Filed in E. Moline
John Deere file

EPA Region 5 Records Ctr.
355543

217/782-6762

December 8, 1982

Mr. John E. Smith
Environmental Control
Deere & Company
John Deere Road
Moline, Illinois 61265

Dear Mr. Smith.

Re: Request for Waiver of Permitting Requirements - Foundry Sand Disposal at John Deere Industrial Training Demonstration Site.

Your request for waiver of permitting requirements cannot be granted by this Agency.

In essence, what you request is a variance from permitting requirements adopted by the Pollution Control Board. Only the Pollution Control Board can grant a variance. Enclosed is a copy of the Environmental Protection Act. On Page 18 you will find Title IX: Variances explained.

Should you desire to pursue the permit route, I am enclosing "Chapter 7 Solid Waste" Rules and Regulations, and application forms for a solid waste disposal facility.

If you have any questions, please contact me at 217/782-9862.

Very truly yours,

Thomas E. Cavanagh, Jr., Manager
Permit Section
Division of Land Pollution Control

TEC/tk/z

Enclosures

cc: Robert Kuykendall
William Child
Rockford Region

(7)

DEERE & COMPANY

JOHN DEERE ROAD, MOLINE, ILLINOIS 61265 U.S.A.

RECEIVED

NOV 15 1982

STATE OF ILLINOIS

Safety, Environment
& Energy Management

4 November 1982

Mr. Thomas Cavanagh
Residual Management Section
Land/Noise Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Mr. Cavanagh:

Request for Waiver of Permitting Requirements - Foundry Sand Disposal
John Deere Industrial Training Demonstration Site

Some time ago, we discussed on the phone the possibility of utilizing spent foundry sand generated by John Deere Foundry in East Moline, Illinois as fill material at our Industrial Training ~~Demonstration Site near Coal~~ Valley, Illinois. In order to determine if such an operation could be eligible for waiver from normal waste disposal permitting requirements, you requested additional information. This letter is in response to your request.

File

John Deere Foundry in East Moline currently disposes of spent foundry sand in an on-site landfill permitted by Illinois EPA under Permit No. 1975-48-DE. John Deere Industrial Training Center currently operates a site located 1-1/2 miles south of U.S. Route 150 on Third Street near Coal Valley, Illinois for the purposes of demonstration and field training for industrial earth moving equipment manufactured by John Deere. A map is enclosed showing location of this site.

The Coal Valley site consists of approximately three acres. It is bounded on two sides by roadways and does not lie in a floodplain. The soil characteristics are shown on enclosed boring logs. Boring No. 9 is most applicable to the specific site in question. The drainage pattern is from south to north at a slope of 1.3% and from west to east at 8.4%. The character of the soil makes the site unsuitable for earth moving operations during wet weather.

It is proposed to fill the three-acre site with 60,000 tons of spent foundry sand to an average depth of 8'-2". This sand would be trucked from John Deere Foundry in East Moline in lieu of landfilling on-site at the Foundry. This would create an all-weather site for the Industrial Training Center operations, as well as extend the useful life of the John Deere Foundry landfill. The alternative of purchasing fresh sand for this fill would be quite expensive.

DEERE & COMPANY

We have run leachate tests on samples of our spent foundry sand (copies attached). We have included both a first and second leach result for each sample. We have also used both the RCRA E.P. toxicity test as well as the American Foundrymen's Society distilled water leach test. Studies have shown this latter test to be more representative of actual field conditions in mono-fill foundry landfills. All results show low levels of heavy metals and phenols in the resultant leachates.

We believe this beneficial use of our waste foundry sand can be implemented without environmental harm. Based on the above information, we are requesting a waiver of permitting requirements for an off-site landfill and special waste supplemental permitting requirements for the sand transfer. Since we have equipment and operators available, we would be amenable to any reasonable request for diking, grading, or runoff retention and evaporation pits using native materials, which you might wish to specifiy as conditions of your waiver.

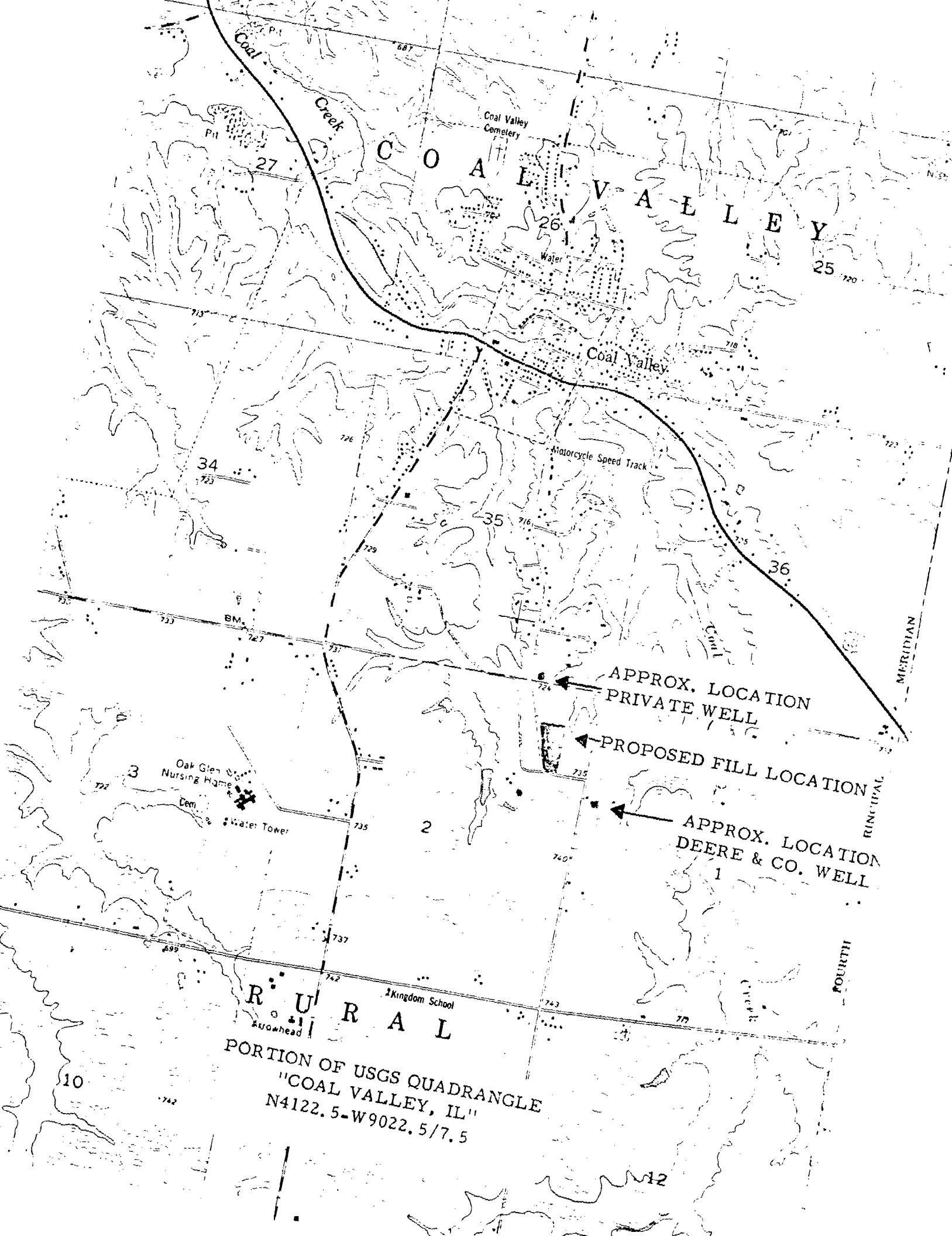
Your early attention to this matter will be greatly appreciated. Should you have any questions, please contact me at 309/752-5152.

Yours truly,

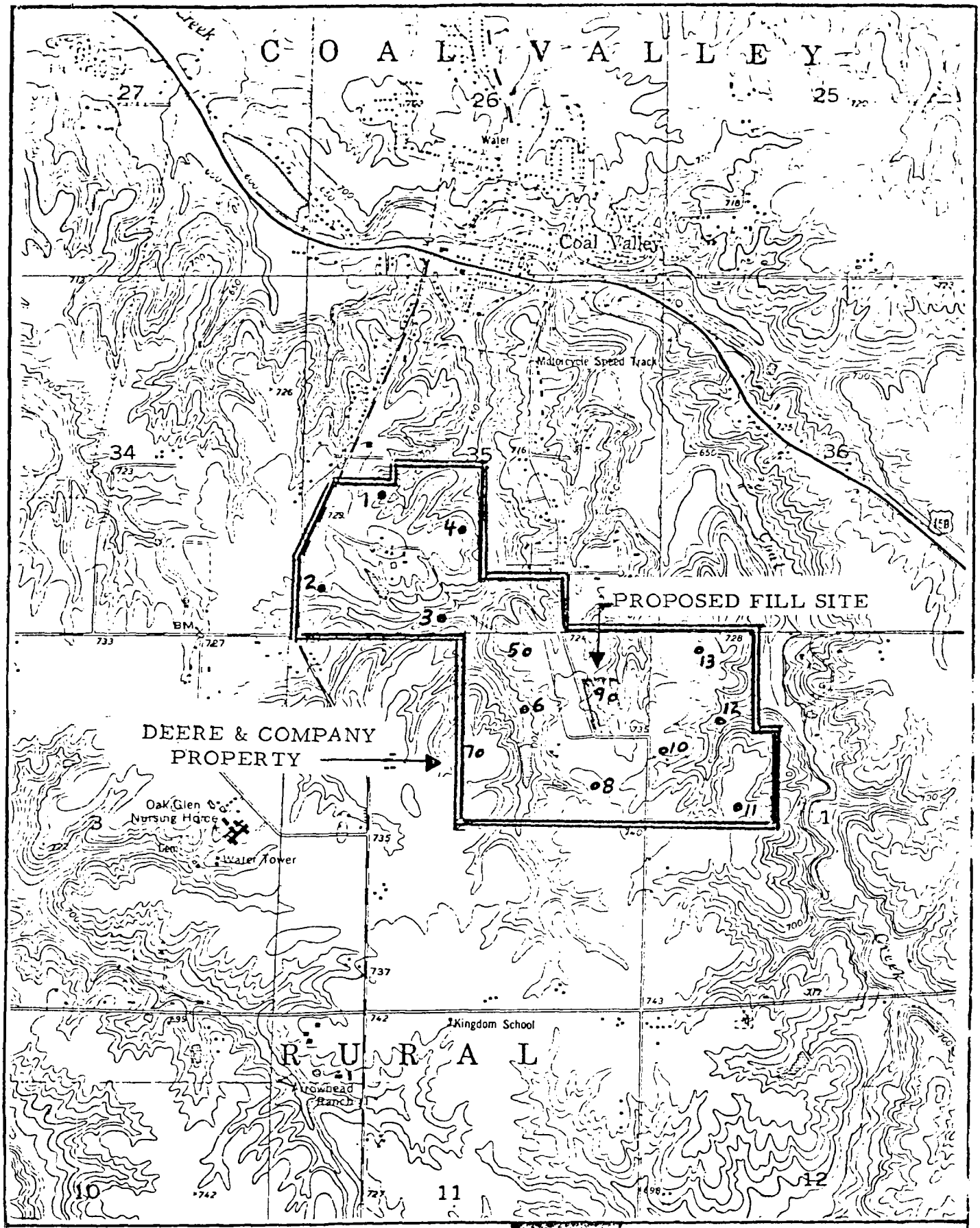
John E. Smith
Environmental Control

/jv
Att.

c: R. E. Goudy
R. D. Grotelueschen/D. Beck
D. E. Johnson
R. Kuykendall, IEPA
M. E. McGuire



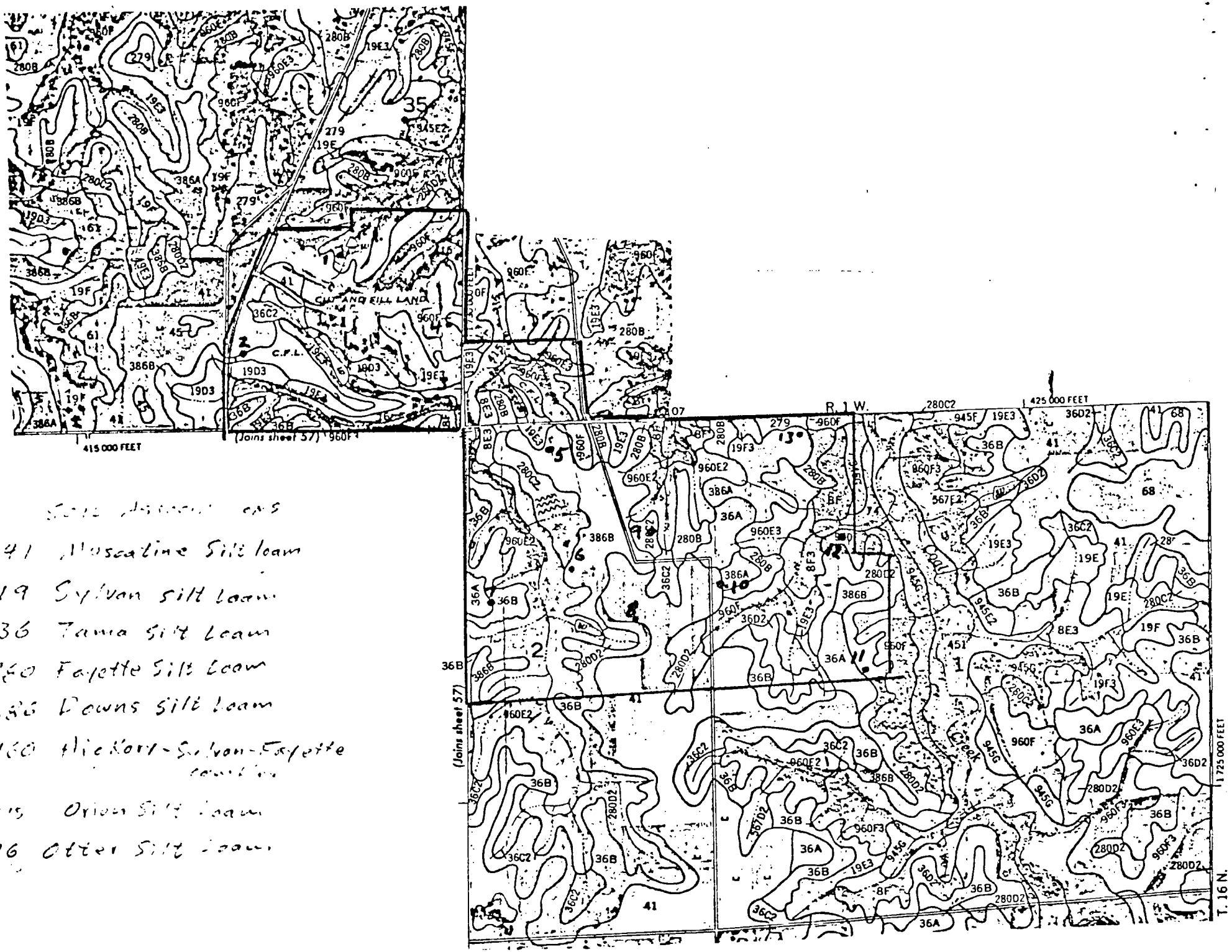
PORTION OF USGS QUADRANGLE
"COAL VALLEY, IL"
N4122.5-W9022.5/7.5



BORING LOCATION DIAGRAM
SITE SOIL SURVEY
DEERE & Co.
COAL VALLEY, ILL

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

760583 | 11-18-80



Soil Descriptions

41 Muscatine Silt loam

19 Sylvan Silt Loam

36 Tama Silt Loam

280 Fayette Silt Loam

386 Downs Silt Loam

960 Hickory-Sylvan-Fayette complex

945 Orion Silt Loam

76 Otter Silt Loam

LOG OF BORING NO. 1

OWNER	ARCHITECT-ENGINEER
J. DEERE & CO.	
SITE	**PROJECT NAME**
CORL VALLEY [illegible]	SITE [illegible]

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
1	AS					23.0					
	FA								5		SILT TRACE CLAY BROWN AND GRAY (6.0)
2	AS					22.0			10		SANDY SILTY CLAY BROWN
3	AI					19.2			15		
4	AI					18.5					(20.0)
									20		B.O.B.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS					
W.L.	12.0'	W.S. OR W.D.	12.0'	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-12-80
BORING COMPLETED	11-12-80
RIG CME 55	FOREMAN JF
APPROVED RKC	JOB # 780587

LOG OF BORING NO. 2

OWNER	ARCHITECT-ENGINEER
J DEERE & Co	
SITE	**PROJECT NAME**
COAL VALLEY	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
											6" TOPSOIL CLAYEY SILT BROWN AND GRAY
									5		
	PA								10		SILT BROWN TO GRAY
									15		(17.0)
1	AS					26.1					SANDY SILTY CLAY GRAY (20.0)
									20		B.O.B.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS					
W.L.	NONE	W.S. OR W.D.	NONE	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines IA
Kansas City Wichita, KS

BORING STARTED	11-12-80
BORING COMPLETED	11-12-80
RIG CME 55	FOREMAN JF
APPROVED RCL	JOB # 780587

LOG OF BORING NO. 3

OWNER	ARCHITECT-ENGINEER
J. DEERE & Co	
SITE	**PROJECT NAME**
CEDAR VALLEY, ILL	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
1	AJ					53.3			5		ORGANIC SILT DARK BROWN
									10		(10.0)
2	AJ					20.1			15		SANDY SILTY CLAY GRAY
	PG										(18.0)
3	AJ					32.5			20		SILTY CLAY HIGHLY WEATHERED SHALE (GRAY)
											B.O.B.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS					
W.L.	2.5'	W.S. OR W.D.	5.0'	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-11-80
BORING COMPLETED	11-11-80
RIG CME 55	FOREMAN JF
APPROVED RKL	JOB # 780513

LOG OF BORING NO. 4

OWNER	ARCHITECT-ENGINEER
J. DEERE & CO	
SITE	**PROJECT NAME**
COAL VALLEY	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
	14								5, 10, 15		CLAYEY SILT BROWN (15.0)
1	AJ					20.9			20		WEATHERED SHALE BROWN (20.0)
											B.O.B.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS					
W.L.	NONE	W.S. OR W.D.	NONE	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-11-10
BORING COMPLETED	11-11-10
RIG CME 55	FOREMAN JF
APPROVED RKL	JOB # 78055

LOG OF BORING NO. 5

OWNER	ARCHITECT-ENGINEER
J. DEERE & Co	—
SITE	**PROJECT NAME**
COAL VALLEY, ILL.	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft^3	Unified Class. Symbol	Depth	Elevation	Description
	1A								5, 10		SILT, TRACE CLAY DARK BROWN TO GRAY
1	AJ					24.7			15		(18.0)
2	AJ					26.3			20		SANDY SILTY CLAY GRAY (20.0)
											BOB

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS					
W.L.	none	W.S. OR W.D.	none	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-14-80
BORING COMPLETED	11-14-80
RIG CME 55	FOREMAN JF
APPROVED MKL	JOB # 780513

LOG OF BORING NO. 6

OWNER	ARCHITECT-ENGINEER
J. DECRE & Co.	—
SITE	**PROJECT NAME**
COAL VALLEY, ILL.	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
1	A1					23.2					
									5		SANDY CLAYEY SILT DARK BROWN TO BROWN
	1A								10		(10.0)
											SILT TRACE CLAY BROWN (13.0)
									15		CLAYEY SHALE GRAY
2	A1					20.5					
									20		(20.0)
											BOB

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS					
W.L.	11.0'	W.S. OR W.D.	11.0'	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-14-80
BORING COMPLETED	11-14-80
RIG CME 55	FOREMAN JF
APPROVED KL	JOB # 780183

LOG OF BORING NO. 7

OWNER	ARCHITECT-ENGINEER
J DEERE & Co.	
SITE	**PROJECT NAME**
COAL VALLEY, ILL.	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
									5		CLAYEY SILT BROWN TO GRAY
	1A								10		
									15		
									20		(200) B.O.B

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS					
W.L.	NONE	W.S. OR W.D.	19.5'	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-14-80
BORING COMPLETED	11-14-80
RIG CME 55	FOREMAN JF
APPROVED REL	JOB # 780593

LOG OF BORING NO. 8

OWNER	ARCHITECT-ENGINEER
J DEERE & Co.	—
SITE	**PROJECT NAME**
EAGLE VALLEY, ILL.	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
	PA								5 10 15 20	(20.0)	CLAYEY SILT, BROWN
											B.O.B

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS					
W.L.	NONE	W.S. OR W.D.	20.0	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-14-80
BORING COMPLETED	11-14-80
RIG CME 55	FOREMAN JF
APPROVED MKL	JOB # 7Y0783

LOG OF BORING NO. 9

OWNER	ARCHITECT-ENGINEER
J. DEERE & Co	—
SITE	**PROJECT NAME**
COAL VALLEY, ILL	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
1	AJ					21.0					SILT, TRACE CLAY, GRAY
									5		(8.0)
	1A								10		CLAYEY SILT, BROWN
											(13.5)
									15		SANDY SILTY CLAY, BROWN
									20		(20.0)
											B.O.B.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS					
W.L.	NONE	W.S. OR W.D.	20.0	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-12-80		
BORING COMPLETED	11-12-80		
RIG CME 55		FOREMAN	JK
APPROVED RKC		JOB #	710587

LOG OF BORING NO. 10

OWNER	ARCHITECT-ENGINEER
J DEERE & Co	—
SITE	**PROJECT NAME**
COAL VALLEY, Ill	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
	1A								5, 10, 15		CLAYEY SILT, BROWN
											(18.5)
1	A)					44.7			20		(20.6) ORGANIC SILT, TRACE CLAY, DARK BROWN
											B.O.B.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS					
W.L.	NOLE	W.S. OR W.D.	17.0	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-14-80
BORING COMPLETED	11-14-80
RIG CME 55	FOREMAN JF
APPROVED RKC	JOB # 78051

LOG OF BORING NO. 11

OWNER	ARCHITECT-ENGINEER
J DEERE & CO	–
SITE	**PROJECT NAME**
COAL VALLEY, ILL	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
	PA								5, 10, 15		CLAYEY SILT, BROWN (18.0)
1	AJ					21.5			20		SANDY SILTY CLAY, BROWN (20.0)
											B.O.B

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS					
W.L.	none	W.S. OR W.D.	none	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-12-80
BORING COMPLETED	11-12-80
RIG CME 55	FOREMAN JF
APPROVED RKL	JOB # 7/0513

LOG OF BORING NO. 12

OWNER	ARCHITECT-ENGINEER
J DEERE & CO.	
SITE	**PROJECT NAME**
COAL VALLEY, ILL.	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
	1A										(1.0) CLAYEY SILT DARK BROWN
1	AJ					37.3			5		SILTY CLAY, LITTLE SAND BROWN (6.0)
2	AJ					16.0					WEATHERED SANDY & CLAYEY SHALE (FEW COAL SEAMS) GRAY
	1A								10		(13.0)
									15		B.O.B.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES. IN-SITU. THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS					
W.L.	12.0	W.S. OR W.D.	10.5	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-12-80
BORING COMPLETED	11-12-80
RIG CME 55	FOREMAN JK
APPROVED RKL	JOB # 780583

LOG OF BORING NO. 13

OWNER	ARCHITECT-ENGINEER
J DEERE & Co.	
SITE	**PROJECT NAME**
COAL VALLEY, ILL.	SITE SOIL SURVEY

Sample No.	Type Sample	Sampling Distance	Recovery	Blows/ft.	Unconfined Compressive Strength-lbs./ft.^{2}	Water Content-%	Dry Density-lbs./ft.^{3}	Unified Class. Symbol	Depth	Elevation	Description
	1A								5, 10, 15		SILT TRACE CLAY BROWN & GRAY
1	A1					25.2					(20.0)
									20		B.O.B

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES IN-SITU. THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS					
W.L.	NONE	W.S. OR W.D.	NONE	A.B.	
W.L.		B.C.R.		A.C.R.	
W.L.					

Terracon Consultants, Inc.
Cedar Rapids Davenport Des Moines, IA
Kansas City Wichita, KS

BORING STARTED	11-12-80
BORING COMPLETED	11-12-80
RIG Cme 55	FOREMAN JA
APPROVED AKL	JOB # 7/0513

Beling Laboratories
1001 - 16th Street
Moline, Illinois 61265
Phone 309 / 757-9800

Laboratory Report

Date October 21, 1982

Received August 11, 1982

Lab No. B1470-71
P.O. #DC12569

John Deere Training & Demo Site
Coal Valley, Illinois 61240

Samples treated per RCRA E.P. Toxicity test.

	Foundry Sand Slab Behind Building Leachate 1	Foundry Sand Slab Behind Building Leachate 2	Foundry Sand Landfill Leachate 1	Foundry Sand Landfill Leachate 2
Initial pH	9.16	-	9.12	-
Final pH	4.46	4.61	5.07	5.12
Arsenic, mg/l	0.006	0.004	0.002	0.004
Barium, mg/l	0.4	0.4	0.3	0.4
Cadmium, mg/l	<0.005	<0.005	<0.005	<0.005
Chromium, mg/l	<0.05	<0.05	<0.05	<0.05
Lead, mg/l	<0.1	<0.1	<0.1	<0.1
Mercury, mg/l	0.0004	0.0002	0.0011	0.0003
Selenium, mg/l	0.006	0.006	0.002	0.003
Silver, mg/l	<0.01	<0.01	<0.01	<0.01
Zinc, mg/l	0.587	0.591	0.578	0.219
Phenols, mg/l	0.225	0.072	0.005	0.005

cc: John Smith, Deere & Co.

Jeffrey A. Wasson
Chemist

Beling Laboratories
1001 - 16th Street
Moline, Illinois 61265
Phone 309 / 757-9800

Laboratory Report

Date October 21, 1982

Received August 11, 1982

Lab No. B1470-71
P.O. #DC12569

John Deere Training & Demo Site
Coal Valley, Illinois 61240

Samples extracted with distilled water only.

	Foundry Sand Slab Behind Building Leachate 1	Foundry Sand Slab Behind Building Leachage 2	Foundry Sand Landfill Leachate 1	Foundry Sand Landfill Leachate 2
Initial pH	9.14	-	9.10	
Final pH	8.34	8.21	8.68	8.61
Arsenic, mg/l	0.011	0.009	0.004	0.006
Barium, mg/l	<0.1	<0.1	0.1	0.2
Cadmium, mg/l	<0.005	<0.005	<0.005	<0.005
Chromium, Total, mg/l	<0.05	<0.05	<0.05	<0.05
Lead, mg/l	<0.1	<0.1	<0.1	<0.1
Mercury, mg/l	<0.0002	<0.0002	0.0008	<0.0002
Selenium, mg/l	0.006	0.006	0.003	<0.002
Silver, mg/l	<0.01	<0.01	<0.01	<0.01
Zinc, mg/l	0.163	0.120	0.116	0.134
Phenols, mg/l	0.032	<0.005	<0.005	0.019

cc: John Smith, Deere & Company

Jeffrey A. Wasson