Dvirka and Bartilucci
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December 17, 2001

Mr. Joseph Jones
Division of Environmental Remediation
New York State Department
of Environmental Conservation
625 Broadway
Albany, NY 12233-7010

Re: New Cassel Industrial Area
Off-site Groundwater Monitoring and Assessment Program
Work Assignment No. D003600-25
D&B No. 1898

Dear Mr. Jones:

This letter report provides documentation for the field work conducted for the New Cassel Industrial Area. The activities related to construction of the eight (8) new monitoring wells, including drilling, logging, well construction, well development, cuttings disposal and well surveying, are described below.

Well Locations

Eight new wells (MW-1 through MW-8) were constructed in a residential area, downgradient of the New Cassel Industrial Area. The well locations and depths of the wells were selected by the NYSDEC to supplement the existing monitoring well network. The locations of the eight new monitoring wells and the four existing early warning wells are illustrated on Figure 1. The eight wells were constructed as two 2-well clusters and one 4-well cluster. One of the 2-well clusters is located at 1052 Grand Boulevard and contains wells MW-5 and MW-6. The second 2-well cluster is located at 791 Edgewood Drive and contains wells MW-7 and MW-8. The 4-well cluster is located at the southwest corner of Myron Road and Bowling Green Drive and contains wells MW-1 through MW-4.

Project Setup

A decontamination pad was constructed at the Bowling Green Water District well field located at the south end of Iris Place in South Westbury. The drilling equipment and supplies were also stored at this location. In addition, potable water used for decontamination and well drilling was obtained from a fire hydrant on the Bowling Green Water District well field property.

Drilling and Logging

Drilling and well construction was conducted by American Auger and Ditching Company, Inc. of Constantia, New York. Seven of the eight boreholes (MW-1 through MW-3 and MW-5 through MW-8) were drilled using 4 ¼-inch ID hollow stem augers. The eighth borehole (MW-4) was drilled using the mud rotary method with an 8-inch roller bit. Soil cuttings were logged by a geologist in accordance with the Unified Soil Classification System. Boring logs for the eight boreholes are included as Attachment 1.

During drilling and well construction, ambient air in the work zone was monitored for volatile organic compounds (VOCs) using a Photovac 2020 organic vapor analyzer equipped with a photoionization detector (PID). No VOC levels above background were detected during the drilling and well construction activities at any of the eight locations.

Well Construction

Table 1 summarizes the well construction details. All eight wells were constructed of Schedule 40 flush joint PVC with 20 feet of 10-slot screen. Seven of the eight wells (MW-1 through MW-3 and MW-5 through MW-8) were constructed with 2-inch diameter PVC. The eighth well (MW-4) was constructed with 4-inch diameter PVC. Clean No. 1 grade sand pack was tremied around the well screen to at least 3 feet above the top of the well screen. A bentonite slurry was tremied around the riser pipe to at least 3 feet above the sand pack. The remaining annular space was filled to ground surface with a bentonite/cement grout. Each well was secured with a locking compression cap and padlock, and the well was completed at ground surface with a flush-mounted steel vault box. Well construction logs for the eight wells are included as Attachment 2.

Cuttings Disposal

The cuttings generated during drilling were contained in 15-yard roll-off containers. The roll-off containers were staged at the Bowling Green Water District well field. The two 15-yard roll-off containers were removed by Jamaica Recycling, Inc. on October 22 and October 29, 2001.

Fifteen 55-gallon drums were used to contain drilling fluids generated from the construction of borehole MW-4. The 15 drums were removed for disposal as non-hazardous waste by Action Environmental Group on October 26, 2001.

Well Development

The eight new monitoring wells were each developed by pumping and surging to remove sediment from the well and to improve hydraulic connection to the aquifer. A decontaminated 2-inch

submersible pump with dedicated polyethylene tubing was used for development. Water quality measurements, including pH, specific conductivity, temperature, dissolved oxygen and turbidity, were measured at regular intervals during development. Well development was considered complete when the measured field parameters stabilized to within 10% for two consecutive readings and the turbidity was measured less than 50 nephelometric turbidity units (NTUs). All development water was collected in a water tank and discharged to the Nassau County sanitary sewer system with the authorization of the Nassau County Department of Public Works.

Well Surveying

The eight new monitoring wells were surveyed on November 28, 2001, for horizontal and vertical control by YEC, Inc. The vertical elevations were tied to the National Geodetic Vertical Datum of 1929 (NGVD-1929). Horizontal control was tied to the New York State Plan Coordinate System. Survey data are summarized in Table 1. The survey report is included as Attachment 3.

If you have any questions or require additional information, please contact me at (516) 364-9890.

Very truly yours,

Keith Robins

Keith S. Robins

KSR/ld
Enclosure
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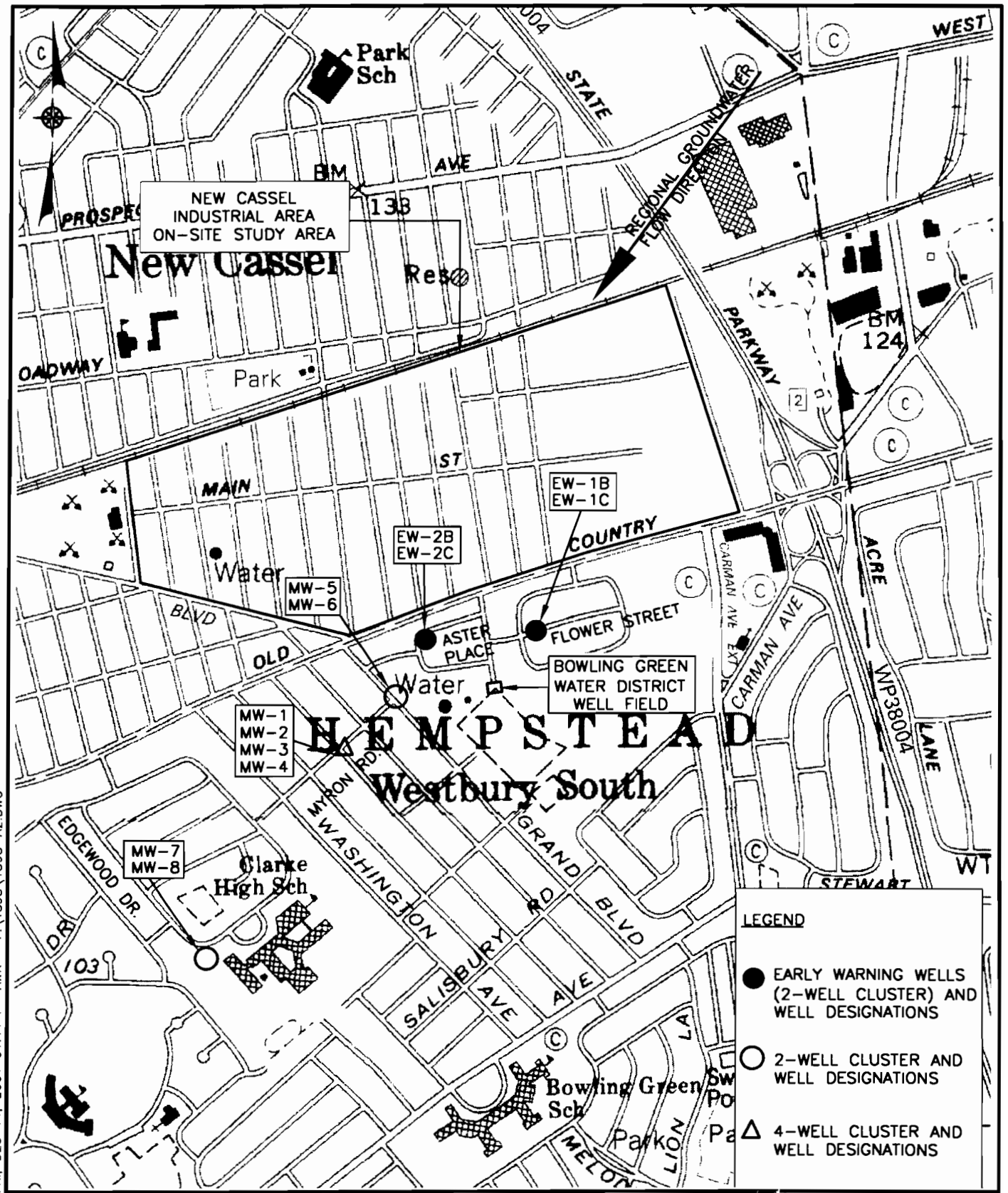

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NEW CASSEL INDUSTRIAL AREA
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM

EARLY WARNING WELL AND NEW MONITORING WELL LOCATIONS

Dvirka and Bartilucci Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 1

Table 1

SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
NEW CASSEL INDUSTRIAL AREA
OFF-SITE GROUNDWATER MONITORING PROGRAM

Well ID	Diameter and Material	Screen Zone*	Sand Pack*	Bentonite Seal*	Top of PVC Elevation	Ground Elevation
MW-1	2-inch PVC	90-110	87-110	84-87	115.11	115.44
MW-2	2-inch PVC	110-130	107-130	104-107	115.14	115.40
MW-3	2-inch PVC	130-150	127-150	51-127	115.13	115.35
MW-4	4-inch PVC	180-200	175-200	30-175	115.24	115.49
MW-5	2-inch PVC	90-110	87-110	84-87	117.11	117.38
MW-6	2-inch PVC	110-130	107-130	75-107	117.14	117.37
MW-7	2-inch PVC	90-110	86-110	83-86	107.05	107.34
MW-8	2-inch PVC	119-139	116-139	55-116	106.98	107.22

*Feet below ground surface

ATTACHMENT 1

BORING LOGS

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-1 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/17/01	**Geologist:** Jim Milligan **Drilling Method:** HSA **Drive Hammer Weight:** NA **Date Completed:** 10/17/01	**Boring Completion Depth:** 110' **Ground Surface Elevation:** --- **Boring Diameter:** 6.5"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; MEDIUM TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-70	Tan; FINE TO COARSE SAND; occasional fine to coarse gravel; wet; no odor.	SP
70-110	Light tan; MEDIUM TO COARSE SAND; wet; no odor.	SP
	Well information: MW-1 screened from 90-110 feet below ground surface	

NOTES: Logged from cuttings.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-2 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/18/01	**Geologist:** Jim Milligan **Drilling Method:** HSA **Drive Hammer Weight:** NA **Date Completed:** 10/18/01	**Boring Completion Depth:** 130' **Ground Surface Elevation:** --- **Boring Diameter:** 6.5"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; MEDIUM TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-70	Tan; FINE TO COARSE SAND; occasional fine to coarse gravel; no odor.	SP
70-120	Light tan; MEDIUM TO COARSE SAND; wet; no odor.	SP
120-130	Light tan; FINE TO MEDIUM SAND; wet; no odor.	SM
	Well information:	
	MW-2 screened from 110-130 feet below ground surface	

NOTES: Logged from cuttings.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-3 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/23/01	**Geologist:** Jim Milligan **Drilling Method:** HSA **Drive Hammer Weight:** NA **Date Completed:** 10/23/01	**Boring Completion Depth:** 150' **Ground Surface Elevation:** --- **Boring Diameter:** 6.5"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; MEDIUM TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-70	Tan; FINE TO COARSE SAND; occasional fine to coarse gravel; wet; no odor.	SP
70-120	Light tan; MEDIUM TO COARSE SAND; wet; no odor.	SP
120-135	Light tan; FINE TO MEDIUM SAND; wet; no odor.	SM
135-140	Light tan; FINE SILTY SAND; trace clay; no odor.	SC
140-150	Grey; FINE TO MEDIUM SILTY SAND; trace tan clay; no odor	SC
	Well information:	
	MW-3 screened from 130-150 feet below ground surface	

NOTES: Logged from cuttings.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No.:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-4 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/25/01	**Geologist:** Jim Milligan **Drilling Method:** Mud Rotary **Drive Hammer Weight:** NA **Date Completed:** 10/25/01	**Boring Completion Depth:** 200' **Ground Surface Elevation:** --- **Boring Diameter:** 8"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; MEDIUM TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-70	Tan; FINE TO COARSE SAND; occasional fine to coarse gravel; wet; no odor.	SP
70-120	Light tan; MEDIUM TO COARSE SAND; wet; no odor.	SP
120-135	Light tan; FINE TO MEDIUM SAND; wet; no odor.	SM
135-140	Light tan; FINE SILTY SAND; trace clay; wet; no odor.	SC
140-150	Grey; FINE TO MEDIUM SILTY SAND; trace tan clay; wet; no odor.	SC
150-160	Grey; FINE SILTY SAND; some grey clay; wet; no odor.	SC
160-190	Grey; FINE TO MEDIUM SILTY SAND; trace clay; wet; no odor.	SC
190-200	Light tan to grey; SILTY CLAY; wet no odor.	CL
	Well information:	
	Well MW-4 screened 180-200 feet below ground surface	

NOTES: Logged from cuttings.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-5 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/17/01	**Geologist:** Jim Milligan **Drilling Method:** HSA **Drive Hammer Weight:** NA **Date Completed:** 10/17/01	**Boring Completion Depth:** 110' **Ground Surface Elevation:** --- **Boring Diameter:** 6.5"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; FINE TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-70	Tan; FINE TO COARSE SAND; occasional fine to coarse gravel; wet; no odor.	SP
70-75	Dark tan to brown; FINE TO COARSE SAND; occasional rounded gravel; wet; no odor.	SP
75-100	Light tan; FINE TO MEDIUM FINE SAND; little silt; wet; no odor.	SM
100-110	Light tan; FINE SAND; mica flakes; wet; no odor.	SP
	Well information: MW-5 screened 90-110 feet below ground surface	

NOTES: Logged from cuttings.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-6 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/16/01	**Geologist:** Jim Milligan **Drilling Method:** HSA **Drive Hammer Weight:** NA **Date Completed:** 10/16/01	**Boring Completion Depth:** 130' **Ground Surface Elevation:** --- **Boring Diameter:** 6.5"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; FINE TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-70	Tan; FINE TO COARSE SAND; occasional fine to coarse gravel; wet; no odor.	SP
70-75	Dark tan to brown; FINE TO COARSE SAND; occasional rounded gravel; wet; no odor.	SP
75-100	Light tan; FINE TO MEDIUM FINE SAND; little silt; wet; no odor.	SM
100-130	Light tan; FINE SAND; mica flakes; wet; no odor.	SP
	Well information:	
	MW-6 screened 110-130 feet below ground surface	

NOTES: Logged from cuttings.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-7 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/18/01	**Geologist:** Jim Milligan **Drilling Method:** HSA **Drive Hammer Weight:** NA **Date Completed:** 10/18/01	**Boring Completion Depth:** 110' **Ground Surface Elevation:** --- **Boring Diameter:** 6.5"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; MEDIUM TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-65	Brown; MEDIUM TO COARSE SAND; occasional fine to coarse gravel; wet; no odor.	SP
65-70	Light tan; MEDIUM TO COARSE SAND; wet; no odor.	SP
70-105	Tan; FINE TO MEDIUM SANDS; wet; no odor.	SP
105-110	Light tan to white; SILTY CLAY; wet; no odor.	CL
	Well information:	
	MW-7 screened from 90-110 feet below ground surface	

NOTES: Logged from cuttings.

Dvirka and Bartilucci CONSULTING ENGINEERS	**Project No:** 1898 **Project Name:** New Cassel Industrial Area Off-site Groundwater Mon. South Westbury, NY	**Boring No:** MW-8 **Sheet** 1 **of** 1 . **By:** JM
Drilling Contractor: American Auger **Driller:** Rocky Baye **Drill Rig:** CT 250 **Date Started:** 10/24/01	**Geologist:** Jim Milligan **Drilling Method:** HSA **Drive Hammer Weight:** NA **Date Completed:** 10/24/01	**Boring Completion Depth:** 140' **Ground Surface Elevation:** --- **Boring Diameter:** 6.5"

Depth (ft.)	Sample Description	USCS
0-1	Black; highly organic FINE TO COARSE SAND; moist; organic odor.	ML
1-35	Tan; MEDIUM TO COARSE SAND; trace silt; occasional fine to coarse gravel; dry; no odor.	SP
35-70	Tan; FINE TO COARSE SAND; occasional fine to coarse gravel; wet; no odor.	SP
70-90	Light tan; MEDIUM TO COARSE SAND; wet; no odor.	SP
90-92	Light tan to white; SILTY CLAY; wet; no odor.	CL
92-140	Light tan; FINE TO MEDIUM SAND; wet; no odor.	SP
	Well information:	
	MW-8 screened from 139-119 feet below ground surface	

NOTES: Logged from cuttings. Drilling crew noted silty clay layer at ~ 90-92 feet below ground surface.

ATTACHMENT 2

WELL CONSTRUCTION LOGS

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

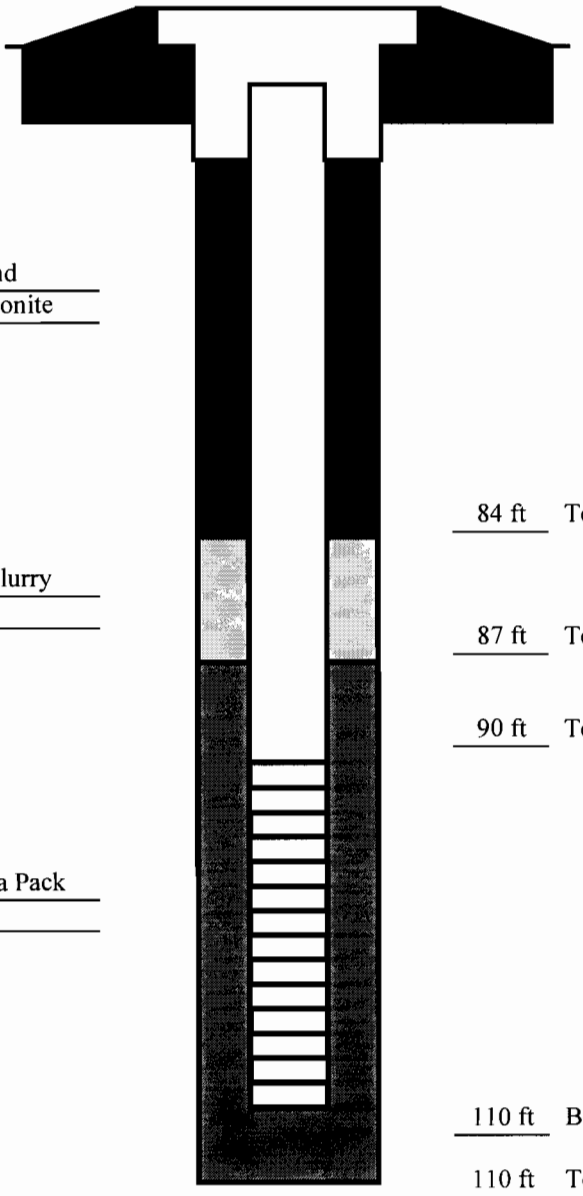
Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-1

Total Depth: 110 ft | Surface Elevation: 115.44 | Top Riser Elevation: 115.11

Water Levels (Depth, Date, Time): 50.51 ft 10/24/01 | Date Installed: 10/17/01

Riser	Dia.	2 inch	Material	PVC	Length	90 ft	
Screen	Dia.	2 inch	Material	PVC	Length	20 ft	Slot Size 0.010 inch

SCHEMATIC



Surface Seal Type: Portland Cement

Ground Surface

Riser Elevation

Bottom Surface Seal

Grout Type: Quickrete Portland Cement and Bentonite

84 ft Top Seal

Seal Type: Bentonite Slurry

87 ft Top Sand Pack

90 ft Top Screen

Sand Pack Type: Filpro Silica Pack

Size: Number 1

110 ft Bottom Screen

110 ft Total Depth of Boring

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-2

Total Depth: 130 FT | Surface Elevation: 115.40 | Top Riser Elevation: 115.14

Water Levels (Depth, Date, Time): 50.81 ft 10/24/01 | Date Installed: 10/18/01

Riser	Dia.	2 inch	Material	PVC	Length	110 ft	
Screen	Dia.	2 inch	Material	PVC	Length	20 ft	Slot Size: 0.010 inch

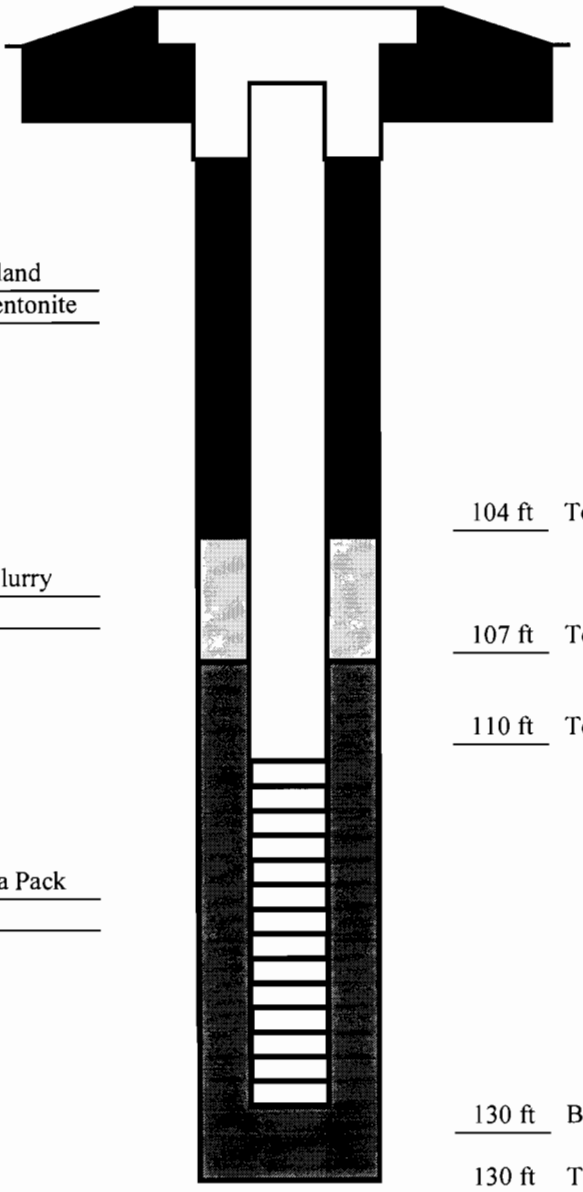
SCHEMATIC

Surface Seal Type: Cement

Grout Type: Quickrete Portland Cement and Bentonite

Seal Type: Bentonite Slurry

Sand Pack Type: Filpro Silica Pack
Size: Number 1



Ground Surface
Riser Elevation
Bottom Surface Seal

104 ft Top Seal

107 ft Top Sand Pack

110 ft Top Screen

130 ft Bottom Screen

130 ft Total Depth of Boring

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Well Construction Log

Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-3

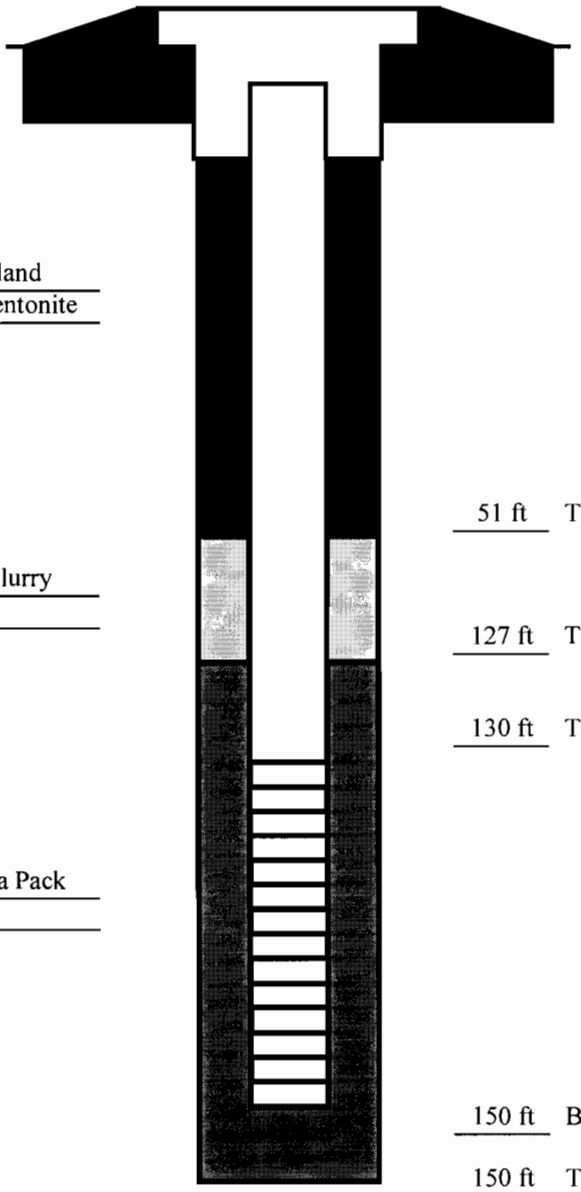
Total Depth: 150 FT | Surface Elevation: 115.35 | Top Riser Elevation: 115.13

Water Levels (Depth, Date, Time): 50.51 FT 10/24/01 | Date Installed: 10/23/01

Riser	Dia.	2 inch	Material	PVC	Length	130 ft	
Screen	Dia.	2 inch	Material	PVC	Length	20 ft	Slot Size 0.010 inch

SCHEMATIC

Surface Seal Type: Cement



Ground Surface

Riser Elevation

Bottom Surface Seal

Grout Type: Quickrete Portland Cement and Bentonite

51 ft Top Seal

Seal Type: Bentonite Slurry

127 ft Top Sand Pack

130 ft Top Screen

Sand Pack Type: Filpro Silica Pack

Size: Number 1

150 ft Bottom Screen

150 ft Total Depth of Boring

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Well Construction Log

Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-4

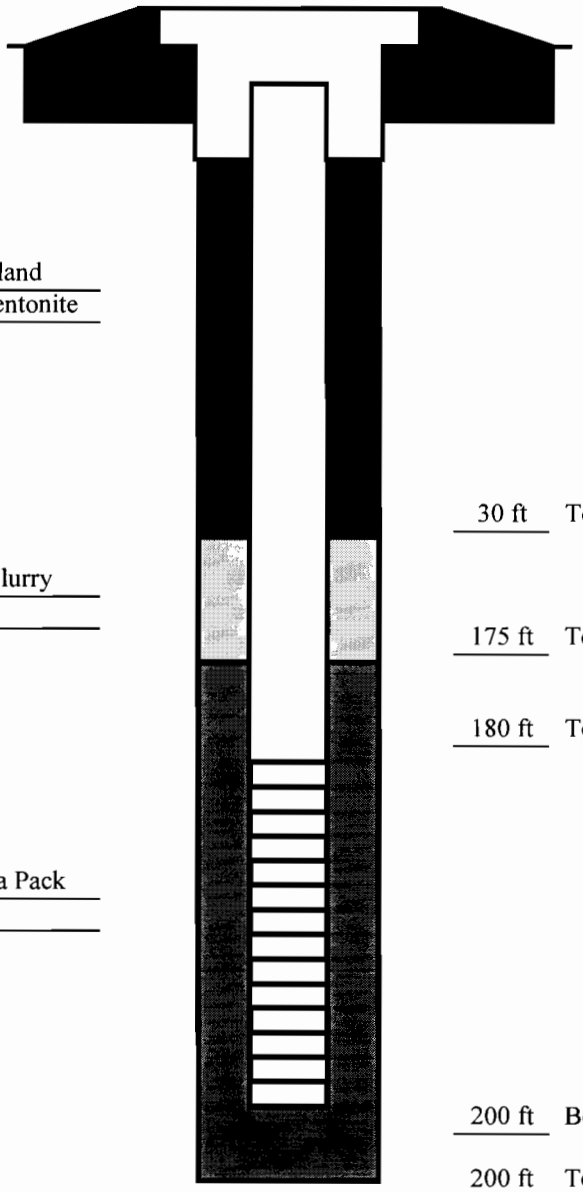
Total Depth: 200 FT | Surface Elevation: 115.49 | Top Riser Elevation: 115.24

Water Levels (Depth, Date, Time): 51.95 ft 10/26/01 | Date Installed: 10/25/01

Riser	Dia.	4 inch	Material	PVC	Length	180 ft	
Screen	Dia.	4 inch	Material	PVC	Length	20 ft	Slot Size 0.010 inch

SCHEMATIC

Surface Seal Type: Cement



Ground Surface

Riser Elevation

Bottom Surface Seal

Grout Type: Quickrete Portland Cement and Bentonite

30 ft Top Seal

Seal Type: Bentonite Slurry

175 ft Top Sand Pack

180 ft Top Screen

Sand Pack Type: Filpro Silica Pack

Size: Number 1

200 ft Bottom Screen

200 ft Total Depth of Boring

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A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-5

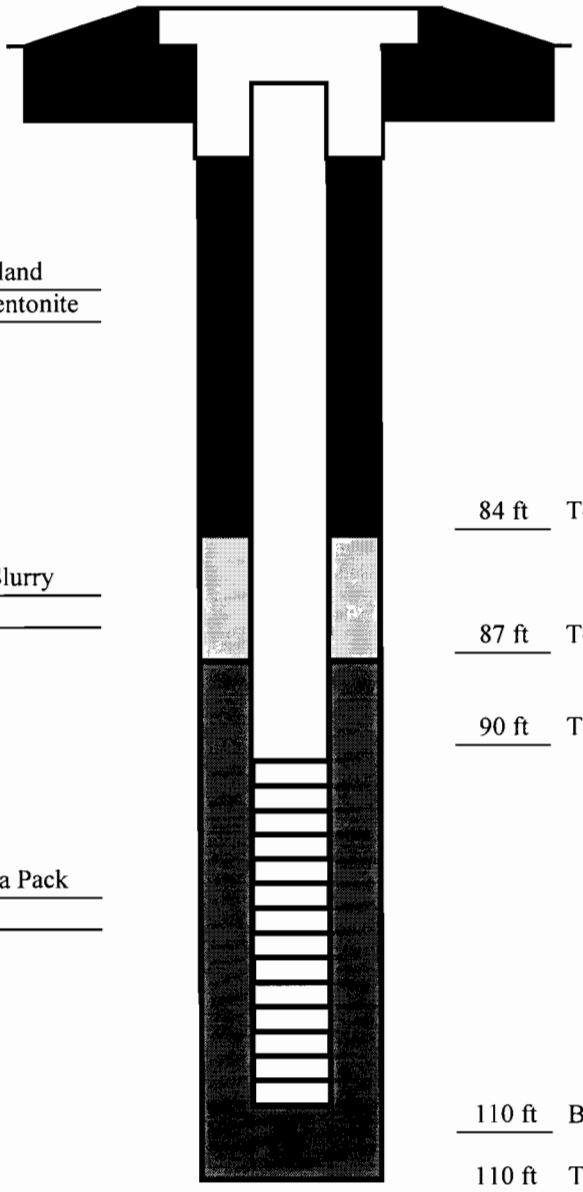
Total Depth: 110 ft | Surface Elevation: 117.38 | Top Riser Elevation: 117.11

Water Levels (Depth, Date, Time): 52.03 ft 10/23/01 | Date Installed: 10/17/01

Riser	Dia.	2 inch	Material	PVC	Length	90 ft	
Screen	Dia.	2 inch	Material	PVC	Length	20 ft	Slot Size 0.010 inch

SCHEMATIC

Surface Seal Type: Cement



Ground Surface

Riser Elevation

Bottom Surface Seal

Grout Type: Quickrete Portland Cement and Bentonite

84 ft Top Seal

Seal Type: Bentonite Slurry

87 ft Top Sand Pack

90 ft Top Screen

Sand Pack Type: Filpro Silica Pack
Size: Number 1

110 ft Bottom Screen

110 ft Total Depth of Boring

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Dvirka and Bartilucci CONSULTING ENGINEERS
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Well Construction Log

Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-6

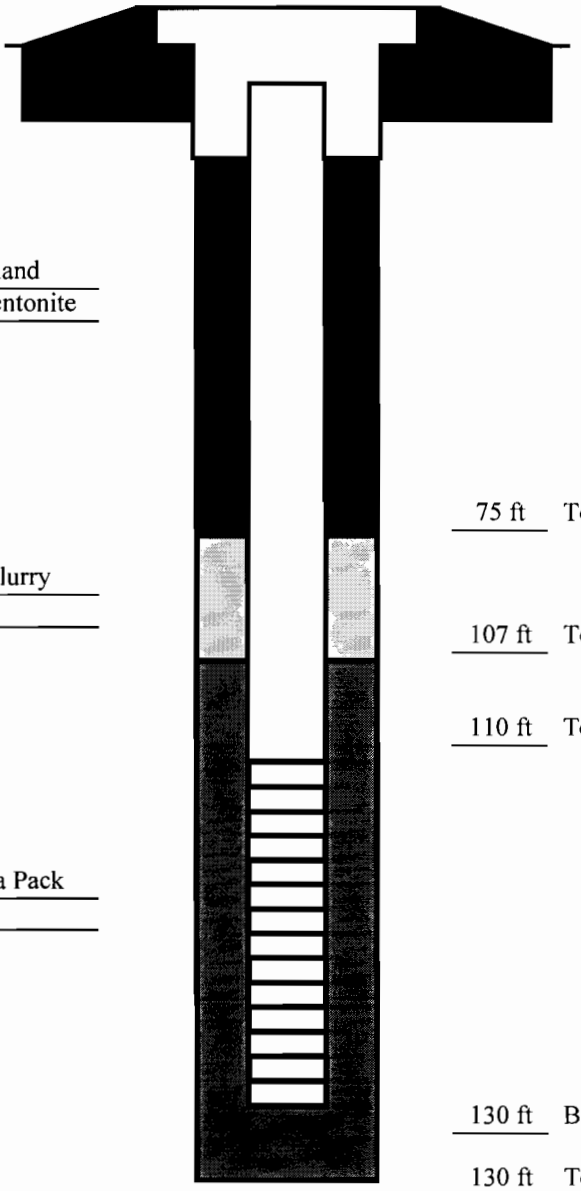
Total Depth: 130 ft | Surface Elevation: 117.37 | Top Riser Elevation: 117.14

Water Levels (Depth, Date, Time): 52.05 ft 10/22/01 | Date Installed: 10/16/01

Riser	Dia.	2 inch	Material	PVC	Length	110 ft	
Screen	Dia.	2 inch	Material	PVC	Length	20 ft	Slot Size 0.010 inch

SCHEMATIC

Surface Seal Type: Cement



Ground Surface

Riser Elevation

Bottom Surface Seal

Grout Type: Quickrete Portland Cement and Bentonite

75 ft Top Seal

Seal Type: Bentonite Slurry

107 ft Top Sand Pack

110 ft Top Screen

Sand Pack Type: Filpro Silica Pack

Size: Number 1

130 ft Bottom Screen

130 ft Total Depth of Boring

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Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-7

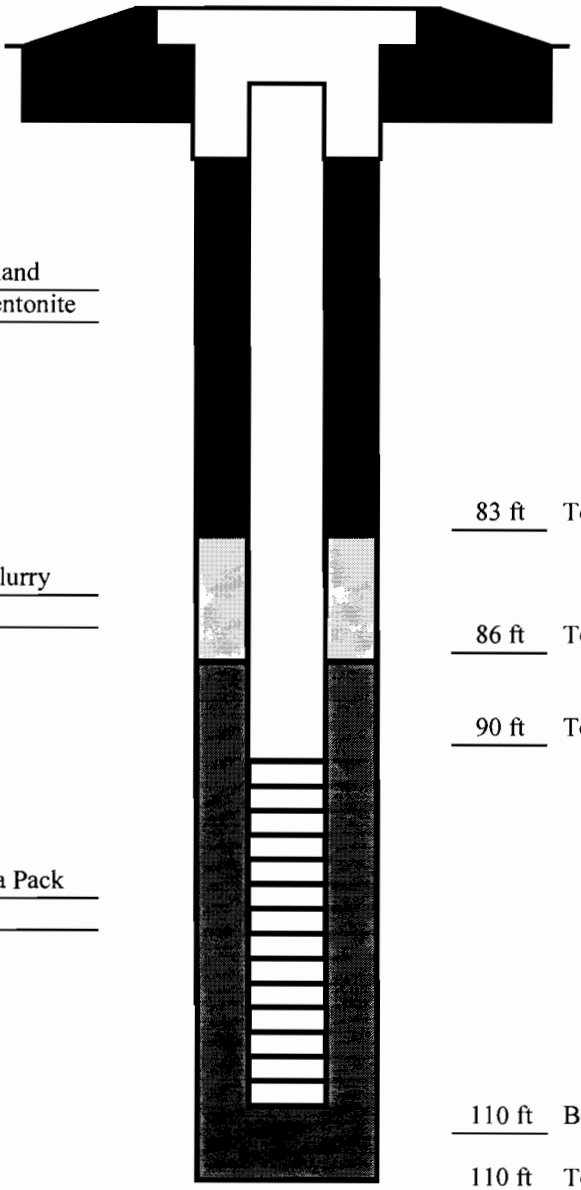
Total Depth: 110 ft | Surface Elevation: 107.34 | Top Riser Elevation: 107.05

Water Levels (Depth, Date, Time): 49.03 ft, 10/23/01 | Date Installed: 10/18/01

Riser	Dia.	2 inch	Material	PVC	Length	90 ft	
Screen	Dia.	2 inch	Material	PVC	Length	20 ft	Slot Size 0.010 inch

SCHEMATIC

Surface Seal Type: Cement



Ground Surface

Riser Elevation

Bottom Surface Seal

Grout Type: Quickrete Portland Cement and Bentonite

83 ft Top Seal

Seal Type: Bentonite Slurry

86 ft Top Sand Pack

90 ft Top Screen

Sand Pack Type: Filpro Silica Pack

Size: Number 1

110 ft Bottom Screen

110 ft Total Depth of Boring

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Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Well Construction Log

Site: New Cassel Industrial Area | Job No.: 1898 | Well No.: MW-8

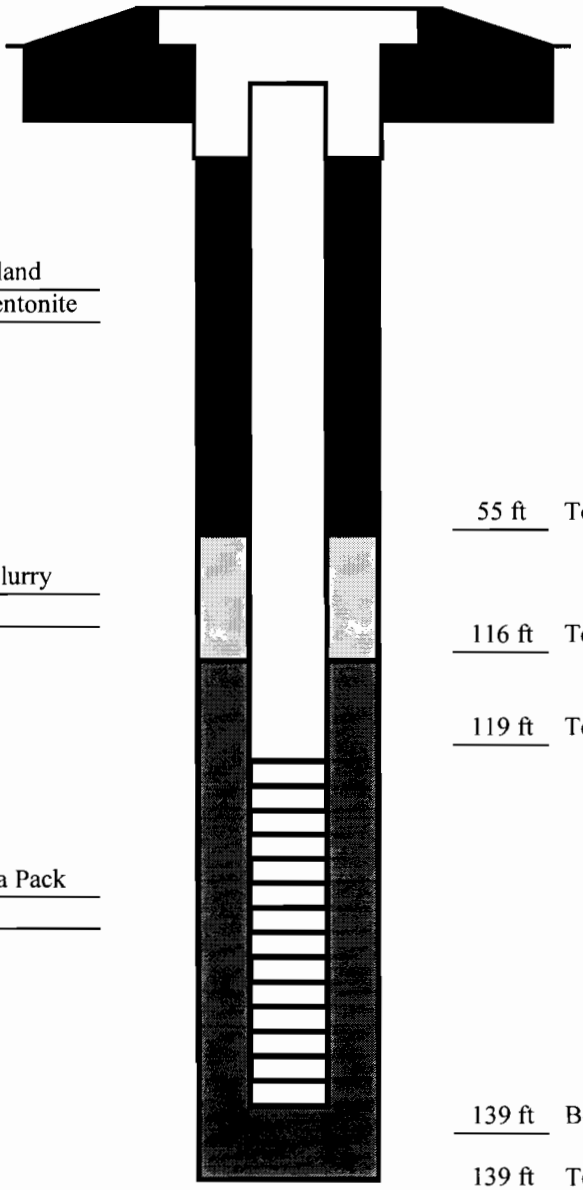
Total Depth: 139 ft | Surface Elevation: 107.22 | Top Riser Elevation: 106.98

Water Levels (Depth, Date, Time): 44.80 ft 10/25/01 | Date Installed: 10/24/01

Riser	Dia.	2 inch	Material	PVC	Length	119 ft	
Screen	Dia.	2 inch	Material	PVC	Length	20 ft	Slot Size 0.010 inch

SCHEMATIC

Surface Seal Type: Cement



Ground Surface

Riser Elevation

Bottom Surface Seal

Grout Type: Quickrete Portland Cement and Bentonite

55 ft Top Seal

Seal Type: Bentonite Slurry

116 ft Top Sand Pack

119 ft Top Screen

Sand Pack Type: Filpro Silica Pack
Size: Number 1

139 ft Bottom Screen

139 ft Total Depth of Boring

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ATTACHMENT 3

SURVEY DATA

YEC, INC./YEC ENGINEERING, P.C.
Clarkstown Executive Park
612 Corporate Way, Suite 4M
Valley Cottage, NY 10989
Tel: (845) 268-3203 Fax: (845) 268-5313

December 13, 2001

Keith Robins
Dvirka & Bartilucci
330 Crossways Park Dr.
Woodbury, NY 11797

Re: New Cassel Well Survey

Dear Mr. Robins:

Enclosed please fine the well elevation table and survey notes for the above-referenced survey. Please feel free to contact me if you need anything further.

Sincerely,

Y.S. Ed Chen, Ph.D., P.E.
President, YEC, Inc.

YEC, INC./YEC ENGINEERING, P.C.
Clarkstown Executive Park
612 Corporate Way, Suite 4M
Valley Cottage, NY 10989
Tel: (845) 268-3203 Fax: (845) 268-5313

NEW CASSEL WELL SURVEY

WELL ELEVATION TABLE (in feet)					
Northing	Easting	Well ID	Ground Elevation	Top of PVC	Top of Casing
191971.66307	2120935.05327	MW-1	115.44	115.11	115.44
191975.18055	2120938.92503	MW-2	115.40	115.14	115.40
191977.78995	2120941.63983	MW-3	115.35	115.13	115.35
191982.45808	2120947.01168	MW-4	115.49	115.24	115.49
192328.48537	2121285.43089	MW-5	117.38	117.11	117.38
192324.97440	2121287.82004	MW-6	117.37	117.14	117.37
190468.64116	2119965.25266	MW-7	107.34	107.05	107.34
190468.97540	2119971.17421	MW-8	107.22	106.98	107.22

Notes:

1. Survey conducted on November 28, 2001
2. Horizontal Datum: New York State Plane Coordinate System NAD 1927
3. Vertical Datum: NGVD 1929
4. Nassau County GIS GPS Monument 12E14N
   - Northing 193791.090 (F)
   - Easting 2124273.41 (F)
   - Elevation 123.89 (F)
5. Nassau County GIS GPS Monument 12E14NAZ
   - Northing 194157.440 (F)
   - Easting 2124548.00 (F)
   - Elevation 117.20 (F)