			108											
			109		SW			0						
			110											
			111											
			112											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

ng Number P-103D Use only as an attachment to Form 4400-122. Page 7 of 11

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			113	Sand, medium to fine with some coarse zones, grayish brown to reddish brown *(continued)*	SW									
			114											
			115	Sand, medium to coarse with some gravel up to 3 cm in diameter.	SW			0.2						
	120 105		116	Sand, medium to fine with some coarse zones. Some coarse silt zones. Grayish brown to reddish brown				0						
			117											
			118											
			119					0						
			120											
			121											
			122					0						
			123		SW									
			124											
	120 81		125					0						
			126					1.7						
			127											
			128											
			129					0						
			130											
			131	Sand with some silt, reddish brown transition with adjacent units	SW									
			132											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			133	Silt (~70%) with clay (~30%), dark reddish brown, laminated in places. 1" sandy to silty layers throughout interval. *(continued)*	ML			0						
			134											
			135					0.2						
	120 120		136					0						
			137											
			138	Gravel with sand, silt and clay, light brown	GW									
			139					0.3						
			140	Silt (~60%) with clay (~40%), dark reddish brown, laminated in places. Sandy silt layer at 141.5-141.8 and 142.0-142.2.	ML									
			141											
			142					0						
			143											
			144											
	240 93		145					0						
			146											
			147	Gravel, coarse (<=12 cm) with sand, medium to coarse, dark brown				0						
			148											
			149		GW									
			150											
			151					0						
			152											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			153	Gravel, coarse (<=12 cm) with sand, medium to coarse, dark brown *(continued)*										
			154											
			155											
			156					0.7						
			157											
			158											
			159											
			160		GW			0						
			161											
			162											
			163											
			164											
	168 144		165					0.7						
			166											
			167											
			168					0.3						
			169	Sand, medium to coarse with some gravel consisting of sandstone (local bedrock)										
			170		SW									
			171											
			172											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			173	Sand, some gravel, dark brown	SW			0						
			174	Sand with pieces of angular local sandstone bedrock.	SW									
			175											
			176	Sandstone, white, medium grain, poorly cemented (weathered)										
			177		Sandstone									
			178											
	144 0		179	No Recovery - Sandstone assumed based on local geology.				0						
			180											
			181											
			182											
			183											
			184											
			185		Sandstone									
			186											
			187											
			188											
			189											
			190											
			191	End of borehole. Log adapted by Wisconsin Geologic and Natural History										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number P-103D Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Survey interpretation.										

Table 1 - Vertical Profiling of Well P-103D
FF/NN Landfill
Ripon, WI

Depth of Groundwater Sample Taken	Sample Date	cis-1,2-Dichloroethene	Tetrachlorethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	Vinyl chloride
95'	**12/9/2003**	2.9	2.3	<0.67	3.3	<0.48	**0.68**
120'	**12/9/2003**	3.6	3.8	0.7	3.6	<0.48	<0.18
150'	**12/9/2003**	3.4	2.2	0.68	2.8	<0.48	**1.7**
170'	**12/9/2003**	3.5	1.9	0.78	2.8	<0.48	**0.89**
Screen (191')	**2/4/2004**	<0.83	<0.45	<0.67	<0.90	<0.48	**1.1**
NR 140	**PAL**	7	0.5	200	40	0.5	0.02
	ES	70	5	1000	200	5	0.2

Notes:
Groundwater concentrations are in ug/L unless otherwise indicated
Methylene chloride was detected in samples 95' (0.49 ug/L), 120' (0.81 ug/L), 170' (0.50 ug/L) and in the screened interval (0.55 ug/L). This is assumed to be a laboratory artifact.
ES - NR 140 Enforcement Standard
PAL - NR 140 Preventive Action Limit
Bold indicates ES exceedance
Underline indicates PAL exceedance

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
1		0	6,8 15	55 57		SP			--						
2		24	5,7 8,10		58.5 - 60.0: SILT, light brownish gray (10YR 6/2), saturated (Till)	ML			1.8						
3		24	8,6 8,12	59 61	60.0 - 70.5: SAND, very fine, light brownish gray (7.5YR 6/2) to gray (7.5YR 6/0), saturated (Till)				1.8						
4		20	8,12 11,12						1.8						
5		22	1,1 2,2	63					2.0						
6		24	7,7 8,9	65		SP			1.8						
7		24	4,6 10,10	67					2.0						
8		24	5,6 8,10	69					1.8						
9		24	5,6 8,10	71	70.5 - 81.0: SILT, gray (7.5YR 6/0), laminated, moist (Till) 76.0 - 77.6: sand lamanie 77.6 - 78.6: coarse sand lense, saturated 79.0 - 81.0: silt with coarse sand seams (<1" in thickness, 2 to 3 per ft), seams are saturated, silt is moist				1.8						
10		22	5,10 17,17	73					1.8						
11		24	7,9 10,14	75		ML			1.8						
12		24	3,4 4,12	77					2.2						
13		24	5,6 6,7	79					1.8						
				81	EOB: 81.0 ft. Piezometer installed at 80.3 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		MW-104

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/10/93	05/10/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	MW-104	_____ Feet MSL	871.55 Feet MSL	8 inches

Boring Location
State Plane 682,413.6687 N, 2,297,483.9592 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
					0											
1	18		1,1 1,2			0.0 - 0.5: TOPSOIL, dark brown silty clay, moist	OL									
						0.5 - 1.0: CLAY, 10% subrounded to well rounded gravel, reddish brown (5YR 5/4), moist (Fill)	CL			2.2						
2	24		13,13 14,14		2	1.0 - 4.0: SILT, 20% fine sand, 10% angular to subrounded limestone gravel, brown (5YR 3/4), moist (Fill)	ML			--						
3	12		7,8 5,8		4	4.0 - 5.8: SAND, medium to fine, reddish brown (5YR 4/4), moist (Fill)	SP			2.2						
4	0		4,1 4,15		6	5.8 - 6.0: CLAY, highly organic (roots, wood, plant fragments), moist (Fill)	CL									
5	12		7,15 11,6		8	6.0 - 21.0: REFUSE										
6	12		24,9 5,10		10											Not Sampled
7	16		5,13 13,15		12		REFUSE									
8	18		10,15 10,10		14											
9	0		11,4 5,9		16											
					18											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
10	0	6,4 4,11	18 20											
11	20	6,9 9,12	22	21.0 - 22.0: SAND, medium to fine, 10 to 15% limestone gravel, brown (10yr 5/6), moist (Fill)	SP			5.9						
12	18	16,13 9,9	24	22.0 - 28.0: SILT and CLAY, highly organic (roots, wood, plant fragments, nuts), fine sand lenses less than 1 in. thickness, moist (Till)	CL			4.8						
13	12	10,12 7,4	26					6.5						
14	12	5,7 4,4	28					5.4						
15	18	6,6 1,6	30	28.0 - 33.0: SILT and fine SAND, gray, moist (Till)	SM			6.6						
16	18	7,7 13,13	32					3.4						
17	12	9,12 50/0	34	33.0 - 45.0: SAND and GRAVEL, mottled red and gray, moist (Till) 40.5 - 41.5: silt lense	GP			5.8						
18	0	12,12 15,17	36					--						
19	12	10,12 13,15	38					5.5						
20	18	8,9 12,15	40					3.0						
21	18	20,12 7,9	42					2.2						
22	18	12,16 7,9	44					2.9						
23	16	7,9 12,15	46	45.0 - 53.0: SAND and GRAVEL, coarse, poorly sorted, well rounded, saturated (Till)	GW			1.0						
24	18	10,15 20,15	48					1.0						
			50											
			52											
			54	EOB: 53.0 ft. Well set at 52.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-104

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/20/93	05/25/93	Hollow Stem Auger/Air Rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	P-104	_____ Feet MSL	_____ Feet MSL	6 inches

Boring Location
State Plane 682,414.4021 N, 2,297,490.0702 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	SAMPLE BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: PENETRATION STANDARD	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0												
1	18	1,1 1,2		2	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist 0.5 - 1.0: CLAY, 10% subrounded to well rounded gravel, reddish brown (5YR 5/4), moist (Fill)	OL CL			2.2							
2	24	13,13 14,14		4	1.0 - 4.0: SILT, 20% fine sand, 10% angular to subrounded limestone gravel, brown (5YR 3/4), moist (Fill)	ML			--							
3	12	7,8 5,8		6	4.0 - 5.8: SAND, medium to fine, reddish brown (5YR 4/4), moist (Fill)	SP CL			2.2							
4	0	4,1 4,15		8	5.8 - 6.0: CLAY, highly organic (roots, wood, plant fragments), moist (Fill)											
5	12	7,15 11,6		10	6.0 - 21.0: REFUSE											
6	12	24,9 5,10		12												Not Sampled
7	16	5,13 13,15		14		REFUSE										
8	18	10,15 10,10		16												
9	0	11,4 5,9		18												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
				18												
10		0	6,4 4,11	20												
11		20	6,9 9,12	22	21.0 - 22.0: SAND, medium to fine, 10 to 15% limestone gravel, brown (10YR 5/6), moist (Fill)	SP			5.9							
12		18	16,13 9,9	24	22.0 - 28.0: SILT and CLAY, highly organic (roots, wood, plant fragments, nuts), fine sand lenses less than 1 in. thickness, moist (Till)	CL			4.8							
13		12	10,12 7,4	26					6.5							
14		12	5,7 4,4	28					5.4							
15		18	6,6 1,6	30	28.0 - 33.0: SILT and fine SAND, gray, moist (Till)	SM			6.6							
16		18	7,7 13,13	32					3.4							
17		12	9,12 50/1	34	33.0 - 45.0: SAND and GRAVEL, mottled red and gray, moist (Till) 40.5 - 41.5: silt lense	GP			5.8							
18		0	12,12 15,17	36					--							
19		12	10,12 13,15	38					5.5							
20		18	8,9 12,15	40					3.0							
21		18	20,12 7,9	42					2.2							
22		18	12,16 7,9	44					2.9							
23		16	7,9 12,15	46	45.0 - 78.0: SAND and GRAVEL, coarse, poorly sorted, well rounded, saturated (Till)	GW			1.0							
24		18	10,15 20,15	48					1.0							
				50												
				52												
1		0	5,5 11,17	54					--							

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROCK COMMENTS
				54											
2		18	12,10 10,12						7.0						
				56											
3		20	22,24 14,14						4.8						
				58											
4		12	14,16 9,9						3.2						
				60											
5		12	8,8 15,16						1.8						
				62											
6		24	5,2 1,1						1.8						
				64											
7		24	4,6 10,12			GW			1.8						
				66											
8		18	17,18 21,8						1.8						
				68	68.0 - 71.0: brown fine sand lense										
9		24	5,2 2,6						2.2						
				70											
10		12	6,8 8,8						1.8						
				72											
11		18	1,1 5,9						1.8						
				74											
12		16	2,3 6,7						2.6						
				76											
13		16	5,6 12,18						1.8						
				78	78.0 - 79.0: SILTY SAND, gray (7.5YR 6/0), saturated (Till)	SM									
14		18	7,10 12,12						2.0						
				80	79.0 - 82.0: SILT, gray (7.5YR 7/0) with fine sand seams <1.0" thick, saturated (Till)	ML									
15		1	6,6 12,13						--						
				82	82.0 - 92.0: SAND, 20% subangular to subrounded gravel, brown (7.5YR 5/6), saturated (Till)										
16		10	5,6 7,7						1.8						
				84											
17		20	8,12 14,16						1.8						
				86		SP									
18		24	5,6 9,9						1.8						
				88											
19		12	2,2 3,3						--						
				90											

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
20	2	7,10 10,12	90		SP			--						
			92	EOB: 92.0 ft. Piezometer installed at 90.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	MW-105

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/14/93 MM DD YY	05/14/93 MM DD YY	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___	MW-105	_____ Feet MSL	869.89 Feet MSL	8 inches

Boring Location
State Plane 683,137.6484 N, 2,297,477.9032 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0	0.0 - 1.0: TOPSOIL										
1	12	12	2,4 4,6	2	1.0 - 12.0: CLAY, 10% fine sand, <5% gravel, roots, and Wood, brown (7.5YR 5/4), moist to wet at 3.0 ft. (Fill)	OL			2.0						
2	8	8	2,2 4,4	4					1.4						
3	12	12	2,3 3,3	6		CL			1.4						
4	16	16	1,2 2,2	8					1.4						
5	20	20	1,1 1,1	10	9.7: numerous fine sand seams, 1 ft. in thickness				1.4						
6	20	20	2,3 6,6	12					1.4						
7	6	6	12,16 10/4	14	12.0 - 26.0: SAND, medium, 25% well rounded to subangular gravel (>95% limestone, <5% igneous), reddish brown (5YR 5/4), moist (Till)				1.9						
8	2	2	7 50/1	16		SP			--						
9	18	18	11,21 23,25	18					1.4						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				18											
10	12	12	13,13 21 50/1	20					1.4						
11	0	0	50/4	22					--						
12	10	10	6,12 14,23	24		SP			1.4						
13	3	3	50/3	26					--						
14	18	18	30 50/4	28	26.0 - 40.0: SAND, coarse, 10% limestone gravel, pinkish gray (7.5YR 6/2), moist (Till) 34.0 - 36.0: silt lense, light brown (7.5YR 6/4) wet				1.4						
15	12	12	7,10 20,23	30					1.4						
16	18	18	4,6 8,9	32					1.4						
17	12	12	7,9 13,5	34		SP			1.4						
18	20	20	6,6 9,12	36					1.4						
19	22	22	10,15 18,27	38					1.4						
20	20	20	17,17 18,20	40					1.4						
21	20	20	10,12 14,15	42	40.0 - 41.5: SAND and GRAVEL, coarse, wet (Till) 41.5 - 42.0: SAND and SILT, fine sand, moist (Till)	GP SM			1.4						
22	22	22	6,8 10,12	44	42.0 - 49.0: SAND, medium, subangular to sub-rounded, well sorted, brown (7.5YR 5/4), saturated (Outwash)				1.4						
23	22	22	1,1 1,1	46		SP			1.4						
				48											
				50	EOB: 49.0 ft. Well installed at 47.54 ft.										

SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-105

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (M M D D Y Y)	Date Drilling Completed (M M D D Y Y)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	06/14/93	06/15/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		P-105	_____ Feet MSL	869.88 Feet MSL	8 inches

Boring Location
State Plane 683,136.3490 N, 2,297,482.6476 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0	0.0 - 1.0: TOPSOIL											
1	12	12	2,4 4,6	2	1.0 - 12.0: CLAY, 10% fine sand, <5% gravel, roots, and wood, brown (7.5YR 5/4), moist to wet at 3.0 ft. (Fill)	OL			2.0							
2	8	8	2,2 4,4	4					1.4							
3	12	12	2,3 3,3	6		CL			1.4							
4	16	16	1,2 2,2	8					1.4							
5	20	20	1,1 1,1	10	9.7: numerous fine sand seams, 1 ft. in thickness				1.4							
6	20	20	2,3 6,6	12	Auger refusal at 12 ft; moved 5 ft. east and began again.				1.4							
7	6	6	12,16 50/4	14	12.0 - 26.0: SAND, medium, 25% well rounded to subangular gravel (>95% limestone, <5% igneous), reddish brown (5YR 5/4), silty clay layer 13.6 to 13.9 ft., moist (Till)				1.9							
8	2	2	7 50/4	16		SP			--							
9	18	18	11,21 23,25	18					1.4							

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
10	12	12	13,13 21 50/1	18 20					1.4						
11	0	0	50/4	22		SP			--						
12	10	10	6,12 14,23	24					1.4						
13	3	3	50/3	26					--						
14	18	18	30 50/4	28	26.0 - 40.0: SAND, coarse, 10% limestone gravel, pinkish gray (7.5YR 6/2), moist (Till)				1.4						
15	12	12	7,10 20,23	30					1.4						
16	18	18	4,6 8,9	32					1.4						
17	12	12	7,9 13,5	34		SP			1.4						
18	20	20	6,6 9,12	36					1.4						
19	22	22	10,15 18,27	38					1.4						
20	20	20	17,17 18,20	40					1.4						
21	20	20	10,12 14,15	42	40.0 - 41.5: SAND and GRAVEL, coarse, wet (Till) 41.5 - 42.0: SAND and SILT, fine sand, moist	GP SM			1.4						
22	22	22	6,8 10,12	44	42.0 - 85.0: SAND, medium, subangular to sub-rounded, well sorted, brown (7.5YR 5/4), saturated (Outwash)				1.4						
23	22	22	1,1 1,1	46					1.4						
1	6	6	6,6 5,5	48		SP			3.5						
2	24	24	1,2 2,4	50					3.0						
3	18	18	4,4 4,4	52					1.4						
4	20	20	8,2 6,7	54					1.4						

Boring Number P-105

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD / REMENTS
				54											
5	18		3,1 1,2	56					1.4						
6	24		4,3 3,4	58					1.4						
7	20		6,6 7,8	60					1.4						
8	24		10,11 16,12	62					1.4						
9	20		6,10 12,14	64	63.5 - 64.0: silt and fine sand lense				1.4						
10	24		2,3 5,5	66					1.4						
11	24		1,1 1,2	68		SP			1.4						
12	24		6,6 10,12	70					1.4						
13	24		10,10 12,14	72					1.4						
14	24		5,5 6,7	74					1.4						
15	24		5,10 10,12	76					1.4						
16	24		10,16 15,20	78					1.4						
				80	80.0 - 82.0: gray silty clay lense (from cuttings)	CL									
				82		SP									
				84											
					EOB: 85.0 ft.										
				86	Piezometer installed at 80.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	MW-106

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	06 / 01 / 93	06 / 08 / 93	Hollow Stem Auger/Air Rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	MW-106	_____ Feet MSL	876.34 Feet MSL	6 inches

Boring Location
State Plane 682,209.3772 N, 2,298,373.5075 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0												
1	18		1,1 1,1		0.0 - 0.5: TOPSOIL, dark brown silty clay moist 0.5 - 5.5: SILTY CLAY, 20% fine to medium sand, brown (7.5YR 5/6), moist (Till)	OL			2.0							
2	20		1,3 2,3	2		CL			1.2							
3	12		2,3 7,9	4	4.5 - 5.0: wet sandy clay lense				1.2							
4	0		35 50/1	6	5.5 - 39.0: SAND, coarse to fine, 25 to 35% subangular to subrounded gravel (90% limestone, 10% igneous), brown (7.5YR 4/6), moist (Till)	SP			--							
5	14		6,12 35,22	8					1.4							
6	12		9,12 16,18	10					1.4							
7	14		13,15 27 50/1	12					1.2							
8	8		8,10 12,13	14	14.0 - 18.0: gravel lense				1.2							
9	0		50/3	16					--							
				18												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD / COMMENTS
				18												
10		12	16,16 17,20						1.4							
				20												
11		6	9 50/4						1.5							
				22	22.0 - 24.0: gravel lense											
12		4	38 50/4						2.0							
				24												
13		0	50/1						--							
				26												
14		1	40,50 60,--						--							
				28	28.0 - 30.0: gravel lense	SP										
15		4	50/4						1.6							
				30	30.0 - 32.0: sand lense, 10% gravel											
16		2	20 50/1						--							
				32												
17		1	50/1						--							
				34												
18		0	25/0						--							
				36												
19		4	25,33 13,18						2.2							
				38												
20		16	8,12 15,8		39.0 - 47.5: SAND, fine, light yellowish brown (10YR 6/4) with dark yellowish brown (10YR 4/6) silty sand laminations, moist (Till)				1.4							
				40												
21		24	6,4 13,6		43.0 - 43.5: silt and fine sand lense, light olive brown (2.5Y 5/8)				1.2							
				42												
22		24	4,5 5,6		44.0 - 45.0: 10% subrounded to well rounded gravel	SM			1.2							
				44												
23		20	7,7 14,18		46.0 - 46.5: 10% rounded gravel				1.4							
				46												
24		20	6,6 10,12		47.0 - 47.5: silt and fine sand lense, light olive brown (2.5Y 5/8)				1.2							
				48	47.5 - 52.0: SAND, medium to very coarse, 10% subangular to subrounded gravel, moist to saturated at 50 ft. (Till)											
25		6	17,17 18,21						2.0							
				50		SP										
26		8	10,10 12,10						1.8							
				52	52.0 - 55.0: SAND, coarse, 15 to 20% subrounded to well rounded gravel, brown (5YR 4/4), saturated (Till)											
27		12	7,8 15,16			SP			1.8							
				54												

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: LIQUID LIMIT	SOIL PROPERTIES: PLASTIC LIMIT	SOIL PROPERTIES: P 200	RQD/ COMMENTS
			54											
28	8	8,10 10,12		EOB: 55.0 ft.	SP									
			56	Monitor well installed at 55.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of 2

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-106

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	06/01/93	06/08/93	Hollow Stem Auger/Air Rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	P-106	_____ Feet MSL	876.55 Feet MSL	6 inches

Boring Location
State Plane 682,209.7973 N, 2,298,367.1358 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE RECOVERED (in)	SAMPLE BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
			0											
1	18	1,1 1,1	2	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist 0.5 - 5.5: SILTY CLAY, 20% fine to medium sand, brown (7.5YR 5/6), moist (Till)	OL			2.0						
2	20	1,3 2,3	4	4.5 - 5.0: wet sandy clay lense	CL			1.2						
3	12	2,3 7,9	6	5.5 - 39.0: SAND, coarse to fine, 25 to 35% subangular to subrounded gravel (90% limestone, 10% igneous), brown (7.5YR 4/6), moist (Till)				1.2						
4	0	35 50/1	8					--						
5	14	6,12 35,22	10					1.4						
6	12	9,12 16,18	12		SP			1.4						
7	14	13,15 37 50/1	14	14.0 - 18.0: gravel lense				1.2						
8	8	8,10 12,13	16					1.2						
9	0	50/3	18					--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Eric J. Ram

Firm: SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			18												
10	12	16,16 17,20	20					1.4							
11	6	9 50/4	22	22.0 - 24.0: gravel lense				1.5							
12	4	38 50/4	24					2.0							
13	0	50/1	26					--							
14	1	40,50 60,--	28	28.0 - 30.0: gravel lense	SP			--							
15	4	50/4	30	30.0 - 32.0: sand lense, 10% gravel				1.6							
16	2	20 50/1	32					--							
17	1	50/1	34					--							
18	0	25/0	36					--							
19	4	25,33 13,18	38					2.2							
20	16	8,12 15,8	40	39.0 - 47.5: SAND, fine, light yellowish brown (10YR 6/4) with dark yellowish brown (10YR 4/6) silty sand laminations, moist (Till)				1.4							
21	24	6,4 13,6	42	43.0 - 43.5: silt and fine sand lense, light olive brown (2.5Y 5/8)				1.2							
22	24	4,5 5,6	44	44.0 - 45.0: 10% subangular to well rounded gravel	SM			1.2							
23	20	7,7 14,18	46	46.0 - 46.5: 10% rounded gravel				1.4							
24	20	6,6 10,12	48	47.0 - 47.5: silt and fine sand lense, light olive brown (2.5Y 5/8)				1.2							
25	6	17,17 18,21	50	47.5 - 52.0: SAND, medium to very coarse, 10% subangular to subrounded gravel, moist to saturated at 50 ft. (Till)	SP			2.0							
26	8	10,10 12,10	52					1.8							
27	12	7,8 15,16	54	52.0 - 78.0: SAND, coarse, 15 to 20% subrounded to well rounded gravel, brown (5YR 4/4), saturated (Till)	SP			1.8							

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			54											
28	8	8,10 10,12	56	56.0 - 58.0: gravel lense				1.4						
29	0	4,5 5,6	58					1.4						
30	18	50/0	60		SP			1.4						
31	18	7,7 9,14	62					3.4						
32	18	6,4 4,6	64					2.8						
33	22	4,5 5,6	66					2.5						
34	16	6,8 10,10	68					2.6						
35	23	5,10 13,13	70					2.8						
36	16	7,7 8,12	72					2.2						
37	0	1,1 2,1	74					--						
38	12	4,4 8,10	76					2.4						
39	0	2,2 4,8	78					--						
40	12	6,5 2,2	80	78.0 - 90.0: SAND, medium, 15% subrounded to well rounded gravel, gray (7.5YR 6/0), saturated (Till)				3.0						
41	0	13,6 7,6	82					--						
42	6	8,13 17,21	3 84		SP			3.0						
43	4	3,2 2,3	86					--						
44	24	5,9 13,21	88					3.0						
			90	EOB: 90.0 ft. Well installed at 85.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	MW-107

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/11/93	05/12/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___	MW-107	_____ Feet MSL	869.42 Feet MSL	8 inches

Boring Location
State Plane 681,752.2163 N, 2,297,726.8023 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY LIMIT	P200	RQD/COMMENTS
				0	0.0 - 0.3: TOPSOIL, dark brown silty clay, moist	OL									
1	18	18	1,1 2,3	2	0.3 - 1.0: SAND, fine, light brown (7.5YR 6/4), moist (Till)	SP			2.6						
2	12	12	2,2 3,4	4	1.0 - 3.8: SILTY CLAY, 15% subrounded gravel, yellowish brown (10YR 5/6), moist (Till)	CL			1.2						
3	18	18	7,10 15,15	6	3.8 - 5.5: SAND, coarse, very dark grayish brown (2.5Y 3/2), moist (Till)	SP			1.8						
4	18	18	7,8 9,9	8	5.5 - 39.0: SAND, fine, 15% subrounded to well rounded gravel (>90% limestone; <10% igneous), reddish brown (5YR 5/3), moist (Till)				1.2						
5	18	18	7,9 15,15	10					2.0						
6	24	24	7,8 10,10	12		SP			1.4						
7	16	16	7,9 18,23	14					1.4						
8	18	18	6,6 7,7	16	15.0 - 16.0: Reddish yellow, coarse sand lense (7.5YR 6/6)				1.0						
9	2	2	20 50/2	18					--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROCK COMMENTS
				18											
10		16	8,15 18,20	20					1.0						
11		12	9,15 18,23	22					2.5						
12		18	8,10 18,20	24					1.6						
13		18	8,10 16,18	26					1.0						
14		3	30,15 16,20	28		SP			--						
15		1	10 50/1	30					--						
16		5	50/2	32					2.2						
17		0	10 50/3	34					--						
18		12	12,15 50/0	36					1.6						
19		8	15 50/1	38					2.0						
20		18	6,12 9,15	40	39.0 - 44.5: SAND, coarse, well sorted, brown (7.5YR 4/6), moist (Outwash)				1.1						
21		12	6,8 10,15	42		SP			1.1						
22		20	4,8 8,8	44					1.1						
23		24	7,7 10,11	46	44.5 - 49.8: SILTY SAND, fine, well sorted, brown (7.5YR 6/4), moist to saturated at 46.0 ft. (Outwash)				1.1						
24		20	6,12 13,15	48		SM			1.1						
25		20	6,6 12,25	50					1.1						
26		22	8,10 14,16	52	49.8 - 54.0: SAND, coarse, subrounded to well rounded, well sorted, yellowish red (5YR 5/8), saturated (Outwash)				1.1						
				54	EOB: 54.0 ft. Well set at 53.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-107

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenberg	05/11/93	05/12/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-107	_____ Feet MSL	871.38 Feet MSL	8 inches

Boring Location
State Plane 681,757.5633 N, 2,2917,727.2697 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
				0	0.0 - 0.3: TOPSOIL, dark brown silty clay, moist	OL									
1	18	18	1,1 2,3	2	0.3 - 1.0: SAND, fine, light brown (7.5YR 6/4), moist (Till)	SP			2.6						
2	12	12	2,2 3,4	4	1.0 - 3.8: SILTY CLAY, 15% subrounded gravel, yellowish brown (10YR 5/6), moist (Till)	CL			1.2						
3	18	18	7,10 15,15	6	3.8 - 5.5: SAND, coarse, very dark grayish brown (2.5Y 3/2), moist (Till)	SP			1.8						
4	18	18	7,8 9,9	8	5.5 - 39.0: SAND, fine, 15% subrounded to well rounded gravel (>90% limestone; <10% igneous), reddish brown (5YR 5/3), moist (Till)				1.2						
5	18	18	7,9 15,15	10					2.0						
6	24	24	7,8 10,10	12		SP			1.4						
7	16	16	7,9 18,23	14					1.4						
8	18	18	6,6 7,7	16	15.0 - 16.0: Reddish yellow, coarse sand lense (7.5YR 6/6)				1.0						
9	2	2	20 50/2	18					--						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD / COMMENTS
10	16		8,15 18,20	18-20		SP			1.0						
11	12		9,15 18,23						2.5						
12	18		8,10 18,20	22-24					1.6						
13	18		8,10 16,18						1.0						
14	3		30,15 16,20	26-28					--						
15	1		10 50/1						--						
16	5		50/2	30-32					2.2						
17	0		10 50/3						--						
18	12		12,15 50/0	34-36					1.6						
19	8		15 50/1						2.0						
20	18		6,12 9,15	38-40	39.0 - 44.5: SAND, coarse, well sorted, brown (7.5YR 4/6), moist (Outwash)				1.1						
21	12		6,8 10,15			SP			1.1						
22	20		4,8 8,8	42-44					1.1						
23	24		7,7 10,11		44.5 - 49.8: SAND, fine, well sorted, brown (7.5YR 6/4), moist to saturated at 46.0 ft. (Outwash)				1.1						
24	20		6,12 13,15	46-48		SP			1.1						
25	20		6,6 12,25						1.1						
				48-50	49.8 - 80.0: SAND, coarse, subrounded to well rounded, <10% gravel, well sorted, yellowish red (5YR 5/8), saturated (Outwash)										
				50-52		SP									
1	12		6,6 10,12						1.8						
				52-54											

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD/ COMMENTS
			54											
2	12	4,1 1,4						1.6						
			56											
3	16	4,5 2,5						1.0						
			58											
4	16	3,6 6,7						1.0						
			60	60.0 - 62.0: iron staining										
5	24	3,4 8,10						1.0						
			62											
6	24	4,4 4,11						1.2						
			64	64.0 - 67.0: 15% gravel and some gray mottles										
7	12	4,4 5,6						1.0						
			66											
8	21	6,9 10,12		67.5 - 67.6: fine sand lense	SP			1.0						
			68	68.0 - 69.0: mottled brown and gray silty clay lense										
9	12	6,7 9,10						1.0						
			70											
10	16	4,5 10,13						1.0						
			72											
11	18	3,4 6,8						1.0						
			74											
12	16	4,4 6,6						1.0						
			76											
13	24	4,5 7,9		77.5 - 78.0: silty clay lense				1.2						
			78											
14	24	4,14 13,9						1.0						
			80	80.0 - 83.0: SILT with sand seams, gray (7.5YR 6.0), saturated (Till)	ML									
15	24	5,14 16,9						1.0						
			82											
16	24	4,5 7,10		83.0 - 85.0: SANDY SILT, gray (7.5YR 6/0), saturated (Till)	SM			1.0						
			84											
				EOB: 85.0 ft.										
			86	Piezometer installed at 85.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

P-107D

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-107D

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Chuck Blunt	09/28/93	10/22/93	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	P-107D	819.63 Feet MSL	869.35 Feet MSL	8 inches

Boring Location
State Plane 681,760.5491 N, 2,266,170.2733 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 52' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
				0												
1	18	12	1,1 2,3		0.0 - 0.3: TOPSOIL, dark brown silty clay, moist	OL SP			2.6							
2	12	12	2,2 3,4	2	0.3 - 1.0: SAND, fine, light brown (7.5YR 6/4), moist (Till) 1.0 - 3.8: SILTY CLAY, 15% subrounded gravel, yellowish brown (10YR 5/6), moist (Till)	CL			1.2							
3	18	12	7,10 15,15	4	3.8 - 5.5: SAND, coarse, very dark grayish brown (2.5Y 3/2), moist (Till)	SP			1.8							
4	18	12	7,8 9,9	6	5.5 - 39.0: SAND, fine, 15% subrounded to well rounded gravel (>90% limestone; <10% igneous), reddish brown (5YR 5/3), moist (Till)				1.2							
5	18	12	7,9 15,15	8					2.0							
6	24	12	7,8 10,10	10		SP			1.4							
7	16	12	7,9 18,23	12					1.4							
8	18	12	6,6 7,7	14	15.0 - 16.0: Reddish yellow, coarse sand lense (7.5YR 6/6)				1.0							
9	2	2	20 50/2	16					--							
				18												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John L. Rose

Firm: SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
				18											
10		16	8,15 18,20	20					1.0						
11		12	9,15 18,23	22					2.5						
12		18	8,10 18,20	24					1.6						
13		18	8,10 16,18	26					1.0						
14		3	30,15 16,20	28					--						
15		1	10 50/1	30		SP			--						
16		5	50/2	32					2.2						
17		0	10 50/3	34					--						
18		12	12,15 50/0	36					1.6						
19		8	15 50/1	38					2.0						
20		18	6,12 9,15	40	39.0 - 44.5: SAND, coarse, well sorted, brown (7.5YR 4/6), moist (Outwash)				1.1						
21		12	6,8 10,15	42		SP			1.1						
22		20	4,8 8,8	44					1.1						
23		24	7,7 10,11	46	44.5 - 49.8: SAND, fine, well sorted, brown (7.5YR 6/4), moist to saturated at 46.0 ft. (Outwash)				1.1						
24		20	6,12 13,15	48		SP			1.1						
25		20	6,6 12,25	50					1.1						
				52	49.8 - 80.0: SAND, coarse, subrounded to well rounded, <10% gravel, well sorted, yellowish red (5YR 5/8), saturated (Outwash)	SP									
1		12	6,6 10,12	54					1.8						

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD / COMMENTS
				54											
2		12	4,1 1,4	56					1.6						
3		16	4,5 2,5	58					1.0						
4		16	3,6 6,7	60	60.0 - 62.0: iron staining				1.0						
5		24	3,4 8,10	62					1.0						
6		24	4,4 4,11	64	64.0 - 67.0: 15% gravel and some gray mottles				1.2						
7		12	4,4 5,6	66					1.0						
8		21	6,9 10,12	68	67.5 - 67.6: fine sand lense	SP			1.0						
9		12	6,7 9,10	70	68.0 - 69.0: mottled brown and gray silty clay lense				1.0						
10		16	4,5 10,13	72					1.0						
11		18	3,4 6,8	74					1.0						
12		16	4,4 6,6	76					1.0						
13		24	4,5 7,9	78	77.5 - 78.0: silty clay lense				1.2						
14		24	4,14 13,9	80					1.0						
15		24	5,14 16,9	82	80.0 - 83.0: SILT with sand seams, gray (7.5YR 6.0), saturated (Till)	ML			1.0						
16		24	4,5 7,10	84	83.0 - 85.0: SANDY SILT, gray (7.5YR 6/0), saturated (Till)	SM			1.0						
				85											
1		18	20,32 35,42	87	85.0 - 90.5: SAND, silty, fine, reddish gray (5YR 5/2), saturated (Till)	SP			3.0						
2		16	13,38 40,40	89					3.0						

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
				89											
3	24		8,10 13,38	91	90.5 - 116.0: SILT, 0 to 20% fine sand, gray (10YR 5/1) with reddish gray (10YR 5/1) layers, moist (Till)	SP			3.0						
4	24		13,25 28,33	93	92.0: 1" fine sand lens				3.0						
5	24		9,11 12,15	95	94.5: 1" fine sand lens				3.0						
6	24		6,11 13,21	97	96.0: 1" fine sand lens				3.0						
7	16		13,18 21,34	99					3.0						
8	24		7,7 10,13	101	100.5 - 101.0: fine sand lens				3.0						
9				103	103.0 - 112.0: 30% fine sand	ML			--						
10	18		7,10 19,21	105					3.0						
11	18		10,9 12,14	107					3.0						
12	18		9,9 13,16	109					3.0						
13	24		8,11 14,21	111					3.0						
14	24		9,9 10,11	113					0.6						
15	12		7,9 11,14	115	114.0 - 114.5: medium sand lens				0.6						
16	12		8,16 10,22	117	116.0 - 142.0: SAND, medium to fine, gray brown (10YR 5/2), intermittent silty lenses, saturated (Till)				1.0						
17	18		6,13 16,21	119					0.6						
18	12		11,16 18,21	121		SP			1.8						
19	12		10,14 18,20	123					0.8						
20	12		13,22 32,24	125					0.8						

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD/ COMMENTS
21		12	10,10 10,14	125 127		SP			0.6						
22		14	14,14 16,20	129					1.4						
23		12	14,13 13,12	131					0.8						
24		12	15,14 17,22	133					0.8						
25		14	11,13 15,22	135					1.0						
26		14	12,11 13,17	137					1.0						
27		20	3,10 12,15	139	138.8 - 140.0: Silt lens, gray				1.0						
28		16	12,14 16,17	141					1.0						●
29		18	8,12 12,15	143	142.0 - 151.0: SILT, gray (10YR 5/1), moist to saturated (Till)	ML			1.2						
30		24	7,8 9,10	145					1.2						
31		24	6,7 10,13	147					1.2						
32		24	9,7 11,8	149					1.2						
33		24	5,7 7,9	151					1.2						
34		24	6,15 18,12	153	151.0 - 160.5: CLAY, gray (10YR 5/1), saturated (Till)	CL			0.8						
35		24	8,19 11,17	155					0.8						
36		24	7,8 11,12	157					0.8						
37		24	8,8 10,13	159					0.8						
38		24	4,9 11,14	161	160.5 - 182.0: SAND, fine, saturated (Till)				0.8						●

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
39	18	7,9 13,14	161 163	163.0 - 167.0: medium to coarse sand, <15% gravel	SP			0.8						
40	12	4,26 24,21	165					0.8						
41	12	14,21 27,24	167					1.0						
42	12	9,12 9,11	169					1.0						
43	12	10,13 11,13	171					1.0						
44	14	8,11 14,17	173					1.0						
45	20	17,8 9,13	175											
46	18	11,9 12,15	177											
47	12	7,8 8,13	179											
			181	182.0 - 224.0: SANDSTONE, medium to fine grained, pale brown (10YR 6/3), saturated (St. Peter Sandstone)										
48	0	25/ 0.2	183											
			185											
			187											
			189		Sand-stone									
			190	* Note depth scale change										
			200											
			210	214.0 - 218.0: SANDSTONE and SILTSTONE, reddish brown										
			220											

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ CORE COMMENTS
			220	220.0 - 224.0: SANDSTONE, reddish brown, very fine										
			230	224.0 - 322.0: SANDSTONE, medium to very fine, white to pale brown and pale gray (10YR 8/1, 10YR 8/3, and 10YR 7/1), saturated (Franconia Sandstone)										
			240											
			250											
			260											
			270		Sandstone									
			280											
			290	293.0 - 294.0: reddish brown										
			300											
			310											
		Screen	320	322.0 - 326.0: QUARTZITE, purple	Quartzite									
			330	326.0 - 340.5: GRANITE, feldspathic with quartz and minor muscasite, red	Granite									
			340	EOB: 340.5 ft. Piezometer installed at 325.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		MW-108

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenburg	09/07/93	09/07/93	Hollow-Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	MW-108	818.91 Feet MSL	842.90 Feet MSL	8 inches

Boring Location
State Plane 682,142.5955 N, 2,266,956.8669 E S/C/N
SW ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 55' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0	0.0 - 28.0: SAND, coarse, 20 to 30% subrounded to well rounded gravel and cobbles, yellowish brown (10YR 5/6), moist to saturated at 23.0 ft. (Till)										
1	2	24	3,6 8,4	2					3.0						
2	12	12	4,7 7,7	4					2.0						
3	8	12	4,9 4,6	6					2.2						
4	8	12	4,10 8,7	8					2.6						
5	4	12	6,9 12,11	10	10.0 - 12.0: Fine brown (7.5YR 5/4) sand lense	SP			3.2						
6	6	12	11,8 6,11	12					1.2						
7	8	12	12,11 11,11	14					4.2						
8	10	12	14,18 9,6	16					4.0						
9	2	12	18,14 9,8	18					4.6						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	SIMON HYDRO-SEARCH 175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD/ COMMENTS
10	0		27,12 7,7	18					--						
11	1		17,10 6,6	20					--						
12	10		5,3 3,5	22		SP			4.6						
13	12		4,4 4,4	24					3.8						
14	1½		20,15 4,4	26					--						
				28	EOB: 28.0 ft. Monitor well installed at 27.8 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	P-108

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenburg	09/07/93	09/07/93	Hollow-Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___	___ ___ ___ ___	P-108	821.95 Feet MSL	843.00 Feet MSL	8 inches

Boring Location
State Plane 682,143.6722 N, 2,265,492.5557 E S/C/N
SW ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 55' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE RECOVERED (in)	SAMPLE BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: PENETRATION STANDARD	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
			0	0.0 - 28.0: SAND, coarse, 20 to 30% subrounded to well rounded gravel and cobbles, yellowish brown (10YR 5/6), moist to saturated at 23.0 ft. (Till)										
1	2	3,6 8,4	2					3.0						
2	12	4,7 7,7	4					2.0						
3	8	4,9 4,6	6					2.2						
4	8	4,10 8,7	8					2.6						
5	4	6,9 12,11	10	10.0 - 12.0: Fine brown (7.5YR 5/4) sand lense	SP			3.2						
6	6	11,8 6,11	12					1.2						
7	8	12,11 11,11	14					4.2						
8	10	14,18 9,6	16					4.0						
9	2	18,14 9,8	18					4.6						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ REMARKS
10	0	27,12 7,7	18 20					--						
11	1	17,10 6,6						--						
12	10	5,3 3,5	22 24					4.6						
13	12	4,4 4,4			SP			3.8						
14	1½	20,15 4,4	26 28					--						
15	18	25,27 24,22						1.4						
16	4	50/4	30 32					1.4						
17	10	25,20 50/2		33.0 - 62.0: SAND, medium to fine, <15% gravel and cobbles, brown (7.5YR 5/4), saturated (Till)				1.6						
18	16	36,39 13,10	34 36					1.4						
19	16	3,4 4,5						1.4						
20	24	7,9 12,21	38 40	39.0 - 40.0: Silt and very fine sand lense, pale brown (10YR 6/3), saturated				1.4						
			42 44 46 48 50 52		SW									

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			52		SW									
			54											
			56											
			58											
			60											
			62	EOB: 62.0 ft. Piezometer installed at 60.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	MW-109

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenburg	09/08/93	09/09/93	Hollow-Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___	MW-109	-- Feet MSL	871.42 Feet MSL	8 inches

Boring Location
State Plane 682,721.6952 N, 2,266,959.8444 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 55' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town
Fond du Lac	2 0	Ripon

SAMPLE NUMBER	SAMPLE RECOVERED (in)	SAMPLE COUNTS BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
			0	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist	OL									
1	6	1,2 2,2	2	0.5 - 14.0: SILT, trace glass fragments, brown (7.5YR 5/4), moist (Fill)				1.4						
2	12	2,2 2,2	4					1.2						
3	1	1,1 2,2	6					--						
4	2	2,2 2,2	8		SP			--						
5	4	1,2 2,2	10					1.2						
6	2	1,1 1,1	12					--						
7	2	1,1 1,1	14					--						
8	4	4,4 8,9	16	14.0 - 41.0: SAND, coarse, 20 to 40% subangular to subrounded gravel and cobbles, dark red (2.5 YR 3/6), moist (Till)	SP			1.2						
9	3	45, 50/1	18					1.2						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
				18	18.0 - 20.0: Pale brown (10YR 6/3) lense	SP									
10	4		15,30 28,27	20					1.2						
11	8		3,6 12,12	22	21.5 - 22.0: Olive green coarse sand lense (weathered peridotite)				1.2						
12	12		15,25 26,30	24					1.2						
13	6		3,6 20,15	26					1.2						
14	4		8,12 24,24	28					1.8						
15	6		7,21 11,14	30					1.6						
16	8		7,50 11,12	32					1.8						
17	4		13,10 10,11	34					0.8						
18	0		12,14 18,22	36					--						
19	10		13,14 11,13	38					0.8						
20	12		27,11 13,7	40					1.4						
21	6		6,7 6,10	42	41.0 - 80.0: SAND, coarse to fine, 10 to 20% well rounded gravel and cobbles, brown (7.5YR 5/4), moist to saturated at 45.0 ft. (Till)	SW			0.8						
22	0		8,11 13,15	44					--						
23	12		20,25 16,18	46					1.0						
24	16		30,17 10,12	48					--						
25	10		5,5 6,7	50					0.8						
					EOB: 50.0 ft. Monitor well installed at 50.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		P-109

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenburg	09/09/93	09/09/93	Hollow-Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		P-109	824.35 Feet MSL	870.95 Feet MSL	8 inches

Boring Location
State Plane 682,726.3037 N, 2,266,956.8669 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 55' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: LIQUID LIMIT	SOIL PROPERTIES: PLASTIC LIMIT	SOIL PROPERTIES: P200	RQD/ COMMENTS
				0	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist	OL									
1	6	6	1,2 2,2	2	0.5 - 14.0: SILT, trace glass fragments, brown (7.5YR 5/4), moist (Fill)				1.4						
2	12	12	2,2 2,2	4					1.2						
3	1	1	1,1 2,2	6					--						
4	2	2	2,2 2,2	8		SP			--						
5	4	4	1,2 2,2	10					1.2						
6	2	2	1,1 1,1	12					--						
7	2	2	1,1 1,1	14					--						
8	4	4	4,4 8,9	16	14.0 - 41.0: SAND, coarse, 20 to 40% subangular to subrounded gravel and cobbles, dark red (2.5 YR 3/6), moist (Till)	SP			1.2						
9	3	3	45, 50/1	18					1.2						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature]

Firm: SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
			18											
10	4	15,30 28,27	20	18.0 - 20.0: Pale brown (10YR 6/3) sand lens				1.2						
11	8	3,6 12,12	22	21.5 - 22.0: Olive green coarse sand lense (weathered peridotite)				1.2						
12	12	15,25 26,30	24					1.2						
13	6	3,6 20,15	26					1.2						
14	4	8,12 24,24	28					1.8						
15	6	7,21 11,14	30		SP			1.6						
16	8	7,50 11,12	32					1.8						
17	4	13,10 10,11	34					0.8						
18	0	12,14 18,22	36					--						
19	10	13,14 11,13	38					0.8						
20	12	27,11 13,7	40					1.4						
21	6	6,7 6,10	42	41.0 - 80.0: SAND, coarse to fine, 10 to 20% well rounded gravel and cobbles, brown (7.5YR 5/4), moist to saturated at 45.0 ft. (Till)				0.8						
22	0	8,11 13,15	44					--						
23	12	20,25 16,18	46					1.0						
24	16	30,17 10,12	48		SW			--						
25	10	5,5 6,7	50					0.8						
26	12	9,10 10,12	52	50.0 - 51.0: Reddish yellow (5YR 6/8) coarse sand lense				0.8						

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROCK COMMENTS
27	24	12	15,7 4,4	52	54.0 - 80.0: <15% cobbles and gravel	SW			0.8						
28	24	12	7,2 2,2	54					0.8						
29	24	2	2,2 3,5	56					--						
30	24	12	13,7 15,20	58					0.8						
31	24	0	12,12 9,10	60					--						
32	24	0	13,16 12,15	62					--						
33	24	8	9,7 6,6	64					0.8						
34	24	10	28,8 5,6	66					0.8						
35	24	4	15,7 6,6	68					0.8						
36	24	0	24,9 7,9	70					--						
				72											
				74											
37	24	20	20,60 13,15	76					--						
				78											
				80	EOB: 80.0 ft. Piezometer installed at 80.0 ft.										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NH Landfill		MW-110

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling Eric Schoenburg	09/10/93	09/10/93	Hollow-Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___	MW-110	824.55 Feet MSL	826.41 Feet MSL	8 inches

Boring Location
State Plane 683,185.2962 N, 2,266,794.9036 E S/C/N
SE ¼ of SE ¼ of Section 7 T 16 N, R 17 E
Lat 43° 55' ___
Long 88° 52' ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town
Fond du Lac	20	Ripon

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0												
1	12	2,2 2,2		2	0.0 - 4.2: SILTY CLAY, numerous roots, highly organic, black (2.5YR 2.5/0), moist (Topsoil)	OH			2.2							
2	8	1,1 2,2		4					2.2							
3	24	1,1 2,3		6	4.2 - 13.0: CLAY, 15% very fine sand, trace roots, dark gray (2.5Y 4/0) with minor dark yellowish brown mottling (10YR 4/4), highly plastic, saturated (Till)				2.2							
4	24	1,1 1,1		8					2.2							
5	24	1,1 1,1		10		CH			2.2							
6	24	1,1 1,1		12					2.2							
					EOB: 13.0 ft. Monitor well installed at 13.0 ft.											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATIC
Form: 4400-122 7/9

Page 1 of __

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill		MW-111

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Wisconsin Test Drilling John Weeks	04/04/94	04/04/94	Hollow Stem Auger

DNR Facility Well No.	Wi Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		P-111	817.58 Feet MSL	856.46 Feet MSL	8 inches

Boring Location
State Plane 681233.4113 N, 2265997.8406 E S/C/N
SE ¼ of SE ¼ of Section 7 T 7 N, R 14 E ~~or W~~
Lat 43° 52′ ___
Long 88° 50′ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	20	Town of Ripon

SAMPLE NUMBER	SAMPLE RECOVERED (in)	SAMPLE BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
1	22	6,5 3,4	0	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist	OL			1.2						
2	24	4,4, 5,4	2	0.5 - 4.0: SANDY CLAY, low plasticity, 15% subrounded gravel, yellowish brown (10YR 5/6), moist (Till)	CL			1.2						
3	24	4,7 6,6	4	4.0 - 23.0: SAND and GRAVEL, 15% fines, very poorly sorted, strong brown (7.5YR 5/6), moist (Till)	SP			1.2						
4	4	3,5 7,6	6					1.2						
5	16	6,8 9,9	8					1.2						
6	18	7,9 9,10	10					1.2						
7	12	7,8 13,17	12					1.2						
8	14	17,16 15,19	14					1.2						
9	8	16,23 21,17	16					1.2						
10	10	7,12 15,13	18					1.2						
			20											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			20											
11	12	17,18 19,12			SP			1.2						
			22											
12	20	12,16 31,17		23.0 - 35.0: SILT and FINE SAND, grading to coarse sand, 15% gravel, very pale brown (10YR 7/4), moist (Till)				1.2						
			24											
13	16 18	13,19 21,27						1.2						
			26											
14	20	18,14 9,15						1.2						
			28											
15	12	12,16 13,15			SW			1.2						
			30											
16	24	26,18 24,17						1.2						
			32											
17	24	16,12 12,14						1.2						
			34											
18	24	16,12 10,12						1.2						
			35	35.0 - 42.0: SAND, medium, well sorted, brown (7.5YR 4/6), moist to saturated at 36.0 feet (Till)										
19	24	6,9 7,8						1.2						
			38											
20	24	6,5 7,7						1.2						
			40											
21	12	9,6 6,5						1.2						
			42	EOB: 42.0 feet										

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
___ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ripon FF/NN Landfill	___ ___ ___ ___ ___ ___ ___	P-111

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM/DD/YY)	Date Drilling Completed (MM/DD/YY)	Drilling Method
Wisconsin Test Drilling John Weeks	04/04/94	04/05/94	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	P-111	817.09 Feet MSL	853.97 Feet MSL	8 inches

Boring Location
State Plane 681225.0351 N, 2265999.6989 E
SE ¼ of SE ¼ of Section 7 T 7 N, R 14 E ~~or W~~
Lat 43° 52′ ___
Long 88° 50′ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Fond du Lac	2 0	Town of Ripon

SAMPLE NUMBER	SAMPLE RECOVERED LENGTH (in)	SAMPLE COUNTS BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: PENETRATION RESISTANCE STANDARD	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
1	22	6,5 3,4	0	0.0 - 0.5: TOPSOIL, dark brown silty clay, moist	OL			1.2						
2	24	4,4, 5,4	2	0.5 - 4.0: SANDY CLAY, low plasticity, 15% subrounded gravel, yellowish brown (10YR 5/6), moist (Till)	CL			1.2						
3	24	4,7 6,6	4	4.0 - 23.0: SAND and GRAVEL, 15% fines, very poorly sorted, strong brown (7.5YR 5/6), moist (Till)	SP			1.2						
4	4	3,5 7,6	6					1.2						
5	16	6,8 9,9	8					1.2						
6	18	7,9 9,10	10					1.2						
7	12	7,8 13,17	12					1.2						
8	14	17,16 15,19	14					1.2						
9	8	16,23 21,17	16					1.2						
10	10	7,12 15,13	18					1.2						
			20											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	ROD/ COMMENTS
11		12	17,18 19,12	20 22		SP			1.2						
12		20	12,16 31,17	24	23.0 - 35.0: SILT and FINE SAND, grading to coarse sand, 15% gravel, very pale brown (10YR 7/4), moist (Till)				1.2						
13		16 18	13,19 21,27	26					1.2						
14		20	18,14 9,15	28					1.2						
15		12	12,16 13,15	30		SW			1.2						
16		24	26,18 24,17	32					1.2						
17		24	16,12 12,14	34					1.2						
18		24	16,12 10,12	35					1.2						
19		24	6,9 7,8	38	35.0 - 79.0: SAND, medium, well sorted, brown (7.5YR 4/6), moist to saturated at 36.0 feet (Till)				1.2						
20		24	6,5 7,7	40					1.2						
21		12	9,6 6,5	42					1.2						
22		18	13,17 15,19	44					1.5						
23		24	2,4 7,9	46					1.5						
24		24	11,13 17,39	48		SW			1.5						
25		24	10,13 12,13	50					1.5						
26		12	7,10 10,13	52	(52.0 - 53.0: SANDY CLAY lense)				1.5						
27		12	3,7 6,5	54					1.5						

Boring Number P-111

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			54	(54.0 - 56.0: 20% GRAVEL)										
28	24	7,8 4,3						1.5						
			56											
29	12	3,3 4,11						1.5						
			58											
30	18	3,5 7,9						1.5						
			60											
31	18	3,4 6,7						1.5						
			62											
32	24	2,2 2,2		(63.0 - 79.0: Grey SAND [7.5YR 6/0])				1.5						
			64											
33	24	1,2 2,1						1.5						
			66											
34	24	1,2 1,1			SW			1.5						
			68											
35	24	3,2 2,2						1.5						
			70											
36	24	3,3 2,3						1.5						
			72											
37	16	3,3 4,6						1.5						
			74											
38	18	3,3 4,4						1.5						
			76											
39	16	3,4 6,4						1.5						
			78											
40	24	3,7 9,10		79.0 - 80.0: SILT with sand seams, grey (7.5YR 6/0), saturated (Till)	ML			1.5						
			80	EOB: 80.0 feet.										

SIMON HYDRO-SEARCH

...nt of Natural Resources — MONITORING WELL CONSTRUCTION — Form 4400-113A 8-89

...ity/Project Name: Ripon FF/NN Landfill	Grid Location: 681233.411 3 ft. N. S. / 2265997.8406 ft. E. W.	Well Name: MW-111
Facility License, Permit or Monitoring Number: _____		Wis. Unique Well Number / DNR Well Num
Type of Well: Water Table Observation Well 11 / Piezometer 12	Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 E W	Date Well Installed: 04/04/94 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ~800 ft.	Location of Well Relative to Waste/Source: Upgradient / Sidegradient / Downgradient / Not Known	Well Installed By: (Person's Name and Firm): John Wells - WTD; Jennifer J. Rink - Simon Hydro-S
Is Well A Point of Enforcement Std. Application? Yes / No		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 856.46 ft. MSL
C. Land surface elevation 853.9 ft. MSL
D. Surface seal, bottom 853.9 ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP GM GC GW SW SP
SM SC ML MH CL CH
Bedrock

13. Sieve analysis attached? Yes / No

14. Drilling method used: Rotary 50 / Hollow Stem Auger 41 / Other

15. Drilling fluid used: Water 02 / Air 01 / Drilling Mud 03 / None 99

16. Drilling additives used? Yes / No
Describe N/A

17. Source of water (attach analysis): N/A

E. Bentonite seal, top 1.0 ft. MSL or 853.9 ft.
F. Fine sand, top 282 ft. MSL or 825.7 ft.
G. Filter pack, top 298 ft. MSL or 824.7 ft.
H. Well screen, top 316 ft. MSL or 822.3 ft.
I. Well screen, bottom 419 ft. MSL or 812.0 ft.
J. Filter pack, bottom 419 ft. MSL or 812.0 ft.
K. Borehole, bottom 419 ft. MSL or 812.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in. 2"

1. Cap and lock? Yes
2. Protective cover pipe:
a. Inside diameter: 4.0
b. Length: 2.0
c. Material: Steel / Other
d. Additional protection? Yes
If yes, describe: 2" steel Bumper Posts
3. Surface seal: Bentonite / Concrete / Other
Bentonite topped w/ 1' native material
4. Material between well casing and protective pipe: Bentonite / Annular space seal / Other
#30 Sand
5. Annular space seal: chipped ~~Granular~~ Bentonite
_____ Lbs/gal mud weight ... Bentonite-sand slurry
_____ Lbs/gal mud weight ..... Bentonite slurry
_____ % Bentonite .... Bentonite-cement grout
1/4 bags volume added for any of the above
How installed: Tremie / Tremie pumped / Gravity
6. Bentonite seal: Bentonite granules / 1/4 in. 3/8 in. 1/2 in. Bentonite pellets / Other
coarse bentonite chips
7. Fine sand material: Manufacturer, product name and mesh si
Best sand #8
Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh s
Red Flint #30
Volume added 6 bags ft³
9. Well casing: Flush threaded PVC schedule 40 / Flush threaded PVC schedule 80 / Other
10. Screen material: Same as casing
Screen type: Factory cut / Continuous slot / Other
Manufacturer Timco
Slot size: 0.010
Slotted length: 9.6
11. Backfill material (below filter pack): None / Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature _____ Firm Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

GeoTrans, Inc.

LOG OF SOIL BORING

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
[redacted]/NN Landfill	00467	P-111D

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Craig Plant, Environmental Drilling Service, Inc.	04 / 01 / 2002 (mm dd yy)	04 / 03 / 2002 (mm dd yy)	Casing Hammer

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
PG201	NA	P-111D	43.71 Feet bgs	NA	6 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S/C/N | Lat__°__'____"
NW 1/4 of NE 1/4 of Section 18, T16N, R14E | Long__°__'____"

Local Grid Location
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
420013660	Fond Du Lac	20	Town of Ripon

Sample Number and Type	Sample Length Att & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength Lab Qu is bolded	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			80	Blind drill to 80 feet. Refer to borehole log for well P-111										
			85	medium brown silty clay with some gravel wet, no odor	CL									
			90	same as above but with no gravel	CL									
			95	medium brown silty clay with some sand wet, no odor	CL									
			100	light brown silty clay with minimal sand wet, no odor	CL									
			105											
			110	light brown sandy clay with minimal small gravel wet, no odor	CL									
			115	light brown clay with some sand wet, no odor	CL									
			120	medium brown sandy clay wet, no odor	CL									
			125	medium brown clay with some sand wet, no odor	CL									
			130	medium brown sandy clay with small gravel wet, no odor	CL									
			135											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Keith W Yeaton | Firm GeoTrans, Inc

Facility/Project Name: FF/NN Landfill
Boring Number P-111D

Depth in Feet (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Well Diagram [Vinyl Chloride]
140	medium brown clay with some sand and gravel wet, no odor	CL	
145	dark brown medium-grained sand with gravel (mostly < ½") wet, no odor	SP	
150	dark brown gravelly sand (gravel < ¾") trending to sandy gravel wet, no odor	SP-GW	16
155	poorly sorted gravel wet, no odor	GW	
160	medium brown gravelly sand, trending to red-brown wet, no odor	SP-GW	10
	160-161: poorly sorted gravel with some sand, wet, no odor	GW	
165, 170	beginning 161: tan sandstone, very fine-grained, some red (iron) staining, wet, no odor		6.7
175	pinkish-tan fine-grained sandstone wet, no odor		
180	tan fine-grained sandstone with slight yellow hue wet, no odor		9.1
185	brick-red fine-grained sandstone with very infrequent small pebble, wet, no odor		
190, 195	pinkish-red fine-grained sandstone with frequent small (1-2mm) white fragments (likely shells), wet, no odor		6.5
200	white, fine-grained sandstone with frequent small (1-2mm) white fragments (likely shells), wet, no odor		8
	end of borehole		

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Derek W Yantz | Firm: GeoTrans

Table 1 - Vertical Profiling Analytical Results
Well P-111D
FF/NN Landfill, Ripon, WI

5-2-02 Geotrans Report

Depth of Sample	Date Taken	cis-1,2-Dichloroethene	Toluene	Vinyl Chloride
148.5'	04/01/2002	ND	17	**16**
158.5'	04/01/2002	ND	2.1	**10**
168'	04/01/2002	ND	11	**6.7**
180'	04/02/2002	ND	23	**9.1**
190'	04/02/2002	ND	16	**6.5**
200'	04/02/2002	2.5	11	**8**
Purge Water*	04/02/2002	ND	12	**4.3**
WDNR NR140	PAL	7	200	0.02
	ES	70	1000	0.2

* Composite sample of purge and rinse water from borehole sampling & well development

All values in ug/L
ND = not detected
PAL = Preventive Action Limit
ES = Enforcement Standard
Underlined values indicate PAL exceedance
Bold values indicate ES exceedance
Samples ran using method SW-846 8260

Vertical Profiling

To determine where to place the well screen, vertical profiling of the groundwater began at 150 ft bgs. Sampling occurred as explained below.

The drill rod and bit were removed from the borehole. A grundfos pump was inserted into the well down to 4 to 6 inches above the bottom of the borehole (the outer casing ended approximately one foot above the borehole bottom) and pumped at a low rate of approximately 2-3 gallons per minute. Every two minutes, a sample was taken and the pH, temperature and conductivity were analyzed using a YSI 63/10 meter. Once these three parameters stabilized with no greater than 10% fluctuation, the pump was reduced to its minimum rate (< 1 gallon per minute) and a groundwater sample was collected for volatile organic compound (VOC) analysis.

This procedure occurred at 10-foot intervals down to 200 ft. Due to drilling logistics, the samples were actually collected at 148.5', 158.5', 168', 180', 190' and 200'. The sample at 158.5 ft was collected using a disposable bailer due to air bubbles in the sample from the pump. This was the only interval in which air bubbles were observed.

After each sampling interval, the pump and tubing were removed from the well, flushed with a detergent water and then rinsed with clean water. At the start of the next sampling interval, the pump was allowed to run for several minutes before beginning field parameter monitoring so that any rinse water was fully purged from the tubing. All purge and rinse water was contained in eight 55-gallon drums provided by the driller.

A mobile lab (New Age/Landmark Laboratories) was contracted to provide field analysis of the vertical profiling samples. The field lab required electricity (not available on-site) so it was stationed at the City of Ripon Waste Water Treatment facility located off of Highway 23. Table 1 summarizes the results of the vertical profiling analyses. All six samples had vinyl chloride concentrations that exceeded the NR 140 Enforcement Standard (ES). The sample at 200 ft had a detection of cis-1,2-dichloroethene below its NR 140 Preventive Action Limit (PAL). Finally, all samples had concentrations of toluene well below its NR 140 PAL.

Well Construction

The well was constructed on April 2, 2002, based on the mobile lab results. As the highest vinyl chloride concentration was seen at 148.5 ft bgs, the well screen was placed in that interval. The borehole was filled with bentonite chips up to the top of bedrock (161 ft). Filter pack sand was then added to 150 ft bgs, at which point the well was constructed. Initially, the well was installed with a five-foot screen placed at 150 ft. However, during the well construction, the PVC casing was accidentally snagged and pulled up slightly out of the borehole. The well casing was pushed back into the hole with a final well depth of 148.5 ft bgs. The permanent outer casing was pulled up so that the bottom was at approximately 120 ft bgs. The well construction and well development forms are attached.

GeoTrans, Inc.

LOG OF TEST BORING

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
FF/NN Landfill	000467	P-113 A+B

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Todd Schmalfedlt, Boart Longyear	08/26/2002	09/04/2002	Mud rotary

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
PG241, PG242	136, 138	P-113A, P-113B	~794 Feet MSL	830.55 Feet MSL	8 & 10 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S/C/N | Lat__° __' ____"
SW 1/4 of NE 1/4 of Section 18, T16N, R14E | Long__° __' ____"

Local Grid Location
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
420013660	Fond du Lac	20	Town of Ripon

Sample Number and Type	Sample Length Att & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength Lab Qu is bolded	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	0-1: topsoil										
			1	1-5: medium brown clay with occasional sand	CL									
			5	5: poorly sorted sandy gravel	GW									
			10	10: clayey sandy gravel	GW-GC									
			12	12: poorly sorted sandy gravel	GW									
			25	25: sand and gravel	SW & GW									
			60											

Not taken for cuttings. Ambient air readings ranged from 0.0 to 0.3 ppm

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi Hardt | Firm: GeoTrans, Inc. | 262-792-1282

Facility/Project Name: FF/NN Landfill
Boring Number: P-113

Sample: Number and Type	Sample: Length Att & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength Lab Qu is bolded	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			65	62: occasional clay present in sand and gravel										
			70											
			75	75: sand, gravel, clay (hard to determine percentages)	SW, GW, CL									
			80											
			85	82: gravelly, sandy clay	CL									
			90	88: sandy clay with occasional gravel	CL									
			95											
			100											
			105	102: sandy gravelly clay	CL									
			110	110: sandy clay with occasional gravel	CL									
			115	115: sandy gravelly clay	CL									
			120											
			125											
			130											
			135											
			140											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi Yandt

Firm: GeoTrans, Inc.

262-792-1282

Facility/Project Name: FF/NN Landfill
Boring Number: P-113

Sample Number and Type	Sample Length Att & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength Lab Qu is bolded	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			145											
			150	150: gravel, sand, clay	GW, SW, CL									
			155											
			160	157: sandy clay	CL									
			165											
			170											
			175											
			180	180: coarse sand and gravel	SP, GW									
			185											
			190											
			195	190: lithic sandstone grains include: white & red fine-grained quartz sandstone fragments, dolomite fragments, igneous fragments, chert fragments, alternating white & red (iron-rich) shale fragments (clay consistency) 195-200: shale fragments are very red *P-113B well screen set at 190'-195'*											
			200	200: begin seeing shale fragments										
			205											
			210	210: shale fragments are white										
			215											
			220											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi Yantz

Firm: GeoTrans, Inc.

262-792-1282

Sample Number and Type	Sample Length Att & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength Lab Qu is bolded	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			225	225: fewer red quartz sandstone fragments										
			230	230: brick red shale with medium to fine quartz sand										
			235											
			240	239: increasing quartz sand content and size (medium-grained)										
				242: same shale with medium to large sand and gravel										
			245	245: back to lithic sandstone with red shale fragments 247: shale fragments now white										
			250											
			255	255: some red shale fragments again										
				259: brick-red shaley lithic sandstone										
			260											
				263: very little red shale										
			265											
			270	270: white shaley lithic sandstone										
			275	275: see increase in quartz grains										
			280	280: less shale fragments and more red-orange quartz sandstone fragments 283: rock fragments more diverse – more dolomite & chert										
			285	284: start seeing red shale fragments again										
			290	290: brick-red shaley lithic sandstone 292: red shale fragments decreasing 294: red shale is gone, more shells present										
			295											
				296: red shale is back 298: red shale is gone										
			300											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm
GeoTrans, Inc.

262-792-1282

Facility/Project Name: **FF/NN Landfill**
Boring Number: **P-113**

Sample: Number and Type	Sample: Length Att & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength Lab Qu is bolded	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			305 310 315 320	lithic sandstone continues with white shale fragments										
			325	322: End of Borehole *P-113A well screen set at 317'-322'*										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
[signature]	GeoTrans, Inc.	262-792-1282

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment [X] Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: FF/NN Landfill	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: P-113A
Facility License, Permit or Monitoring No.: 000467	Local Grid Origin ☐ (estimated: ☐) or Well Location [X]; Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: PG241 / DNR Well ID No.: 136
Facility ID: 420013660	St. Plane 679929.24 ft. N, 2265518.54 ft. E. S; ☐	Date Well Installed: 09 / 05 / 2002 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 18, T. 16 N, R. 14 [X]E ☐W	Well Installed By: Name (first, last) and Firm: Todd Schmalfeldt; Boart-Longyear
Distance from Waste/Source: 2200 ft.	Enf. Stds. Apply [X]	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d [X] Downgradient n ☐ Not Known
		Gov. Lot Number: _____

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation 833.09 ft. MSL

C. Land surface elevation 830.55 ft. MSL

D. Surface seal, bottom _____ ft. MSL or 4 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock [X]

13. Sieve analysis performed? ☐ Yes [X] No

14. Drilling method used: Rotary [X] 50
Hollow Stem Auger ☐ 41
Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud [X] 03 None ☐ 99

16. Drilling additives used? ☐ Yes [X] No
Describe _____

17. Source of water (attach analysis, if required):
City of Ripon Public Water Supply

E. Bentonite seal, top _____ ft. MSL or 307 ft.

F. Fine sand, top _____ ft. MSL or _____ ft.

G. Filter pack, top _____ ft. MSL or 313 ft.

H. Screen joint, top _____ ft. MSL or 317 ft.

I. Well bottom _____ ft. MSL or 322 ft.

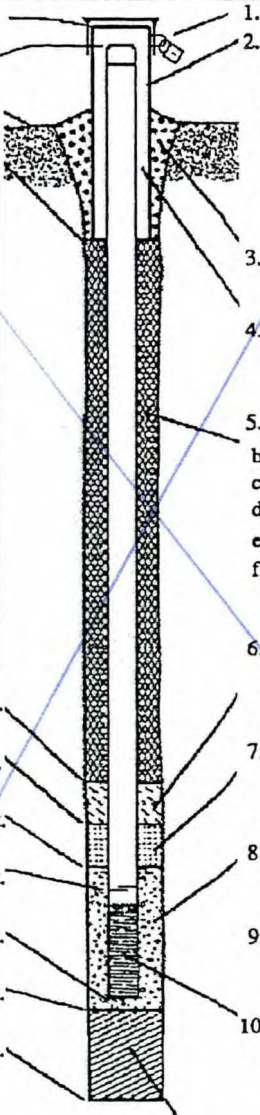
J. Filter pack, bottom _____ ft. MSL or 322 ft.

K. Borehole, bottom _____ ft. MSL or 322 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 1.94 in.



1. Cap and lock? [X] Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: 7 ft.
c. Material: Steel [X] 04
Other ☐ _____
d. Additional protection? [X] Yes ☐ No
If yes, describe: bumper posts (2)

3. Surface seal: Bentonite [X] 30
Concrete ☐ 01
Other ☐ _____

4. Material between well casing and protective pipe:
Bentonite ☐ 30
filter pack sand
Other [X] _____

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 10 Lbs/gal mud weight . . . . . Bentonite slurry [X] 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 15 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped [X] 02
Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. [X]3/8 in. ☐1/2 in. Bentonite chips [X] 32
c. _____ Other ☐ _____

7. Fine sand material: Manufacturer, product name & mesh size
a. Not used (filter pack extended into inte
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint, Filter & Abrasive Sands
b. Volume added 0.75 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 [X] 24
Other ☐ _____

10. Screen material: PVC
a. Screen type: Factory cut [X] 11
Continuous slot ☐ 01
Other ☐ _____
b. Manufacturer Boart-Longyear
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None [X] 14
Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi Yantz | Firm: GeoTrans, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Well Construction Report

WISCONSIN UNIQUE WELL NUMBER 00283 P-114

Department Of Natural Resources, Box 7921, Madison, WI 53707 (Rev 12/00)

Property Owner: EHSTER, ALAN | Telephone Number: - -

Mailing Address: W13134 OLDEN RD

RIPON | State: WI | Zip Code: 54971

County of Well Location: 20 FOND DU LAC | Co Well Permit No: W | Well Completion Date: November 13, 2000

Well Constructor: DANIEL J STEFFES | License #: 6109 | Facility ID (Public)

Address: W3465 HWY Q | Public Well Plan Approval#

City: FOND DU LAC | State: WI | Zip Code: 54935 | Date Of Approval

Hicap Permanent Well # | Common Well # | Specific Capacity: 1 gpm/ft

Depth 185 FT

1. Well Location T (T=Town C=City V=Village) of RIPON | Fire#

Street Address or Road Name and Number: ST CHARLES ST

Subdivision Name | Lot# | Block #

Gov't Lot | or NW 1/4 of NE 1/4 of Section 18 T16 N R14 E

Latitude Deg. Min. Sec.

Longitude Deg Min. Sec.

2. Well Type 1 (1=New, 2=Replacement, 3=Reconstruction) (See item 12 below) | Lat/Long Method

of previous unique well # _____ constructed in _____

Reason for replaced or reconstructed Well?

3. Well Serves P (M=Munic O=OTM N=NonCom P=Private Z=Other X=NonPot A=Anode L=Loop H=Drillhole) # of homes and or (eg: barn, restaurant, church, school, industry, etc.)

High Capacity: Well? N Property? N

1 (1=Drilled 2=Driven Point 3=Jetted 4=Other)

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? Y

Well located in floodplain? N

Distance in feet from well to nearest: (including proposed)

1. Landfill
15 2. Building Overhang
35 3. 1 (1=Septic 2= Holding Tank)
55 4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. (1=Shoreline 2= Swimming Pool)
9. Downspout/ Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain (1=Cast Iron or Plastic 2=Other)
14. Building Sewer (1=Gravity 2=Pressure; 1=Cast Iron or Plastic 2=Other)
15. Collector Sewer: ___ units ___ in. diam.
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe (1=Gravity 2=Pressure; 1=Cast iron or Plastic 2=Other)
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

Drillhole Dimensions and Construction Method

Dia.(in.)	From (ft)	To (ft)
6.0	surface	185

Upper Enlarged Drillhole — Lower Open Bedrock

- 1. Rotary - Mud Circulation
- 2. Rotary - Air
- 3. Rotary - Air and Foam
- X 4. Drill-Through Casing Hammer
- 5. Reverse Rotary
- 6. Cable-tool Bit _____ in. dia
- 7. Temp. Outer Casing _____ in. dia. ____ depth ft. Removed ?

Other

Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
-S-	SAND	Surface	37
-CS	SANDY CLAY	37	115
-C-	CLAY	115	127
-CS	SANDY CLAY	127	168
-N-	SANDSTONE	168	185

6. Casing Liner Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6.0	ASTM A53B IPSCO 6.625 X .280 EL 20 PLAIN END	surface	168

Dia.(in.)	Screen type, material & slot size	From	To

7. Grout or Other Sealing Material

Method / Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
GRANULAR BENTONITE	surface		

9. Static Water Level feet ground surface A=Above B=Below

10. Pump Test Pumping level ft. below surface; Pumping at GP Hrs

11. Well Is: Grade in. A=Above B=Below; Developed? Disinfected? Capped?

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property? If no, explain

13. Initials of Well Constructor or Supervisory Driller: DJS Date Signed: 11/13/00

Initials of Drill Rig Operator (Mandatory unless same as above): MD Date Signed: 11/13/00

Additional Comments? Owner Sent Label? Y Variance Issued? More Geology?

Bill Hadel P-1176

State of Wisconsin
Department of Natural Resources
Private Water Supply
Box 7921
Madison, Wisconsin 53707

NOTE:
White Copy – Division's Copy
Green Copy – Driller's Copy
Yellow Copy – Owner's Copy

WELL CONSTRUCTOR'S REPORT
Form 3300–15 Rev. 2-79

JAN 5 1981

1. COUNTY: Fond du Lac
CHECK (✓) ONE: ☒ Town ☐ Village ☐ City
Name: Rigon

2. LOCATION: ¼ Section or Gov't. Lot: N W | Section: 18 | Township: 16N | Range: 14E
OR – Grid or Street No. | Street or Road Name
AND – If available subdivision name, lot & block No.

3. NAME ☒ OWNER ☐ AGENT AT TIME OF DRILLING CHECK (✓) ONE: Vair De Bruin Realty
ADDRESS: Rigon
POST OFFICE: Rigon | ZIP CODE: Wis.

4. Distance in feet from well to nearest: (Record answer in appropriate block)

Building	Sanitary Bldg. Drain C.I.	Sanitary Bldg. Drain Other	Sanitary Bldg. Sewer C.I.	Sanitary Bldg. Sewer Other	Floor Drain Connected to: C.I. Sewer	Floor Drain Connected to: Other Sewer	Storm Bldg. Drain C.I.	Storm Bldg. Drain Other	Storm Bldg. Sewer C.I.	Storm Bldg. Sewer Other
15										

Street Sewer San.	Street Sewer Storm	Other Sewers C.I.	Other Sewers Other	Foundation Drain Connected to: Sewer	Foundation Drain Connected to: Sewage Sump	Foundation Drain Connected to: Clearwater Dr.	Foundation Drain Connected to: Clearwater Sump	Sewage Sump C.I.	Sewage Sump Other	Clearwater Sump	Septic Tank	Holding Tank	Sewage Absorption Unit: Seepage Pit / Seepage Bed / Seepage Trench	Manure Hopper or Retention or Pnuematic Tank

Privy	Pet Waste Pit	Pit: Nonconforming Existing: Well / Pump / Tank	Subsurface Pumproom / Nonconforming Existing	Barn Gutter	Animal Barn Pen	Animal Yard	Silo With Pit	Glass Lined Storage Facility	Silo w/o Pit	Earthen Silage Storage Trench Or Pit	Earthen Manure Basin

Temporary Manure Stack or Platform	Watertight Liquid Manure Tank or Basin	Manure Pressure Pipe	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Manure Storage Basin: Concrete Floor Only / Concrete Floor and Partial Concrete Walls	Other (Describe)

5. Well is intended to supply water for: New Home

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
18	Surface	155			
6	155	165			

7. CASING, LINER, CURBING AND SCREEN
Material, Weight, Specification

Dia. (in.)	Mfg. & Method of Assembly	From (ft.)	To (ft.)
6	NEW BLACK STEEL PE-18.97#ASTM-A53 V. 1, S. P.	Surface	155

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Slurry Clay	Surface	155

9. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay	Surface	80
Gravel & Sand	80	110
clay	110	155
Sand Stone	155	165
Wtr Bearing		

10. TYPE OF DRILLING MACHINE USED
☐ Cable Tool ☑ Rotary-hammer w/drilling mud & air ☐ Jetting with
☐ Rotary-air w/drilling mud ☐ Rotary-hammer & air ☐ Air ☐ Water
☐ Rotary-w/drilling mud ☐ Reverse Rotary

Well construction completed on Nov 1 19 58

11. MISCELLANEOUS DATA
Yield Test: 4 Hrs. at 10 GPM
Depth from surface to normal water level 40 Ft.
Depth of water level when pumping 62 Ft. Stabilized ☒ Yes ☐ No

Well is terminated 12 inches ☒ above ☐ below final grade
Well disinfected upon completion ☒ Yes ☐ No
Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Oshkosh laboratory on Nov 4 19 58

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, method of finishing the well, amount of cement used in grouting, blasting, etc., should be given on reverse side.

Signature: 6887 Walter Clark — Registered Well Driller

Business Name and Complete Mailing Address: 5411 Rigon Rd. Oak

P-115

SEP 10 1973

WELL CONSTRUCTOR'S REPORT
FORM 3300–15

NOTE
WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

1. COUNTY: Fond du Lac

CHECK ONE: [X] Town [ ] Village [ ] City — NAME: Ripon

2. LOCATION – ¼ Section: NE¼ | Section: 18 | Township: 16 N | Range: 14 E

OR – Grid or street no. | Street name: Hwy NN

AND – If available subdivision name, lot & block no.

3. OWNER AT TIME OF DRILLING: Harold Weise c/o Prestige Builders Osk.

ADDRESS: 1938 Algoma Blvd.

POST OFFICE: Oshkosh, Wisconsin

4. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
15						15		

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
	15								

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

5. Well is intended to supply water for: New Home

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	20			
6	20	180			

7. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	P.E. 18.97 New	Surface	175

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Drill cuttings	Surface	20

9. FORMATIONS

Kind	From (ft.)	To (ft.)
Gravel	Surface	35
Sand & clay	35	165
Gravel & clay	165	175
Sandstone	175	180

10. TYPE OF DRILLING MACHINE USED

[ ] Cable Tool [ ] Direct Rotary [ ] Reverse Rotary
[ ] Rotary – air w/drilling mud [X] Rotary – hammer with drilling mud & air [ ] Jetting with [ ] Air [ ] Water

Well construction completed on: 8-22 19 73

Well is terminated 13 inches [X] above [ ] below final grade

Well disinfected upon completion [X] Yes [ ] No

Well sealed watertight upon completion [X] Yes [ ] No

11. MISCELLANEOUS DATA

Yield test: 2 Hrs. at 12 GPM

Depth from surface to normal water level: 25 ft.

Depth to water level when pumping: 30 ft.

Water sample sent to: Madison laboratory on: 8-23 19 73

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub-surface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: C H Wagner Registered Well Driller

COMPLETE MAIL ADDRESS: R# 1 Box 49 Mt. Calvary, Wisconsin 53057

Please do not write in space below

GAS – 24 HRS.	GAS – 48 HRS.	CONFIRMED	REMARKS

FL 4216

Graostra

NOV 2 6 1979

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

NOTE:
White Copy – Division's Copy
Green Copy – Driller's Copy
Yellow Copy – Owner's Copy

WELL CONSTRUCTOR'S REPORT
Form 3300–15 Rev. 12-76

1. COUNTY: Fond du Lac
CHECK (✓) ONE: ☒ Town ☐ Village ☐ City
Name: Ripon

2. LOCATION: ¼ Section: N.E. | Section: 18 | Township: 16 N | Range: 14E
OR – Grid or Street No. | Street Name:
AND – If available subdivision name, lot & block No.

3. NAME ☒ OWNER ☐ AGENT AT TIME OF DRILLING CHECK (✓) ONE: Scot Bishop
ADDRESS: Ct. Hwy. NN
POST OFFICE: Ripon

4. Distance in feet from well to nearest: (Record answer in appropriate block)

Building	Sanitary Bldg. Drain		Sanitary Bldg. Sewer		Floor Drain Connected To:		Storm Bldg. Drain		Storm Bldg. Sewer	
	C.I.	Other	C.I.	Other	C.I. Sewer	Other Sewer	C.I.	Other	C.I.	Other
15	70		45		35			none		

Street Sewer		Other Sewers		Foundation Drain Connected to:		Sewage Sump		Clearwater Sump		Septic Tank	Holding Tank	Sewage Absorption Unit	
San.	Storm	C.I.	Other	Sewer		Sewage Sump		C.I.	Other			Seepage Pit	
no		none		Clearwater Dr.		Clearwater Sump	15	none		60	none	Seepage Bed	20
												Seepage Trench	

Privy	Pet Waste Pit	Pit: Nonconforming Existing		Subsurface Pumproom	Barn Gutter	Animal Barn Pen	Animal Yard	Silo With Pit	Glass Lined Storage Facility	Silo w/o Pit	Earthen Silage Storage Trench Or Pit
		Well		Nonconforming Existing							
no	no	Pump		no	none	no	no	none	none	none	none
		Tank									

Temporary Manure Stack	Watertight Liquid Manure Tank	Solid Manure Storage Structure	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Other (Give Description)
no	no	none	no	none	

5. Well is intended to supply water for: home

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	Surface	155			
6	155	160			

7. CASING, LINER, CURBING AND SCREEN

Dia. (in.)	Material, Weight, Specification & Method of Assembly	From (ft.)	To (ft.)
6	18.97 #/F.E. new black steel/ASTM A-53 Nippon	Surface	155

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
drilling mud	Surface	155

9. FORMATIONS

Kind	From (ft.)	To (ft.)
red clay	Surface	5
sand & gravel	5	95
sandy clay	95	130
sand & gravel	130	154
sandstone	154	160

10. TYPE OF DRILLING MACHINE USED

☐ Cable Tool
☒ Rotary-air w/drilling mud
☐ Rotary-w/drilling mud
☐ Rotary-hammer w/drilling mud & air
☐ Rotary-hammer & air
☐ Reverse Rotary
☐ Jetting with ☐ Air ☐ Water

Well construction completed on 11-15- 19 29

11. MISCELLANEOUS DATA

Yield Test: 2 Hrs. at 15 GPM
Depth from surface to normal water level 30 Ft.
Depth of water level when pumping 35 Ft. Stabilized ☒ Yes ☐ No

Well is terminated 8 inches ☒ above ☐ below final grade
Well disinfected upon completion ☒ Yes ☐ No
Well sealed watertight upon completion ☒ Yes ☐ No

FL 4217

Oshkosh laboratory on 11-15- 19 29

...llution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, method of ...ent used in grouting, blasting, etc., should be given on reverse side.

Signature: Harold Nigl
Registered Well Driller

Complete Mail Address
HAROLD NIGL WELL DRILLING
3458 W. 4th St. Rd.
Oshkosh, Wi. 54901

Bunek

NOV 26 1979

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

NOTE:
White Copy – Division's Copy
Green Copy – Driller's Copy
Yellow Copy – Owner's Copy

WELL CONSTRUCTOR'S REPORT
Form 3300–15 Rev. 12-76

COUNTY: Fond du Lac
CHECK (✓) ONE: ☒ Town ☐ Village ☐ City
Name: Ripon

2. LOCATION: ¼ Section: NE | Section: 18 | Township: 16N | Range: 14E
OR – Grid or Street No. | Street Name:
AND – If available subdivision name, lot & block No.

3. NAME ☒ OWNER ☐ AGENT AT TIME OF DRILLING CHECK (✓) ONE: Jeff Schultz
ADDRESS: Ct. Hwy. NN
POST OFFICE: Ripon

4. Distance in feet from well to nearest: (Record answer in appropriate block)

Building	Sanitary Bldg. Drain C.I.	Sanitary Bldg. Drain Other	Sanitary Bldg. Sewer C.I.	Sanitary Bldg. Sewer Other	Floor Drain Connected To: C.I. Sewer	Floor Drain Connected To: Other Sewer	Storm Bldg. Drain C.I.	Storm Bldg. Drain Other	Storm Bldg. Sewer C.I.	Storm Bldg. Sewer Other
15	70		40		30		none			

Street Sewer San.	Street Sewer Storm	Other Sewers C.I.	Other Sewers Other	Foundation Drain Connected to: Sewer	Foundation Drain Connected to: Sewage Sump	Foundation Drain Connected to: Clearwater Dr.	Foundation Drain Connected to: Clearwater Sump	Sewage Sump C.I.	Sewage Sump Other	Clearwater Sump	Septic Tank	Holding Tank	Sewage Absorption Unit
no	no	none					15	none		35	60	none	Seepage Pit: ; Seepage Bed: 70; Seepage Trench:

Privy	Pet Waste Pit	Pit: Nonconforming Existing	Subsurface Pumproom Nonconforming Existing	Barn Gutter	Animal Barn Pen	Animal Yard	Silo With Pit	Glass Lined Storage Facility	Silo w/o Pit	Earthen Silage Storage Trench Or Pit
no		Well: ; Pump: ; Tank: none	no	no	none		no	no	none	none

Temporary Manure Stack	Watertight Liquid Manure Tank	Solid Manure Storage Structure	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Other (Give Description)
no	none		no	none	

5. Well is intended to supply water for: home

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	Surface	155			
6	155	160			

7. CASING, LINER, CURBING AND SCREEN

Dia. (in.)	Material, Weight, Specification & Method of Assembly	From (ft.)	To (ft.)
6	18.97 #/F. new black steel ASTM A-53 Nippon	Surface	155

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
drilling mud	Surface	155

9. FORMATIONS

Kind	From (ft.)	To (ft.)
red clay	Surface	4
sand & gravel	4	95
sandy clay	95	130
sand & gravel	130	154
sand stone	154	160

10. TYPE OF DRILLING MACHINE USED
☐ Cable Tool ☒ Rotary-air w/drilling mud ☐ Rotary-w/drilling mud ☐ Rotary-hammer w/drilling mud & air ☐ Rotary-hammer & air ☐ Reverse Rotary ☐ Jetting with Air ☐ Water

Well construction completed on 11-13- 1979

11. MISCELLANEOUS DATA
Yield Test: 2 Hrs. at 15 GPM
Depth from surface to normal water level 30 Ft.
Depth of water level when pumping 35 Ft. Stabilized ☒ Yes ☐ No

Well is terminated 8 inches ☒ above ☐ below final grade
Well disinfected upon completion ☒ Yes ☐ No
Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Oshkosh laboratory on 11-15- 1979

pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, method of ment used in grouting, blasting, etc., should be given on reverse side.

FL 4224

Harold Nigl
Registered Well Driller

Complete Mail Address
HAROLD NIGL WELL DRILLING
3458 W. 4th St. Rd.
Oshkosh, Wi. 54901

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill	Grid Location: 682,760.4975 ft. ☒ N. ☐ S.; 2,297,758.7006 ft. ☐ E. ☒ W.	Well Name: MW-101
Facility License, Permit or Monitoring Number: [redacted]		Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W	Date Well Installed: 05/13/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known	Well Installed By: (Person's Name and Firm) Eric Schoenburg - WTD
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 884.80 ft. MSL
C. Land surface elevation 882.55 ft. MSL
D. Surface seal, bottom 878.6 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP
☒ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ ____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 430 ft. MSL or 839.5 ft.
F. Fine sand, top 480 ft. MSL or 834.6 ft.
G. Filter pack, top 500 ft. MSL or 832.6 ft.
H. Well screen, top 520 ft. MSL or 830.6 ft.
I. Well screen, bottom 620 ft. MSL or 820.6 ft.
J. Filter pack, bottom 630 ft. MSL or 819.6 ft.
K. Borehole, bottom 630 ft. MSL or 819.6 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 3.4 ft.
c. Material: Steel ☒ 04; Other ☐ ____
d. Additional protection? Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐ ____
5. Annular space seal: Granular Bentonite ☐ 33
____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight ..... Bentonite slurry ☒ 31
____ % Bentonite .... Bentonite-cement grout ☐ 50
____ Ft³ volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Bentonite chips Other ☒ ____
7. Fine sand material: Manufacturer, product name and mesh size
Badger Fire SGN
Volume added 2 bags ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 6 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____
10. Screen material: Same as casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ____
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 2.8 ft.
11. Backfill material (below filter pack): None ☒; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Ryan AFNN Landfill

Well Name: MW-101

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other Surged with pump & pumped	☒	

3. Time spent developing well: 33 min.

4. Depth of well (from top of well casisng): 69.5 ft.

5. Inside diameter of well: 2.05 in.

6. Volume of water in filter pack and well casing: 3.3 gal.

7. Volume of water removed from well: 51.0 gal.

8. Volume of water added (if any): 00 gal.

9. Source of water added: N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	58.88 ft.	58.95 ft.
Date	05/24/93 (m m d d y y)	05/24/93 (m m d d y y)
Time	16:46 ☐ a.m. ☒ p.m.	17:30 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) TAN	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: John Kaftan

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: John P. Kaftan

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Rhinelander MSW Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 682,765.24 ft. ☒ N. ☐ S. / 297,761.4189 ft. ☐ E. ☒ W.
Well Name: P-101
Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 36 N, R 7 ☐ E ☐ W
Date Well Installed: 05 26 93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known
Well Installed By: (Person's Name and Firm) Paul Dickson - WTD
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 885.26 ft. MSL
C. Land surface elevation 882.91 ft. MSL
D. Surface seal, bottom 878.9 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP
☒ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 808.9 ft. MSL or 80.0 ft.
F. Fine sand, top 797.9 ft. MSL or 91.0 ft.
G. Filter pack, top 795.9 ft. MSL or 87.0 ft.
H. Well screen, top 793.9 ft. MSL or 89.0 ft.
I. Well screen, bottom 788.9 ft. MSL or 94.0 ft.
J. Filter pack, bottom 787.9 ft. MSL or 95.0 ft.
K. Borehole, bottom 787.9 ft. MSL or 95.0 ft.
L. Borehole, diameter 8 3 in.
M. O.D. well casing 2 3 8 in.
N. I.D. well casing 1 9 1 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6 0 in.
b. Length: 7 0 ft.
c. Material: Steel ☒ 04; Other ☐ _____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐ _____
5. Annular space seal: Granular Bentonite ☐ 33
_____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
_____ Lbs/gal mud weight ..... Bentonite slurry ☒ 31
_____ % Bentonite ..... Bentonite-cement grout ☐ 50
160 ft³ Volume added for any of the above
How installed: Tremie ☒ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Bentonite Chips Other ☒
7. Fine sand material: Manufacturer, product name and mesh size
Badger Fine Sand
Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 2 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ _____
10. Screen material: Same as Casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ _____
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 4.0 ft.
11. Backfill material (below filter pack): None ☒; Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NW Landfill
Well Name: P-101
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other Surged w/pump & Pumped slowly	☒	___

3. Time spent developing well: 30 min.
4. Depth of well (from top of well casisng): 97.0 ft.
5. Inside diameter of well: 1.91 in.
6. Volume of water in filter pack and well casing: 8.6 gal.
7. Volume of water removed from well: 122.0 gal.
8. Volume of water added (if any): 0.0 gal.
9. Source of water added: N/A
10. Analysis performed on water added? N/A ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	59.33 ft.	59.41 ft.
Date	05 / 27 / 93 (m m d d y y)	05 / 27 / 93 (m m d d y y)
Time	13:42 ☐ a.m. ☒ p.m.	15:51 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	0.2 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Grey, turbid	Clear ☒ 20 Turbid ☐ 25 (Describe) clear, no color

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm
Name: John Kafton
Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 682,481.2392 ft. [X] N. [ ] S.; 2,298,110.4889 ft. [X] E. [ ] W.
Well Name: MW-102
Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well [X] 11; Piezometer [ ] 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 [X] E [ ] W
Date Well Installed: 05/07/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: [ ] Upgradient [ ] Sidegradient [ ] Downgradient [X] Not Known
Well Installed By: (Person's Name and Firm) Eric Schoenberg WTO
Is Well A Point of Enforcement Std. Application? [ ] Yes [ ] No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 843.05 ft. MSL
C. Land surface elevation 840.79 ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
[ ] GP [ ] GM [ ] GC [ ] GW [ ] SW [X] SP
[ ] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH
[ ] Bedrock

13. Sieve analysis attached? [X] Yes [ ] No

14. Drilling method used: Rotary [ ] 50; Hollow Stem Auger [X] 41; Other [ ]

15. Drilling fluid used: Water [ ] 02; Air [ ] 01; Drilling Mud [ ] 03; None [X] 99

16. Drilling additives used? [ ] Yes [X] No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 840.8 ft. MSL or 0.0 ft.
F. Fine sand, top 832.8 ft. MSL or 8.0 ft.
G. Filter pack, top 830.8 ft. MSL or 10.0 ft.
H. Well screen, top 828.8 ft. MSL or 12.0 ft.
I. Well screen, bottom 818.8 ft. MSL or 22.0 ft.
J. Filter pack, bottom 817.8 ft. MSL or 23.0 ft.
K. Borehole, bottom 817.8 ft. MSL or 23.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.

1. Cap and lock? [X] Yes [ ] No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 20 ft.
c. Material: Steel [X] 04; Other [ ]
d. Additional protection? [ ] Yes [X] No
If yes, describe:
3. Surface seal: Bentonite [X] 30; Concrete [ ] 01; Other [ ]
4. Material between well casing and protective pipe: Bentonite [X] 30; Annular space seal [ ]; Other [ ]
5. Annular space seal: None; Granular Bentonite [ ] 33; ____ Lbs/gal mud weight ... Bentonite-sand slurry [ ] 35; ____ Lbs/gal mud weight ..... Bentonite slurry [ ] 31; ____ % Bentonite .... Bentonite-cement grout [ ] 50; ____ Ft³ volume added for any of the above
How installed: N/A Tremie [ ] 01; Tremie pumped [ ] 02; Gravity [ ] 08
6. Bentonite seal: Bentonite granules [ ] 33; [ ] 1/4 in. [ ] 3/8 in. [ ] 1/2 in. Bentonite pellets [ ] 32; Bentonite chips Other [X]
7. Fine sand material: Manufacturer, product name and mesh size Badger FineSand
Volume added 1 bag [X]
8. Filter pack material: Manufacturer, product name and mesh size Red Flint #30
Volume added 4 bags [X]
9. Well casing: Flush threaded PVC schedule 40 [X] 23; Flush threaded PVC schedule 80 [ ] 24; Other [ ]
10. Screen material: Same as casing
Screen type: Factory cut [X] 11; Continuous slot [ ] 01; Other [ ]
Manufacturer Timco
Slot size: 0.01 in.
Slotted length: 10 ft.
11. Backfill material (below filter pack): None [X]; Other [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Simon Hydro-Search

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State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/MW Landfill
Well Name: MW-107
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other Surged with pumped pumped	☒	

3. Time spent developing well 24 min.
4. Depth of well (from top of well casisng) 24.2 ft.
5. Inside diameter of well 2.05 in.
6. Volume of water in filter pack and well casing 4.6 gal.
7. Volume of water removed from well 60.0 gal.
8. Volume of water added (if any) 0.0 gal.
9. Source of water added N/A
10. Analysis performed on water added? (If yes, attach results) N/A ☐ Yes ☐ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	16.36 ft.	16.96 ft.
Date	05/24/93 (m m d d y y)	05/24/93 (m m d d y y)
Time	14:40 ☐ a.m. ☒ p.m.	15:36 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) BROWN	Clear ☐ 20 Turbid ☒ 25 (Describe) BROWN

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm
Name: John Kaftan
Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF INN landfill

Grid Location: 6824809731 ft. [X] N. [ ] S. / 2298117.4157 ft. [X] E. [ ] W.

Well Name: P-102

Facility License, Permit or Monitoring Number: ________

Wis. Unique Well Number / DNR Well Number

of Well: Water Table Observation Well [ ] 11 / Piezometer [X] 12

Section Location: ____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ [ ] E [ ] W

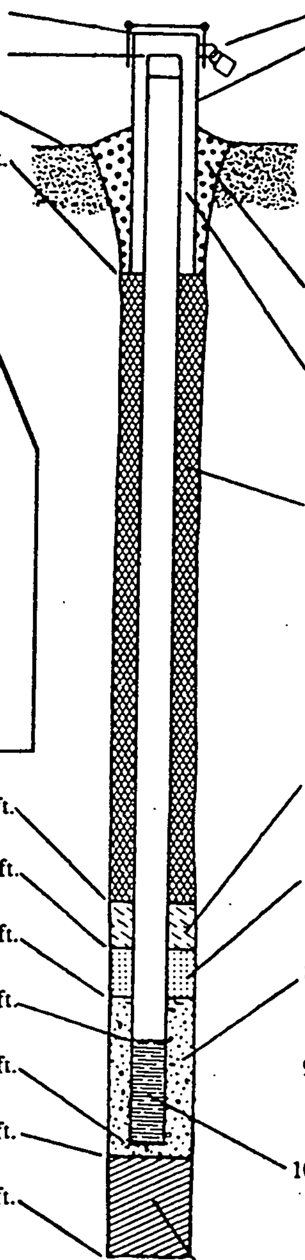
Date Well Installed: 05/28/93 (m m d d y y)

Distance Well Is From Waste/Source Boundary: ____ ft.

Location of Well Relative to Waste/Source: [ ] Upgradient [ ] Sidegradient [ ] Downgradient [ ] Not Known

Well Installed By: (Person's Name and Firm) Paul Dickonson - WTD

Is Well A Point of Enforcement Std. Application? [ ] Yes [ ] No



A. Protective pipe, top elevation ______ ft. MSL

B. Well casing, top elevation 842.99 ft. MSL

C. Land surface elevation 840.71 ft. MSL

D. Surface seal, bottom 836.7 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen: [ ] GP [ ] GM [ ] GC [ ] GW [ ] SW [X] SP [ ] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH [ ] Bedrock

13. Sieve analysis attached? [X] Yes [ ] No

14. Drilling method used: Rotary [ ] 50; Hollow Stem Auger [X] 41; Other [ ]

15. Drilling fluid used: Water [ ] 02; Air [ ] 01; Drilling Mud [ ] 03; None [X] 99

Drilling additives used? [ ] Yes [X] No

Describe N/A

17. Source of water (attach analysis): N/A

E. Bentonite seal, top 795.7 ft. MSL or 45.0 ft.

F. Fine sand, top 790.7 ft. MSL or 50.0 ft.

G. Filter pack, top 788.7 ft. MSL or 52.0 ft.

H. Well screen, top 786.7 ft. MSL or 54.0 ft.

I. Well screen, bottom 781.7 ft. MSL or 59.0 ft.

J. Filter pack, bottom 780.7 ft. MSL or 60.0 ft.

K. Borehole, bottom 780.7 ft. MSL or 60.0 ft.

L. Borehole, diameter 8.3 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 1.91 in.

1. Cap and lock? [X] Yes [ ] No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel [X] 04; Other [ ]
d. Additional protection? [ ] Yes [X] No
If yes, describe: ________

3. Surface seal: Bentonite [X] 30; Concrete [ ] 01; Other [ ]

4. Material between well casing and protective pipe: Bentonite [X] 30; Annular space seal [ ]; Other [ ]

5. Annular space seal: Granular Bentonite [ ] 33
____ Lbs/gal mud weight . . . Bentonite-sand slurry [ ] 35
____ Lbs/gal mud weight . . . . . Bentonite slurry [X] 31
____ % Bentonite . . . . . Bentonite-cement grout [ ] 50
130 gal volume added for any of the above
How installed: Tremie [ ] 01; Tremie pumped [X] 02; Gravity [ ] 08

6. Bentonite seal: Bentonite granules [ ] 33
[ ] 1/4 in. [ ] 3/8 in. [ ] 1/2 in. Bentonite pellets [ ] 32
Bentonite Chips Other [X]

7. Fine sand material: Manufacturer, product name and mesh size
Badger fine sand
Volume added 1 bag

8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #50
Volume added 3 bags ft³

9. Well casing: Flush threaded PVC schedule 40 [ ] 23; Flush threaded PVC schedule 80 [X] 24; Other [ ]

10. Screen material: Same as casing
Screen type: Factory cut [X] 11; Continuous slot [ ] 01; Other [ ]
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 4.9 ft.

11. Backfill material (below filter pack): None [X]; Other [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Ripon PF/NW Landfill
Well Name: P-102
License/Permit or Monitoring Number:
Wis. Unique Well Number:
DNR Well Number:

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other surged with pump & pumped	☒	

3. Time spent developing well: 75 min.
4. Depth of well (from top of well casisng): 61.9 ft.
5. Inside diameter of well: 1.91 in.
6. Volume of water in filter pack and well casing: 10.7 gal.
7. Volume of water removed from well: 100.0 gal.
8. Volume of water added (if any): 00 gal.
9. Source of water added: N/A
10. Analysis performed on water added? N/A ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	16.10 ft.	ft.
Date	06/22/93 (m m d d y y)	06/23/93 (m m d d y y)
Time	☐ a.m. ☒ p.m.	☐ a.m. ☒ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Tan/brown/gray slightly turbid	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: John Kaftan
Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:
Firm: Simon-Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: RIEWFFNN Landfill
Facility License, Permit or Monitoring Number: [redacted]
Grid Location: 6,82,103.2770 ft. N. S. / 2,297,751.8452 ft. E. W.
Well Name: MW-103
Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well 11; Piezometer 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 E W
Date Well Installed: 05/1/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: Upgradient; Sidegradient; Downgradient; Not Known
Well Installed By: (Person's Name and Firm): Eric Schoenberg, W. T. D
Is Well A Point of Enforcement Std. Application? Yes No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 672.42 ft. MSL
C. Land surface elevation 670.14 ft. MSL
D. Surface seal, bottom 666.1 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
GP GM GC GW SW SP
SM SC ML MH CL CH
Bedrock

13. Sieve analysis attached? Yes No

14. Drilling method used: Rotary 50; Hollow Stem Auger 41; Other

15. Drilling fluid used: Water 02; Air 01; Drilling Mud 03; None 99

16. Drilling additives used? Yes No

Describe

17. Source of water (attach analysis):

E. Bentonite seal, top 638.1 ft. MSL or 32.0 ft.
F. Fine sand, top 633.1 ft. MSL or 37.0 ft.
G. Filter pack, top 631.1 ft. MSL or 39.0 ft.
H. Well screen, top 629.1 ft. MSL or 41.0 ft.
I. Well screen, bottom 619.1 ft. MSL or 51.0 ft.
J. Filter pack, bottom 618.1 ft. MSL or 52.0 ft.
K. Borehole, bottom 618.1 ft. MSL or 52.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.38 in.
N. well casing 2.05 in.

1. Cap and lock? Yes No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel 04; Other
d. Additional protection? Yes No
If yes, describe:
3. Surface seal: Bentonite 30; Concrete 01; Other
4. Material between well casing and protective pipe: Bentonite 30; Annular space seal; Other
5. Annular space seal: Granular Bentonite 33; Lbs/gal mud weight ... Bentonite-sand slurry 35; Lbs/gal mud weight ..... Bentonite slurry 31; % Bentonite .... Bentonite-cement grout 50
90 gal volume added for any of the above
How installed: Tremie 01; Tremie pumped 02; Gravity 08
6. Bentonite seal: Bentonite granules 33; 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 32; Bentonite chips Other
7. Fine sand material: Manufacturer, product name and mesh size: Badger Fine Sand
Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size: Red Flint #30
Volume added 6 bags
9. Well casing: Flush threaded PVC schedule 40 23; Flush threaded PVC schedule 80 24; Other
10. Screen material: Cameo Casing; Screen type: Factory cut 11; Continuous slot 01; Other
Manufacturer TIMCO
Slot size: 0.010 in.
Slotted length: 8.1 ft.
11. Backfill material (below filter pack): None; Other
None

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Simon Hydro Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
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State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/AN Landfill

License, Permit or Monitoring Number: ________

Well Name: MW-103

Wis. Unique Well Number: ______ DNR Well Number: ___

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
   - surged with bailer and bailed ☐ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ☐ 51
   - pumped slowly ☐ 50
   - Other Surged w/pump & pumped ☒

3. Time spent developing well: 25 min.

4. Depth of well (from top of well casisng): 53.5 ft.

5. Inside diameter of well: 2.05 in.

6. Volume of water in filter pack and well casing: 2.1 gal.

7. Volume of water removed from well: 31.0 gal.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No
    (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	50.00 ft.	49.99 ft.
Date (mm dd yy)	05 25 93	05 25 93
Time	08:04 ☒ a.m. ☐ p.m.	11:02 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 / Turbid ☒ 15	Clear ☐ 20 / Turbid ☒ 25
(Describe)	Tan, very turbid	Tan

Fill in if drilling fluids were used and well is at solid waste facility:

	Before Development	After Development
14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: John Kaftan

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

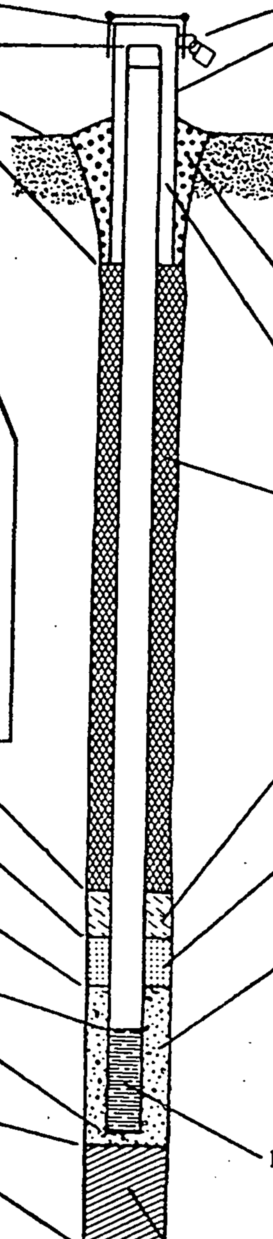
MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill	Grid Location: 6,82,097.5317 ft. ☒ N. ☐ S.; 2,247,751.1454 ft. ☒ E. ☐ W.	Well Name: P-103
Facility License, Permit or Monitoring Number: ________		Wis. Unique Well Number / DNR Well Number
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W	Date Well Installed: 05/19/93 (mm dd yy)
Distance Well Is From Waste/Source Boundary: ___ ft.	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known	Well Installed By: (Person's Name and Firm) Eric Schoenberg - WTD
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation 872.92 ft. MSL
C. Land surface elevation 870.55 ft. MSL
D. Surface seal, bottom 866.6 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen: ☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐ SM ☐ SC ☒ ML ☐ MH ☐ CL ☐ CH ☐ Bedrock
13. Sieve analysis attached? ☒ Yes ☐ No
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☒ 41; Other ☐
15. Drilling fluid used: Water ☐ 02; Air ☒ 01; Drilling Mud ☐ 03; None ☐ 99
16. Drilling additives used? ☐ Yes ☒ No
Describe N/A
17. Source of water (attach analysis): N/A

E. Bentonite seal, top 802.8 ft. MSL or 67.8 ft.
F. Fine sand, top 797.8 ft. MSL or 72.8 ft.
G. Filter pack, top 797.3 ft. MSL or 73.3 ft.
H. Well screen, top 795.3 ft. MSL or 75.3 ft.
I. Well screen, bottom 790.3 ft. MSL or 80.3 ft.
J. Filter pack, bottom 790.3 ft. MSL or 80.3 ft.
K. Borehole, bottom 790.3 ft. MSL or 80.3 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 1.91 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 6.0 in.
   b. Length: 7.0 ft.
   c. Material: Steel ☒ 04; Other ☐
   d. Additional protection? ☐ Yes ☒ No. If yes, describe: ________
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐
5. Annular space seal: Granular Bentonite ☐ 33
   ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
   ___ Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
   ___ % Bentonite . . . . . Bentonite-cement grout ☐ 50
   275 gal ft³ volume added for any of the above
   How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33; ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32; Bentonite chips Other ☒
7. Fine sand material: Manufacturer, product name and mesh size: Badger B.B. 70; Volume added 1/2 bag
8. Filter pack material: Manufacturer, product name and mesh size: Red Flint #30; Volume added 4 1/2 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐
10. Screen material: Same as Casing
    Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
    Manufacturer Timco
    Slot size: 0.010 in.
    Slotted length: 5' 4.5 ft.
11. Backfill material (below filter pack): None ☒; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NN Landfill
Well Name: P-103
License/Permit or Monitoring Number:
Wis. Unique Well Number:
DNR Well Number:

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other Surged with pump & pumped slowly	☒	

3. Time spent developing well: 39 min.

4. Depth of well (from top of well casisng): 42.5 ft.

5. Inside diameter of well: 1.91 in.

6. Volume of water in filter pack and well casing: 63 gal.

7. Volume of water removed from well: 620 gal.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: N/A

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results) N/A

	Before Development	After Development
11. Depth to Water (from top of well casing)	47.39 ft.	47.30 ft.
Date (m m d d y y)	05 25 93	05 25 93
Time	8:01 ☐ a.m. ☐ p.m.	11:05 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	.05 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☐ 20 Turbid ☒ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: John Kaftan
Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:
Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: FF/NN Landfill	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: P-103D
Facility License, Permit or Monitoring No.: 000467	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒	Wis. Unique Well No.: PG243 / DNR Well Number: 141
Facility ID: 431048200	Lat. ° ' " Long. ° ' " or St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 12/10/2003
Type of Well: Well Code 72/dp	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 7, T. 16 N, R. 17 ☒ E ☐ W	Well Installed By: (Person's Name and Firm): Stacy Kizewski; Boart Longyear
Distance from Waste/Source: 50 ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number:

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation ____ ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Rotosonic; Other ☒ 99

15. Drilling fluid used: Water ☒ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☐ 99

16. [redacted]ing additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis, if required):
City of Green Lake

E. Bentonite seal, top ____ ft. MSL or 174.0 ft.
F. Fine sand, top ____ ft. MSL or 182.0 ft.
G. Filter pack, top ____ ft. MSL or 184.0 ft.
H. Screen joint, top ____ ft. MSL or 186.0 ft.
Well bottom ____ ft. MSL or 191.0 ft.
Filter pack, bottom ____ ft. MSL or 191.0 ft.
K. Borehole, bottom ____ ft. MSL or 191.0 ft.
Borehole, diameter 6.0 in.
M. O.D. well casing 2.37 in.
I.D. well casing 1.94 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ____
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 3.4 Lbs/gal mud weight . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. 160 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining Company #7
b. Volume added 0.375 ft³
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint
b. Volume added 1.375 ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ____
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ____
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] 3-24-04 | Firm: GeoTrans, Inc. 175 N. Corporate Drive, Suite 100 Brookfield, WI 53045 | Tel: 262-792-1282 Fax:

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	County	Well Name
FF/NN Landfill	Fond Du Lac	P-103D

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
000467	20	PG243	141

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	☒

3. Time spent developing well: min.

4. Depth of well (from top of well casing): 60 ft.

5. Inside diameter of well: 191.0 in.

6. Volume of water in filter pack and well casing: 25.7 gal.

7. Volume of water removed from well: 300.0 gal.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	ft.	ft.
Date b.	2/4/2004	2/4/2004
Time c.	☒ a.m. 12:00 ☐ p.m.	☒ a.m. 12:00 ☐ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Cloudy	

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Richard Sawall
GeoTrans, Inc.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: FF/NN Landfill Group

Firm: c/o Ray Roder, Reinhart Boerner Van Deuren sc

Street: PO Box 2018

City/State/Zip: Madison, WI 53701-2018

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Heidi W Yantz

Print Name: Heidi W Yantz

Firm: GeoTrans, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: RAN FINN Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 682,413.6687 ft. [X] N. [ ] S. 2,247,462.0472 ft. [X] E. [ ] W.
Well Name: MW-104
Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well [X] 11 Piezometer [ ] 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 [X] E [ ] W
Date Well Installed: 05/12/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: [ ] Upgradient [ ] Sidegradient [ ] Downgradient [X] Not Known
Well Installed By: (Person's Name and Firm) Eric Schoenberg - WTD
Is Well A Point of Enforcement Std. Application? [ ] Yes [ ] No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 877.86 ft. MSL
C. Land surface elevation 877.55 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 0.0 ft.

12. USCS classification of soil near screen:
[ ] GP [ ] GM [ ] GC [ ] GW [X] SW [ ] SP
[X] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH
[ ] Bedrock

13. Sieve analysis attached? [X] Yes [ ] No

14. Drilling method used: Rotary [ ] 50; Hollow Stem Auger [X] 41; Other [ ]

15. Drilling fluid used: Water [ ] 02; Air [ ] 01; Drilling Mud [ ] 03; None [X] 99

16. Drilling additives used? [ ] Yes [X] No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 871.6 ft. MSL or 0.0 ft.
F. Fine sand, top 833.6 ft. MSL or 38.0 ft.
G. Filter pack, top 831.6 ft. MSL or 40.0 ft.
H. Well screen, top 829.6 ft. MSL or 42.0 ft.
I. Well screen, bottom 819.6 ft. MSL or 52.0 ft.
J. Filter pack, bottom 818.6 ft. MSL or 53.0 ft.
K. Borehole, bottom 818.6 ft. MSL or 53.0 ft.
L. Borehole, diameter 8 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.

1. Cap and lock? [X] Yes [ ] No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel [X] 04; Other [ ]
d. Additional protection? [ ] Yes [X] No
If yes, describe: Bumper posts
3. Surface seal: Bentonite [X] 30; Concrete [ ] 01; Other [ ]
4. Material between well casing and protective pipe: Bentonite [X] 30; Annular space seal [ ]; Other [ ]
5. Annular space seal: None; Granular Bentonite [ ] 33; _____ Lbs/gal mud weight ... Bentonite-sand slurry [ ] 35; _____ Lbs/gal mud weight ..... Bentonite slurry [ ] 31; _____ % Bentonite .... Bentonite-cement grout [ ] 50; _____ Ft³ volume added for any of the above
How installed: N/A Tremie [ ] 01; Tremie pumped [ ] 02; Gravity [ ] 08
6. Bentonite seal: Bentonite granules [ ] 33; [ ] 1/4 in. [ ] 3/8 in. [X] 1/2 in. Bentonite pellets [ ] 32; Bentonite chips Other [X]
7. Fine sand material: Manufacturer, product name and mesh size: Badger Fine Sand
Volume added 1 Bag ft³
8. Filter pack material: Manufacturer, product name and mesh size: Red Rock #30
Volume added 7 Bags ft³
9. Well casing: Flush threaded PVC schedule 40 [X] 23; Flush threaded PVC schedule 80 [ ] 24; Other [ ]
10. Screen material: Schedule 40 Slotted; Screen type: Factory cut [X] 11; Continuous slot [ ] 01; Other [ ]
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 8.9 ft.
11. Backfill material (below filter pack): None [X]; Other [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: RIDOT FFAN Landfill
Well Name: MW-104
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

		Before Development	After Development
1. Can this well be purged dry?	☐ Yes ☒ No		
2. Well development method			
surged with bailer and bailed	☐ 4 1		
surged with bailer and pumped	☐ 6 1		
surged with block and bailed	☐ 4 2		
surged with block and pumped	☐ 6 2		
surged with block, bailed and pumped	☐ 7 0		
compressed air	☐ 2 0		
bailed only	☐ 1 0		
pumped only	☐ 5 1		
pumped slowly	☐ 5 0		
Other surged with pump & pumped	☒		
11. Depth to Water (from top of well casing)		48.10 ft.	____.__ ft.
Date		05/28/93 (m m d d y y)	__/__/__ (m m d d y y)
Time		08:24 ☒ a.m. ☒ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom		__.__ inches	__.__ inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe) BROWN	Clear ☐ 20 Turbid ☒ 25 (Describe) BROWN
3. Time spent developing well	57 min.		
4. Depth of well (from top of well casisng)	54.5 ft.		
5. Inside diameter of well	2.05 in.		
6. Volume of water in filter pack and well casing	3.8 gal.		
7. Volume of water removed from well	60.0 gal.		
8. Volume of water added (if any)	00 gal.		
9. Source of water added	N/A		
10. Analysis performed on water added? (If yes, attach results)	N/A ☐ Yes ☐ No		
Fill in if drilling fluids were used and well is at solid waste facility:			
14. Total suspended solids		_____.__ mg/l	_____.__ mg/l
15. COD		_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: JOHN KAFTAN
Firm: SIMON Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]
Firm: SIMON Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: R.P.S.N. FT/NP Landfill
Facility License, Permit or Monitoring Number: [redacted]
Grid Location: 682,414.4021 ft. N. S. / 2,297,490.0702 ft. E. W.
Well Name: P-104
Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well 11 / Piezometer 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 E W
Date Well Installed: 05/25/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: Upgradient / Sidegradient / Downgradient / Not Known
Is Well A Point of Enforcement Std. Application? Yes / No
Well Installed By: (Person's Name and Firm) Eric Scholzbus - WTD

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 874.20 ft. MSL
C. Land surface elevation 872.05 ft. MSL
D. Surface seal, bottom 866.0 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
GP GM GC GW SW SP
SM SC ML MH CL CH
Bedrock

13. Sieve analysis attached? Yes / No

14. Drilling method used: Rotary 50 / Hollow Stem Auger 41 / Other

15. Drilling fluid used: Water 02 / Air 01 / Drilling Mud 03 / None 99

16. Drilling additives used? Yes / No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 796.1 ft. MSL or 76.0 ft.
F. Fine sand, top 791.1 ft. MSL or 81.0 ft.
G. Filter pack, top 789.1 ft. MSL or 83.0 ft.
H. Well screen, top 787.1 ft. MSL or 85.0 ft.
I. Well screen, bottom 782.1 ft. MSL or 90.0 ft.
J. Filter pack, bottom 779.1 ft. MSL or 93.0 ft.
K. Borehole, bottom 779 ft. MSL or 93.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 1.91 in.

1. Cap and lock? Yes / No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel 04 / Other
d. Additional protection? Yes / No
If yes, describe: bumper posts
3. Surface seal: Bentonite 30 / Concrete 01 / Other
4. Material between well casing and protective pipe: Bentonite 30 / Annular space seal / Other
5. Annular space seal: Granular Bentonite 33 / Lbs/gal mud weight ... Bentonite-sand slurry 35 / Lbs/gal mud weight ..... Bentonite slurry 31 / % Bentonite .... Bentonite-cement grout 50
170 gal ft³ volume added for any of the above
How installed: Tremie 01 / Tremie pumped 02 / Gravity 08
6. Bentonite seal: Bentonite granules 33 / 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 32 / Other
Bentonite Chips
7. Fine sand material: Manufacturer, product name and mesh size
Badger FineSand
Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 3 bags ft³
9. Well casing: Flush threaded PVC schedule 40 23 / Flush threaded PVC schedule 80 24 / Other
10. Screen material: Same as Casing
Screen type: Factory cut 11 / Continuous slot 01 / Other
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 7.2 ft.
11. Backfill material (below filter pack): None / Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NN Landfill

Well Name: P-104

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other Surged with pump & pumped	☒	___

3. Time spent developing well: 50 min.

4. Depth of well (from top of well casisng): 92.4 ft.

5. Inside diameter of well: 1.91 in.

6. Volume of water in filter pack and well casing: 7.8 gal.

7. Volume of water removed from well: 117.0 gal.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	48.31 ft.	48.45 ft.
Date	05 26 93 (m m d d y y)	05 26 93 (m m d d y y)
Time	08:15 ☒ a.m. ☐ p.m.	10:10 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	0.1 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) tan	Clear ☐ 20 Turbid ☐ 25 (Describe) tan
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: John Kaftan

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

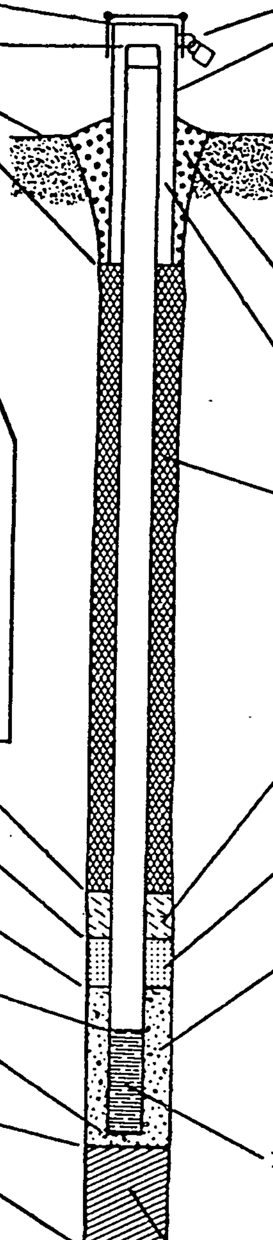
State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FPPP Landfill	Grid Location: 683,137.6484 ft. ☒ N. ☐ S.; 2,207,477.9032 ft. ☒ E. ☐ W.	Well Name: MW-105
Facility License, Permit or Monitoring Number: ________		Wis. Unique Well Number / DNR Well Number
of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W	Date Well Installed: 05/14/93 (mm dd yy)
Distance Well Is From Waste/Source Boundary ____ ft.	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known	Well Installed By: (Person's Name and Firm) Eric Schoenberg - WTD
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation ______ ft. MSL
B. Well casing, top elevation 872.95 ft. MSL
C. Land surface elevation 869.89 ft. MSL
D. Surface seal, bottom 865.9 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen: ☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP ☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐ Bedrock
13. Sieve analysis attached? ☒ Yes ☐ No
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐
15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99
16. Drilling additives used? ☐ Yes ☒ No
Describe N/A
17. Source of water (attach analysis): N/A



E. Bentonite seal, top 841.4 ft. MSL or 28.5 ft.
F. Fine sand, top 836.4 ft. MSL or 33.5 ft.
G. Filter pack, top 834.4 ft. MSL or 35.5 ft.
H. Well screen, top 832.4 ft. MSL or 37.5 ft.
I. Well screen, bottom 822.4 ft. MSL or 47.5 ft.
J. Filter pack, bottom 820.4 ft. MSL or 49.0 ft.
K. Borehole, bottom 820.4 ft. MSL or 49.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.38 in.
N. well casing 2.05 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Bumper posts
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; sand Other ☒
5. Annular space seal: Granular Bentonite ☐ 33
____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
90gal volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: Bentonite granules ☐ 33; ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32; Bentonite Chips Other ☒
7. Fine sand material: Manufacturer, product name and mesh size
Badger #40 sand
Volume added 2 bags
8. Filter pack material: Manufacturer, product name and mesh size
Red flint #30
Volume added 7 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen material: same as casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 10' 8.8 ft.
11. Backfill material (below filter pack): None ☒; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NN Landfill
Well Name: MW-105
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☐ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☐ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other Surged with Pump & pumped ☒ ____

3. Time spent developing well 54 min.

4. Depth of well (from top of well casisng) 50.0 ft.

5. Inside diameter of well 2.05 in.

6. Volume of water in filter pack and well casing 2.6 gal.

7. Volume of water removed from well 50.0 gal.

8. Volume of water added (if any) 00 gal.

9. Source of water added N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	45.60 ft.	50.10 ft.
Date	05/24/93 (m m d d y y)	05/24/93 (m m d d y y)
Time	13:59 ☐ a.m. ☒ p.m.	15:24 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	0.1 inches	00 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) TaN	Clear ☒ 20 Turbid ☐ 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm
Name: John Kaftan
Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: RIPON PP/NP Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 683,136.3490 ft. [X] N. [ ] S. — 2,297,982.6476 ft. [X] E. [ ] W.
Well Name: P-105
Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well [ ] 11; Piezometer [X] 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 [ ] E [ ] W
Date Well Installed: 06/05/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: [ ] Upgradient [ ] Sidegradient [ ] Downgradient [X] Not Known
Well Installed By: (Person's Name and Firm): Eric Schoenberg - CTD
Is Well A Point of Enforcement Std. Application? [ ] Yes [ ] No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 872.18 ft. MSL
C. Land surface elevation 869.88 ft. MSL
D. Surface seal, bottom 865.9 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
[ ] GP [ ] GM [ ] GC [ ] GW [ ] SW [X] SP
[ ] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH
[ ] Bedrock

13. Sieve analysis attached? [X] Yes [ ] No

14. Drilling method used: Rotary [ ] 50; Hollow Stem Auger [X] 41; Other [ ]

15. Drilling fluid used: Water [ ] 02; Air [ ] 01; Drilling Mud [ ] 03; None [X] 99

16. Drilling additives used? [ ] Yes [X] No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 809.9 ft. MSL or 60.6 ft.
F. Fine sand, top 798.9 ft. MSL or 71.0 ft.
G. Filter pack, top 796.9 ft. MSL or 73.0 ft.
H. Well screen, top 794.9 ft. MSL or 75.0 ft.
I. Well screen, bottom 789.9 ft. MSL or 80.0 ft.
J. Filter pack, bottom 789.9 ft. MSL or 80.0 ft.
K. Borehole, bottom 784.9 ft. MSL or 85.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.38 in.
N. well casing 1.91 in.

1. Cap and lock? [X] Yes [ ] No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 7.0 ft.
c. Material: Steel [X] 04; Other [ ]
d. Additional protection? [X] Yes [ ] No
If yes, describe: bumper posts
3. Surface seal: Bentonite [X] 30; Concrete [ ] 01; Other [ ]
4. Material between well casing and protective pipe: Bentonite [X] 30; Annular space seal [ ]; Other [ ]
5. Annular space seal: Granular Bentonite [ ] 33
_____ Lbs/gal mud weight ... Bentonite-sand slurry [ ] 35
_____ Lbs/gal mud weight ..... Bentonite slurry [X] 31
_____ % Bentonite .... Bentonite-cement grout [ ] 50
400 gal volume added for any of the above
How installed: Tremie [ ] 01; Tremie pumped [X] 02; Gravity [ ] 08
6. Bentonite seal: Bentonite granules [ ] 33
[ ] 1/4 in. [ ] 3/8 in. [ ] 1/2 in. Bentonite pellets [ ] 32
Bentonite chips Other [X]
7. Fine sand material: Manufacturer, product name and mesh size
Badger fine sand
Volume added 1 bag
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 3 bags
9. Well casing: Flush threaded PVC schedule 40 [ ] 23; Flush threaded PVC schedule 80 [X] 24; Other [ ]
10. Screen material: same as casing; Other [ ]
Screen type: Factory cut [X] 11; Continuous slot [ ] 01; Other [ ]
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 4.4 ft.
11. Backfill material (below filter pack): None [ ]
collapsed formation Other [X]

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon Landfill
Well Name: P105
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other Surged w/pump	☒	___

3. Time spent developing well: 20 min.
4. Depth of well (from top of well casisng): 82.3 ft.
5. Inside diameter of well: 1.91 in.
6. Volume of water in filter pack and well casing: 10.6 gal.
7. Volume of water removed from well: 110.0 gal.
8. Volume of water added (if any): ____.__ gal.
9. Source of water added: _____
10. Analysis performed on water added? ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	44.55 ft.	44.55 ft.
Date	06/22/93 (m m d d y y)	06/22/93 (m m d d y y)
Time	11:42 ☐ a.m. ☐ p.m.	15:45 ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Brown very Turbid	Clear ☐ 20 Turbid ☒ 25 (Describe) Lt Gray slightly Turbid

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm
Name: John Kaftan
Firm: Simon Hydro Search

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: John Kaftan
Firm: Simon Hydro Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NW Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 682,209.3772 ft. [X] N. [ ] S. — 2,298,373.5075 ft. [X] E. [ ] W.
Well Name: MW-106
Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well [X] 11 — Piezometer [ ] 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 [X] E [ ] W
Date Well Installed: 06/14/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: [ ] Upgradient [ ] Sidegradient [ ] Downgradient [X] Not Known
Well Installed By: (Person's Name and Firm): Eric Schoenburg - WD
Is Well A Point of Enforcement Std. Application? [ ] Yes [ ] No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 676.90 ft. MSL
C. Land surface elevation 676.34 ft. MSL
D. Surface seal, bottom 672.3 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
[ ] GP [ ] GM [ ] GC [ ] GW [ ] SW [X] SP
[ ] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH
[ ] Bedrock

13. Sieve analysis attached? [X] Yes [ ] No

14. Drilling method used: Rotary [X] 50 — Hollow Stem Auger [ ] 41 — Other [ ]

15. Drilling fluid used: Water [ ] 02 — Air [X] 01 — Drilling Mud [ ] 03 — None [ ] 99

16. Drilling additives used? [ ] Yes [X] No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 640.3 ft. MSL or 36.0 ft.
F. Fine sand, top 635.3 ft. MSL or 41.0 ft.
G. Filter pack, top 633.3 ft. MSL or 43.0 ft.
H. Well screen, top 631.3 ft. MSL or 45.0 ft.
I. Well screen, bottom 621.3 ft. MSL or 55.0 ft.
J. Filter pack, bottom 621.3 ft. MSL or 55.0 ft.
K. Borehole, bottom 621.3 ft. MSL or 55.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.

1. Cap and lock? [X] Yes [ ] No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 20. ft.
c. Material: Steel [X] 04 — Other [ ]
d. Additional protection? [X] Yes [ ] No
If yes, describe: Bumperposts
3. Surface seal: Bentonite [X] 30 — Concrete [ ] 01 — Other [ ]
4. Material between well casing and protective pipe: Bentonite [X] 30 — Annular space seal [ ] — Other [ ]
5. Annular space seal: Granular Bentonite [ ] 33 — ____ Lbs/gal mud weight ... Bentonite-sand slurry [ ] 35 — ____ Lbs/gal mud weight ..... Bentonite slurry [X] 31 — ____ % Bentonite .... Bentonite-cement grout [ ] 50 — ____ Ft³ volume added for any of the above
How installed: Tremie [ ] 01 — Tremie pumped [ ] 02 — Gravity [X] 08
6. Bentonite seal: Bentonite granules [ ] 33 — [ ] 1/4 in. [ ] 3/8 in. [ ] 1/2 in. Bentonite pellets [ ] 32 — Bentonite chips — Other [X]
7. Fine sand material: Manufacturer, product name and mesh size: Badger Fine Sand
Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size: Red Flint #50
Volume added 8 bags ft³
9. Well casing: Flush threaded PVC schedule 40 [X] 23 — Flush threaded PVC schedule 80 [ ] 24 — Other [ ]
10. Screen material: Same
Screen type: Factory cut [X] 11 — Continuous slot [ ] 01 — Other [ ]
Manufacturer: Timco
Slot size: 0.010 in.
Slotted length: 10. ft.
11. Backfill material (below filter pack): None [X] — Other [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Rhon Landfill
Well Name: MW-106
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other surged w/pump	☒	___

3. Time spent developing well: 60 min.
4. Depth of well (from top of well casisng): 58.0 ft.
5. Inside diameter of well: 2.00 in.
6. Volume of water in filter pack and well casing: 2.1 gal.
7. Volume of water removed from well: 45.0 gal.
8. Volume of water added (if any): ____.__ gal.
9. Source of water added: _____
10. Analysis performed on water added? ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	52.26 ft.	52.26 ft.
Date	6/21/93 (m m d d y y)	6/21/93 (m m d d y y)
Time	16:44 ☐ a.m. ☐ p.m.	17:06 ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Redish Brown	Clear ☐ 20 Turbid ☒ 25 (Describe) Redish Brown

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm
Name: John Kaftan
Firm: Simon Hsi

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: John Kaftan
Firm: Simon Hsi

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NW Landfill
Facility License, Permit or Monitoring Number: _____
Well Name: P-106
Wis. Unique Well Number: _____ DNR Well Number: _____
Grid Location: 682,209.7973 ft. ☒ N. ☐ S. 2,498,367.1358 ft. ☒ E. ☐ W.
Date Well Installed: 06 09 93 (m m d d y y)
Well Installed By: (Person's Name and Firm): Eric Schoenburg - WTC

Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W
Distance Well Is From Waste/Source Boundary: _____ ft.
Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 878.91 ft. MSL
C. Land surface elevation 876.55 ft. MSL
D. Surface seal, bottom 872.6 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ ___

15. Drilling fluid used: Water ☐ 02; Air ☒ 01; Drilling Mud ☐ 03; None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 805.6 ft. MSL or 71.0 ft.
F. Fine sand, top 800.6 ft. MSL or 76.0 ft.
G. Filter pack, top 798.6 ft. MSL or 78.0 ft.
H. Well screen, top 796.6 ft. MSL or 80.0 ft.
I. Well screen, bottom 791.6 ft. MSL or 85.0 ft.
J. Filter pack, bottom 790.6 ft. MSL or 86.0 ft.
K. Borehole, bottom 786.6 ft. MSL or 90.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 1.91 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Bumper posts
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Other ☐ ___
5. Annular space seal: Granular Bentonite ☐ 33
_____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
_____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
_____ % Bentonite .... Bentonite-cement grout ☐ 50
_____ Ft³ volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Bentonite chips Other ☒ ___
7. Fine sand material: Manufacturer, product name and mesh size
Badger Fine Sand
Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 2 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___
10. Screen material: Same as casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 4.5 ft.
11. Backfill material (below filter pack): None ☐; Other ☒
Formation Sand heaved to 86'

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
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State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon Landfill
Well Name: P-106
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other Surged with pump & pumped	☒	

3. Time spent developing well 40 min.
4. Depth of well (from top of well casisng) 97.2 ft.
5. Inside diameter of well 1.91 in.
6. Volume of water in filter pack and well casing 7.1 gal.
7. Volume of water removed from well 120.0 gal.
8. Volume of water added (if any) 0.0 gal.
9. Source of water added N/A
10. Analysis performed on water added? N/A ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	52.30 ft.	52.30 ft.
Date	06/21/93 (m m d d y y)	06/21/93 (m m d d y y)
Time	15:03 ☐ a.m. ☒ p.m.	17:02 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	6.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Tan/grey/Brown very turbid	Clear ☐ 20 Turbid ☒ 25 (Describe) light grey slightly turbid

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm
Name: John Kaftan
Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: R.O.S. FP/NW Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 68,752.2163 ft. [X] N. [ ] S. 2,297,726.8023 ft. [X] E. [ ] W.
Well Name: MW-107
Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well [X] 11; Piezometer [ ] 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 [X] E [ ] W
Date Well Installed: 05/12/93
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: [ ] Upgradient [ ] Sidegradient [ ] Downgradient [X] Not Known
Well Installed By: (Person's Name and Firm) Eric Schoenberg WTD
Is Well A Point of Enforcement Std. Application? [ ] Yes [ ] No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 871.78 ft. MSL
C. Land surface elevation 869.42 ft. MSL
D. Surface seal, bottom 865.4 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
[ ] GP [ ] GM [ ] GC [ ] GW [ ] SW [ ] SP
[X] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH
[ ] Bedrock

13. Sieve analysis attached? [X] Yes [ ] No

14. Drilling method used: Rotary [ ] 50; Hollow Stem Auger [X] 41; Other [ ]

15. Drilling fluid used: Water [ ] 02; Air [ ] 01; Drilling Mud [ ] 03; None [X] 99

16. Drilling additives used? [ ] Yes [X] No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 835.4 ft. MSL or 34.0 ft.
F. Fine sand, top 830.9 ft. MSL or 39.0 ft.
G. Filter pack, top 828.4 ft. MSL or 41.0 ft.
H. Well screen, top 824.4 ft. MSL or 43.0 ft.
I. Well screen, bottom 816.4 ft. MSL or 53.0 ft.
J. Filter pack, bottom 815.4 ft. MSL or 54.0 ft.
K. Borehole, bottom 815.4 ft. MSL or 54.0 ft.
L. Borehole, diameter 6.3 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.

1. Cap and lock? [X] Yes [ ] No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 70 ft.
c. Material: Steel [X] 04; Other [ ]
d. Additional protection? [X] Yes [ ] No
If yes, describe: Bumper post
3. Surface seal: Bentonite [X] 30; Concrete [ ] 01; Other [ ]
4. Material between well casing and protective pipe: Bentonite [X] 30; Annular space seal [ ]; Other [ ]
5. Annular space seal: Granular Bentonite [ ] 33
_____ Lbs/gal mud weight ... Bentonite-sand slurry [ ] 35
_____ Lbs/gal mud weight ..... Bentonite slurry [X] 31
_____ % Bentonite ..... Bentonite-cement grout [ ] 50
90gal [X] volume added for any of the above
How installed: Tremie [ ] 01; Tremie pumped [ ] 02; Gravity [X] 08
6. Bentonite seal: Bentonite granules [ ] 33
[ ] 1/4 in. [ ] 3/8 in. [ ] 1/2 in. Bentonite pellets [ ] 32
Bentonite Chips Other [X]
7. Fine sand material: Manufacturer, product name and mesh size
Badger Fine Sand
Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 6 bags ft³
9. Well casing: Flush threaded PVC schedule 40 [X] 23; Flush threaded PVC schedule 80 [ ] 24; Other [ ]
10. Screen material: Same as Casing
Screen type: Factory cut [X] 11; Continuous slot [ ] 01; Other [ ]
Manufacturer TIMCO
Slot size: 0.010 in.
Slotted length: 10' 8.9 ft.
11. Backfill material (below filter pack): None [X]; Other [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Sinotech Hydro-Search

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NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Kifon Landfill

Well Name: MW-107

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

		Before Development	After Development
1. Can this well be purged dry?	☐ Yes ☒ No		
2. Well development method			
surged with bailer and bailed	☐ 41		
surged with bailer and pumped	☐ 61		
surged with block and bailed	☐ 42		
surged with block and pumped	☐ 62		
surged with block, bailed and pumped	☐ 70		
compressed air	☐ 20		
bailed only	☐ 10		
pumped only	☐ 51		
pumped slowly	☐ 50		
Other Surged w/ Pump	☐ ___		
11. Depth to Water (from top of well casing)		51.36 ft.	58.39 ft.
Date		05 / 23 / 93 (m m d d y y)	05 / 25 / 93 (m m d d y y)
Time		12:50 ☐ a.m. ☒ p.m.	13:49 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		0.0 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe) Brown very turbid	Clear ☐ 20 Turbid ☒ 25 (Describe) light Brown turbid
3. Time spent developing well	53 min.		
4. Depth of well (from top of well casisng)	55.4 ft.		
5. Inside diameter of well	2.05 in.		
6. Volume of water in filter pack and well casing	2.4 gal.		
7. Volume of water removed from well	46.0 gal.		
8. Volume of water added (if any)	00 gal.		
9. Source of water added	N/A		
10. Analysis performed on water added? (If yes, attach results)	N/A ☐ Yes ☐ No		

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: JOHN KAFTAN

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 681,757.5033 ft. ☒ N. ☐ S. 2,297,727.2697 ft. ☒ E. ☐ W.
Well Name: P-107
Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ☐ 11 Piezometer ☒ 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W
Date Well Installed: 11/16/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known
Well Installed By: (Person's Name and Firm) Eric Schoenburg-WTD
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 871.38 ft. MSL
C. Land surface elevation 869.16 ft. MSL
D. Surface seal, bottom 865.2 ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP
☐ SM ☐ SC ☒ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☒ Yes ☐ No

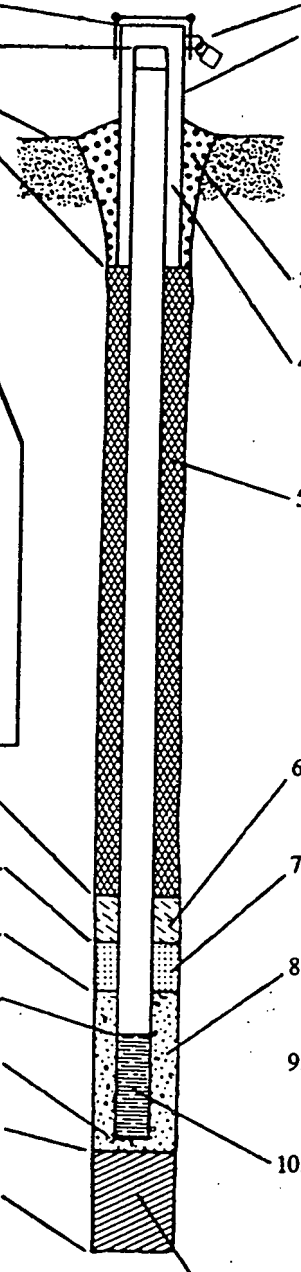
14. Drilling method used: Rotary ☐ 50 Hollow Stem Auger ☐ 41 Other ☐
_____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe N/A

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top 798.2 ft. MSL or 71.0 ft.
F. Fine sand, top 793.2 ft. MSL or 76.0 ft.
G. Filter pack, top 791.2 ft. MSL or 75.0 ft.
H. Well screen, top 789.2 ft. MSL or 80.0 ft.
I. Well screen, bottom 784.2 ft. MSL or 85.0 ft.
J. Filter pack, bottom 784.2 ft. MSL or 85.0 ft.
K. Borehole, bottom 784.2 ft. MSL or 85.0 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 1.91 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04 Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Bumper posts
3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30 Annular space seal ☐ Other ☐
5. Annular space seal: Granular Bentonite ☐ 33
_____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
_____ Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
_____ % Bentonite . . . . Bentonite-cement grout ☐ 50
200 gal. ☒ volume added for any of the above
How installed: Tremie ☐ 01 Tremie pumped ☒ 02 Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Benfonite chips Other ☒
7. Fine sand material: Manufacturer, product name and mesh size
Badger Fine Sand
Volume added 1 bags ☒
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 6 bags ☒
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 Flush threaded PVC schedule 80 ☒ 24 Other ☐
10. Screen material: Same as casing
Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Lipon Landfill
Well Name: P 107
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☒	5 0
Other Surged w/Pump	☒	

3. Time spent developing well: 112 min.
4. Depth of well (from top of well casisng): 81.7 ft.
5. Inside diameter of well: 1.91 in.
6. Volume of water in filter pack and well casing: 10.6 gal.
7. Volume of water removed from well: 60.5 gal.
8. Volume of water added (if any): ____.__ gal.
9. Source of water added: _____
10. Analysis performed on water added? ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	50.52 ft.	51.19 ft.
Date	06/22/93 (m m d d y y)	06/22/93 (m m d d y y)
Time	13:01 ☐ a.m. ☐ p.m.	21:30 ☐ a.m. ☐ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☒ 25
(Describe)	Gray Brown Very Turbid	Gray Brown Very Turbid

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well Went Dry after 60.5 gal

Well developed by: Person's Name and Firm

Name: John Kaftan
Firm: Simon Hydro Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: John Kaftan
Firm: Simon Hydrosearch

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NR Landfill
Facility License, Permit or Monitoring Number: [redacted]
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12
Distance Well Is From Waste/Source Boundary: ft.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☒ No

Grid Location: 681760.5491 ft. ☒ N. ☐ S.; 2266770.2733 ft. ☒ E. ☐ W.
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W
Location of Well Relative to Waste/Source: ☐ Upgradient ☒ Sidegradient ☒ Downgradient ☐ Not Known

Well Name: P-107D
Wis. Unique Well Number: DNR Well Number:
Date Well Installed: 10/22/93 (m m d d y y)
Well Installed By: (Person's Name and Firm)
Chuck. Blunt
Wisconsin Test Drilling

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 871.98 ft. MSL
C. Land surface elevation 869.4 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 25.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☒ Bedrock
13. Sieve analysis attached? ☐ Yes ☒ No
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐
15. Drilling fluid used: Water ☐ 02; Air ☒ 01 below bedrock; Drilling Mud ☒ 03 to bedrock; None ☐ 99
16. Drilling additives used? ☐ Yes ☒ No
Describe
17. Source of water (attach analysis):
City of Ripon - Copec well.

E. Bentonite seal, top _____ ft. MSL or 301.0 ft.
F. Fine sand, top _____ ft. MSL or 311.0 ft.
G. Filter pack, top _____ ft. MSL or 312.9 ft.
H. Well screen, top _____ ft. MSL or 315.0 ft.
I. Well screen, bottom _____ ft. MSL or 325.0 ft.
J. Filter pack, bottom 541.9 ft. MSL or 330.0 ft.
K. Borehole, bottom _____ ft. MSL or 340.5 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 1.91 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: 2 steel bumper posts
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐
5. Annular space seal: Granular Bentonite ☐ 33; _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35; _____ Lbs/gal mud weight ..... Bentonite slurry ☒ 31; _____ % Bentonite .... Bentonite-cement grout ☐ 50
500 Gallons Ft³ volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33; ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32; Bentonite chips Other ☒
7. Fine sand material: Manufacturer, product name and mesh size
Badger fine sand
Volume added 3/4 bags ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 5 1/2 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐
10. Screen material: Same as casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 9.2 ft.
11. Backfill material (below filter pack): None ☐; Bentonite chips. Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name	Well Name
Ripon FF/NN Landfill	P-107d
License, Permit or Monitoring Number	Wis. Unique Well Number / DNR Well Number
———	——— / ———

		Before Development	After Development
1. Can this well be purged dry?	☐ Yes ☒ No		
2. Well development method			
surged with bailer and bailed	☐ 41		
surged with bailer and pumped	☐ 61		
surged with block and bailed	☐ 42		
surged with block and pumped	☐ 62		
surged with block, bailed and pumped	☐ 70		
compressed air	☐ 20		
bailed only	☐ 10		
pumped ~~only grad~~	☐ 51		
pumped slowly	☐ 50		
Other Pumped & surged with pump	☒ [ ]		
11. Depth to Water (from top of well casing)		52.35 ft.	54.72 ft.
Date		10/27/93 (m m d d y y)	10/27/93 (m m d d y y)
Time		13:16 ☒ a.m. ☐ p.m.	14:52 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		___.__ inches	___.__ inches
13. Water clarity		Clear ☒ 10 Turbid ☐ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)		ND color/odor	ND color/odor
3. Time spent developing well		96 min.	
4. Depth of well (from top of well casisng)		328.__ ft.	
5. Inside diameter of well		1.91 in.	
6. Volume of water in filter pack and well casing		40.5 gal.	
7. Volume of water removed from well		406.__ gal.	
8. Volume of water added (if any)		0.0 gal.	
9. Source of water added		N/A	
10. Analysis performed on water added? (If yes, attach results)	☐ Yes ☐ No N/A		

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jennifer J. Rank

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill	Grid Location: 692425995 ft. ☒ N. ☐ S.	Well Name: MW-108
Facility License, Permit or Monitoring Number: ____	226549860130 ft. ☒ E. ☐ W.	Wis. Unique Well Number / DNR Well Number
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location: SW 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W	Date Well Installed: 09/07/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary ____ ft.	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☒ Downgradient ☐ Not Known	Well Installed By: (Person's Name and Firm) Eric Schomburg - WTD
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation ______ ft. MSL
B. Well casing, top elevation 845.25 ft. MSL
C. Land surface elevation 842.9 ft. MSL
D. Surface seal, bottom ______ ft. MSL or 6.0 ft.

12. USCS classification of soil near screen:
☒ GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐

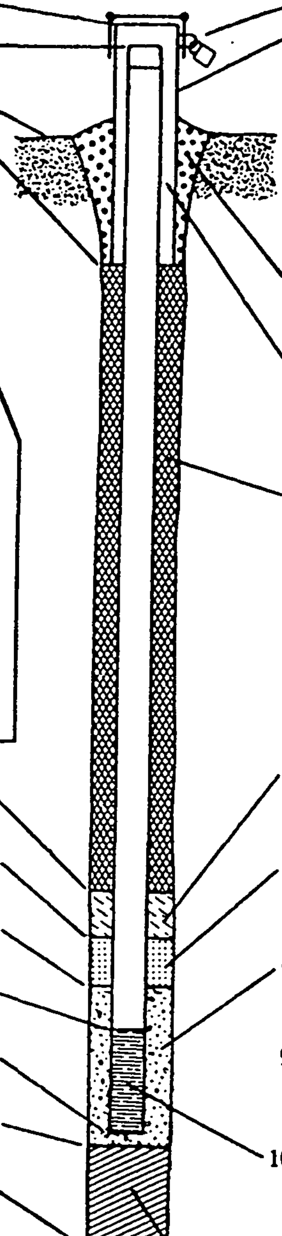
15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ______

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top ______ ft. MSL or 0.0 ft.
F. Fine sand, top ______ ft. MSL or 14.0 ft.
G. Filter pack, top ______ ft. MSL or 16.0 ft.
H. Well screen, top ______ ft. MSL or 18.0 ft.
I. Well screen, bottom ______ ft. MSL or 29.0 ft.
J. Filter pack, bottom ______ ft. MSL or 29.0 ft.
K. Borehole, bottom ______ ft. MSL or 29.0 ft.
L. Borehole, diameter 8 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: 2" Steel bumper posts
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐
5. Annular space seal: None
Granular Bentonite ☐ 33
____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
____ % Bentonite . . . . Bentonite-cement grout ☐ 50
____ Ft^3 volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
holeplug bentonite chips Other ☒
7. Fine sand material: Manufacturer, product name and mesh size
Badger fine sand
Volume added 1 bag ft^3
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint #30
Volume added 4.5 bags ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐
10. Screen material: Same as casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 8.6 ft.
11. Backfill material (below filter pack): None ☒; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	Simon Hydro-Search

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State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Rigid FF/NN Landfill

Well Name: MW-108

License, Permit or Monitoring Number: ESOS

Wis. Unique Well Number:

DNR Well Number:

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other surged & purged with pump	☒	

3. Time spent developing well ____ min.

4. Depth of well (from top of well casisng) 30.0 ft.

5. Inside diameter of well 2.05 in.

6. Volume of water in filter pack and well casing 4.1 gal.

7. Volume of water removed from well 55.0 gal.

8. Volume of water added (if any) 00.0 gal.

9. Source of water added N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	25.16 ft.	25.24 ft.
Date	09/14/93 (m m d d y y)	09/14/93 (m m d d y y)
Time	10:50 ☒ a.m. ☐ p.m.	12:15 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	.03 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Brown, silty	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jennifer J. Ronk

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Jennifer J. Ronk

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NW Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 682143.6722 ft. [x] N. [ ] S.; 2265492.5357 ft. [x] E. [ ] W.
Well Name: P-108
Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well [ ] 11; Piezometer [x] 12
Section Location: SW 1/4 of SE 1/4 of Section 7, T 16 N, R 17 [x] E [ ] W
Date Well Installed: 09/08/93 (m m / d d / y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: [ ] Upgradient [ ] Sidegradient [ ] Downgradient [ ] Not Known
Well Installed By: (Person's Name and Firm): Eric Schoenberg - WTD
Is Well A Point of Enforcement Std. Application? [x] Yes [ ] No

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 845.61 ft. MSL
C. Land surface elevation 843.0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 60 ft.

12. USCS classification of soil near screen:
[ ] GP [ ] GM [ ] GC [ ] GW [ ] SW [x] SP
[ ] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH
[ ] Bedrock

13. Sieve analysis attached? [ ] Yes [x] No

14. Drilling method used: Rotary [ ] 50; Hollow Stem Auger [x] 41; Other [ ]

15. Drilling fluid used: Water [ ] 02; Air [ ] 01; Drilling Mud [ ] 03; None [x] 99

16. Drilling additives used? [ ] Yes [x] No
Describe

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top _____ ft. MSL or 460 ft.
F. Fine sand, top _____ ft. MSL or 510 ft.
G. Filter pack, top _____ ft. MSL or 530 ft.
H. Well screen, top _____ ft. MSL or 550 ft.
I. Well screen, bottom _____ ft. MSL or 600 ft.
J. Filter pack, bottom _____ ft. MSL or 600 ft.
K. Borehole, bottom _____ ft. MSL or 600 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 1.91 in.

1. Cap and lock? [x] Yes [ ] No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel [x] 04; Other [ ]
d. Additional protection? [x] Yes [ ] No
If yes, describe: 2" steel bumper posts
3. Surface seal: Bentonite [x] 30; Concrete [ ] 01; Other [ ]
4. Material between well casing and protective pipe: Bentonite [x] 30; Annular space seal [ ]; Other [ ]
5. Annular space seal: Granular Bentonite [ ] 33
_____ Lbs/gal mud weight ... Bentonite-sand slurry [ ] 35
_____ Lbs/gal mud weight ..... Bentonite slurry [x] 31
_____ % Bentonite ..... Bentonite-cement grout [ ] 50
100 gal [x] volume added for any of the above
How installed: Tremie [ ] 01; Tremie pumped [x] 02; Gravity [ ] 08
6. Bentonite seal: Bentonite granules [ ] 33
[ ] 1/4 in. [ ] 3/8 in. [ ] 1/2 in. Bentonite pellets [ ] 32
Holeplug bentonite chips Other [x]
7. Fine sand material: Manufacturer, product name and mesh size
Badger fine sand
Volume added 1 bags ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red flint #30
Volume added 4.5 bags ft³
9. Well casing: Flush threaded PVC schedule 40 [ ] 23; Flush threaded PVC schedule 80 [x] 24; Other [ ]
10. Screen material: Same as casing
Screen type: Factory cut [x] 11; Continuous slot [ ] 01; Other [ ]
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 4.7 ft.
11. Backfill material (below filter pack): None [x]; Other [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature
Firm: Simon Hydro-Search

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State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NW Landfill
Well Name: P-108
License/Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other Surged&pumped w/pump	☒	___

3. Time spent developing well _____ min.

4. Depth of well (from top of well casisng) 62.9 ft.

5. Inside diameter of well 1.91 in.

6. Volume of water in filter pack and well casing 6.9 gal.

7. Volume of water removed from well 110.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	23.20 ft.	23.19 ft.
Date	09/14/93 (m m d d y y)	09/14/93 (m m d d y y)
Time	09:30 ☒ a.m. ☐ p.m.	10:20 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	1.2 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Brown silty	Clear ☒ 20 Turbid ☐ 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jennifer J. Ronk
Firm: Simon Hydro Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Jennifer J. Ronk
Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill	Grid Location: 682721.6952 ft. ☒ N. ☐ S. / 2266959.8444 ft. ☒ E. ☐ W.	Well Name: MW-109
Facility License, Permit or Monitoring Number:		Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W	Date Well Installed: 09/09/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: ☒ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	Well Installed By: (Person's Name and Firm): Eric Schoenburg - WTI
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 873.60 ft. MSL
C. Land surface elevation 871.4 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 6.0 ft.

12. USCS classification of soil near screen:
☒ GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top _____ ft. MSL or 31.0 ft.
F. Fine sand, top _____ ft. MSL or 36.0 ft.
G. Filter pack, top _____ ft. MSL or 39.0 ft.
H. Well screen, top _____ ft. MSL or 40.0 ft.
I. Well screen, bottom _____ ft. MSL or 50.0 ft.
J. Filter pack, bottom _____ ft. MSL or 50.0 ft.
K. Borehole, bottom _____ ft. MSL or 50.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 2.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐
5. Annular space seal: Granular Bentonite ☐ 33; _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35; _____ Lbs/gal mud weight ..... Bentonite slurry ☒ 31; _____ % Bentonite ..... Bentonite-cement grout ☐ 50
100 gal volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33; ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32; Hole plus Bentonite chips Other ☒
7. Fine sand material: Manufacturer, product name and mesh size: Badger Fine Sand
Volume added 1 bag
8. Filter pack material: Manufacturer, product name and mesh size: Red flint #30
Volume added 6 bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen material: Sgnees casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 8.5 ft.
11. Backfill material (below filter pack): None ☒; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with s. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NN Landfill

Well Name: MW-109

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other _____	☐	____

3. Time spent developing well _____ min.

4. Depth of well (from top of well casisng) _____ ft.

5. Inside diameter of well _____ in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well _____ gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	_____ ft.	_____ ft.
Date	m m / d d / y y	m m / d d / y y
Time	☐ a.m. ☐ p.m.	☐ a.m. ☐ p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

Additional comments on development:

Well could not be developed - grout apparently migrated from the P-109 installation into the well screen, well abandonment is proposed

Well developed by: Person's Name and Firm

Name: _____

Firm: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Firm: Simon Hydro-Search.

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill
Facility License, Permit or Monitoring Number:
Grid Location: 682726.3037 ft. [x] N. [ ] S.; 2266956.8669 ft. [x] E. [ ] W.
Well Name: P-109
Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well [ ] 11; Piezometer [x] 12
Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 [x] E [ ] W
Date Well Installed: 09/09/93 (m m / d d / y y)
Distance Well Is From Waste/Source Boundary: ft.
Location of Well Relative to Waste/Source: [x] Upgradient [ ] Sidegradient [ ] Downgradient [ ] Not Known
Well Installed By: (Person's Name and Firm): Eric Schoenburg - WTD
Is Well A Point of Enforcement Std. Application? [x] Yes [ ] No

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 873.35 ft. MSL
C. Land surface elevation 870.9 ft. MSL
D. Surface seal, bottom ____ ft. MSL or 5.0 ft.

12. USCS classification of soil near screen:
[ ] GP [ ] GM [ ] GC [ ] GW [ ] SW [x] SP
[ ] SM [ ] SC [ ] ML [ ] MH [ ] CL [ ] CH
[ ] Bedrock

13. Sieve analysis attached? [x] Yes [ ] No

14. Drilling method used: Rotary [ ] 50; Hollow Stem Auger [x] 41; Other [ ]

15. Drilling fluid used: Water [ ] 02; Air [ ] 01; Drilling Mud [ ] 03; None [x] 99

16. Drilling additives used? [ ] Yes [x] No
Describe

17. Source of water (attach analysis): N/A

E. Bentonite seal, top ____ ft. MSL or 66.0 ft.
F. Fine sand, top ____ ft. MSL or 71.0 ft.
G. Filter pack, top ____ ft. MSL or 73.0 ft.
H. Well screen, top ____ ft. MSL or 75.0 ft.
I. Well screen, bottom ____ ft. MSL or 80.0 ft.
J. Filter pack, bottom ____ ft. MSL or 80.0 ft.
K. Borehole, bottom ____ ft. MSL or 80.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. well casing 1.91 in.

1. Cap and lock? [x] Yes [ ] No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel [x] 04; Other [ ]
d. Additional protection? [ ] Yes [x] No
If yes, describe:
3. Surface seal: Bentonite [x] 30; Concrete [ ] 01; Other [ ]
4. Material between well casing and protective pipe: Bentonite [x] 30; Annular space seal [ ]; Other [ ]
5. Annular space seal: Granular Bentonite [ ] 33; ____ Lbs/gal mud weight ... Bentonite-sand slurry [ ] 35; ____ Lbs/gal mud weight ..... Bentonite slurry [x] 31; ____ % Bentonite .... Bentonite-cement grout [ ] 50
200 gal volume added for any of the above
How installed: Tremie [ ] 01; Tremie pumped [x] 02; Gravity [ ] 08
6. Bentonite seal: Bentonite granules [ ] 33; [ ] 1/4 in. [ ] 3/8 in. [ ] 1/2 in. Bentonite pellets [ ] 32; Holeplug Bentonite chips Other [x]
7. Fine sand material: Manufacturer, product name and mesh size: Badger Fine Sand
Volume added 1 bags
8. Filter pack material: Manufacturer, product name and mesh size: Red Flint #30
Volume added 3 bags
9. Well casing: Flush threaded PVC schedule 40 [ ] 23; Flush threaded PVC schedule 80 [x] 24; Other [ ]
10. Screen material: Same as casing
Screen type: Factory cut [x] 11; Continuous slot [ ] 01; Other [ ]
Manufacturer: Timco
Slot size: 0.010 in.
Slotted length: 4.3 ft.
11. Backfill material (below filter pack): None [x]; Other [ ]

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [signature] Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NN Landfill
Well Name: P-109
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other surged/purged w/pump	☒	___

3. Time spent developing well _____ min.

4. Depth of well (from top of well casisng) 81.8 ft.

5. Inside diameter of well 1.91 in.

6. Volume of water in filter pack and well casing 9.2 gal.

7. Volume of water removed from well 110.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	48.14 ft.	48.17 ft.
Date	09/14/93 (m m d d y y)	09/14/93 (m m d d y y)
Time	13:00 ☐ a.m. ☒ p.m.	14:30 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	4.5 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Brown, silty	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jennifer J. Ronk

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Jennifer J. Ronk

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: Ripon FF/NN Landfill	Grid Location: 693185.2962 ft. ☒ N. ☐ S.; 2246794.9036 ft. ☒ E. ☐ W.	Well Name: MW-110
Facility License, Permit or Monitoring Number:		Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W	Date Well Installed: 09/10/93 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: ☒ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	Well Installed By: (Person's Name and Firm) Eric Schoenberg - WTD
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 822.873 ft. MSL
C. Land surface elevation 820.64 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 2.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP
☐ SM ☐ SC ☒ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ ____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top _____ ft. MSL or 0.0 ft.
F. Fine sand, top _____ ft. MSL or NONE ft.
G. Filter pack, top _____ ft. MSL or 25 ft.
H. Well screen, top _____ ft. MSL or 33 ft.
I. Well screen, bottom _____ ft. MSL or 133 ft.
J. Filter pack, bottom _____ ft. MSL or 133 ft.
K. Borehole, bottom _____ ft. MSL or 133 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 2.0 ft.
c. Material: Steel ☒ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐ ____
5. Annular space seal: NONE Granular Bentonite ☐ 33
____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
____ % Bentonite ..... Bentonite-cement grout ☐ 50
____ Ft^3 volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Hole plug Bentonite chips Other ☒ ____
7. Fine sand material: Manufacturer, product name and mesh size
NONE
Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
Red flint #30
Volume added 4 bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____
10. Screen material: Same as casing
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ____
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 4.6 ft.
11. Backfill material (below filter pack): None ☒; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NW Landfill
License, Permit or Monitoring Number: _____

Well Name: MW-110
Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☒	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	___

3. Time spent developing well ____ min.

4. Depth of well (from top of well casisng) 15.3 ft.

5. Inside diameter of well 2.05 in.

6. Volume of water in filter pack and well casing 9.8 gal.

7. Volume of water removed from well 10.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added N/A

10. Analysis performed on water added? N/A ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	3.71 ft.	Dry ft.
Date	09/15/93 m m d d y y	09/15/93 m m d d y y
Time	10:00 ☒ a.m. ☐ p.m.	11:30 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	1.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Grey, silky	Clear ☐ 20 Turbid ☒ 25 (Describe) Grey, silky

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

9/10/93 8 gal water removed, well went dry, allowed ½ hr to recover, removed an additional 2 gal, and well again went dry

Well developed by: Person's Name and Firm

Name: Jennifer J. Ronk

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Jennifer J. Ronk

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

...t of Natural Resources — Form 4400-113A 8-89

...ity/Project Name: Ripon FF/NN Landfill
Facility License, Permit or Monitoring Number: _____

Grid Location: 681233.411 3 ft. N. S. / 2265997.8406 ft. E. W.

Well Name: MW-111
Wis. Unique Well Number: DNR Well Nun

Type of Well: Water Table Observation Well 11 / Piezometer 12

Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 E W

Date Well Installed: 04/04/94

Distance Well Is From Waste/Source Boundary: ~200 ft.

Well Installed By: (Person's Name and Firm): John Wells - WTD; Jennifer J. Rek - Simon Hydro-S

Is Well A Point of Enforcement Std. Application? Yes / No

Location of Well Relative to Waste/Source: Upgradient / Sidegradient / Downgradient / Not Known

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation 856.46 ft. MSL

C. Land surface elevation 853.9 ft. MSL

D. Surface seal, bottom 853.9 ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP GM GC GW SW SP
SM SC ML MH CL CH
Bedrock

13. Sieve analysis attached? Yes / No

14. Drilling method used: Rotary 50 / Hollow Stem Auger 41 / Other

15. Drilling fluid used: Water 02 / Air 01 / Drilling Mud 03 / None 99

16. Drilling additives used? Yes / No

Describe N/A

Source of water (attach analysis): N/A

E. Bentonite seal, top 1.0 ft. MSL or 853.9 ft.

F. Fine sand, top 28.2 ft. MSL or 825.7 ft.

G. Filter pack, top 29.8 ft. MSL or 824.1 ft.

H. Well screen, top 31.6 ft. MSL or 822.3 ft.

I. Well screen, bottom 41.9 ft. MSL or 812.0 ft.

J. Filter pack, bottom 41.9 ft. MSL or 812.0 ft.

K. Borehole, bottom 41.9 ft. MSL or 812.0 ft.

L. Borehole, diameter 8.3 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.05 in. 2"

1. Cap and lock? Yes

2. Protective cover pipe:
a. Inside diameter: 4.0
b. Length: 2.0
c. Material: Steel / Other
d. Additional protection? Yes
If yes, describe: 3" steel Bumper Posts

3. Surface seal: Bentonite / Concrete / Other
Bentonite topped w/1' native material

4. Material between well casing and protective pipe:
Bentonite / Annular space seal / Other
#30 sand

5. Annular space seal: chipped Granular Bentonite
_____ Lbs/gal mud weight ... Bentonite-sand slurry
_____ Lbs/gal mud weight ..... Bentonite slurry
_____ % Bentonite .... Bentonite-cement grout
14 bags volume added for any of the above
How installed: Tremie / Tremie pumped / Gravity

6. Bentonite seal: Bentonite granules
1/4 in. 3/8 in. 1/2 in. Bentonite pellets
coarse bentonite chips Other

7. Fine sand material: Manufacturer, product name and mesh si
Best sand #8
Volume added 16 gg

8. Filter pack material: Manufacturer, product name and mesh s
Red flint #30
Volume added 6 bags

9. Well casing: Flush threaded PVC schedule 40 / Flush threaded PVC schedule 80 / Other

10. Screen material: Same as casing
Screen type: Factory cut / Continuous slot / Other
Manufacturer Timco
Slot size: 0.010
Slotted length: 9.6

11. Backfill material (below filter pack): None / Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: _____ Firm: Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NN Landfill
Well Name: MW-111
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

		Before Development	After Development
1. Can this well be purged dry?	☐ Yes ☒ No		
2. Well development method			
surged with bailer and bailed	☐ 41		
surged with bailer and pumped	☐ 61		
surged with block and bailed	☐ 42		
surged with block and pumped	☐ 62		
surged with block, bailed and pumped	☐ 70		
compressed air	☐ 20		
bailed only	☐ 10		
pumped only	☐ 51		
pumped slowly	☐ 50		
Other surged w/ pump & pumped	☒ [ ]		
11. Depth to Water (from top of well casing)		38.84 ft.	38.86 ft.
Date		04,06,94 m m d d y y	04,06,94 m m d d y y
Time		15:40 ☐ a.m. ☐ p.m.	16:10 ☐ a.m. ☐ p.m.
12. Sediment in well bottom		0.2 ~~feet~~ inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)		Brown, Very silty	
3. Time spent developing well	30 min.		
4. Depth of well (from top of well casisng)	44.4 ft.		
5. Inside diameter of well	2.05 in.		
6. Volume of water in filter pack and well casing	4.0 gal.		
7. Volume of water removed from well	85.0 gal.		
8. Volume of water added (if any)	0.0 gal.		
9. Source of water added	N/A		
10. Analysis performed on water added? (If yes, attach results)	N/A ☐ Yes ☐ No		

Fill in if drilling fluids were used and well is at solid waste facility:

	Before Development	After Development
14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jennifer J. Ronk
Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]
Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

1 ...nt of Natural Resources — Form 4400-113A — 8-89

Facility/Project Name	Grid Location	Well Name
Ripon FF/NN Landfill	681225.0351 ft. ☒ N. ☐ S.	R-111
Facility License, Permit or Monitoring Number	2265999.0989 ft. ☒ E. ☐ W.	Wis. Unique Well Number / DNR Well Num...
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location: SE 1/4 of SE 1/4 of Section 7, T 16 N, R 17 ☒ E ☐ W	Date Well Installed 04/05/95 (mm dd yy)
Distance Well Is From Waste/Source Boundary: N 800 ft.	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	Well Installed By: (Person's Name and Firm) John Weeks - WTD; Jennifer J. Rouk-Simon...
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation ______ ft. MSL

B. Well casing, top elevation 856.13 ft. MSL

C. Land surface elevation 854.0 ft. MSL

D. Surface seal, bottom 814.0 ft. MSL or 40.0 ft.

12. USCS classification of soil near screen: ☐ GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP ☐ SM ☐ SC ☒ ML ☐ MH ☐ CL ☐ CH ☐ Bedrock

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ______

17. Source of water (attach analysis): N/A

E. Bentonite seal, top 787.5 ft. MSL or 66.5 ft.

F. Fine sand, top 785.5 ft. MSL or 68.5 ft.

G. Filter pack, top 781.6 ft. MSL or 72.4 ft.

H. Well screen, top 779.0 ft. MSL or 75.0 ft.

I. Well screen, bottom 773.9 ft. MSL or 80.1 ft.

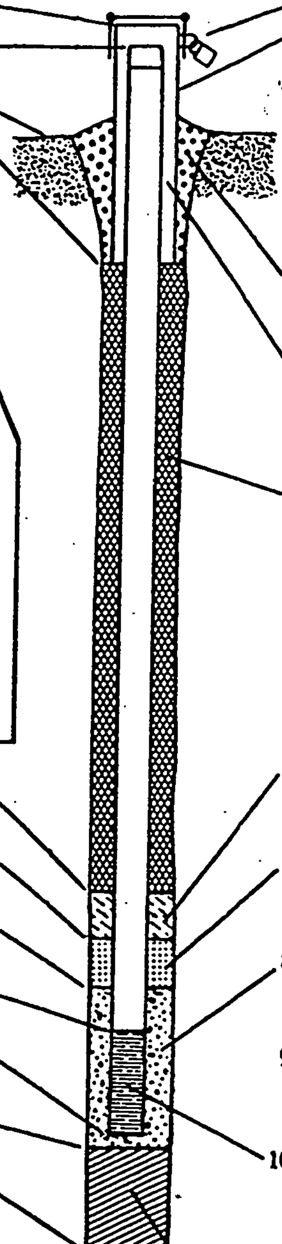
J. Filter pack, bottom 773.9 ft. MSL or 80.1 ft.

K. Borehole, bottom 773.9 ft. MSL or 80.1 ft.

L. Borehole, diameter 8.3 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.05 in.



1. Cap and lock? ☒ Yes ☐ N...
2. Protective cover pipe:
   a. Inside diameter: 4.0
   b. Length: 7.0
   c. Material: Steel ☒; Other ☐
   d. Additional protection? ☒ Yes ☐ No. If yes, describe: Bumper posts (2, 2")
3. Surface seal: Bentonite ☒ 3; Concrete ☐; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 3; Annular space seal ☐; Other ☒ Sand
5. Annular space seal: Granular Bentonite ☐ 3; ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3; ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3; ____ % Bentonite . . . . . Bentonite-cement grout ☒ 5; 100 gal ft³ volume added for any of the above. How installed: Tremie ☐; Tremie pumped ☒ 0; Gravity ☐ 0
6. Bentonite seal: Bentonite granules ☐ 3; ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3; chipped bentonite Other ☒
7. Fine sand material: Manufacturer, product name and mesh size: Badger #8 fine sand. Volume added 1 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size: Red flint #30. Volume added 4 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 2; Flush threaded PVC schedule 80 ☐ 2; Other ☐
10. Screen material: Same as casing. Screen type: Factory cut ☒ 1; Continuous slot ☐ 0; Other ☐. Manufacturer Timco. Slot size: 0.010. Slotted length: 4.5
11. Backfill material (below filter pack): None ☒; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	Simon Hydro-Search

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Ripon FF/NP Landfill
Well Name: P-111
License, Permit or Monitoring Number: _____
Wis. Unique Well Number: _____ DNR Well Number: _____

		Before Development	After Development
1. Can this well be purged dry?	☐ Yes ☒ No		
2. Well development method			
surged with bailer and bailed	☐ 41		
surged with bailer and pumped	☐ 61		
surged with block and bailed	☐ 42		
surged with block and pumped	☐ 62		
surged with block, bailed and pumped	☐ 70		
compressed air	☐ 20		
bailed only	☐ 10		
pumped only	☐ 51		
pumped slowly	☐ 50		
Other surged with pump and pumped	☒		
11. Depth to Water (from top of well casing)		38.99 ft.	39.05 ft.
Date		04/06/99 mm dd yy	04/06/99 mm dd yy
Time		13:50 ☐ a.m. ☒ p.m.	14:20 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		.2 feet inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe) Brown silty	Clear ☒ 20 Turbid ☐ 25 (Describe)
3. Time spent developing well	30 min.		
4. Depth of well (from top of well casisng)	81.9 ft.		
5. Inside diameter of well	2.05 in.		
6. Volume of water in filter pack and well casing	11.0 gal.		
7. Volume of water removed from well	175.0 gal.		
8. Volume of water added (if any)	0.0 gal.		
9. Source of water added	N/A		
10. Analysis performed on water added? (If yes, attach results)	N/A ☐ Yes ☐ No		
Fill in if drilling fluids were used and well is at solid waste facility:			
14. Total suspended solids		____.__ mg/l	____.__ mg/l
15. COD		____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jennifer J. Rork

Firm: Simon Hydro-Search

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]

Firm: Simon Hydro-Search

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: FF/NN Landfill	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: P-111D
Facility License, Permit or Monitoring No.: 00467	Local Grid Origin ☐ (estimated: ☒) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: PG201 / DNR Well ID No.: NA
Facility ID: 420013660	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 04 / 02 / 2002 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 7 T. 16 N. R. 14 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Craig Plant, Environmental Drilling Services, Inc.
Distance from Waste/Source: 1000 ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number: _____

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 0.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☐ 41 / Casing Hammer / Other ☒

15. Drilling fluid used: Water ☐ 02 / Air ☒ 01 / Drilling Mud ☐ 03 / None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):
Water not used

E. Bentonite seal, top _____ ft. MSL or 135 ft.

F. Fine sand, top _____ ft. MSL or 139.5 ft.

G. Filter pack, top _____ ft. MSL or 141 ft.

H. Screen joint, top _____ ft. MSL or 143.5 ft.

I. Well bottom _____ ft. MSL or 148.5 ft.

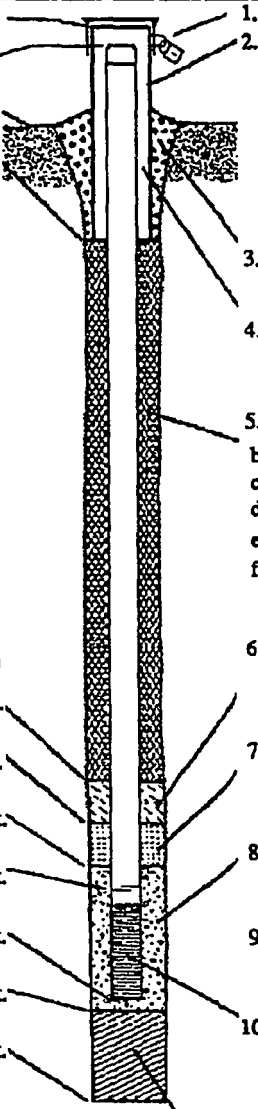
J. Filter pack, bottom _____ ft. MSL or 159 ft.

K. Borehole, bottom _____ ft. MSL or 200 ft.

L. Borehole, diameter 6 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: bumper posts

3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / Other ☐

4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. 11.5 Lbs/gal mud weight ... Bentonite-sand slurry ☒ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 19 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☒ 02 / Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining Co, fine sand (40-60)
b. Volume added 0.25 ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. Badger Mining Co, filter pack sand (20-4
b. Volume added 3 ft³

9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☒ 24 / Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / TimCo / Other ☐
b. Manufacturer Badger Mining Corporation
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☐ 14 / Bentonite (3/8") / Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi W Gantz | Firm: GeoTrans, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
FF/NN Landfill	FOND DU LAC	P-111D

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
00467	20	PG201	NA

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well: 150 min.

4. Depth of well (from top of well casisng): 151.8 ft.

5. Inside diameter of well: 2 in.

6. Volume of water in filter pack and well casing: 30.5 gal.

7. Volume of water removed from well: 330 gal.

8. Volume of water added (if any): 30 gal.

9. Source of water added: driller

10. Analysis performed on water added? ☐ Yes ☒ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 41.48 ft.	43.71 ft.
Date	b. 04 / 03 / 2002 (m m / d d / y y y y)	04 / 03 / 2002 (m m / d d / y y y y)
Time	c. 10 : 30 ☒ a.m. ☐ p.m.	14 : 50 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Cloudy with fines. Very few of these fines settled out of the surge/purge water.	Purge water was completely clear. Sample taken from bottom of well was still slightly cloudy.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Heidi Last Name: Yantz
Firm: GeoTrans, Inc.

17. Additional comments on development:
Driller added approximately 30 gallons to water to blow fines out of screen interval. Unable to insert pump past approximately 80' (well must be slightly kinked). Surged and purged well at bottom with bailer for 35 minutes. Pumped well from ~80'.

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Raymond Last Name: Roder
Facility/Firm: Reinhart Boerner Van Deuren, S.C.
Street: PO Box 2018
City/State/Zip: Madison WI 53701-2018

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Heidi W Yantz
Print Name: Heidi W Yantz
Firm: GeoTrans, Inc.

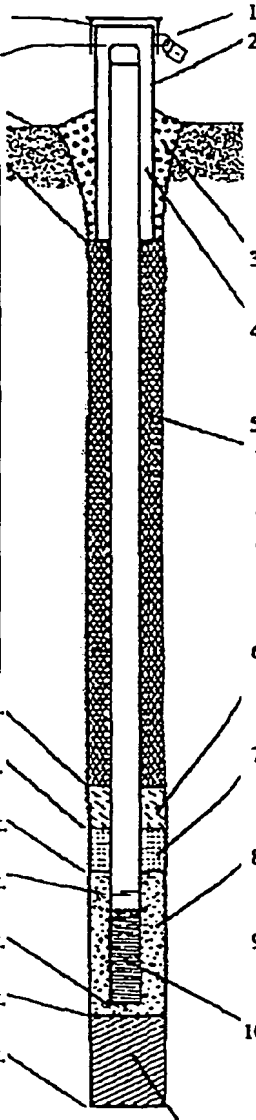
NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: FF/NN Landfill	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: P-113A
Facility License, Permit or Monitoring No.: 000467	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. _____ ° _____ ' _____ " Long. _____ ° _____ ' _____ " or	Wis. Unique Well No.: PG241 / DNR Well ID No.: 136
Facility ID: 420013660	St. Plane 679929.24 ft. N, 2265518.54 ft. E. S, ☐	Date Well Installed: 09 / 05 / 2002 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 18 T. 16 N, R. 14 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Todd Schmalfeldt / Boart-Longyear
Distance from Waste/Source: 2200 ft.	Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known
		Gov. Lot Number: _____



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 833.09 ft. MSL
C. Land surface elevation 830.55 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 4 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☒ 50 / Hollow Stem Auger ☐ 41 / Other ☐ _____

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☒ 03 / None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis, if required):
City of Ripon Public Water Supply

E. Bentonite seal, top _____ ft. MSL or 307 ft.
F. Fine sand, top _____ ft. MSL or _____ ft.
G. Filter pack, top _____ ft. MSL or 313 ft.
H. Screen joint, top _____ ft. MSL or 317 ft.
I. Well bottom _____ ft. MSL or 322 ft.
J. Filter pack, bottom _____ ft. MSL or 322 ft.
K. Borehole, bottom _____ ft. MSL or 322 ft.
L. Borehole, diameter 8 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 1.94 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: 7 ft.
c. Material: Steel ☒ 04 / Other ☐ _____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: bumper posts (2)
3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30 / Other ☒ 50
filter pack sand
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 10 Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 15 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☒ 02 / Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Not used (filter pack extended into inte
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint, Filter & Abrasive Sands
b. Volume added 0.75 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☒ 24 / Other ☐ _____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ _____
b. Manufacturer Boart-Longyear
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi Yantz | Firm: GeoTrans, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment [X] Other ☐ _____

Facility/Project Name	County Name	Well Name
FF/NN Landfill	FOND DU LAC	P-113A

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
000467	20	PG241	136

1. Can this well be purged dry? [X] Yes ☐ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	[X] 20
bailed only	☐ 10
pumped only	[X] 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well: 195 min.

4. Depth of well (from top of well casisng): 323.8 ft.

5. Inside diameter of well: 1.94 in.

6. Volume of water in filter pack and well casing: 52.6 gal.

7. Volume of water removed from well: 180 gal.

8. Volume of water added (if any): ____ gal.

9. Source of water added: _____

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	17.61 ft.	36 * ft.
Date b. (m m d d y y y y)	09 / 11 / 2002	09 / 12 / 2002
Time c.	14 : 20 ☐ a.m. [X] p.m.	13 : 00 ☐ a.m. [X] p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear ☐ 10 Turbid [X] 15	Clear ☐ 20 Turbid [X] 25
(Describe)	Light brown, slightly cloudy	Still light brown, slightly cloudy

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____ mg/l	____ mg/l
15. COD	____ mg/l	____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Juedes
Firm: Boart Longyear

17. Additional comments on development:
Borehole sampled using packer before well install. - approx 250 gals of water purged from screen interval during packer testing. During development, grundfos pump could not pull from depth. Switched to air lifting. Purged dry three times.

* taken 9/12 am before beginning air lift. Well hadn't recovered sufficiently for final measurement before consultant left site. Static water level ≈ 17'

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Raymond Last Name: Roder
Facility/Firm: Reinhart Boerner Van Deuren, S.C.
Street: PO Box 2018
City/State/Zip: Madison WI 53701-2018

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Heidi W Yantz
Print Name: Heidi W yantz
Firm: GeoTrans, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment [X] Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: FF/NN Landfill	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: P-113B
Facility License, Permit or Monitoring No.: 000467	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: GP242 / DNR Well ID No.: 138
Facility ID: 420013660	St. Plane 679929.04 ft. N, 2265518.39 ft. E. S; ═	Date Well Installed: 09 / 06 / 2002 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 18 T. 16 N, R. 14 [X] E ☐ W	Well Installed By: Name (first, last) and Firm: Todd Schmalfeldt / Boart-Longyear
Distance from Waste/Source: 2200 ft. / Enf. Stds. Apply [X]	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d [X] Downgradient n ☐ Not Known	Gov. Lot Number:

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation 833.1 ft. MSL

C. Land surface elevation 830.55 ft. MSL

D. Surface seal, bottom _____ ft. MSL or 4 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock [X]

13. Sieve analysis performed? ☐ Yes [X] No

14. Drilling method used: Rotary [X] 50
Hollow Stem Auger ☐ 41
Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud [X] 03 None ☐ 99

16. Drilling additives used? ☐ Yes [X] No
Describe _____

17. Source of water (attach analysis, if required):
City of Ripon Public Water Supply

E. Bentonite seal, top _____ ft. MSL or 178.5 ft.

F. Fine sand, top _____ ft. MSL or 185 ft.

G. Filter pack, top _____ ft. MSL or 187.5 ft.

H. Screen joint, top _____ ft. MSL or 190 ft.

I. Well bottom _____ ft. MSL or 195 ft.

J. Filter pack, bottom _____ ft. MSL or 196 ft.

K. Borehole, bottom _____ ft. MSL or 322 ft.

L. Borehole, diameter 10 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 1.91 in.

1. Cap and lock? [X] Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: 7 ft.
c. Material: Steel [X] 04 / Other ☐ _____
d. Additional protection? [X] Yes ☐ No
If yes, describe: bumper posts (2)

3. Surface seal: Bentonite [X] 30 / Concrete ☐ 01 / Other ☐ _____

4. Material between well casing and protective pipe:
filter pack material
Bentonite ☐ 30 / Other [X] _____

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 10 Lbs/gal mud weight . . . . . Bentonite slurry [X] 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 47 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped [X] 02 / Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. [X] 3/8 in. ☐ 1/2 in. Bentonite chips [X] 32
c. _____ Other ☐ _____

7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining Corp Fine Sand
b. Volume added 0.5 ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint, Filter & Abrasive Sands
b. Volume added 1.75 ft³

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 [X] 24
Other ☐ _____

10. Screen material: PVC
a. Screen type: Factory cut [X] 11 / Continuous slot ☐ 01 / Other ☐ _____
b. Manufacturer Boart-Longyear
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☐ 14
Bentonite chips/slurry for well P-113A / Other [X] _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi Yontz | Firm: GeoTrans, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment [X] Other ☐ _____

Facility/Project Name	County Name	Well Name
FF/NN Landfill	FOND DU LAC	P-113B

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
00467	20	PG242	138

1. Can this well be purged dry? ☐ Yes X No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	X 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 210 min.

4. Depth of well (from top of well casisng) 198 ft.

5. Inside diameter of well 1.94 in.

6. Volume of water in filter pack and well casing 33.8 gal.

7. Volume of water removed from well 460 gal.

8. Volume of water added (if any) ____ gal.

9. Source of water added _____

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 16.42 ft.	17.23 ft.
Date	b. 09 / 11 / 2002 (m m / d d / y y y y)	09 / 12 / 2002
Time	c. 10 : 35 X a.m. ☐ p.m.	11 : 10 X a.m. ☐ p.m.
12. Sediment in well bottom	____ inches	____ inches
13. Water clarity	Clear ☐ 10 Turbid X 15 (Describe) Medium brown, very cloudy	Clear X 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids ____ mg/l ____ mg/l

15. COD ____ mg/l ____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Juedes
Firm: Boart Longyear

17. Additional comments on development:
Surged with grundfos pump while pumping. Surged six times throughout development process.

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Raymond Last Name: Roder
Facility/Firm: Reinhart Boerner Van Deuren, S.C.
Street: PO Box 2018
City/State/Zip: Madison WI 53701-2018

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Heidi W Yantz
Print Name: Heidi W Yantz
Firm: GeoTrans, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

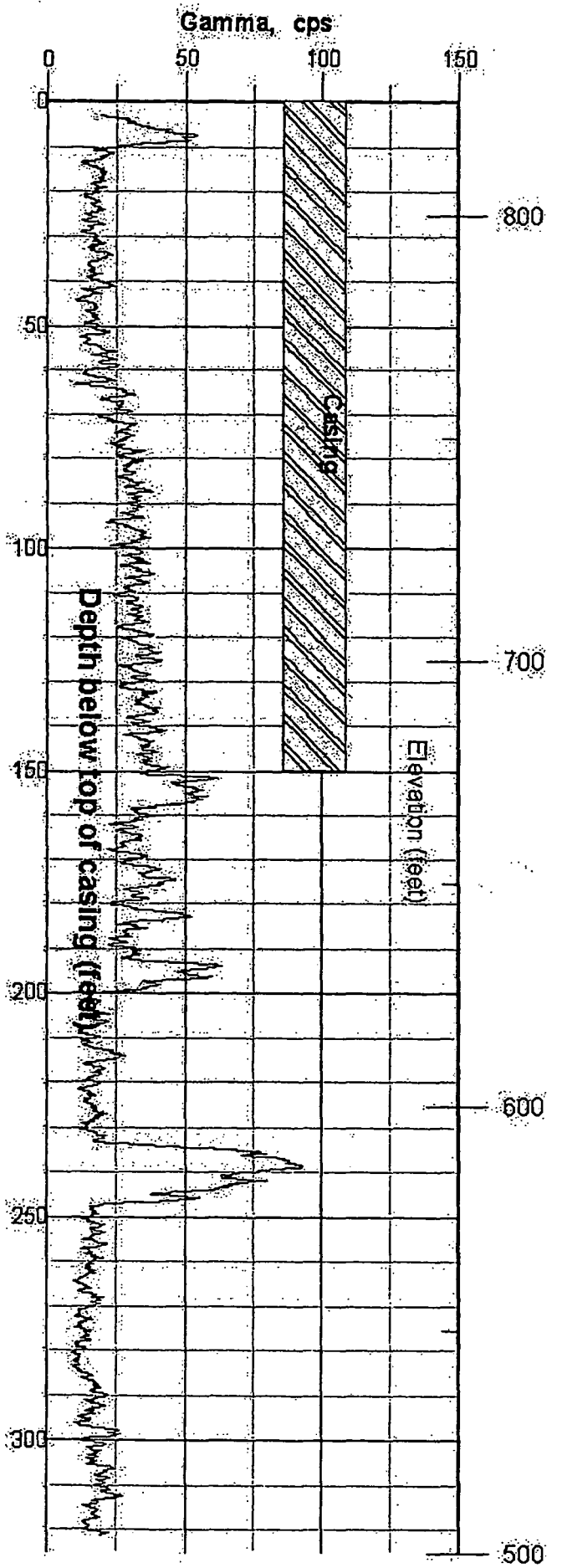
consin Geological and Natural History Survey
ysical Log
from Mt Sopris digital logger
ed 09/04/02 by C.Thomas

ation: 825 FT. MSL Ripon Topo

g: 150 FT. Driller

Ripon- Monitoring Well Nest P-113

Well ID: 200817, 200818
8756 South Koro Road
Ripon, WI



of Wisconsin
partment of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: [redacted] Landfill	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-114 (Ehster)
Facility License, Permit or Monitoring No.: 00467	Local Grid Origin ☐ (estimated: ☒) or Well Location ☒ Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or	Wis. Unique Well No.: PG220 / DNR Well ID No.: NA
Facility ID: 420013660	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 01/29/2003 (m m d d y y y y)
Type of Well: Well Code 12/PZ	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 7 T. 16 N. R. 14 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Mike Gerrits / Environmental Drilling Services
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☐ 41 / Other ☐
Previously drilled.

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top _____ ft. MSL or 0.0 ft.
F. Fine sand, top _____ ft. MSL or 163.5 ft.
G. Filter pack, top _____ ft. MSL or 165.5 ft.
H. Screen joint, top _____ ft. MSL or 168.0 ft.
I. Well bottom _____ ft. MSL or 183.2 ft.
J. Filter pack, bottom _____ ft MSL or 183.5 ft.
K. Borehole, bottom _____ ft MSL or 183.5 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.04 in.

Pvc casing @ 168'
Top of SS @ 168'
Borehole open to 185'

1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Flush mount — Steel ☒ 04 / Other ☐
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐
4. Material between well casing and protective pipe: Sand — Bentonite ☐ 30 / Other ☒
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. badger mining, fine sand 20-40
b. Volume added 1.4 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. badger mining, filter pack #30
b. Volume added 14.8 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☒ 24 / Other ☐
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐

15' screen

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm GeoTrans Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
FF/NN Landfill	Fon Du Lac	MW-114
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well ID Number**
~~[illegible]~~ 00467	20	PG220	NA

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 65 min.

4. Depth of well (from top of well casisng) 183.5 ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 27.0 gal.

7. Volume of water removed from well 270.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added -

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 22.56 ft.	32.74 ft.
Date	b. 01/30/2003 (m m d d y y y y)	01/30/2003 (m m d d y y y y)
Time	c. 08:45 ☒ a.m. ☐ p.m.	10:10 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Slightly cloudy, likely fines in filter pack material	
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Richard Last Name: Sawall
Firm: GeoTrans Inc.

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Richard Last Name: Sawall
Facility/Firm: GeoTrans Inc.
Street: 175 N. Corporate Drive Suite 100
City/State/Zip: Brookfield WI 53045

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Richard H. Sawall
Print Name: Richard H. Sawall
Firm: GeoTrans Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: FF/NN Landfill	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: P-115 (Wiese)
Facility License, Permit or Monitoring No.: 000467	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: PG221 / DNR Well Number: 142
Facility ID: 431048200	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 04/16/2004
Type of Well: Well Code 72/dp	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 7, T. 16 N, R. 17 ☒E ☐W	Well Installed By: (Person's Name and Firm): Todd Schamfelt / Boart Longyear
Distance from Waste/Source: 1600 ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number:

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation ____ ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 12.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Converted private well Other ☒

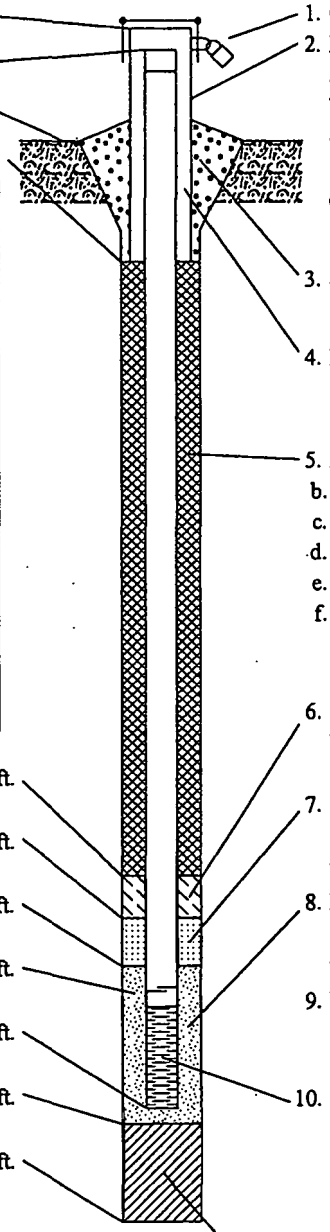
15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ____ ft. MSL or 161.0 ft.
F. Fine sand, top ____ ft. MSL or 171.0 ft.
G. Filter pack, top ____ ft. MSL or 173.0 ft.
H. Screen joint, top ____ ft. MSL or 175.0 ft.
I. Well bottom ____ ft. MSL or 180.0 ft.
J. Filter pack, bottom ____ ft. MSL or 180.0 ft.
K. Borehole, bottom ____ ft. MSL or 180.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 1.94 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 12.0 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 04
____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
____ Other ☐
4. Material between well casing and protective pipe:
Bentonite ☒ 30
____ Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 3.4 Lbs/gal mud weight . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. 149 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☒ 02
Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining Company #7
b. Volume added 0.5 ft³
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint
b. Volume added 1 ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☒ 24
____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11
Continuous slot ☐ 01
____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐ 14
____ Other ☒

I certify that the information on this form is true and correct to the best of my knowledge.

Signature: Heidi Yarosh

Firm: GeoTrans, Inc.
175 N. Corporate Drive, Suite 100 Brookfield, WI 53045

Tel: 262-792-1282
Fax:

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	County	Well Name
FF/NN Landfill	Fond Du Lac	P-115

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
000467	20	PG221	142

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☒	51
pumped slowly	☐	50
other _____	☐	[illegible]

3. Time spent developing well: 86 min.

4. Depth of well (from top of well casing): 179.8 ft.

5. Inside diameter of well: 1.94 in.

6. Volume of water in filter pack and well casing: 27.0 gal.

7. Volume of water removed from well: 300.0 gal.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	23.99 ft.	24.10 ft.
Date b.	4/27/2004	4/27/2004
Time c.	☒ a.m. 12:00 ☐ p.m.	☒ a.m. 12:00 ☐ p.m.
12. Sediment in well bottom	3.0 inches	1.9 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Black - manganese	Clear ☒ 20 Turbid ☐ 25 (Describe) Slight tinge of black

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Richard Sawall
GeoTrans, Inc.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: FF/NN Landfill Group

Firm: c/o Ray Roder, Reinhart Boerner Van Deuren sc

Street: PO Box 2018

City/State/Zip: Madison, WI 53701-2018

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Heidi Yantz

Print Name: Heidi Yantz

Firm: GeoTrans, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

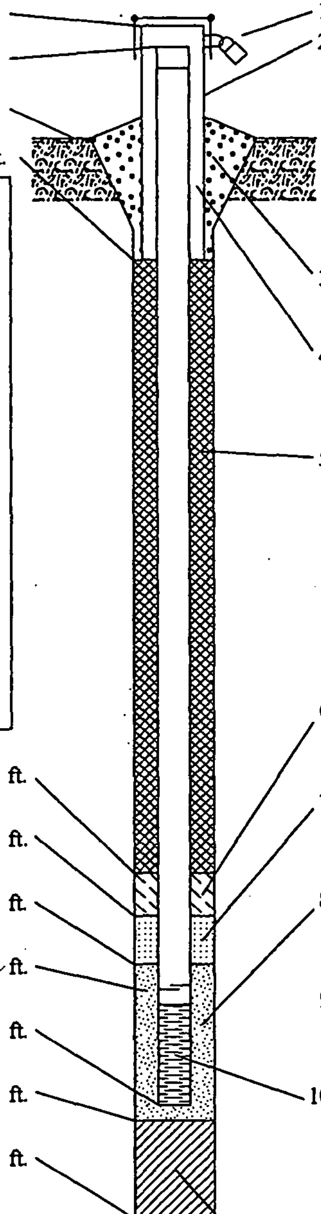
Facility/Project Name: FF/NN Landfill	Local Grid Location of Well: ______ ft. ☐ N. ☐ S. ______ ft. ☐ E. ☐ W.	Well Name: P-116 (Hadel)
Facility License, Permit or Monitoring No.: 000467	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No.: PG222 / DNR Well Number: 143
Facility ID: 431048200	St. Plane ______ ft. N, ______ ft. E. S/C/N	Date Well Installed: 04/15/2004
Type of Well: Well Code 72/dp	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 7, T. 16 N, R. 17 ☒ E ☐ W	Well Installed By: (Person's Name and Firm) Todd Schamfelt, Boart Longyear
Distance from Waste/Source: 1800 ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient; s ☐ Sidegradient; d ☒ Downgradient; n ☐ Not Known / Gov. Lot Number:	

A. Protective pipe, top elevation ______ ft. MSL
B. Well casing, top elevation ______ ft. MSL
C. Land surface elevation ______ ft. MSL
D. Surface seal, bottom ______ ft. MSL or 10.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis attached? ☐ Yes ☒ No
14. Drilling method used: Rotary ☐ 5 0; Hollow Stem Auger ☐ 4 1; Converted private well Other ☒
15. Drilling fluid used: Water ☐ 0 2; Air ☐ 0 1; Drilling Mud ☐ 0 3; None ☒ 9 9
16. Drilling additives used? ☐ Yes ☒ No
Describe ______
17. Source of water (attach analysis, if required):

E. Bentonite seal, top ______ ft. MSL or 145.5 ft.
F. Fine sand, top ______ ft. MSL or 155.0 ft.
G. Filter pack, top ______ ft. MSL or 157.0 ft.
H. Screen joint, top ______ ft. MSL or 159.0 ft.
I. Well bottom ______ ft. MSL or 166.0 ft.
J. Filter pack, bottom ______ ft. MSL or 165.0 ft.
K. Borehole, bottom ______ ft. MSL or 165.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 1.94 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
 a. Inside diameter: 12.0 in.
 b. Length: 1.0 ft.
 c. Material: Steel ☒ 0 4; Other ☐
 d. Additional protection? ☐ Yes ☒ No
 If yes, describe: ______
3. Surface seal: Bentonite ☒ 3 0; Concrete ☐ 0 1; Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 3 0; Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 3 3
 b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
 c. 3.4 Lbs/gal mud weight . . . Bentonite slurry ☒ 3 1
 d. ____ % Bentonite . . . Bentonite-cement grout ☐ 5 0
 e. 135.5 Ft^3 volume added for any of the above
 f. How installed: Tremie ☐ 0 1; Tremie pumped ☒ 0 2; Gravity ☐ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
 b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 3 2
 c. ______ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
 a. ______
 b. Volume added 0.5 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
 a. Red Flint
 b. Volume added 1 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 2 3; Flush threaded PVC schedule 80 ☒ 2 4; Other ☐
10. Screen material: PVC
 a. Screen Type: Factory cut ☒ 1 1; Continuous slot ☐ 0 1; Other ☐
 b. Manufacturer Boart Longyear
 c. Slot size: 0.010 in.
 d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 1 4; Cave-in formation Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] | Firm: GeoTrans, Inc., 175 N. Corporate Drive, Suite 100 Brookfield, WI 53045 | Tel: 262-792-1282 Fax:

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	County	Well Name
FF/NN Landfill	Fond Du Lac	P-116

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
000467	20	PG222	143

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well 360+ min.

4. Depth of well (from top of well casing) 165.0 ft.

5. Inside diameter of well 1.94 in.

6. Volume of water in filter pack and well casing 24.0 gal.

7. Volume of water removed from well 260.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	28.28 ft.	163.35 ft.
Date	b.	4/28/2004	5/11/2004
Time	c.	12:00 ☒ a.m. ☐ p.m.	12:00 ☒ a.m. ☐ p.m.
12. Sediment in well bottom		111.0 inches	19.8 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe) Brick red - iron	Clear ☐ 20 Turbid ☒ 25 (Describe) Cloudy with brownish-red color

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Richard Sawall
GeoTrans, Inc.

17. Additional comments on development:
4/28/04: 100 gals water removed using pneumatic pump. Removed 6.85' of sand. DTB 163.60 when complete.

5/14/04: 160 gals water removed using grundfos pump.

Facility Address or Owner/Responsible Party Address

Name: FF/NN Landfill Group

Firm: c/o Ray Roder, Reinhart Boerner Van Deuren sc

Street: PO Box 2018

City/State/Zip: Madison, WI 53701-2018

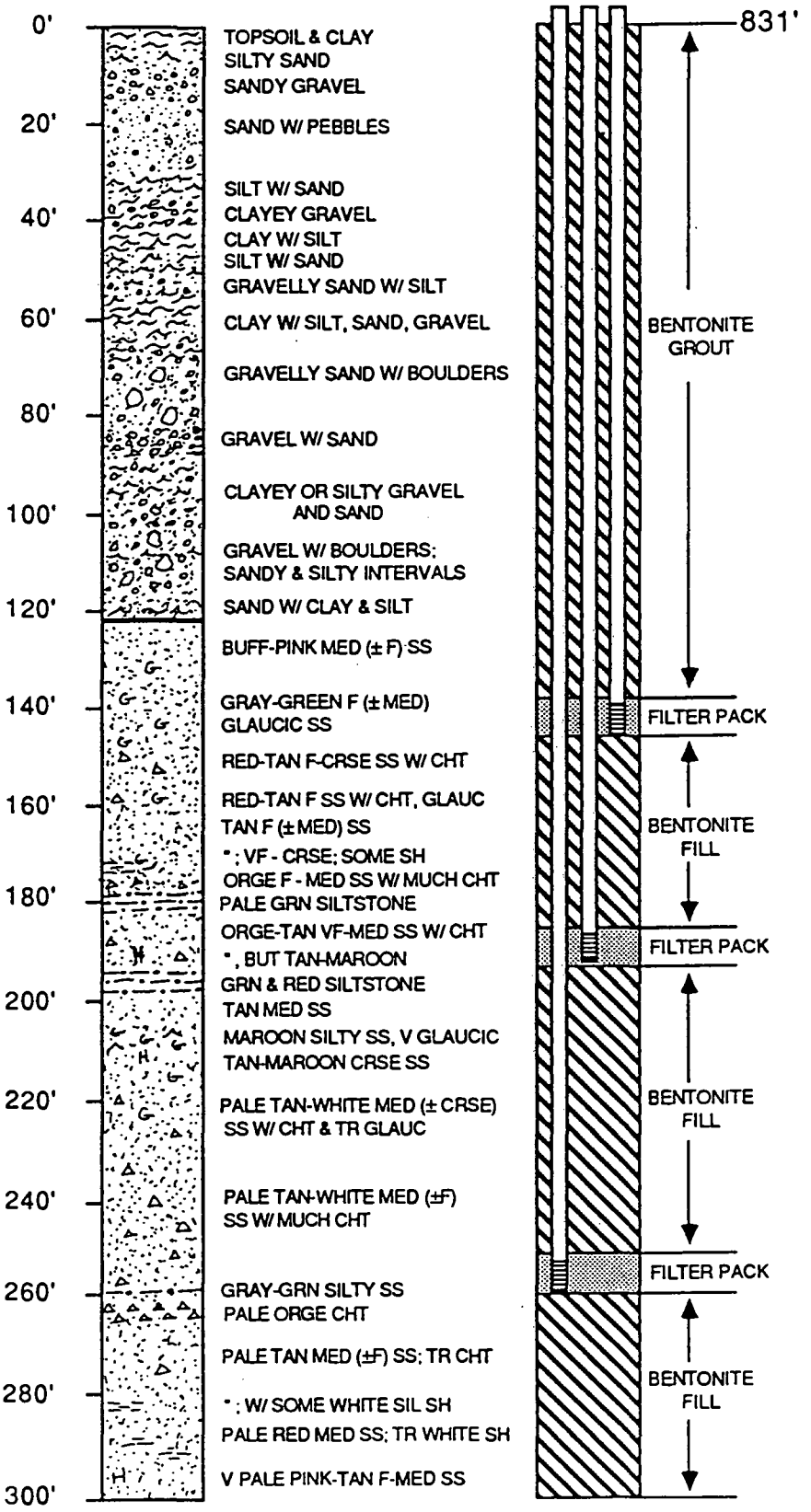
I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Heidi Yantz

Print Name: Heidi Yantz

Firm: GeoTrans, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.



WELL NEST MW-1

@ Municipal Well #9 location

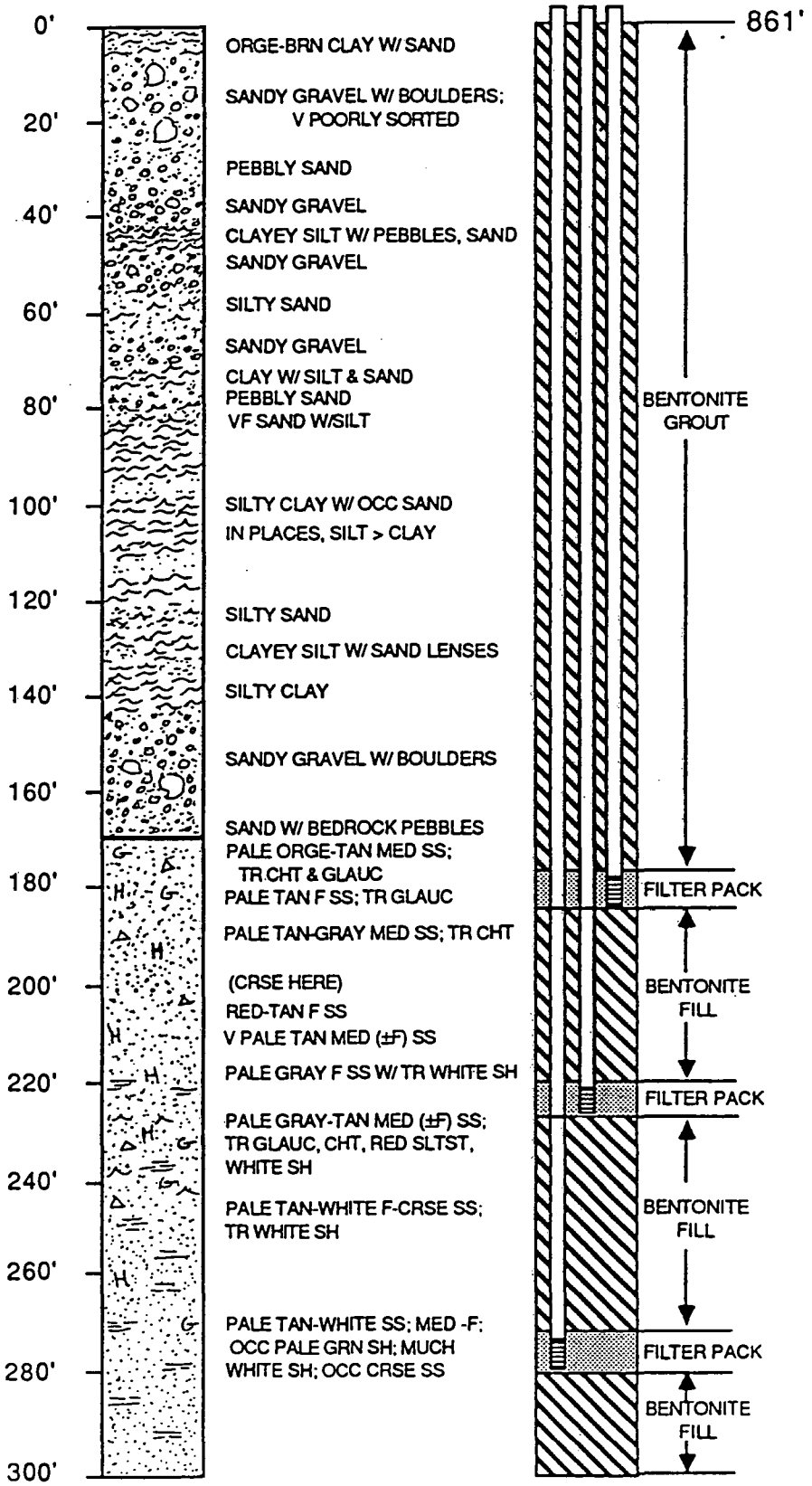
KEY

LITHOLOGIES

- CLAY
- SHALE
- SILT
- SILTSTONE
- SAND & SANDSTONE
- GRAVEL

OTHER SYMBOLS

- CHERT
- GLAUCONITE
- HEMATITIC CONCRETIONS



WELL NEST MW-2

E. of Bosveld
Abandoned

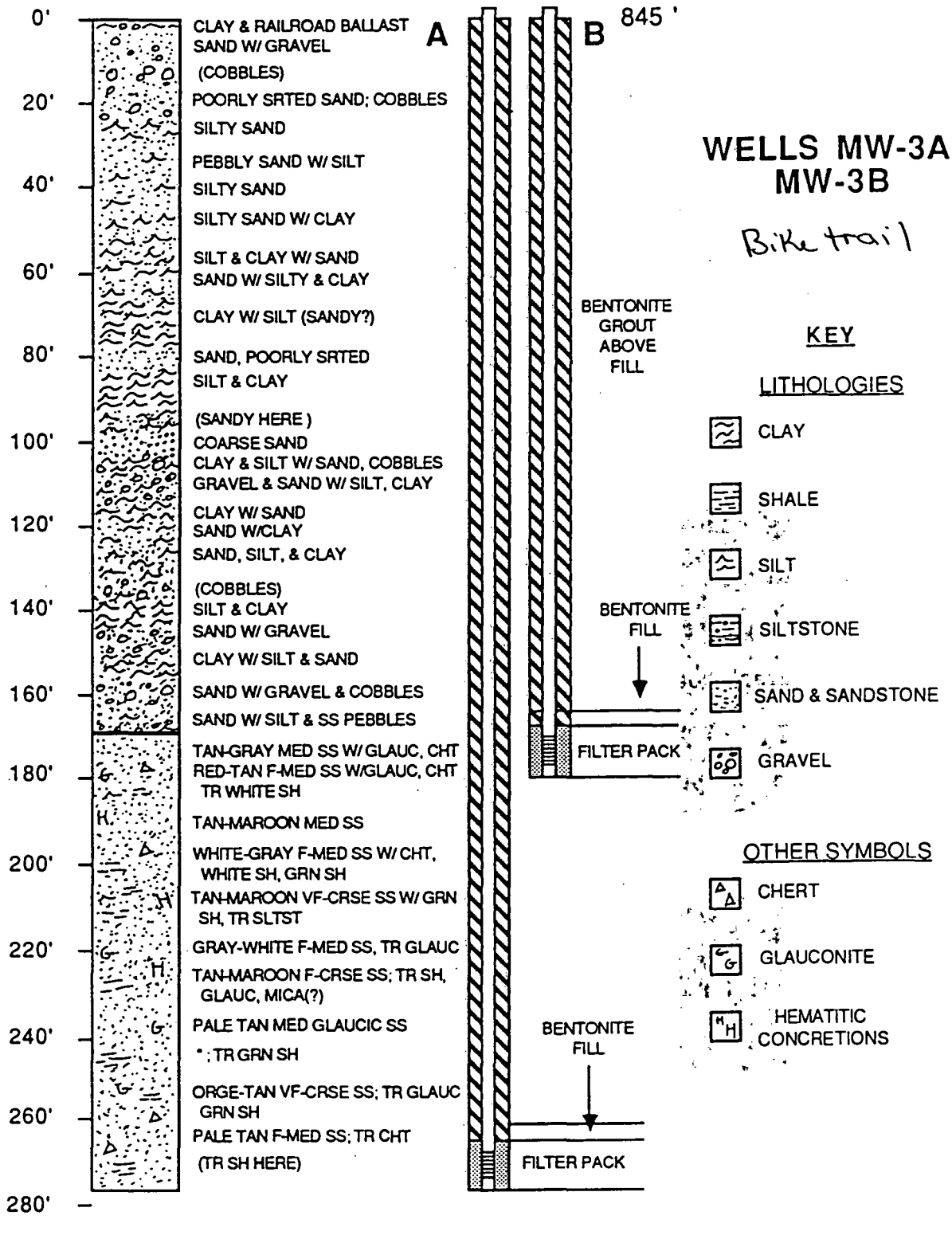
KEY

LITHOLOGIES

- CLAY
- SHALE
- SILT
- SILTSTONE
- SAND & SANDSTONE
- GRAVEL

OTHER SYMBOLS

- CHERT
- GLAUCONITE
- HEMATITIC CONCRETIONS


0'
20'
40'
60'
80'
100'
120'
140'
160'
180'
200'
220'
240'
260'
280'
CLAY & RAILROAD BALLAST
SAND W/ GRAVEL
(COBBLES)
POORLY SRTED SAND; COBBLES
SILTY SAND
PEBBLY SAND W/ SILT
SILTY SAND
SILTY SAND W/ CLAY
SILT & CLAY W/ SAND
SAND W/ SILTY & CLAY
CLAY W/ SILT (SANDY?)
SAND, POORLY SRTED
SILT & CLAY
(SANDY HERE)
COARSE SAND
CLAY & SILT W/ SAND, COBBLES
GRAVEL & SAND W/ SILT, CLAY
CLAY W/ SAND
SAND W/CLAY
SAND, SILT, & CLAY
(COBBLES)
SILT & CLAY
SAND W/ GRAVEL
CLAY W/ SILT & SAND
SAND W/ GRAVEL & COBBLES
SAND W/ SILT & SS PEBBLES
TAN-GRAY MED SS W/ GLAUC, CHT
RED-TAN F-MED SS W/GLAUC, CHT
TR WHITE SH
TAN-MAROON MED SS
WHITE-GRAY F-MED SS W/ CHT,
WHITE SH, GRN SH
TAN-MAROON VF-CRSE SS W/ GRN
SH, TR SLTST
GRAY-WHITE F-MED SS, TR GLAUC
TAN-MAROON F-CRSE SS; TR SH,
GLAUC, MICA(?)
PALE TAN MED GLAUCIC SS
" ; TR GRN SH
ORGE-TAN VF-CRSE SS; TR GLAUC
GRN SH
PALE TAN F-MED SS; TR CHT
(TR SH HERE)
A
B
845 '
BENTONITE
GROUT
ABOVE
FILL
BENTONITE
FILL
FILTER PACK
BENTONITE
FILL
FILTER PACK
WELLS MW-3A,
MW-3B
Bike trail
KEY
LITHOLOGIES
CLAY
SHALE
SILT
SILTSTONE
SAND & SANDSTONE
GRAVEL
OTHER SYMBOLS
CHERT
GLAUCONITE
HEMATITIC
CONCRETIONS

APPENDIX A
MONITORING WELL INSTALLATION AND LOGS

Drilling and installation of monitoring well nests MW-1 and MW-2 occurred from August 29 to September 20, 1990. Layne-Northwest Company of Pewaukee, Wisconsin was contracted for this work. In each case, a six-inch diameter hole was drilled to 300 feet using the reverse-circulation air rotary method. Steel casing was driven along with the bit until it reached the bedrock surface. After reaching bedrock, no more casing was driven, but the casing through the drift was left in place after completion of the hole. Description of cuttings collected during drilling provided a means for locating and correlating potential basal boundaries for DNAPL flow, as well as guiding piezometer placement. Originally, individual piezometers were to be placed above potential boundaries, but once MW-2 was drilled, it was apparent that few, if any such layers exist in the bedrock. As such, the three nested piezometers in each well were placed to be screened at roughly equal elevations.

Individual piezometers were constructed with threaded, one-inch diameter schedule 80 PVC piping, with a five-foot, number 10 slot (0.01 inch) screen at the bottom. A coarse sand filter pack was poured to two feet above and below the screen, and the intervals between the screens were filled with bentonite chips. Above the uppermost piezometer, bentonite grout was pumped in up to ground level.

The third set of monitoring wells, MW-3A and MW-3B, are separate wells located within seven feet of each other. These were drilled and installed by CTW Corporation from January 7 - 25, 1991. In this case, the method employed was direct circulation rotary. While drilling through the drift, bentonite mud was the fluid, and air was used in bedrock. Casing through the drift was driven after the bit reached bedrock.

MW-3A is the deeper of the two holes, extending to 278 feet, while MW-3B extends to 182 feet deep. Each well was constructed with threaded, two-inch diameter schedule 40 PVC with five-foot number ten slot screens and two-foot blanks at the bottom. As before, a coarse sand filter pack was poured to two feet above the screen, but was topped with two feet of pure quartz sand and then two feet of bentonite pellets. The remaining portion of each hole was filled with bentonite grout.

The following figures are graphic logs and cartoons showing the stratigraphy and construction of each well. Abbreviations used in descriptions are as follows:

BRN = brown; CHT = chert; CRSE = coarse; F = fine; GLAUC = glauconite; GLAUCIC = glauconitic; GRN = green; MED = medium; OCC = occasional; ORGE = orange; SH = shale; SRTED = sorted; SS = sandstone; TR = trace; V = very; VF = very fine; W/ = with.

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Fond du Lac

____ 1/4 of ____ 1/4 of Sec. ____ ; T. ____ N; R. ____ ☐ E ☐ W

(If Applicable)

____ Gov't Lot ____ Grid Number

Grid Location

____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well

City, Village: Ripon

(2) FACILITY NAME FSNN Landfill

Original Well Owner (If Known)

Present Well Owner: FSNN Landfill

Street or Route

City, State, Zip Code: Ripon, WI

Facility Well No. and/or Name (If Applicable): MW-105

WI Unique Well No.

Reason For Abandonment: Clean

Date of Abandonment: 10-30-96

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) ____

☒ Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) 50.5 Casing Diameter (ins.) 2.00
(From groundsurface)

Casing Depth (Ft.) 50.5

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) 48.1

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☒ Yes	☐ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☒ Bentonite-Cement Grout

(7)

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Cement-Grout	Surface	50.5	15 Gal.	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work: Boart Longyear

Signature of Person Doing Work

Date Signed: 11-7-96

Street or Route: 101 Alderson Street

Telephone Number: (715) 359-7090

City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected

District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Fond du Lac

____ 1/4 of ____ 1/4 of Sec. ____ ; T. ____ N; R. ____ ☐ E ☐ W

(If Applicable)

____ Gov't Lot ____ Grid Number

Grid Location

____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well

City, Village: Ripon

(2) FACILITY NAME FSNN Landfill

Original Well Owner (If Known)

Present Well Owner: FSNN Landfill

Street or Route

City, State, Zip Code: Ripon, WI

Facility Well No. and/or Name (If Applicable): P-105

WI Unique Well No.

Reason For Abandonment: Clean

Date of Abandonment: 10-30-96

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) ____

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) ____ Casing Diameter (ins.) ____
(From groundsurface)

Casing Depth (Ft.) 82.5

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) 47.5

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☒ Yes	☐ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☒ Bentonite-Cement Grout

(7)

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Cement-Grout	Surface	82.5	22 Gal.	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work: Boart Longyear

Signature of Person Doing Work

Date Signed: 11-7-96

Street or Route: 101 Alderson Street

Telephone Number: (715) 359-7090

City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected

District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Fond du Lac

____ 1/4 of ____ 1/4 of Sec. ____ ; T. ____ N; R. ____ ☐ E ☐ W

(If Applicable)

Gov't Lot ____ Grid Number ____

Grid Location

____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well

City, Village: Ripon

(2) FACILITY NAME FSNN Landfill

Original Well Owner (If Known)

Present Well Owner: FSNN Landfill

Street or Route

City, State, Zip Code: Ripon, WI

Facility Well No. and/or Name (If Applicable): MW-109

WI Unique Well No.

Reason For Abandonment: Clean

Date of Abandonment: 10-30-96

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) ____

☒ Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) 51.5 Casing Diameter (ins.) 2.00
(From groundsurface)

Casing Depth (Ft.) 51.5

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) 49.9

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☒ Yes	☐ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☒ Bentonite-Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Cement-Grout	Surface	51.5	15 Gal.	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear

Signature of Person Doing Work | Date Signed: 11-7-96

Street or Route: 101 Alderson Street | Telephone Number: (715) 359-7090

City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected | District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Fond du Lac

____ 1/4 of ____ 1/4 of Sec. ____ ; T. ____ N; R. ____ ☐ E ☐ W

(If Applicable)

____ Gov't Lot ____ Grid Number

Grid Location

____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well

City, Village: Ripon

(2) FACILITY NAME FSNN Landfill

Original Well Owner (If Known)

Present Well Owner: FSNN Landfill

Street or Route

City, State, Zip Code: Ripon, WI

Facility Well No. and/or Name (If Applicable): P-109

WI Unique Well No.

Reason For Abandonment: Clean

Date of Abandonment: 10-30-96

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) ____

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) ____ Casing Diameter (ins.) ____
(From groundsurface)

Casing Depth (Ft.): 82.0

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet): 49.8

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☒ Yes	☐ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☒ Bentonite-Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Cement-Grout	Surface	82.0	22 Gal.	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work: Boart Longyear

Signature of Person Doing Work: [signature] Date Signed: 11-7-96

Street or Route: 101 Alderson Street Telephone Number: (715) 359-7090

City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected ____ District/County ____

Reviewer/Inspector ____

Follow-up Necessary ____

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Fond du Lac

____ 1/4 of ____ 1/4 of Sec. ____ ; T. ____ N; R. ____ ☐ E ☐ W

(If Applicable)

_____ Gov't Lot _____ Grid Number

Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well

City, Village: Ripon

(2) FACILITY NAME FSNN Landfill

Original Well Owner (If Known)

Present Well Owner: FSNN Landfill

Street or Route

City, State, Zip Code: Ripon, WI

Facility Well No. and/or Name (If Applicable): MW-110

WI Unique Well No.

Reason For Abandonment: Clean

Date of Abandonment: 10-30-96

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) _____

☒ Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) (From groundsurface): 15.6 Casing Diameter (ins.): 2.00

Casing Depth (Ft.): 15.6

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet): 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☒ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite-Cement Grout

(7)

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	15.6	2 Bags	

(8) Comments _____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear

Signature of Person Doing Work

Date Signed: 11-7-96

Street or Route: 101 Alderson Street

Telephone Number: (715) 359-7090

City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected

District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

U.S. Department of the Interior
U.S. Geological Survey
Water Resources Division
8505 Research Way
Middleton, WI 53562-3586
(608) 828-9901
http://wi.water.usgs.gov/

Date: 6/06/02

To: Jenny Pelczar
Wisconsin Department of Natural Resources
625 E. County Road Y, Suite 700
Oshkosh WI 54901

From: Sue Jones, Editorial Assistant
(608) 821-3815
e-mail address: szjones@usgs.gov

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Copy of U.S. Geological Survey Circular, "Investigation of Bedrock Depths by Electrical-Resistivity Methods in the Ripon-Fond Du Lac Area, Wisconsin," by H. Cecil Spicer

GEOLOGICAL SURVEY CIRCULAR 69

March 1950

INVESTIGATION OF BEDROCK DEPTHS BY ELECTRICAL-RESISTIVITY METHODS IN THE RIPON-FOND DU LAC AREA, WISCONSIN

By

H. Cecil Spicer

UNITED STATES DEPARTMENT OF THE INTERIOR
Oscar L. Chapman, Secretary
GEOLOGICAL SURVEY
W. E. Wrather, Director

WASHINGTON, D. C.

Free on application to the Director, Geological Survey, Washington 25, D. C.

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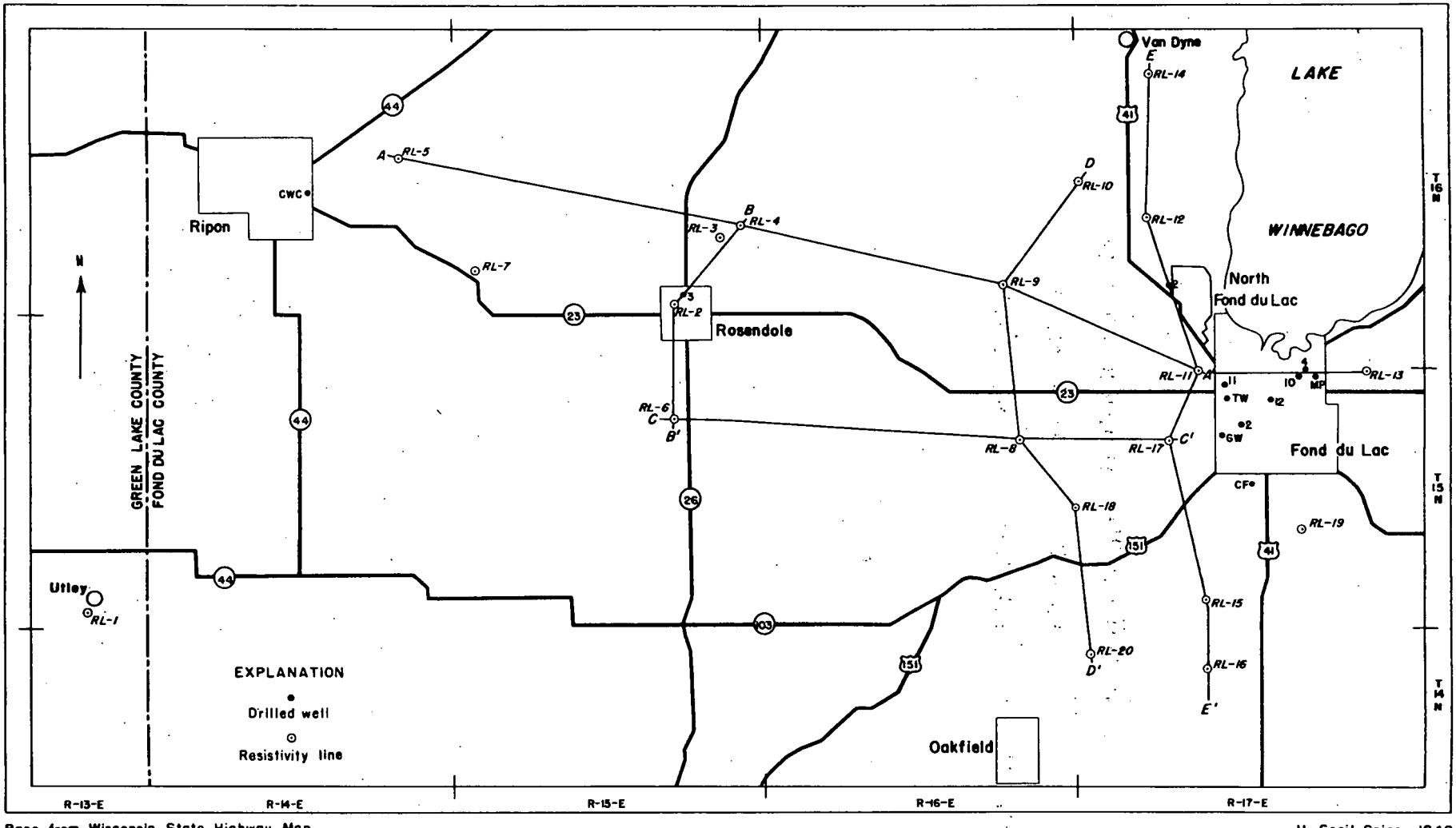
CONTENTS

ILLUSTRATIONS

ABSTRACT

Resistivity measurements are reported for an area in east-central Wisconsin which is mainly in Fond du Lac County. The geological materials overlying the pre-Cambrian bedrock surface are glacial drift, dolomites, sandstones, siltstones, and limestones. The resistivity measurements were made with the Earth Resistivity Apparatus, a Gish-Rooney-type instrument. The pre-Cambrian rocks were identified on the apparent resistivity curves by their higher resistivity. The depths to the pre-Cambrian rocks, as geophysically determined, ranged from 355 feet to more than 1,000 feet. The field measurements indicate that with favorable surface conditions, resistivity methods may be used in this area to locate the pre-Cambrian rocks to depths of approximately 1,500 feet.



Base from Wisconsin State Highway Map, issued 1946

H. Cecil Spicer, 1948

Figure 1.-Map of Ripon—Fond du Lac area, Wisconsin

Showing location of resistivity lines, lines of cross sections, and drilled wells

0 1 2 3 4 5 6 MILES

INTRODUCTION

The geophysical investigation of the depths to bedrock was undertaken upon request of the Ground Water Branch Office of the U. S. Geological Survey at Madison, Wis. The Wisconsin Geological Survey cooperated in the work by providing funds and field assistants. The field measurements were made during the period May 22 to June 10, 1947; the apparent resistivity curves were interpreted during March and April 1948; and the report was prepared after the curves were interpreted.

The writer is grateful to Mr. Ernest F. Bean, State Geologist, Wisconsin Geological Survey, to Mr. Frank C. Foley, District Geologist, U. S. Geological Survey, and his staff, and to Mr. George J. Edwards, the author's co-worker, for the splendid assistance and generous cooperation extended, thus enabling the completion of the field assignment.

LOCATION AND GEOLOGY

The area in which the measurements were made is in the southern part of east-central Wisconsin in Fond du Lac and Green Lake Counties. (See fig. 1.)

The geology of the area has been described by Chamberlin 1/ and Thwaites, 2/ and numerous drill holes in the vicinity have been logged from the cuttings by Thwaites. 2/ The following summary was taken from the above sources.

The soils of the area are variable, but mainly are clay, loam, or sandy loam. They are derived from the glacial drift and in some localities have considerable vegetable material and a resultant relatively dark color. The drift of the area was found to be usually less than 100 feet thick although locally thicker.

At one typical location southeast of Fond du Lac, the formations in succession below the drift are: Galena dolomite; Platteville formation, including the Glenwood shale member; St. Peter sandstone; Prairie du Chien ("Lower Magnesian") dolomite; Jordan sandstone; sandstone and siltstone of the Trempealeau formation; Franconia sandstone; Dresbach sandstone; and pre-Cambrian rocks.

The pre-Cambrian rocks of the area, as found by drilling, are mainly quartzites and slates of the buried Fond du Lac range. These quartzitic rocks are similar in character to those of the Baraboo range to the southwest. The slates and quartzites have high electrical resistivity, thus making it possible to differentiate between them and the overlying sandstones and dolomites, even though the latter have a moderately high resistivity.

FIELD MEASUREMENTS

The measurements were taken with the Earth Resistivity Apparatus, which is a Gish-Rooney-type instrument as modified and constructed by the Geophysical Instrument Co., Arlington, Va. The electrodes are copper-clad steel rods with steel driving heads which were pushed or driven into the earth to make contact for the potential and current connections to the instrument. Whenever contact with the earth was inadequate, the soil around the electrodes was wetted and tamped to reduce the resistance of the electrode contact.

Depth profiling was used throughout this survey, as the character of the earth materials and depths to pre-Cambrian rocks were of main importance. A modification of the Lee variation of the Wenner electrode configuration was used and the electrode intervals were expanded outward from the central station. With this method of taking observations, three apparent resistivity curves were obtained at each station, one in each direction from the center and one over the full interval. These are termed the P_1, P_2, and Full curves and indicated by Δ's, x's and o's, respectively, when plotted. Bearings for the depth profiles are referred to magnetic north and given for the P_1 direction. Power for driving the instrument was obtained from the truck battery, and current to pass through the earth was provided by a band of extra-heavy-duty "B" batteries. The fundamental technique for operating the Earth-Resistivity Apparatus is described by the maker of the instrument and in literature by Heiland 3/ and others.

METHOD OF INTERPRETING THE RESISTIVITY CURVES

The resistivity curves obtained from this investigation were interpreted, in part, by means of procedures explained in literature on geophysics. The methods of interpreting resistivity curves, described in the references cited below, are based upon theoretical and mathematical considerations, and are presumed by the writer to be more reliable than any of the empirical methods of interpretation that have been advanced. Furthermore, all the methods mentioned below are based upon the theory of images 4/ and apply to two or more layers.

A partial list of references on interpretation follows:

Hummel, J. N., A theoretical study of apparent resistivity in surface potential method: Am. Inst. Min. Met. Eng. Tech. Pub. 418, 1931.

Roman, Irwin, How to compute tables for determining electrical resistivity of underlying beds and their application to geophysical problems: U. S. Dept. Commerce, Bur. Mines Tech. Paper 502, 1931.

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Tagg, G. F., Interpretation of earth resistivity curves: Am. Inst. Min. Met. Eng. Tech. Paper 755, 1937.

Watson, R. J., A contribution to the theory of the interpretation of resistivity measurements obtained from surface potential observations: Am. Inst. Min. Met. Eng. Tech. Paper 518, 1934.

Watson, R. J., and Johnson, J. F., On the extension of two-layer methods of interpretation of earth resistivity data to three and more layers: Geophysics, vol. 3, no. 1, pp. 7-21, 1938.

[1] Chamberlin, T. C., Geology of eastern Wisconsin: Geology of Wisconsin, vol. 2, survey of 1873-77, pp. 97-404, 1877.

[2] Thwaites, F. T., personal communication.

[3] Heiland, C. A., Geophysical exploration, Prentice-Hall, 1940.

[4] Jeans, J. F., Mathematical theory of electricity and magnetism, 5th ed., Cambridge Univ. Press, 1925.

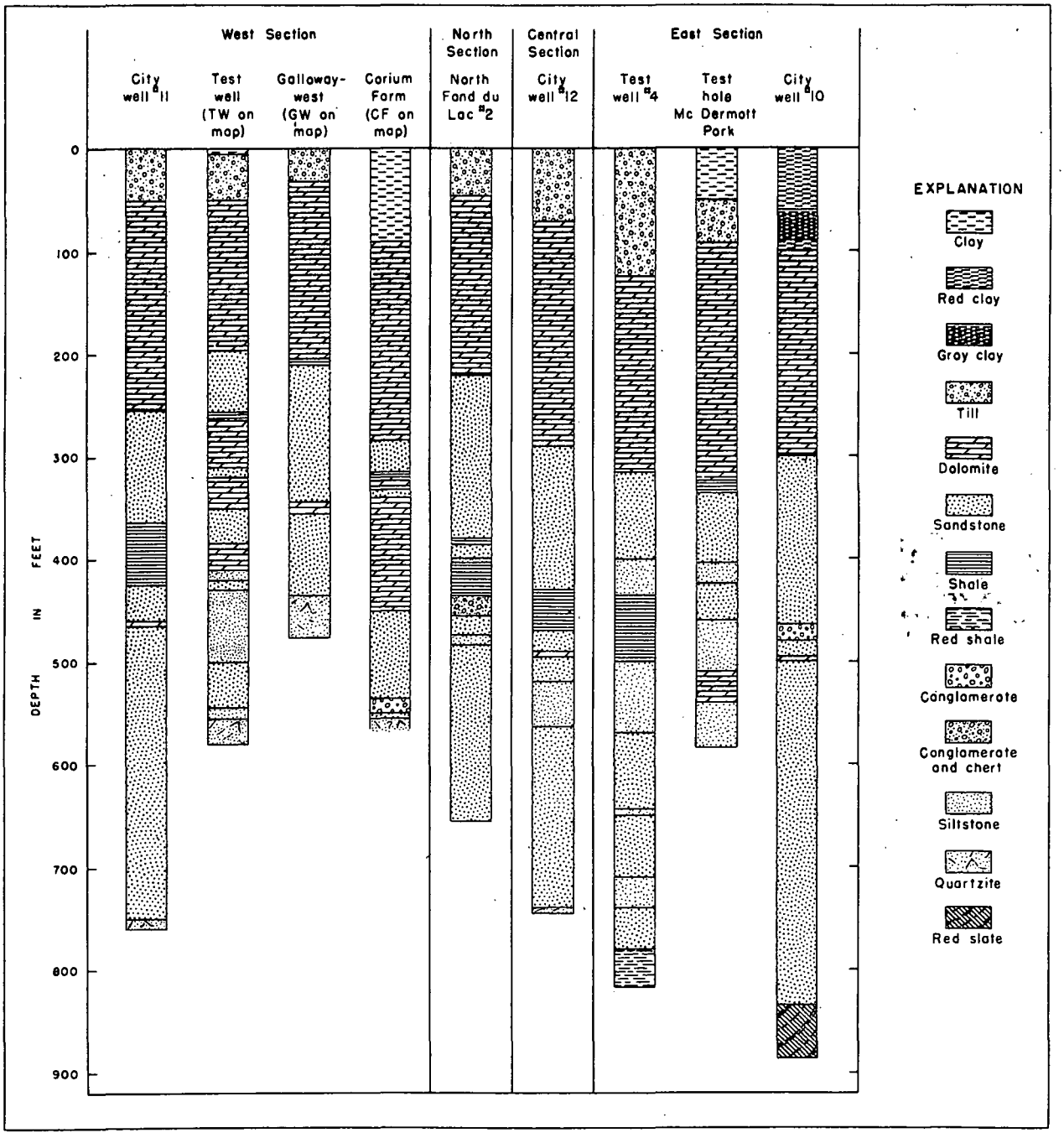


Figure 2.—Comparison of lithology in wells drilled in Fond du Lac, Wisconsin

All wells, except the Corium Farm well and the North Fond du Lac No.2 well, are within the city limits of Fond du Lac, Wisconsin.

SUMMARY OF RESULTS

Profile RL-1 was taken southwest of Utley near an exposure of pre-Cambrian acidic rock to determine the electrical characteristics and extent of this body. According to the interpretation, a dense, compact rock having very high resistivity is present and is similar to the exposed acidic rock in electrical characteristics.

The resistivity depth profiles RL-2 through RL-20 were taken in the vicinity of Ripon and Fond du Lac to ascertain the depth to the pre-Cambrian surface, and profile RL-21, near Hartford, was taken to determine whether or not the pre-Cambrian could be reached here by resistivity methods. Unfortunately, a network of ground-return power lines surrounding the area in which profile RL-21 was taken caused serious interference with the resistivity measurements and as a result the interpretations from the curve, line 21, are considered uncertain. The depth to the pre-Cambrian rocks is estimated to be about 800 feet at the center of profile RL-21. The P_1 and P_2 curves indicate a rather steep slope on the pre-Cambrian surface. The depth to the pre-Cambrian on the P_2 end is about 750 feet, and on the P_1 end about 850 feet.

Locations of depth profiles RL-1 through RL-20 are shown on figure 1, but the location of profile RL-21 could not be shown because this profile was taken about 30 miles south of the area included in this figure. The appendix contains copies of the apparent-resistivity curves and their interpretations, locations for the centers of the profiles, the direction in which the electrode intervals were taken, and the surface elevations at the centers of the profiles. The interpretations of the apparent-resistivity curves are based mainly upon the in-place formation tests and the electrical resistivities computed for the materials of each apparent-resistivity curve.

Some information was available in the area from both drilled wells and test wells. Copies of the well logs will be found in the appendix and locations of the wells are shown on figure 1. With the exception of well No. 2 at North Fond du Lac and the Central Wisconsin Canning Co. wells at Ripon and Rosendale, the wells are grouped near the city of Fond du Lac in an area about 2 miles wide and 2½ miles long. In figure 2 nine logs in the vicinity of Fond du Lac are compared by groups, namely, west section, north section, central section, and east section. The extreme variability in the depth to the pre-Cambrian quartzite and red slate, as well as the failure of some holes to reach the pre-Cambrian, are apparent in this figure.

As the primary purpose of this geophysical investigation was to determine the depth to the pre-Cambrian surface, the interpretations of the resistivity curves have been depicted graphically. (See figs. 3-7.) All the cross sections in this group are plotted with the altitude above sea level in feet as ordinate, and distance in miles as abscissa. Figure 1 shows the location of these profiles. Figure 3, a west-east section from Ripon to Fond du Lac, shows that the greatest depth to the pre-Cambrian surface is below RL-9. Figure 4, a north-south section at Rosendale, shows that the greatest depth to pre-Cambrian is beneath RL-2. Another west-east section from Rosendale to Fond du Lac, figure 5, shows the pre-Cambrian deepening markedly near Fond du Lac. Figure 6 is a north-south section showing an almost continuously deep section except for RL-8, just west of Fond du Lac. Another north-south section, figure 7, indicates that the pre-Cambrian is deeper north of Fond du Lac but rises to the south and then drops steeply again beyond RL-15.

Perhaps the generalized picture of the pre-Cambrian surface as determined by the geophysical results can be more easily visualized from figure 8, which shows the predicted contours on the pre-Cambrian. The resistivity-line locations were taken directly from figure 1 and are plotted on the same scale. Attention is directed to the contour intervals of figure 8; in the eastern part the intervals are 20 feet, whereas in the western part they are 100 feet. The smaller intervals were omitted in the western part because the stations were more widely spaced.

The altitudes of the pre-Cambrian surface within the city limits of Fond du Lac, as determined by drilling, are given in table 1. Comparison of these altitudes of the pre-Cambrian surface with those altitudes determined by the geophysical method employed shows very good correlation except for the TW and GW wells. If the drill-log altitudes of the pre-Cambrian for wells TW and GW are presumed to be correct, then the surface of the pre-Cambrian is almost cliff like between these locations and the

Table 1 - Altitudes of pre-Cambrian surface as determined from drilling logs

Well designation	Altitude of pre-Cambrian (feet)	Well designation	Altitude of pre-Cambrian (feet)
11	± 0	12	= 0
TW	+ 200	10	- 80
MP*	- -	4	- 30
GW	+ 320	2*	- -

*Did not reach pre-Cambrian.

locations of wells 11 and 12. This is, of course, not an impossible subsurface condition, but it is not indicated either by the other drilling results or by the geophysical measurements.

On the other hand, the altitudes of the pre-Cambrian surface for wells 11 and 12 are approximately zero and are close to the geophysically predicted zero contour. Wells 10 and 4 closely correspond to the results for depth profile RL-13 and, furthermore, correlate well with the geophysically predicted -100 foot contour. The correlation between predicted contours and the drill-log data of the Corium Farm well, CF on figure 1, is poor if the questionable depth to quartzite is considered correct.

One particularly disconcerting anomaly was found at Rosendale, between the resistivity measurements and the drill log of the No. 3 well of the Central Wisconsin Canning Co. A resistivity measurement made about a quarter of a mile southwest indicated no pre-Cambrian rocks to a depth of 1,000 feet. The material occupying the position where the pre-Cambrian was expected had a very low resistivity, more like clay in its electrical characteristics. A test northeast of this well, RL-4, indicated pre-Cambrian at an altitude of 305 feet above sea level. A large number of resistivity lines, or drill holes, would be needed to explain what is present here beneath the surface.

CONCLUSION

The resistivity results have shown that it is possible to determine the depth to the pre-Cambrian basement rocks where it is less than 1,000 feet. With favorable near-surface conditions, it probably would be possible to increase the depth determinations to at least 2,000 feet in this area.

Several factors limiting electrical-resistivity measurements are generally present throughout the area. These are: (1) All the land is in use or under cultivation, (2) wire fences with metal fence posts are prevalent, (3) ground-return power lines form a network over a considerable part of the area. These limiting factors could be minimized by choosing the autumn months for the field work so that access could be had to all fields, thus making it possible to get far enough away from sources of disturbances. In many instances, however, there would be no suitable area free from all the above-mentioned limiting factors, because of the great spread of electrodes needed to reach depths of 1,000 feet or more.

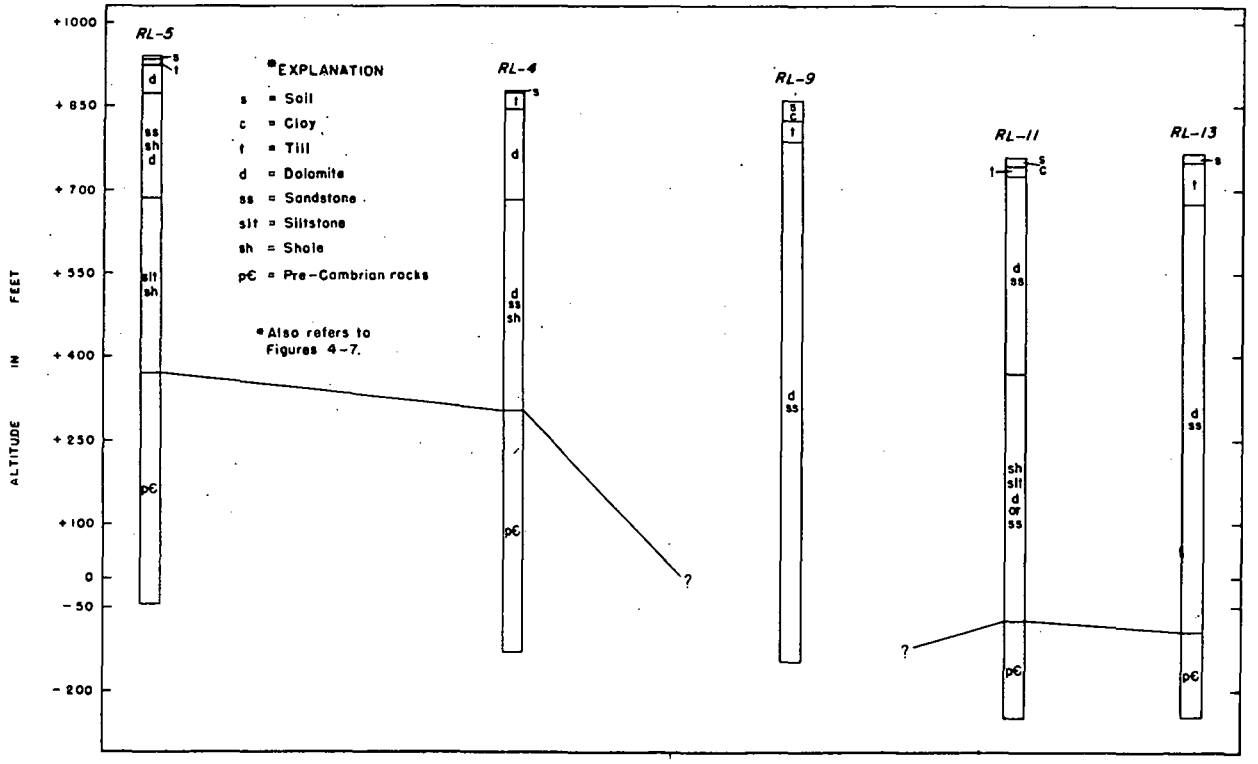


Figure 3. Cross section A-A' Ripon to Fond du Lac, Wisconsin

APPENDIX

Interpretations of apparent resistivity curves

Line 1 (G-2) 5/27/47. Along south side Chicago, Milwaukee, St. Paul and Pacific Railroad branch and opposite marker 68 on pole. NE¼SE¼ sec. 35, T. 15 N., R. 13 E. P_1 - N. 41½° E. Altitude 900 feet.

Electrical depth profile	Depth (In feet)
Drift and till	0 - 4¼
Clay	4¼ - 23
Dolomite and sandstone	23 - 190
Sandstone either with a large amount of shale or saturated with mineralized water	190 - 445
Very dense, compact rock, probably acidic igneous similar to nearby outcrop	445 - 900

Line 2 (G-2) 5/29/47. About 200 feet west of central Wisconsin Canning Co. well No. 3. 0.25 mile north and 0.25 mile east of the southwest corner of sec. 35, T. 16 N., R. 15 E. P_1 - N. 6° W. Altitude 956 feet.

Electrical depth profile	Depth (In feet)
Soil and clay	0 - 6.5
Till, large amount of rock	6.5 - 32
Dolomite, probably some sandstone	32 - 184
Shale, or dolomite and sandstone saturated with highly mineralized water; probably highly fractured. No indication of pre-Cambrian rocks to 800 feet	184 - 800

Line 3 (G-2) 5/29/47. 0.25 mile west of center of sec. 25, T. 16 N., R. 15 E. P_1 - N. 82° E. Altitude 875 feet.

Electrical depth profile

Line abandoned after the 300-foot electrode interval because of some unaccountable electrical disturbance that caused very large galvanometer oscillations and a great divergence of the P_1 and P_2 readings.

Line 4 (G-2) 5/29/47. 0.25 mile north of center of sec. 25, T. 16 N., R 15 E. P_1 - N. 3° E. Altitude 875 feet.

Electrical depth profile	Depth (In feet)
Clay soil	0 - 4.5
Till with clay and stones	4.5 - 34
Dolomite, some sandstone and shale	34 - 195
Sandstone and dolomite, dense and of low permeability	195 - 570
Pre-Cambrian rocks	570 - 1,000

Line 5 (G-2) 5/30/45. On Lietz farm. NW¼SE¼ sec. 14, T. 16 N., R. 14 E. P_1 - N. 67° E. Altitude 941 feet.

Electrical depth profile	Depth (In feet)
Clay soil	0 - 6.2
Till	6.2 - 16
Dolomite	16 - 67
Sandstone, shale, dolomite	67 - 255
Siltstone, shale, some sandstone	255 - 568
Pre-Cambrian rocks	568 - 1,000

The bottom layer of pre-Cambrian is dipping rapidly in the P_1 direction and is approximately 80 feet deeper than in the P_2 direction. The resistivity of this layer has an anomalous value, being higher than a theoretically perfect insulator.

Line 6 (G-2) 5/30/46. 0.25 mile east of southwest corner of sec. 11, T. 15 N., R. 15 E. P_1 - N. 82° E. Altitude 954 feet.

Electrical depth profile	Depth (In feet)
Clay soil	0 - 11.5
Dolomite, some shale and sandstone	11.5 - 235
Shale, dolomite, sandstone	235 - 355
Pre-Cambrian rocks	355 - 800

Line 7 (G-2) 6/1/47. 0.35 mile east of junction of KK with Highway 23 along south side of KK and on line between secs. 30 and 31, T. 16 N., R. 15 E. P_1 - N. 85° E. Altitude 939 feet.

Electrical depth profile	Depth (In feet)
Clay soil	0 - 8.5
Dolomite, some sandstone and shale	8.5 - 335
Shale	335 - 355
Sandstone	355 - 585
Shale, some sandstone	585 - 655
Pre-Cambrian rocks	655 - 1,000

The interpretation of depth to the pre-Cambrian rocks is from the P_2 curve. It appears that the depth to pre-Cambrian is much greater on the P_1 side of the profile.

Line 8 (G-2) 6/2/47. 0.3 mile south from road KK on line between secs. 13 and 14, T. 15 N., R. 16 E. P_1 - N. 3° W. Altitude 853 feet.

Electrical depth profile	Depth (In feet)
Clay soil	0 - 6.75

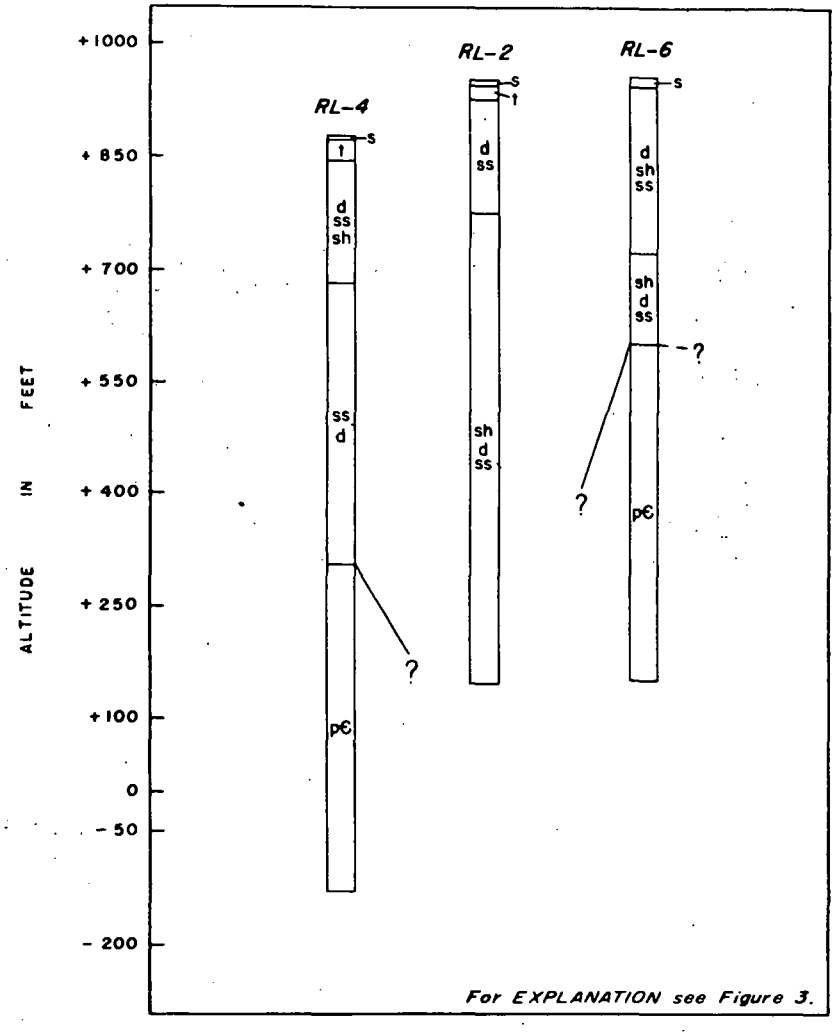


Figure 4. Cross section B-B'
Rosendale, Wisconsin

0 1 2 3 4 MILES

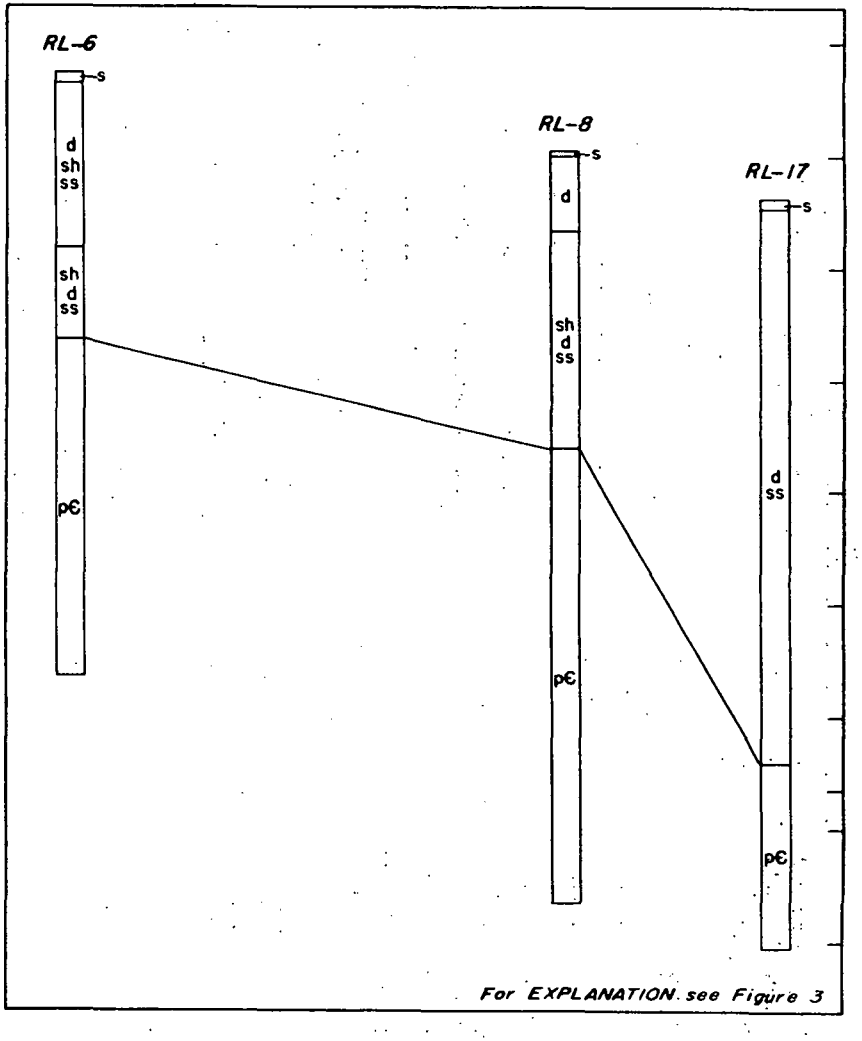


Figure 5. Cross section C-C'
Rosendale-Fond du Lac, Wisconsin

0 1 2 3 4 MILES

Line 8 (G-2) 6/2/47 - Continued

Dolomite; perhaps some till above...	3.75 -107
Shale, dolomite, sandstone.....	107 - 395
Pre-Cambrian rocks.....	395 - 1,000

The depth to pre-Cambrian is about 30 feet greater on the P_2 side of the profile.

Line 9 (G-2). 0.35 mile west of road I on east-west line of sec. 35, T. 16 N., R. 16 E. P_1 - N. 86° E. Altitude 861 feet.

Electrical depth profile	Depth (In feet)
Clay soil.....	0 - 38
Till.....	38 - 76
Dolomite, sandstone.....	76 - 1,000

No certain indication of pre-Cambrian rocks. The last four or five observations indicate the presence of a layer having relatively low resistivity which might be slate.

Line 10 (G-2). 0.35 mile south of road N and 1.0 mile west of Highway 41 along west side of road, sec. 19, T. 16 N., R. 17 E. P_1 - N. 5° W. Altitude 814 feet.

Electrical depth profile	Depth (In feet)
Clay soil.....	0 - 15
Dolomite, perhaps some till above....	15 - 85
Dolomite and sandstone.....	85 - 1,000

No indication of pre-Cambrian rocks. A change of material is indicated at about 650 - 700 feet and has lower resistivity than the layer above.

Line 11 (G-2) 6/4/47. 0.3 mile west of Highway 41 on road 000 along north line of sec. 9, T. 15 N., R. 17 E. P_1 - N. 85 E. Altitude 757 feet.

Electrical depth profile	Depth (In feet)
Clay soil.....	0 - 15
Till, probably considerable clay.....	15 - 34
Dolomite, sandstone.....	34 - 385
Interpreted qualitatively because of some extraneous electrical interference.....	385 - 1,000

The material in the 385 - 825-foot zone has a generally low resistivity except for a somewhat higher resistivity in the 650 - 750-foot layer. The material in this zone is probably shale or siltstone interbedded with dolomite or sandstone. Based on the P_2 curve, mainly, the material below 825 - 875 feet appears to be of pre-Cambrian age.

Line 12 (G-2) 6/4/47. 0.29 mile east of Highway 41 on north line of sec. 29, T. 16 N., R. 17 E. P_1 - N. 84° E. Altitude 788 feet.

Line 12 (G-2) 6/4/47 - Continued

Electrical depth profile	Depth (In feet)
Soil, clay, drift.....	0 - 32
Dolomite.....	32 - 94
Dolomite, sandstone.....	94 - 420
Shale, siltstone, sandstone.....	420 - 1,000

There is a large variation in the depth to the lowest layer along the profile. The above-interpreted depth is from the F-curve but is controlled by the P_2 curve. The depth to the lowest layer from the interpretation of the P_1 curve is ≐ 700 feet. There is no indication of pre-Cambrian rocks.

Line 13 (G-2) 6/5/47. 0.35 mile north of Highway 23 on center line of sec. 12, T. 16 N., R. 17 E. P_1 - N. 7° E. Altitude 762 feet.

Electrical depth profile	Depth (In feet)
Soil, clay.....	0 - 11
Till.....	11 - 86
Dolomite and sandstone.....	86 - 850
Pre-Cambrian rocks.....	850 - 1,000

The depth to pre-Cambrian is less on the P_1 side of the profile, being about 675 feet. The P_2 side of the profile has a depth of about 950 feet to pre-Cambrian.

Line 14 (G-2) 6/5/47. On old interurban roadbed and parallel to Milwaukee Railroad. 0.3 mile south of north line of sec. 8, T. 16 N., R. 17 E. P_1 - N. 20° W. Altitude 799 feet.

Electrical depth profile	Depth (In feet)
Soil, clay.....	0 - 10
Clay.....	10 - 16
Till, dolomite, sandstone.....	16 - 392
Shale, siltstone, dolomite.....	392 - 470
Sandstone and shale.....	470 - 1,000

There is a pronounced low-resistivity layer on the P_1 side of the profile between 375 and 550 feet that is hardly apparent on the P_2 curve. Similarly, there is a low-resistivity layer on P_2 between 825 and 1,000 feet that is not present on P_1. These layers are considered to be shale or siltstone.

Line 15 (G-2) 6/6/47. About 100 yards west of center of sec. 33, T. 15 N., R. 17 E. P_1 - N. 89° E. Altitude 826 feet.

Electrical depth profile	Depth (In feet)
Soil, clay.....	0 - 10
Till.....	10 - 82

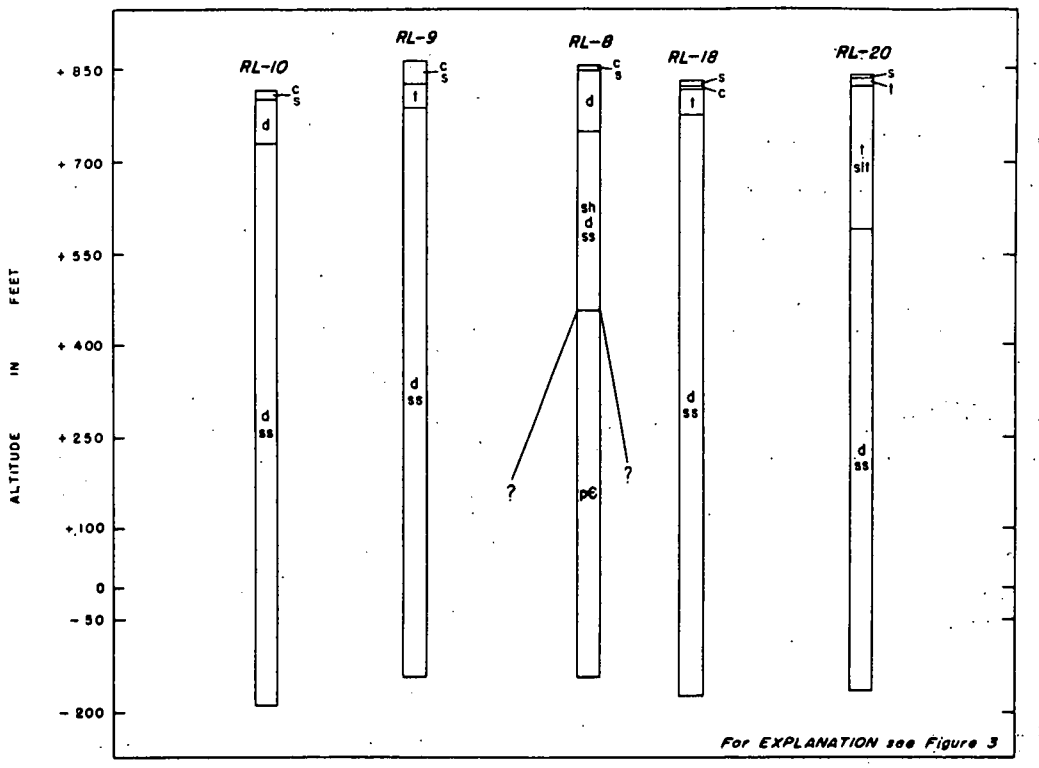


Figure 6. Cross section D-D' Fond du Loc, Wisconsin

0 1 2 3 4 5 6 MILES

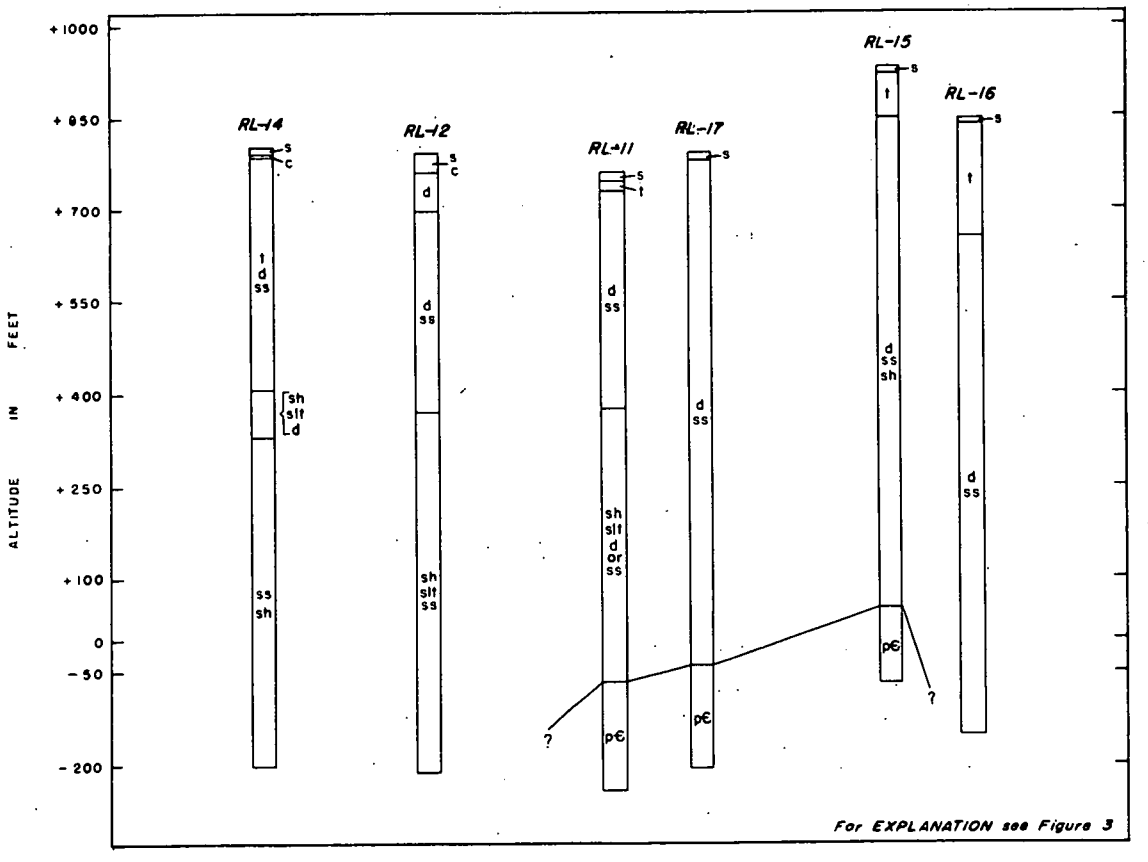


Figure 7, Cross section E-E' Fond du Loc, Wisconsin

0 1 2 3 4 5 6 MILES

Line 15 (G-2) 6/6/47 - Continued

	Depth (In feet)
Dolomite, sandstone; shale or siltstone layer 710 - 770 feet	82 - ±875
Pre-Cambrian rocks; last three observations have a steep rise but are not adequate to make a good interpretation	±875-1,000

Line 16 (G-2) 6/6/47. 0.3 mile south of county trunk highway FFF on center line of sec. 4, T. 14 N., R. 17 E. P_1 - N. 0° E. Altitude 842 feet.

Electrical depth profile	Depth (In feet)
Soil, clay	0 - 7.5
Till	7.5- 192
Dolomite, sandstone	192 - 1,000

No indication of pre-Cambrian rocks.

Line 17 (G-2) 6/9/47. 0.3 mile west of east line and on center line of sec. 17, T. 15 N., R. 17 E. P_1 - N. 90° W. Altitude 790 feet.

Electrical depth profile	Depth (In feet)
Soil, clay	0 - 14
Dolomite, sandstone	14 - 750
Pre-Cambrian rocks	750 - 1,000

Line 18 (G-2). 0.7 mile south of county trunk highway T on west line of sec. 19, T. 15 N., R. 17 E. P_1 - N. 10° W. Altitude 828 feet ± 2 feet.

Electrical depth profile	Depth (In feet)
Soil, clay	0 - 7.25
Clay	7.25- 13
Till	13 - 55
Dolomite and sandstone	55 - 1,000

Line 19 (G-2) 6/10/47. 1,500 feet northwest of overpass on Chicago and Northwestern Railroad in NW¼ sec. 26, T. 15 N., R. 17 E. Abandoned because of some unidentified electrical interference with the measurements.

Line 20 (G-2) 6/10/47. Along county highway D, 0.25 mile north of county highway FFF in sec. 6, T. 14 N., R. 17 E. P_1 - N. 25° E. Altitude 840 feet.

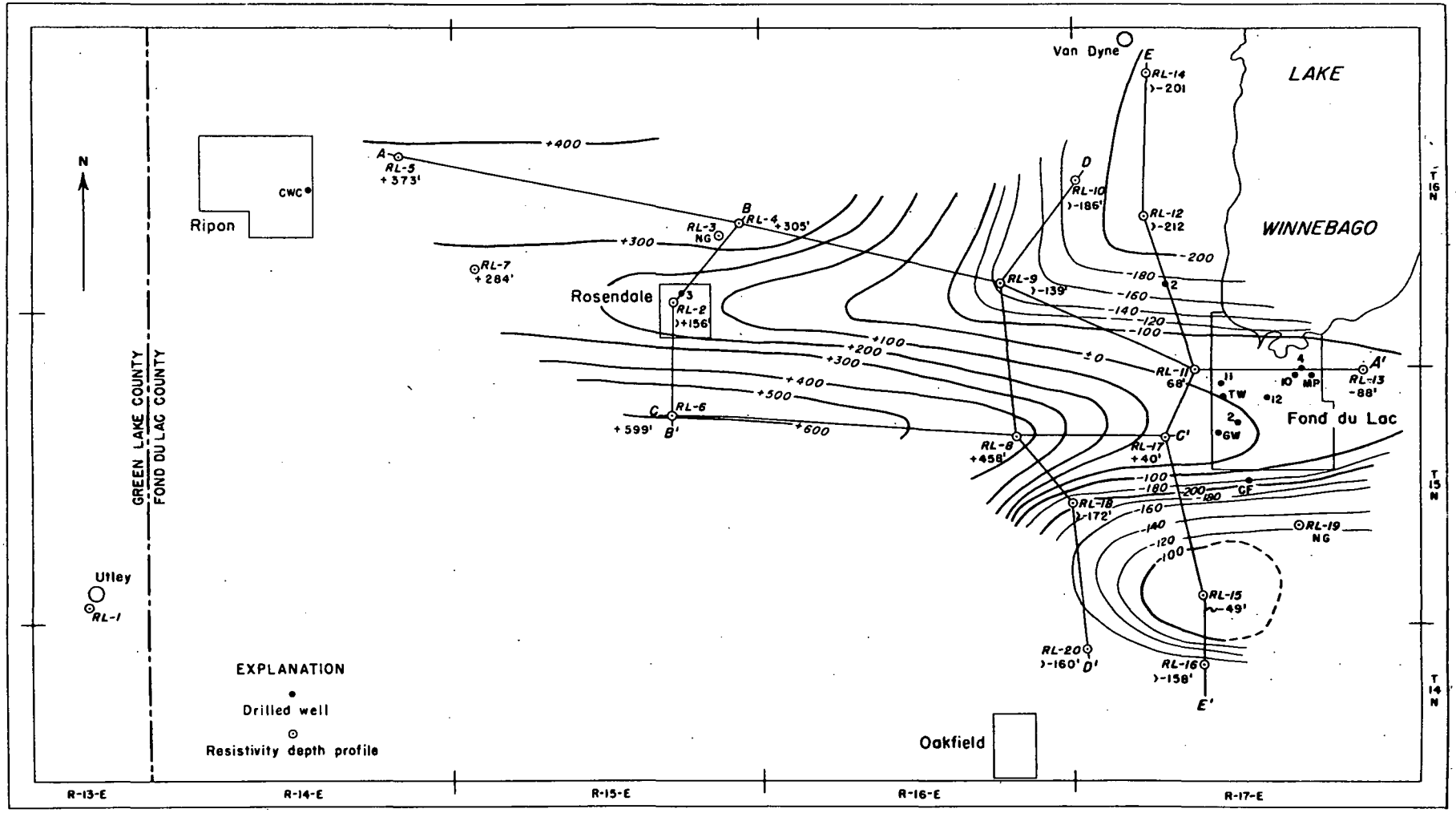
Electrical depth profile	Depth (In feet)
Soil	0 - 4
Till, considerable coarse material	4 - 19
Till, some silty material	19 - 252
Dolomite and sandstone	252 - 1,000

No indication of pre-Cambrian rocks.

Line 21(G-2) 6/11/47. Near Hartford, Wis. 0.25 mile west of east line and 0.3 mile north of south line of sec. 29, T. 10 N., R. 18 E. P_1 - N. 3° W. Altitude 1,026 feet.

Electrical depth profile	Depth (In feet)
Soil	0 - 4
Clay	4 - 8
Till	8 - 26
Limestone	26 - 195
Shale, dolomite	195 - ±800
Pre-Cambrian rocks	±800 - 950

The indication from the P_2 curve is ± 750 feet and from the P_1 ± 850 feet. However, because of serious interference from a ground-return power line, the indications are considered uncertain.



Base from Wisconsin State Highway Map, issued 1946

H. Cecil Spicer, 1948

Figure 8. Contours on the pre-Cambrian surface from resistivity results

0 1 2 3 4 5 6 MILES

Contour intervals 100 feet and 20 feet

DATUM IS MEAN SEA LEVEL

Well logs

Central Wisconsin Canneries Well, Ripon, Wis.
(NW¼SW¼ sec. 22, T. 16 N., R. 14 E. Altitude about 940 feet)

	Depth (in feet)		Depth (in feet)
Drift	0 - 25	Dolomite	145 - 220
Dolomite	25 - 65	Sandstone and siltstone	220 - 280
Sandstone	65 - 110	Sandstone and siltstone	280 - 380
Shale	110 - 115	Shale	380 - 395
Dolomite	115 - 135	Sandstone	395 - 495
Sandstone	135 - 145		

Well No. 3, Central Wisconsin Canning Co., Rosendale, Wis.
(NE¼SW¼ sec. 35, T. 16 N., R. 15 E. Altitude 905 feet)

	Depth (in feet)		Depth (in feet)
Stony till	0 - 29	Shale	175 - 180
Dolomite	29 - 130	Dolomite	180 - 280
Sandstone and shale	130 - 145	Sandstone	280 - 440
Dolomite	145 - 175	Quartzite	440 - 442

City well No. 11, Fond du Lac, Wis.
(NE¼SW¼NW¼ sec. 10, T. 15 N., R. 17 E. Altitude 755 feet)

	Depth (in feet)		Depth (in feet)
Red till	0 - 20	Sandstone	415 - 460
Stony till	20 - 70	Dolomite	460 - 465
Dolomite	70 - 255	Sandstone	465 - 545
Sandstone	255 - 350	Siltstone	545 - 560
Red shale	350 - 415	Sandstone	560 - 750

Test well (TW on map), Fond du Lac, Wis.
(NE¼SE¼ sec. 9, T. 15 N., R. 17 E.)

	Depth (in feet)		Depth (in feet)
Clay	0 - 5	Sandstone	310 - 320
Red till	5 - 10	Dolomite	320 - 350
Stony till	10 - 50	Sandstone	350 - 385
Dolomite	50 - 195	Dolomite	385 - 410
Sandstone	195 - 255	Sandstone and siltstone	410 - 555
Shale	255 - 265		
Dolomite	265 - 310	Quartzite	555 - 580

Test well, Galloway-West Co. (GW on map), Fond du Lac, Wis.
(SE¼NE¼ sec. 16, T. 15 N., R. 17 E.)

	Depth (in feet)		Depth (in feet)
Till	0 - 31½	Dolomite	345 - 355
Dolomite	31½ - 205	Sandstone	355 - 435
Shale	205 - 210	Quartzite	435 - 477
Sandstone	210 - 345		

Corium Farm well (CF on map), Fond du Lac, Wis.
(NW¼ sec. 22, T. 15 N., R. 17 E.)

	Depth (in feet)		Depth (in feet)
Clay and hardpan	0 - 80	Dolomite	340 - 450
Dolomite	80 - 285	Sandstone	450 - 535
Sandstone and shale	285 - 320	Conglomerate	535 - 550
Dolomite	320 - 332½	Sandstone	550 - 555
Sandstone	332½ - 340	Quartzite (?)	555 +

Test well No. 4, Fond du Lac, Wis.
(NE¼NE¼NW¼ sec. 11, T. 15 N., R. 17 E. Altitude 753 feet)

	Depth (in feet)		Depth (in feet)
Red clay	0 - 10	Siltstone	645 - 650
Till	10 - 125	Sandstone	650 - 710
Dolomite	125 - 315	Siltstone	710 - 760
Sandstone	315 - 400	Sandstone	760 - 780
Siltstone, shale	400 - 570	Red shale	780 - 817
Sandstone	570 - 645		

Test well, McDermott Park (MP on map), Fond du Lac, Wis.
(NW¼SE¼ sec. 11, T. 15 N., R. 17 E. Altitude 765 feet)

	Depth (in feet)		Depth (in feet)
Clay and till	0 - 50	Siltstone	405 - 425
Till	50 - 142	Sandstone	425 - 460
Dolomite	142 - 325	Siltstone	460 - 510
Shale	325 - 335	Dolomite	510 - 540
Sandstone	335 - 405	Siltstone	540 - 585

City well No. 10, Fond du Lac, Wis.
(NE¼NW¼NW¼ sec. 11, T. 15 N., R. 17 E. Altitude 755 feet)

	Depth (in feet)		Depth (in feet)
Red clay	0 - 60	Sandstone	480 - 490
Clay	60 - 100	Dolomite (no sample)	490 - 500
Dolomite	100 - 300	Sandstone	500 - 835
Sandstone	300 - 465	Slate	835 - 885
Conglomerate	465 - 480		

Well No. 2, North Fond du Lac, Wis.
(sec. 32, T. 16 N., R. 17 E.)

	Depth (in feet)		Depth (in feet)
Drift	0 - 10	Sandstone	387 - 400
Till	10 - 46	Siltstone and shale	400 - 435
Dolomite	46 - 225	Conglomerate and chert	435 - 455
Sandstone	225 - 380	Sandstone	455 - 655
Shale	380 - 387	(siltstone 475 - 485)	

Well No. 2, West Ice and Cold Storage Co., Fond du Lac, Wis.
(NW¼ NW¼ sec. 15, T. 15 N., R. 17 E.)

	Depth (in feet)		Depth (in feet)
Red clay	0 - 10	Dolomite	35 - 200
Till	10 - 35		

City well No. 12, Fond du Lac, Wis.
(NW¼SE¼ sec. 10, T. 15 N., R. 17 E.)

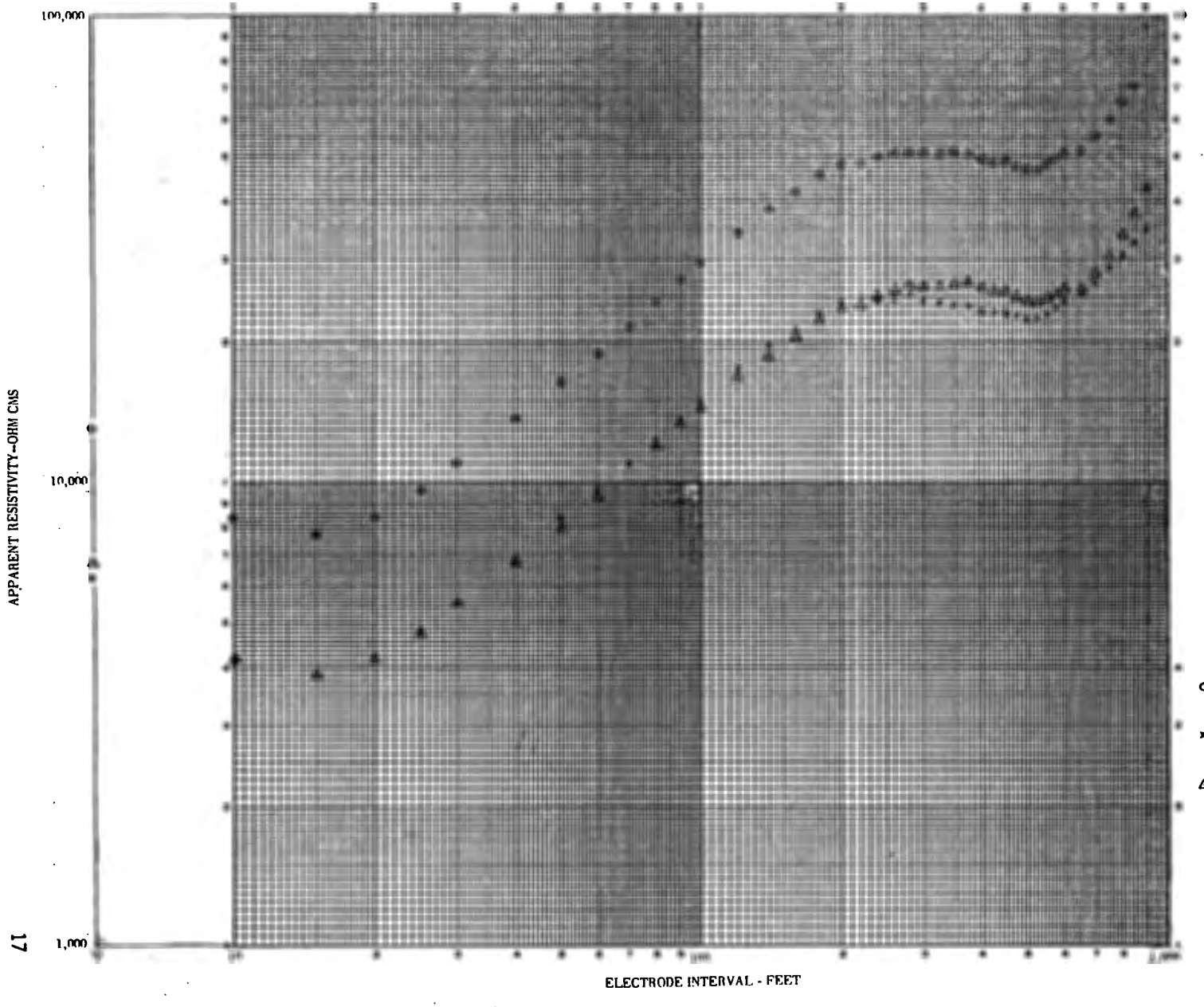
	Depth (in feet)		Depth (in feet)
Till	0 - 35	Sandstone	470 - 490
Stony till	35 - 105	Dolomite	490 - 495
Dolomite	105 - 290	Sandstone	495 - 520
Sandstone	290 - 430	Siltstone	520 - 565
Shale	430 - 470	Sandstone	565 - 740

City well, Hartford, Wis.
(NW¼ sec. 16, T. 10 N., R. 18 E. Altitude 1010 feet)

	Depth (in feet)		Depth (in feet)
Glacial drift	0 - 35	Shale	100 - 300
Limestone	35 - 55	Limestone	300 - 535
Shale	55 - 85	Sandstone	535 - 550
Limestone	85 - 100	Quartzite	550 - 735

City well No. 2, Hartford Wis.
(T. 10 N., R. 18 E., sec. not given)

	Depth (in feet)
(Old filled pit)	0 - 66
Shale	66 - 95
Dolomite	95 - 105
Shale	105 - 115
Dolomite	115 - 130
Shale	130 - 165
Dolomite	165 - 190
Shale	190 - 280
Dolomite	280 - 532
Quartzite	532 -1370
Basalt or diabase	1,370 -1,385
Quartzite	1,385-1,410



Line 1 (G-2) Ripon, Wis. 5/25/47

Location: NE. 1/4 35, T. 15 N., R. 13 E., On S. side of Milwaukee R. R. Branch opp. marker 68 on R. R.

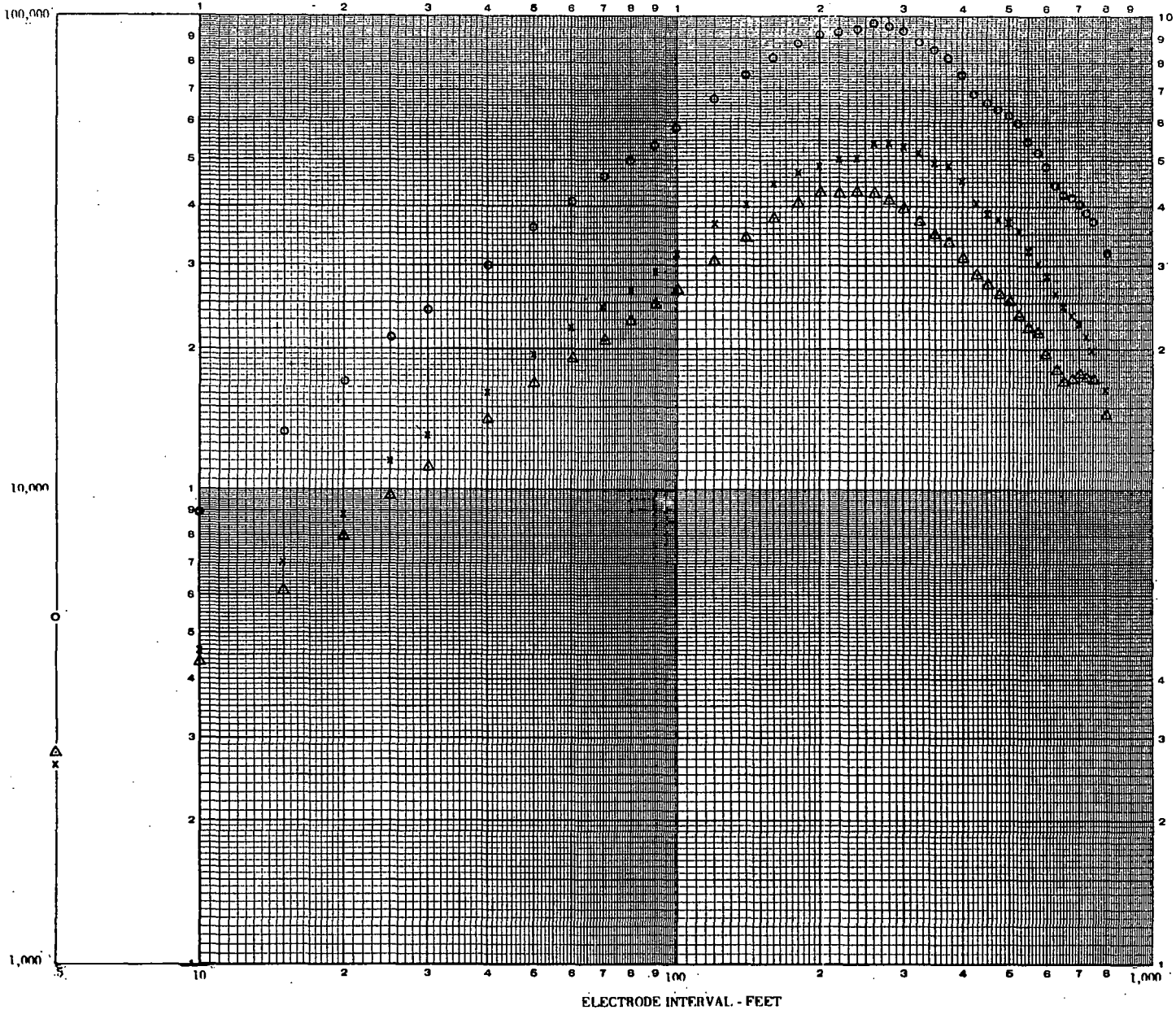
Bearing: P-1 N. 41 1/2° E.
Elev. 900'

Bearing: P-1 N. 41 1/2° E.
Elev. 900'

O = Full curve

x = P-2 curve

Δ = P-1 curve



Line 2, Ripon, Wis. 5/29/47

Location: 1/4 mi. N. E., 1/4 mi. E. of the SW corner sec. 35., T. 16 N., R. 15 E., 200' W. of Rosendale cannery well W. of Rosendale. Wis.

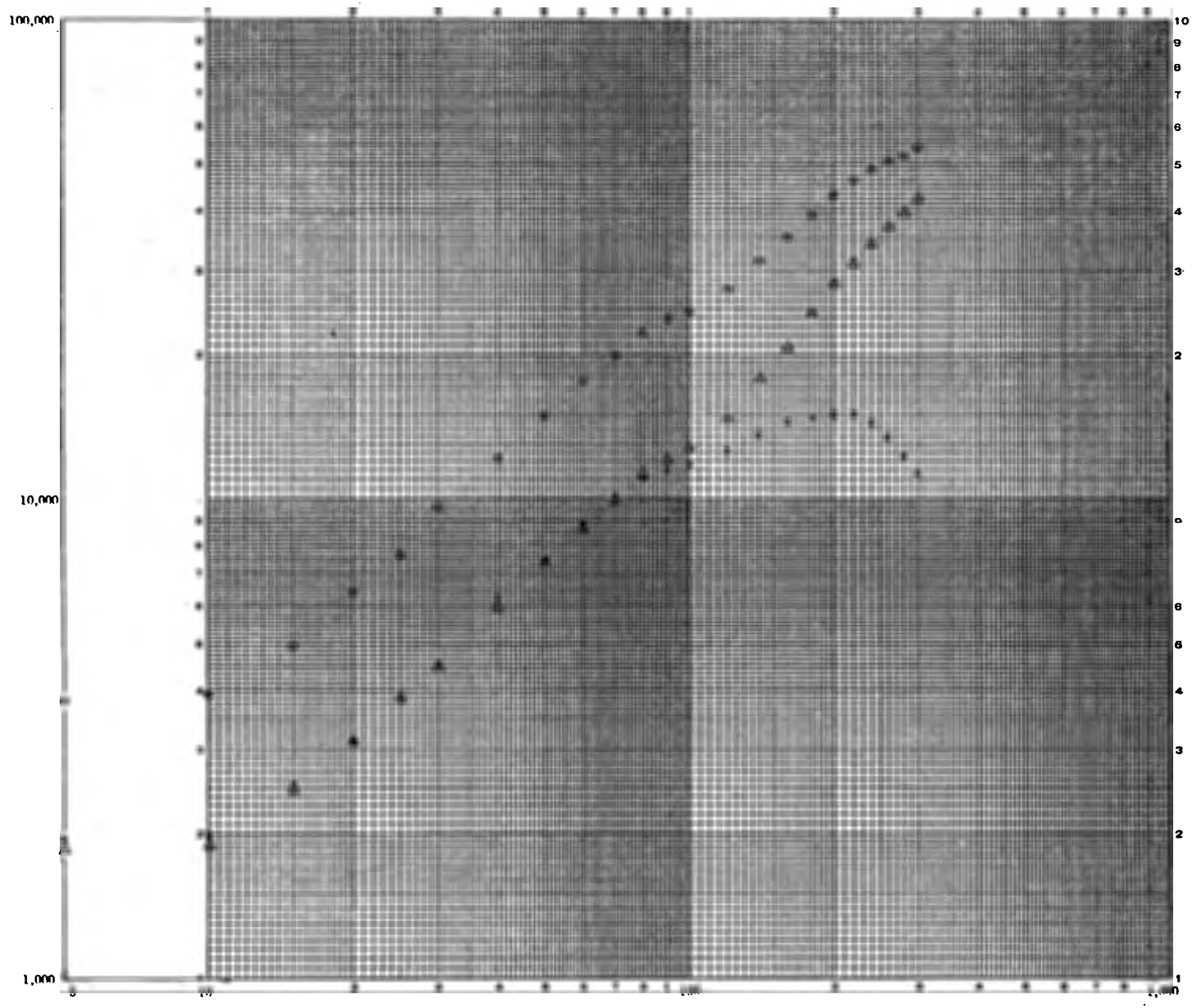
Bearing: P-1 N. 6° W.

Elev. 956'

o = Full curve

x = P-2 curve

Δ = P-1 curve



Line 3 (G-2) Ripon, Wis. 5/29/47

Location: 1/4 mi. W. of center sec. 25, T. 16 N., R. 15 E.

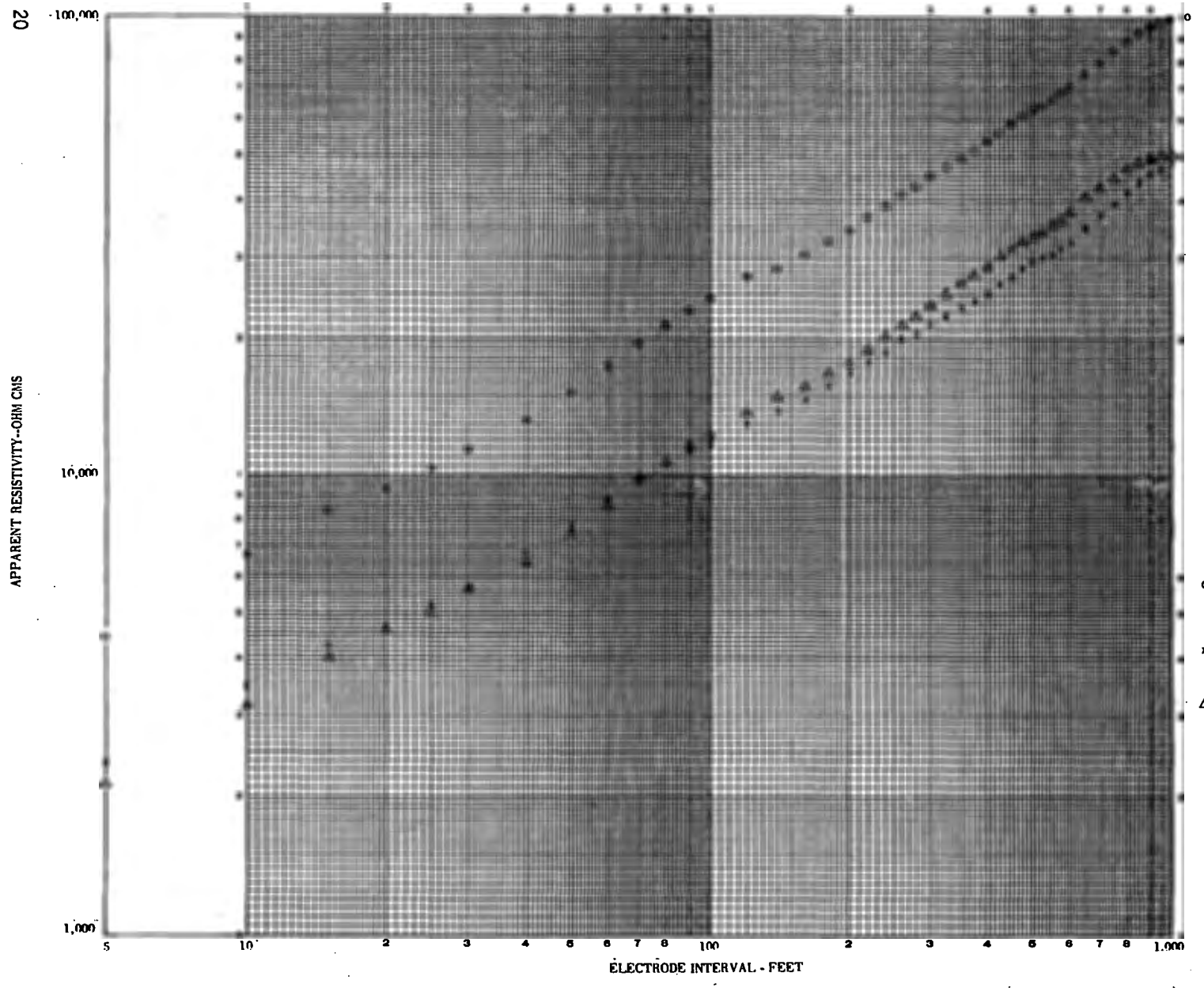
Bearing: P-1 N. 82° E.

Elev.: 875'

O = Full curve

x = P-2 curve

Δ = P-1 curve



Line 4 (G-2) Ripon, Wis. 5/29/47

Location: 1/4 mi. N. of center sec. 25, T. 16 N., R. 15 E.

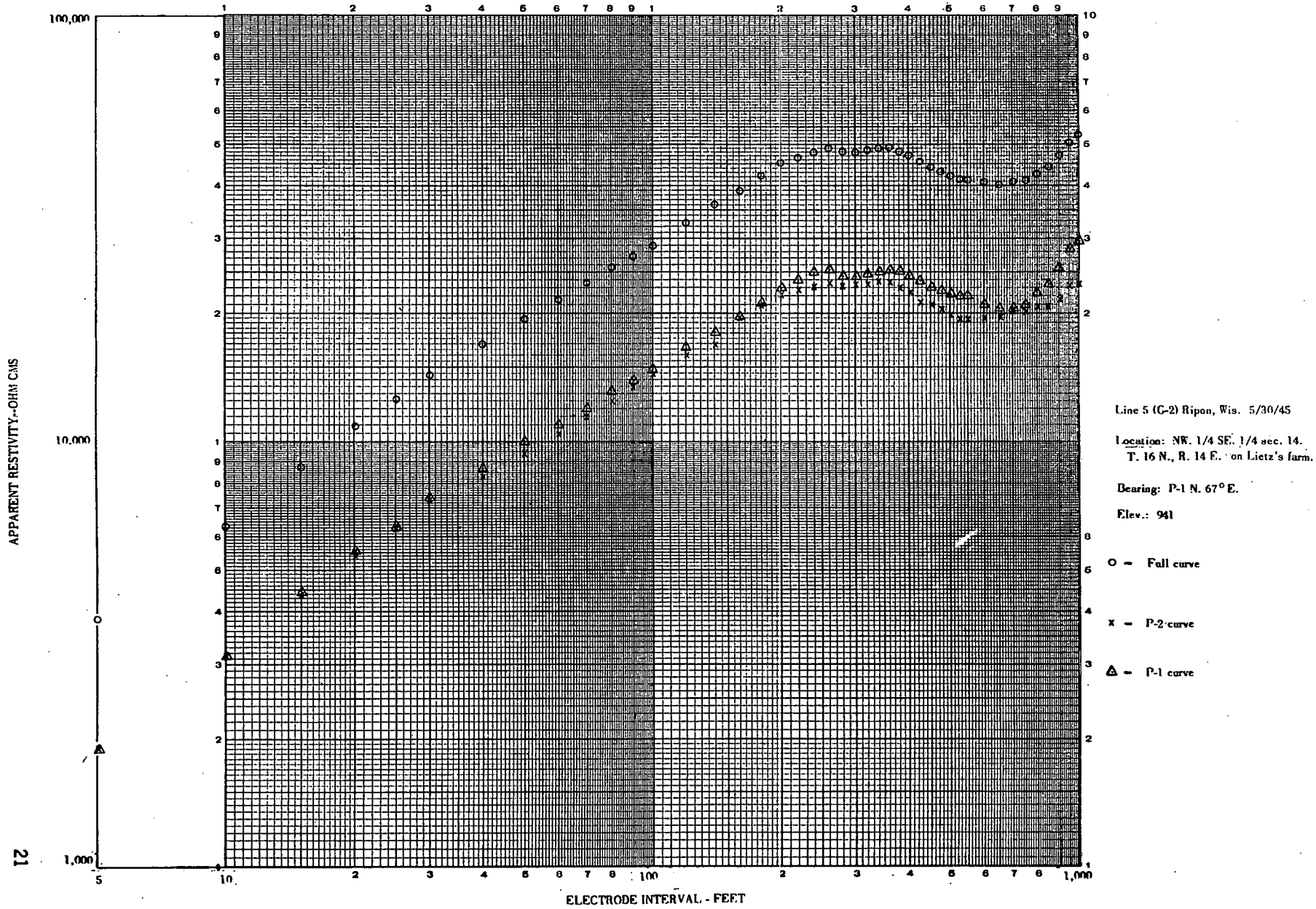
Bearing: P-1 N. 3° E.

Elev.: 875'

o = Full curve

x = P-2 curve

△ = P-1 curve



Line 5 (G-2) Ripon, Wis. 5/30/45

Location: NW. 1/4 SE. 1/4 sec. 14. T. 16 N., R. 14 E. on Lietz's farm.

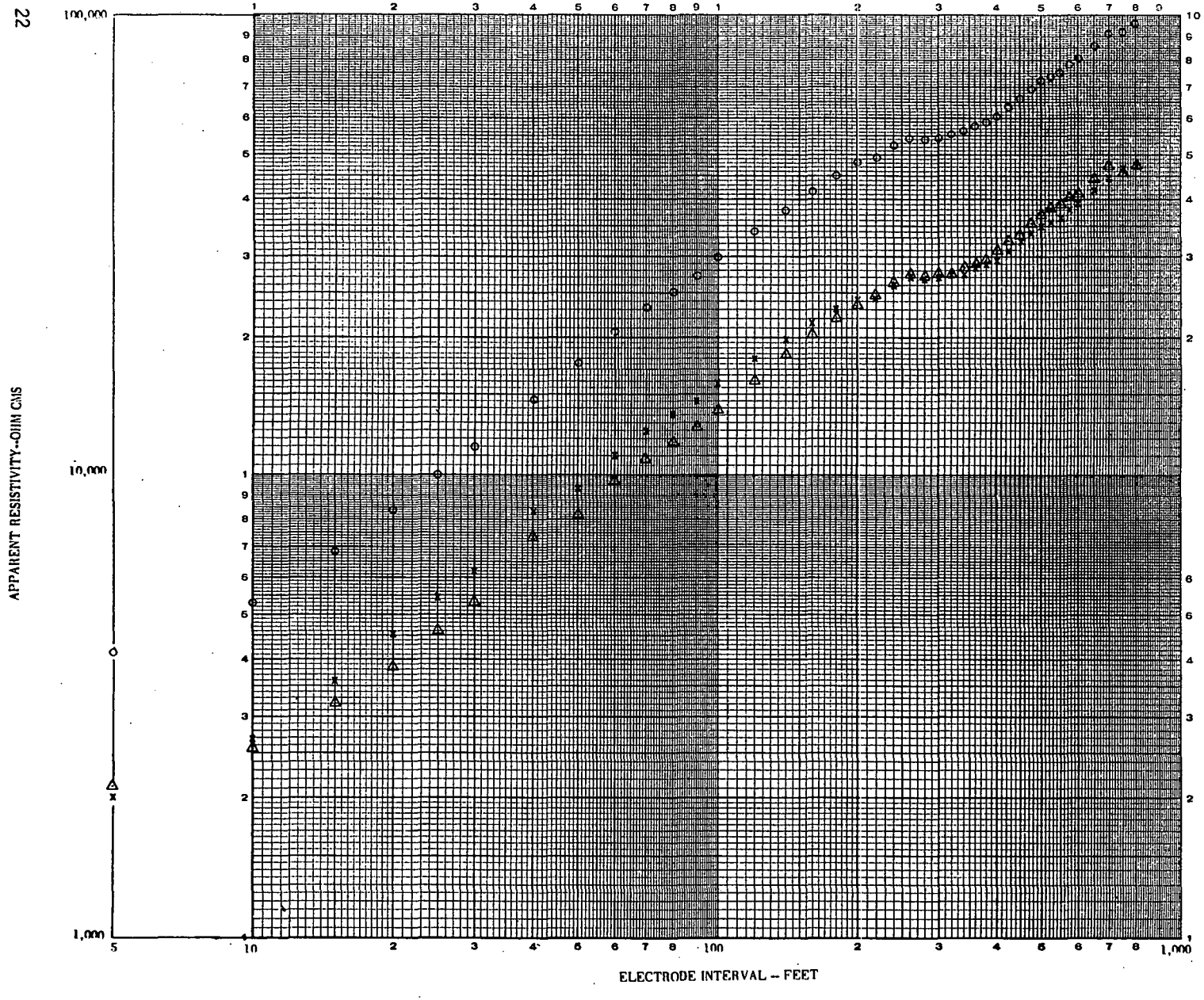
Bearing: P-1 N. 67° E.

Elev.: 941

o — Full curve

x — P-2 curve

Δ — P-1 curve



Line 6 (G-2) Ripon, Wis. 5/30/46

Location: 1/4 mi. E. of SW. cor. sec. 11, T. 15 N., R. 15 E.

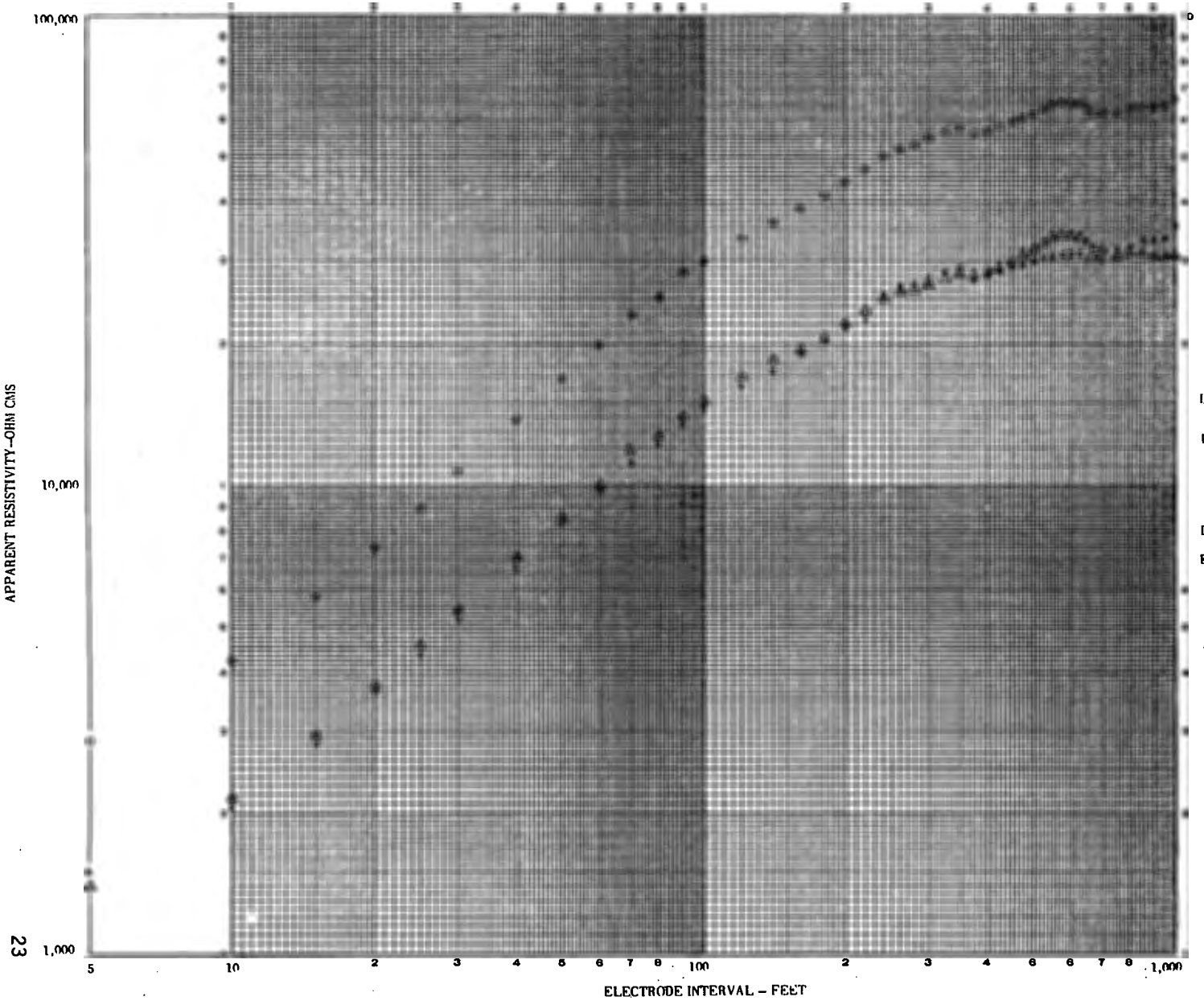
Bearing: P-1 N. 82° E.

Elev.: 954'

o = Full curve

x = P-2 curve

△ = P-1 curve



Line 7 (G-2) Ripon, Wis. 6/1/47

Location: 0.35 mi. E. of Junction KK. with Hwy. 23. On S. side of KK. on line between secs. 30 and 31, T. 16 N., R. 15 E.

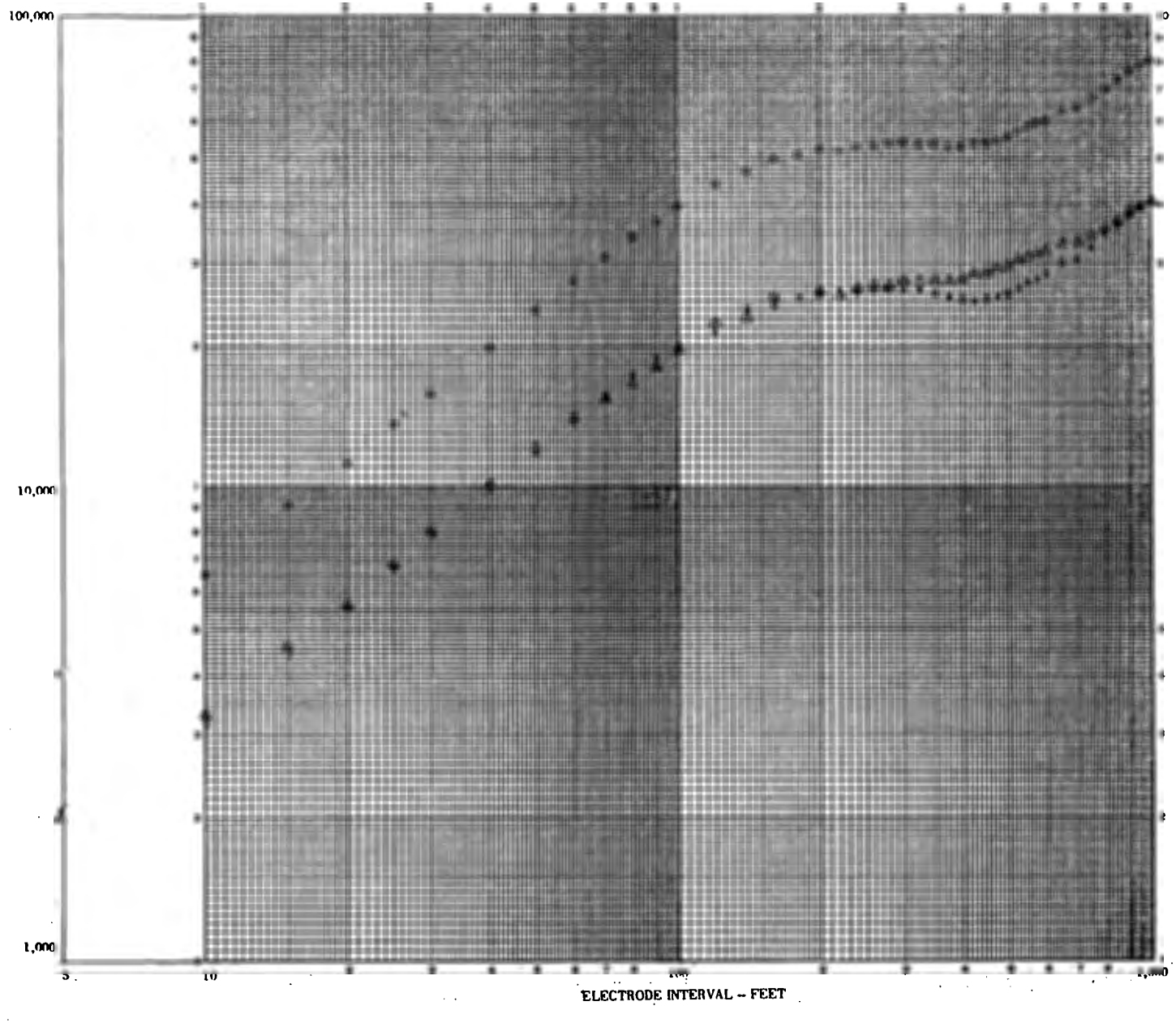
Bearing: P-1 N. 85° E.

Elev.: 939'

o– Full curve

x– P-2 curve

Δ– P-1 curve



Line 8 (G-2) Ripon. Wis. 6/2/47

Location: 0.3 mi. S. from County hwy. KK. between secs. 13 and 14, T. 15 N., R. 16 E. on W. side of road.

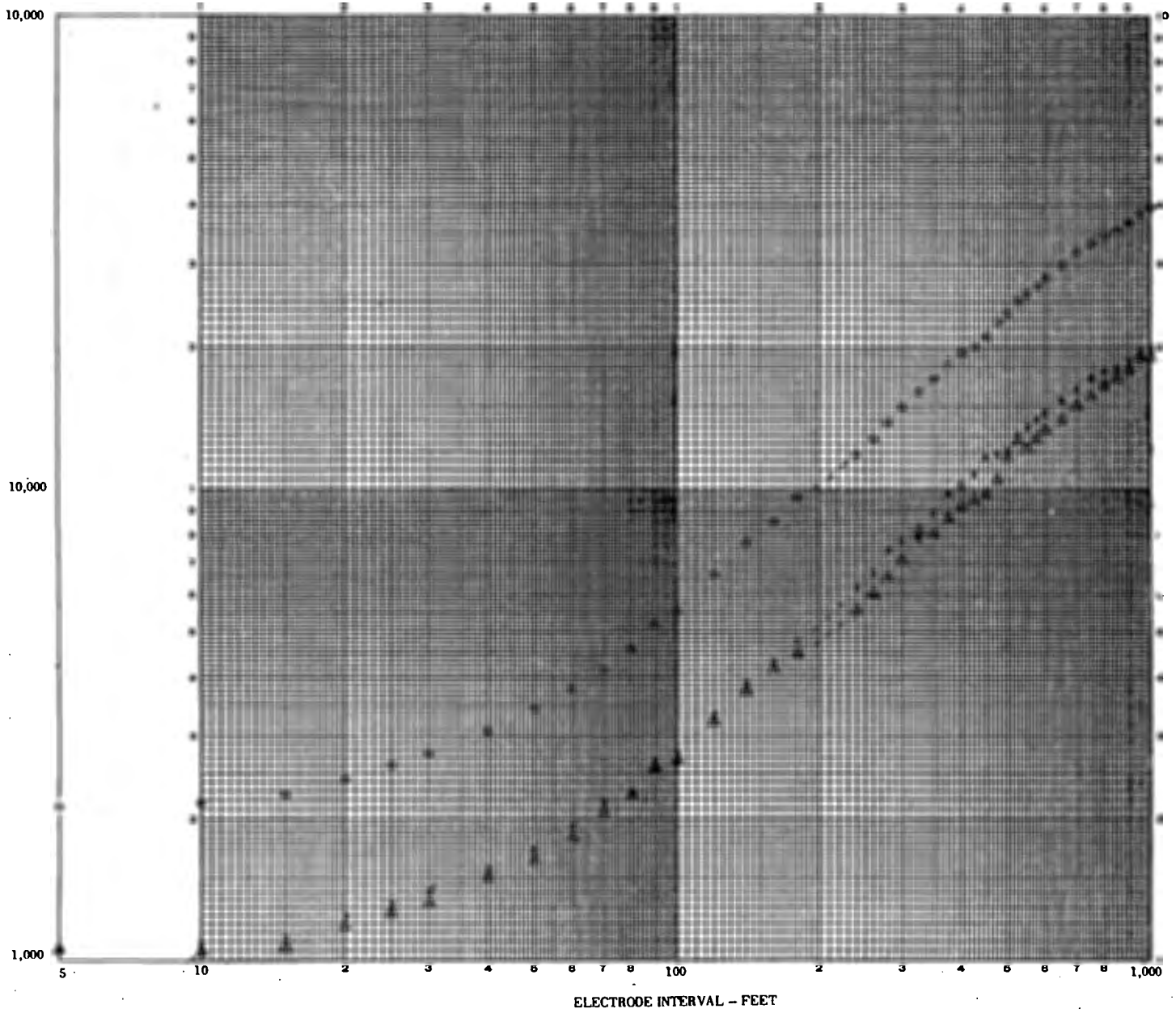
Bearing: P-1 N. 3° W.

Elev. 853'

O – Full curve

x – P-2 curve

△– P-1 curve



Line 9 (G-2) Fond du Lac, Wis.

Location: 0.35 mi. W. of road I along E-W road, center of sec. 35, T. 16 N., R. 16. E.

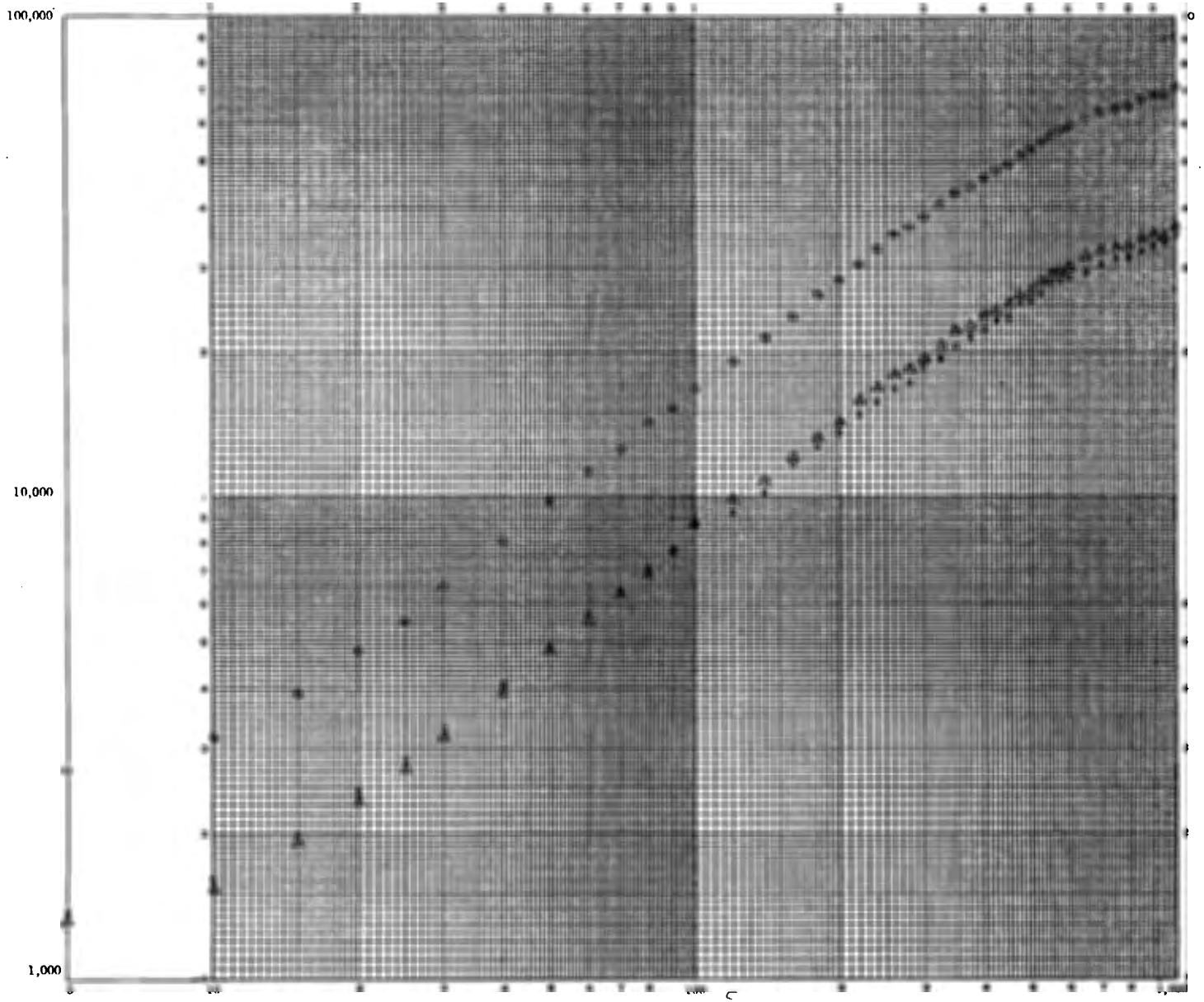
Bearing: P-1 N. 85° E.

Elev.: 861'

o— Full curve

x— P-2 curve

△— P-1 curve



Line 10 (G-2) Fond du Lac, Wis.

Location: 0.35 mi. S. of Rd. N 1 mi. W. of Hwy. 41 W. side of sec. 19 T. 16 N., R. 17 E.

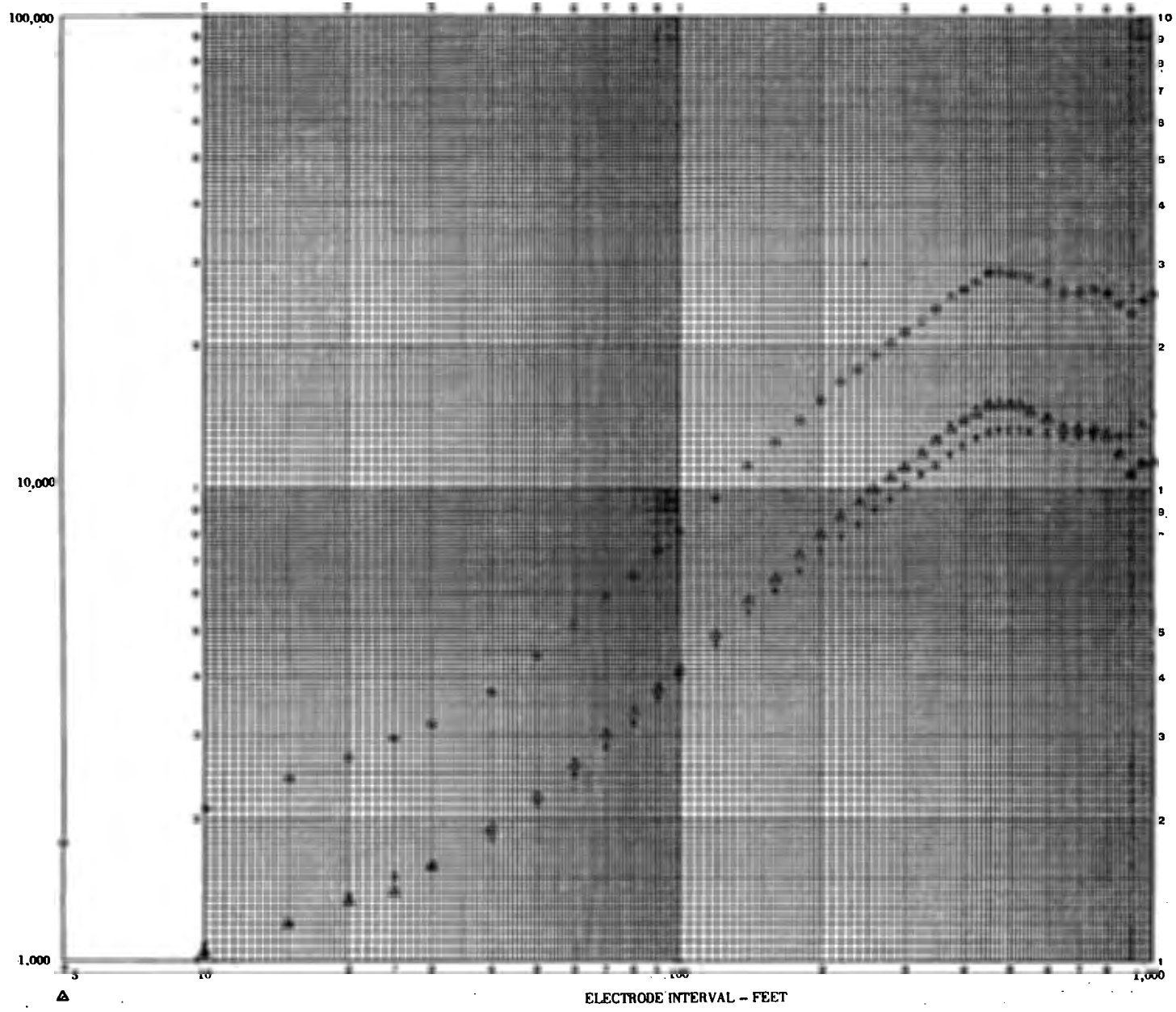
Bearing: P-1 N. 50° W.

Elev.: 814'

○ = Full curve

x = P-2 curve

△ = P-1 curve



Line 11 (C-2) Fond du Lac, Wis. 6/4/47

Location: 0.3 mi. W. of Hwy. 41 on Rd. 000. N. line of sec. 9, T. 15 N., R. 17 E.

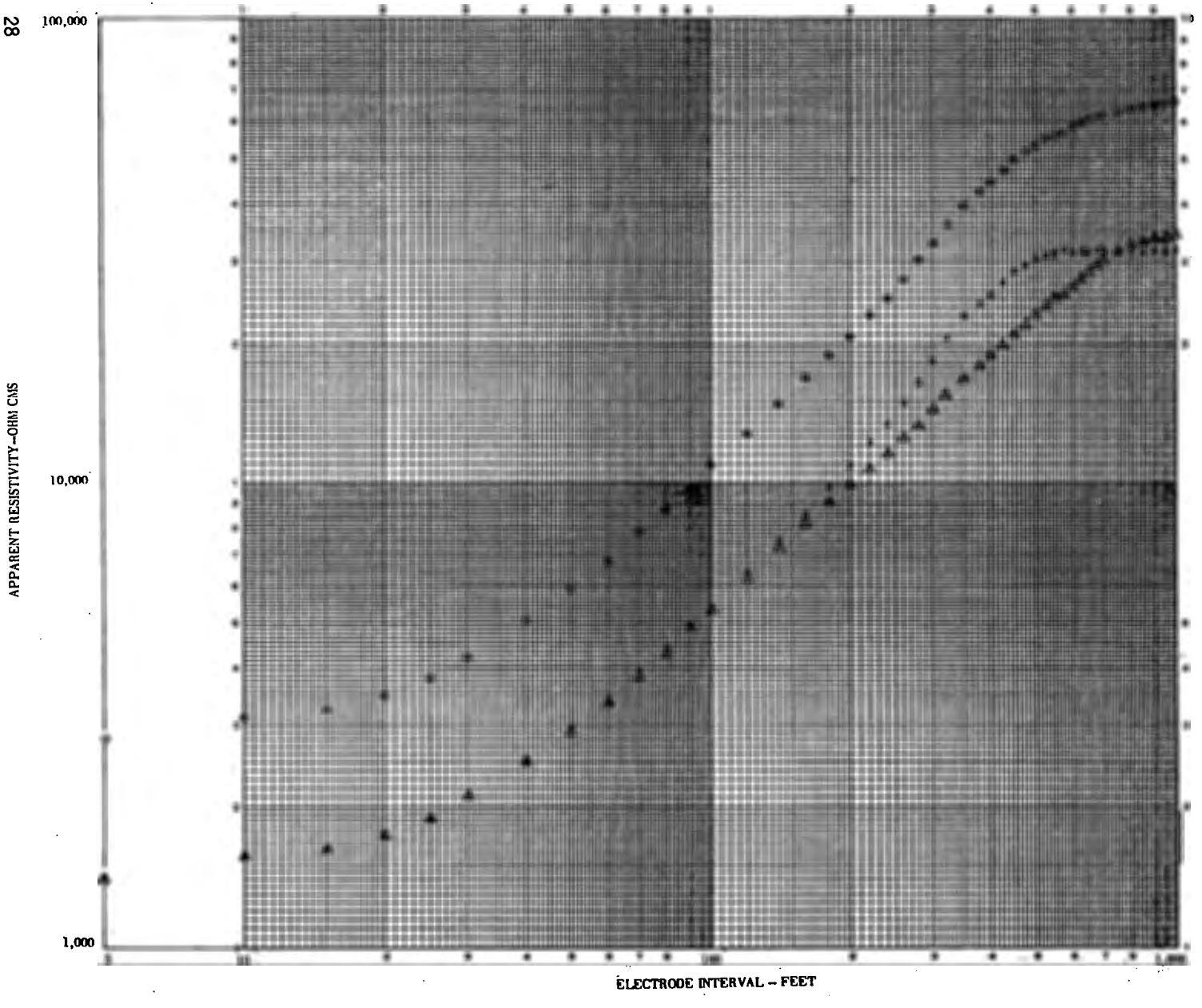
Bearing: P-1 N. 85° E.

Elev.: 757'

O = Full curve

x = P-2 curve

△ = P-1 curve



Line 12 (G-2) N. Fond du Lac, Wis. 6/4/47

Location: 0.29 mi. E. of Hwy 41 on N. line sec. 29, T. 16 N., R. 17 E.

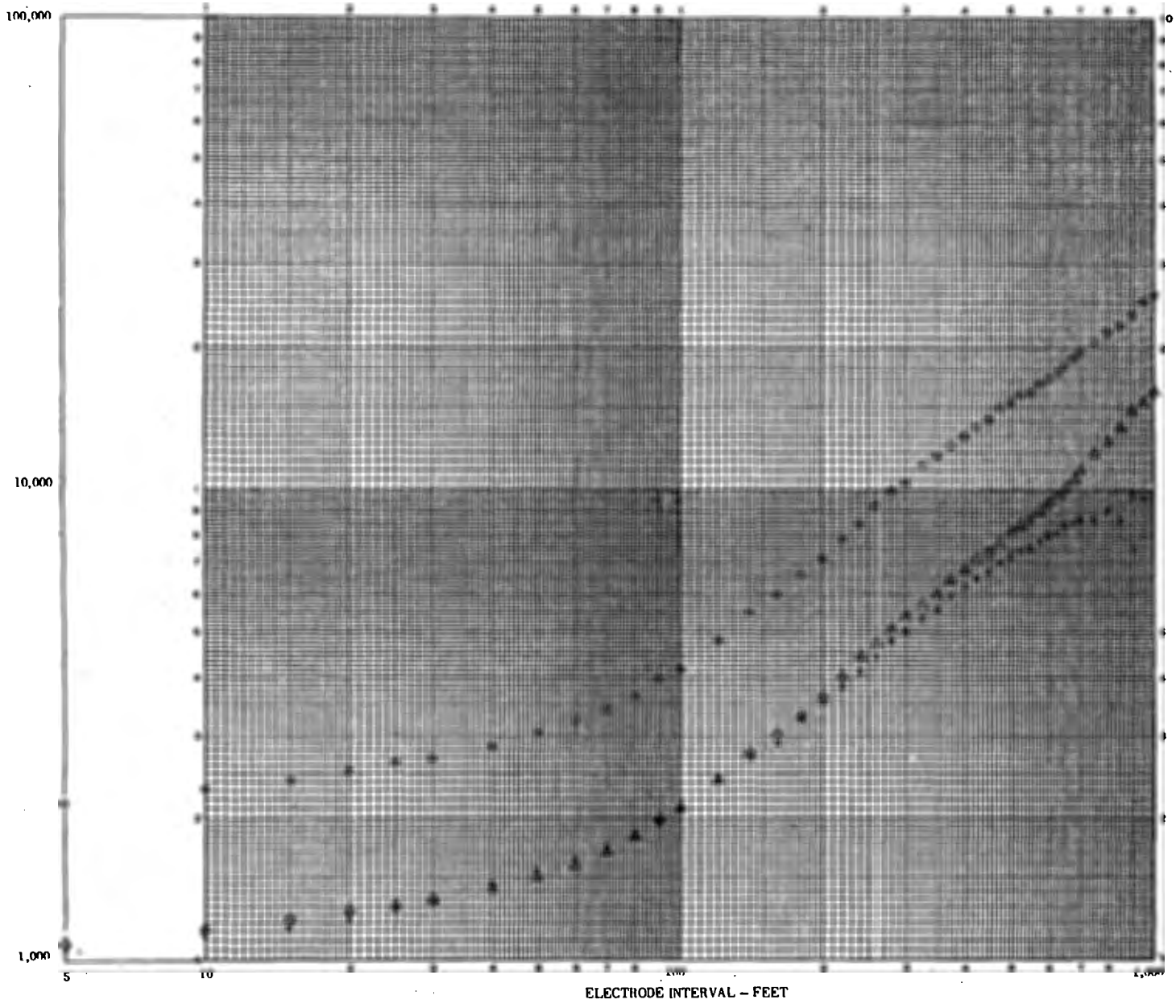
Bearing: P-1 N. 84° E.

Elev.: 788'

o = Full curve

x = P-2 curve

△ = P-1 curve



Line 13 (G-2) Fond du Lac, Wis. 6/5/47

Location: 0.35 mi. N. of Hwy. 23 on center line sec. 12, T. 16 N., R. 17 E.

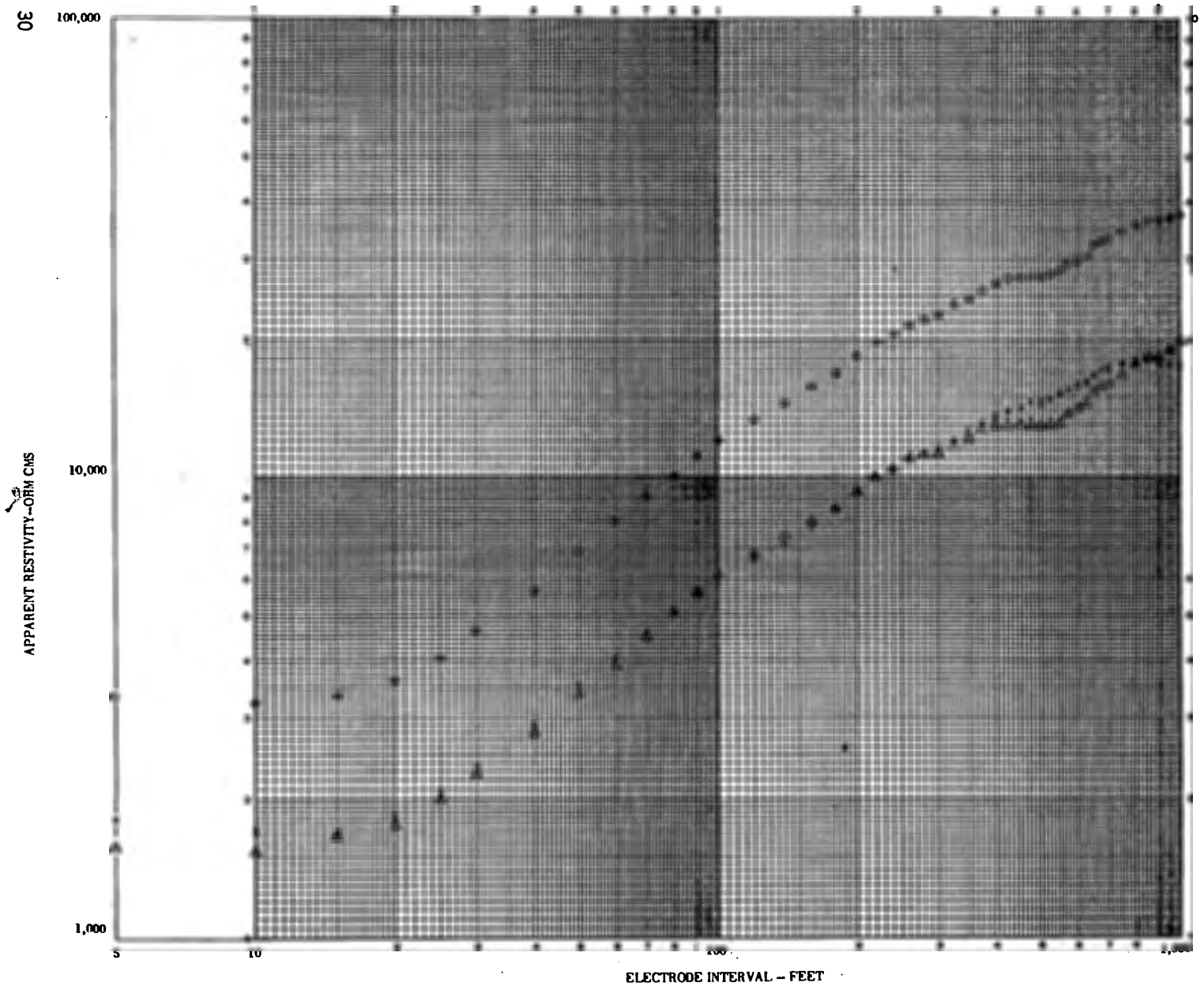
Bearing: P-1 N. 7° E.

Elev.: 762'

O – Full curve

× – P-2 curve

△ – P-1 curve



Line 14 (G-2) Fond du Lac, Wis.
6/5/47

Location: 0.3 mi. S. of N. line sec. 8, T. 16 N., R. 17 E, on old interurban road bed. Parallel to Milwaukee R.R.

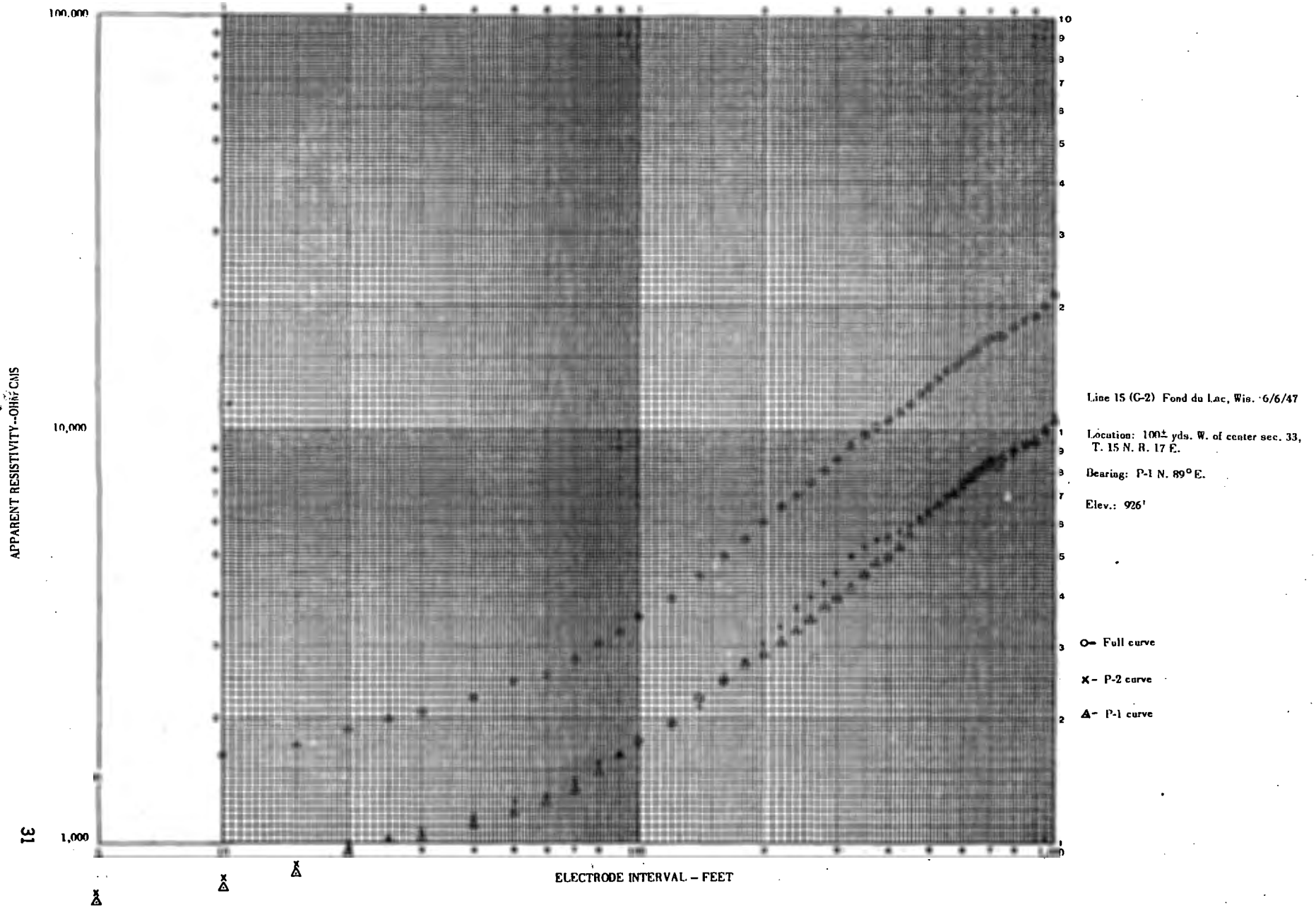
Bearing: P-1 N. 20° W.

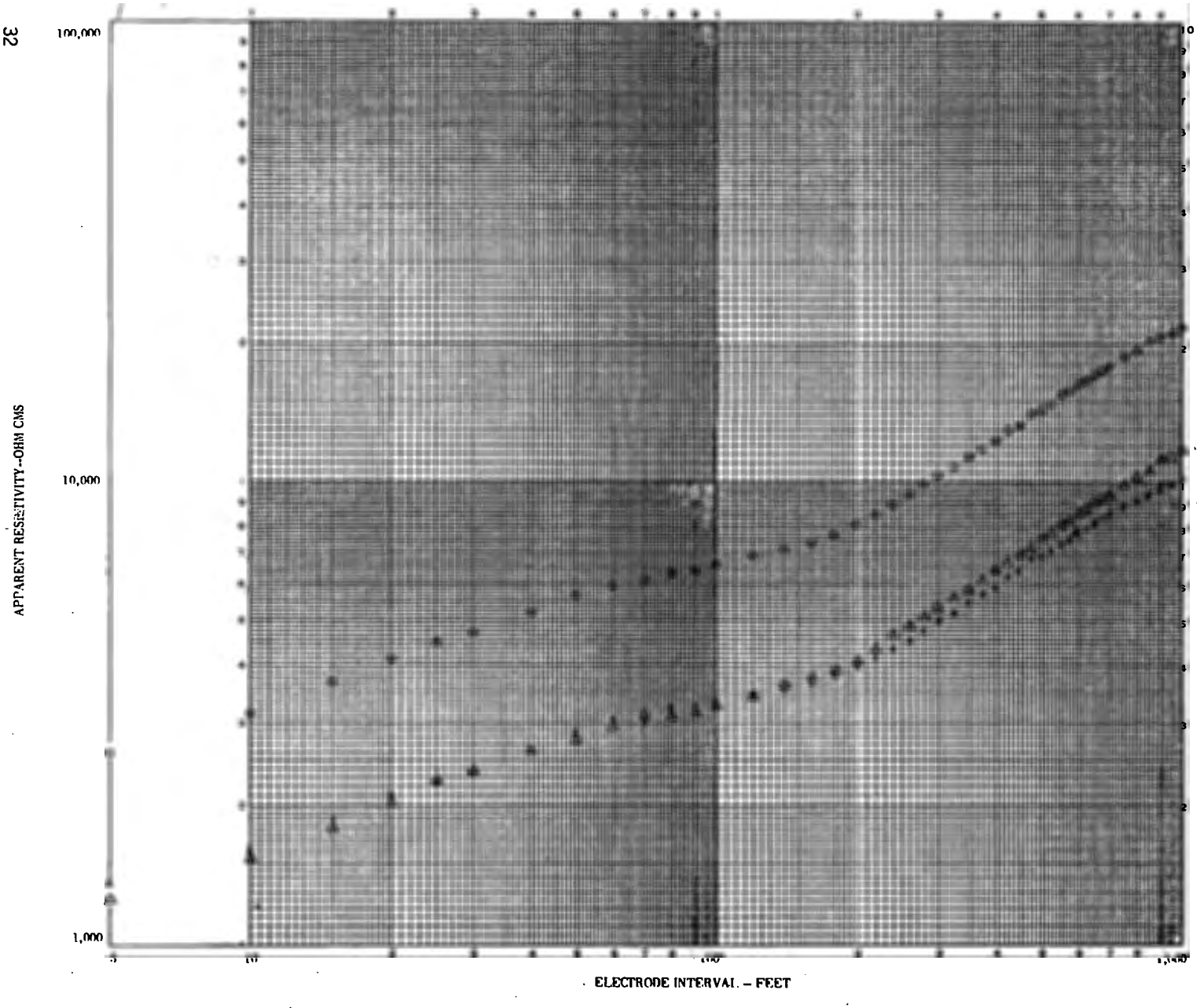
Elev. 799'

o = Full curve

× - P-2 curve

△ - P-1 curve


100,000
10,000
1,000
APPARENT RESISTIVITY – OHMS/CMS
ELECTRODE INTERVAL – FEET
Line 15 (C-2) Fond du Lac, Wis. 6/6/47
Location: 100± yds. W. of center sec. 33, T. 15 N. R. 17 E.
Bearing: P-1 N. 89° E.
Elev.: 926'
O– Full curve
X– P-2 curve
Δ– P-1 curve



Line 16 (G-2) Fond du Lac, Wis. 6/6/47

Location: 0.3 mi. S. of County Hwy.FFF in sec. 4, T. 14 N., R. 17 E.

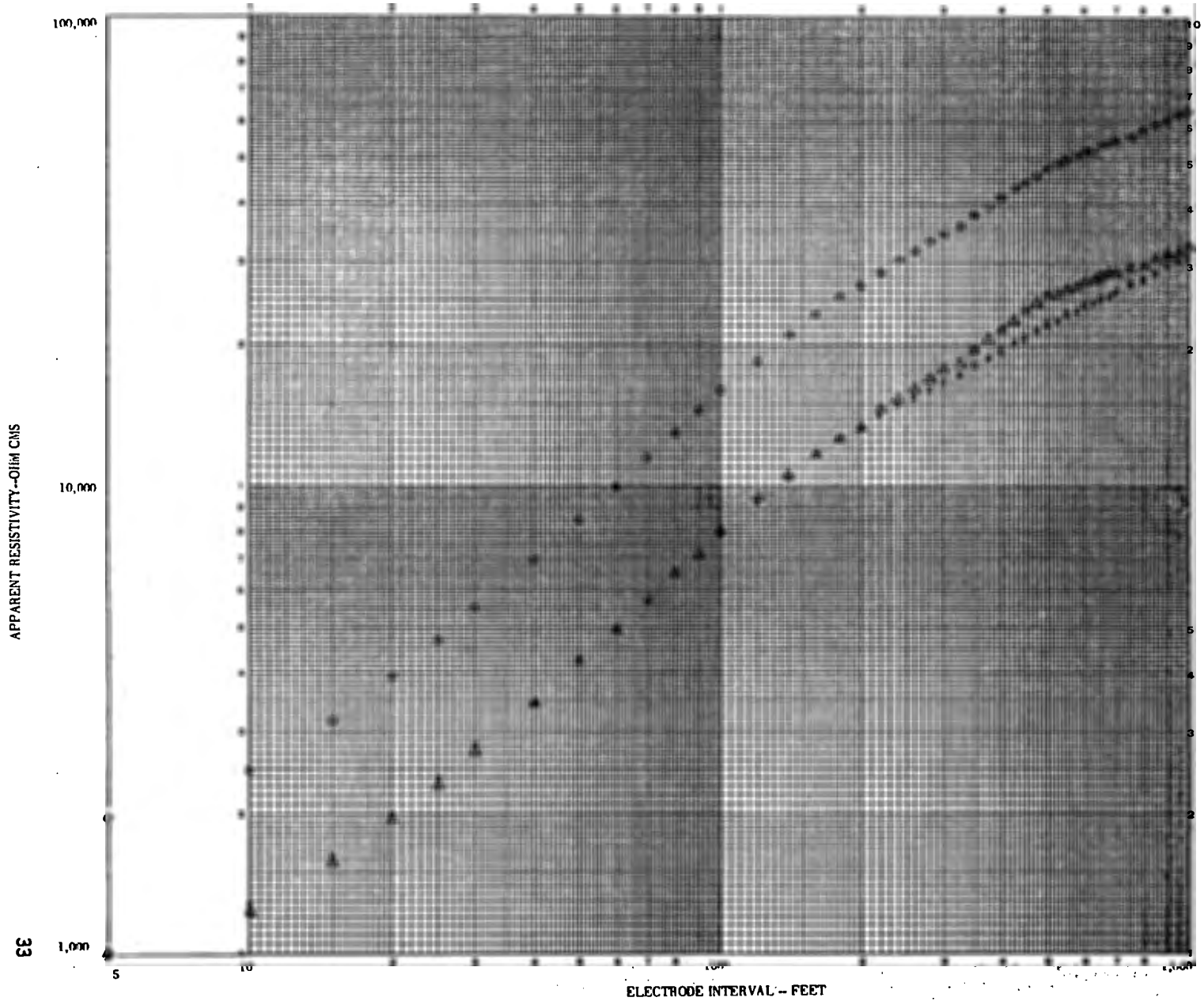
Bearing: P-1 N. 0° E.

Elev.: 842'

o = Full curve

x = P-2 curve

Δ = P-1 curve



Line 17 (G-2) Fond du Lac, Wis. 6/9/47

Location: 0.3 mi. W. of E. Line on center line sec. 17, T. 15 N., R. 17 E.

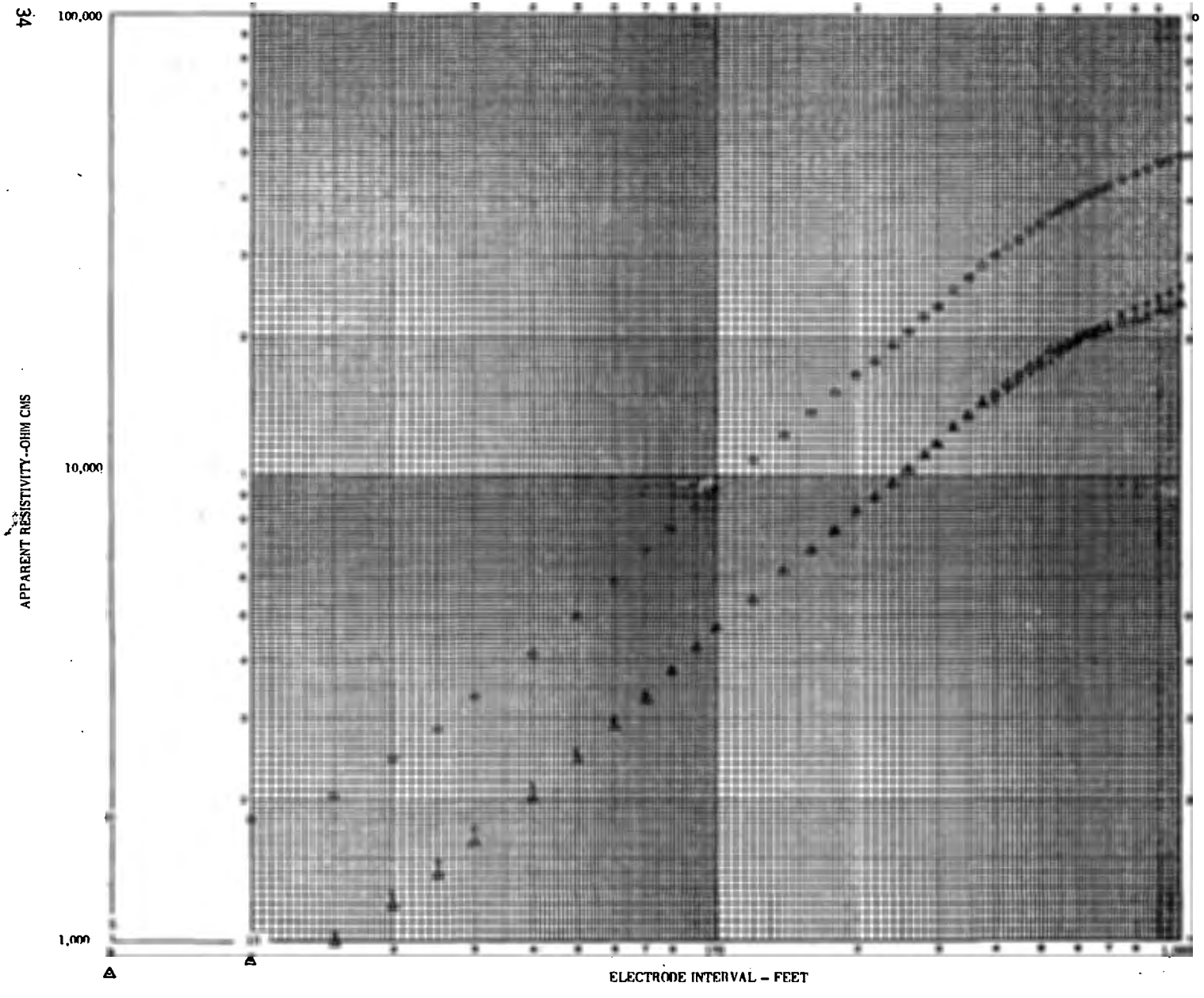
Bearing: P-1, N. 90° W.

Elev.: 790'

○ = Full curve

× = P-2 curve

△ = P-1 curve



Line 18 (G-2) Fond du Lac, Wis.

Location: 0.7 mi. S. of county Hwy. on W. line sec. 19, T. 15 N., R. 17 E.

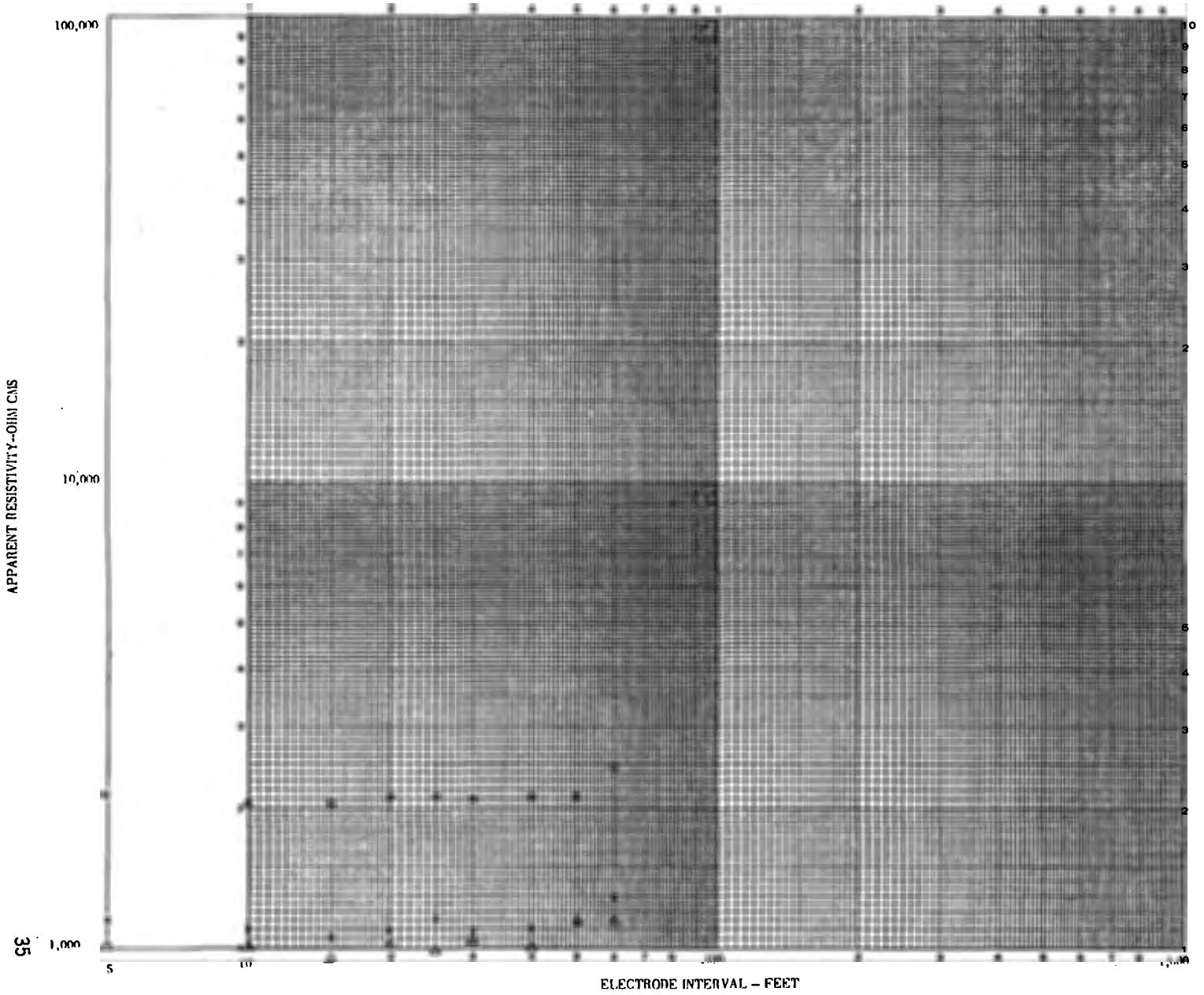
Bearing: P-1 N. 10° W.

Elevation: 828' ± 2'

o = Full curve

x = P-2 curve

△ = P-1 curve



Line 19 (G-2) Fond du Lac, Wis 6/10/47

Location: 1500 ft. N.W. of overpass on C. & N.W. Ry. NW¼ sec. 26, T. 15 N., R. 17 E.

Bearing: Not taken.

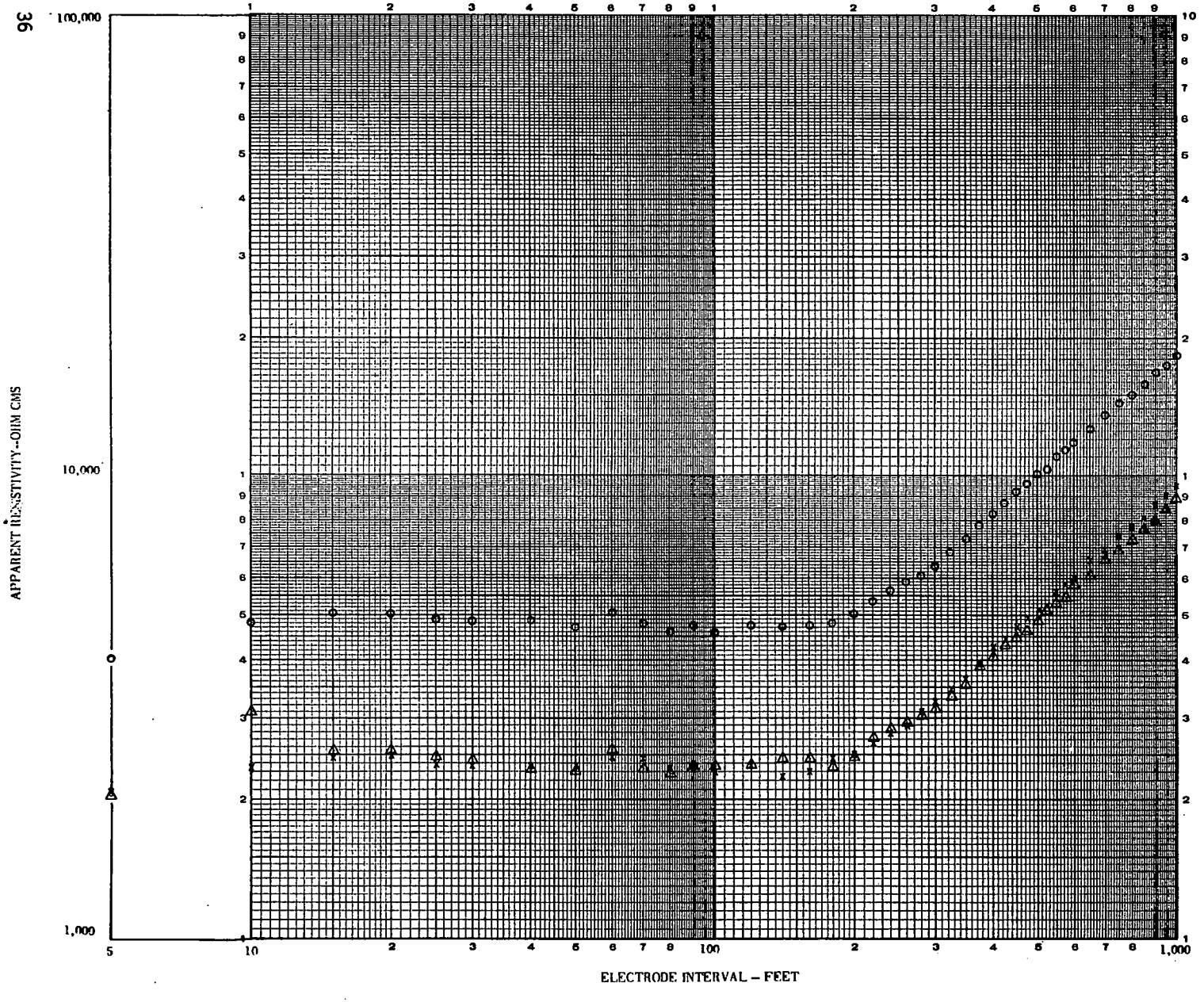
Elev.: Not taken.

Given up due to a buried conductor along R.R. track.

o – Full curve

x – P-2 curve

△ – P-1 curve



Line 20 (C-2) Fond du Lac, Wis. 6/10/47

Location: County Hwy. D., ¼ mi. N. of County Hwy. FFF., sec. 6, T. 14 N., R. 17 E.

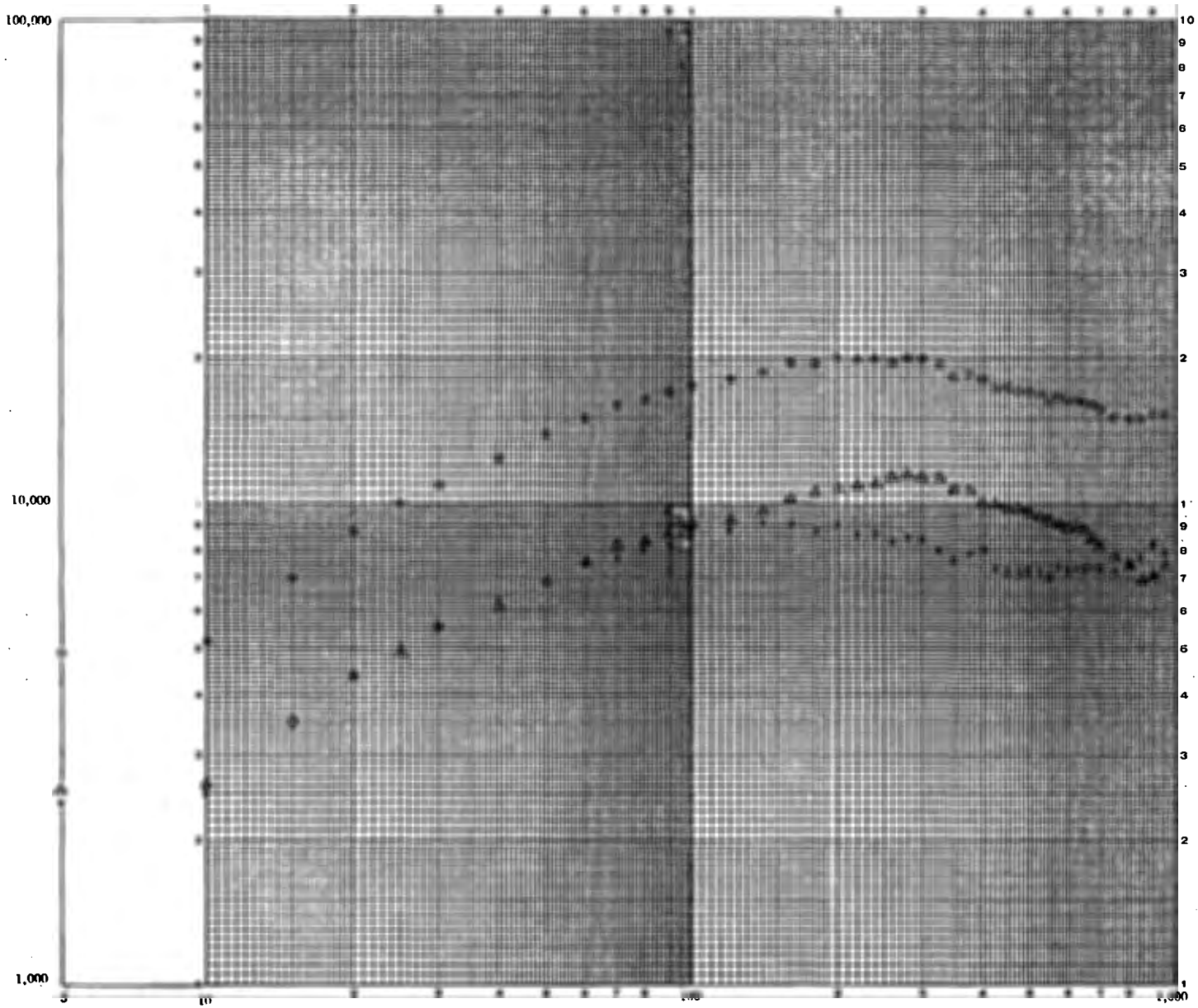
Bearing: P1 N. 25° E.

Elev.: 840'

o = Full curve

x = P-2 curve

Δ = P-1 curve



Line 21 (G-2) Hartford, Wis. 6/11/47

Location: ¼ mi. W. of E. line and 0.3 mi. N. of S. line of sec. 29, T. 10 N., R. 18 E.

Bearing: P-1 N. 3° W.

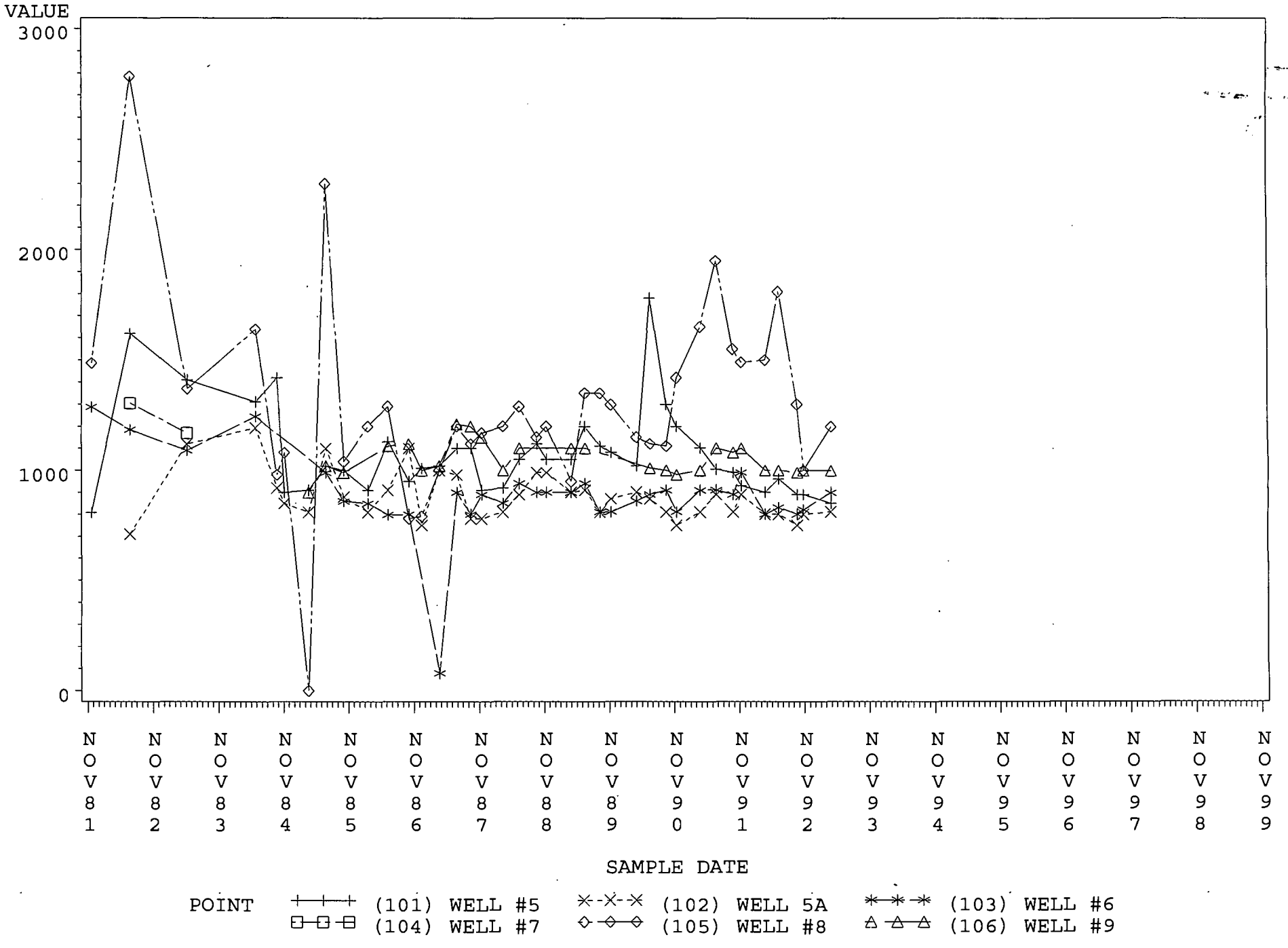
Elev.: 1026'

O– Full curve

X – P-2 curve

Δ– P-1 curve

RIPON TN RIPON CTY (467), PARAMETER=' 94, SPECIFIC CONDUCTANCE, FIELD (U,'



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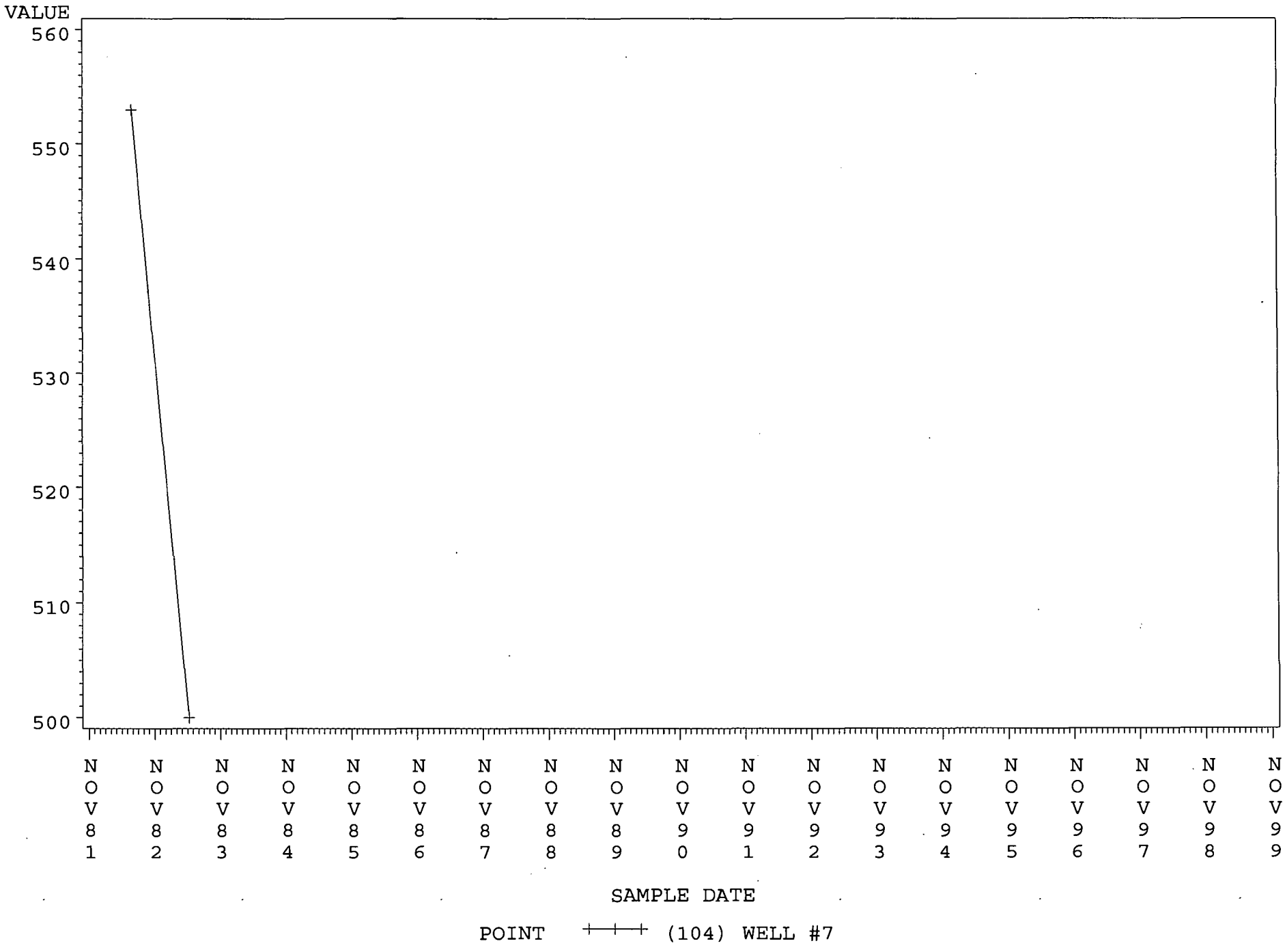

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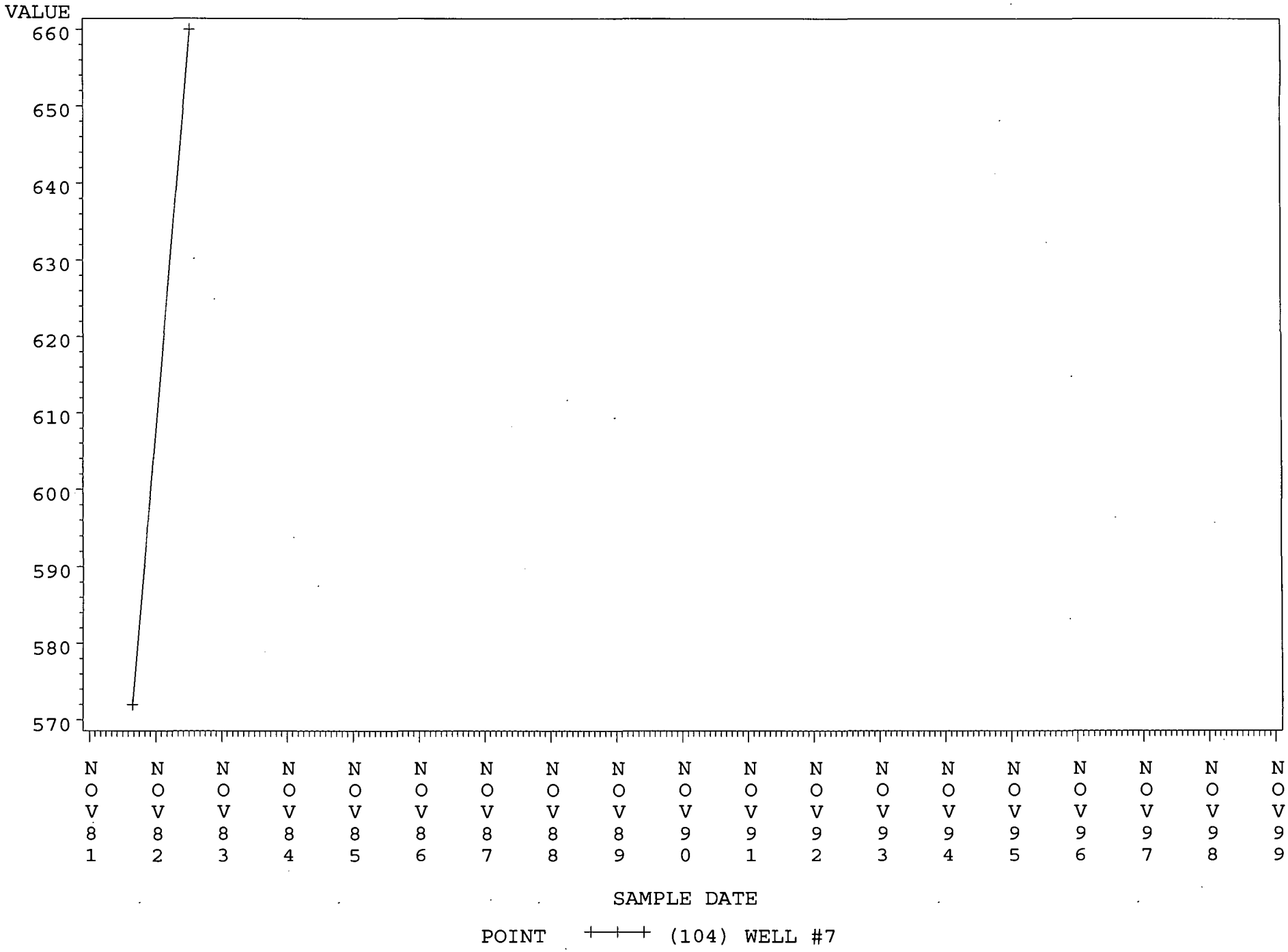
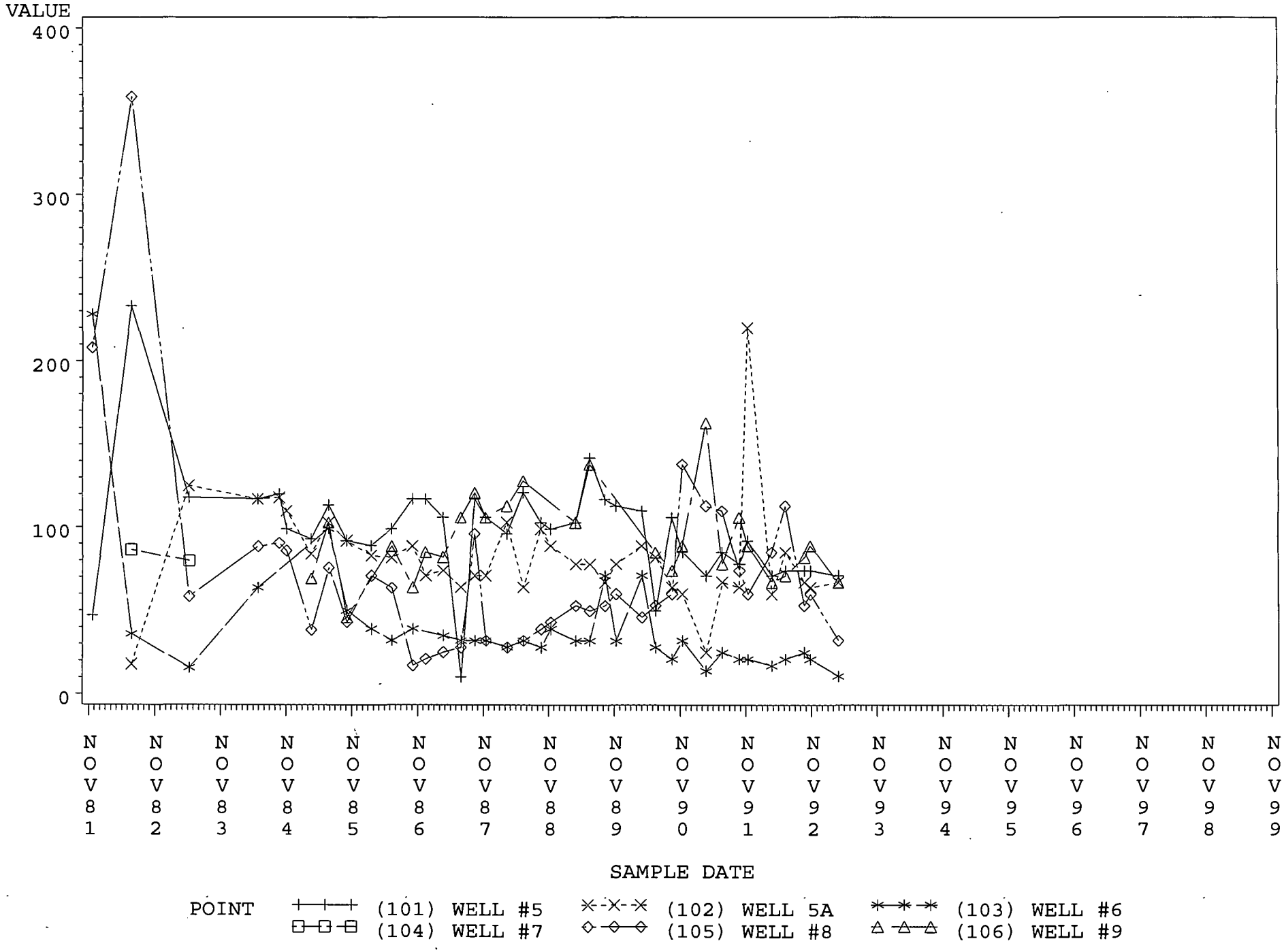
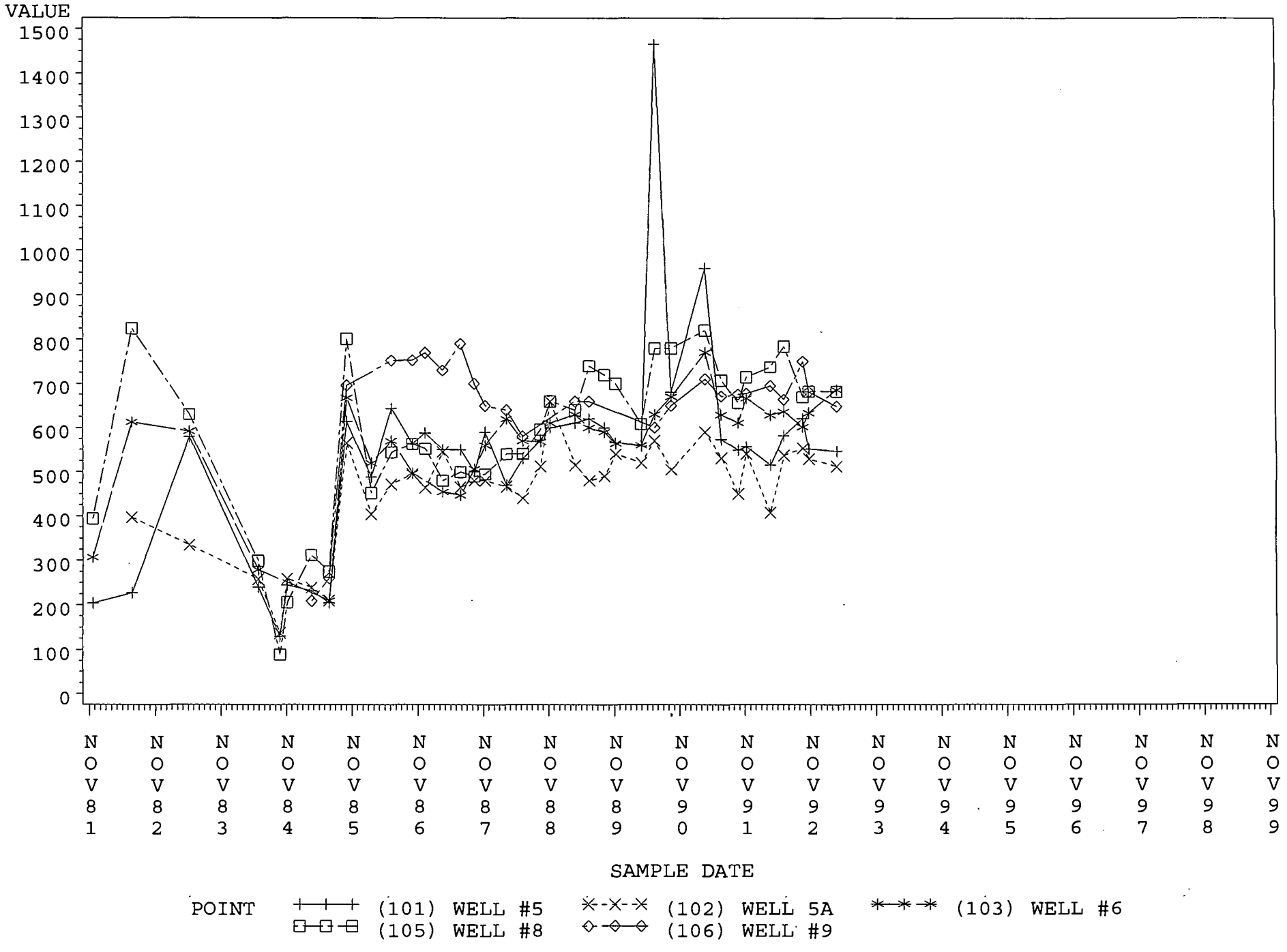


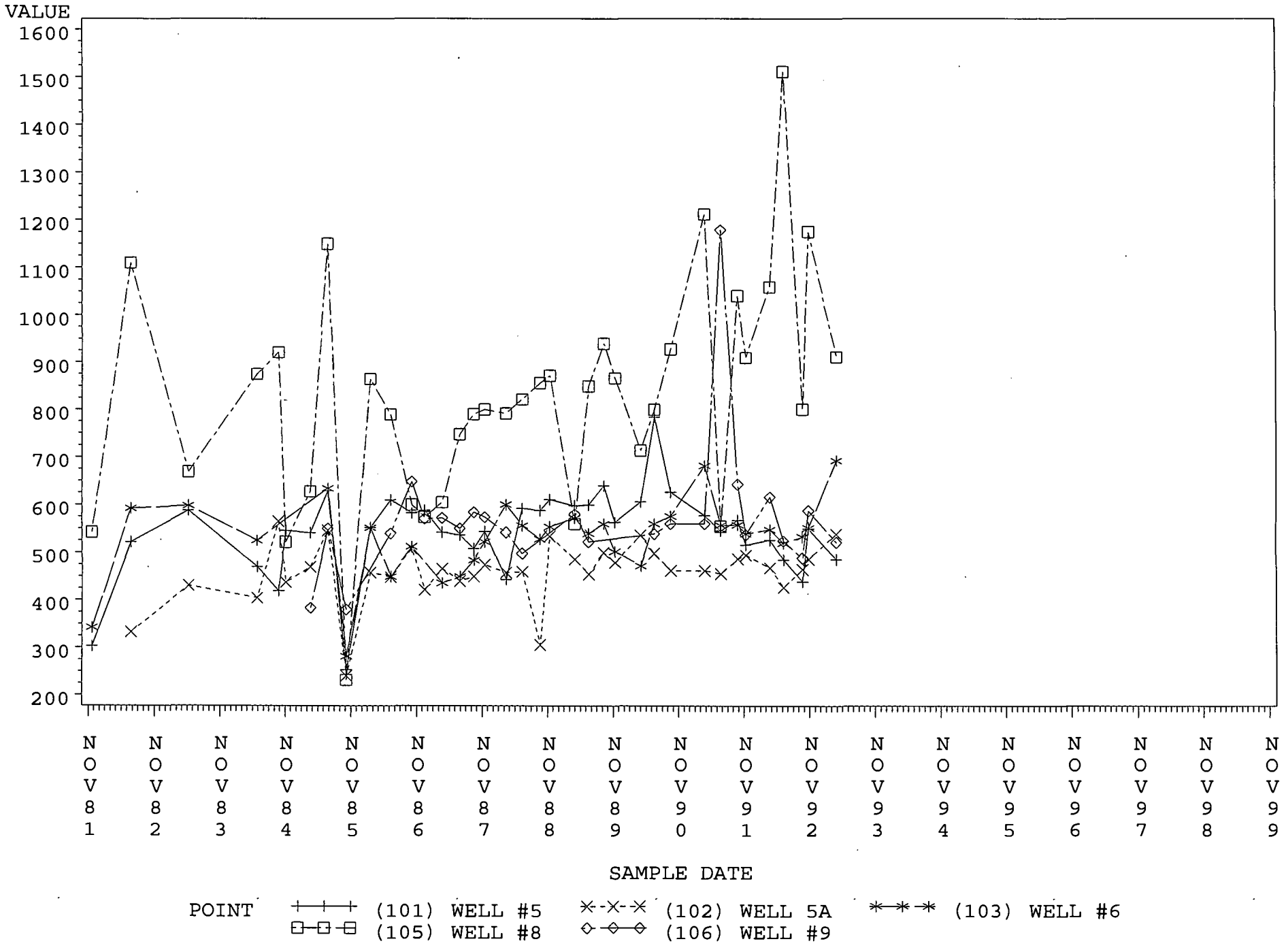
RIPON TN RIPON CTY (467), PARAMETER=' 940, CHLORIDE, TOTAL OR DISSOLVED I,'



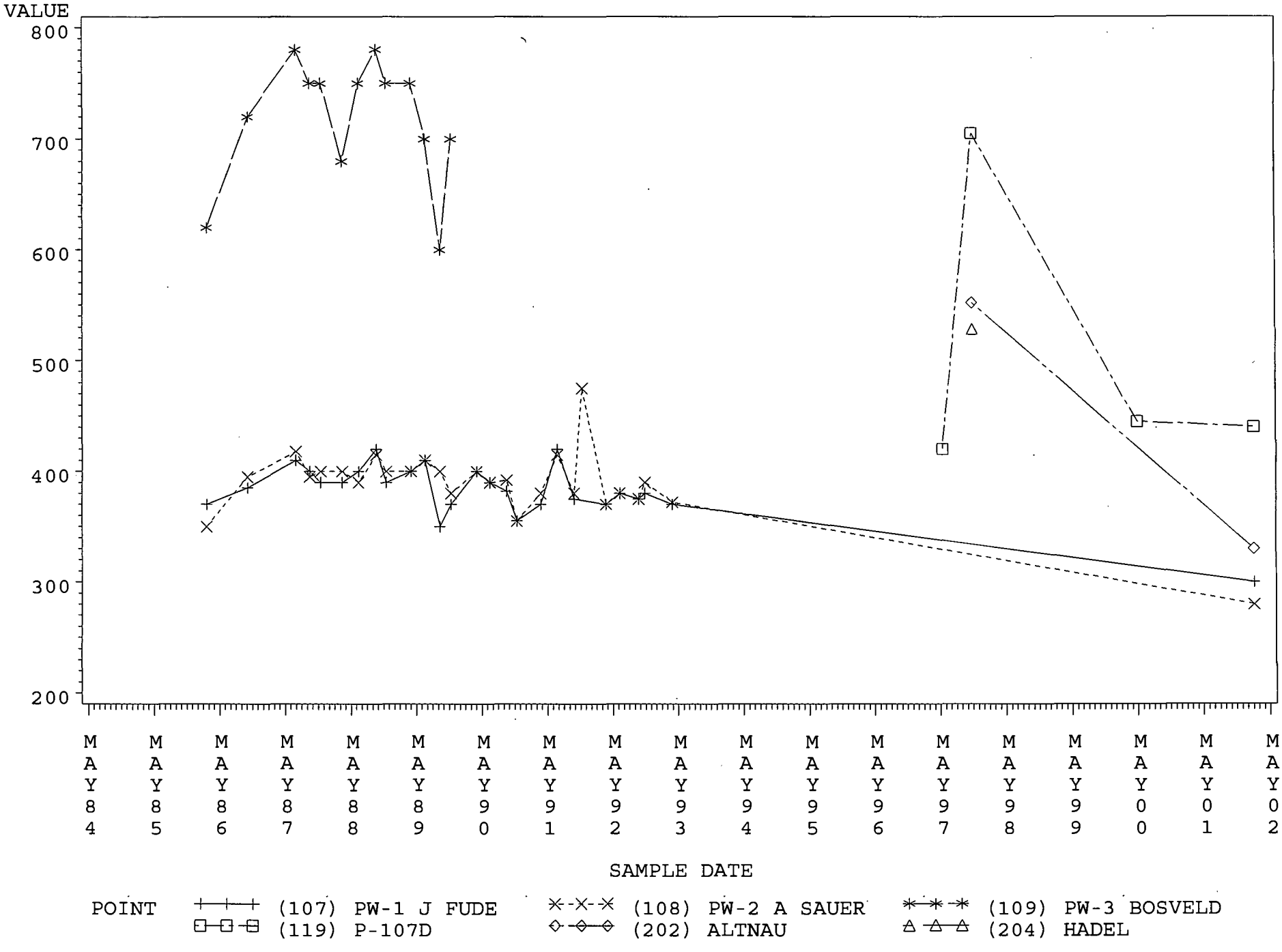
RIPON TN RIPON CTY (467), PARAMETER=22413, HARDNESS, TOTAL, FILTERED (MG/,



RIPON TN RIPON CTY (467), PARAMETER=39036, ALKALINITY, TOTAL FILTERED (MG,



RIPON TN RIPON CTY (467), PARAMETER=' 94, SPECIFIC CONDUCTANCE, FIELD (U,'



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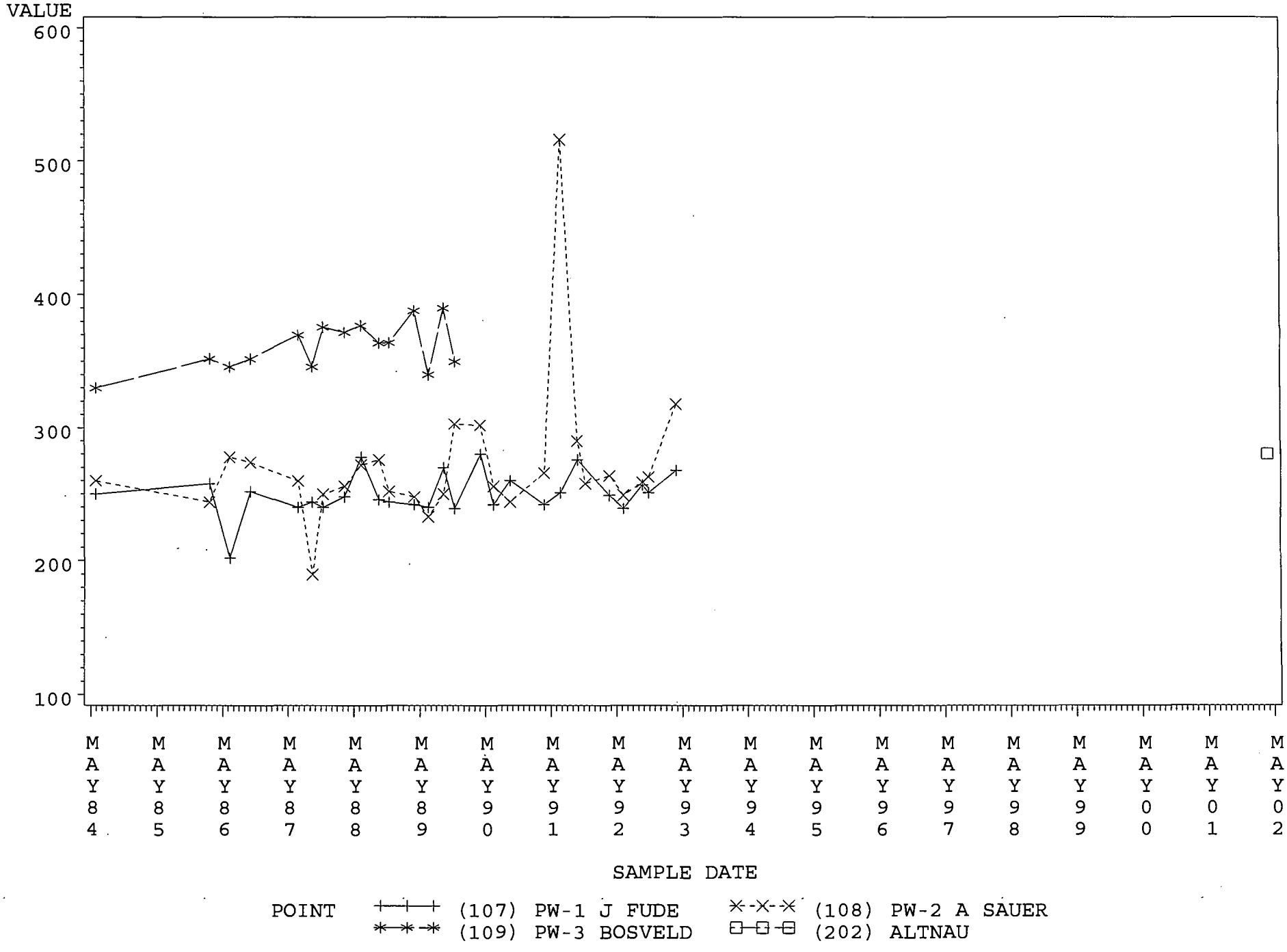
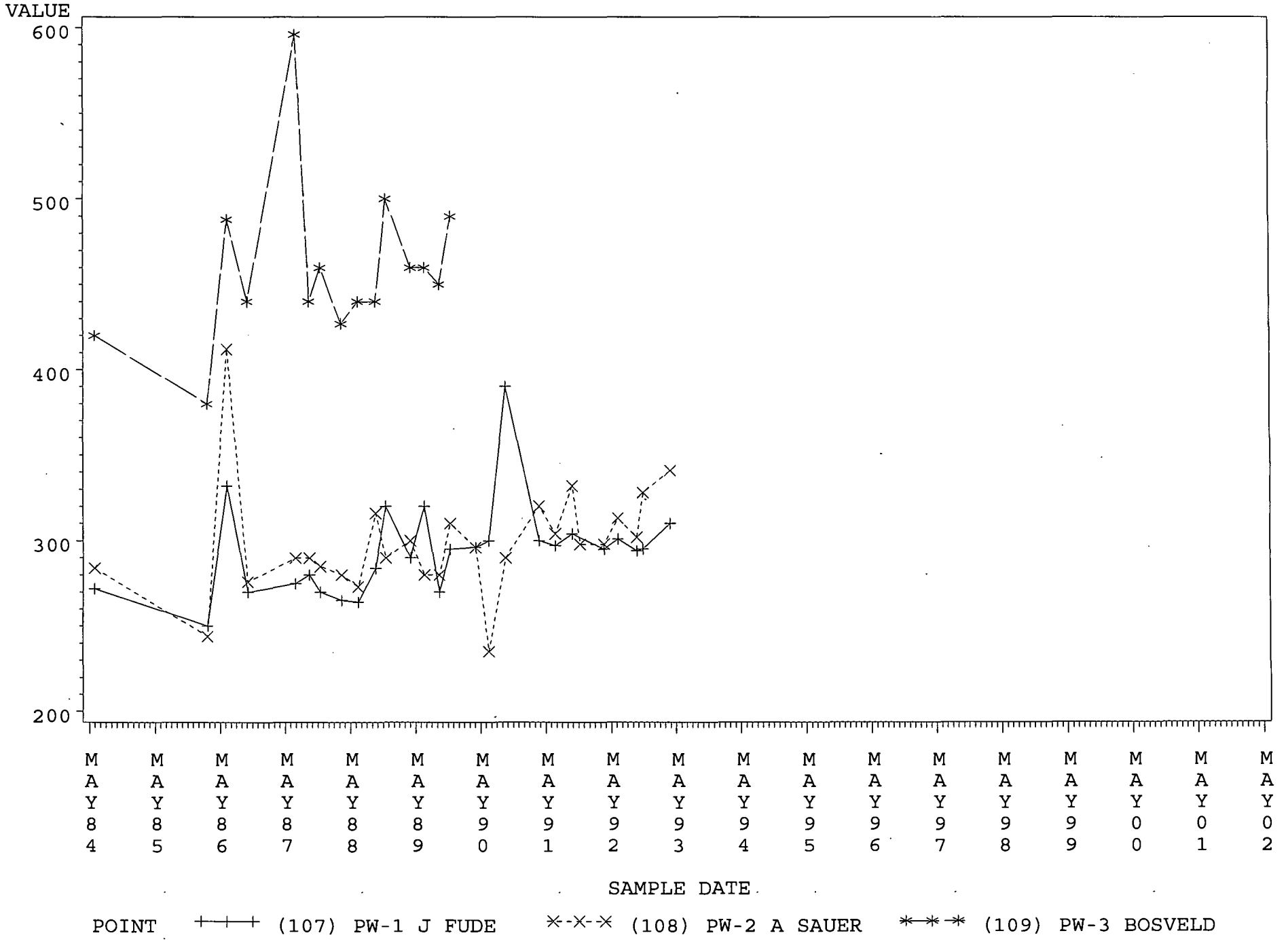
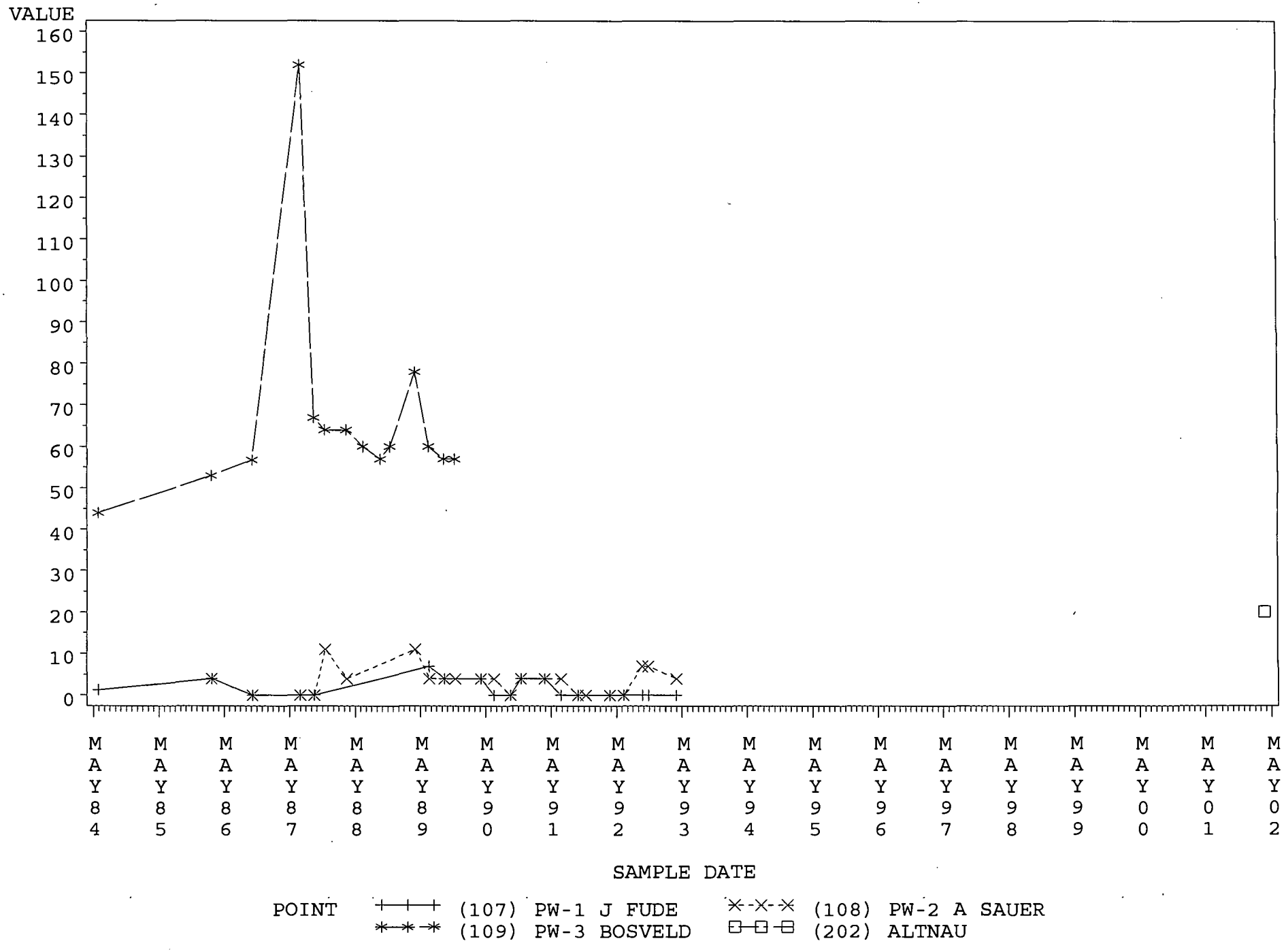


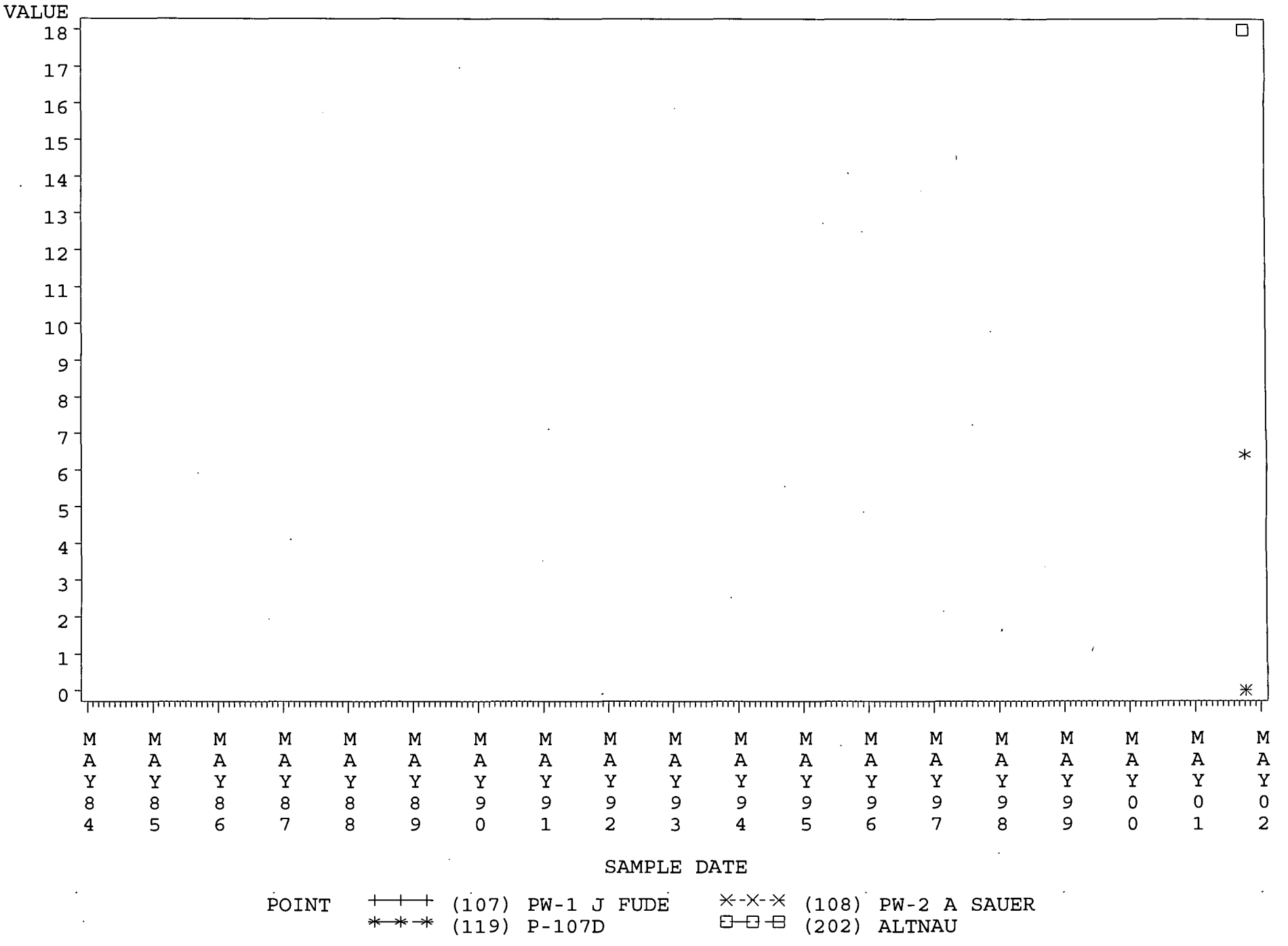
RIPON TN RIPON CTY (467), PARAMETER=' 900, HARDNESS, TOTAL (MG/L AS CACO3,'



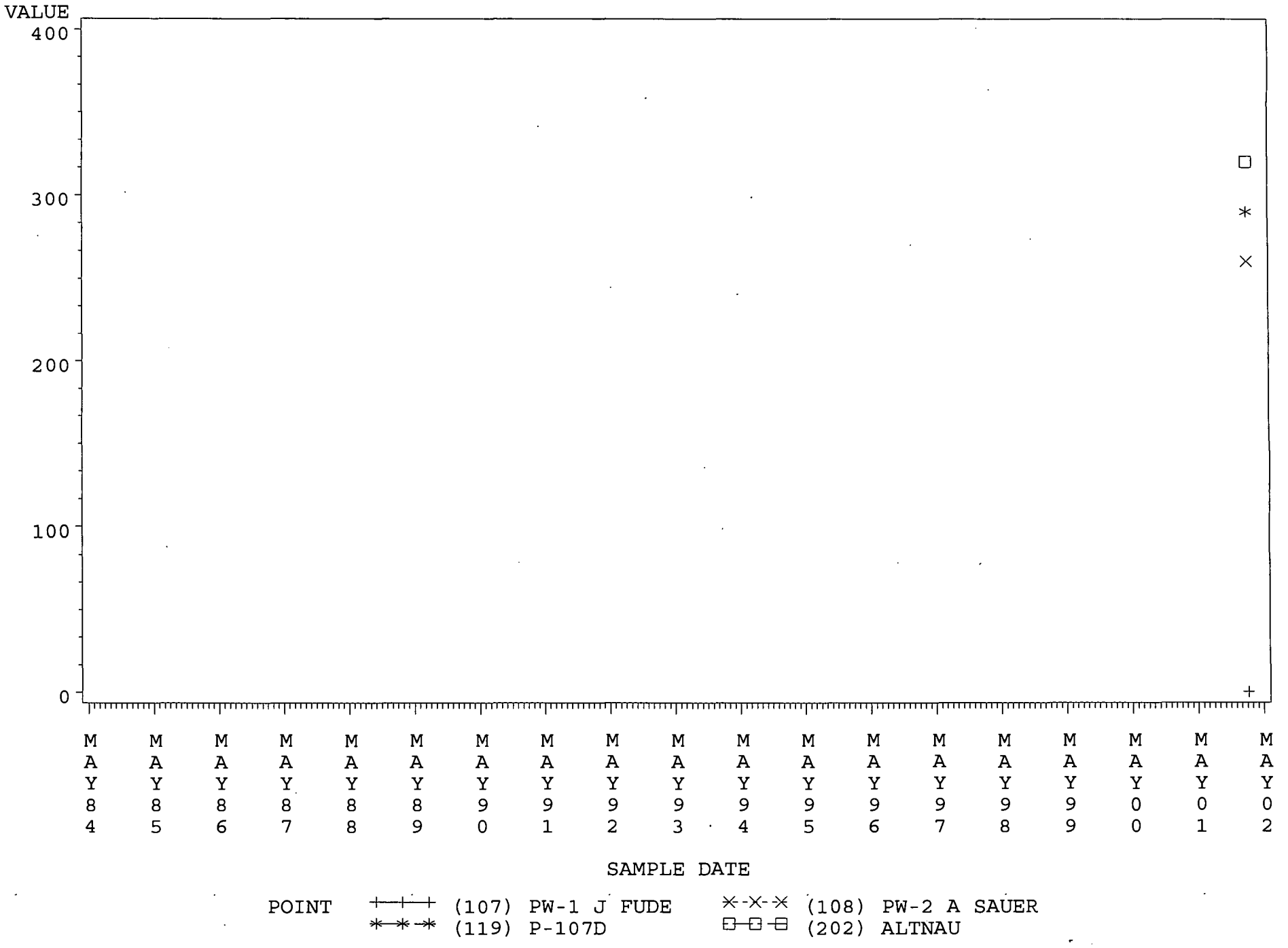
RIPON TN RIPON CTY (467), PARAMETER=' 940, CHLORIDE, TOTAL OR DISSOLVED I,'



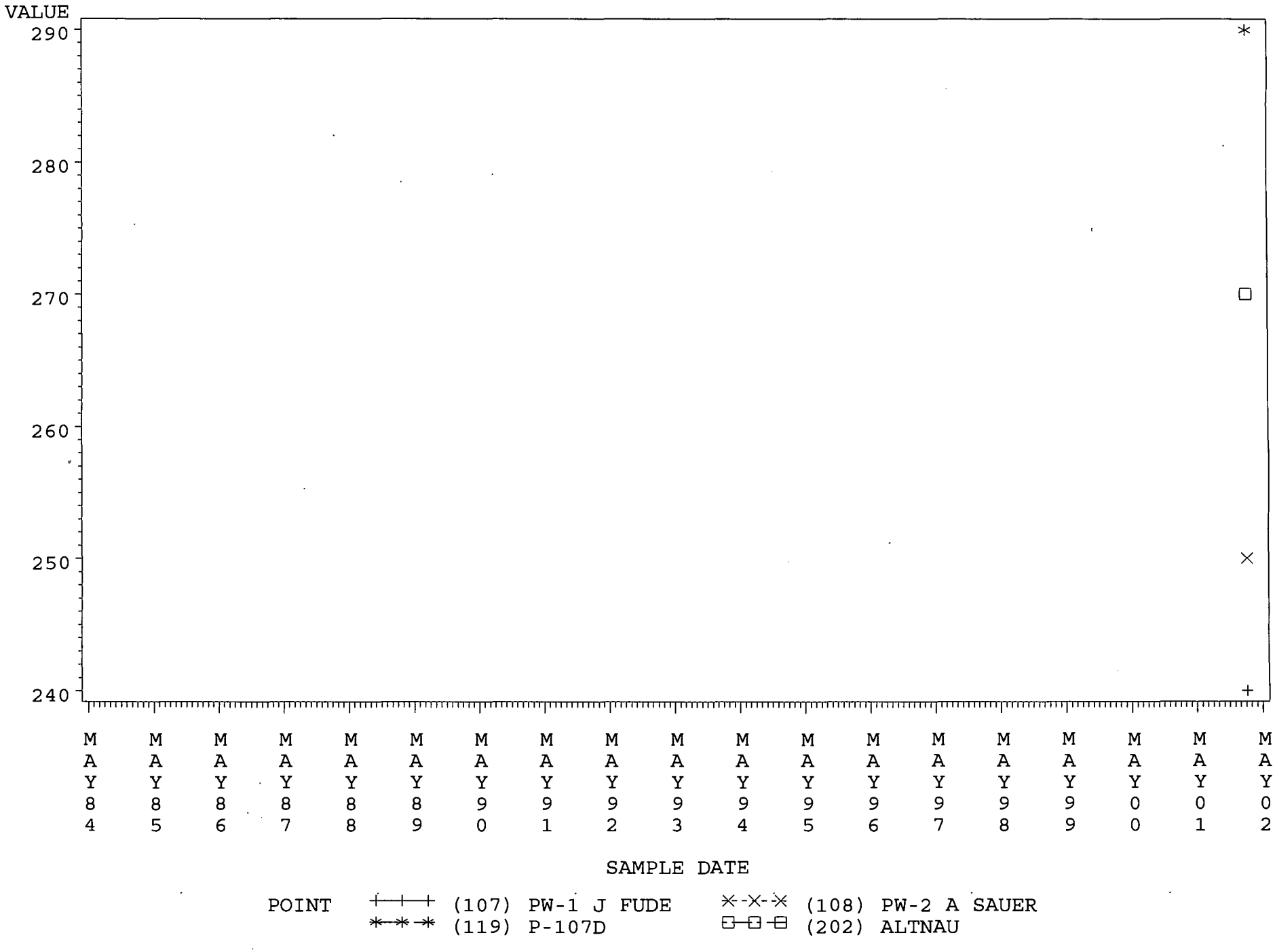
RIPON TN RIPON CTY (467), PARAMETER=' 941, CHLORIDE, DISSOLVED IN WATER S,'



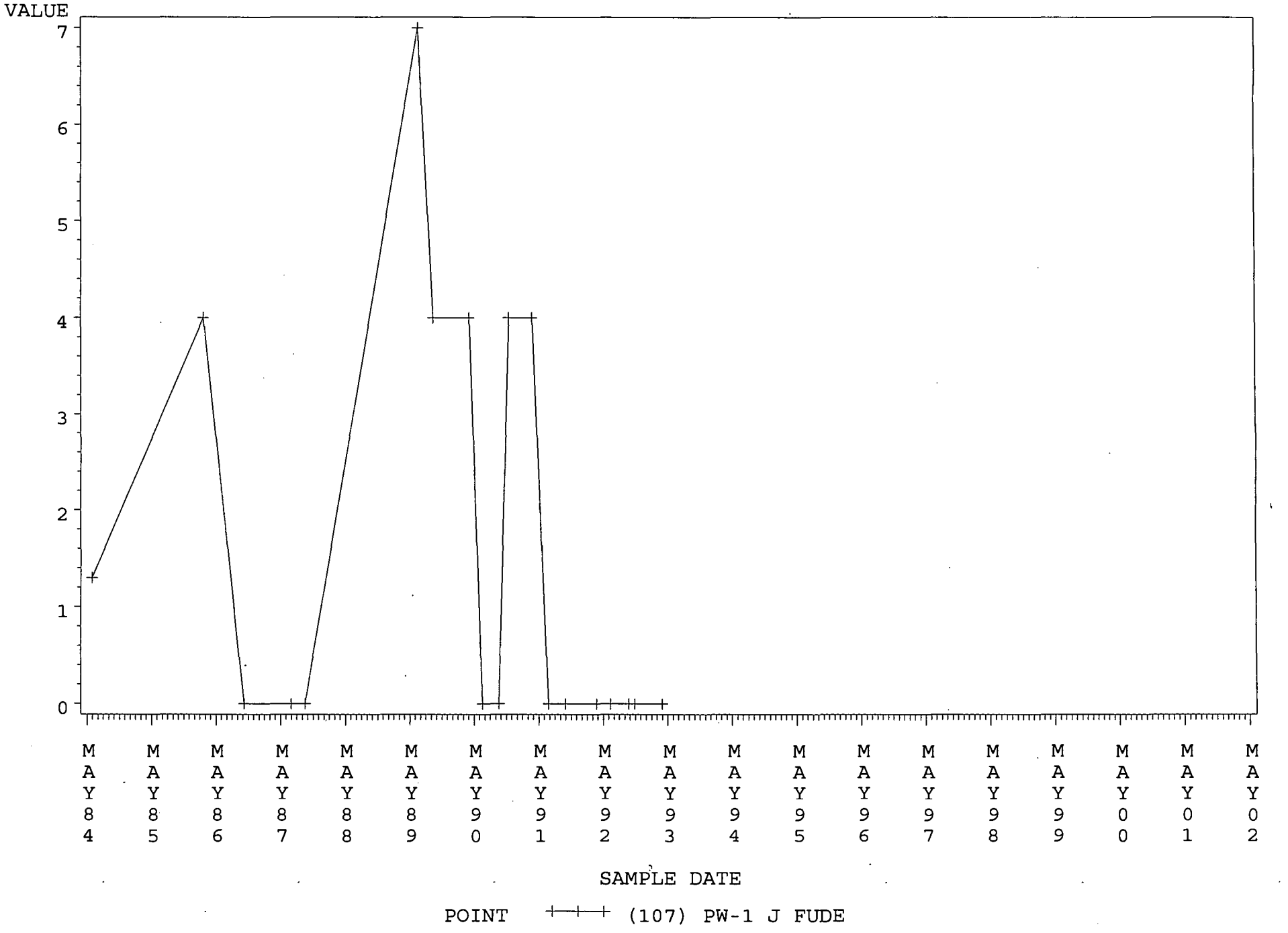
RIPON TN RIPON CTY (467), PARAMETER=22413, HARDNESS, TOTAL, FILTERED (MG/,



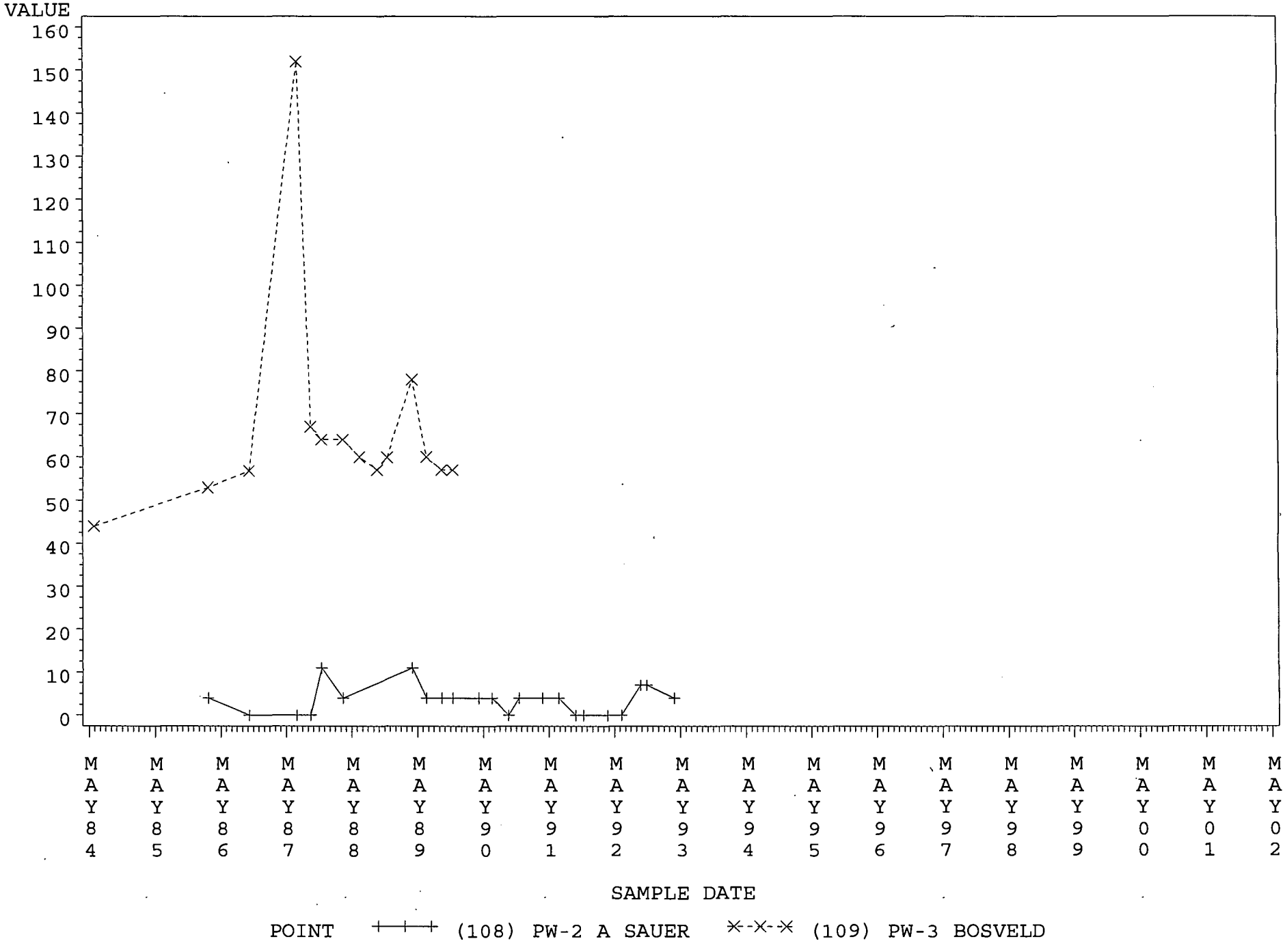
RIPON TN RIPON CTY (467), PARAMETER=39036, ALKALINITY, TOTAL FILTERED (MG,



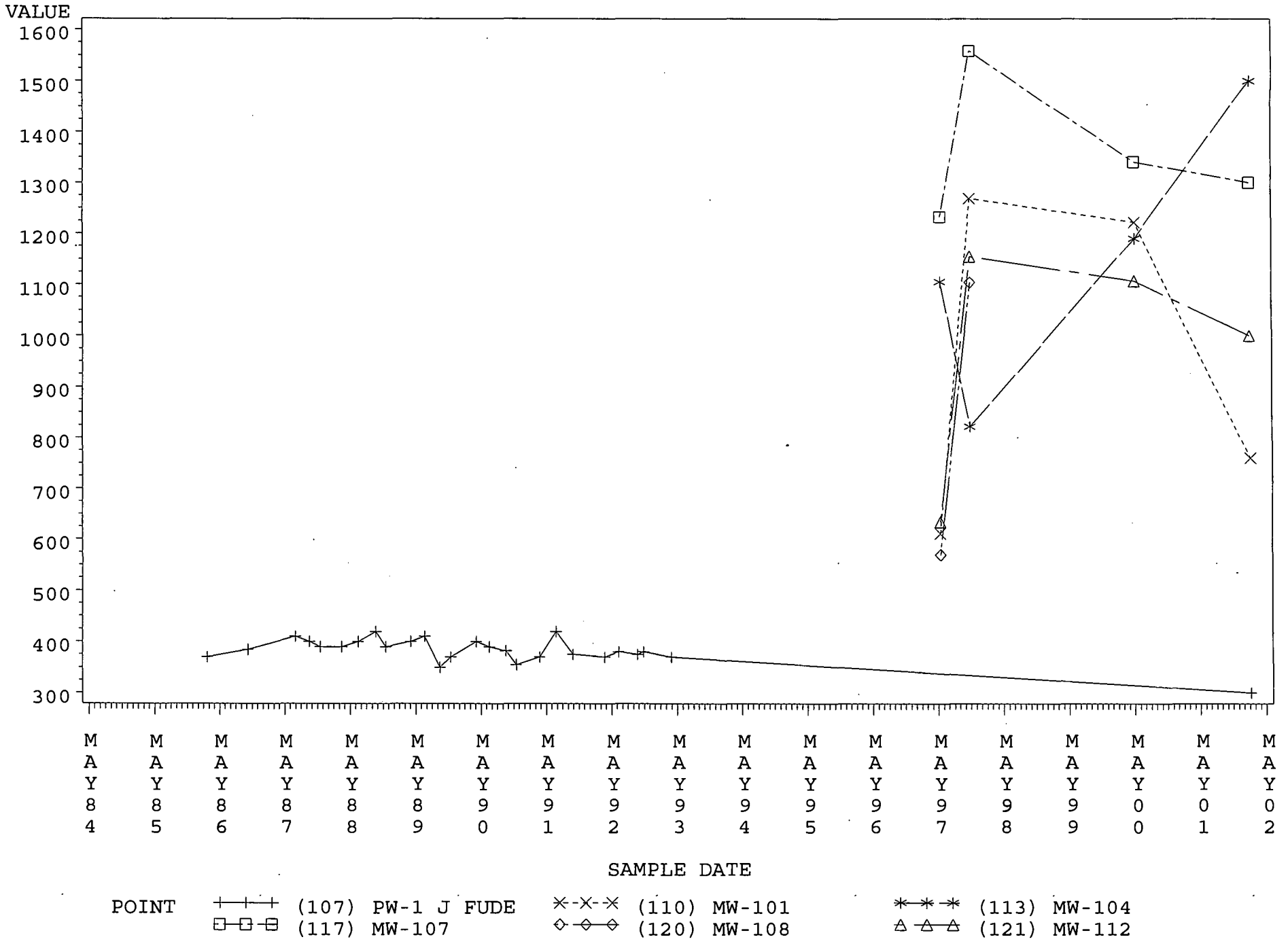
RIPON TN RIPON CTY (467), PARAMETER=' 940, CHLORIDE, TOTAL OR DISSOLVED I,'

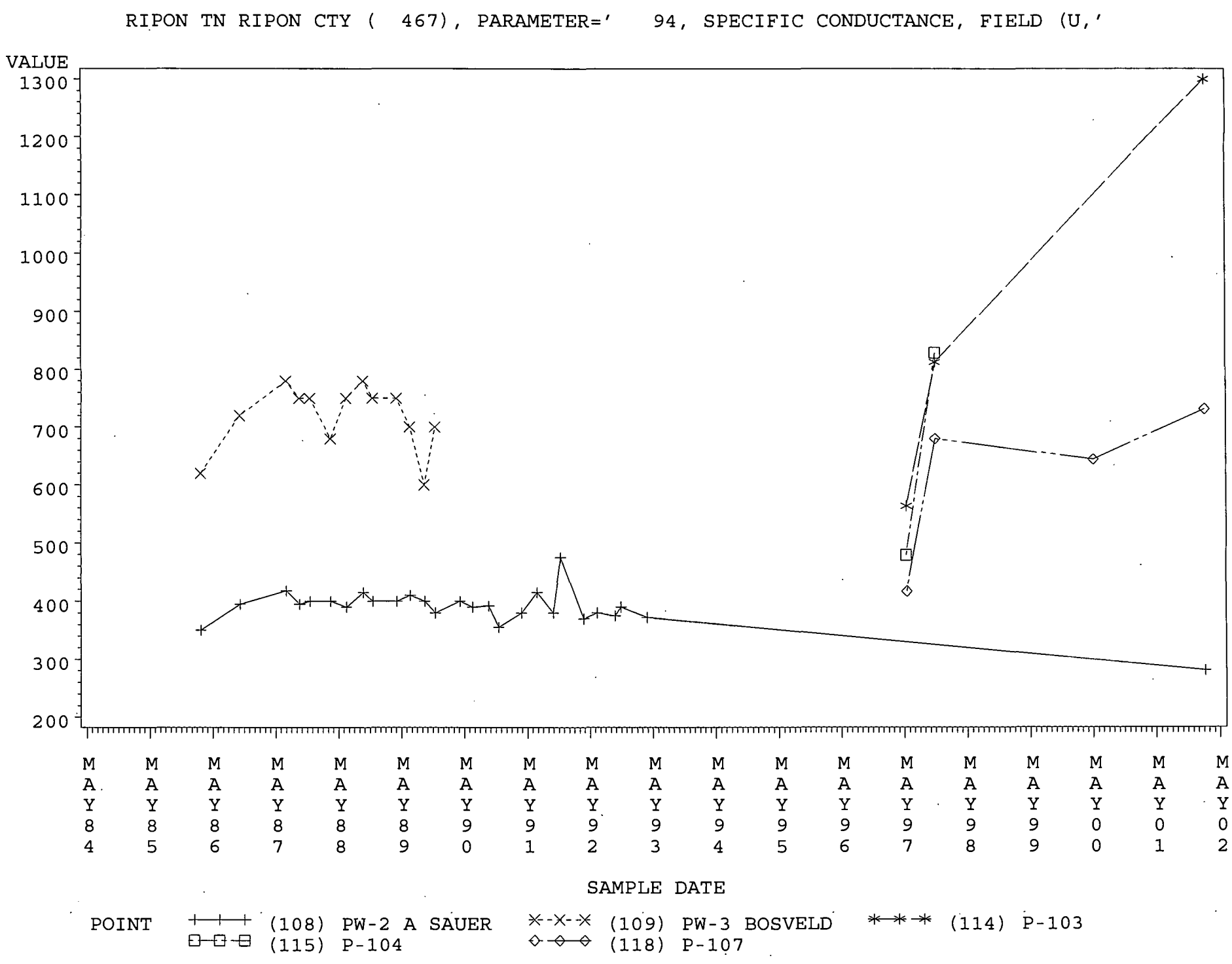


RIPON TN RIPON CTY (467), PARAMETER=' 940, CHLORIDE, TOTAL OR DISSOLVED I,'

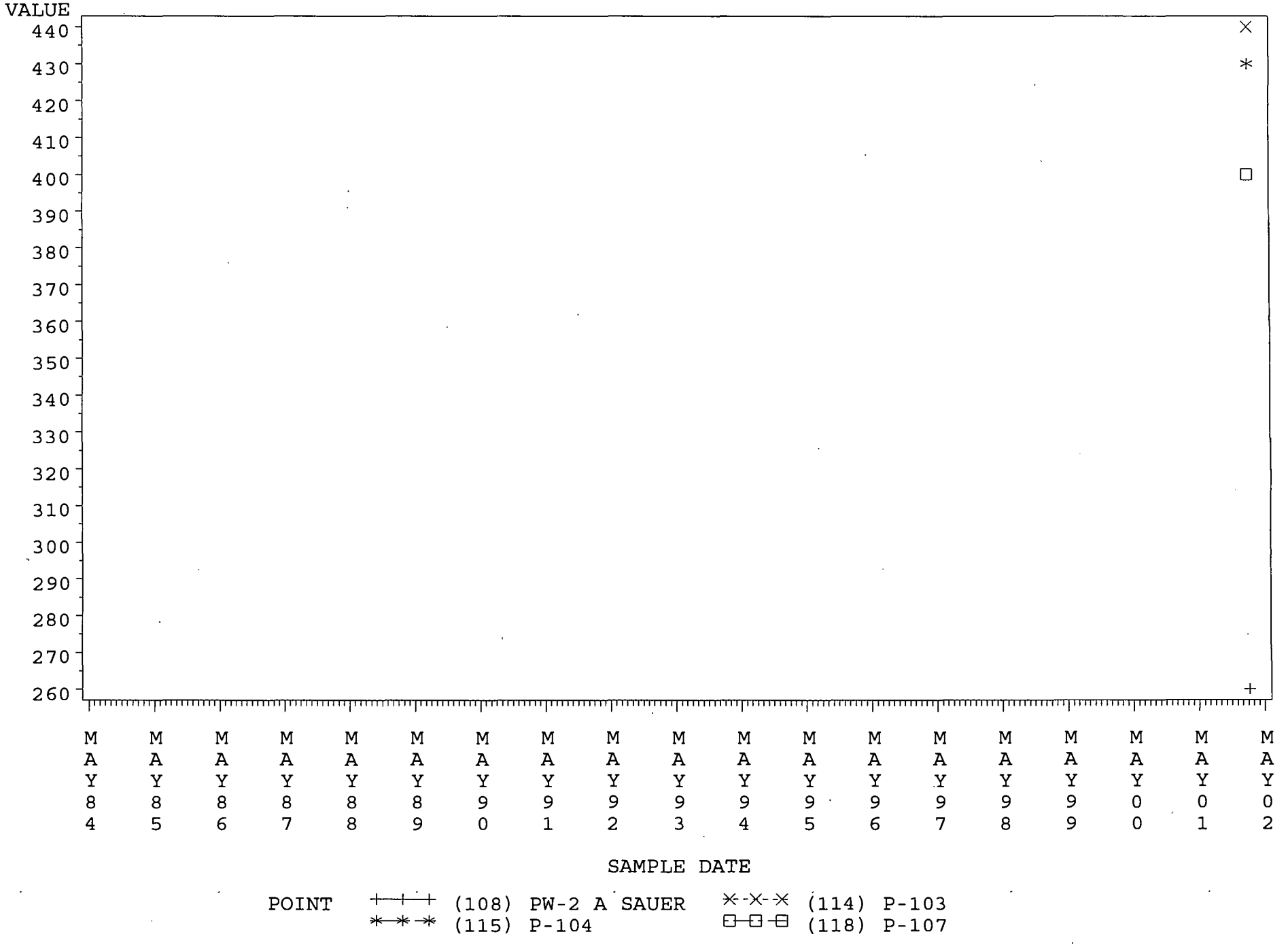


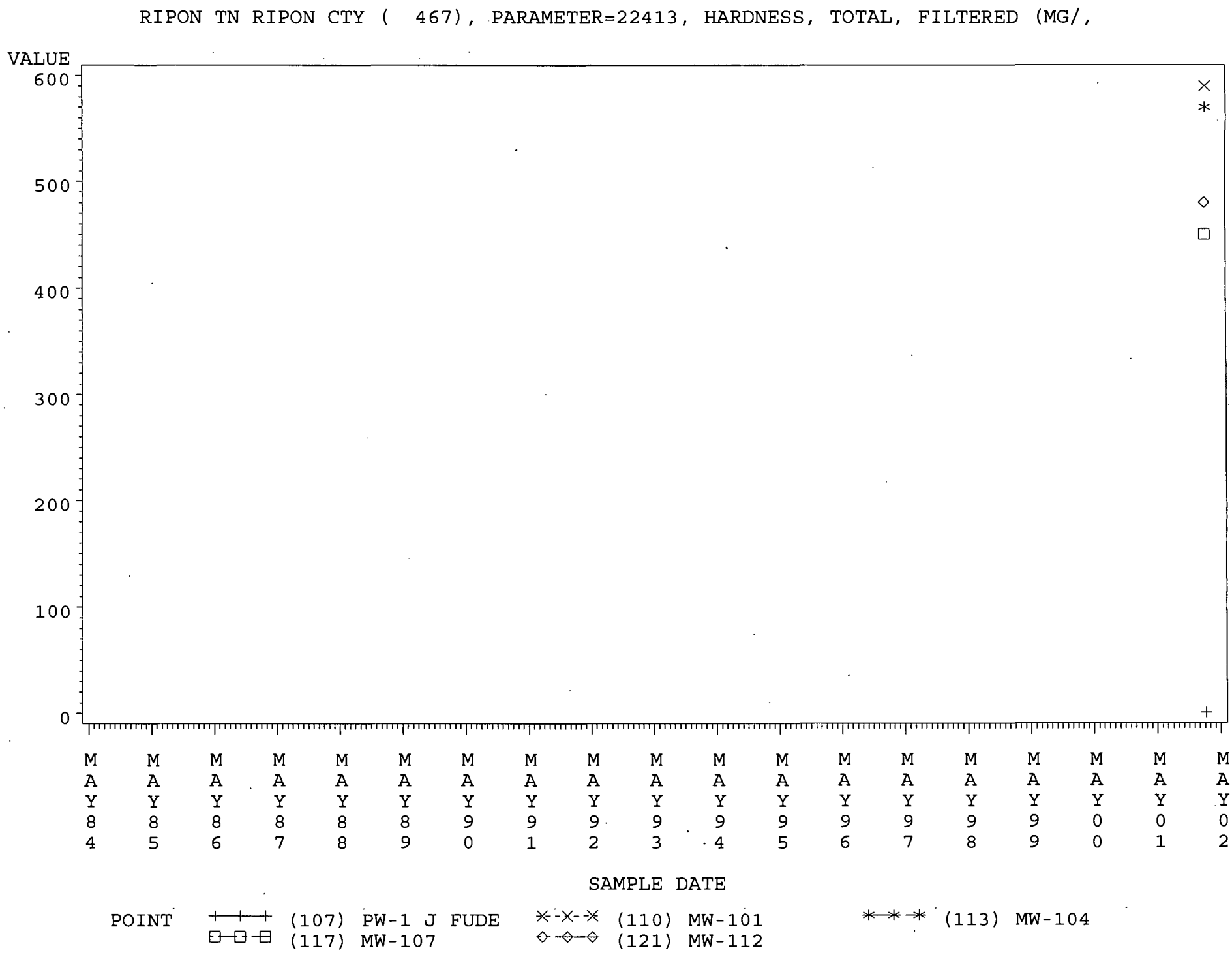
RIPON TN RIPON CTY (467), PARAMETER=' 94, SPECIFIC CONDUCTANCE, FIELD (U,'

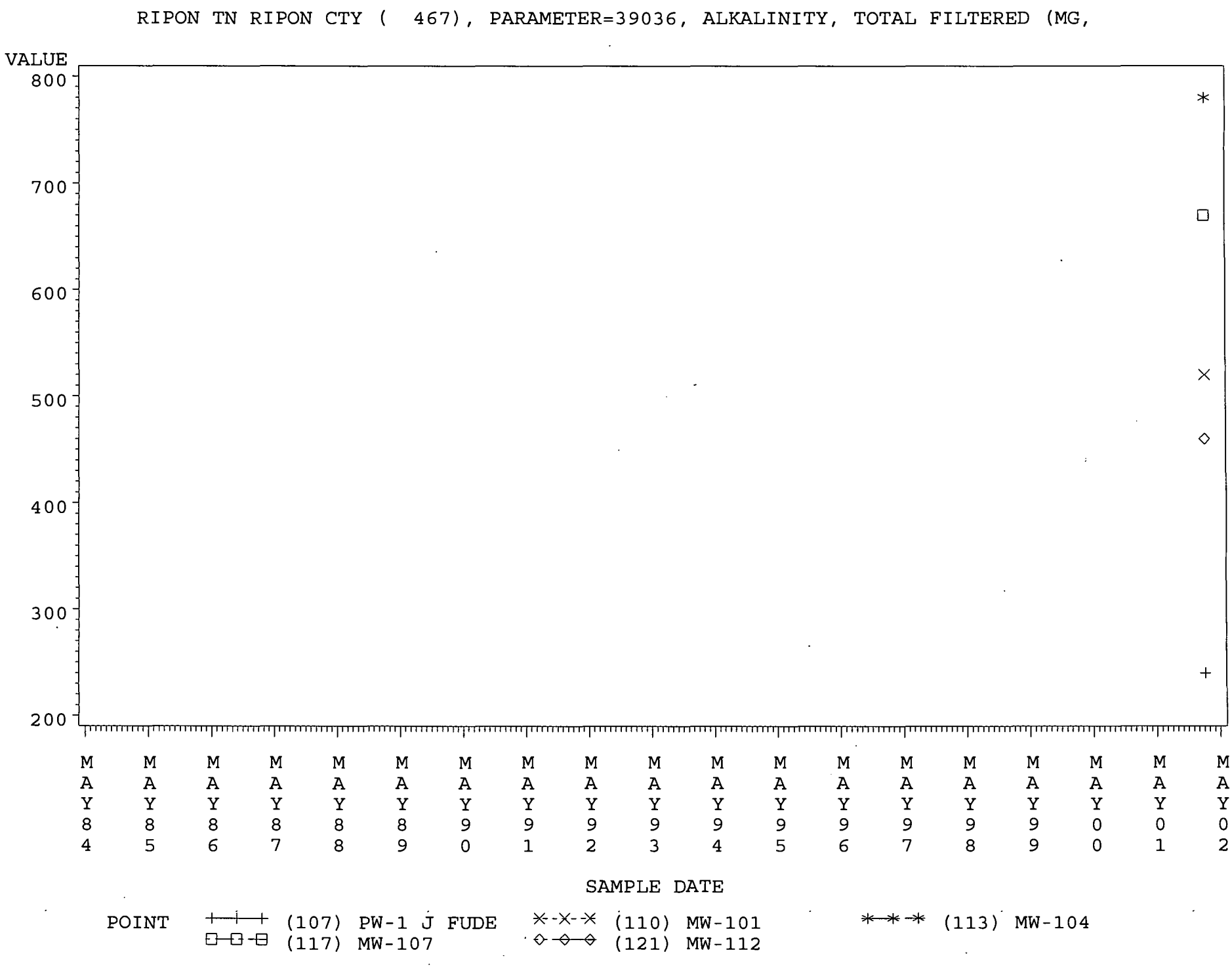



RIPON TN RIPON CTY (467), PARAMETER=' 94, SPECIFIC CONDUCTANCE, FIELD (U,'
VALUE
1300
1200
1100
1000
900
800
700
600
500
400
300
200
MAY84
MAY85
MAY86
MAY87
MAY88
MAY89
MAY90
MAY91
MAY92
MAY93
MAY94
MAY95
MAY96
MAY97
MAY98
MAY99
MAY00
MAY01
MAY02
SAMPLE DATE
POINT
(108) PW-2 A SAUER
(109) PW-3 BOSVELD
(114) P-103
(115) P-104
(118) P-107

RIPON TN RIPON CTY (467), PARAMETER=22413, HARDNESS, TOTAL, FILTERED (MG/,




RIPON TN RIPON CTY (467), PARAMETER=22413, HARDNESS, TOTAL, FILTERED (MG/,
VALUE
600
500
400
300
200
100
0
MAY84
MAY85
MAY86
MAY87
MAY88
MAY89
MAY90
MAY91
MAY92
MAY93
MAY94
MAY95
MAY96
MAY97
MAY98
MAY99
MAY00
MAY01
MAY02
SAMPLE DATE
POINT
(107) PW-1 J FUDE
(110) MW-101
(113) MW-104
(117) MW-107
(121) MW-112


RIPON TN RIPON CTY (467), PARAMETER=39036, ALKALINITY, TOTAL FILTERED (MG,
VALUE
800
700
600
500
400
300
200
MAY84
MAY85
MAY86
MAY87
MAY88
MAY89
MAY90
MAY91
MAY92
MAY93
MAY94
MAY95
MAY96
MAY97
MAY98
MAY99
MAY00
MAY01
MAY02
SAMPLE DATE
POINT
(107) PW-1 J FUDE
(110) MW-101
(113) MW-104
(117) MW-107
(121) MW-112

RIPON TN RIPON CTY (467), PARAMETER=39036, ALKALINITY, TOTAL FILTERED (MG,