1 of Appendix B
MID 064 197 742

US EPA RECORDS CENTER REGION 5
1004367

APPENDIX B

Soil Boring and Monitoring Well Logs

Field Boring Logs for Piezometers Installed during Ancillary Pump Tests (PE1NA, PE4NA, PE10NB, PE13NB, and PE14NC)

(Prepared by Jack Lanigan of BASF)

FIELD BORING LOG
NORTH WORKS, 'A' FIELD REPLACEMENT WELLS

ID # PE-1-NA				Elevation ground surface : 578.23 ft IGLD
Drilled : May 19, 1997				Elevation Piezometer top of riser : 580.32 ft.
By : Carlo Environmental Technologies				Elevation Extraction well top of riser : 579.38 ft.
				Logged by : Jack Lanigan
Depth (ft)	Blows per 6 inches	Percent Recovery	Strata	Field Description
1	4,4			Clay, brown, earthy
2	3,3	80		Coal mixed with gravel, very coarse
3	4,4			
4	5,5	80		DBO, white coarse, H2S odor wet at 4 ft.
5	1.1			DBO white changing to blue
6	1,1	100		Sand, blue, very coarse
7	0.5,0.5		Fill	Clay, brown. DBO white to blue, wet
8	0.5,0.5	100	Peat	Peat and clayey peat, brown, earthy, dry.
9	1,1			Black Clay
10	1,1	50		
11	1,1			Peat and sandy black clay
12	1,1	70		
13	1,1			No recovery
14	1,1	0		
15	2,3		Peat	Peat, clayey grey to black, dry
16	3,4	75	Sand	Sand, grey, fine grained, silty, wet
17	0.5,0.5			very loose
18	2,2	100		
19	1,1			
20	1,1	100		
21	1,2			
22	3,3	100	Sand	
23	4,7		Clay	Clay, grey, moist to damp, stoney, plastic.
24	8,10	100		
25	3,4			
26	4,5	80		
27	4,5			
28	5,7	75		
29			TD	
30				
	Groundwater encountered at 4 and 15 feet during drilling.			
Piezometer Installation Notes:				Extraction Well Installation Notes:
Boring drilled with 4.25 in ID HSAs				Boring drilled with 12 in ID HSAs
Bottom of screen at 20 ft				Bottom of well at 28 ft.
Screen length 5 ft.				Bottom of screen at 25 ft.
Slot size 0.010 in.				Screen length 12 ft 5 in.
Top of sand filter pack at 14 ft.				Slot size 0.020 in.
Top of bentonite seal at 12 ft.				Top of sand filter pack at 10 ft.
Grout to surface.				Top of bentonite seal at 8 ft.
				Grout to 42 in below surface.

FIELD BORING LOG
NORTH WORKS, 'A' FIELD REPLACEMENT WELLS

ID # PE-4-NA				Elevation ground surface : 577.32 ft IGLD
Drilled : May 22, 1997				Elevation Piezometer top of riser : 578.81 ft.
By : Carlo Environmental Technologies				Elevation Extraction well top of riser : 579.08 ft.
				Logged by : Jack Lanigan
Depth (ft)	Blows per 6 inches	Percent Recovery	Strata	Field Description
1	3,2			Topsoil. Clay, sand, cinders, DBO, brick.
2	6,2	100		dry to moist
3	3,2			
4	2,2	100		
5	0.5,0.5			Sand, clayey, damp, med-fine grained.
6	3,2	100		
7	2,2		Fill	
8	2,2	100	Peat	Peat, brown, dry, woody.
9	1,1		Peat	Sandy clay, moist, with peat.
10	2,3	100	Sand	Sand, tight at top, grey, well sorted, damp.
11	2,2			
12	3,5	100		Sand, as above but wet.
13	1,1			
14	1,1	50		
15	1,1			
16	2,2	75		1-in. layer grey clay, damp.
17	1,1			
18	3,4	100	Sand	
19	3,6		Clay	Abrupt and sharp change from sand to clay.
20	8,10	75		Clay, stiff to firm, grey, moist, stoney.
21	3,6			
22	7,9	75		
23	-,3			
24	3,5	75		
25			TD	
26				
27				
28				
29				
30				
	Groundwater encountered at 11 feet during drilling.			
Piezometer Installation Notes:				Extraction Well Installation Notes:
Boring drilled with 4.25 in ID HSAs				Boring drilled with 12 in ID HSAs
Bottom of screen at 17 ft				Bottom of well at 25 ft.
Screen length 5 ft.				Bottom of screen at 22 ft.
Slot size 0.010 in.				Screen length 10 ft.
Top of sand filter pack at 10 ft.				Slot size 0.020 in.
Top of bentonite seal at 9 ft.				Top of sand filter pack at 10 ft.
Grout to surface.				Top of bentonite seal at 8 ft.
				Grout to 42 in below surface.

FIELD BORING LOG
NORTH WORKS 'B' FIELD REPLACEMENT WELLS

ID # PE-10-NB				Elevation ground surface : 576.37 ft.
Drilled : June 19, 1997				Elevation Piezometer top of riser : 578.19 ft.
By : Carlo Environmental Technologies				Elevation Extraction well top of riser : 577.21 ft.
				Logged by : Jack Lanigan
Depth (ft)	Blows per 6 inches	Percent Recovery	Strata	Field Description
1				
2				Drilled w/out sampling
3	0.5,0.5			
4	1,1	50		Clayey gravel and cinders.
5	3,1			
6	1,1	50		Coal, cinders, DBO, black, wet.
7	1.1			
8	2,3	50		Coal and cinders, black, wet.
9	0.5,0.5			
10	0.5,1	50		
11	0.25,0.25			
12	0.25,0.25	20	Fill	
13	0.25,0.25		Clay	Clay, very soft, grey, lean, damp,
14	0.25,0.25	100		some roots
15	0.5,0.5			Damp to dry peaty layer 6 in. thick at 15.5 ft.
16	0.5,1	100		Clay grading into silty sand, mottled grey-br-yel.
17	1,1		Sand	Sand grey-yellow/tan, soft, wet, med grained,
18	3,4	100		well sorted. PDC odor throughout sand layer.
19	1,3			
20	3,4	50		
21	4,7			
22	11,15	100		
23	4,8			Sand mottled tannish-grey w/ black sploches.
24	11,11	100		
25	2,5			
26	8,10	100	Clay	Clay, grey, 4 in. soft & moist, then firm
27			TD	to hard, grey, dry, stoney till
28				
29				
30				
	Groundwater encountered at 4 and 16 feet during drilling.			
Piezometer Installation Notes:				Extraction Well Installation Notes:
Boring drilled with 4.25 in ID HSAs				Boring drilled with 12 in ID HSAs
Bottom of screen at 25 ft				Bottom of well at 28 ft.
Screen length 5 ft.				Bottom of screen at 25 ft.
Slot size 0.010 in.				Screen length 9 ft.
Top of sand filter pack at 16 ft.				Slot size 0.020 in.
Top of bentonite seal at 14 ft.				Top of sand filter pack at 14 ft.
Grout to surface.				Top of bentonite seal at 12 ft.
				Grout to 42 in below surface.

FIELD BORING LOG
NORTH WORKS, 'B' FIELD REPLACEMENT WELLS

ID # PE-13-NB				Elevation ground surface : 575.72 ft.
Drilled : June 12, 1997				Elevation Piezometer top of riser : 577.64 ft.
By : Carlo Environmental Technologies				
				Logged by : Jack Lanigan
Depth (ft)	Blows per 6 inches	Percent Recovery	Strata	Field Description
1				
2				Drilled w/out sampling.
3	2,2			
4	2,1	75		Clay, DBO, Cinders
5	3,3			Cinders, brick, sand, gravel
6	5,6	75		
7	1,1			
8	1,1	50		Cinders, black coarse.
9	0.5,0.5			
10	0.5,0.5	25	Fill	
11	0.5,0.5		Peat	Peat, brn, dry to damp,fiberous
12	0.5,0.5	50	Peat	Peat, clayey, soft, w/ roots, damp to moist.
13	0.25,0.25		Clay	Clay, tan to brn-gray, v. wet, v. soft, v. lean.
14	0.25,0.25	100		
15	0.25,0.25			
16	0.5,0.5	75	Sand	Sand, fine grained, blue-grn, stiff.
17	0.5,0.5		Clay	Clay, silty blue-grn.
18	0.5,0.5	100	Sand	Sand blue-grn at top then brn, w/ oily
19	0.5,0.5			appearence.
20	1,2	100		V. thin gravel layer at base.
21	0.5,0.5		Clay	Clay, brn, silty, stiff-firm, moist.
22	1,1	100		
23	3,1		Sand	Sand gray, med-fine grained, wet, sticky
24	0.5,0.5	100		Sand, as above but brn. V. thin gravel layer at base
25	1,1		Clay	Clay, gray, lean, solf, moist
26	0.5,0.5	100		Clay, as above and sticky.
27	0.25,0.25			
28	0.5,1	75		
29	0.25,1			
30	1,1	100		Clay, as above but w/ stones.
31			TD	
	Groundwater encountered at 3 and 13 feet during drilling.			
Piezometer Installation Notes:				
Boring drilled with 4.25 in ID HSAs				
Bottom of screen at 20 ft				
Screen length 5 ft.				
Slot size 0.010 in.				
Top of sand filter pack at 13 ft.				
Top of bentonite seal at 10 ft.				
Grout to surface.				

FIELD BORING LOG
NORTH WORKS 'C' FIELD REPLACEMENT WELLS

ID # PE-14-NC				Elevation ground surface : 582.62 ft.
Drilled : June 12, 1997				Elevation Piezometer top of riser : 583.38 ft.
By : Carlo Environmental Technologies				
				Logged by : Jack Lanigan
Depth (ft)	Blows per 6 inches	Percent Recovery	Strata	Field Description
1				Gravel fill, drilled w/out sampling
2				
3				
4				
5	3,1			6" DBO white, sandy, limey: 6" Cinders, black
6	1,1	50		Cinders, black
7	2,1		Fill	
8	0.5,0.5	75	Peat	Peat, clayey,blk, dry, soft; Clay brown w/ sand.
9	1,1		Peat	Clay, silty, black, moist grades to yellow-brown
10	1,1	90	Sand	Sand, moist to wet, fine-med grained,
11	1,1			well sorted.
12	2,3	90		
13	1,1			
14	3,4	100		Sand, as above.
15	0.5,0.5			
16	0.5,0.5	100		Sand, slightly coarser and darker.
17	0.5,0.5			
18	1,1	75		Sand, as above but gray.
19	1,3			
20	4,7	100		
21	0.5,0.5		Sand	Sand w/ v. thin layer gravel at base.
22	3,4	100	Clay	Clay, silty, brn-gray, moist, but dry at base.
23	3,4			
24	7,7	100		Clay, soft, brn-gray, stoney.
25			TD	
26				
27				
28				
29				
30				
	Groundwater encountered at 3 and 10 feet during drilling.			
Piezometer Installation Notes:				
Boring drilled with 4.25 in ID HSAs				Placed 4" by 5' stainless-steel pipe around
Bottom of screen at 20 ft				riser and filled w/ cement. Pipe to protect
Screen length 5 ft.				well while rebuilding gravel bank at building
Slot size 0.010 in.				foundation.
Top of sand filter pack at 13 ft.				
Top of bentonite seal at 10 ft.				
Grout to surface.				

Test Well Records for MDNR Wells Installed in 1981
(DNR 4 and DNR 6)

(Prepared by Michigan Department of Natural Resources)

ENVIRONMENTAL QUALITY
GROUNDWATER INVESTIGATION UNIT

EE_

TEST WELL RECORD

WELL NO. BW 4

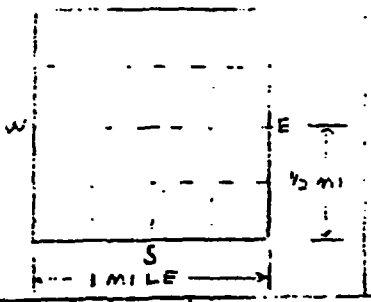
PROJECT: BASF WYANDOTTE

PERMIT NO. 914-812-48

LOCATION
COUNTY: WAYNE Co
TOWNSHIP NAME | FRACTION ¼ ¼ ¼ | SECTION NO. | TOWN T3S N/S | RANGE R11E
STREET ADDRESS AND CITY OF WELL LOCATION

PROPERTY OWNER: BASF WYANDOTTE
ADDRESS:

LOCATION IN SECTION (MARK WITH "X")



SKETCH MAP OF LOCATION

SEE SITE MAP

N ↑

WELL DEPTH (COMPLETED): 9
DATE OF COMPLETION: 6-2-81
DRILLING METHOD(S): HSA
DEPTH(S): 12

CASING: DIAMETER 2 IN, LENGTH 9 FT
IN, FT.
HEIGHT ABOVE SURFACE 2.9 FT
TYPE GAL WEIGHT

SCREEN: TYPE SS WW, DIAM. 2"
SLOT/GAUGE 7-10?, LENGTH 2'
SET BETWEEN 7 FT. AND 9 FT.

WATER LEVELS
FIRST NOTED AT 6-24-81 FT BELOW SURFACE
AFTER COMPLETION 7.65 FT BELOW SURFACE OR CASING TOP X
[illegible] 6.48 9-14-8
GRD 583.5 TOC 585.55

SEALING METHOD
1/3 SACK DRY BENTONITE

CREW INGALLS, PARISH, SLTER

RECORD BY [illegible]

DATE

REMARKS
SAMPLE TYPE: AF = AUGER FLIGHT, SS = SPLIT SPOON

DEPTH FROM	DEPTH TO	THICKNESS OF STRATUM	DESCRIPTION	SAMPLE IDENTIFICATION NO.	SAMPLE TYPE
0	4		Limestone fines and stones to 1" diam, grey		AF
4	5	5	LS, as above		SS
5	9		"Cinders", black		AF
9	10		"Cinders" black		SS
10	11		3" LS & Sand, fine, grey 3" "Cinders", black sweet smell		SS
11	12	7	1" LS mud, grey 1" cinders black sweet odor		SS

SAND PACKED - 1½ Sks silica sand
2 shovels cuttings
1/3 sack dry bentonite

PLUGGING AND ABANDONMENT METHOD

DATE
CREW
RECORD BY

- - - - - INVESTIGATION UNIT

TEST WELL RECORD

EE

WELL NO. BW 6

PROJECT: BASF WYANDOTTE

PERMIT NO. 914-812-48

LOCATION

COUNTY: WAYNE | TOWNSHIP NAME: | FRACTION: ¼ ¼ ¼ | SECTION NO.: | TOWN: T3S N/S | RANGE: R11E

STREET ADDRESS AND CITY OF WELL LOCATION

PROPERTY OWNER: BASF WYANDOTTE

ADDRESS:

LOCATION IN SECTION [MARK WITH "X"]

N

W — E

S

½ mi

← 1 MILE →

SKETCH MAP OF LOCATION [No SCALE]

SEE SITE MAP

N ↑

WELL DEPTH (COMPLETED): 12.4 | DATE OF COMPLETI: 6-11-81

DRILLING METHOD(S): HSA | DEPTH(S): 13

CASING: DIAMETER 2" IN. | LENGTH 13'3" FT. | HEIGHT ABOVE SURFA 2.6 FT

___ IN. | ___ FT. | TYPE 6A | WEIGHT ___

SCREEN: TYPE SS WW | DIAM. 2"

SLOT/GAUZE 7-10? | LENGTH 2'

SET BETWEEN 10.4 FT. AND 12.4 FT.

WATER LEVELS

FIRST NOTED AT ___ FT BELOW SURFAC

AFTER COMPLETION 6-24-81 5.41 FT BELOW SURFACE ☐ OR CASING TOP ☒

SURFACE ELEVATION 9-14-81 5.1

GRD 580.4 T.O.C. 583.66

SEALING METHOD: 20 lb Volclay

DEPTH FROM	DEPTH TO	THICKNESS OF STRATUM	DESCRIPTION	SAMPLE IDENTIFICATION NO	SAMPLE IDENTIFICATION TYPE
0	2	2	RUBBLE		AF
2	5	3	Sand & Silt, black, compact 1ft recovery		AF
5	7	2	8" Silt & Sand, grey with some brown, compact	BW6A	SS
			4" black "cinder" material		
7	10	3	(1ft recovery)	BW6B	SS
			6" cindery, black		
			6" asphaltic material black, hard, odor		
10	12	2	(16" recovery)		SS
			6" cinders, black		
			2" hard material, white		
			8" Sand, fine, brown modenately compact		
12	13	1	(AUGERED) no recovery		

CREW: INGALLS, PARISH, ELTZRO

RECORD BY: Elmer E. Eltzroth

DATE

REMARKS

SAND PACKED - 1 2/3 sacks

PLUGGING AND ABANDONMENT METHOD

DATE

CREW

RECORD BY

Well Logs for Piezometers Installed in 1983 and 1984 (P4N, P12N, P27N, P34N, P37N, and P39N)

(Prepared by S.S. Papadopulos & Associates)

S. S. PAPADOPULOS & ASSOCIATES, INC.

PROJECT BASF Wyandotte Corporation

DRILLING RECORD

DRILLER John Corbin, Trenton, MI

DEPTH FROM	TO	STRATA THICK	DESCRIPTION	REMARKS
0	1.5	1.5	Cinder, black	weathered
1.5	5.0	3.5	Limewaste	
5.0	7.0	2.0	Waste, black, fibrous and sand, etc.	
7.0	16.5	9.5	Sand, gray, medium	
16.5	18.0	1.5	Clay, bluish gray stiff, pebbles	

OWNER BWC NUMBER P-4-N

DATE COMPLETED 11-8/14-83

DRILLING METHOD 6" auger

CASING STRING 2 +5 +5 +6.9+ + = +18.5 (B S S)

TYPE Sched. 40 PVC DIAM. 2" ID

DEPTH 16+ +HT ABOVE LS 2.5

MP ELEVATION 579.80 (+2.4)

SCREEN

TYPE Sched. 40 PVC DIAM. 2"ID

LENGTH 10' SLOT

DEPTH SET FROM 4' TO 14'

GRAVEL RECORD METHOD pour in 4" pipe from surfac

TYPE Spec. sand #0 # OF BAGS 1

DEPTH BOTTOM 16 TOP ±3

BENTONITE SEAL pellets (1 1/2 gals)

DEPTH BOTTOM ±3 TOP ±2

GROUT RECORD

TYPE I GP concrete mix # OF BAGS 1 1/3

DEPTH BOTTOM ±2 TOP 0

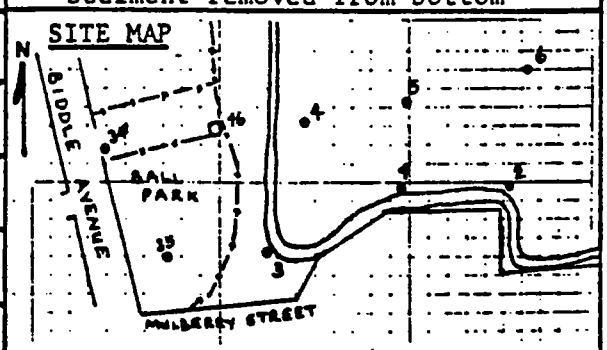
DEVELOPMENT RECORD DATE 12-8-83

TIME 20 minutes METHOD(S) cf. pump

PUMPING RATE ? D/D very little

HOW MEASURED? pumped foam after sediment removed from bottom

SITE MAP



REMARKS Temp. 4" pipe to 17' drilled out by mud rotary, PVC casing installed in 4" pipe and sand poured in as 4" pipe with drawn

WATER LEVEL 4.00 below PVC 12/8/83

S. S. PAPADOPULOS & ASSOCIATES, INC.

PROJECT BASF Wyandotte Corporation

DRILLING RECORD

DRILLER John Corbin, Trenton, MI

DEPTH FROM	TO	STRATA THICK	DESCRIPTION	REMARKS
0	2.0	2.0	Soil, tan, cobbles of limestone	
2.0	9.0	7.0	Cinders, black, wood, stones, gray (crushed)	
9.0	11.5	2.5	Limestone, crushed	
11.5	12.0	0.5	Clay, peaty, leaves, etc. @11.5	
12.0	20.0	8.0	Sand, medium to fine, brown	
20.0	21.0	1.0	Clay, blue, stiff	

OWNER BWC NUMBER P-12-N

DATE COMPLETED 11-15-83

DRILLING METHOD 6" auger

CASING STRING $\frac{2}{B} + \frac{5}{S} + \frac{5}{S} + \frac{5}{S} + \frac{0.5}{B} + \frac{5}{B} \pm 1 = \pm 2$

TYPE Sched. 40 PVC DIAM. 2" ID

DEPTH 20.5 +HT ABOVE LS 2.3

MP ELEVATION 578.85 (+2.3)

SCREEN

TYPE Sched. 40 PVC DIAM. 2" ID

LENGTH 15 SLOT .020"

DEPTH SET FROM 3.5 TO 18.5

GRAVEL RECORD METHOD pour in 4"

TYPE Special sand #0 # OF BAGS 2

DEPTH BOTTOM ±20 TOP ±3

BENTONITE SEAL

DEPTH BOTTOM ±3 TOP ±2 1/2

GROUT RECORD pellets

TYPE I GP concrete mix # OF BAGS 1 1/2

DEPTH BOTTOM ±2 1/2 TOP 0

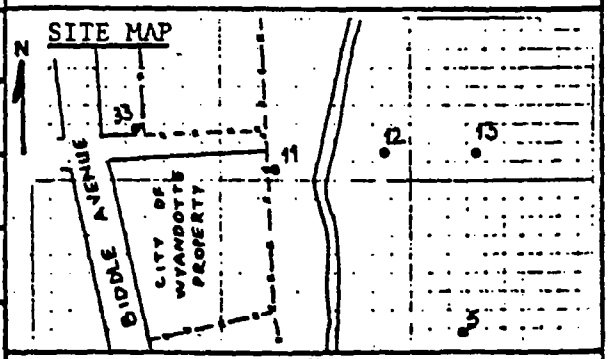
DEVELOPMENT RECORD DATE 12-8-83

TIME 20 minutes METHOD(S) Cf. pump

PUMPING RATE 5 gpm D/D foam

HOW MEASURED? bucket

SITE MAP



REMARKS Temp. 4" pipe installed and cleaned by mud rotary to 20.5. Install 2" PVC in 4" and poured sand in 4" as 4" withdrawn.

WATER LEVEL 3.13 below PVC 12-8-83

PROJECT BASF Wyandotte Corporation

DRILLING RECORD

DRILLER
John Corbin
Trenton, MI

DEPTH FROM	DEPTH TO	STRATA THICK	DESCRIPTION	REMARKS
0	3.0	3.0	Lime waste, granular (fines) and crushed rock	
3.0	6.0	3.0	Cinders, black	
6.0	9.5	3.5	Cinders, crushed stone	
9.5	10.5	1.0	Peat, black	
10.5	12.0	1.5	Sand, clayey, black to tan	
12.0	15.0	3.0	Sand, tan, medium	
15.0	23.0	8.0	Sand, fine to medium, gray	
23.0	24.0	1.0	Clay, gray, stiff	

OWNER BWC NUMBER P-27-N

DATE COMPLETED 11-22-83

DRILLING METHOD 6" auger

CASING STRING 2+ 5+ 5+ 5+ 5+ 5+0.5+1= 27
B S S S S B B

TYPE Sched. 40 PVC DIAM. 2" ID

DEPTH 25 +HT ABOVE LS ±2

MP ELEVATION 585.06 (+2.1)

SCREEN

TYPE Sched. 40 PVC DIAM. 2" ID

LENGTH 20 SLOT .020"

DEPTH SET FROM 3 TO 23

GRAVEL RECORD METHOD pour in 4"

TYPE Special sand #0 # OF BAGS 3 1/2

DEPTH BOTTOM ±25 TOP ±3

BENTONITE SEAL 1 1/2' pellets

DEPTH BOTTOM ±3 TOP ±1 1/2

GROUT RECORD

TYPE I GP concrete mix # OF BAGS 1

DEPTH BOTTOM ±1 1/2 TOP 0

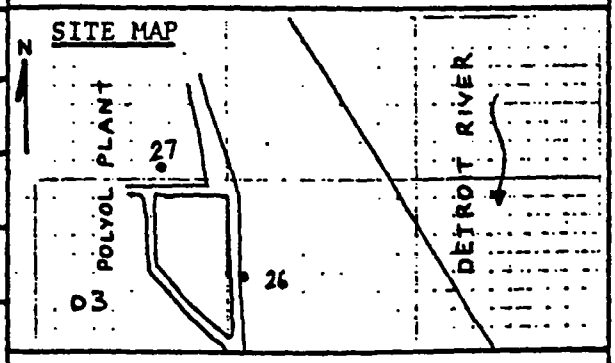
DEVELOPMENT RECORD DATE 12-9-83

TIME 25 minutes METHOD(S) Cf. pump

PUMPING RATE 4 gpm D/D

HOW MEASURED? bucket

SITE MAP



REMARKS Temp. 4" pipe drilled out to 25' by mud rotary. PVC casing installed in 4" and sand added as 4" pipe withdrawn.

WATER LEVEL 6.83 below PVC 12-9-83

NUMBER P-27-N

S. S. PAPADOPULOS & ASSOCIATES, INC.

PROJECT BASF Wyandotte Corporation

DRILLING RECORD

DRILLER John Corbin, Trenton, MI

DEPTH FROM	TO	STRATA THICK	DESCRIPTION	REMARKS
0	1.5	1.5	Cinders, black	
1.5	2.9	1.4	Clay, sandy	
2.9	4.5	1.6	Sand, medium, tan	
4.5	7.0	2.5	Clay, brown and gray, stiff	

OWNER BWC NUMBER P-34-N

DATE COMPLETED 11-23-83

DRILLING METHOD 6" auger

CASING STRING 2 + 5 + 0.5 + 3.5 + + = +9
B S B B

TYPE Sched. 40 PVC DIAM. 2" ID

DEPTH 7 +HT ABOVE LS 1.6

MP ELEVATION 577.20 (+1.5)

SCREEN

TYPE Sched. 40 PVC DIAM. 2" ID

LENGTH 3 SLOT .020"

DEPTH SET FROM 2 TO 5

GRAVEL RECORD METHOD pour from surface

TYPE Special sand #0 # OF BAGS ?

DEPTH BOTTOM ±7 TOP ±1.5

BENTONITE SEAL pellets

DEPTH BOTTOM ±1.5 TOP ±1

GROUT RECORD

TYPE I GP concrete mix # OF BAGS 1/2

DEPTH BOTTOM ±1 TOP 0

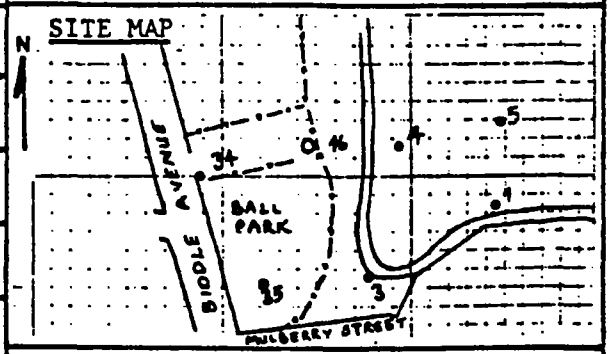
DEVELOPMENT RECORD DATE 12-13-83

TIME 12 minutes METHOD(S) cf. pump

PUMPING RATE .5cp/min D/D cleared quickly fairly well

HOW MEASURED? bucket

SITE MAP



REMARKS PVC casing installed in open hole and sand added from surface.

WATER LEVEL 1.68 below PVC 12-13-83

S. S. PAPADOPULOS & ASSOCIATES, INC.

PROJECT BASF Wyandotte Corporation

DRILLING RECORD

DRILLER Corbin Drilling Co. Gary Qualls

DEPTH FROM	TO	STRATA THICK	DESCRIPTION	REMARKS
0	8.5	8.5	Fill, Cinders, sand, gravel	water @ ±4
8.5	11.5	3.0	Sand, black, peat, etc.	
11.5	22.5	11.0	Sand, gray, medium	
22.5	23.5	1.0	Clay, gray, stiff	

Remarks:
Washed out with tubing and mud pump-set casing and sand collapsed around PVC when tubing pulled ~~so only 1/3 of bag of~~ sand from 5' to 3.3'

OWNER BWC NUMBER P-37-N

DATE COMPLETED 5-21-84

DRILLING METHOD 6" auger

CASING STRING $\frac{2}{B}+\frac{5}{S}+\frac{5}{S}+\frac{5}{S}+\frac{3}{S}+\frac{5}{B}=24.46'$

TYPE Sched. 40 PVC DIAM. 2"

DEPTH 22 +HT ABOVE LS 2.3

MP ELEVATION 583.57 (581.16 GR)

SCREEN

TYPE Sched. 40 PVC DIAM. 2"

LENGTH 18 SLOT .020

DEPTH SET FROM 4 TO 22

GRAVEL RECORD METHOD

TYPE Special sand #0 # OF BAGS 1/3

DEPTH BOTTOM 5 TOP 3.3'

BENTONITE SEAL pellets

DEPTH BOTTOM 3.3' TOP 2.5'

GROUT RECORD

TYPE Portland cement # OF BAGS 3/4

DEPTH BOTTOM 2.5 TOP 0

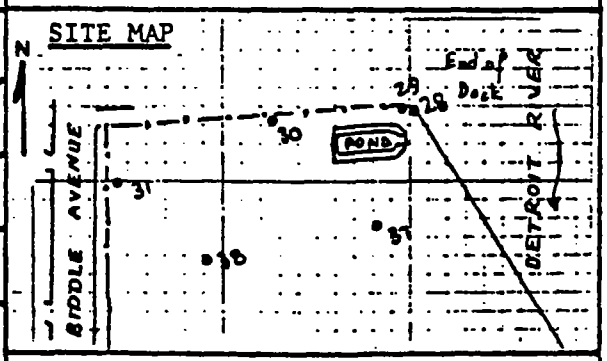
DEVELOPMENT RECORD DATE 5/24/84

TIME 25 minutes METHOD(S) pump

PUMPING RATE ±3 gpm D/D

HOW MEASURED? estimated

SITE MAP



REMARKS 12:45 to 3:20 P.M.

(N 2773.86 E 176.05)

WATER LEVEL ±6.5 5/24/84

NUMBER P-37-N

S. S. PAPADOPULOS & ASSOCIATES, INC.

PROJECT BASF Wyandotte Corporation

DRILLING RECORD

DRILLER Corbin Drilling Co. Gary Qualls

DEPTH FROM	TO	STRATA THICK	DESCRIPTION	REMARKS
0	3.5	3.5	Cinders, clay, black, fill	
3.5	5.0	1.5	Lime fines and waste, fill	water @ ±3
5.0	7.0	2.0	Cinders, gravel, fill	
7.0	10.0	3.0	Clay, black, some sand, organic waste (?)	
10.0	12.0	2.0	Sand, gray, medium, some clay, black	
12.0	23.5	11.5	Sand, gray, medium and fine	
23.5	24.5	1.0	Clay, blue-gray, smooth	
			Remarks:	
			Casing scrunched down when cover pushed in but 10' piece of A-rod entered easily.	

OWNER BWC NUMBER P-39-N

DATE COMPLETED 5-22-84

DRILLING METHOD 6" auger

CASING STRING 2 B +5 S +5 S +5 S +5 B +.05 and piece=25.68

TYPE Sched. 40 PVC DIAM. 2"

DEPTH 22.5' +HT ABOVE LS +1.2

MP ELEVATION 582.61 (581.41 GR)

SCREEN

TYPE 40 PVC DIAM. 2"

LENGTH 20 SLOT .020

DEPTH SET FROM 0.5 TO 20.5

GRAVEL RECORD METHOD Tremie

TYPE Special sand #0 # OF BAGS 1/2

DEPTH BOTTOM 10 TOP 0.5'

BENTONITE SEAL pellets

DEPTH BOTTOM 0.5 TOP 0.1

GROUT RECORD

TYPE Portland cement # OF BAGS 1/4

DEPTH BOTTOM 0.1 TOP +.2

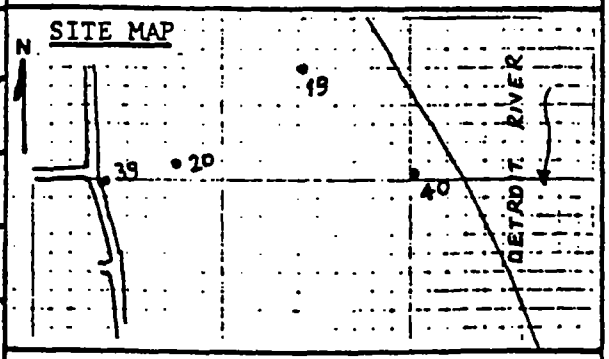
DEVELOPMENT RECORD DATE 5/24/84

TIME 10 minutes METHOD(S) Pump

PUMPING RATE 2-3 gpm D/D

HOW MEASURED? estimated

SITE MAP



REMARKS 8:25 to 10:30

(N 1208.57 E 348.27)

WATER LEVEL 4.23' 5/24/84

Soil Boring Logs for RFI Monitoring Wells

Log of Boring RFISB01

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/6/96*	**Date Completed:** *8/6/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB01

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	42				Sand & gravel with brick, cinders, ashes. Dry.	SP			
2					Cinders & ashes black. Dry.	PT			
	10				DBO yellow. Moist.	CL			
4									
	16								
6					DBO grey-white.				
	77					CL			
8					SAA- Saturated @ 8'.				
	71								
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB01-1

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/7/96*	**Date Completed:** *8/7/96*	**Total Depth Drilled (ft.):** *18*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-18	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB01-1

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2									
4									
6									
8									
					Drilled down to 10' and then spooned.				
10	24								
12	7				DBO white-yellow, slimy.	CL			
14	1								
16	1								
					Peat brown-black, some wood.	PT			
18					End of Boring				
20									

Log of Boring RFISB01A

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/6/96*	**Date Completed:** *8/6/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *9*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB01A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	25				Sand & gravel white with black cinders & ashes. Dry.	SP			
2									
	17								
4					SAA- some brick.				
	7								
6									
	3				SAA- some clay. Moist.	SC			
8									
	4				DBO brown-tan with some sand. Saturated @ 9'.	CL			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB01A1

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/7/96*	**Date Completed:** *8/7/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB01A1

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2									
4									
6									
8									
					Drilled down to 10' and then spooned.				
10					DBO, sand, some clay.				
	24								
12					SAA- some gravel.	CL			
	17								
14					DBO white-yellow, slimy.	CL			
					Tar	PT			
16					Peat	PT			
					End of Boring				
18									
20									

Log of Boring RFISB01B

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/6/96* **Date Completed:** *8/6/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *9*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB01B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	23				Sand, gravel, brick.	SP			
2									
	16				SAA- some black cinders & ashes, white DBO.				
4									
	5				Sand, Cinders, Ashes, Brick black, moist.	SP			
6									
	4								
8									
	27				DBO, gravel, cinders. Saturated @ 9'.	CL			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB01B1

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/7/96* **Date Completed:** *8/7/96*	**Total Depth Drilled (ft.):** *14*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-14	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB01B1

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2									
4									
6									
8									
					Drilled down to 10' and then spooned.				
10									
	28		/100						
12					Gravel, cinders, ash, sand. Saturated.	GP			
	119		/100						
14					End of Boring				
16									
18									
20									

Log of Boring RFISB02

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/6/96* **Date Completed:** *8/6/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *8.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB02

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	22								
2									
	21				Cinders, ash, brick, silt, little gravel. Dry.				
4									
	9					PT			
6									
	4				SAA- some clay.				
8					Saturated.				
	4								
10			0.0						
	1								
12					Gravel, brick, cinders, slight odor.				
	7					GP			
14									
	4								
16					Peat in bottom of spoon.	PT			
					End of Boring				
18									
20									

Log of Boring RFISB02A

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/6/96*	**Date Completed:** *8/6/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *9*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB02A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	17		/0.0		Cinders, ash, brick, gravel black. Dry.				
2					SAA- some DBO.				
	50		/0.0						
4					SAA- no DBO, some clay.	PT			
	8		/0.0						
6									
	5		/0.0		SAA- Moist.				
8									
	2		/0.0						
10					Clay some gravel, cinders, brick. Saturated @ 9'.	CL			
	1		/0.0						
12									
	2		/0.0		Gravel little clay & cinders, trace sand.	GC			
14					Clay with sandy gravel, cinders.	CL			
	9		/90						
					Tar like material	PT			
16					End of Boring				
18									
20									

Log of Boring RFISB02B

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/6/96*	**Date Completed:** *8/6/96*	**Total Depth Drilled (ft.):** *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-14	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB02B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	20		/0.0		Limestone gravel white, black cinders & ashes. Dry.	GP			
2									
	14		/0.0		Gravel, cinders, ashes, brick, white DBO.				
4									
					SAA- Moist.				
	17		/0.0			GP			
6									
					SAA- some clay.				
	20		/0.0						
8									
	13		/ <1						
10									
					Gravel with little sand. Saturated @ 8'.	GW			
	18		/ <1						
12									
	14		/100		SAA- @ 13'- tar like material, odor, just above peat.				
					Peat	PT			
14					End of Boring				
16									
18									
20									

Log of Boring RFISB03

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/8/96* **Date Completed:** *8/8/96*	**Total Depth Drilled (ft.):** *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *11*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-11	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB03

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	17		/0.0		Gravel white, black cinders & ash.	GP			
2									
	3		/0.0		DBO yellow, silty.	CL			
4									
	1		/0.0						
6									
	11		/0.0		DBO yellow-white.				
8						CL			
	1		/0.0						
10									
	1		/100.0		SAA- Saturated @ 11'.				
12									
	1		/200		Tar like substance black, silty, peat-like.	PT			
14					End of Boring				
16									
18									
20									

Log of Boring RFISB04

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/8/96*	**Date Completed:** *8/8/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *14*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	29		/0.0						
2									
	34		/0.0						
4									
	31		/0.0		Limestone grave, sand, cinders, ash, brick. Dry.				
6									
	37		/0.0						
8						GP			
	15		/0.0						
10									
	12		/0.0						
12									
	5		/10						
14					SAA- Saturated				
	8		/70						
16					Tar like material	PT			
					End of Boring				
18									
20									

Log of Boring RFISB04A

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/8/96*	**Date Completed:** *8/8/96*	**Total Depth Drilled (ft.):** *18*
Apparent Depth to Saturation While Drilling (ft. bgl): *13.75*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-18	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	23		/0.0		Gravel, sand, brick, little cinders.	GP			
2									
	28		/0.0						
4					Cinders, ash, sand, brick black.				
	12		/0.0						
6					SAA- some black gravel.	PT			
	19		/0.0						
8									
	27		/0.0						
10					Cinders, ash, little brick. Dry.				
	58		/0.0						
12									
	8								
14					Saturated @ 13.75.	PT			
	5		/2.0		SAA- some gravel & clay.				
16									
	23		/25		SAA- little tar like material.				
18					End of Boring				
20									

Log of Boring RFISB04B

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/8/96*	**Date Completed:** *8/8/96*	**Total Depth Drilled (ft.):** *18*
Apparent Depth to Saturation While Drilling (ft. bgl): *12*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-18	**Grout Type:** Bentonite & Cement Slurry

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	23		/0.0		Limestone & gravel white-grey, sand, brick.	GP			
2									
	11		/0.0						
4									
	7		/0.0		Cinders & ash black, gravel, brick.	PT			
6									
	44		/0.0		Gravel & sand grey, little brick, cinders.	GP			
8									
	35		/6.0		Cinders, ash, little brick, & gravel, black. Saturated @ 12'.	PT			
10									
	86								
12									
	14		/6.0						
14									
	32		/30		DBO grey, little gravel.	CL			
16									
	38		/60		Cinders, ash, gravel, very silty, some DBO.	PT			
18					End of Boring				
20									

Log of Boring RFISB04C

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/8/96*	**Date Completed:** *8/8/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04C

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	17		/0.0		Sand & gravel, little clay, trace brick.				
2									
	35		/0.0						
4					SAA- cinders & ash.	SP			
	18		/0.0						
6									
	14		/0.0						
8									
	96				Limestone gravel, brick. Refusal @ 9'.	GP			
10									
	147		/200		Cinders, ashes, gravel, brick odor.	PT			
12					End of Boring				
14									
16									
18									
20									

Log of Boring RFISB04D

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/9/96*	**Date Completed:** *8/9/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04D

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	28		/0.0		Gravel, sand, brick. Dry.	SP			
2									
	111		/0.0						
4					Cinders, ash, sand, gravel, brick.	PT			
	61		/0.0						
6									
	80		/0.0		Limestone gravel, stone, trace sand. Saturated @ 6'.	GW			
8									
	111		/40		Gravel, cinders, ash, white DBO, little sand.	GP			
10									
	118		/100		Gravel & cinder/ coal like material.	PT			
12					End of Boring				
14									
16									
18									
20									

Log of Boring RFISB04E

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/9/96*	**Date Completed:** *8/9/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04E

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	58		/0.0		Limestone gravel, sand, cinders, ash, brick. Dry.	GP			
2									
	112		/0.0		Limestone gravel, sand.				
4					SAA- Saturated @ 4'.	GP			
	69		/0.0						
6									
	146		/20		Gravel, cinders, ashes, coal like material.	PT			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB04F

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/9/96*	**Date Completed:** *8/9/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04F

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	97		/0.0		Cinders, ash, sand, limestone gravel, brick.	PT			
2									
	144		/0.0		Limestone gravel, sand.	GP			
4					SAA- Saturated @ 4'.				
	42		/0.0						
6									
	112		/10		Cinders, ash, gravel, sand.	PT			
8									
	20		/100		Cinders, ash, gravel, coal like material.	PT			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB04G

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/9/96*	**Date Completed:** *8/9/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04G

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	62		/0.0		Limestone gravel, sand, cinder, ash. Dry.	GP			
2									
	181		/0.0		Limestone gravel tan, sand & stones.	GP			
4					SAA- Saturated @ 4'.				
	138		/0.0						
6									
	147		/50						
					Coal like material, hard.	PT			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB04H

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/9/96*	**Date Completed:** *8/9/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04H

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	91		/0.0		Limestone gravel, sand, cinder, ash. Dry.	GP			
2									
	142		/0.0						
4									
	67		/0.0		Limestone gravel, little sand. Saturated @ 4'.	GP			
6									
	51		/50		Cinders, ashes, coal like material silty, hard.	PT			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB04I

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/9/96*	**Date Completed:** *8/9/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04I

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	77		/0.0						
2									
	123		/0.0						
4					Limestone gravel, sand, ashes. Dry. Saturated @ 4'.	GP			
	46		/0.0						
6									
	118		/40						
					Coal like material, cinders, ashes black.	PT			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB04J

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/12/96*	**Date Completed:** *8/12/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04J

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	60								
2			/0.0		Limestone fill tan, sand. Dry.	GP			
4			/0.0		Limestone gravel grey. Saturated.	GP			
6									
8			0.0 /600		Coal tars black.	PT			
					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB04K

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/12/96*	**Date Completed:** *8/12/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04K

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	82		/0.0		Limestone fill tan, with fines. Dry.	GP			
2									
	177		/0.0						
4									
	42		/6.0		Limestone/gravel grey. Saturated.	GW			
6									
			/400		Coal tars black.	PT			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB04L

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/12/96*	**Date Completed:** *8/12/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04L

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	51		/0.0		Limestone fill tan, fines. Dry.	GP			
2									
	95		/0.0						
4									
	58		/7.0		Limestone/gravel grey. Saturated.	GW			
6									
	66		0/ 100		Coal tars black.	PT			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB04M

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/12/96*	**Date Completed:** *8/12/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *5.8*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB04M

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
			/0.0		Limestone fill tan, sand. Dry.	GP			
2	68		/0.0						
4	71		/15		Limestone fill tan, sand, slight trace of coal. Saturated.	GP			
6	107		0/ 130		Coal tars black.	PT			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB05

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/13/96*	**Date Completed:** *8/13/96*	**Total Depth Drilled (ft.):** *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-14	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB05

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	12		/0.0						
2					DBO white.				
	2		/0.0						
4					SAA- some sand & clay.				
	2		/0.0						
6						CL			
	4		/0.0						
8					SAA- Saturated.				
	1								
10									
	1		/40						
12					Cinders & ash black, little sand & gravel, odor.	PT			
					DBO	CL			
	1		/60						
					Silt black, traces of sand.	MH			
14					End of Boring				
16									
18									
20									

Log of Boring RFISB05A

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/13/96*	**Date Completed:** *8/13/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *10*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB05A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	29		/0.0		Gravel, sand, brick, ashes, cinders.	GP			
2					DBO yellow-white.	CL			
	2		/0.0						
4									
	2		/0.0		DBO white.	CL			
6									
	2		/0.0						
8									
	1		/0.0						
10									
	1		/10		DBO cream & yellow-white. Saturated @ 10'.	CL			
12									
	1		/10						
14									
	1		/70		Silt & gravel black, odor.	MH			
16					Sand brown-grey, fine to medium grained.	SW			
					End of Boring				
18									
20									

Log of Boring RFISB05B

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/13/96*	**Date Completed:** *8/13/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *10.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB05B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	23		/0.0		Gravel, sand, brick black, silt.	GP			
2									
	10		/0.0		Sand with yellow-creme DBO.	SC			
4									
	1		/0.0						
6					BO yellow-creme.				
	1		/10						
8									
	1		/10			CL			
10					SAA- little gravel. Saturated @ 10.5'.				
	1		/0.0						
12									
	1		/0.0						
14					Silt black, some organics.	OL			
	1		/1000						
					Gravel, cinders, ash, silt black, odor.	GP			
16					End of Boring				
18									
20									

Log of Boring RFISB05C

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/13/96* **Date Completed:** *8/13/96*	**Total Depth Drilled (ft.):** *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *10*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-14	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB05C

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	23		/0.0		Sand & gravel, brick, ashes. Dry.	SP			
2									
	7		/0.0		Gravel & sand with yellow-white DBO. Moist.	GP			
4									
	2		/0.0						
6					DBO cream-white.				
	2		/0.0						
8					SAA				
	2		/100			CL			
10					SAA- some cinders & ash. Saturated.				
	1		/100						
12					SAA				
	1		/500						
14					End of Boring				
16									
18									
20									

Log of Boring RFISB05D

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/13/96* **Date Completed:** *8/13/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB05D

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	36		/10		Gravel, sand, cinders, ashes. Dry. SAA- little brick.	GP			
2	104		/5						
4					Silt black, little sand & gravel.	MH			
	6		/250		DBO grey, little cinders.	CL			
6	1		/10		DBO grey-crean. Saturated.	CL			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring RFISB05E

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/13/96* **Date Completed:** *8/13/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB05E

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	27		/0.0		Sand, clay, gravel, brick, ash.	SC			
2									
	8		/350		Cinders, ash, coal like material.	PT			
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring RFISB05F

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/13/96* **Date Completed:** *8/13/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB05F

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	45		/0.0		Sand & gravel, brick, trace DBO.	SP			
2									
	105		/600		Sand & silt black, silt, wood, little DBO & gravel.	SM			
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring RFISB06

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/14/96*	**Date Completed:** *8/14/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl): *2.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB06

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	30		/100		Gravel, sand, cinders, ash, brick. Saturated @ 2.5'.	GP			
2									
	13		/600						
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring RFISB07

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/14/96*	**Date Completed:** *8/14/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB07

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GP			
	43		/80		Cinders, ash, gravel, brick, little sand, odor.				
2						PT			
	10		/100		SAA-some grey DBO, granular. Saturated.				
4									
	6		>1000		Cinders, ash, gravel black, strong odor.				
6					SAA-little grey DBO, strong odor, sheen.				
	4		>1000			PT			
8									
	2								
					Peatlike material silty, organics.	PT			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB08

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/14/96* **Date Completed:** *8/14/96*	**Total Depth Drilled (ft.):** *7*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-7	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB08

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	24		/<1						
2									
	18		/<1		Gravel, sand, & clay, little cinder & ash. SAA-Saturated.	GP			
4									
	15		/30						
6					Sand brown-grey some blue-green, clayey, little gravel. Refusal @ 7'.	SC			
	9		/80		End of Boring				
8									
10									
12									
14									
16									
18									
20									

Log of Boring RFISB09

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/14/96*	**Date Completed:** *8/14/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB09

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GP			
	17		/0.0		Sand & gravel, cinder, ash, brick.				
2					SAA-except some clay.	GP			
	14		/0.0						
4					SAA-a little brick.				
	12		/100						
6					Cinders & ash black, gravel, odor. Saturated.				
	9		/10		SAA-odor.	PT			
8									
	9		/100						
10					Silt black, odor.	OL			
					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB10

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/14/96*	**Date Completed:** *8/14/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB10

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	10		/0.0						
2					Cinders, ash, gravel, brick black.				
	16		/0.0		SAA-Saturated.				
4									
	12		/100			PT			
6									
	14		/100						
8									
	9		/300						
					Silt black, some organics.	OL			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB11

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/14/96* **Date Completed:** *8/14/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *1.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB11

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GP			
	8		/0.0		Sand, silt, gravel, cinder, ash, brick. SAA-Saturated.	SM			
2									
	53		/3.0						
4					Cinders, ash, gravel, wood odor.				
	25		/500						
6						PT			
	20		/100						
8									
	4		/500						
					Silt black, peatlike, organics.	OL			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB12

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Carlo Env. Tech*	
Drilling Rig: *CME*	**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/15/96* **Date Completed:** *8/15/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB12

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	14		0.0/ 0.0		Limestone gravel, sand.	GP			
2					Sand black, silty, ashlike with gravel & a little DBO. Dry. Saturated @ 3'.	SM			
	8		0.0/ 50						
4									
	15		0.0/ 600						
6					Cinders & ash black.	PT			
	4		0.0/ 550						
8									
	1		0.0/ >1000		Silt peatlike material, organics.	OL			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB13

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/15/96*	**Date Completed:** *8/15/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB13

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	14		0.0/ 5.0		Clay, gravel, sand, little cinder.	CL			
2									
	15		17.1/ 400		Cinders, ash, gravel, brick black, odor. Saturated @ 3'. SAA-some clay.	PT			
4									
	14		2.3/ 200		SAA-clay & cinders.				
6									
	5		243/ >1000						
8									
	10		222/ >1000		Silt black, organics, odor.	OL			
10					Sand blue, green, brown & grey, little silt.	SM			
					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB14

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/15/96*	**Date Completed:** *8/15/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB14

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	16		0.0/ 0.0		Cinders, ash, gravel, & brick black.				
2									
	7		0.0/ 0.0		SAA-Saturated.				
4									
	16		0.0/ 0.0			PT			
6									
	11		0.0/ 0.0						
8									
	4		0.0/ 10		Silt black, organics.	OL			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB15

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/15/96*	**Date Completed:** *8/15/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB15

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	30		0.0/ 0.0		Sand, gravel, cinder, ash, brick. Dry.	SP			
2									
	24		0.0/ 5.0		SAA-Saturated.				
4									
	13		0.0/ 40		SAA-odor.				
6									
	8		0.0/ 100						
8									
	4		0.0/ 70						
					Silt black, peatlike material, organics.	OL			
10					Sand grey-brown, silty.	SM			
					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB16

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/15/96*	**Date Completed:** *8/15/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB16

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0	29		6.8/ 0.0		Gravel, sand, clay, stones.	GP			
2	92		0.0/ 0.0		Cinders, ashes, gravel, brick.	PT			
4	19		1.2/ 100		SAA-little clay & sand. Saturated.				
6	8		0.0/ >1000						
8	4		0.0/ 400		Peatlike material black, silty, organics.	PT			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB17

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/16/96*	**Date Completed:** *8/16/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *2*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB17

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Asphalt				
	11		0.0/ 0.0		Sand, gravel, cinders, ash, brick. Saturated @ 2'.	GP			
2									
	10		0.0/ 40						
4									
	16		0.0/ 200		Sand grey-brown, little black cinders & ashes, little grey DBO.	SC			
6									
					DBO grey and fine grained sand.	CL			
	7		3.4/ 600		Cinders & ash black.	PT			
					Peatlike material black, silty, organics.	PT			
8									
	7		3.9/ 600		Silt black, little sand.	ML			
					Sand brown, trace gravel & silt.	SP			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB18

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/16/96*	**Date Completed:** *8/16/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *2*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB18

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	17		0.0/ 0.0		Clay, sand, cinders, ash, brick, little silt.	CL			
2					Sand, gravel, ashes. Saturated from 2'-2.25'.	SP			
	12		0.0/ 25		DBO grey-white, granular.	CL			
4									
	20		0.0/ 75.0		Cinders, ash, gravel.	PT			
6									
	6		0.0/ 400		DBO grey.	CL			
8					Silt black, some organics.	OL			
	10		0.0/ 100		Sand brown, little silt & organics. SAA-brown-black.	SM			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB19

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/16/96*	**Date Completed:** *8/16/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *2.75*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB19

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Gravel & sand**	GP			
	15		0.0/ 0.0						
2					**Cinders & ash**, gravel. Dry. Saturated @ 2.75'.	PT			
	31		0.0/ <1.0						
4					**Clay** grey, sand, gravel.	CL			
	14		1.1/ 150						
6					**Cinders & ashes** black, gravel.	PT			
	4		2.8/ 350		**DBO** white, gravel, cinders & ashes.	CL			
8					**Silt** black, peatlike.	OL			
	4		0.0/ 300						
10					**Sand**, little silt.	SM			
					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB20

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/16/96*	**Date Completed:** *8/16/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *2*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB20

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	16		0.0/ 5.5		Gravel, clay, cinder, ash, brick.	GP			
2									
	14		3.4/ 100		Cinder, ash, gravel, trace silt, slight "tar" odor. Saturated @ 2'.				
4									
	4		7.3/ 50		SAA-strong "tar" odor.	PT			
6									
	5		14.7/ 550		Silt black, peatlike, organics.	OL			
8									
	1		1.1/ 200		Sand brown-green, little silt & organics.	SM			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB21

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2" Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/19/96*	**Date Completed:** *8/19/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *7*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB21

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Grass	CL			
	38		0.0/ 0.0		Gravel, sand, clay.	GP			
2									
	48		0.0/ 5.0						
4					Gravel, sand, clay, silt, cinder, ash, brick.				
	99		0.0/ 45			GP			
6									
	29		0.0/ 35.0		SAA-Saturated.				
8									
	6		0.0/ 90.0		Gravel, cinder, ash black.	GP			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB22

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/19/96*	**Date Completed:** *8/19/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB22

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	31		0.0/ 0.0		Limestone gravel, sand, little clay.				
2									
	15		0.0/ 2.0		SAA-little cinder & ash.	GP			
4									
	3		0.0/ 0.0		Clay, gravel, cinder, ash, DBO, little sand. Saturated @ 5'.	CL			
6									
	7		0.0/ 30.0		Cinder, ash, gravel black.				
8						PT			
	9		0.0/ 40.0						
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB23

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/19/96*	**Date Completed:** *8/19/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB23

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	18		0.0/ 0.0		**Limestone gravel**, sand, clay, gravel, cinders, ashes.	GP			
2									
	48		5.8/ 70.0		**Cinder & ash**, sand, brick, grey-silvery coallike material.	PT			
4									
	8		1.5/ 8.0						
6									
	10		0.0/ 35.0		**Sand**, gravel, cinders, ashes, brick. Saturated @ 4'.	SP			
8									
	5		0.0/ 75.0						
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB24

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/19/96*	**Date Completed:** *8/19/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB24

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
	33		0.0/ 0.0		Sand, clay, gravel, brick.	SC			
2									
	20		0.0/ 0.0		Clay, sand, gravel, cinders, ashes, brick. Moist.	SC			
4									
	6		0.0/ 0.0		Clay grey-brown, some gravel, trace DBO. Saturated @ 5'.	CL			
6									
	11		0.0/ 60						
8									
	7		0.0/ 65.0		Cinders, ashes, gravel.	PT			
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB25

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2" Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/19/96*	**Date Completed:** *8/19/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB25

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Gravel	GW			
	14		0.0/ 0.0						
2					Limestone gravel, cinders, ashes.	GP			
	14		0.0/ 0.0		SAA-some brick. Moist.				
4									
	8		0.0/ 0.0		Clay, some gravel, little cinders, ashes, brick. Saturated @ 5'.				
6									
	4				SAA-little sand.	CL			
8									
	2								
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring RFISB26

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		**Drilling Method:** *Hollow Stem Auger*
Soil Sampling Device: *2' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *8 7/8*
Date Started: *8/20/96*	**Date Completed:** *8/20/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte Northworks

Log of Boring RFISB26

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Gravel**	GW			
	11		0.0/ 0.0						
2									
	12		0.0/ 0.0		**Gravel, sand** tan, little clay. Moist. Saturated @ 3.5'.	GP			
4									
	9		1.1/ 500		SAA-some wood.				
6									
	27		201.1/ >1000		**DBO** grey-white yellow, some gravel.	CL			
8									
					Peatlike material brown-black, silty, organics.	PT			
	3		107.1/ >1000		**Sand** brownish-green, silt, little gravel.	SM			
10					End of Boring				
12									
14									
16									
18									
20									

RFI Monitoring Well Logs

Log of Well RFIMW01

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/31/96*	Date Completed: *07/31/96*	Total Depth Drilled (ft.): *24*
Apparent Depth to Saturation While Drilling (ft. bgl): *2.5*		Ground Elevation (ft.): *577.23*

Completion Information

Screened Interval (ft. bgl): *19-21*	Filter Pack Interval (ft. bgl): *14-23*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *11-14*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *23-24*
Total Casing (ft.): *23*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-11*
Top of Casing Elevation (ft.): *576.67*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

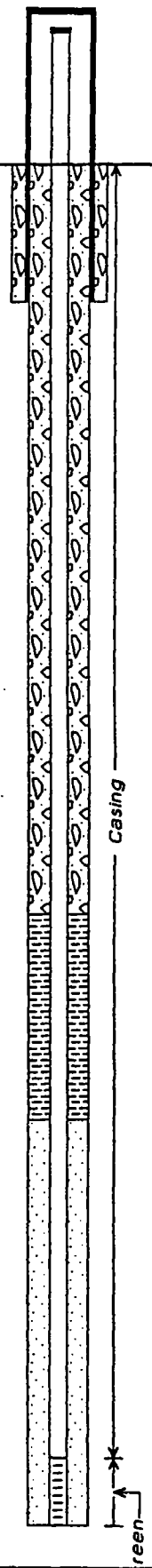
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW01

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Gravel.**	GP				577.2
			Gravel, clay, sand, brick tan-white. Dry.	CL				
2			**Cinder, ash, gravel** black. Saturated @ 2.5'.	PT				575.2
4			**DBO Material** yellow-red with gravel & sand mixed in.	CL				573.2
6								571.2
8			**DBO** white-grey-yellow-red, some gravel.	CL				569.2
10			**Silt** brown, trace gravel & clay, some organics, slimy.	OL				567.2
12			SAA-except hint of green-blue.					565.2
14			**Sand** brown, some silt, trace gravel, organics, & shells.	SM				563.2
16			SAA-some grey.					561.2
18			SAA-some black.					559.2
20								557.2



BASF Wyandotte Northworks

Log of Well RFIMW01

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20			becoming more clay like.	SM		Sump Casing, Screen		557.2
22			Clay brown-grey mottled, trace gravel, soft.	CH				555.2
24			End of Boring					553.2
26								551.2
28								549.2
30								547.2
32								545.2
34								543.2
36								541.2
38								539.2
40								537.2

Log of Well RFIMW02

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/26/96*	Date Completed: *07/26/96*	Total Depth Drilled (ft.): *28*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		Ground Elevation (ft.): *577.95*

Completion Information

Screened Interval (ft. bgl): *23-25*	Filter Pack Interval (ft. bgl): *20-27*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *17-20*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *27-28*
Total Casing (ft.): *25*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-17*
Top of Casing Elevation (ft.): *580.05*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW02

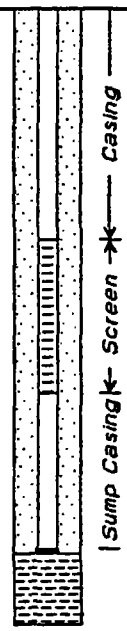
Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Elevation (ft.)
0					**Topsoil.**	CL	577.9
2					**Limestone gravel, stone, sand,** trace clay.	GP	575.9
4			0.0		SAA-slight odor. Saturated.	GP	573.9
6							571.9
8					**Rocks & gravel.** Auger refusal after 8".	GP	569.9
10					**Cinders, ashes, gravel, brick** black. Saturated.	PT	567.9
12					**Silt** brown-grey, very clayey, little sand & gravel, some wood & rocks.	ML	565.9
14					**Silt** brown, little grey becoming like peat, some organics.	OL	563.9
16					**Silt & sand** brown-grey, little gravel.	ML	561.9
18							559.9
20					**Sand** grey, lots of silt, little gravel & shells.	SM / ML	557.9

Well Construction

BASF Wyandotte Northworks

Log of Well RFIMW02

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
20									557.9
					Silt & sand brown-grey, trace clay.				
22									555.9
					SAA-becoming grey & clayey with depth some shells, gravel, & organics.	ML			
24									553.9
26									551.9
					Clay little grey, soft.	CL			
28					End of Boring				549.9
30									547.9
32									545.9
34									543.9
36									541.9
38									539.9
40									537.9



Log of Well RFIMW03

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/26/96*	Date Completed: *07/26/96*	Total Depth Drilled (ft.): *24*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		Ground Elevation (ft.): *578.84*

Completion Information

Screened Interval (ft. bgl): *18-20*	Filter Pack Interval (ft. bgl): *15-22*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *12-15*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *22-24*
Total Casing (ft.): *20*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-12*
Top of Casing Elevation (ft.): *581.06*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW03

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Topsoil**	CL		22'		578.8
2			**Limestone gravel & stone** white. Dry.	GP				576.8
4			**Limestone gravel & stone** white with a little sand & clay. Saturated @ 4'.	GP				574.8
6			**Limestone gravel** white-black, some sand & clay.	GP				572.8
8			**Cinders, ashes, brick, gravel** black.	PT				570.8
10			**Silt** brown-grey, clayey, sandy, trace gravel.	ML		Casing		568.8
12			**Clay** brown, some gravel, sand, silt.	CL				566.8
			Sand grey, medium grained, little gravel.	SW				
14			**Peat** brown, some wood.	PT				564.8
			Clay brown, some gravel, sand, silt, wood.	CL				
16			**Silt** grey-brown, some clay & sand, little gravel. SAA-some wood.	ML				562.8
18			becoming sandier with depth.			Screen		560.8
20								558.8

BASF Wyandotte Northworks

Log of Well RFIMW03

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20				ML		Sump Casing		558.8
22			Clay brown-grey mottled, little gravel, medium stiffness.	CL				556.8
24			End of Boring					554.8
26								552.8
28								550.8
30								548.8
32								546.8
34								544.8
36								542.8
38								540.8
40								538.8

Log of Well RFIMW04

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/22/96*	Date Completed: *07/22/96*	Total Depth Drilled (ft.): *20*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.50*		Ground Elevation (ft.): *577.91*

Completion Information

Screened Interval (ft. bgl): *8-10*	Filter Pack Interval (ft. bgl): *5-14*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.): *2*	Upper Seal Interval (ft. bgl):
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *14-20*
Total Casing (ft.): *10*	Lower Seal Type: *Bentonite chip*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl):
Top of Casing Elevation (ft.): *580.39*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type:

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW04

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0									577.9
	42	60%	0		**Sand** brown, fine grained, with silt and some roots. Grass surface	SM			
2					**Gravel & sand** black, with slag, trace brick.				575.9
	25	60%	>0		SAA - with less gravel & trace lime powder DBO. Wet @ 3.5'.	GP			
4									573.9
	NR	NR			Refusal (concrete).				
6									571.9
	1	80%	0		**Clay** grey, with silt, very soft. Wet. Appears as native?	CL			
8									569.9
	1	60%							
10					**Brick & Sand** fine grained, silty.	SP			567.9
	2	60%			**Clay** brown, with silt. Very soft. Wet.	CH			
12			3						565.9
	2	75%			**Clay** with lots of organics, grass, peaty, trace of wood chunks. Moist to wet.	OH			
14									563.9
	0	NA			**Clay** greenish-blue with trace of organic material. Soft. Wet.	CH			
16									561.9
	7	NA							
18									559.9
	7	NA							
20									557.9

Log of Well RFIMW05

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/22/96*	Date Completed: *07/22/96*	Total Depth Drilled (ft.): *20*
Apparent Depth to Saturation While Drilling (ft. bgl): *6.00*		Ground Elevation (ft.): *580.07*

Completion Information

Screened Interval (ft. bgl): *13-15*	Filter Pack Interval (ft. bgl):
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.): *2*	Upper Seal Interval (ft. bgl):
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl):
Total Casing (ft.): *15*	Lower Seal Type: *Bentonite chip*
Casing Type/Dia. (in.): *S.S. 2*	Grout Interval (ft. bgl):
Top of Casing Elevation (ft.): *582.21*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type:

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stack.

BASF Wyandotte Northworks

Log of Well RFIMW05

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0					**Sand** brown, fine grained, with silt and some roots. Grass surface	SM		2.14'	580.0
		40%			**Cinders & Ash** black, with slag.	GC			
2									578.0
	19	NA							
4									576.0
		40%							
6			0					Casing	574.0
	38	NA							
8									572.0
		60%			DBO white, powder like. Some gravel with depth. Pasty in some areas. Saturated @ 6'.	CL			
10					SAA – except greys a little with more cinder looking material that is black.				570.0
	13	NA							
12									568.0
	1	5%						Screen	
14									566.0
		5%						Sump Casing	
16									564.0
	6	60%			Clay grey, medium stiff, appears as native. Wet.				
18						CL			562.0
	3	75%							
20									560.0

Log of Well RFIMW06

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/18/96*	Date Completed: *07/18/96*	Total Depth Drilled (ft.): *20*
Apparent Depth to Saturation While Drilling (ft. bgl): *6.0*		Ground Elevation (ft.): *579.43*

Completion Information

Screened Interval (ft. bgl): *13.0-15.0*	Filter Pack Interval (ft. bgl): *6.0-14.0*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.): *2*	Upper Seal Interval (ft. bgl): *3-6*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *14.0-20.0*
Total Casing (ft.): *11.0*	Lower Seal Type: *Bentonite chip*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-3*
Top of Casing Elevation (ft.): *581.30*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

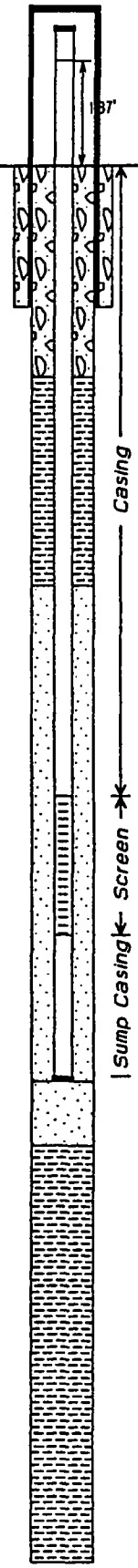
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW06

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Topsoil** tan	CL				579.4
2								577.4
4								575.4
6			**Cinders, Ash, Gravel, Brick and Sand** black. Saturated @ 6.0'.	GP				573.4
8								571.4
10								569.4
12			**Silty clayey substance** white, some gravel.	CL				567.4
14								565.4
			DBO white. Paste like.	CL				
16			**Clay like material** blue green.	CL				563.4
			Silty material black.	MH				
			Clay & silt material, varigated layers of white, green, brown, grey.	CL				
18								561.4
			Clay brown-grey mottled, some silt & gravel. Medium stiff. Damp.	CL				
20								559.4



Log of Well RFIMW07

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/24/96*	Date Completed: *07/24/96*	Total Depth Drilled (ft.): *28*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*		Ground Elevation (ft.): *587.13*

Completion Information

Screened Interval (ft. bgl): *16-18*	Filter Pack Interval (ft. bgl): *12-20*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.): *2*	Upper Seal Interval (ft. bgl): *9-12*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *20-28*
Total Casing (ft.): *18*	Lower Seal Type: *Bentonite.*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *2-9*
Top of Casing Elevation (ft.): *589.39*	Grout Type: *Neat cement with bentonite.*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *Y*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW07

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0					**Sand** tan, fine grained with trace of limestone gravel.	SW		2.28'	587.1
		60%							
2					**Sand, Cinders, and Coal** black.				585.1
		100%			SAA - with more coal & cinders, less sand.				
4						SP			583.1
			.8						
6									581.1
			0						
8			0					Casing	579.1
10									577.1
			96						
12									575.1
					DBO white pasty.	CL			
14			2						573.1
16								Screen	571.1
			0						
18								Sump Casing	569.1
			0						
20						CL			567.1

BASF Wyandotte Northworks

Log of Well RFIMW07

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
20					Clay brown, medium stiff, with silt. Peaty. Moist.	CL			567.1
22			0		Clay brownish-grey mottled, stiff. Moist.	CL			565.1
24					SAA - siltier with a trace of fine sand. Saturated.				563.1
26			0		SAA - Trace silt&sand.				561.1
28					End of Boring				559.1
30									557.1
32									555.1
34									553.1
36									551.1
38									549.1
40									547.1

Log of Well RFIMW08

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/23/96*	Date Completed: *07/23/96*	Total Depth Drilled (ft.): *40*
Apparent Depth to Saturation While Drilling (ft. bgl): *5.25*		Ground Elevation (ft.): *578.47*

Completion Information

Screened Interval (ft. bgl): *34-36*	Filter Pack Interval (ft. bgl): *30-38*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.): *2*	Upper Seal Interval (ft. bgl): *27-30*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *38-40*
Total Casing (ft.): *36*	Lower Seal Type: *Natural sluff.*
Casing Type/Dia. (in.): *S.S. 2*	Grout Interval (ft. bgl): *0-27*
Top of Casing Elevation (ft.): *580.95*	Grout Type: *Neat cement with bentonite.*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type:

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW08

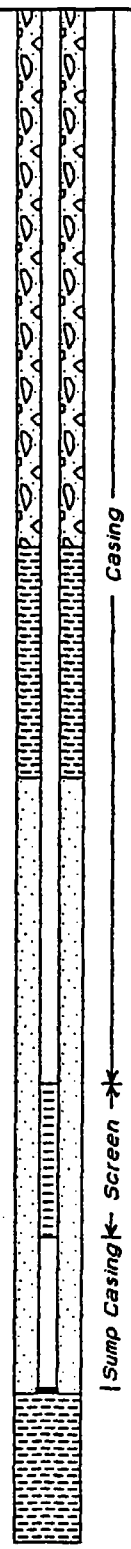
Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0									578.4
		50%			**Fill** brown, with red and black slag material, fine sand and silt.	CL			
2			0		**Clay** brown, moist.	CL			576.4
		5%							
4					**Gravel, red slag, and white limestone**, with brown clay. Sample description based on drill cuttings.	GC			574.4
	15								
6	16								572.4
					No recovery because of refusal. (Concrete ruble).				
8									570.4
	9		2.8						
10					**DBO** light blueish-grey, wet to saturated. Pasty.	CL			568.4
12									566.4
			0.7		**Sand** black, fine grained, silty, with DBO. Saturated.	SM			
14					**Sand** dark grey, fine grained, silty with some clay.	SM			564.4
16					SAA - grades to siltier. Wet.				562.4
					SAA - *trace organic material.*				
18									560.4
			1.3		SAA - somewhat sandier between 19-20.5'. 1.3ppm.				
20									558.4

Well Construction: 2.48" Casing

BASF Wyandotte Northworks

Log of Well RFIMW08

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
20									558.4
					SAA-somewhat sandier between 19-20.5'.	SM			
22									556.4
24									554.4
					No recovery.				
26									552.4
			0		**Sand** grey, fine grained with some silt. Saturated.				
28									550.4
30									548.4
					SAA - some white shells and coarse sand present.	SM			
32									546.4
34									544.4
36					**Sand** medium grained, more shells & trace coarse sand.	SW			542.4
38					**Clay** grey, soft to medium stiff, with a trace of coarse gravel. Wet.	CL			540.4
			0						
40									538.4



Log of Well RFIMW09

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/16/96*	Date Completed: *07/16/96*	Total Depth Drilled (ft.): *42*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*		Ground Elevation (ft.): *577.19*

Completion Information

Screened Interval (ft. bgl): *36.5-38.5*	Filter Pack Interval (ft. bgl): *31.5-40.5*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *28-31.5*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *40.5-42*
Total Casing (ft.): *38.5*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-28.5*
Top of Casing Elevation (ft.): *579.09*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW09

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Topsoil	CL				577.1
2			Sand brown-black, fine-medium grained, with some gravel. Dry. Saturated @ 3.5	SP				575.1
4			Soda Ash, Gravel, and Sand Fill material.					573.1
6								571.1
8				CL				569.1
10			As above, except more angular gravel.			Casing		567.1
12			Silt grey-black, clay rich, trace gravel. Very soft. Saturated.					565.1
14								563.1
16				ML				561.1
18								559.1
20								557.1

BASF Wyandotte Northworks

Log of Well RFIMW09

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20			**Silt** grey-black, clay rich, trace gravel. Very soft. Saturated.	ML				557.1
22								555.1
24			**Sand** grey, fine grained, very silty. Saturated.	SM				553.1
26								551.1
28						Casing		549.1
30								547.1
32								545.1
34			**Sand, Gravel, & Seashells** grey, fine to coarse grained.	SW				543.1
36						Screen		541.1
38								539.1
40			**Clay** grey, trace gravel.	CL		Casing		537.1

BASF Wyandotte Northworks

Log of Well RFIMW09

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
40			Clay grey, trace gravel. Soft. Moist.	CL		Sump Casing		537.1
42			End of Boring					535.1
44								533.1
46								531.1
48								529.1
50								527.1
52								525.1
54								523.1
56								521.1
58								519.1
60								517.1

Log of Well RFIMW10

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/15/96*	Date Completed: *07/15/96*	Total Depth Drilled (ft.): *43*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*		Ground Elevation (ft.): *580.01*

Completion Information

Screened Interval (ft. bgl): *38-40*	Filter Pack Interval (ft. bgl): *33-42*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *30-33*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *42-43*
Total Casing (ft.): *40*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-30*
Top of Casing Elevation (ft.): *581.92*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

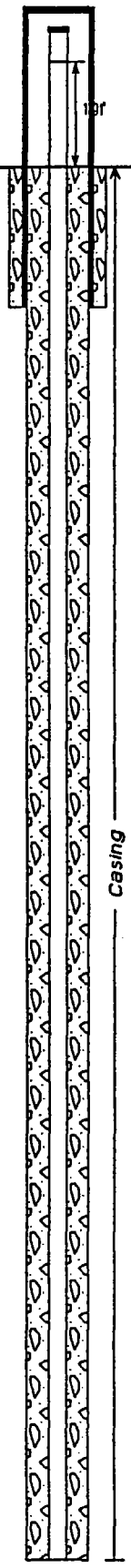
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW10

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Topsoil**	CL				580.0
			Gravel, Sand, & Wood light brown, dry, with little clay.	GW				
2								578.0
			Brick, Wood, and Cinders black-white, some sand. Fill material.	GW				
4								576.0
			Gravel, Wood, Sand, and Cinders little clay. Saturated from 5-5.5 feet.	GC				
6								574.0
			Gravel, bricks, & Soda Ash Fill material. Saturated @ 6 feet.					
8								572.0
10								570.0
			As above except for a trace clay.					
12								568.0
				GC				
14								566.0
16								564.0
			As above except for more gravel.					
18								562.0
20								560.0



BASF Wyandotte Northworks

Log of Well RFIMW10

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20			**Gravel, bricks, & Soda Ash**, Fill material.	GC		Casing		560.0
22								558.0
24								556.0
26			**Silt** grey-black, clayey, some gravel.	SM				554.0
28								552.0
30			**Sand** brown, some silt and clay with gravel. Fine to medium grained. Some shells.	SP				550.0
32								548.0
34								546.0
36								544.0
38						Screen		542.0
40								540.0

BASF Wyandotte Northworks

Log of Well RFIMW10

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
40			**Sand** brown, some silt and clay with gravel. Fine to medium grained. Some shells.	SP				540.0
42			**Clay** grey, little gravel, soft, moist.	CH		Sump Casing		538.0
			End of Boring					
44								536.0
46								534.0
48								532.0
50								530.0
52								528.0
54								526.0
56								524.0
58								522.0
60								520.0

Log of Well RFIMW11

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/12/96*	Date Completed: *07/12/96*	Total Depth Drilled (ft.): *28.0*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		Ground Elevation (ft.): *576.07*

Completion Information

Screened Interval (ft. bgl): *23-25*	Filter Pack Interval (ft. bgl): *20-27*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *17-20*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *27-28*
Total Casing (ft.): *25*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-17*
Top of Casing Elevation (ft.): *577.78*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

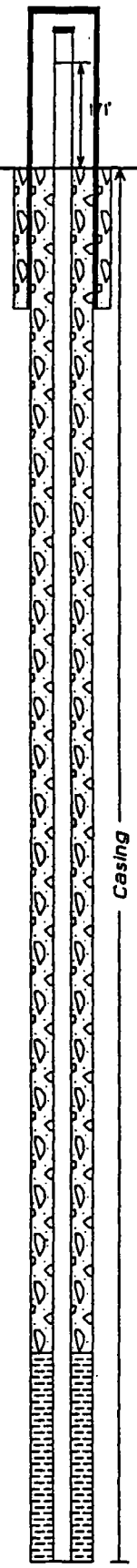
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW11

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Topsoil	CL				576.0
2			Gravel, Concrete Fragments, and Sand Fill material.	GW				574.0
4			Brick, Wood, Ash, and Gravel Fill material. Saturated.	GP				572.0
6			Gravel, Wood, and Ash black.	GP				570.0
8								568.0
10			Clay black, silty, with some tar. Strong petroleum odor.	CL				566.0
12								564.0
14			Silt grey, with clay. Old river bottom.					562.0
16			As above with some wood, little gravel, some shells. Damp.	ML				560.0
18								558.0
20								556.0



BASF Wyandotte Northworks

Log of Well RFIMW11

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20								556.0
			As above but becoming sandier and more saturated.	ML		Casing / Screen / Sump Casing		
22								554.0
24								552.0
			Sand fine to medium grained, some wood. Saturated.	SW				
26								550.0
			Clay	CL				
28			End of Boring					548.0
30								546.0
32								544.0
34								542.0
36								540.0
38								538.0
40								536.0

Log of Well RFIMW12

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/11/96*	Date Completed: *07/12/96*	Total Depth Drilled (ft.): *28.0*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.5*		Ground Elevation (ft.): *577.56*

Completion Information

Screened Interval (ft. bgl): *23-25*	Filter Pack Interval (ft. bgl): *20-27*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *17-20*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *27-28*
Total Casing (ft.): *25*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-17*
Top of Casing Elevation (ft.): *579.89*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

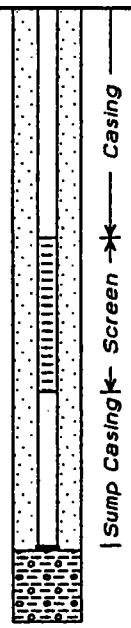
Log of Well RFIMW12

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Topsoil**	CL		2.33'		577.5
			Brick with a little sand. Fill material.	GW				
2								575.5
			Cinders & Ash Material black, trace brick. Fill material.	PT				
4			**Soda Ash** grey, some gravel. Fill material. Saturated @ 4.5 feet.	CL				573.5
6								571.5
8			**Gravel, Sand and Brick** brown-black. Fill material.	GP				569.5
10			**Soda Ash & cinders** greyish-black with gravel and some sand.	CL		Casing		567.5
12								565.5
14								563.5
16								561.5
18								559.5
20								557.5

BASF Wyandotte Northworks

Log of Well RFIMW12

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20			**Soda Ash & cinders** greyish-black with gravel and some sand.	CL				557.5
22								555.5
24			**Silt** greyish black, clayey, sandy, very soft.	ML				553.5
26			**Clay** grey, with trace gravel. Soft.	CH				551.5
28			End of Boring					549.5
30								547.5
32								545.5
34								543.5
36								541.5
38								539.5
40								537.5



Log of Well RFIMW13

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/30/96*	Date Completed: *07/30/96*	Total Depth Drilled (ft.): *24*
Apparent Depth to Saturation While Drilling (ft. bgl): *2*		Ground Elevation (ft.): *578.15*

Completion Information

Screened Interval (ft. bgl): *19-21*	Filter Pack Interval (ft. bgl): *16-23*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *13-16*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *23-24*
Total Casing (ft.): *23*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-13*
Top of Casing Elevation (ft.): *577.78*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW13

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20								558.1
			SAA-becoming clayey.	SP		Sump Casing, Screen		
22								556.1
			Clay brown-grey mottling, trace gravel, soft.	CL				
24			End of Boring					554.1
26								552.1
28								550.1
30								548.1
32								546.1
34								544.1
36								542.1
38								540.1
40								538.1

Log of Well RFIMW14

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/25/96*	Date Completed: *07/26/96*	Total Depth Drilled (ft.): *29*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		Ground Elevation (ft.): *579.87*

Completion Information

Screened Interval (ft. bgl): *23-25*	Filter Pack Interval (ft. bgl): *18-27*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *15-18*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *27-29*
Total Casing (ft.): *25*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-15*
Top of Casing Elevation (ft.): *581.76*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW14

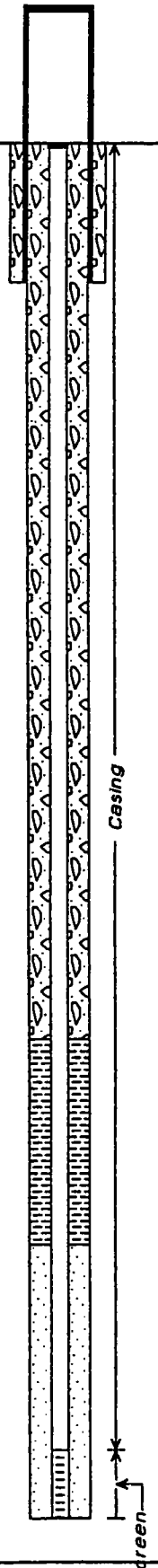
Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Topsoil	CL				579.8
2			Concrete, gravel, brick, sand, cinders, stone.	GP				577.8
4			Gravel & stone. Saturated @ 5'.	GP				575.8
6								573.8
			Filter cake					
8			DBO white, silty.	CL				571.8
10			Cinders, ashes, brick.	PT				569.8
12								567.8
14			Silt, grey, clay, little sand & wood.	ML				565.8
16			SAA-becoming sandier with depth.					563.8
18			Sand grey, medium grained, trace gravel.	SW				561.8
			Silty	SP				
20				SW				559.8

Casing

BASF Wyandotte Northworks

Log of Well RFIMW13

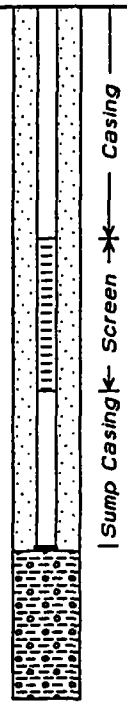
Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Gravel.	GP				578.1
2			Gravel, brick, sand, cinders. Saturated @ 2'.	GP				576.1
4								574.1
6			Cinders, ashes, gravel black, odor.	PT				572.1
8			Sand black, some silt & gravel, little clay, odor.	SM				570.1
10								568.1
12			Sand brown, fine to medium grained, little silt.	SP				566.1
14								564.1
16								562.1
18								560.1
20								558.1



BASF Wyandotte Northworks

Log of Well RFIMW14

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20								559.8
			Sand grey, medium grained.					
22								557.8
			SAA-fine grained.	SW				
24								555.8
			SAA.					
26								553.8
			Clay grey, little gravel, soft. Moist.	CL				
28								551.8
			End of Boring					
30								549.8
32								547.8
34								545.8
36								543.8
38								541.8
40								539.8



Log of Well RFIMW15

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/25/96*	Date Completed: *07/25/96*	Total Depth Drilled (ft.): *22.0*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*		Ground Elevation (ft.): *582.94*

Completion Information

Screened Interval (ft. bgl):	Filter Pack Interval (ft. bgl):
Screen Length (ft.):	Filter Pack Type:
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl):
Screen Type:	Upper Seal Type:
Screen Slot Size/Dia. (in.):	Lower Seal Interval (ft. bgl):
Total Casing (ft.):	Lower Seal Type:
Casing Type/Dia. (in.):	Grout Interval (ft. bgl): *0-22*
Top of Casing Elevation (ft.): *584.51*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type:

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW15

Depth (feet bgl)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0	**Topsoil**	CL		1.57'		582.9
2	**Gravel** grey, little sand. Dry.	GP		Cement Grout		580.9
4	**Cinders, ash, brick** black. Saturated @ 3.5'.	PT				578.9
6	SAA-odor.					576.9
8	**Tar** black & sticky, little gravel, cinders.	PT				574.9
10	**Silt** black, slimy, odor.	OL				572.9
12	**Peat** some wood.	PT				570.9
14	**Silt** black, slimy, odor.	OL				568.9
16	**Sand** grey, fine to medium grained, little gravel, silty. Saturated.	SM				566.9
18	**Clay** blue-green, purple, brown, mottled, soft.	CH				564.9
20	**Sand** grey, medium grained, little gravel. Saturated.	SP				562.9
		CL				

BASF Wyandotte Northworks

Log of Well RFIMW15

Depth (feet bgl)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20						562.9
	Clay	CL		Cement Grout		
22	End of Boring					560.9
24						558.9
26						556.9
28						554.9
30						552.9
32						550.9
34						548.9
36						546.9
38						544.9
40						542.9

Log of Well RFIMW15A

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/29/96*	Date Completed: *07/29/96*	Total Depth Drilled (ft.): *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*		Ground Elevation (ft.):

Completion Information

Screened Interval (ft. bgl): *9-11*	Filter Pack Interval (ft. bgl): *6-13*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *3-6*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *13-14*
Total Casing (ft.): *11*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-3*
Top of Casing Elevation (ft.):	Grout Type: *Neat cement*
Survey Datum:	Protective Casing Type: *6"*

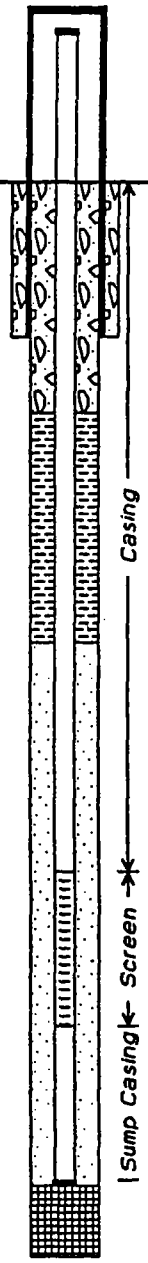
Explanation & Comments

Well Location Sketch

BASF Wyandotte Northworks

Log of Well RFIMW15A

Depth (feet bgs)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Topsoil.	CL				
2								
4			Sand, grave, cinders, ashes, brick.					
6				GP				
8			SAA-Saturated.					
			SAA-except some clay & DBO.					
10								
12			Tarlike substance.	PT				
14			End of Boring					
16								
18								
20								



Log of Well RFIMW15FINAL

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *08/01/96*	Date Completed: *08/01/96*	Total Depth Drilled (ft.): *32*
Apparent Depth to Saturation While Drilling (ft. bgl): *10*		Ground Elevation (ft.):

Completion Information

Screened Interval (ft. bgl): *25-27*	Filter Pack Interval (ft. bgl): *20-29*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *17-20*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *29-32*
Total Casing (ft.): *27*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. 2*	Grout Interval (ft. bgl): *0-17*
Top of Casing Elevation (ft.):	Grout Type: *Neat cement*
Survey Datum:	Protective Casing Type: *6"*

Explanation & Comments

Well Location Sketch

BASF Wyandotte Northworks

Log of Well RFIMW15FINAL

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification
0					**Topsoil.**	CL
					Limestone gravel, clay, sand. Dry.	
2					SAA-except some cinders, ash, brick, moist.	GC
4					**Clay** brown-black, gravel, cinders, ash, moist.	CL
6					**Cinders, ash, limestone gravel** white-black, moist.	PT
8					**Cinders, ash, gravel** very moist.	
10					SAA-no sheen or odor. Saturated @ 10'.	PT
12					**DBO.**	CL
					Wood.	PT
14			0.0		**DBO, black gravel, cinders, ashes** no sheen or odor.	CL
16					**Peat** brown, root structures, moist.	PT
18					**Silt** brown, clayey, little gravel & organics, moist.	OL
20						

Lithologic Log

Well Construction

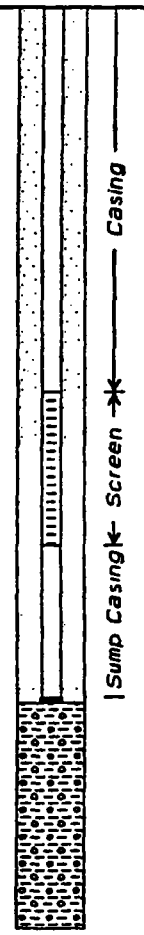
Casing

Elevation (ft.)

BASF Wyandotte Northworks

Log of Well RFIMW15FINAL

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
20									
22					becoming more clayey & some grey.	OL			
24									
26					**Sand** brown-grey, fine to medium grained, some silt, trace gravel.	SM			
28									
30					**Clay** grey, trace gravel, little sand, soft.	CH			
32					End of Boring				
34									
36									
38									
40									



Log of Well RFIMW16

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/22/96*	Date Completed: *07/22/96*	Total Depth Drilled (ft.): *30*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*		Ground Elevation (ft.): *585.69*

Completion Information

Screened Interval (ft. bgl): *23-25*	Filter Pack Interval (ft. bgl):
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.): *2*	Upper Seal Interval (ft. bgl):
Screen Type: *Stainless Steel*	Upper Seal Type:
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl):
Total Casing (ft.): *25*	Lower Seal Type:
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl):
Top of Casing Elevation (ft.): *587.62*	Grout Type:
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type:

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

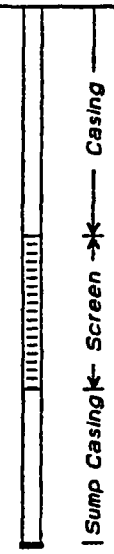
Log of Well RFIMW16

Depth (feet bgs)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0								1.93"	585.6
	32	70%			**Topsoil** tan, fine sand with silt.	CL			
			1.1		**Gravel** dark grey, sandy with industrial slag.	GP			
2									583.6
	13	60%			**DBO** greyish white, granular.	CL			
4									581.6
	1	50%	0		**DBO** white. Pasty, wet, very soft.				
6									579.6
	4	60%	0						
					SAA - except pale yellow.				577.6
	5	70%				CL			
10								Casing	575.6
	1	100%			SAA - except a litte pink.				
12									573.6
	1	0%							
14									571.6
16			0		**Sand** black, fine grained, silty, with organic material such as roots. Saturated.				569.6
						OL			
18					Grades to dark grey. More fine sand than above & clay.				567.6
			0		Organic material - roots, wood, etc.				
20									565.6

BASF Wyandotte Northworks

Log of Well RFIMW16

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
20									565.6
			3.4		**Sand** black, fine grained, silty, with organic material such as roots. Saturated.	OL			
22									563.6
24			0		**Sand** greyish-brown, fine grained, well sorted. Saturated.	SW			561.6
26					**Clay** grey with silt, trace fine sand.				559.6
28						CL			557.6
30					End of Boring				555.6
32									553.6
34									551.6
36									549.6
38									547.6
40									545.6



Log of Well RFIMW17

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/19/96*	Date Completed: *07/19/96*	Total Depth Drilled (ft.): *36*
Apparent Depth to Saturation While Drilling (ft. bgl): *5.00*		Ground Elevation (ft.): *585.08*

Completion Information

Screened Interval (ft. bgl): *30-32*	Filter Pack Interval (ft. bgl): *27-34*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *24-27*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *34-36*
Total Casing (ft.): *32*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-24*
Top of Casing Elevation (ft.): *586.87*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

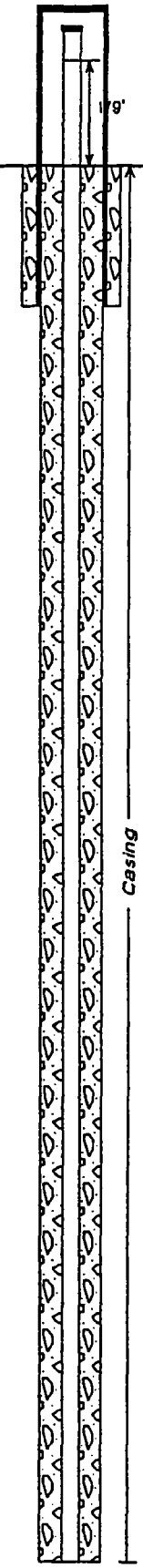
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW17

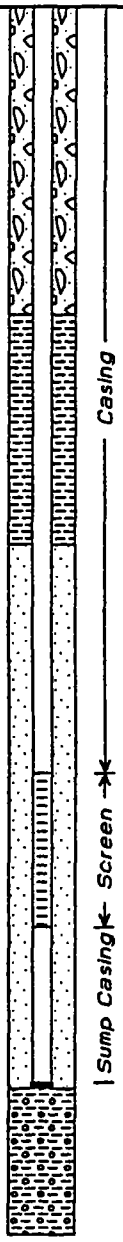
Depth (feet bgs)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Topsoil tan	CL				585.0
2			Sand, Gravel white-black.	GP				583.0
4			Cinders, gravel, brick black.	GP				581.0
6			DBO white. silty. Pasty and slimy. SAA - except not pasty, but compact & less saturated.	CL				579.0
			SAA - except white & gray.					577.0
10								575.0
12			SAA - except some gravel from 12 - 13'.					573.0
14								571.0
16			SAA - real pasty.					569.0
18			Slimy material black, silty	MH				567.0
20				PT				565.0



BASF Wyandotte Northworks

Log of Well RFIMW17

Depth (feet bgs)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20								565.0
22			**Peat** lots of wood, swampy odor.	PT				563.0
24								561.0
26			**Silt** brown, gravel, clay. Very soft. "Old river bottom".	MH				559.0
28			SAA - except becoming more sandy.					557.0
30			SAA - except becoming grey.					555.0
32								553.0
34			**Clay**, some silt & gravel. Very soft. Moist.	CL				551.0
36			End of Boring					549.0
38								547.0
40								545.0



Log of Well RFIMW18

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/18/96*	Date Completed: *07/18/96*	Total Depth Drilled (ft.): *44*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.25*		Ground Elevation (ft.): *576.78*

Completion Information

Screened Interval (ft. bgl): *13.0-15.0*	Filter Pack Interval (ft. bgl): *10.0-18.0*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *7-10*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *18.0-44.0*
Total Casing (ft.): *15.0*	Lower Seal Type: *Bentonite chip*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-7*
Top of Casing Elevation (ft.): *579.04*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW18

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Topsoil** tan	CL		2.26'		576.7
				GP				
2								574.7
4			**Cinders, Ash, Gravel, Brickk** black. Saturated @ 3.25'.					572.7
				GC				
6						Casing		570.7
8								568.7
			Tarish silty material black. Strong odor and sheen.	PT				
10								566.7
			Cinders, Ash, and Gravel black. Odor and sheen.	GC				
12								564.7
			Peat like material brown, some wood, silty. Damp.	PT				
14						Screen		562.7
			Sand and gravel odor and sheen. Saturated.	GW				
			Clay, green-grey and blue mottling, some silt. Moist.	CL		Sump Casing		
16								560.7
			Clay & Gravel odor. Saturated.	CL				
18			**Clay** grey, brown, and green mottled. Medium stiff, trace of gravel. Odor. SAA - except some wood.	CL				558.7
20								556.7

BASF Wyandotte Northworks

Log of Well RFIMW18

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20								556.7
			SAA - except stiff and some sand.					
22				CL				554.7
24								552.7
26								550.7
28								548.7
30								546.7
32				CL				544.7
34			Clay grey, some gravel and silt, trace of sand. Soft.					542.7
36								540.7
38			SAA - except more gravel.					538.7
40								536.7

BASF Wyandotte Northworks

Log of Well RFIMW18

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
40								536.7
42				CL				534.7
44			End of Boring					532.7
46								530.7
48								528.7
50								526.7
52								524.7
54								522.7
56								520.7
58								518.7
60								516.7

Log of Well RFIMW19

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/17/96*	Date Completed: *07/17/96*	Total Depth Drilled (ft.): *45*
Apparent Depth to Saturation While Drilling (ft. bgl): *9*		Ground Elevation (ft.): *576.53*

Completion Information

Screened Interval (ft. bgl): *9.5-11.5*	Filter Pack Interval (ft. bgl): *6.0-14.5*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *3-6*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *14.5-45*
Total Casing (ft.): *11.5*	Lower Seal Type: *Bentonite chip*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-3*
Top of Casing Elevation (ft.): *578.52*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW19

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Clay, Sand, & Brick tan	CL				576.5
2								574.5
4								572.5
6			Concrete	GW		Casing		570.5
8								568.5
			Gravel little sand. Saturated.	GW				
10			Silt black-brown, very clayey. Saturated. Oldriver bottom, some wood and gravel.	ML		Screen		566.5
12			Peat damp.	PT		Sump Casing		564.5
14			Clay grey-brown, some green mottling, little gravel. Becoming harder. Damp.	CL				562.5
16								560.5
18			As above-medium stiff.					558.5
20								556.5

BASF Wyandotte Northworks

Log of Well RFIMW19

Depth (feet bgs)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20								556.5
			As above - brown-grey mottling.					
22								554.5
24			As above - saturated.					552.5
			As above-except some gravel and sand. Very soft.					
26								550.5
				CL				
28								548.5
30			As above-except all grey.					546.5
			Becoming more silty.					
32								544.5
34								542.5
36								540.5
			Clay & silt, grey, trace gravel. Soft. Saturated.	CL				
38								538.5
40								536.5

BASF Wyandotte Northworks

Log of Well RFIMW19

Depth (feet bgs)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
40								536.5
			Clay & silt, grey, trace gravel. Soft. Saturated.	CL				
42								534.5
			Clay grey, little silt and gravel. Soft. Saturated.	CL				
44								532.5
			End of Boring					
46								530.5
48								528.5
50								526.5
52								524.5
54								522.5
56								520.5
58								518.5
60								516.5

Log of Well RFIMW20

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/16/96*	Date Completed: *07/16/96*	Total Depth Drilled (ft.): *20*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.0*		Ground Elevation (ft.): *577.81*

Completion Information

Screened Interval (ft. bgl): *7.5-9.5*	Filter Pack Interval (ft. bgl): *4.5-12.0*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *2.0-4.5*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *12.0-20.0*
Total Casing (ft.): *9.5*	Lower Seal Type: *Bentonite chip*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-2*
Top of Casing Elevation (ft.): *579.52*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

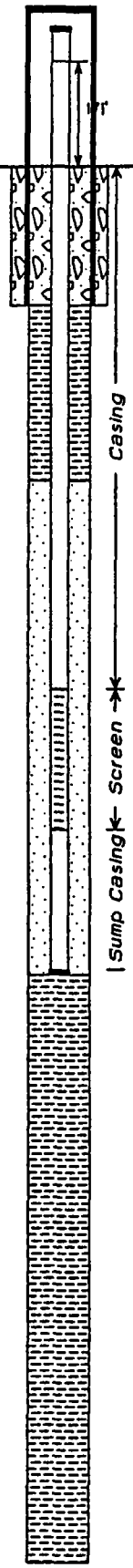
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW20

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Topsoil**	CL				577.8
			Clay brown-grey, with silt and gravel.	CL				
2			**Cinders, Ash, & Brick** brick-red, some sand.	GW				575.8
4			**DBO & Gravel** grey-black. Saturated @ 4.0 feet.					573.8
6			As above except some cinders.	CL				571.8
8								569.8
10			**Sand** grey-black, silty, little gravel, little DBO.	SM				567.8
			Peat dry.	PT				
12			**Silt** dark brown, clay rich, with little gravel & wood. Damp.	ML				565.8
			Peat dry.	PT				
14			**Clay** blue-grey, with little gravel, trace of wood. Damp.					563.8
16			As above except grey.	CL				561.8
18								559.8
20								557.8



Log of Well RFIMW21

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/24/96*	Date Completed: *07/24/96*	Total Depth Drilled (ft.): *32*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.5*		Ground Elevation (ft.): *584.09*

Completion Information

Screened Interval (ft. bgl): *25-27*	Filter Pack Interval (ft. bgl): *22-29*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *19-22*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chips*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *29-32*
Total Casing (ft.): *27*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-19*
Top of Casing Elevation (ft.): *586.00*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW21

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0									584.0
		90%	0		**Industrial clay fill**, trace gravel, coal, cinders, coal, grass surface. some DBO	CL			
2									582.0
		60%	2.8		**DBO.**	CL			
4									580.0
		40%	8		**Cinders & sand** fine to coarse grained with mixed DBO, evidence of filter cake & paper, some nuggets of a tan/orange hardened resin. more filter cake.	SW			
6									578.0
		30%	28		**Filter cake** gooey. Saturated.				
8									576.0
		10%			**DBO** positive Fe test.	CL		Casing	
10									574.0
12			53						572.0
14					**Lime waste** more granular.				570.0
16					**Peat** with clay.	PT			568.0
			4.4		**DBO** white. Very saturated.	CL			
18					**Peat** black, topsoil like, stong odor.	PT			566.0
		90%	1.4		**Silt** brown, clayey with lots of organic-peat material.	OL			
20									564.0

Environmental Science & Engineering, Inc.

BASF Wyandotte Northworks

Log of Well RFIMW21

Depth (feet bgs)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
20									564.0
		100%			SAA-brown, silty. Wet to saturated.				
22									562.0
		100%	0		SAA-less organics.	OL		Casing	
24									560.0
		100%	1.4					Screen	
26					Sand greyish-brown, fine grained, silty with clay, trace sea shells. Saturated. less silty with depth.	SM		Sump Casing	558.0
28									556.0
30					Clay grey, medium stiffness.	CL			554.0
32					End of Boring				552.0
34									550.0
36									548.0
38									546.0
40									544.0

Log of Well RFIMW22

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/30/96*	Date Completed: *07/30/96*	Total Depth Drilled (ft.): *20*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*		Ground Elevation (ft.): *577.82*

Completion Information

Screened Interval (ft. bgl): *14-16*	Filter Pack Interval (ft. bgl): *11-18*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *8-11*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chips*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *18-20*
Total Casing (ft.): *16*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. 2*	Grout Interval (ft. bgl): *0-8*
Top of Casing Elevation (ft.): *577.15*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW22

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Gravel.**	GP				577.8
			Clay, sand, gravel, brick. Fill material.	CL				
2			**Cinders**	PT				575.8
			DBO white-grey, some gravel, very granular. Saturated @ 3'.	CL				
4								573.8
6								571.8
8								569.8
			Silt black, brown, grey-green, very clayey, little gravel, very slimy.	ML				
10								567.8
12								565.8
			Sand brown, fine to medium grained, trace gravel.	SW				
14								563.8
			SAA-except becoming grey.					
16								561.8
18			**Clay** brown-grey mottling, trace gravel, medium stiff.	CL				559.8
20								557.8

Casing

Screen

Sump Casing

Log of Well RFIMW23

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/29/96*	Date Completed: *07/29/96*	Total Depth Drilled (ft.): *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		Ground Elevation (ft.): *580.30*

Completion Information

Screened Interval (ft. bgl):	Filter Pack Interval (ft. bgl):
Screen Length (ft.):	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl):
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chips*
Screen Slot Size/Dia. (in.):	Lower Seal Interval (ft. bgl):
Total Casing (ft.):	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. 2*	Grout Interval (ft. bgl):
Top of Casing Elevation (ft.): *582.17*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

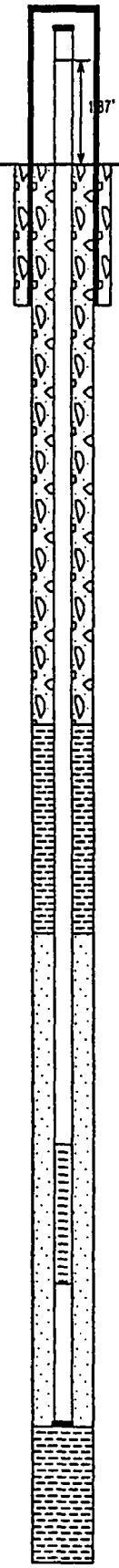
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW23

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Topsoil.	CL				580.3
			Gravel, sand, brick, white ashy substance.	GP				
2								578.3
			Slag-like material grey. Dry.	GW				
4								576.3
6			Cinders, ashes, gravel black. Saturated @ 5'. SAA-has sheen & odor.	GP				574.3
8								572.3
10			Sand black, very silty, sheen, odor.	SM				570.3
12								568.3
			Clay brown-grey mottled, trace gravel, medium stiff.	CL				
14			End of Boring					566.3
16								564.3
18								562.3
20								560.3



Log of Well RFIMW24

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/11/96*	Date Completed: *07/11/96*	Total Depth Drilled (ft.): *8.5*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.0*		Ground Elevation (ft.): *582.67*

Completion Information

Screened Interval (ft. bgl): *4.5-6.5*	Filter Pack Interval (ft. bgl): *3.0-8.5*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *1-3.0*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl):
Total Casing (ft.): *6.5*	Lower Seal Type:
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-1*
Top of Casing Elevation (ft.): *582.37*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *Flush mount*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

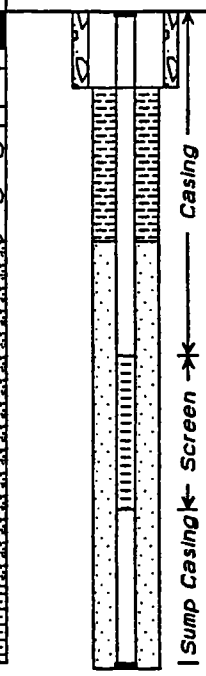
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW24

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0					Asphalt				582.6
					Fill material				
2					Concrete Rubble grey. Fill material.	GW			580.6
4			0		Sand brown, fine to medium grained, some silt, trace gravel. Saturated @ 5.5 feet.	SM			578.6
6									576.6
8					Clay grey, trace gravel. Soft. Moist.	CH			574.6
					End of Boring				
10									572.6
12									570.6
14									568.6
16									566.6
18									564.6
20									562.6



Log of Well RFIMW25

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/10/96*	Date Completed: *07/10/96*	Total Depth Drilled (ft.): *9.5*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.0*		Ground Elevation (ft.): *581.66*

Completion Information

Screened Interval (ft. bgl): *4.5-6.5*	Filter Pack Interval (ft. bgl): *3.5-8.5*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *2-3.5*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *8.5-9.5*
Total Casing (ft.): *6.5*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-2*
Top of Casing Elevation (ft.): *581.34*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *Flush mount*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

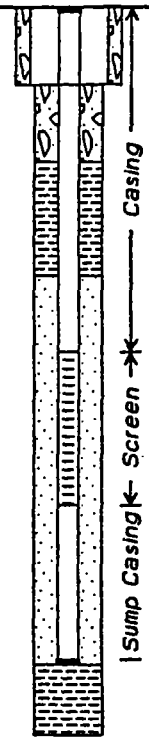
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW25

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0					Asphalt				581.6
					Concrete Rubble grey. Fill material.	GW			
2									579.6
					Peat black, silty.	PT			
4									577.6
					Sand brown-grey, trace silt. Moist.	SW			
6									575.6
8									573.6
					Clay grey, with a trace gravel. Soft, moist.	CH			
					End of Boring				
10									571.6
12									569.6
14									567.6
16									565.6
18									563.6
20									561.6



Log of Well RFIMW26

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/11/96*	Date Completed: *07/11/96*	Total Depth Drilled (ft.): *10.0*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*		Ground Elevation (ft.): *582.32*

Completion Information

Screened Interval (ft. bgl): *5-7*	Filter Pack Interval (ft. bgl): *3-9*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *1-3*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *9-10*
Total Casing (ft.): *7*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-1*
Top of Casing Elevation (ft.): *581.96*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D*	Protective Casing Type: *Flush mount*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955

The casing elevations are referenced to the top north rim of each casing.

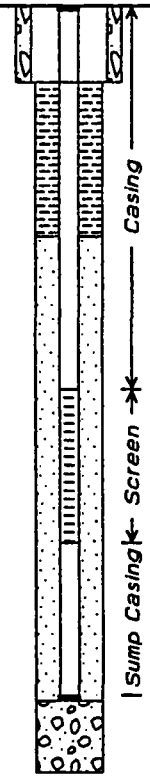
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW26

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			Asphalt					582.3
			Cinders, Ash, & Brick black, some sand, Dry.	GP				
2								580.3
4								578.3
			Sand black-brown, fine to medium grained with a little silt. Saturated.	SW				
6								576.3
8								574.3
			Clay grey, little silt & gravel. Soft.	CH				
10			End of Boring					572.3
12								570.3
14								568.3
16								566.3
18								564.3
20								562.3



Log of Well RFIMW27

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/09/96*	Date Completed: *07/09/96*	Total Depth Drilled (ft.): *20*
Apparent Depth to Saturation While Drilling (ft. bgl): *11.5*		Ground Elevation (ft.): *574.99*

Completion Information

Screened Interval (ft. bgl): *15-17*	Filter Pack Interval (ft. bgl): *14.5-19*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *11.5-14.5*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *19-20*
Total Casing (ft.): *17*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. 2*	Grout Interval (ft. bgl): *0-11.5*
Top of Casing Elevation (ft.): *577.03*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6 " Steel Casing*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW27

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0					**Topsoil**	CL		2.04'	574.9
			0.0		**Soda Ash** grey, trace clay, moist. Fill material.	CL			
2									572.9
4					**Bricks Cinder & Ash** black, trace wood. Saturated @ 4.0. Fill material.	GW			570.9
6									568.9
8			0.0		**Soda Ash Linewaste** grey-blue, gritty with coarse gravel and coal. Becomes brown at 8.5 feet.	CL		Casing	566.9
10									564.9
12			0.0/ 4.0		**Silt** brown, sandy. Saturated.	MH			562.9
14									560.9
16					**Sand** light brown, with a little silt. Saturated.	SM		Screen / Sump Casing	558.9
18									556.9
20					**Clay** grey, soft, trace of silt. Moist.	CH			554.9

Log of Well RFIMW28

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/10/96*	Date Completed: *07/10/96*	Total Depth Drilled (ft.): *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *2.5*		Ground Elevation (ft.): *574.36*

Completion Information

Screened Interval (ft. bgl): *7-9*	Filter Pack Interval (ft. bgl): *5-11*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *2-5*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *11-12*
Total Casing (ft.): *9*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-2*
Top of Casing Elevation (ft.): *577.41*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6 " Steel Casing*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

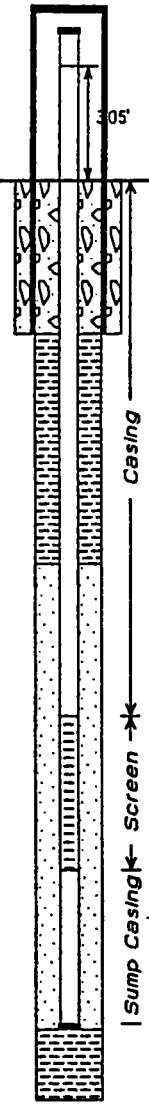
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW28

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0			**Topsoil**	CL				574.3
			Soda Ash grey, trace clay, moist. Fill material. Saturated at 2.5 feet.	CL				
2								572.3
			Peat black, silty.	PT				
4			**Brick & Cinders** brown.	GW				570.3
			Sand brown, medium to fine grained, silty. Saturated.	SM				
6								568.3
8			SAA-turning lighter brown.					566.3
10								564.3
			Clay grey, with a little silt. Soft, moist.	CH				
12			End of Boring					562.3
14								560.3
16								558.3
18								556.3
20								554.3



Log of Well RFIMW29

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *09/19/96*	Date Completed: *09/19/96*	Total Depth Drilled (ft.): *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		Ground Elevation (ft.): *577.57*

Completion Information

Screened Interval (ft. bgl): *4.5-6.5*	Filter Pack Interval (ft. bgl): *3-8.5'*
Screen Length (ft.): *2'*	Filter Pack Type: *Sand #3*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *2-3'*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *6-8.5'*
Total Casing (ft.): *10.5'*	Lower Seal Type: *Sand #3*
Casing Type/Dia. (in.): *S.S. 1/2*	Grout Interval (ft. bgl): *0-2'*
Top of Casing Elevation (ft.): *579.62*	Grout Type: *Cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *Stickup, no casing*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

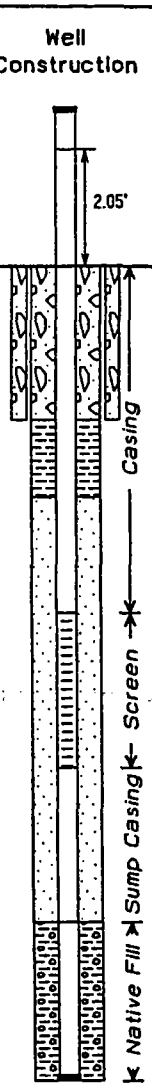
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIMW29

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	Soil/Rock Description	USCS Classification	Lithologic Log	Comments	Elevation (ft.)
0			**Topsoil**	CL			577.5
	7	100%	**Cinders** black. Fill material.	PT			
2			**Silt** brown, sandy.	MH			575.5
	3	100%	**Silt** gray, sandy. Moist.	MH			
4			**Sand** light brown.	SW			573.5
	14	100%					
6			SAA- Saturated.	SW			571.5
	14	100%					
	17	100%	**Clay** gray, silty, firm, trace fine gravel.	CL			569.5
10							567.5
			End of Boring				
12							565.5
14							563.5
16							561.5
18							559.5
20							557.5



Log of Well RFIP1NA

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *08/05/96*	Date Completed: *08/05/96*	Total Depth Drilled (ft.): *27*
Apparent Depth to Saturation While Drilling (ft. bgl):		Ground Elevation (ft.): *578.43*

Completion Information

Screened Interval (ft. bgl): *23-25*	Filter Pack Interval (ft. bgl): *20-27*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *17-20*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl):
Total Casing (ft.): *27*	Lower Seal Type:
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-17*
Top of Casing Elevation (ft.): *580.56*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

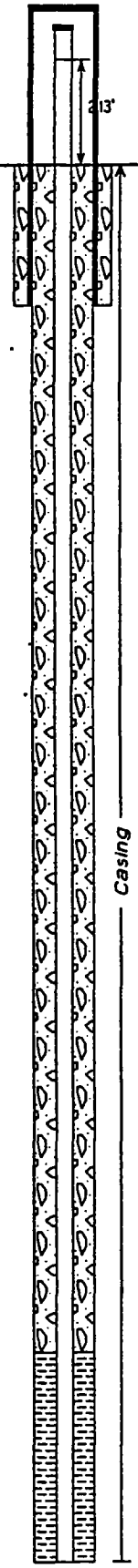
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIP1NA

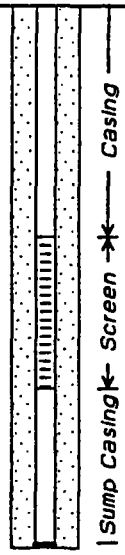
Depth (feet bgl)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0						578.4
2						576.4
4						574.4
6						572.4
8						570.4
10						568.4
12						566.4
14						564.4
16						562.4
18						560.4
20						558.4



BASF Wyandotte Northworks

Log of Well RFIP1NA

Depth (feet bgl)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20						558.4
22						556.4
24						554.4
26						552.4
28						550.4
30						548.4
32						546.4
34						544.4
36						542.4
38						540.4
40						538.4



Log of Well RFIP2-1

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *07/31/96*	Date Completed: *07/31/96*	Total Depth Drilled (ft.): *28*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*		Ground Elevation (ft.): *580.21*

Completion Information

Screened Interval (ft. bgl): *22-24*	Filter Pack Interval (ft. bgl): *17-26*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *14-17*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl): *26-28*
Total Casing (ft.): *24*	Lower Seal Type: *Native fill*
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-14*
Top of Casing Elevation (ft.): *582.06*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIP2-1

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
0					**Topsoil.**	CL			580.2
					Sand brown, little clay, gravel, cinders, brick. Dry.	SP			
2									578.2
					Cinders & ashes black, brick. Moist.	PT			
4									576.2
6					**Limestone gravel** tan, sand. Moist. Saturated @ 6'.	GP			574.2
			1000						572.2
					Cinder & ash black, odor. Saturated.	PT			
10									570.2
12					**Silt** black-brown, little clay & gravel, some organics.	OL			568.2
					Sand brown, some silt, trace organics.				
14					SAA-brown-grey.				566.2
16						SM			564.2
18					becoming more grey.				562.2
20									560.2

Well Construction: 1.85' Casing

Environmental Science & Engineering, Inc.

BASF Wyandotte Northworks

Log of Well RFIP2-1

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Well Construction	Elevation (ft.)
20					Sand brown, some silt, trace organics.	SM		Sump Casing, Screen, Casing	560.2
22									558.2
24									556.2
26					Clay brown-grey mottled, trace gravel, medium stiff.	CL			554.2
28					End of Boring				552.2
30									550.2
32									548.2
34									546.2
36									544.2
38									542.2
40									540.2

Log of Well RFIP2NA

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *08/12/96*	Date Completed: *08/12/96*	Total Depth Drilled (ft.): *18.7*
Apparent Depth to Saturation While Drilling (ft. bgl):		Ground Elevation (ft.): *575.88*

Completion Information

Screened Interval (ft. bgl): *14.2-16.2*	Filter Pack Interval (ft. bgl): *5-14.2*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *3-5*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl):
Total Casing (ft.): *16.2*	Lower Seal Type:
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-3*
Top of Casing Elevation (ft.): *577.61*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

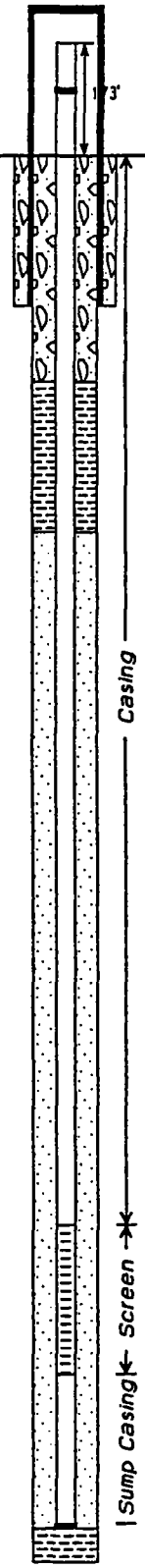
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIP2NA

Depth (feet bgl)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0						575.8
2						573.8
4						571.8
6						569.8
8						567.8
10						565.8
12						563.8
14						561.8
16						559.8
18						557.8
20						555.8



Log of Well RFIPM2NA

BASF Wyandotte Northworks
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Carlo Env. Tech*		
Drilling Rig: *CME*		Drilling Method: *Hollow Stem Auger*
Soil Sampling Device:	*Steel Split Spoon Sampler*	Borehole Diameter (in.): *8 7/8*
Date Started: *08/12/96*	Date Completed: *08/12/96*	Total Depth Drilled (ft.): *27.1*
Apparent Depth to Saturation While Drilling (ft. bgl):		Ground Elevation (ft.): *576.16*

Completion Information

Screened Interval (ft. bgl): *20.6-22.6*	Filter Pack Interval (ft. bgl): *5-24.6*
Screen Length (ft.): *2*	Filter Pack Type: *Sand*
Bottom Cap Length (ft.):	Upper Seal Interval (ft. bgl): *3-5*
Screen Type: *Stainless Steel*	Upper Seal Type: *Bentonite chip*
Screen Slot Size/Dia. (in.): *10/2*	Lower Seal Interval (ft. bgl):
Total Casing (ft.): *22.6*	Lower Seal Type:
Casing Type/Dia. (in.): *S.S. /2*	Grout Interval (ft. bgl): *0-3*
Top of Casing Elevation (ft.): *578.20*	Grout Type: *Neat cement*
Survey Datum: *I.G.L.D of 1955*	Protective Casing Type: *6"*

Explanation & Comments

The elevations indicated are referenced to the International Great Lakes Datum, (I.G.L.D), of 1955.

The casing elevations are referenced to the top north rim of each casing.

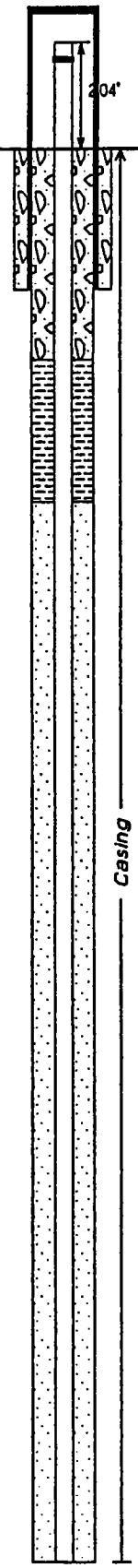
The locations indicated are referenced to the BASF north plant coordinate system.

The site bench mark is the Army Corps of Engineers H.L. reference stacks.

BASF Wyandotte Northworks

Log of Well RFIPM2NA

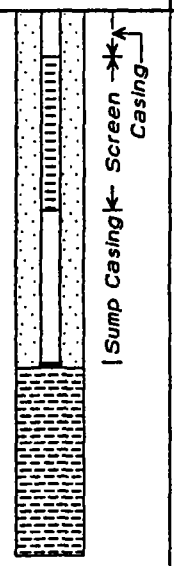
Depth (feet bgl)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
0						576.1
2						574.1
4						572.1
6						570.1
8						568.1
10						566.1
12						564.1
14						562.1
16						560.1
18						558.1
20						556.1



BASF Wyandotte Northworks

Log of Well RFIPM2NA

Depth (feet bgs)	Soil/Rock Description	USCS Classification	Lithologic Log	Well Construction	Comments	Elevation (ft.)
20						556.1
22						554.1
24						552.1
26						550.1
28						548.1
30						546.1
32						544.1
34						542.1
36						540.1
38						538.1
40						536.1



Soil Boring Logs for SWMU F
(Perimeter Soil Borings - [TP designation])

Log of Boring TP01

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/11/96*	**Date Completed:** *7/11/96*	**Total Depth Drilled (ft.):** *10*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-10	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP01

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%	0.0		Fill black.				
2		50%	0.0		Fill grey-black.				
4		100%	0.0						
6		5%	0.0		Filter Cake				
					Not enough recovery to characterize.				
8		100%			Fill. Saturated.				
					Filter Cake white.				
10					End of Boring				
12									
14									
16									
18									
20									

Log of Boring TP01-1

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/12/96*	**Date Completed:** *7/12/96*	**Total Depth Drilled (ft.):** *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-14	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP01-1

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%	0.0		**Topsoil** and fill material. Paper found @ 18".	CL			
2					**Fill Material** grey.				
			1.7		**Fill Material** black. Saturated @ 4'.				
4									
					DBO white, spongy material.	CL			
6					**Silt** grey. Saturated.	ML			
			4.6		**Blue/Green Material** spongy. Not granular.				
8					No recovery.				
10					**Silt** grey. Saturated.	ML			
					DBO? white, spongy. Wet.	CL			
12									
			6.4		**Silt** grey with angular gravel.	ML			
14					End of Boring				
16									
18									
20									

Log of Boring TP02

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/12/96*	**Date Completed:** *7/12/96*	**Total Depth Drilled (ft.):** *6*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-6	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP02

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0			0.0		**Topsoil** and grey fill material.	CL			
		95%	0.0		**Filter Cake** white with filter paper.				
			0.0		**Fill Material** black-grey with traces of paper and filter cake.				
2					**Fill Material** grey, soft clay with white flecks of filter cake. (These may be scrapings from the boring walls).	CL			
		75%	0.0		**Fill Material** black with flecks of white filter cake.				
4									
		50%	0.0		**Fill Material** black with soft clay. Moisture @ 4'.				
6					End of Boring				
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP02A

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2"*
Date Started: *7/11/96*	**Date Completed:** *7/11/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP02A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		50%	0.0		Topsoil	CL			
2		0%			No recovery.				
4		75%	0.0						
6		10%	0.0		Clay Cover with silt. Saturated @ 4'. Last 3" are spongy white (DBO). Saturated.	CL			
8		95%	0.0						
10		NA			Clay with silt. Last 3" are spongy white (DBO), maybe filter cake.	CL			
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP02B

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2"*
Date Started: *7/11/96*	**Date Completed:** *7/11/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP02B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		90%	0.0		Topsoil	CL			
2		50%	0.0		Fill Material				
			0.0		Clay. Saturated @ 4'.	CL			
4		50%	0.0		Clay and fill material.	CL			
6		75%	0.0		Clay	CL			
8					DBO	CL			
10		0%			No recovery.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP03

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*		**Borehole Diameter (in.):** *2"*
Date Started: *7/12/96*	**Date Completed:** *7/12/96*	**Total Depth Drilled (ft.):** *6*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-6	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP03

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0			0.0		**Topsoil** with black fill material and angular gravel. Dry.	CL			
		100%			**Filter Cake** / filter paper. Dry.				
			0.0						
2			0.0		**Fill** grey, finely grained. Dry.				
			0.0		**Filter Cake.** Damp.				
		100%	0.0		**Fill** grey, finely grained. Damp.				
			0.0		**Fill** black, coarsely grained. Moist.	CL			
4			0.0		**DBO** very dark and tightly compacted.	SP			
			0.0		**Fill** grey, finely grained.				
		100%	0.0		**Fill** black. Dry.	GW			
			0.0		**Gravel** angular with black fill. Saturated.	CL			
6			0.0		**DBO** green/grey, spongy material. Tested with Fe Reagent.				
					End of Boring				
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP04

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/12/96* **Date Completed:** *7/12/96*	**Total Depth Drilled (ft.):** *6*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-6	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP04

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%	0.0		**Topsoil** grass, and coarse gravel with grey, fine grained fill. Dry.	CL			
			0.0		**Filter Cake** (i.e. no rapid color change).				
2			0.0		**Clay Fill** fine, damp with coarse gravel and angular rocks.				
		100%	0.0		**Fill** grey with flecks of orange and white. Dry.				
			2.2		**Fill Material** black with bits of paper and wood. Damp-Moist.				
4		75%	0.2		**Clay** black with fill, very fine. Saturated.	CL			
6					End of Boring				
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP05

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/12/96*	**Date Completed:** *7/12/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP05

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%	0.0 0.0		**Topsoil** with grey fill and fine gravel. Dry.	CL			
					Filter Cake no paper (test "+"). Dry.				
2		100%			**Fill Material** grey with pieces of plastic (visqueen) and fine gravel. Dry.				
					Fill Material grey with fine gravel.				
4			0.0 0.0		**Filter Cake** with filter paper (test "+"), "putty like" material. Moist.				
					Fill Material grey. Saturated.				
					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP06

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/12/96*	**Date Completed:** *7/12/96*	**Total Depth Drilled (ft.):** *2*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-2	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP06

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%	0.0		**Topsoil** with grey, fine fill, and coarse, angular gravel.	CL			
2			0.0		**Filter Cake** white material with filter paper. Failed the Fe reagent test (i.e. very fast color change).				
					End of Boring				
4									
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP06A

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/19/96* **Date Completed:** *7/19/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *2.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP06A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with coarse gravel, industrial fill, and some fines.	GP			
2		100%	>100		**DBO/Lime Waste** white (not very reactive to the Fe reagent) Saturated @ approximately 2.5'.	CL			
4					**Black fines and column bottoms.** Wire @ 6'.	PT			
6		15%							
8					No recovery.				
10		10%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP07

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/19/96*	**Date Completed:** *7/19/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP07

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
			0.0		**DBO** ("+" Fe reagent)	CL			
2		100%	0.0		**Fill Material** grey with fine grained sand and some slag. Saturated @ approximately 3'.				
4					**DBO** red	CL			
			0.0		**DBO** white	CL			
6		30%							
8					No recovery.				
10		0%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP07A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/19/96*	**Date Completed:** *7/19/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *3.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP07A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with coarse gravel.	CL			
					DBO (passed Fe test).	CL			
2		90%	0.0		**Fill Material** grey, fine with coarse grained sand and some slag. Moist.	SP			
					DBO (passed Fe test). Saturated @ approximately 3.5'.	CL			
4									
			<1		**Silt** black with colunn bottoms and a strong odor.	OL			
6		30%							
8					Little recovery				
10		10%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP07B

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96*	**Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl): *3*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP07B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with grey fill, coarse grained sand, slag, and cinders. Moist.	CL			
2		100%			**DBO**	CL			
					Fill Material grey.				
4					**Filter Cake** (filter paper~ failed Fe test). Saturated @ approximately 3'.				
6		75%							
					Fill Material grey.				
8			5.0		**DBO** blue-green.	CL			
					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring TP08

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96*	**Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *2.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP08

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with grey fill, coarse grained sand, and fine gravel. Dry.	CL			
					Filter Cake				
2		90%	0.0		**Fill Material** black with pieces of plastic and some DBO. Saturated @ approximately 2.5'.				
4					**Filter Cake**				
			>20		**Fill Material** black with coarse grained sand, slag, and cinders.				
6		50%							
8					No sample to characterize.				
10		0%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP09

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96*	**Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP09

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		100%			**Topsoil** with black fill, coarse gravel, slag, and some fines. Moist.	CL			
4									
					Sand lens (1")	SW			
6		100%							
8			<2.0		**Gravel** coarse with black fill, slag, and some fines. Saturated @ approximately 6'.	GP			
10		50%							
					Gravel coarse with white lime waste and grey fill.	GP			
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP09A

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96*	**Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP09A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
					DBO ("+" Fe test).	CL			
2		80%			Sand coarse grained with grey-black fill material, slag, cinders, and brick (industrial fill).	SW			
4					Fill Material grey with fines.				
6		100%	<10		Sand fine grained, silty with fill material. Saturated @ approximately 5'.	SM			
8									
10		5%			No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP09B

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96*	**Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP09B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with grey fill and coarse grained sand. Dry.	CL			
					DBO ("+" Fe test) Fe reagent fizzed upon contact.	CL			
2		100%							
4					**Fill Material** ,grey, with coarse gravel, fine grained silty sand, and brick. Saturated @ 5'.	GP			
6		100%							
			<5		**Fill Material** black, fine grained. Saturated.	SP			
8					**Sand** silty.	SM			
10		50%							
					No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP09C

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96* **Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP09C

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%			**Topsoil** with black fine grained fill, coarse grained sand, and industrial fill. Dry.	SP			
2					**Filter Cake** ("-" Fe test)				
4					*End of Boring*				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP10

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96* **Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP10

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Filter Cake ("-" Fe test).				
					Fill Material grey with pieces of plastic (visqueen), slag, and cinders.				
2		100%			**DBO** ("+" Fe test)	CL			
					Fill Material black with coarse gravel, silty sand, and slag.				
4					**Filter Cake** (3")				
					Slag black with grey fill. Saturated @ approximately 5'.	GW			
6		100%			**DBO**	CL			
					Fill Material grey with coarse grained sand and some DBO. Wet.				
8					**Limestone Fill** grey with silty sand and DBO.	GP			
10		40%			No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP10-1

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96* **Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP10-1

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
			0.0						
2		90%			**Topsoil** with grey fill, coarse sand, slag, and some fines.	CL			
4									
					Filter Cake				
6		100%	0.0		**Fill Material** brown/black as above. Saturated @ 5'.				
					DBO blue/green	CL			
8			0.0						
10		90%			**DBO** with silty sand and fill as above.	CL			
			0.0		**DBO** yellow/white	CL			
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP10-2

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*		**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP10-2

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
			0.0		**Topsoil** with grey fill as before.	CL			
2		90%							
			0.0		**DBO** white.	CL			
					Fill Material grey as above.				
4			0.0		**Fill Material** yellow, hard, and flaky. ("coinshaped" sections).				
			0.0		**Fill Material** grey/black with some silty sand and coarse gravel. Saturated @ approximately 5'.				
6		50%	0.0						
8					No sample to characterize.				
10		0%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP11

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96* **Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP11

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		95%	>50		**Topsoil** with black fill, coarse grained sand, and slag.	CL			
2					**DBO**	CL			
4		50%			**Fill Material** grey/black, coarse grained gravel, and some fines. Saturated @ 4'.				
6					**DBO** blue/green	CL			
8		30%			**DBO** white/brown	CL			
10					No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP11A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96* **Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP11A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Filter Cake (Possible: "-" Fe test)				
2		95%			**Fill Material** light grey, with coarse sand, slag, grey DBO, and cinders. Saturated @ 5'.				
4									
6		75%			**DBO** white.	CL			
8									
10		0%			*No sample to characterize.*				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP11B

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96* **Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP11B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		75%			**Topsoil** with grey fill and coarse gravel.	CL			
					DBO ("+" Fe test)	CL			
2					**Fill Material** black, coarse sand, and slag. Moist.				
4		50%			**DBO** pale yellow/grey. Saturated @ 4'.	CL			
6									
8		0%			No sample to characterize.				
10									
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP11C

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/22/96* **Date Completed:** *7/22/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP11C

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		100%			**Topsoil** with grey fill, slag, asphalt, and cinders. Dry.	CL			
					DBO	CL			
4					**Fill Material** grey mixed with DBO. Saturated @ 4'.				
6		50%			**DBO** pale yellow	CL			
8									
10		75%			*No sample to characterize.*				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Fill Material** light grey, powdery with very fine grained sand.	SM			
					Fill Material dark grey with coarse gravel slag, and asphalt.				
					Wood	PT			
2		50%			**Fill Material** black with coarse gravel slag and asphalt. Moist.				
4			0.0		**DBO** pale yellow				
6		25%							
8					No sample to characterize.				
10		90%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *2*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		70%			**Fill Material** grey, darker with depth, coarse grained sand, slag, and some fines.				
4									
6		50%	0.0		**DBO**	CL			
8									
10		100%			No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12B

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96* **Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0			0.0		**Fill Material** grey, topsoil with some fine grained silty sand and coarse gravel. Dry.				
2		90%							
4					**Fill Material** dark grey with slag and cinders. Saturated @ approximately 4'.				
6		100%							
8					**DBO** of varying color (dark grey to pale yellow).	CL			
10		90%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12C

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12C

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		100%			**Fill Material** grey as before.				
4					**Fill Material** darker grey with slag and cinders. Moist.				
6		90%			**Silt** with peat.	OL			
8					**DBO.** Saturated @ 6'	CL			
10		50%			No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12D

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12D

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		100%	0.0		**Topsoil** with black fill, some fines, slag, brick, and plastic. Dry.	CL			
4					**Peat** with black fill. Moist. Saturated @ 4.5'.	PT			
6		95%							
8					**DBO** white/pale yellow.	CL			
10		90%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12E

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12E

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
					Topsoil with grey fill as seen before.	CL			
2		90%	0.0						
					DBO white ("+" Fe test). Dry.	CL			
4									
6		100%							
					Peat black	PT			
8									
					DBO pale yellow.	CL			
10		85%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12F

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12F

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with grey fill, slag, and some DBO. Dry.	CL			
2		80%	0.0		**Wood**	PT			
					Fill Material brown with coarse grained sand. Moist.				
4					**Gravel** coarse with sand fill as above. Saturated @ 4'.	GW			
6									
8					**DBO** white to pale yellow.	CL			
10									
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP12G

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96*	**Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP12G

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Filter Cake ("-" Fe test).				
2		15%			**Fill Material** grey as before.				
4									
6		15%			**Fill Material** black, silty sand with coarse gravel, slag, and cinders. Saturated @ 4'.				
8									
10		85%			No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP13

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP13

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		50%	0.0		**Fill Material** black with coarse gravel.				
					D80 ("+" Fe test).	CL			
2					No recoverable sample.				
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP14

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96* **Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP14

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Asphalt				
					Fill Material black.	GP			
					Gravel Fill				
2		85%			Fill Material black.				
					DBO pale yellow.	CL			
					Not a full sample. Could not characterize.				
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP15

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96* **Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP15

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Fill Material				
					Gravel coarse.	GW			
2		80%			DBO	CL			
4					No sample to characterize.				
					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP16

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/23/96*	**Date Completed:** *7/23/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl): *1*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP16

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		75%	0.0		**Fill Material** with brown coarse grained sand. Dry.				
					Fill Material black, fine. Moist.				
					DBO and fill. Saturated.	CL			
2					No sample to characterize.				
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring TP17

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4" Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96*	**Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP17

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
2		90%			Fill Material grey as before with wood.				
					Filter Cake ("-" Fe test).				
4			>20		Peat black. Saturated @ 4'.	PT			
6		100%							
8					DBO blue-green.	CL			
10		50%	0.0		DBO white/pale yellow.	CL			
12					No sample to characterize.				
					End of Boring				
14									
16									
18									
20									

Log of Boring TP18

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96*	**Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP18

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
2		90%	0.0		**Fill Material** grey as before. Moisture increasing with depth.				
4					**DBO** ("+" Fe test).	CL			
					Filter Cake dark yellow ("-" Fe test) filter paper.				
					Fill Material dark grey	CL			
6		70%			**DBO**				
8					**Peat** dark grey-black with some filter paper/ filter cake mixed in. Saturated @ approximately 6'.	PT			
10		70%			**DBO** white	CL			
12					No sample to characterize.				
					End of Boring				
14									
16									
18									
20									

Log of Boring TP19

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96* **Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP19

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with grey fill as before and brick.	CL			
2		75%			**Lime Waste** white, spongy material, not filter cake and not DBO ("-" Fe test).	CL			
					Fill Material grey. Moist.				
4					**Lime Waste** spongy as above.	CL			
					Fill Material grey, mixed with DBO.				
6		60%			**DBO** grey.	CL			
8									
10		60%			No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP19A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96* **Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP19A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0			0.0		**Topsoil** with grey fill as before and industrial fill, brick, slag, and asphalt. Dry.	CL			
2		40%							
4					**Lime Waste** white.	CL			
					Lime Waste black. Saturated @ 4'.	CL			
6		10%			**Lime Waste** white.	CL			
8					No sample to characterize.				
10		40%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP19B

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96*	**Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *5.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP19B

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		85%			**Topsoil** with grey fill as before. Moisture increasing with depth.	CL			
4					**Filter Cake** white, spongy ("-" Fe test) no filter paper.				
					Fill Material grey/black. Saturated @ approximately 5.5'.				
6		85%			**Fill Material** black and silty. Saturated.				
8					**DBO** white ("+" Fe test).	CL			
10					No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP19C

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96* **Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP19C

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
					Topsoil with some grey fill as seen before.	CL			
2		20%							
					Filter Cake				
					Fill Material grey.				
					Filter Cake	GW			
4					**Brick**				
			<5		**Peat** black and silty.	PT			
6		80%							
					DBO white/grey.	CL			
8									
10		100%			No sample to characterize.				
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP20

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96* **Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP20

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
			0.0		Topsoil with some grey fill.	CL			
2		100%			Filter Cake ("-" Fe test).				
					Fill Material grey.				
					Fill Material black and silty. Saturated @ 4'.				
4									
6		100%							
8			0.0		DBO of varying colors and consistencies.	CL			
10									
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP21

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/24/96* **Date Completed:** *7/24/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP21

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil with brown fill.	CL			
2		50%			Filter Cake				
4									
6		50%			No sample to characterize.				
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring TP22

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/26/96*	**Date Completed:** *7/26/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP22

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with grey fill. Dry.	CL			
2		90%	>30		**Slag** black with industrial fill and slag.	GW			
					Filter Cake ("-" Fe test).	SM			
					Fill Material black, fine grained, and silty.				
4			0.0						
6		100%							
8					DBO of varying colors and consistencies. Moisture increasing with depth. Some hard lime waste. Saturated @ approximately 4.5'.	CL			
10		10%							
12					End of Boring				
14									
16									
18									
20									

Log of Boring TP23

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/26/96*	**Date Completed:** *7/26/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring TP23

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil** with grey fill as before.	CL			
2		80%			**Slag** black with cinders, etc...	GW			
					Filter Cake				
					DBO and lime waste.	CL			
4									
6		0%							
8					No sample to characterize.				
10		30%							
12					End of Boring				
14									
16									
18									
20									

Soil Boring Logs for SWMU F
(Interior Soil Borings - [SP designation])

Log of Boring SP01

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96*	**Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *15*
Apparent Depth to Saturation While Drilling (ft. bgl): *12.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-15	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP01

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Clay** brown with sand and roots.	CL			
					Sand brown-grey, silty with some clay.	SM			
					DBO white.	CL			
					Sand brown-grey, silty with some clay.	SM			
2		50%	0.7						
4					**Clinker** black with some red stuff.	GW			
6		70%	29						
					Sand green and black, silty with some clay and roots.	SM			
8									
10		80%	0.5		**DBO** tan.	CL			
12									
14		10%	17		**Sand** grey, fine grained, and well sorted. DBO in basket. Saturated.	SW			
					End of Boring				
16									
18									
20									

Log of Boring SP01A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP01A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Sand grey, fine grained.	SW			
					Filter Cake white.	SW			
2		80%	5.3		**Sand** grey, fine grained with filter cake.				
					Filter Cake white.	GW			
					Clinker Gravel black with sand.				
					No recovery.				
4									
					Clinker Gravel black with sand. SAMPLE TAKEN.	GW			
6		80%							
					DBO green turning tan with fine grained interbeded sand.	CL			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring SP02

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96*	**Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *12.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP02

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Clay** brown with sand and roots.	CL			
					Sand grey-brown, silt, and clay.	SM			
					Filter Cake yellow.	SM			
2		80%			**Sand** brown-grey, fine grained with silt and black organic matter.				
					Filter Cake yellow.				
4					**Sand** black, fine grained with silt.	SM			
6		80%	5.4		**Sand** green, fine grained with indurated laminae.	SW			
8									
10		90%			**DBO** white.	CL			
12									
14		10%	8.9		**Sand** green-grey, fine grained with silt. Saturated.	SM			
16					**Peat** brown.	PT			
					End of Boring				
18									
20									

Log of Boring SP02A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP02A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		50%	0.4		**Filter Cake** white.				
					Sand grey, fine grained with silt.	SM			
2					**Filter Cake** white.				
					Clinker Gravel balck with some sand and occassional red gravel. SAMPLE TAKEN.	GW			
					No recovery.				
4		70%			**Clinker Gravel** with some sand and clay (DBO).	GW			
6					**DBO** tan and green, interbeded.	CL			
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring SP03

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96*	**Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *12.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP03

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Clay** brown with sand and silt.	CL			
2		90%			**Filter Cake** white. SAMPLE TAKEN.				
4									
6		90%	8.9		**Sand** grey with clay. SAMPLE TAKEN.	SC			
8					**DBO**	CL			
10		90%							
12									
14		10%			**Sand** grey. Saturated.	SW			
16					End of Boring				
18									
20									

Log of Boring SP04

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96* **Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *12.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP04

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
2		30%			**Filter Cake** white. SAMPLE TAKEN.				
4									
6		60%	35.7		**Sand** dark grey with silt.	SM			
					DBO brown, white, and green with indurated laminae. SAMPLE TAKEN.	CL			
8					**Sand** grey. Saturated. SAMPLE TAKEN.	SW			
10		50%			**DBO** brown and white laminae.	CL			
12									
14		20%	10.4		**Sand** grey, fine grained, and well sorted. Saturated.	SW			
16					**Peat** brown. SAMPLE	PT			
					End of Boring				
18									
20									

Log of Boring SP05

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96* **Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP05

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
2		60%	0.0		**Clinker** dark grey with gravel, sand, clay, and DBO.	GP			
4					**Filter Cake** yellow.				
6		50%	4.8		**Sand** dark grey, fine grained, well sorted, oily with dark grey DBO or clay laminae.	SC			
8									
10		20%	0.0		**Sand** as above. Saturated.	SC			
12									
14		20%							
					DBO white indurated.	CL			
16					**Peat** yellow and brown, sandy.	PT			
					End of Boring				
18									
20									

Log of Boring SP06

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96*	**Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *10*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP08

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
2		50%			Filter Cake yellow. SAMPLE TAKEN.				
4									
			682		Debris, sand, glass, & filter cake dark grey. SAMPLE TAKEN.				
6		50%							
8					Filter Cake yellow.				
10		60%			Sand grey, fine grained and filter cake. Saturated.	SC			
					Sand green, fine grained, and well sorted.	SW			
12					DBO tan.	CL			
14		30%							
			13.0		Peat black.	PT			
16					End of Boring				
18									
20									

Log of Boring SP06A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96* **Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *12*
Apparent Depth to Saturation While Drilling (ft. bgl): *9*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-12	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP06A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
2		100%			Filter Cake white and red.				
4									
6		50%							
8									
10		90%	0.0		Sand dark grey to grey, fine grained, silty with clay (DBO). Saturated. SAMPLE TAKEN.	SM			
12					DBO tan.	CL			
					End of Boring				
14									
16									
18									
20									

Log of Boring SP07

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96*	**Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *8.0*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP07

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Filter Cake yellow.				
2		95%	23		**Clay** grey with sand, some silt, and debris.	CL			
					Filter Cake yellow.				
4					No recovery.				
6		10%							
			67		**Wood** black with sand, steel, and glass.	PT			
8									
			35		**Wood** as above. Saturated.	PT			
10		30%							
					DBO tan with sand and silt.	CL			
12									
14		5%			**Sand** grey. Saturated?.	SW			
16					End of Boring				
18									
20									

Log of Boring SP07A

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *6.3*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.3*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-6.3	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP07A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Filter Cake white.				
					No recovery.				
2		50%			**Clinker** black with coal.	GW			
					Filter Cake white.				
4			21.1		**Sand** black, fine grained, clay, and organic matter (coal dust?).	SC			
					Shale Clast black, fissile.				
			45.1		**Clinker** black with sand and clay. Saturated. SAMPLE TAKEN. Refusal @ 6.3'.	GW			
6		60%			End of Boring				
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP08

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4" Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96* **Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *9.0*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP08

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0			5.9		**Topsoil**	CL			
					Clay dark grey with sand.	CL			
					Filter Cake white.				
2		30%			**Sand** grey with clay and debris.	SC			
4					**Column Bottoms** with sand and gravel.	PT			
6		50%							
8			26		**Sand** grey, silty, laminated. Moist.	SM			
10		80%	15		**DBO** with dark grey clay and sand. Saturated.	CL			
					DBO green and lam.	CL			
12									
14		10%			**Sand** green-grey with DBO. Saturated.	CL			
16			50		**Gravel** green and black with sand and DBO. Saturated.	GP			
					End of Boring				
18									
20									

Log of Boring SP08A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *8*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP08A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
2		80%			**Sand** grey, fine grained with DBO and clay mix.	SC			
4					**Filter Cake** white.				
					Clinker Gravel black. SAMPLE TAKEN.	GW			
6		25%			No recovery.				
8			24.1						
10		100%			**Sand** black, fine grained, silty with clay. Saturated.	SC			
12					**Sand** green and white, fine grained, lam, and DBO.	SC			
					No recovery.				
14		30%			**DBO** white.	CL			
					Clinker black with sand.	GW			
					Sand green-grey, fine grained, and well sorted. Moist.	SW			
16					End of Boring				
18									
20									

Log of Boring SP09

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/30/96* **Date Completed:** *7/30/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *15.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP08

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
			4.2		Filter Cake with gravel.				
					Sand grey.	SW			
2		80%			Filter Cake white.				
					Sand grey with silt, clay and filter cake.	SC			
4									
6		100%			Sand black, coarse grained, poorly sorted, and silty.				
			72.8			SM			
8									
10		50%							
12					DBO green and white, laminated.	CL			
14		20%							
16			258		Sand black with gravel and some clay. Saturated.	SW			
					End of Boring				
18									
20									

Log of Boring SP09A

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *6*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP09A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
2		80%			**Cinder Gravel** black with sand.	GW			
4									
6		50%							
8					**DBO** green turning white. Saturated. SAMPLE.	CL			
10		50%							
12					**DBO** white.	CL			
14		20%							
16			4.2		**Sand** black and fine grained.	SW			
					End of Boring				
18									
20									

Log of Boring SP10

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96* **Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *12.1*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP10

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		95%			**Clay** brown-grey with gravel, sand, and silt.	CL			
			14.7		**Clay** black with wood and carbonaceous material.	CL			
4					**Filter Cake** white.				
6		100%							
8			0.4		**Sand** brown, fine grained, well sorted with trace silt and white DBO. Laminae approximately 0.5", apiece.	SM			
10		100%							
12					**Sand** as above. Saturated.	SM			
14		40%			**DBO** white.	CL			
					Sand green and brown, fine grained, silty with trace clay. Moist.	SM			
16			31.7		**Gravel** black. Saturated.	GW			
					End of Boring				
18									
20									

Log of Boring SP11

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96* **Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *11.5*
Apparent Depth to Saturation While Drilling (ft. bgl): *8.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-11.5	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP11

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		70%	2.0		**Clay** brown-grey with sand and gravel.	CL			
					DBO white with clay as above. Interbeded.	CL			
2					**Clay** dark brown with sand.	CL			
					Filter Cake tan.				
					No recovery.				
4			4.4		**Clay** black with sand and silt.	CL			
					Clay green, (DBO?) with fine grained, well sorted sand as interbeded laminae.	CL			
6		100%			**Sand** brown, fine grained, well sorted with some silt interbeded with white DBO.	SM			
8					**Sand** black to dark grey, fine grained with some silt.	SM			
10		80%	4.0		**Sand** brown, fine grained, well sorted with some silt interbed with white and green DBO. Refusal @ 11.5'.	SM			
12					End of Boring				
14									
16									
18									
20									

Log of Boring SP11A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *7*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-7	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP11A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Clay** brown with trace gravel.	CL			
					Filter Cake white and grey fine grained sand with coal and wood fragments.				
2		70%			No recovery.				
					Filter Cake white. SAMPLE TAKEN.	CL			
4			0.4		**Clinker Gravel** black with sand.	GW			
					Sand green, fine grained, well sorted with green turning white DBO.	SW			
6		100%			**Sand** light brown, fine grained, well sorted with laminae of white DBO. SAMPLE TAKEN. Refusal @ 7'.	SC			
					End of Boring				
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP12

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96* **Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *14*
Apparent Depth to Saturation While Drilling (ft. bgl): *8.5*	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-14	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP12

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Filter Cake tan.				
2		70%			**Sand** dark grey, fine grained, silt, and some clay.	SM			
4					**Filter Cake** white.				
6		60%	31		**Sand** black, fine grained, silt with some clay. Petroleum odor.	SM			
8									
10		20%			**Sand** as above. Saturated.	SM			
12					**Sand** green, fine grained, indurated.	SW			
					Sand grey, fine grained, silty. Saturated.	SM			
14		10%			**DBO** white. Refusal @ 14'.	CL			
					End of Boring				
16									
18									
20									

Log of Boring SP13

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96*	**Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *8.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP13

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
			0.0		**Sand** grey, fine grained with some clay, silt, dissemated black organic matter, and coal.	SC			
2		90%			**Filter Cake** white.				
					Sand dark grey, fine grained with silt and some clay.	SM			
4									
6		30%			No recovery.				
			9.2		**Sand** black, fine grained and abundant organic matter.	SW			
8					**DBO** dark green-grey and some sand.	CL			
					Sand dark green-grey, fine grained with clay and silt. Saturated.	SM			
10		90%			**DBO** tan.	CL			
12									
14		50%							
			23.1		**Gravel** black with sand and abundant black dissemated matter.	GW			
16					End of Boring				
18									
20									

Log of Boring SP14

BASF Wyandotte SMWUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96*	**Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SMWUF Grain Size Analysis

Log of Boring SP14

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Filter Cake tan.				
2		80%	0.0		**Sand** grey, fine grained, well sorted with red gravel and some silt.	SW			
4					**Filter Cake** white.				
					Sand dark grey-brown, fine grained with silt.	SM			
					Sand dark grey and green, fine grained with laminated DBO. Saturated.	SW			
6		100%							
8									
10		50%			**DBO** green turning tan.	CL			
12									
14		30%							
			0.0		**Cinker Gravel** green to black with sand and silt. Saturated.	GW			
16					End of Boring				
18									
20									

Log of Boring SP15

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96*	**Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP15

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%			Filter Cake white. SAMPLED.				
2									
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP16

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96*	**Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP16

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		100%			Clay brown with gravel, sand, coal, and some silt.	CL			
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP17

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96* **Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP17

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%			**Clay** brown with sand and silt.	CL			
2					**Sand** brown to grey brown, fine grained with silt.	SM			
					Filter Cake white	SC			
4					**Sand** black, fine grained, silt, clay with abundant organic matter.				
					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP17A

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*	
Drilling Company: *Environmental Science and Engineering, Inc.*	
Drilling Rig: *Keck (TM) Soil Punch*	**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *7/31/96* **Date Completed:** *7/31/96*	**Total Depth Drilled (ft.):** *8*
Apparent Depth to Saturation While Drilling (ft. bgl):	**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-8	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP17A

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		50%			**Topsoil** brown.	CL			
2					**Filter Cake** white with black gravel parting.				
4		60%			No description.				
6									
8					End of Boring				
10									
12									
14									
16									
18									
20									

Log of Boring SP18

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *16*
Apparent Depth to Saturation While Drilling (ft. bgl): *4.5*		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-16	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP18

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Topsoil**	CL			
					Clay grey with gravel and sand.	CL			
					DBO	CL			
2		80%			**Sand** grey with coal and tan DBO mix.	SW			
4			0.0		**Sand** dark grey, silt with some clay and laminated tan DBO.	SM			
6		5%			No recovery. (Wet barrel). Wood plug in barrel.				
8									
10		50%			**DBO** green turning tan. SAMPLE TAKEN.	CL			
12					No recovery.				
14		20%			**Sand** grey, fine grained, well sorted. Saturated. SAMPLE TAKEN.	SW			
			0.4		**Sand** dark grey, fine grained with silt.	SM			
16					End of Boring				
18									
20									

Log of Boring SP19

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP18

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		100%			Filter Cake tan. SAMPLED.				
2									
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP20

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP20

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Clay** brown-grey with fragments of coal and limestone.	CL			
					DBO tan and grey, fine grained, interbeded with sand.	CL			
2		80%			**Clinker Gravel** black with sand and coal.	GW			
4			0.0		End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP21

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP21

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					Topsoil	CL			
2		80%			Filter Cake tan. SAMPLE.				
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP22

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP22

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		80%			**Filter Cake** white to tan. SAMPLE.				
2									
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP23

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP23

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		90%			**Filter Cake** white to tan. SAMPLE.				
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP24

BASF Wyandotte SWMUF Grain Size Analysis
1609 Biddle, Wyandotte, Michigan
Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP24

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0					**Filter Cake** white. SAMPLE.				
					Sand grey, fine grained, well sorted with silt and organic matter.	SM			
2		80%							
					Clinker black with coal and silt.	GW			
4			0.4		End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP25

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP25

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0									
2		100%			Filter Cake tan. SAMPLE.				
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									

Log of Boring SP26

BASF Wyandotte SWMUF Grain Size Analysis

1609 Biddle, Wyandotte, Michigan

Project Number: 4695-010

Client: *BASF*		
Drilling Company: *Environmental Science and Engineering, Inc.*		
Drilling Rig: *Keck (TM) Soil Punch*		**Drilling Method:** *Hydraulic Hammer*
Soil Sampling Device: *4' Lined*	*Steel Sampler*	**Borehole Diameter (in.):** *2*
Date Started: *8/1/96*	**Date Completed:** *8/1/96*	**Total Depth Drilled (ft.):** *4*
Apparent Depth to Saturation While Drilling (ft. bgl):		**Ground Elevation (ft.):**

Completion Information

Grout Interval (ft. bgl): 0-4	**Grout Type:** Bentonite Chips

NO WELL INSTALLED

Explanation & Comments

BASF Wyandotte SWMUF Grain Size Analysis

Log of Boring SP26

Depth (feet bgl)	Blow Counts	Sample Recovery (%)	PID or FID (ppm) Values	PID or FID (ppm) Profile	Soil/Rock Description and Comments	USCS Classification	Lithologic Log	Borehole Completion	Elevation (ft.)
0		50%			**Filter Cake** white to tan. SAMPLE TAKEN.				
2					No recovery.				
4					End of Boring				
6									
8									
10									
12									
14									
16									
18									
20									