

APPENDICES

APPENDIX A
Well Information

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 56550

Atlas Sheet Coordinates 31 : 11 394

OWNER IDENTIFICATION - Owner PRINTING MANAGEMENT SYSTE
Address 400 BENINGO BLVD
City BELLMAWR State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-2
County CAMDEN Municipality BELLMAWR BORO Lot No. 18 Block No. 173.03
Address 400 BENINGO BLVD

DATE WELL STARTED 11/5/99
DATE WELL COMPLETED 11/5/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Powell Harpstead Tele. # _____

WELL CONSTRUCTION

Total depth drilled 13 ft.
Well finished to 13 ft.
Borehole diameter:
Top 6 in.
Bottom 6 in.
Well was finished: above grade
 flush mounted
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed?
 Yes No
Static water level after drilling 11 ft.
Water level was measured using M-scope
Well was developed for 1/2 hours
at 5 gpm

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	8	2	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used .010)	8	13	2	PVC	Sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	6	13		#1 Sand	
Grout	0	6		Neat Cement Bentonite	100 lbs.

Grouting Method gravity Placement
Drilling Method HSA

Method of development Submersible Pump
Was permanent pumping equipment installed? Yes No
Pump capacity NA gpm
Pump type: NA
Drilling Fluid NONE Type of Rig CME 15
Health and Safety Plan submitted? Yes No
Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company UNI-TECH DRILLING
Well Driller (Print) Christopher Warren
Driller's Signature Christopher Warren
Registration No M1546 Date 11/23/99

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0-6	FM tan orange silty sand
6-13	FM tan and brown sand

MONITORING WELL RECORD

Well Permit No. 31 - 56551

Atlas Sheet Coordinates 31 : 11 394

OWNER IDENTIFICATION - Owner PRINTING MANAGEMENT SYSTE
Address 400 BENINGO BLVD
City BELLMAWR State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County CAMDEN Municipality BELLMAWR BORO Lot No. 18 Block No. 173.03
Address 400 BENINGO BLVD

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 11/5/99
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 11/5/99
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Powell Harpstead Tele. # _____

WELL CONSTRUCTION

Total depth drilled 13 ft.
Well finished to 13 ft.

Borehole diameter:
Top 6 in.
Bottom 6 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 11 ft.

Water level was measured using u scope

Well was developed for 1/2 hours
at 3 gpm

Method of development Submersible Pump

Was permanent pumping equipment installed? Yes No

Pump capacity NA gpm

Pump type: _____

Drilling Fluid NONE Type of Rig CME 75

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company UNI-TECH DRILLING

Well Driller (Print) Christopher Warren

Driller's Signature Christopher Warren

Registration No. M154 Date 11/23/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	8	2	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used .010)	8	13	2	PVC	Sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	6	13		#1 Sand	
Grout	0	6		Neat Cement Bentonite	lbs. <u>100</u> lbs.

Grouting Method Gravity Placement
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-6 Fm tan and orange silty sand

6-13 Fm tan and brown sand

MONITORING WELL RECORD

Well Permit No. 31 - 57807

Atlas Sheet Coordinates 31 : 11 395

OWNER IDENTIFICATION - Owner GLES, INC.
Address 278 E. CHESTNUT HILL ROAD
City NEWARK State DE. Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-4
County CAMDEN Municipality BELLMAWR BORO Lot No. 1 Block No. 92
Address 65 N. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well UST DATE WELL STARTED 4/7/00
DATE WELL COMPLETED 4/7/00 Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) LS Herbert Environmental Tele. # 610/444-2989

WELL CONSTRUCTION

Total depth drilled 35 ft.
Well finished to 35 ft.

Borehole diameter:
Top 10.25 in.
Bottom 10.25 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 24 ft.

Water level was measured using TAPE

Well was developed for _____ hours
at _____ gpm

Method of development _____

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig Turkey

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company ADVANCED DRILLING, INC.

Well Driller (Print) Scott ALBERALLA

Driller's Signature Scott Alberalla

Registration No. 1370 Date 5/1/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	15	4	PVC	40
Middle Casing (for triple cased wells only)	-				
Outer Casing (largest diameter)	-				
Open Hole or Screen (No. Used <u>20</u>)	15	35	4	PVC	40
Blank Casings (No. Used)	-				
Tail Piece <u>SAND FILTER</u>	13	35		<u>#2 SAND FILTER</u>	
Gravel Pack	11	13		<u>#00 SAND SEAL</u>	
Grout	0	11		Neat Cement Bentonite	400 lbs. 80 lbs.

Grouting Method Urethane
Drilling Method HSAUGER

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.
<u>6" Asphalt</u>
<u>6'-9' - Dry Silty SAND</u>
<u>9' - 35' - Moist & wet F-SAND</u>

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 58678

Atlas Sheet Coordinates 31 11 395

OWNER IDENTIFICATION - Owner INDCO INC.
Address N. RAILROAD & ESSEX STREET
City GLOUCESTER CITY State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW 4
County CAMDEN Municipality GLOUCESTER CITY Lot No. 5,6,7,8 Block No. 197
Address N. RAILROAD & ESSEX ST.

DATE WELL STARTED 8/3/00
DATE WELL COMPLETED 8/3/00
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Environmental Resolutions Tele. # 235-7170

WELL CONSTRUCTION

Total depth drilled 41' ft.
Well finished to 40' ft.

Borehole diameter:
Top 11" in.
Bottom 11" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 28 ft.

Water level was measured using M-SCOPE

Well was developed for 1 hours
at 2 gpm

Method of development Air Lift

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig B57 Mobile

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company TOTAL QUALITY DRILLING

Well Driller (Print) MICHAEL KARLUNAS

Driller's Signature Michael Karlunas

Registration No. MB1325 Date 8/14/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	25'	4"	PVC	40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	25	40'	4"	PVC 810	40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	22	41'	#1	MORIC	
Grout	0	22'		Neat Cement Bentonite	100 lbs.

Grouting Method TREMICO
Drilling Method H.S.A.

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0 - 8'	Fill concrete + Grout
8' - 23'	TAN + white fine sand
23' - 36'	TAN + white fine to medium sand
36' - 41'	Black clay Dry + HARD



New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 56550

Atlas Sheet Coordinates 31 : 11 394

OWNER IDENTIFICATION - Owner PRINTING MANAGEMENT SYSTE
Address 400 BENINGO BLVD
City BELLMWR State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-2
County CAMDEN Municipality BELLMWR BORO Lot No. 18 Block No. 173.03
Address 400 BENINGO BLVD

DATE WELL STARTED 11/5/99
DATE WELL COMPLETED 11/5/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Powell Harpstead Tele. # _____

WELL CONSTRUCTION

Total depth drilled 13 ft.
Well finished to 13 ft.
Borehole diameter:
Top 6 in.
Bottom 6 in.
Well was finished: above grade
 flush mounted
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed?
 Yes No
Static water level after drilling 11 ft.
Water level was measured using scope
Well was developed for 1/2 hours
at 5 gpm

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	8	2	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used <u>.010</u>)	8	13	2	PVC	Sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	6	13		#1 Sand	
Grout	0	6		Neat Cement Bentonite	100 lbs.

Method of development Submersible Pump
Was permanent pumping equipment installed? Yes No
Pump capacity NA gpm
Pump type: NA
Drilling Fluid NONE Type of Rig CME 15
Health and Safety Plan submitted? Yes No
Level of Protection used on site (circle one) None D C B A

Grouting Method gravity Placement
Drilling Method HSA

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company UNI-TECH DRILLING
Well Driller (Print) Christopher Warren
Driller's Signature Christopher Warren
Registration No 41546 Date 11/23/99

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0-6	FM tan orange silty sand
6-13	FM tan and brown sand

MONITORING WELL RECORD

Well Permit No. 31 - 56551

Atlas Sheet Coordinates 31 : 11 394

OWNER IDENTIFICATION - Owner PRINTING MANAGEMENT SYSTE
Address 400 BENINGO BLVD
City BELLMAWR State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County CAMDEN Municipality BELLMAWR BORO Lot No. 18 Block No. 173.03
Address 400 BENINGO BLVD

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 11/5/99
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 11/5/99
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Powell Harpstead Tele. # _____

WELL CONSTRUCTION

Total depth drilled 13 ft.
Well finished to 13 ft.

Borehole diameter:
Top 6 in.
Bottom 6 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 11 ft.

Water level was measured using U-Scope

Well was developed for 1/2 hours
at 3 gpm

Method of development Submersible Pump

Was permanent pumping equipment installed? Yes No

Pump capacity NA gpm

Pump type: NA

Drilling Fluid NONE Type of Rig CME 75

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company UNI-TECH DRILLING

Well Driller (Print) Christopher Warren

Driller's Signature Christopher Warren

Registration No. M154 Date 11/23/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	8	2	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used .010)	8	13	2	PVC	Sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	6	13		#1 Sand	
Grout	0	6		Neat Cement Bentonite	100 lbs.

Grouting Method Gravity Placement
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-6 fm tan and orange silty sand

6-13 fm tan and brown sand

MONITORING WELL RECORD

Well Permit No. 31 - 57807

Atlas Sheet Coordinates 31 : 11 395

OWNER IDENTIFICATION - Owner GLES, INC.
Address 278 E. CHESTNUT HILL ROAD
City NEWARK State DE Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-4
County CAMDEN Municipality BELLMAWR BORO Lot No. 1 Block No. 92
Address 65 N. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 4/7/00
Regulatory Program Requiring Well UST DATE WELL COMPLETED 4/7/00
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) LS Herbert Environmental Tele. # 610/444-2989

WELL CONSTRUCTION

Total depth drilled 35 ft.
Well finished to 35 ft.

Borehole diameter:
Top 10.25 in.
Bottom 10.25 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 24 ft.

Water level was measured using TAPE

Well was developed for _____ hours
at _____ gpm

Method of development _____

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig Turkey

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company ADVANCED DRILLING, INC.

Well Driller (Print) Scott ALBERALLA

Driller's Signature Scott Alberalla

Registration No. 1320 Date 5/1/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	15	4	PVC	40
Middle Casing (for triple cased wells only)	-				
Outer Casing (largest diameter)	-				
Open Hole or Screen (No. Used <u>20</u>)	15	35	4	PVC	40
Blank Casings (No. Used)	-				
Tail Piece <u>SAND FILTER</u>	13	35		<u>*2 SAND FILTER</u>	
Gravel Pack	11	13		<u>*00 SAND SEAL</u>	
Grout	0	11		Neat Cement Bentonite	400 lbs. 80 lbs.

Grouting Method Stem
Drilling Method HSAuger

GEOLOGIC LOG
Note each depth where water was encountered in consolidated formations.
<u>6" Asphalt</u>
<u>6'-9' - Dry Silty SAND</u>
<u>9'-35' - Moist & Wet F-SAND</u>

MONITORING WELL RECORD

Well Permit No. 31 - 58678

Atlas Sheet Coordinates 31 11 395

OWNER IDENTIFICATION - Owner INDCO INC.
Address N. RAILROAD & ESSEX STREET
City GLOUCESTER CITY State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW4
County CAMDEN Municipality GLOUCESTER CITY Lot No. 5,6,7,8 Block No. 197
Address N. RAILROAD & ESSEX ST.

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 8/3/00
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 8/3/00
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Environmental Resolutions Tele. # 235-7170

WELL CONSTRUCTION

Total depth drilled 41' ft.
Well finished to 40' ft.

Borehole diameter:
Top 11" in.
Bottom 11" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 28 ft.

Water level was measured using M-SCOPE

Well was developed for 1 hours
at 2 gpm

Method of development Air Lift

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig B57-Mobile

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company TOTAL QUALITY DRILLING

Well Driller (Print) MICHAEL KARLUNAS

Driller's Signature Michael Karlunas

Registration No. MB1325 Date 8/14/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	25'	4"	PVC	40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	25	40'	4"	PVC-D10	40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	22	41'	#1	MORIC	
Grout	0	22'		Neat Cement Bentonite	100 lbs.

Grouting Method TREMICO
Drilling Method H.S.A.

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0 - 8'	Fill Concrete + Grout
8' - 23'	TAN + white fine sand
23' - 36'	TAN + white fine to medium sand
36' - 48'	Black Clay Dry + HARD

MONITORING WELL RECORD

Well Permit No. 31 90720

Atlas Sheet Coordinates 31 4.1 394

OWNER IDENTIFICATION - Owner GLES, INC.
Address 278 E. CHESTNUT HILL RD.
City NEWARK State DE Zip Code 19713-1221

WELL LOCATION - If not the same as owner please give address. Owner's Well No. NW-1
County CAMDEN Municipality BELLMAR BORO Lot No. 1 Block No. 72
Address 65 N. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/24/99
Regulatory Program Requiring Well JS1 DATE WELL COMPLETED 9/24/99
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 30 ft.
Well finished to 30 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 25 ft.

Water level was measured using tape

Well was developed for 1 hours
at 1 gpm

Method of development pump surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid none Type of Rig B-59

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) JOE QUINLAN

Driller's Signature [Signature]

Registration No. 1612 Date 9/24/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	10	4	PVC	SCH40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	10	30	4	PVC	SCH40 .010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	7	30		H1	250#
Grout	0	7		Neat Cement Bentonite	100 lbs.

Grouting Method gravity
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0 - 15 Sand/sills / clay in thin lenses.
15 - 27 Sand/sills / trace of clay
27 - 30 Sand/sills - grey mud.

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 01 50724

Atlas Sheet Coordinates 31 11 396

OWNER IDENTIFICATION - Owner GLES, INC.
Address 278 E. CHESTNUT HILL RD.
City NEWARK State DE Zip Code 19713-1221

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-3
County CAMDEN Municipality BELLMAR BORO Lot No. 1 Block No. 32
Address 65 N. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/24/99
Regulatory Program Requiring Well US1 DATE WELL COMPLETED 2/24/99
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 30 ft.
Well finished to 30 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 25 ft.

Water level was measured using tape

Well was developed for 1 hours
at _____ gpm

Method of development pump surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid none Type of Rig B59

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) JOE QUINLAN

Driller's Signature J. Quinlan

Registration No. 1012 Date 9/24/99

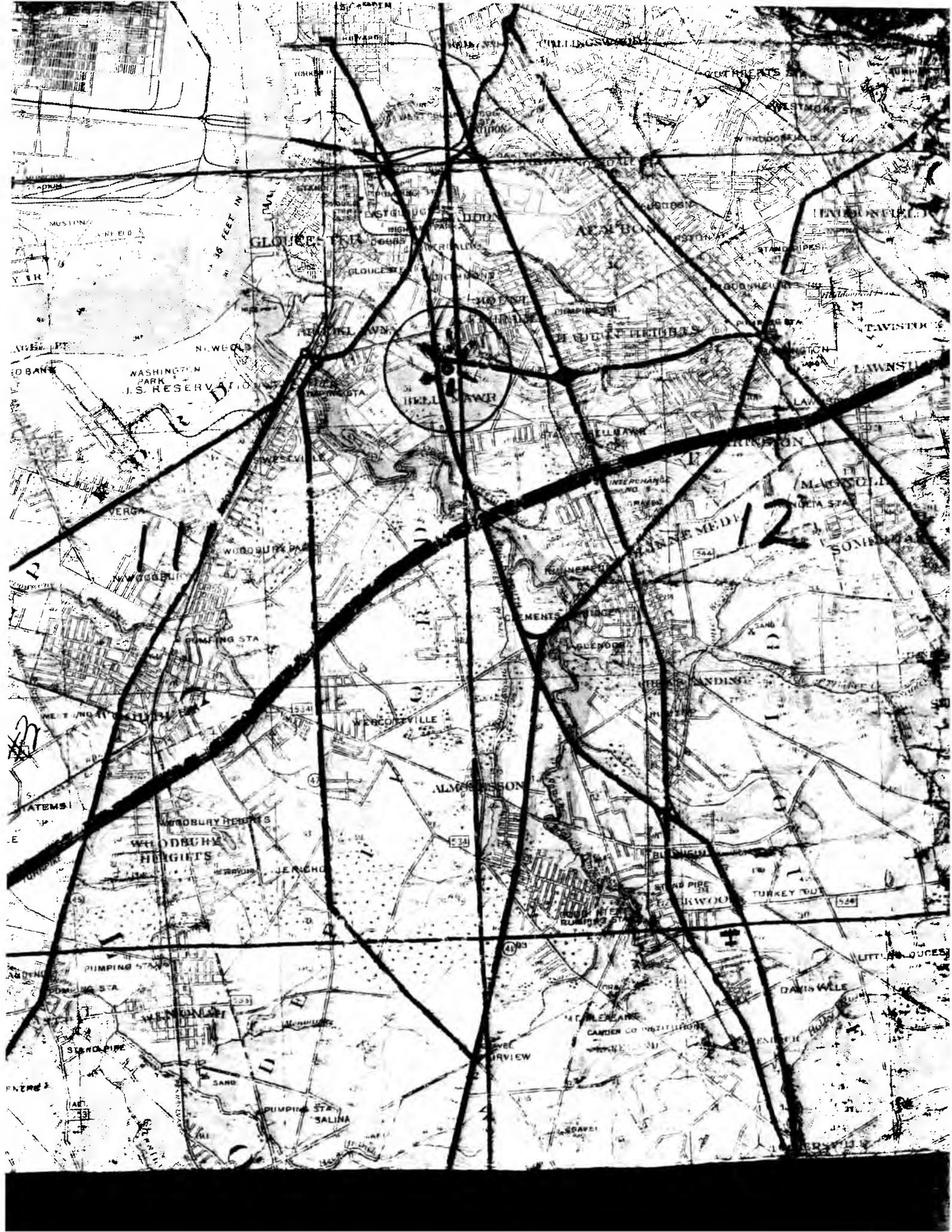
Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	10	4	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	10	30	4	PVC	sch 40 .010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	7	30			25#
Grout	0	7		Neat Cement Bentonite	25 lbs.

Grouting Method gravity
Drilling Method HSD

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-15' F sand/silt/clay in thin lenses
15-22' F sand/silt/trace of clay - yellow
22-30' F sand/silt/clay. grey



GLOUCESTER

HILL STATION

12

WASHINGTON PARK U.S. RESERVATION

WOODBURY HERBERTS

ALMORSON

DAVIS WILLE

30 FEET IN

STATENS

PUMPING STATION

WENDELL

PUMPING STATION SALINA

CANDLER CO. INSTITUTION

LITTLE DOUGES

MONITORING WELL RECORD

Well Permit No. 31 - 59510

Atlas Sheet Coordinates 31 11 366

OWNER IDENTIFICATION - Owner SUNOCO INC.
Address 1801 MARKET ST.
City PHILADELPHIA State PA Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-13
County CAMDEN Municipality GLOUCESTER TWP Lot No. 22 Block No. 31
Address LITTLE GLOUCESTER & EARL

DATE WELL STARTED 11/21/00
DATE WELL COMPLETED 11/21/00
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) GES Tele. # _____

WELL CONSTRUCTION

Total depth drilled 40 ft.
Well finished to 40 ft.

Borehole diameter:
Top 12 in.
Bottom 12 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface NA ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 35 ft.

Water level was measured using TAPE

Well was developed for .5 hours
at 3 gpm

Method of development SUBMERSIBLE

Was permanent pumping equipment installed? Yes No

Pump capacity NA gpm

Pump type: NA

Drilling Fluid NONE Type of Rig A300

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company GARY PARENT/SHORE DRLG. INC.

Well Driller (Print) Ray Cook

Driller's Signature [Signature]

Registration No. JD1603 Date 12/20/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	15	4	PVC	SCH. 40
Middle Casing (for triple cased wells only)	NA				
Outer Casing (largest diameter)	NA				
Open Hole or Screen (No. Used)	15	40	4	PVC	SCH. 40 020 SLOT
Blank Casings (No. Used)	NA				
Tail Piece	NA				
Gravel Pack	14	40	12	#2 SAND	
Grout	0	14	12	Heat Cement Bentonite	105 lbs.

Grouting Method TREMIE
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-4" GRASS/TOPSOIL
4"-22' LT BRN MD SD
22'-40' ORG FN SD SM GRAVEL

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 56550

Atlas Sheet Coordinates 31 : 11 394

OWNER IDENTIFICATION - Owner PRINTING MANAGEMENT SYSTE
Address 400 BENINGO BLVD
City BELLMWR State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-2
County CAMDEN Municipality BELLMWR BORO Lot No. 18 Block No. 173.03
Address 400 BENINGO BLVD

DATE WELL STARTED 11/5/99
DATE WELL COMPLETED 11/5/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Powell Harpstead Tele. # _____

WELL CONSTRUCTION

Total depth drilled 13 ft.
Well finished to 13 ft.

Borehole diameter:
Top 6 in.
Bottom 6 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 11 ft.

Water level was measured using M-scope

Well was developed for 1/2 hours
at 5 gpm

Method of development Submersible Pump

Was permanent pumping equipment installed? Yes No

Pump capacity NA gpm

Pump type: NA

Drilling Fluid NONE Type of Rig CME 15

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company UNI-TECH DRILLING

Well Driller (Print) Christopher Warren

Driller's Signature Christopher Warren

Registration No. M1546 Date 11/23/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	8	2	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used .010)	8	13	2	PVC	Sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	6	13		#1 Sand	
Grout	0	6		Neat Cement Bentonite	100 lbs.

Grouting Method gravity Placement
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-6 FM tan orange silty sand
6-13 FM tan and brown sand

MONITORING WELL RECORD

Well Permit No. 31 - 56551

Atlas Sheet Coordinates 31 : 11 394

OWNER IDENTIFICATION - Owner PRINTING MANAGEMENT SYSTE
 Address 400 BENINGO BLVD
 City BELLMWR State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
 County CAMDEN Municipality BELLMWR BORO Lot No. 18 Block No. 173.03
 Address 400 BENINGO BLVD

DATE WELL STARTED 11/5/99
 TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL COMPLETED 11/5/99
 Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Powell Harps lead Tele. # _____

WELL CONSTRUCTION

Total depth drilled 13 ft.
 Well finished to 13 ft.

Borehole diameter:
 Top 6 in.
 Bottom 6 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 11 ft.

Water level was measured using M Scope

Well was developed for 1/2 hours
 at 3 gpm

Method of development Submersible Pump

Was permanent pumping equipment installed? Yes No

Pump capacity NA gpm

Pump type: _____

Drilling Fluid NONE Type of Rig CME 75

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company UNI-TECH DRILLING

Well Driller (Print) Christopher Warren

Driller's Signature Christopher Warren

Registration No. M154 Date 11/23/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	8	2	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used .010)	8	13	2	PVC	Sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	6	13		#1 Sand	
Grout	0	6		Neat Cement Bentonite	100 lbs.

Grouting Method Gravity Placement
 Drilling Method #SA

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0-6	Fm tan and orange silty sand
6-13	Fm tan and brown sand

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 57808

Atlas Sheet Coordinates 31 : 11 395

OWNER IDENTIFICATION - Owner GLES, INC.
Address 278 E. CHESTNUT HILL ROAD
City NEWARK State DE Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-5
County CAMDEN Municipality BELLMAWR BORO Lot No. 1 Block No. 92
Address 65 N. BLACK HORSE PIKE

DATE WELL STARTED 4/6/00
DATE WELL COMPLETED 4/6/00
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well UST Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) JT Herbert Environmental Tele. # 610/444-2989

WELL CONSTRUCTION

Total depth drilled 30 ft.
Well finished to 30 ft.
Borehole diameter:
Top 10.25 in.
Bottom 10.25 in.
Well was finished: above grade
 flush mounted
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed?
 Yes No
Static water level after drilling 19 ft.
Water level was measured using TAPE
Well was developed for _____ hours at _____ gpm
Method of development _____

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	10	4	PVC	40
Middle Casing (for triple cased wells only)	-				
Outer Casing (largest diameter)	-				
Open Hole or Screen (No. Used <u>20</u>)	10	30	4	PVC	40
Blank Casings (No. Used <u>1</u>)	-				
Tail Piece <u>SAND FILTER</u>	8	30		<u>#2 SAND FILTER</u>	
Gravel Pack	6	8		<u>#00 SAND SEAL</u>	
Grout	0	6		Neat Cement Bentonite	<u>200</u> lbs. <u>40</u> lbs.

Grouting Method Tremie
Drilling Method H-Slugger

Was permanent pumping equipment installed? Yes No
Pump capacity _____ gpm
Pump type: _____
Drilling Fluid _____ Type of Rig Taylor
Health and Safety Plan submitted? Yes No
Level of Protection used on site (circle one) None (D) C B A

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

9" asphalt

9"-15' - Dry Silty SAND

15'-30' Moist to wet F-SAND

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company ADVANCED DRILLING, INC.
Well Driller (Print) Scott ALDEBALLA
Driller's Signature Scott Aldeballa
Registration No. 1320 Date 5/1/00

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 58678

Atlas Sheet Coordinates 31 11 395

OWNER IDENTIFICATION - Owner INDCO INC.
Address N. RAILROAD & ESSEX STREET
City GLOUCESTER CITY State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW 4
County CAMDEN Municipality GLOUCESTER CITY Lot No. 5,6,7,8 Block No. 197
Address N. RAILROAD & ESSEX ST.

DATE WELL STARTED 8/3/00
DATE WELL COMPLETED 8/3/00
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Environmental Resolutions Tele. # 235-7170

WELL CONSTRUCTION

Total depth drilled 41' ft.
Well finished to 40' ft.
Borehole diameter:
Top 11" in.
Bottom 11" in.
Well was finished: above grade
 flush mounted
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed?
 Yes No
Static water level after drilling 28 ft.
Water level was measured using M-Scope
Well was developed for 1 hours
at 2 gpm
Method of development Air Lift

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	25'	4"	PUC	40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	25	40'	4"	PUC-D10	40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	22	41'	#1	MORIE	
Grout	0	22'		Neat Cement Bentonite	100 lbs.

Grouting Method TREMIC
Drilling Method H.S.A.

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig B57-Mobile

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company TOTAL QUALITY DRILLING

Well Driller (Print) MICHAEL KAVIUNAS

Driller's Signature Michael Kavunas

Registration No. MB1325 Date 8/14/00

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.
0 - 8' Fill concrete + Gravel
8' - 23' Tan + white fine sand
23' - 36' Tan + white fine to medium sand
36' - 41' Black Clay Dry + HARD

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 01 13702

Atlas Sheet Coordinates 31 11 096

OWNER IDENTIFICATION - Owner GLS, INC.
Address 278 E. CHESTNUT HILL RD.
City NEWARK State EE Zip Code 19713-1221

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County CAMDEN Municipality BELLSHAW BORO Lot No. 1 Block No. 2
Address 65 N. BLACK HORSE PIKE

DATE WELL STARTED 9/24/99
DATE WELL COMPLETED 9/24/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well 334 Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 30 ft.
Well finished to 30 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 25 ft.

Water level was measured using Tape

Well was developed for 1 hours
at _____ gpm

Method of development pump surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid none Type of Rig B-59

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) JOE QUINLAN

Driller's Signature [Signature]

Registration No. 1612 Date 9/24/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	10	4	PVC	SCH40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	10	30	4	PVC	SCH40 .010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	7	30		H1	250#
Grout	0	7		Neat Cement Bentonite	100 lbs.

Grouting Method Gravity
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-15 Sand/silt/clay in thin lenses.
15-27 Sand/silt/clay
27-30 Sand/silt-grey bent.

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 50724

Atlas Sheet Coordinates 31 11 396

OWNER IDENTIFICATION - Owner PLES, INC.
Address 278 E. CHESTNUT HILL RD.
City NEWARK State DE Zip Code 19713-1221

WELL LOCATION - If not the same as owner please give address. Owner's Well No. M 10 - 3
County CAMDEN Municipality BELLMAR 3000 Lot No. 1 Block No. 72
Address 65 N. BLACK HORSE PIKE

DATE WELL STARTED 9/24/99
DATE WELL COMPLETED 2/24/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well US1 Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 30 ft.
Well finished to 30 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 25 ft.

Water level was measured using tape

Well was developed for 1 hours at _____ gpm

Method of development pump surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid none Type of Rig 1359

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) Joe Quinlan

Driller's Signature [Signature]

Registration No. 1012 Date 9/24/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	10	4	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	10	30	4	PVC	sch 40 1010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	7	30			25#
Grout	0	7		Neat Cement Bentonite	25 lbs.

Grouting Method gravity
Drilling Method HSD

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-15 Sand/silt/clay in thin lenses

15-22 Sand/silt/clay - yellow

22-30 Sand/silt/clay - grey

MONITORING WELL RECORD

Well Permit No. 31 - 61320

Atlas Sheet Coordinates 31 : 12 : 173

OWNER IDENTIFICATION - Owner GLS INC

Address 2604 KIRKWOOD HIGHWAY
City NEWARK State DE Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-6
County CAMDEN Municipality BELLMAR BORO Lot No. 1 Block No. _____
Address 65 NORTH BLACKHORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 8/15/01
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 8/15/01
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) L J Robert Environmental File # 610/444-989

WELL CONSTRUCTION

Total depth drilled 35 ft.
Well finished to 35 ft.
Borehole diameter:
Top 10.25 in.
Bottom 10.25 in.
Well was finished: above grade
 flush mounted
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed?
 Yes No
Static water level after drilling 24 ft.
Water level was measured using TAPE
Well was developed for _____ hours at _____ gpm

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	15	4	PVC	40
Middle Casing (for triple cased wells only)	-				
Outer Casing (largest diameter)	-				
Open Hole or Screen (No. Used <u>20</u>)	15	35	4	PVC	40
Blank Casings (No. Used)	-				
Fill Piece <u>sand filter</u>	13	35		#2 Sand Filter	
Gravel Pack	11	13		#00 sand Seal	
Grout	0	11		Neat Cement Bentonite	300 lbs. / 60 lbs.

Grouting Method Urethane
Drilling Method 1 1/2" Auger

Method of development _____
Was permanent pumping equipment installed? Yes No
Pump capacity _____ gpm
Pump type: _____
Drilling Fluid _____ Type of Rig Tablet
Health and Safety Plan submitted? Yes No
Level of Protection used on site (circle one) None C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company ADVANCED DRILLING, INC.
Well Driller (Print) SCOTT ALBERKALIA
Driller's Signature Scott Alberkalia
Registration No. J1320 Date 9/10/01

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

2' - 2' 6" - Substrate
8' - 15' - Deep F-M Sand & Gravel
15' - 20' - Med F-M Sand, fragments
20' - 35' - Med F-M Sand

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____
OR
LATITUDE: _____ LONGITUDE: _____

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 80722

Atlas Sheet Coordinates 31 1 29

OWNER IDENTIFICATION - Owner GLS, INC.
Address 278 E. CHESTNUT HILL RD.
City NEWARK State DE Zip Code 19713-1221

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County CAMDEN Municipality BELLMAR BORO Lot No. 1 Block No. 92
Address 65 N. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/24/99
Regulatory Program Requiring Well US1 DATE WELL COMPLETED 9/24/99
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 30 ft.
Well finished to 30 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 25 ft.

Water level was measured using Tape

Well was developed for 1 hours
at 1 gpm

Method of development pump surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid none Type of Rig B-59

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) JOE QUINLAN

Driller's Signature [Signature]

Registration No. 1612 Date 9/26/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	10	4	PVC	SCH40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	10	30	4	PVC	SCH40 .010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	7	30		H1	250#
Grout	0	7		Neat Cement Bentonite	<u>100</u> lbs.

Grouting Method Gravity
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-15 Sand/silt/clay in thin lenses.
15-27 Sand/silt/clay
27-30 Sand/silt-grey silt.

MONITORING WELL RECORD

Well Permit No. 31 - 56424

Atlas Sheet Coordinates 31 : 12 149

OWNER IDENTIFICATION - Owner FREEMAN YARD ASSOC
Address PO BOX 1038
City HADDONFIELD State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW9
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 1.01 Block No. 32
Address 101 WEST KINGS HWY

DATE WELL STARTED 8/9/99
DATE WELL COMPLETED 8/9/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well UST Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Resource Control Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 17' ft.
Well finished to 17' ft.

Borehole diameter:
Top 8" in.
Bottom 8" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 Hour hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig Hurricane

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Jeff Marchesi

Driller's Signature Jeff Marchesi

Registration No. M1512 Date 8 / 23 /99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	2'	2"	PVC	Sch. 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	2'	17'	2"	PVC	Sch. 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	1.5'	17'		Morie #2	
Grout	0'	1.5'		Neat Cement Bentonite	100 lbs. / 10 lbs.

Grouting Method Gravity
Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

MONITORING WELL RECORD

Well Permit No. 31 56425

Atlas Sheet Coordinates 31 12 149

OWNER IDENTIFICATION - Owner FREWAY YARD ASSOC
Address PO BOX 1038
City HADDONFIELD State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW10
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 1-01 Block No. 32
Address 101 WEST KINGS HWY

DATE WELL STARTED 8/9/99
DATE WELL COMPLETED 8/9/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well UST Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Resource Control Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 17' ft.
Well finished to 17' ft.

Borehole diameter:
Top 8" in.
Bottom 8" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 Hour hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig Hurricane

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Jeff Marchesi

Driller's Signature Jeff Marchesi

Registration No. M1512 Date 8/23/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	2'	2"	PVC	Sch. 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	2'	17'	2"	PVC	Sch. 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	1.5'	17'		Morie #2	
Grout	0'	1.5'		Neat Cement Bentonite	<u>94</u> lbs. <u>5</u> lbs.

Grouting Method Gravity
Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

MONITORING WELL RECORD



Well Permit No. 31 - 56426

Atlas Sheet Coordinates 31 : 12 149

OWNER IDENTIFICATION - Owner FREWAY YARD ASSOC
Address PO BOX 1038
City HADDONFIELD State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW11
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 1.01 Block No. 32
Address 101 WEST KINGS HWY

DATE WELL STARTED 8/9/99
DATE WELL COMPLETED 8/9/99
TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well UST Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Resource Control Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 17' ft.
Well finished to 17' ft.

Borehole diameter:
Top 8" in.
Bottom 8" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 Hour hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig Hurricane

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Jeff Marchesi

Driller's Signature Jeff Marchesi

Registration No. M1512 Date 8 / 23 / 99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	2'	2"	PVC	Sch. 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	2'	17'	2"	PVC	Sch. 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	1.5'	17'		Morie #2	
Grout	0'	1.5'		Neat Cement Bentonite	<u>94</u> lbs. <u>5</u> lbs.

Grouting Method Gravity
Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 56427

Atlas Sheet Coordinates 31 : 12 149

OWNER IDENTIFICATION - Owner FREWAY YARD ASSOC

Address PO BOX 1038

City HADDONFIELD State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW12

County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 1.01 Block No. 32

Address 101 WEST KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 8/9/99
Regulatory Program Requiring Well UST DATE WELL COMPLETED 8/9/99

Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Resource Control Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 17' ft.

Well finished to 17' ft.

Borehole diameter:

Top 8" in.
Bottom 8" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 Hour hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig Hurricane

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Jeff Marchesi

Driller's Signature Jeff Marchesi

Registration No. M1512 Date 8 / 23 / 99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	2'	2"	PVC	Sch. 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	2'	17'	2"	PVC	Sch. 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	1.5'	17'		Morie #2	
Grout	0'	1.5'		Neat Cement Bentonite	<u>94</u> lbs. <u>5</u> lbs.

Grouting Method Gravity

Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached



Chimney Rock Road, Bldg. 9W
 Bound Brook, NJ 08805
 Telephone: (908) 722-4266
 Toll Free: (800) 242-6648
 FAX: (732) 356-1009
 http://www.summitdrilling.com
 email: info@summitdrilling.com

WELL LOG

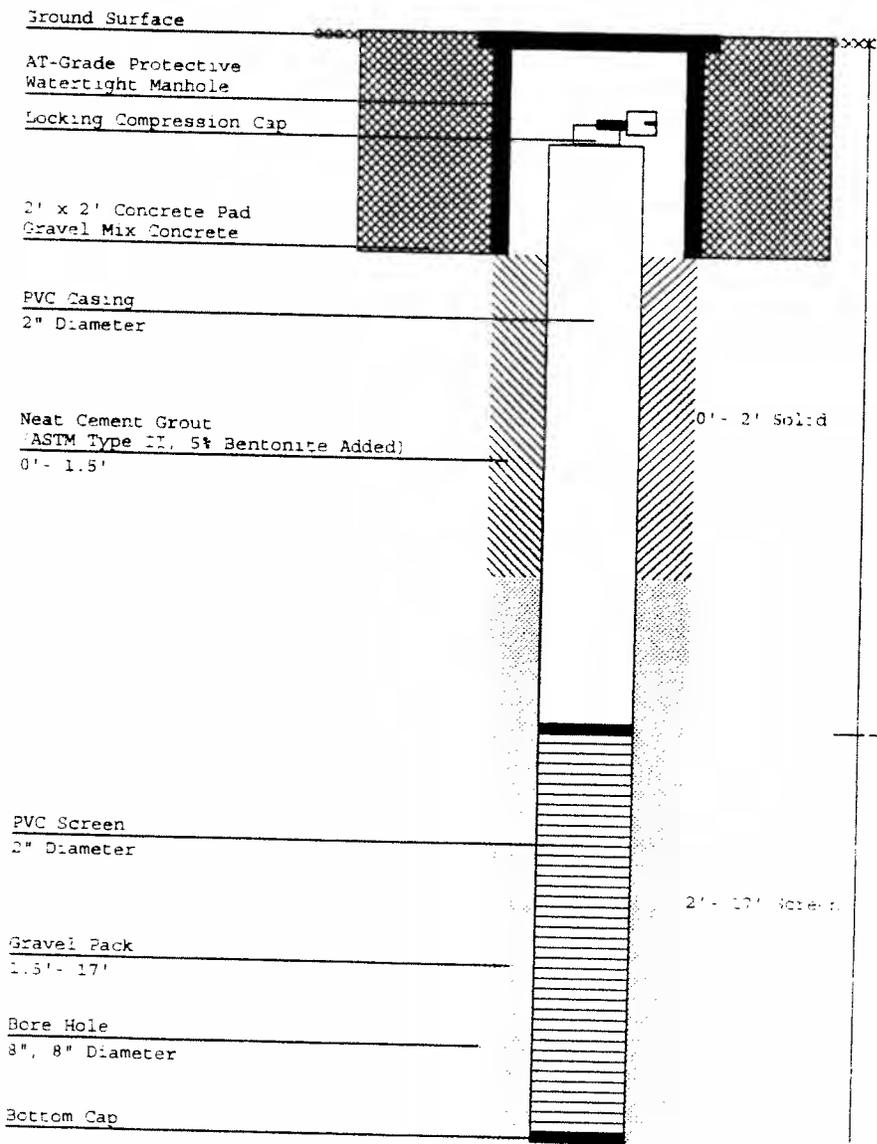
WELL: MW13 DATE DRILLED: 08/09/1999 COORD #1: 31.12.149 PERMIT #1: 31-86428
 COORD #2: PERMIT #2: COUNTY: Camden
 SITE: Haddonfield Lumber, 101 West Kings Highway, Mount Ephraim, NJ XSTREET: Station Road
 OWNER: Freeway Yard Associates, P.O. Box 1038, Haddonfield, NJ 08803 USE: Monitoring

INNER CASING: PVC OUTER CASING: SCREEN TYPE 1: PVC DRILLING METHOD: Auger
 DIAMETER: 2" DIAMETER: SCREEN TYPE 2: SAMPLING METHOD:
 LENGTH: 2' LENGTH: DIAMETER: 2" HOLE DIA. 8", 8"
 SET WELL: 17' GAL PER MIN: 1/2 LENGTH 1: 15' TOTAL DEPTH: 17'
 GRAVEL PK SZ: Morrie #2 STAT H2O LVL: 10' LENGTH 2: SLOT SIZE: .020
 DRILLER: Jeff Marchesi DEVELOPMENT METHOD: Pump CASING SEAL: Portland
 SURFACE COMPLETION: M DEVELOPMENT TIME: 1/2 Hour OPEN HOLE:

DEPTH BELOW SURFACE FROM - TC BLOWS PER 6" ON SAMPLER

REMARKS / SOILS IDENTIFICATION

0' - 17' Brown f/c sand & silty clay.



New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 55714

Atlas Sheet Coordinates 31 : 12 154

OWNER IDENTIFICATION - Owner SMK SPEEDY INTERNATIONAL

Address 365 BLOOR ST. EAST

City TORONTO ONTARIO State CD Zip Code MW43M7

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW1
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 14 Block No. 15
Address 705 BLACKHORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 5/3/99
Regulatory Program Requiring Well UST DATE WELL COMPLETED 5/3/99
Case I.D.# 98-08-19-095616

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Tyree Sean Grexa Tele. # 609-239-0033

WELL CONSTRUCTION

Total depth drilled 15 ft.
Well finished to 15 ft.

Borehole diameter:
Top 6 1/4 in.
Bottom 6 1/4 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 4 ft.

Water level was measured using Steel tape

Well was developed for 1 hours
at 1 gpm

Method of development Submersible pump

Was permanent pumping equipment installed? Yes No

Pump capacity gpm

Pump type:

Drilling Fluid Type of Rig Auger

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company TALON DRILLING COMPANY

Well Driller (Print) Steve Grasso

Driller's Signature Steve Grasso

Registration No. J1050 Date 5/12/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	<u>3 1/2</u>	<u>5</u>	<u>2</u>	<u>PVC</u>	<u>Sch 40</u>
Middle Casing (for triple cased wells only)	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Outer Casing (largest diameter)	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Open Hole or Screen (No. Used, <u>010</u>)	<u>5</u>	<u>15</u>	<u>2</u>	<u>PVC</u>	<u>Sch 40</u>
Blank Casings (No. Used)	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Tail Piece	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Gravel Pack	<u>3 1/2</u>	<u>15</u>	<u>10</u>	<u>#2 Well Gravel</u>	<u>300</u>
Grout	<u>0</u>	<u>3 1/2</u>	<u>10</u>	<u>Neat Cement Bentonite</u>	<u>25</u> lbs.

Grouting Method Placement
Drilling Method Hollow stem auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-5 Brown-light brown sand & silt

5-15 Dark brown clay with lenses of sand



New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 55715

Atlas Sheet Coordinates 31 : 12 154

OWNER IDENTIFICATION - Owner SMK SPEEDY INTERNATIONAL
Address 365 BLOOR ST. EAST
City TORONTO ONTARIO State CD Zip Code MW43M7

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW2
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 14 Block No. 15
Address 705 BLACKHORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 5/3/99
Regulatory Program Requiring Well UST DATE WELL COMPLETED 5/3/99
Case I.D.# 98-08-19-095616

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Sean Grexa / Tyree Tele. # 609-239-0000

WELL CONSTRUCTION

Total depth drilled 15 ft.
Well finished to 15 ft.

Borehole diameter:
Top 6 1/4 in.
Bottom 6 1/4 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface ft.

Was steel protective casing installed?
 Yes No no water in

Static water level after drilling well ft.

Water level was measured using steel tape

Well was developed for hours
at gpm

Method of development

Was permanent pumping equipment installed? Yes No

Pump capacity gpm

Pump type:

Drilling Fluid Type of Rig Auger

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company TALON DRILLING COMPANY

Well Driller (Print) Steve Grasso

Driller's Signature Steve Grasso

Registration No. J1050 Date 5/12/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	-3"	5	2	PVC	Sch 40
Middle Casing (for triple cased wells only)	-	-	-	-	-
Outer Casing (largest diameter)	-	-	-	-	-
Open Hole or Screen (No. Used <u>10/10</u>)	5	15	2	PVC	Sch 40
Blank Casings (No. Used)	-	-	-	-	-
Tail Piece	-	-	-	-	-
Gravel Pack	3 1/2	15	10	#1 well Gravel	300 lb
Grout	0	3 1/2	10	Neat Cement Bentonite	25 lbs.

Grouting Method placement
Drilling Method hollow stem auger

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0-5'	Brown - light brown sand + silt
5-15'	Dark brown clay with lenses of sand

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 55716

Atlas Sheet Coordinates 31 12 154

OWNER IDENTIFICATION - Owner SMK SPEEDY INTERNATIONAL
Address 365 BLOOR ST. EAST
City TORONTO ONTARIO State CD Zip Code MW43M7

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW3
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 14 Block No. 15
Address 705 BLACKHORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 5/3/99
Regulatory Program Requiring Well UST DATE WELL COMPLETED 5/3/99
Case I.D.# 98-08-19-095616

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Tyree/Sean Grexa Tele. # 609-239-0032

WELL CONSTRUCTION

Total depth drilled 15 ft.
Well finished to 15 ft.

Borehole diameter:
Top 6 1/4 in.
Bottom 6 1/4 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface — ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 12 ft.

Water level was measured using Steel tape

Well was developed for — hours
at — gpm

Method of development —

Was permanent pumping equipment installed? Yes No

Pump capacity — gpm

Pump type: —

Drilling Fluid — Type of Rig Auger

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (B) B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company TALON DRILLING COMPANY

Well Driller (Print) Steve Grasso

Driller's Signature Steve Grasso

Registration No. J1050 Date 5/12/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	<u>-3"</u>	<u>5'</u>	<u>2"</u>	<u>PVC</u>	<u>Sch 40</u>
Middle Casing (for triple cased wells only)	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Outer Casing (largest diameter)	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Open Hole or Screen (No. Used <u>0/0</u>)	<u>5'</u>	<u>15'</u>	<u>2"</u>	<u>PVC</u>	<u>Sch 40</u>
Blank Casings (No. Used <u>)</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Tail Piece	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Gravel Pack	<u>3 1/2'</u>	<u>15'</u>	<u>10"</u>	<u>#2 Well Gravel</u>	<u>300lb</u>
Grout	<u>0</u>	<u>3 1/2'</u>	<u>10"</u>	<u>Neat Cement Bentonite</u>	<u>25 lbs.</u>

Grouting Method Placement
Drilling Method Hollow stem auger

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>0-5'</u>	<u>Brown-lite brown sand + silt</u>
<u>5-15'</u>	<u>Dark brown clay w/lenses of sand</u>

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 61658

Atlas Sheet Coordinates 31 : 12 : 157

OWNER IDENTIFICATION - Owner AMERADA HESS CORP
Address 1 HESS PLAZA
City WOODBIDGE State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MP1
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 23 Block No. 45
Address BLACKHORSE PIKE @ KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9-17-02
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 9-17-02
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Amerada Hess Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 11' ft.
Well finished to 10.5' ft.

Borehole diameter:
Top 6" in.
Bottom 3" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig S-31

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Matt Raab

Driller's Signature Matt Raab

Registration No. 01377 Date 10/2/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	4'	2"	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	4'	10.5'	2"	PVC	.020 sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2'	11'		Morie #2	
Grout	0'	2'		Neat Cement Bentonite	____ lbs. ____ lbs.

Grouting Method gravity

Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

AS-BUILT WELL LOCATION

(NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____

LATITUDE: _____ OR _____ LONGITUDE: _____

New Jersey Department of Environmental Protection
Bureau of Water Allocation

MONITORING WELL RECORD

Well Permit No. 31 - 61659
Atlas Sheet Coordinates 31 12 157

OWNER IDENTIFICATION - Owner AMERADA HESS CORP
Address 1 HESS PLAZA
City WOODBIDGE State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. 1102
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 23 Block No. 45
Address BLACKHORSE PIKE @ KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/13/01
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 9/13/01
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Amerada Hess Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 11' ft.
Well finished to 11' ft.

Borehole diameter:
Top 3" in.
Bottom 3" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig 3-61

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Matt Raab

Driller's Signature Matt Raab

Registration No. 01577 Date 10 / 2 / 01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	5'	2"	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	5'	11'	2"	PVC	020 sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2'	11'		Morie #2	
Grout	0'	2'		Neat Cement Bentonite	34 lbs. 3 lbs.

Grouting Method gravity

Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____

LATITUDE: _____ OR _____ LONGITUDE: _____

MONITORING WELL RECORD

E

Well Permit No. 31 - 61660
Atlas Sheet Coordinates 31 ; 12 ; 157

OWNER IDENTIFICATION - Owner AMERADA HESS CORP
Address 1 HESS PLAZA
City WOODBRIIDGE State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. 1493
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 23 Block No. 45
Address BLACKHORSE PIKE @ KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/19/01
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 9/19/01
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Amerada Hess Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 13' ft.
Well finished to 14' ft.
Borehole diameter:
Top 3" in.
Bottom 5" in.
Well was finished: above grade
 flush mounted
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed?
 Yes No
Static water level after drilling 10' ft.
Water level was measured using Tube
Well was developed for 1/2 hours at 1/2 gpm
Method of development Pump

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	5'	2"	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	5'	11'	2"	PVC	220 sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2'	13'		Morie #2	
Grout	0'	2'		Neat Cement Bentonite	34 lbs. 5 lbs.

Grouting Method gravity
Drilling Method Auger

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig R-61

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Matt Raab

Driller's Signature Matt Raab

Registration No. 1577 Date 10/2/01

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____

LATITUDE: _____ OR _____ LONGITUDE: _____

New Jersey Department of Environmental Protection
Bureau of Water Allocation

MONITORING WELL RECORD

Well Permit No. 31 61661
Atlas Sheet Coordinates 31 12 157

OWNER IDENTIFICATION - Owner AMERADA HESS CORP
Address 1 HESS PLAZA
City WOODBIDGE State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MD4
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 23 Block No. 45
Address BLACKHORSE PIKE @ KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 8/11/01
DATE WELL COMPLETED 8/11/01
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Amerada Hess Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 11' ft.
Well finished to 10' ft.

Borehole diameter:
Top 3" in.
Bottom 3" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig 3-61

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Matt Raab

Driller's Signature Matt Raab

Registration No. 31577 Date 10/2/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	4'	2"	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	4'	10'	2"	PVC	sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2'	11'		Morie #2	
Grout	0'	2'		Neat Cement Bentonite	84 lbs. / 5 lbs.

Grouting Method gravity

Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

AS-BUILT WELL LOCATION

(NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____

LATITUDE: _____ OR _____ LONGITUDE: _____



Chimney Rock Road, Bldg. 9W
 Bound Brook, NJ 08805
 Telephone: (908) 722-4266
 Toll Free: (800) 242-6648
 FAX: (732) 356-1009
 http://www.summitdrilling.com
 email: info@summitdrilling.com

WELL LOG

WELL: MPS DATE DRILLED: 09/11/2001 COORD #1: 31.12.157 PERMIT #1: 31-61662
 COORD #2: PERMIT #2:

SITE: Hess Station #30525, Black Horse Pike @ Kings Highway, Mt Ephraim, NJ
 OWNER: Amerada Hess Corporation, P.O. Box 500, 1 Hess Plaza, WB 6, Woodbridge, NJ 07095

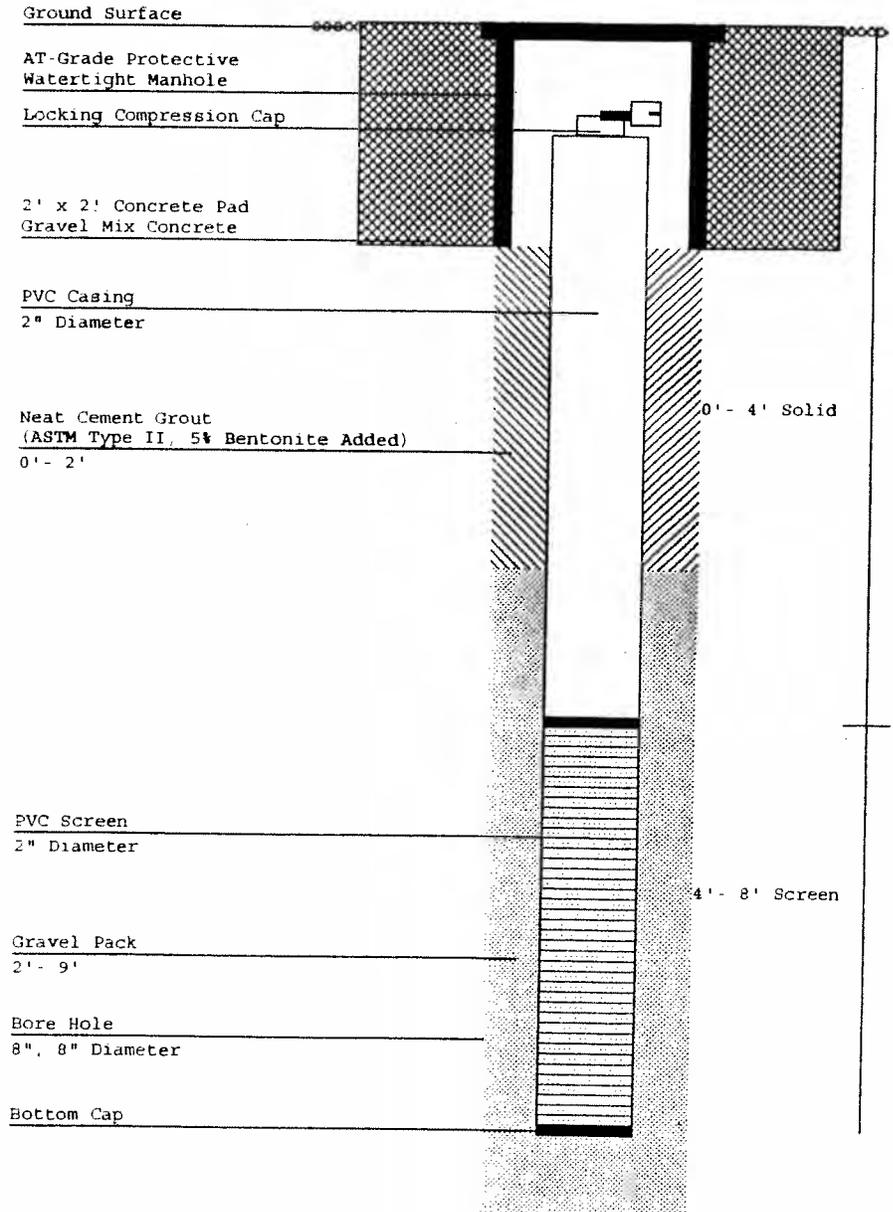
COUNTY: Camden
 XSTREET:
 USE: Monitor

INNER CASING: PVC OUTER CASING: SCREEN TYPE 1: PVC DRILLING METHOD: Auger
 DIAMETER: 2" DIAMETER: SCREEN TYPE 2: SAMPLING METHOD:
 LENGTH: 4' LENGTH: DIAMETER: 2" HOLE DIA: 8", 8"
 LENGTH 1: 4' LENGTH 2: TOTAL DEPTH: 9'
 SET WELL: 8' GAL PER MIN: 1/2 STAT H2O LVL: 10' SLOT SIZE: .020
 GRAVEL PK SZ: Morie #2 DEVELOPMENT METHOD: Pump CASING SEAL: Portland
 DRILLER: Matt Raab DEVELOPMENT TIME: 1/2 OPEN HOLE:
 SURFACE COMPLETION: M

DEPTH BELOW SURFACE FROM - TO	BLOWS PER 6" ON SAMPLER
5' - 7'	10-10-8-6
7' - 9'	7-7-6-5

REMARKS / SOILS IDENTIFICATION

0' - 6" Asphalt.
 6" - 9' Tan-brown f/m sand trace fine gravel.



MONITORING WELL RECORD

E

Well Permit No. 31 - 61663

Atlas Sheet Coordinates 31 : 12 : 157

OWNER IDENTIFICATION - Owner AMERADA HESS CORP
Address 1 HESS PLAZA
City WOODBRIIDGE State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MP6
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 23 Block No. 45
Address BLACKHORSE PIKE @ KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/11/01
DATE WELL COMPLETED 9/11/01
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Amerada Hess Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 9' ft.
Well finished to 8.5' ft.

Borehole diameter:
Top 3" in.
Bottom 3" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig B-61

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

SUMMIT WELL DRILLING CO INC

Drilling Company _____

Well Driller (Print) Matt Raab

Driller's Signature Matt Raab

Registration No. 01577 Date 10/2/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	4'	2"	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	4'	8.5'	2"	PVC	.020 sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2'	9'		Morie #2	
Grout	0'	2'		Neat Cement Bentonite	____ lbs. _____ lbs.

Grouting Method gravity

Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____
OR
LATITUDE: _____ LONGITUDE: _____

Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 61664 E

Atlas Sheet Coordinates 31 ; 12 ; 157

OWNER IDENTIFICATION - Owner AMERADA HESS CORP
Address 1 HESS PLAZA
City WOODBRIIDGE State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MP7
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 23 Block No. 45
Address BLACKHORSE PIKE @ KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/11/01
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 9/11/01
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Amerada Hess Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 9' ft.
Well finished to 3' ft.

Borehole diameter:
Top 3" in.
Bottom 8" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig B-61

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Matt Raab

Driller's Signature Matt Raab

Registration No. 1577 Date 10/2/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	4'	2"	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	4'	3'	2"	PVC	020 sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2'	3'		Morie #2	
Grout	0'	2'		Neat Cement Bentonite	34 lbs. 5 lbs.

Grouting Method gravity

Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____

LATITUDE: _____ OR _____ LONGITUDE: _____

MONITORING WELL RECORD

E

Well Permit No. 31 - 61665

Atlas Sheet Coordinates 31 : 12 : 157

OWNER IDENTIFICATION - Owner AMERADA HESS CORP
Address 1 HESS PLAZA
City WOODBRIIDGE State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MD2
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 23 Block No. 45
Address BLACKHORSE PIKE @ KINGS HWY

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 4-27-01
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 4-27-01
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Amerada Hess Corporation Tele. # _____

WELL CONSTRUCTION

Total depth drilled 11' ft.
Well finished to 10' ft.

Borehole diameter:
Top 3" in.
Bottom 3" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 10' ft.

Water level was measured using Tape

Well was developed for 1/2 hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig S-31

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Matt Raab

Driller's Signature Matt Raab

Registration No. 1577 Date 10 / 2 / 01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	4'	2"	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	4'	10'	2"	PVC	.020 sch 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2'	11'		Morie #2	
Grout	0'	2'		Neat Cement Bentonite	94 lbs. = lbs.

Grouting Method gravity
Drilling Method Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____

LATITUDE: _____ OR _____ LONGITUDE: _____

MONITORING WELL RECORD

Well Permit No. 31 61320

Atlas Sheet Coordinates 31 12 173

OWNER IDENTIFICATION - Owner GLS INC

Address 2604 KIRKWOOD HIGHWAY
City NEWARK State DE Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-6
County CAMDEN Municipality BELLMAR BORO Lot No. 1 Block No. _____
Address 65 NORTH BLACKHORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 8/15/01
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 8/15/01
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) L J Debert Environmental Tele. # 610/444-3894

WELL CONSTRUCTION

Total depth drilled 35 ft.
Well finished to 35 ft.

Borehole diameter:
Top 10.25 in.
Bottom 10.25 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 24 ft.

Water level was measured using TAPE

Well was developed for _____ hours
at _____ gpm

Method of development _____

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid _____ Type of Rig Tricone

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company ADVANCED DRILLING, INC.

Well Driller (Print) SCOTT ALBERMUA

Driller's Signature Scott Albermu

Registration No. J1320 Date 9/10/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	15	4	PVC	40
Middle Casing (for triple cased wells only)	-				
Outer Casing (largest diameter)	-				
Open Hole or Screen (No. Used <u>20</u>)	15	35	4	PVC	40
Blank Casings (No. Used)	-				
Tail Piece <u>Sand Filter</u>	13	35		#2 Sand Felt	
Gravel Pack	11	13		#00 Sand Seal	
Grout	0	11		Neat Cement Bentonite	<u>300</u> lbs. <u>60</u> lbs.

Grouting Method Uremic
Drilling Method 1 1/2 Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.
2' gravel & 6" Subbase
8'-15' - Dens F-M sand & gravel
15'-20' - Med F-M SAND, frag. silt
20'-35' - Med F-M SAND

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET
NORTHING: _____ EASTING: _____
OR
LATITUDE: _____ LONGITUDE: _____

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 38747

Atlas Sheet Coordinates 31 12 181

OWNER IDENTIFICATION - Owner MT. EPHRAIM BURGHOUS
Address 121 S. BLACKHORSE PIKE
City MT. EPHRAIM State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 4.02 Block No. 61
Address 121 S. BLACKHORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well V.G.S.T. Case I.D.# 98-07-28-1032-36

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) T.T.I. ENVIRONMENTAL Tele. # 856-985-8800

WELL CONSTRUCTION

Total depth drilled 22 ft.
Well finished to 21'6" ft.

Borehole diameter:
Top 12" in.
Bottom 12" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 7 ft.

Water level was measured using TAPE

Well was developed for 1 hours
at 1 gpm

Method of development PUMPING

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____ CM2-55

Drilling Fluid _____ Type of Rig AUGER

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company JOHN SNYDER

Well Driller (Print) JOHN SNYDER

Driller's Signature [Signature]

Registration No. J-1123 Date 9/19/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	—	—	—	—	—
Middle Casing (for triple cased wells only)	—	—	—	—	—
Outer Casing (largest diameter)	0	6'6"	4"	PVC	SCH. 40
Open Hole or Screen (No. Used <u>Ø20</u>)	6'6"	21'6"	4"	PVC	SCH. 40
Blank Casings (No. Used)	—	—	—	—	—
Tail Piece	—	—	—	—	—
Gravel Pack	4'	22'	—	2 SAND	500 LBS
Grout	0	4'	—	Neat Cement Bentonite	94 lbs. 20 lbs.

Grouting Method HAND PLACED - 60 LBS CONCRETE
Drilling Method HOLLOW AUGERS

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>ASPHALT</u>	<u>0-3"</u>
<u>CRUSHED STONE</u>	<u>3'-8'</u>
<u>Moist-Sat. GREENISH SILTY FINE SAND</u>	<u>8'-12'</u>
<u>Moist-Sat ORANGE SILTY FINE SAND</u>	<u>12'-16'</u>
<u>Moist Gray, F. SANDY SILTY CLAY</u>	<u>16'</u>
<u>END OF BORING</u>	<u>22'</u>

MONITORING WELL RECORD

31 60084

Well Permit No. _____

Atlas Sheet Coordinates 31 12 181



MT EPHRAIM BOROUGH

OWNER IDENTIFICATION - Owner _____
Address 121 S BLACK HORSE PIKE
City MT EPHRAIM State NJ Zip Code 08059

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-2
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 4.02 Block No. 61
Address 121 S BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 3/8/01
Regulatory Program Requiring Well UST DATE WELL COMPLETED 3/8/01
Case I.D.# 98-7-28-1032-36

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) T.T.I. ENVIRONMENTAL Tele. # 856-985-8800

WELL CONSTRUCTION

Total depth drilled 15 ft.
Well finished to 15 ft.

Borehole diameter:
Top 12" in.
Bottom 12" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 66" ft.
Water level was measured using WET TAPE

Well was developed for 1 hours
at _____ gpm

Method of development PUMPING

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____
Drilling Fluid _____ Type of Rig CME-55 AUGER

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company JOHN SNYDER

Well Driller (Print) JOHN SNYDER

Driller's Signature _____

Registration No. J-1123 Date 3/9/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	_____	_____	_____	_____	_____
Middle Casing (for triple cased wells only)	_____	_____	_____	_____	_____
Outer Casing (largest diameter)	0	5'	4"	PVC	SCH. 40
Open Hole or Screen (No. Used #020)	5'	15'	4"	PVC	SCH. 40
Blank Casings (No. Used)	_____	_____	_____	_____	_____
Tail Piece	_____	_____	_____	_____	_____
Gravel Pack	3'	15'	—	#2 SAND	600 LBS
Grout	0	3'	_____	Neat Cement Bentonite	94 lbs. 15 lbs.

Grouting Method HAND PLACED
Drilling Method HOLLOW AUGERS

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

4" ASPHALT 8" CAS 0-1'

DAMP, BROWN BLACK F SAND 1-4'

MOST, ORANGE TAN F SAND 4'
LITTLE - SOME SILT

SAT. ORANGE F SAND 7'
AND CLAYEY SILT

15'

END OF HOLE

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)

NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _____ EASTING: _____

LATITUDE: _____ OR _____ LONGITUDE: _____

MONITORING WELL RECORD

Well Permit No. 31 60085

Atlas Sheet Coordinates 31 12 181

OWNER IDENTIFICATION - Owner MT EPHRAIM BOROUGH
Address _____
City 121 S BLACK HORSE PIKE State MT EPHRAIM Zip Code 08059

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-3
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 4.02 Block No. 61
Address 121 S BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 3/8/01
Regulatory Program Requiring Well UST DATE WELL COMPLETED 3/8/01
Case I.D.# 98-7-28-1032-36

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) T T I Environmental Tele. # 856-985-8800

WELL CONSTRUCTION

Total depth drilled 14 ft.
Well finished to 14 ft.

Borehole diameter:
Top 12" in.
Bottom 12" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 5'7" ft.
Water level was measured using WET TAPE

Well was developed for 1 hours
at _____ gpm

Method of development PUMPING

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____ CMZ-55

Drilling Fluid _____ Type of Rig AUGER

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company JOHN SNYDER

Well Driller (Print) JOHN SNYDER

Driller's Signature _____

Registration No. J-1123 Date 3/7/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing					
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)	0	4'	4"	PVC	SCH 40
Open Hole or Screen (No. Used <u>0220</u>)	4'	14'	4"	PVC	SCH 40
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	3'	14'	-	#2 SAND	600 LB
Grout	0	3'	-	Neat Cement Bentonite	94 lbs. 15 lbs.

Grouting Method HAND PLACED
Drilling Method HOLLOW AUGERS

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
4" ASPHALT	8" CS. 0-1'
DARK BROWN F. SAND	5'
TI F. GRAVEL	
MOST ORANGE F. SAND	5'
LITTLE - SOME SILT + CLAY	
END OF Hole	14'

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
OR	
LATITUDE: _____	LONGITUDE: _____

MONITORING WELL RECORD

Well Permit No. 31 60086
Atlas Sheet Coordinates 31 12 181

OWNER IDENTIFICATION - Owner MT EPHRAIM BOROUGH
Address 121 S BLACK HORSE PIKE
City MT EPHRAIM State NJ Zip Code 08059

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-4
County CAMDEN Municipality MOUNT EPHRAIM B Lot No. 4.02 Block No. 61
Address 121 S BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 3/8/01
Regulatory Program Requiring Well UST DATE WELL COMPLETED 3/8/01
Case I.D.# 98-7-28-1032-36

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) T.T.I. Environmental Tele. # 856-985-8800

WELL CONSTRUCTION

Total depth drilled 13 ft.
Well finished to 13 ft.

Borehole diameter:
Top 12" in.
Bottom 12" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 5 ft.

Water level was measured using WET TAPE

Well was developed for 1 hours
at gpm

Method of development PUMPING

Was permanent pumping equipment installed? Yes No

Pump capacity gpm

Pump type:

Drilling Fluid Type of Rig CME-55 AUGER

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company JOHN SNYDER

Well Driller (Print) JOHN SNYDER

Driller's Signature [Signature]

Registration No. J-1123 Date 3/9/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	—	—	—	—	—
Middle Casing (for triple cased wells only)	—	—	—	—	—
Outer Casing (largest diameter)	0	3'	4"	PVC	SCH. 40
Open Hole or Screen (No. Used <u>022</u>)	3'	13'	4"	PVC	SCH. 40
Blank Casings (No. Used)	—	—	—	—	—
Tail Piece	—	—	—	—	—
Gravel Pack	2'	13'	—	#2 SAND	600 LBS
Grout	0	2	—	Neat Cement Bentonite	94 lbs. 15 lbs.

Grouting Method HAND PLACED
Drilling Method HOLLOW AUGERS

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>4" ASPHALT 8" C.S.</u>	<u>0-1'</u>
<u>Damp, BRN BLACK F-SAND</u>	<u>1-5'</u>
<u>Moist-SAT - ORANGE F. SAND + CLAYEY SILT</u>	<u>5'</u>
<u>END OF HOLE</u>	<u>13'</u>

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM) NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: <u> </u>	EASTING: <u> </u>
OR	
LATITUDE: <u> </u>	LONGITUDE: <u> </u>

MONITORING WELL RECORD

Well Permit No. 01 56669

Atlas Sheet Coordinates 31 12 187

OWNER IDENTIFICATION - Owner PICOT, STEVE
Address 220 S. BLACK HORSE PIKE
City BELLMAR State NJ Zip Code 08031

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-4
County CAMDEN Municipality BELLMAR BORO Lot No. 3 Block No. 147
Address 220 S. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/15/99
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 9/15/99
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 12 ft.
Well finished to 12 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 4 ft.

Water level was measured using tape

Well was developed for 1 hours
at 1 gpm

Method of development Surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid None Type of Rig B-59

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) JOE QUINLAN

Driller's Signature [Signature]

Registration No. 1612 Date 9/16/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	4	PVC	SCH 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	2	12	4	PVC	SCH 40 .010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	1	12		H1	300
Grout	0	1		Neat Cement Bentonite	____ lbs. 20 lbs.

Grouting Method GRAVITY
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-5 F sand - Brown
5-12 Organic silt

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 - 58517

Atlas Sheet Coordinates 23 12 125

OWNER IDENTIFICATION - Owner MOTIVA ENTERPRISES, LC
Address 308 FELLOWSHIP RD
City ROORESTOWN State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW102
County CARDEN Municipality BELLHAWR BORO Lot No. 12.01 Block No. 33
Address 132 N BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 7/18/00
Regulatory Program Requiring Well UST DATE WELL COMPLETED 7/18/00
Case I.D.# 93-09-14-1320

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 30 ft.
Well finished to 30 ft.

Borehole diameter:
Top 2 8/8 in.
Bottom _____ in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface NA ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 20 ft.

Water level was measured using Tape

Well was developed for 5 hours at 5 gpm

Method of development MOYNO PUMP

Was permanent pumping equipment installed? Yes No

Pump capacity NA gpm

Pump type: NA

Drilling Fluid NA Type of Rig A300

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company GARY PARENT/SHORE DRILLING, INC.

Well Driller (Print) Gary Parent

Driller's Signature Gary Parent

Registration No. MD 1540 Date 8/10/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	15	2	PVC	40
Middle Casing (for triple cased wells only)	/				
Outer Casing (largest diameter)	/				
Open Hole or Screen (No. Used <u>1</u>)	15	30	2	PVC	.020
Blank Casings (No. Used _____)	/				
Tail Piece	/				
Gravel Pack	13	30	8	SAND	#2
Grout	0	13	8	Neat Cement Bentonite	100 lbs.

Grouting Method Tremie
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-4" Asphalt

4"-30' lt brn - brn silty clayey SAND

Bureau of Water Allocation MONITORING WELL RECORD

Well Permit No. 31 56670

Atlas Sheet Coordinates 31 2 136

OWNER IDENTIFICATION - Owner PICOT, STEVE
Address 220 S. BLACK HORSE PIKE
City BELLMAWR State NJ Zip Code 08031

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County CAMDEN Municipality BELLMAWR BORO Lot No. 1.02 Block No. 136.01
Address 220 S. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/14/99
Regulatory Program Requiring Well _____ DATE WELL COMPLETED 9/14/99
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 15 ft.
Well finished to 15 ft.

Borehole diameter:
Top 1.8 in.
Bottom 1.8 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 6 ft.

Water level was measured using tape

Well was developed for 1 hours
at _____ gpm

Method of development Pump Surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid none Type of Rig B-59

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) JOE QUINLAN

Driller's Signature [Signature]

Registration No. 1612 Date 9/16/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2.5	4	PVC	SCH 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	2.5	15	4	PVC	SCH 40 .010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2	15		H1	300#
Grout	0	2		Neat Cement Bentonite	25 lbs.

Grouting Method Gravity
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-2 Backfill
2-10' green sand fine
10-15' dark brown sand/silt

Bureau of Water Allocation MONITORING WELL RECORD

Well Permit No. 31 - 35072

Atlas Sheet Coordinates 31 : 12 186

OWNER IDENTIFICATION - Owner PICOT, STEVE
Address 220 S. BLACK HORSE PIKE
City BELLMAWR State NJ Zip Code 08031

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-3
County CAMDEN Municipality BELLMAWR BORO Lot No. 1.02 Block No. 243.01
Address 220 S. BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 9/14/99
DATE WELL COMPLETED 9/14/99
Regulatory Program Requiring Well _____ Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 15 ft.
Well finished to 15 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 5 ft.

Water level was measured using tape

Well was developed for 1 hours
at _____ gpm

Method of development Pump - Surge

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid None Type of Rig B-59

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company QUINLAN WELL DRILLING

Well Driller (Print) JOE QUINLAN

Driller's Signature [Signature]

Registration No. 1612 Date 9/16/99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2.5	4	PVC	SCH40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	2.5	15	4	PVC	SCH40 1010
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	2	15		#1	300
Grout	0	2		Neat Cement Bentonite	____ lbs. 20 lbs.

Grouting Method Gravity
Drilling Method HSA

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

0-3 Backfill
3-15 organic silt

Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 61134
Atlas Sheet Coordinates 31 11 636

OWNER IDENTIFICATION - Owner BELL HARBOR, INC.
Address 442 CHAPEL HEIGHTS RD
City SEWELL State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. T.B-1
County CAMDEN Municipality BELLMAR BORO Lot No. 9.01 Block No. 79.01
Address CREEK RD & HARDING AVE

DATE WELL STARTED 7/2/01
DATE WELL COMPLETED 7/2/01
TYPE OF WELL (as per Well Permit Categories) BORING
Regulatory Program Requiring Well N/A Case I.D.# N/A

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) UNDERWOOD ENG. Tele. # 856-931-3828

WELL CONSTRUCTION

Total depth drilled 70 ft.
Well finished to 70 ft.
Borehole diameter:
Top 8" in.
Bottom 8" in.

Well was finished: above grade
 flush mounted N/A

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 65' ft.
Water level was measured using Soil Sample Spt

Well was developed for _____ hours
at _____ gpm

Method of development _____

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: CME-55

Drilling Fluid _____ Type of Rig AUG 25

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company JOHN SNYDER

Well Driller (Print) JOHN SNYDER

Driller's Signature [Signature]

Registration No. J-1123 Date 7/5/01

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing					
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)					
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack					
Grout	<u>0</u>	<u>70</u>		Neat Cement Bentonite	<u>376</u> lbs. <u>20</u> lbs.

Grouting Method TREMIE
Drilling Method HOLLOW AUGERS

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>GRAY SILT + CLAY</u>	<u>0-2'</u>
<u>MISC TRASH</u>	<u>2'</u>
	<u>65'</u>
<u>Moist-Set Gray Silt</u>	<u>65'</u>
<u>TR. CLAY, TR. V.F. SAND</u>	
	<u>70'</u>

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
OR	
LATITUDE: _____	LONGITUDE: _____

New Jersey Department of Environmental Protection
Bureau of Water Allocation
MONITORING WELL RECORD

Well Permit No. 31 61134
Atlas Sheet Coordinates 31 11 636

OWNER IDENTIFICATION - Owner BELL HARBOR, INC.
Address 442 CHAPEL HEIGHTS RD
City SEWELL State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. T.B.-1
County CAMDEN Municipality BELLMAR BORO Lot No. 9-01 Block No. 79-01
Address CREEK RD & HARDING AVE

DATE WELL STARTED 7/2/01
DATE WELL COMPLETED 7/2/01
TYPE OF WELL (as per Well Permit Categories) BORING
Regulatory Program Requiring Well N/A Case I.D.# N/A

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) UNDERWOOD ENG. Tele. # 856-931-3828

WELL CONSTRUCTION

Total depth drilled 70 ft.
Well finished to 70 ft.
Borehole diameter:
Top 8" in.
Bottom 8" in.
Well was finished: above grade
 flush mounted N/A
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed?
 Yes No
Static water level after drilling 65' ft.
Water level was measured using Soil Sample Sat
Well was developed for _____ hours at _____ gpm
Method of development _____

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing					
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)					
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack					
Grout	<u>0</u>	<u>70</u>		Neat Cement Bentonite	<u>376</u> lbs. <u>20</u> lbs.

Grouting Method TREMIE
Drilling Method HOLLOW AUGERS

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____ CME-55

Drilling Fluid _____ Type of Rig AUGER

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company JOHN SNYDER

Well Driller (Print) JOHN SNYDER

Driller's Signature [Signature]

Registration No. J-1123 Date 7/5/01

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>GRAY SILT + CLAY</u>	<u>0-2'</u>
<u>MISC TRASH</u>	<u>2'</u>
	<u>65'</u>
<u>Moist-Sat. SANDY SILT</u>	<u>65'</u>
<u>TR. CLAY, TO V.F. SAND</u>	<u>70'</u>

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET
NORTHING: _____ EASTING: _____
OR
LATITUDE: _____ LONGITUDE: _____

MONITORING WELL RECORD

Well Permit No. 31 - 58783

Atlas Sheet Coordinates 31 12 175

OWNER IDENTIFICATION - Owner PIEST, STEVE
Address 220 S BLACK HORSE PIKE
City BELLMAR State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. B-1
County CAMDEN Municipality BELLMAR BORO Lot No. 1.02 Block No. 146.01
Address 300 BLACK HORSE PIKE

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 8/14/00
Regulatory Program Requiring Well SPILLFUND SITE DATE WELL COMPLETED 8/14/00
Case I.D.# _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) LJ Nebel Environmental Tele. # 610/444-2989

WELL CONSTRUCTION

Total depth drilled 23 ft.
Well finished to 23 ft.

Borehole diameter:
Top 10.25 in.
Bottom 10.25 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 5.7 ft.

Water level was measured using TAPE

Well was developed for 1/2 hours
at 1.5 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Fluid None Type of Rig Trotter

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company ADVANCED DRILLING, INC.

Well Driller (Print) ROGER LOGEL

Driller's Signature Roger Logel

Registration No. M1166 Date 8/28/00

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	3	4	PVC	40
Middle Casing (for triple cased wells only)	-				
Outer Casing (largest diameter)	-				
Open Hole or Screen (No. Used <u>20</u>)	3	23	4	PVC	40
Blank Casings (No. Used)	-				
Tail Piece <u>SAND FILTER</u>	2.5	23		#2 SAND FILTER	
Gravel Pack	1.5	2.5		#00 SAND SEAL	
Grout	0	1.5		Neat Cement Bentonite	100 lbs. / 20 lbs.

Grouting Method Tremie
Drilling Method H S Auger

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

7" Asphalt + Siebbase
7' - 6' - Dry SAND, Cabbles, Clunks
6' - 10' - wet Silt, F-M SAND
10' - 20' - wet F-M SAND
20' - 23' - wet Silt, Clay

APPENDIX B
Known Contaminated Site List

KCS-NJ County - Municipality Listing (2001 Edition)

County and Municipality: CAMDEN

BELLMAWR BOROUGH

CAMDEN
BELLMAWR BOROUGH

STATE WITH ALIEN POSSESSIONS OF DOMESTICATED

A E PRICE INCORPORATED BFO-IN 0084900	INTERSTATE INDUSTRIAL PRK ACTIVE - 3/3/94	NJL600053803
BELL HARBOR INCORPORATED LANDFILL BCM 941102210745	HARDING AVE (OFF CREEK RD) ACTIVE - 12/22/94	NJD980779590
BELLMAWR AUTO & TIRE SERVICE BUST 0004745	220 BLACKHORSE PK S ACTIVE - 10/2/96	NJL800155285
BELLMAWR BOROUGH PUBLIC WORKS GARAGE BUST 0123121	KARR DR & CREEK RD ACTIVE - 10/24/94	NJD982744476
BELLMAWR BOROUGH SANITARY LANDFILL BFO-CA 930480	I-295 & CREEK PENDING - 6/17/93	NJD000535401
DEANGELIS AUTO REPAIR BUST 0004754	65 BLACKHORSE PK N ACTIVE - 11/5/98	NJL800440026
FAZZIO SANITARY LANDFILL BFO-CA 930838	204 HARDING AVE PENDING - 4/6/94	NJD980505127
FLAGS INCORPORATED BFO-CA 920138	41 OAK AVE PENDING - 9/25/95	NJD002352300
INTERSTATE INDUSTRIAL PARK BFO-S 9709112	400 BENIGNO BLVD PENDING - 9/19/97	NJL800053373
NJ TURNPIKE AUTHORITY INTERCHANGE 3 BUST 0131735	NJ TPKE MP 26 1 ACTIVE - 12/12/97	NJL800182081
PSE&G COMPANY BUST 0041825	80 HELLER RD ACTIVE - 3/22/90	NJL600027338
SAINT FRANCIS DE SAILS CONVENT BFO-S 990211124053	424 E BROWNING RD ACTIVE - 3/9/99	NJL800472789
SHELL SERVICE STATION BELLMAWR BOROUGH BUST 0078250	132 BLACK HORSE PK N ACTIVE - 11/13/95	NJD986593077
SUNOCO SERVICE STATION BELLMAWR BOROUGH BUST 0145514	NORTH-SOUTH FREEWAY & BELL GARDEN AVE ACTIVE - 12/14/92	NJD000694117
XTRA SERVICE STATION BELLMAWR BOROUGH BUST 0007201	1 BLACKHORSE PK RD S ACTIVE - 1/3/01	NJL800618674

KCS-NJ County - Municipality Listing (2001 Edition)

County and Municipality: CAMDEN GLOUCESTER CITY

County CAMDEN
Municipality GLOUCESTER CITY

14 SITES WITH ON-SITE SOURCE(S) OF CONTAMINATION

AMSPEC CHEMICAL COMPANY BCM 9608170	751 WATER ST PENDING - 8/23/98	NJD000312371
CONTINENTAL SAND & GRAVEL BFO-CA 981206	ERIAL WILLIAMSTOWN RD PENDING - 11/30/98	NJL000075119
GLOUCESTER CITY SEWAGE TREATMENT PLANT BFO-S 950714132446	BRICK ST ACTIVE - 7/14/95	NJL800153405
GLOUCESTER COAL GAS (PSE&G) BCM NJD981083058	JERSEY AVE & 6TH ST ACTIVE - 4/6/90	NJD981083058
GLOUCESTER HEIGHTS SCHOOL BFO-S 990519124442	NICHOLSON CORNELL RDS ACTIVE - 10/14/99	NJL800493728
INDCO INCORPORATED BUST 0238522	RAILROAD AVE N & ESSEX ST ACTIVE - 1/3/00	NJL600158731
LIQUID CARBONIC SPECIALTY GAS CORP BEECRA E91294	560 S BROADWAY ACTIVE - 1/13/93	NJL500019351
O S JOHNSON & COMPANY INCORPORATED BEECRA E93832	450 KING ST N ACTIVE - 11/15/93	NJL500041383
POPCORN FACTORY BCM NJL800153397	HUNTER & 6TH STS ACTIVE - 12/18/96	NJL800153397
RUG FACTORY BCM NJL800153389	POWELL & SIXTH & HUNTER STS ACTIVE - 12/17/96	NJL800153389
SHELL SERVICE STATION GLOUCESTER CITY BUST 0076398 BFO-IN 931015142137	CRESCENT BLVD & NICHOLSON RD ACTIVE - 7/3/96 ACTIVE - 10/15/93	NJD982279499
UNIVERSITY & MEMORIAL AVENUES BCM NJL000031872	UNIVERSITY & MEMORIAL AVES ACTIVE - 4/1/92	NJL000031872
VANGUARD VINYL SIDING INCORPORATED EMSA 9403141	CHARLES & WATER STS PENDING - 4/6/94	NJD982530073
WOODLAND OXYGEN COMPANY INCORPORATED BEECRA E90729	560 S BROADWAY ACTIVE - 7/8/91	NJL500035068

14 SITES WITH ON-SITE SOURCE(S) OF CONTAMINATION IN GLOUCESTER CITY

KCS-NJ County - Municipality Listing (2001 Edition)
 County and Municipality: CAMDEN MOUNT EPHRAIM BOROUGH

County: CAMDEN
 Municipality: MOUNT EPHRAIM BOROUGH

8 SITES WITH ON-SITE SOURCE(S) OF CONTAMINATION

137 6TH AVENUE CEHA 960501064017	137 6TH AVE ACTIVE 5/1/96	NJL800222432
BO BET MOTEL BFMCR 970797	310 BLACKHORSE PK N PENDING 7/31/97	NJL800122145
HADDONFIELD LUMBER COMPANY BUST 0074162	101 KINGS HWY ACTIVE 12/19/91	NJL800421398
MERIT OIL CORPORATION BUST 0091271	BLACK HORSE PK & KINGS HWY ACTIVE 11/21/88	NJD982185332
MOBIL SERVICE STATION MOUNT EPHRAIM BORO BUST 0062444	6 BLACK HORSE PK & KINGS HWY ACTIVE 9/20/91	NJD986605574
MOUNT EPHRAIM BOROUGH HALL BUST 0132004	121 BLACKHORSE PK ACTIVE 12/4/98	NJL800138281
MOUNT EPHRIAM BOROUGH BFO-S 200002166	CLEVELAND AVE PENDING 2/23/00	NJL800023699
SACRED HEART HALL BUST 0177014	W BUCKINGHAM AVE & BLACKHORSE PK ACTIVE 6/19/00	NJL800496523

8 SITES WITH ON-SITE SOURCE(S) OF CONTAMINATION IN MOUNT EPHRAIM BOROUGH

C SITES WITH CLOSED CASE(S) WITH RESTRICTIONS

Site Name: Site Address: Site Location: Site Status: Date Closed: Date Reopened: Date of Report

EXXON SERVICE STATION MOUNT EPHRAIM BORO BUST 0078618	BLACK HORSE PK NFA-A 12/15/99	NJD986610814 Restricted
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1 SITES WITH CLOSED CASE(S) WITH RESTRICTIONS IN MOUNT EPHRAIM BOROUGH

APPENDIX C
Freshwater Fish Management Database

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Big Timber Creek: Summary Data

Species Name:	Scientific Name:	First Captured:	Last Captured:
Goldfish	Carassius auratus	9/5/1975	9/5/1975
Bass, largemouth	Micropterus salmoides	8/19/1992	8/19/1992
Bass, striped	Morone saxatilis	9/5/1975	8/19/1992
Bluegill	Lepomis macrochirus	9/5/1975	9/5/1975
Bullhead, brown	Ameiurus nebulosus	9/5/1975	8/19/1992
Carp, common	Cyprinus carpio	9/5/1975	9/5/1975
Catfish, channel	Ictalurus punctatus	8/19/1992	8/19/1992
Catfish, white	Ameiurus catus	8/19/1992	8/19/1992
Alcwifc	Alosa pseudoharengus	9/5/1975	9/5/1975
Eel, American	Anguilla rostrata	9/5/1975	9/5/1975
Shad, gizzard	Dorosoma cepedianum	9/5/1975	9/5/1975
Herring, blueback	Alosa aestivalis	8/19/1992	8/19/1992
Killifish, banded	Fundulus diaphanus	9/5/1975	8/19/1992
Minnow, Silvery	Hybognathus regius	9/5/1975	8/19/1992
Mudminnow, eastern	Umbra pygmaea	9/28/1998	9/28/1998
Mummichog	Fundulus heteroclitus	9/5/1975	9/5/1975
Perch, white	Morone americana	9/5/1975	9/5/1975
Pumpkinseed	Lepomis gibbosus	9/5/1975	9/5/1975
Shad, American	Alosa sapidissima	8/19/1992	8/19/1992
Crappie, black	Pomoxis nigromaculatus	8/19/1992	8/19/1992

Run by: cms 9:20 AM

Page 1 of 2

Printed 8/3/2005

Received 08-04-2005 01:41pm From-1 608 628 5044

To-DRESDNER ROBIN

Page 002

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Survey Data
 Big Timber Creek:

Survey Date: Monday, September 26, 1998

Reason: Classification

County: Camden	Site Alternate Name:
Township: Berlin Boro	Latitude (DMS): 39 48 21
NJDEP Watershed: Big Timber Creek	Longitude (DMS): 74 59 20
USGS Quad: CLEMENTON NJ	

LOCATION
 Clementon/ New Freedom Road SE of Sharp's Corner

Crew: Carberry	Entered by: KRP 04/08/1999
Weather: Clear and Sunny	Survey ID: 2042547415
Air Temperature: 76 C.	

SURVEY NOTES:
 Trout Classification
 Stream Depth: 5'-1.5'
 Stream Width: 4.5'
 Sample Length 600 ft.
 Time: 3426 sec.

Depth(m)	Location Notes	Conductivity	Alkalinity	pH	kNitrate	Total P	Water Temp	DISC O	% Sat	Time
0		80					14.3	10.3		

Run by: cms 9:21 AM

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Big Timber Creek:

Survey Date: Monday, September 28, 1998

Reason: Classification

SAMPLE # 0	GEAR: Electrofishing - Type VII POW SR Backpack (DC)	Sample Depth: 0 m. CPUE:
---------------	---	-----------------------------

Sample Location/Notes: Many frogs and mud minnows. No salamanders like at Mason's Run	Age Group Definition:	Electrofishing Settings (if applicable) Current type: Voltage: Elapsed Time: 3426 Output Mode:
---	-----------------------	--

Fish Collected								
Species Name	Number	Length (mm)	Weight (kg)	Length (in)	Weight (lb)	Age	Age Class	Sex
Mudminnow, eastern	23	0	0.000	0.00	0.00			

Run by: cms 9:21 AM

Page 3 of 3

Printed 8/3/2005

Received 08-04-2005 01:41pm

From-1 608 628 5044

To-DRESDNER ROBIN

Page 004

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Survey Data
 Big Timber Creek:

Survey Date: Wednesday, August 19, 1992

Reason: Update Information

County: Camden
 Township:
 NJDEP Watershed: Big Timber Creek
 USGS Quad: RUNNEMEDE NJ

Site Alternate Name:
 Latitude (DMS): 39 51 18
 Longitude (DMS): 75 5 80

LOCATION:

Route 286 and Turnpike bridges.

Crew: Carberry

Weather:

Air Temperature: C.

Entered by: TLS 11/26/1997

Survey ID: 1515162235

SURVEY NOTES:

Depth(m)	Location Notes	Conductivity	Alkalinity	pH	Nitrate	Total P	Water Temp	Diss O	% Sat	Time
	Start of outgoing tide.	193					23.0			

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Big Timber Creek:

Survey Date: Wednesday, August 19, 1992

Reason: Update Information

SAMPLE # 1	GEAR: Electrofishing - Unknown Electrofishing Gear (not recorded)	Sample Depth: 0 m.
Sample Location/Notes: 1 of 1.		CPUE:

Age Group Definition:

Electrofishing Settings (if applicable)

Current type: Voltage:
 Elapsed Time: 4256 Output Mode:

Fish Collected

Species Name	Number	Length (mm)	Weight (kg)	Length (in)	Weight (lb)	Age	Age Class	Sex
Shad, American	1	68	0.000	2.70	0.00			
Bass, largemouth	1	325	0.000	13.00	0.00			
Shad, American	1	63	0.000	2.50	0.00			
Herring, blueback	2	0	0.000	0.00	0.00			
Catfish, white	2	0	0.000	0.00	0.00			
Shad, American	1	66	0.000	2.70	0.00			
Bass, largemouth	1	263	0.000	10.50	0.00			
Shad, American	1	63	0.000	3.30	0.00			
Shad, American	1	58	0.000	2.30	0.00			
Shad, American	1	70	0.000	2.60	0.00			
Shad, American	1	80	0.000	3.20	0.00			
Catfish, channel	1	73	0.000	2.90	0.00			
Bass, striped	1	0	0.000	0.00	0.00			
Minnow, silvery	7200	70	0.000	2.80	0.00			
Killifish, banded	750	0	0.000	0.00	0.00			
Bass, largemouth	1	345	0.000	13.60	0.00			
Shad, American	1	73	0.000	2.90	0.00			
Bass, striped	1	145	0.000	5.80	0.00			
Bass, largemouth	1	280	0.000	11.20	0.00			
Shad, American	1	78	0.000	3.10	0.00			
Crapple, black	1	168	0.000	6.70	0.00			
Bullhead, brown	2	0	0.000	0.00	0.00			

Printed by: cms 9:22 AM

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Printed 8/3/2005

Received 08-04-2005 01:41pm

From-1 609 629 5044

To-DRESDNER ROBIN

Page 006

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Survey Data
 Big Timber Creek:

Survey Date: Friday, September 05, 1975

Reason: Classification

County: Gloucester
 Township: Brookdawn Boro
 NJDEP Watershed: Big Timber Creek
 USGS Quad: RUNNEMEDE NJ

Site Alternate Name:

Latitude (DMS): 39 52 26
 Longitude (DMS): 75 7 26

LOCATION:

Gloucester City, Route 47 bridge.

Grow: Soldwedel

Weather:

Air Temperature: C.

Entered by: TLS 09/26/1997

Survey ID: -555278742

SURVEY NOTES:

Slight gradient

Depth(m)	Location Notes	Conductivity	Alkalinity	DH	nitrate	Total P	Water Temp	Diss O	% Sat	Time
		270		6.80			22	3.4		

Run by: cms 9:23 AM

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Printed 8/3/2005

Received 08-04-2005 01:41pm

From-1 609 629 5044

To-DRESDNER ROBIN

Page 007

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Big Timber Creek:

Survey Date: Friday, September 05, 1975

Reason: Classification

SAMPLE # 1	GEAR: Electrofishing - AC 230 - volt generator stream rig	Sample Depth: 0 m.	CPUE:					
Sample Location/Notes: 1 of 1. The number and weight of the American Eels were estimated		Age Group Definition: 0 = Young of the year. 1 = Intermediate.						
		Electrofishing Settings (if applicable) Current type: Voltage: Elapsed Time: Output Mode:						
Fish Collected								
Species Name	Number	Length (mm)	Weight (kg)	Length (in)	Weight (lb)	Age	Age Class	Sex
Carp, common	1	0	1.474	0.00	3.25		>1 lb	
Bullhead, brown	1	0	0.454	0.00	1.00		>7"	
Bluegill	1	0	0.068	0.00	0.15		>5"	
Goldfish	1	0	0.295	0.00	0.65		<1 lb	
Bass, striped	1	0	0.113	0.00	0.25		<7"	
Alewife	14	0	0.068	0.00	0.15			
Shad, gizzard	1	0	0.068	0.00	0.15			
Perch, white	1	0	0.159	0.00	0.35			
Pumpkinseed	3	0	0.136	0.00	0.30		<7"	
Eel, American	100	0	34.014	0.00	75.00		<5"	
Perch, white	1	0	0.027	0.00	0.06		0	
Perch, white	1	0	0.227	0.00	0.50		>7"	
Pumpkinseed	5	0	0.454	0.00	1.00		>5"	
Mummichog	134	0	0.227	0.00	0.50			
Killifish, banded	27	0	0.136	0.00	0.30			
Minnow, Silvery	49	0	0.295	0.00	0.65			

Run by: cms 9:23 AM

Page 3 of 3

Printed 8/3/2005

Survey Data
 Little Timber Creek.

Survey Date: Thursday, August 02, 2001

Reason: Integrated Biological Aquatic Assessment

County: Camden
 Township: Bellmawr Boro
 NJDEP Watershed: Delaware River (11)
 USGS Quad: RIJNMEME NJ

Site Alternate Name:

Latitude (DMS): 39 52 12
 Longitude (DMS): 75 4 18

LOCATION:

Devon Road Bridge, 37 m upstream

Crew: Berno, Crouse, Ward

Weather: mostly sunny

Air Temperature: 20 C.

Entered by: SI 08/07/2001

Survey ID: 842602182

SURVEY NOTES:

salinity of 0.1 ppt
 non-trout
 shade: complete
 WMA: 10

Depth(m)	Location Notes	Conductivity	Alkalinity	pH	AMRrate	Total P	Water Temp	Diss O	% Sat	Time
0	specific cond of 310.2 specific cond of 310.2 specific cond of 310.2	275.2	18	6.22			19	7.4		1522 g

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

HABITAT NOTES

AQUATIC VEGETATION:

SUBSTRATE

Abundance: (%)	Substrate:
10	Gravel
70	Sand
20	Silt

(BII) HABITAT ASSESSMENT.

Assessment Completed By: Barno, Crouse, Ward

LOW GRADIENT

8	Epifaunal Substrate:
8	Pool Substrate:
4	Pool Variability:
3	Sediment Deposition:
16	Channel Flow Status:
11	Channel Alteration:
12	Channel Sinuosity:
0	Bank Stability (Left Bank):
0	Bank Stability (Right Bank):
2	Veg. Protection (Left Bank):
2	Veg. Protection (Right Bank):
8	RVZW (Left Bank)
8	RVZW (Right Bank):

HIGH GRADIENT

0	Epifaunal Substrate:
0	Embeddedness:
0	Velocity Regime:
0	Sediment Deposition:
0	Channel Flow Status:
0	Channel Alteration:
0	Freq. of Riffles:
0	Bank Stability (Left Bank):
0	Bank Stability (Right Bank):
0	Veg. Protection (Left Bank):
0	Veg. Protection (Right Bank):
0	RVZW (Left Bank)
0	RVZW (Right Bank):

NEW JERSEY DIVISION OF FISH AND WILDLIFE
 BUREAU OF FRESHWATER FISHERIES
 FRESHWATER FISH MANAGEMENT DATABASE REPORT

Report Version 2.0

Little Timber Creek:

Survey Date: Thursday, August 02, 2001

Reason: Integrated Biological Aquatic Assessment

SAMPLE # 0	GEAR: Electrofishing - Model 12-B POW	Sample Depth: 0 m. CPUE:
Sample Location/Notes:	Age Group Definition:	Electrofishing Settings (if applicable) Current type: voltage Elapsed Time: Output Mode:
Fish Collected		
Species Name	Number	Length (mm) Weight (kg) Length (in) Weight (lb) Age Age Class Sex
Killifish, banded	1	0 0.000 0.00 0.00
Mudminnow, eastern	1	0 0.000 0.00 0.00
Eel, American	10	0 0.000 0.00 0.00

Run by: cms 9:24 AM

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Printed 8/3/05

APPENDIX D
Agency Correspondence

Lawrence Smith
Dresdner Robin

26012 3

201 - 217 - 9607



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE
Habitat Conservation Division
James J. Howard Marine
Sciences Laboratory
74 Magruder Rd.
Highlands, NJ 07732

Date: 7/18/05 NJDOT
Subject: I 295/I 76/Re 42

Anita Riportella (reviewing biologist)

*revised from 5/27/05
new information provided 7/15/05 letter from L. Smith*

The National Marine Fisheries Service's Habitat Conservation Division has received your request for information. Your request concerning the presence or absence of marine resources is required pursuant to the regional conditions implemented for nationwide permit activities in the State of New Jersey.

It should be noted that our response to your request should not be construed as a formal review of your proposed project with respect to its eligibility or compliance with the Corps' nationwide permit program (NWP). It is incumbent upon you or your agent to coordinate your application with the appropriate office of the U.S. Army Corps of Engineers to ensure that the project complies with all of the necessary NWP requirements.

Based upon our review of the information you have provided, we offer the following comments:

Endangered Species Act

Other than an occasional transient, there are no endangered or threatened species under NMFS's jurisdiction present in the project area.

Endangered species or threatened species may be present in the project area. Please contact: Protected Resources Division, National Marine Fisheries Service, One Blackburn Drive, Gloucester, MA 01930.

Fish and Wildlife Coordination Act

The following may be present in the project area:

*Big Timber Creek - allwife, blueback herring, striped bass, American shad
Little Timber Creek - no resources of concern*

DEPENDENT UPON THE PROJECT DETAILS, RECOMMENDATIONS MAY INCLUDE:

*Big Timber Creek: 3/15 - 6/30 for in-water work
if no disturbance, none necessary
Little Timber Creek: none necessary*

Magnuson-Stevens Fishery Conservation and Management Act (MSA)

The project area has been designated as Essential Fish Habitat (EFH) pursuant to the MSA for one or more species. The information you have provided will be utilized by the Corps to prepare an EFH assessment of the proposed activity and its impacts to EFH. Conservation recommendations may be included as a condition of the permit. For a listing of EFH and further information regarding EFH, please go to our website: www.nero.nmfs.gov/ro/doc/webintro.html

PLEASE NOTE IF CHECKED BELOW

We are unable to fully respond to your request due to insufficient information provided in your request. In order to assess the effects to the above listed species by the proposed activity, please provide us with the all information required in condition G-1 of the regional permit conditions listed in the Federal Register/Vol. 67, No. 10, 15 January 2002.

The proposed project does not appear to qualify for NWP authorization. To avoid any unnecessary and/or lengthy delays, please contact the Army Corps of Engineers at (215) 656-6728 as soon as possible to assure that your project complies with the NWP.

Copy to: U.S. Army Corps of Engineers, Philadelphia District U.S. Army Corps of Engineers, New York District





United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Jersey Field Office
 Ecological Services
 927 North Main Street, Building
 Pleasantville, New Jersey 08232
 Tel: 609-646-9310
 Fax: 609-646-0352
<http://njfieldoffice.fws.gov>



IN REPLY REFER TO:
 ES-03/512

OCT 9 2003

Victor Furmanec, Senior Project Manager
 Dresdner Robin
 371 Warren Street
 Jersey City, New Jersey 07302-3035
 Fax Number: (201) 217-9607

Reference: Threatened and endangered species review within the vicinity of the proposed I 295, I 76, and Route 42 connection project located within Bellmawr, Mount Ephraim, and Gloucester City, Camden County, New Jersey.

The U.S. Fish and Wildlife Service (Service) has reviewed the above-referenced proposed project pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of federally listed endangered and threatened species. The following comments do not address all Service concerns for fish and wildlife resources and do not preclude separate review and comment by the Service as afforded by other applicable environmental legislation.

Except for an occasional transient bald eagle (*Haliaeetus leucocephalus*), no other federally listed or proposed threatened or endangered flora or fauna under Service jurisdiction are known to occur within the vicinity of the proposed project site. Therefore, no consultation pursuant to Section 7 of the Endangered Species Act is required between the federal action agency and the Service. If additional information on federally listed species becomes available, or if project plans change, this determination may be reconsidered.

Enclosed is current information regarding federally listed and candidate species occurring in New Jersey. The Service encourages federal agencies and other planners to consider candidate species in project planning. The addresses of State agencies that may be contacted for current site-specific information regarding federal candidate and State-listed species are also enclosed.

Reviewing Biologist: *Jim Solberg*

Authorizing Supervisor: *J.C. [Signature]*

Enclosures: Current summaries of federally listed and candidate species in New Jersey
 Addresses for additional information on candidate and State-listed species
 Permit requirements for activities in wetlands

No part of this response should be used out of context and if reproduced, should appear in its entirety.



FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN NEW JERSEY



An **ENDANGERED** species is any species that is in danger of extinction throughout all or a significant portion of its range.

A **THREATENED** species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

	COMMON NAME	SCIENTIFIC NAME	STATUS
FISHES	Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E
REPTILES	Bog turtle	<i>Clemmys muhlenbergii</i>	T
	Atlantic Ridley turtle	<i>Leptochelys kempii</i>	E
	Green turtle	<i>Chelonia mydas</i>	T
	Hawksbill turtle	<i>Eretmochelys imbricata</i>	E
	Leatherback turtle	<i>Dermochelys coriacea</i>	E
	Loggerhead turtle	<i>Caretta caretta</i>	T
BIRDS	Bald eagle	<i>Haliaeetus leucocephalus</i>	T
	Piping plover	<i>Charadrius melodus</i>	T
	Roseate tern	<i>Sterna dougallii dougallii</i>	E
MAMMALS	Eastern cougar	<i>Felis concolor couguar</i>	E+
	Indiana bat	<i>Myotis sodalis</i>	E
	Gray wolf	<i>Canis lupus</i>	E+
	Delmarva fox squirrel	<i>Sciurus niger cinereus</i>	E+
	Blue whale	<i>Balaenoptera musculus</i>	E
	Finback whale	<i>Balaenoptera physalus</i>	E
	Humpback whale	<i>Megaptera novaeangliae</i>	E
	Right whale	<i>Balaena glacialis</i>	E
	Sel whale	<i>Balaenoptera borealis</i>	E
	Sperm whale	<i>Physeter macrocephalus</i>	E

	COMMON NAME	SCIENTIFIC NAME	STATUS
INVERTEBRATES	Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E
	Northeastern beachhopper beetle	<i>Cicindela dorsalis dorsalis</i>	T
	Mitchell's streamcaddisfly	<i>Neonympha m. mitchellii</i>	E+
	American burying beetle	<i>Nicrophorus americanus</i>	E+
PLANTS	Small-flowered dogonla	<i>Isotria medeoloides</i>	T
	Synonym	<i>Helonias bullata</i>	T
	Kniekers bark beetle	<i>Rhynchospora knieskernii</i>	T
	American chaffinch	<i>Schwalbea americana</i>	E
	Sensitive plant	<i>Aeschynomene virginica</i>	T
	Sea purslane	<i>Amaranthus pumilus</i>	T

STATUS			
E	endangered species	PE	proposed endangered
T	threatened species	PT	proposed threatened
+	presumed extirpated**		

* Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service.

** Current records indicate the species does not presently occur in New Jersey, although the species did occur in the State historically.

Note: for a complete listing of Endangered and Threatened Wildlife and Plants, refer to 50 CFR 17.11 and 17.12.

For further information, please contact:

U.S. Fish and Wildlife Service
 New Jersey Field Office
 927 N. Main Street, Building D
 Pleasantville, New Jersey 08232
 Phone: (609) 646-9310
 Fax: (609) 646-0352

Revised 12/06/00



FEDERAL CANDIDATE SPECIES IN NEW JERSEY

CANDIDATE SPECIES are species that appear to warrant consideration for addition to the federal List of Endangered and Threatened Wildlife and Plants. Although these species receive no substantive or procedural protection under the Endangered Species Act, the U.S. Fish and Wildlife Service encourages federal agencies and other planners to give consideration to these species in the environmental planning process.

SPECIES	SCIENTIFIC NAME
Bog asphodel	<i>Narthecium americanum</i>
Hirst's panic grass	<i>Panicum hirstii</i>

Note: For complete listings of taxa under review as candidate species, refer to Federal Register Vol. 64, No. 205, October 25, 1999 (Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species).

Revised 11/99

FEDERAL CANDIDATE AND STATE-LISTED SPECIES

Candidate species are species under consideration by the U.S. Fish and Wildlife Service (Service) for possible inclusion on the List of Endangered and Threatened Wildlife and Plants. Although these species receive no substantive or procedural protection under the Endangered Species Act, the Service encourages federal agencies and other planners to consider federal candidate species in project planning.

The New Jersey Natural Heritage Program maintains the most up-to-date information on federal candidate species and State-listed species in New Jersey and may be contacted at the following address:

Coordinator
Natural Heritage Program
Division of Parks and Forestry
P.O. Box 404
Trenton, New Jersey 08625
(609) 984-0097

Additionally, information on New Jersey's State-listed wildlife species may be obtained from the following office:

Dr. Larry Niles
Endangered and Nongame Species Program
Division of Fish and Wildlife
P.O. Box 400
Trenton, New Jersey 08625
(609) 292-9400

If information from either of the aforementioned sources reveals the presence of any federal candidate species within a project area, the Service should be contacted to ensure that these species are not adversely affected by project activities.

PERMIT REQUIREMENTS FOR ACTIVITIES IN WETLANDS

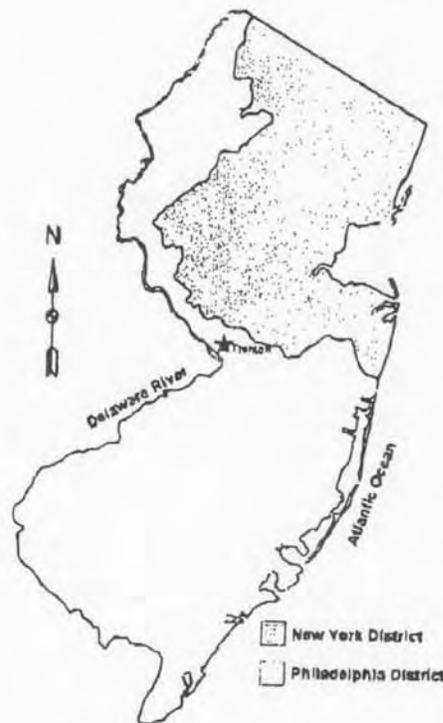
A review of the Service's National Wetland Inventory maps indicates that wetlands occur within the project area. Wetlands provide habitats for a variety of migratory and resident species of fish and wildlife. Thus, the Service discourages activities in and affecting the Nation's wetlands that would unnecessarily damage, degrade, or destroy the values associated with them. Project activities in wetlands may require federal and State permits from the U.S. Army Corps of Engineers pursuant to the Clean Water Act of 1977 (33 U.S.C. 1344 *et seq.*), and the New Jersey Department of Environmental Protection and Energy pursuant to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 *et seq.*). Thus, if work is proposed in or adjacent to wetlands, the following offices must be contacted to determine federal and State permit requirements, respectively:

Federal Permitting Authority:

Regulatory Branch
U.S. Army Corps of Engineers
New York District
26 Federal Plaza
New York, New York 10278-0090
(212) 264-3996
Fax #: (212) 264-4260

or

Regulatory Branch
U.S. Army Corps of Engineers
Philadelphia District
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390
(215) 656-6725
Fax #: (215) 656-6724



State Permitting Authority:

Land Use Regulation Program
New Jersey Department of Environmental Protection
P.O. Box 439
501 East State St., 2nd Floor
Trenton, New Jersey 08625
(609) 984-3444
Fax #: Northern Counties (609-292-1231); Southern Counties (609-292-8115)

Revised January 29, 2003



State of New Jersey

Department of Environmental Protection

Division of Parks and Forestry
Office of Natural Lands Management
Natural Heritage Program
P.O. Box 404
Trenton, NJ 08625-0404
Tel. #609-984-1339
Fax. #609-984-1427

Bradley M. Campbell
Commissioner

James E. McGreevey
Governor

September 11, 2003

Victor Furmanec
Dresdner Robin
371 Warren Street
Jersey City, NJ 07302-3035

Re: I-295/I-76/Route 42 Direct Connection

Dear Mr. Furmanec:

Thank you for your data request regarding rare species information for the above referenced project site in Bellmawr, Mt. Ephraim and Gloucester City, Camden County.

Searches of the Natural Heritage Database and the Landscape Project are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Request for Data into our Geographic Information System. We do not verify that your project bounds are accurate, or check them against other sources. Landscape patches are searched using the boundary depicted on your map buffered by 15 meters. The 15-meter buffer is to accommodate for inherent GIS mapping imprecision.

We have checked the Natural Heritage Database and the Landscape Project habitat mapping for occurrences of any rare wildlife species or wildlife habitat on the referenced site. Please see Table 1 for species list and conservation status.

Table 1 (on referenced site).

Common Name	Scientific Name	Federal Status	State Status	Grank	Srank
herptile species of special concern					

Neither the Natural Heritage Database nor the Landscape Project has records for any additional rare wildlife species or wildlife habitat within 1/4 mile of the referenced site.

We have also checked the Natural Heritage Database for occurrences of rare plant species or natural communities. The Natural Heritage Data Base does not have any records for rare plants or natural communities on or within 1/4 mile of the site.

Attached is a list of rare species and natural communities that have been documented from Camden County. If suitable habitat is present at the project site, these species have potential to be present.

Status and rank codes used in the tables and lists are defined in the attached EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS.

If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive I-Map-NJ website at the following URL, <http://www.state.nj.us/dep/gis/imapnj/imapnj.htm> or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program.

PLEASE SEE THE ATTACHED 'CAUTIONS AND RESTRICTIONS ON NHP DATA'.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Herbert A. Lord

Herbert A. Lord
Data Request Specialist

cc: Lawrence Niles
NHP File No. 03-3907571

CAMDEN COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
ARDEA HERODIAS	GREAT BLUE HERON		S/S		G5	S2B, S4N
CLEMYS MUELENBERGII	BOG TURTLE	LT	E		G3	S2
CROTALIUS HORRIDUS HORRIDUS	TIMBER RATTLESNAKE		E		G4T4	S2
FALCO PEREGRINUS	PEREGRINE FALCON		E		G4	S1B, S7N
HYLA ANDERSONII	PINE BARRENS TREEFROG		E		G4	S3
MELANERPES ERYTHROCEPHALUS	RED-HEADED WOODPECKER		T/T		G5	S2B, S2N
PITUOPHIS MELANOLEUCUS	NORTHERN PINE SNAKE		T		G4T4	S3
MELANOLEUCUS						
COASTAL PLAIN INTERMITTENT POND	VERNAL POND				G3?	S2S3
FRESHWATER TIDAL MARSH COMPLEX	FRESHWATER TIDAL MARSH COMPLEX				G4?	S3?
PITCH PINE LOWLAND FOREST	PITCH PINE LOWLAND FOREST				G3	S3
ANAX LONGIPES	COMET DARNER				G5	S2S3
CALLOPHRYS IRUS	FROSTED ELFIN		T		G3	S2S3
CELITHEMIS MARTHA	MARTHA'S PENNANT				G4	S3S4
ENALLAGMA PICTUM	SCARLET BLUET				G3	S3
ENALLAGMA RECURVATUM	PINE BARRENS BLUET				G3	S3
EPITHECA SPINOSA	ROBUST BASKETTAIL				G4	S1
ERYNNIS MARTIALIS	MOTTLED DUSKY WING				G3G4	SH
GOMPHUS APOMYIUS	BANNER CLUBTAIL				G4	S1
HELICODISCUS SINGLEYANUS	SMOOTH COIL				G4G5	S2S3
HESPERIA ATTALUS SLOSSONAE	DOTTED SKIPPER				G3G4T3	S2S3
LAMPUS RADIATA	EASTERN LAMPUSSEL		T		G5	S3
LEPTODEA OCHRACEA	TIDEWATER MUCKET		T		G4	S1

*** Vertebrates

*** Ecosystems

** Invertebrates

CAMDEN COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
LIBELLULA AXILENA	BAR-WINGED SKIMMER				G5	S2BS3B, S2 N
LIGUMIA NASUTA	EASTERN PONDUSSEL		T		G4G5	S1
NICOPHORUS AMERICANUS	AMERICAN BURYING BEETLE	LE	E		G2G3	SH
PIERIS VIRGINIENSIS	WEST VIRGINIA WHITE				G3G4	SH
POLYGONIA PROGNE	GRAY COMMA				G5	SH
PONTIA PROTODICE	CHECKERED WHITE		T		G4	S1
SPARTINIPHAGA CARTERAE	CARTER'S NOCTUID MOTH				G2G3	S2
AESCHYNOMENE VIRGINICA	SENSITIVE JOINT-VETCH	LT	E	LP	G2	S1
AGASTACHE SCROPHULARIIFOLIA	PURPLE GIANT-HYSSOP				G4	S2
AMANTHUM MUSCITOXICUM	FLY POISON				G4G5	S2
ARISTIDA DICHOTOMA VAR CURTISSII	CURTISS' THREE-AWN GRASS				G5T5	S2
ARISTIDA LANOSA	WOOLLY THREE-AWN GRASS		E		G5	S1
ARISTIDA VIRGATA	WAND-LIKE THREE-AWN GRASS				G5T4T5	S2
ARNOGLOSSUM MUEHLENBERGII	GREAT INDIAN PLANTAIN				G4	SX.1
ASCLEPIAS RUBRA	RED MILKWEED			LP	G4G5	S2
ASCLEPIAS VARIEGATA	WHITE MILKWEED				G5	S2
ASCLEPIAS VERTICILLATA	WHORLED MILKWEED				G5	S2
ASTER RADULA	LOW ROUGH ASTER		E		G5	S1
BIDENS BIDENTOIDES	ESTUARY BURR-MARIGOLD				G3	S2
BOTRYCHUM ONEIDENSE	BLUNT-LOBE GRAPE FERN				G4Q	S2
CACALIA ATRIPLICIFOLIA	PALE INDIAN PLANTAIN		E		G4G5	S1
CALAMOVILFA BREVIPILIS	PINE BARREN REEDGRASS			LP	G4	S4
CALYSTEGIA SPITHAMAEA	ERECT BINDWEED		E		G4G5T4T5	S1
CAREX AQUATILIS	WATER SEDGE		E		G5	S1
CAREX BARRATTII	BARRATT'S SEDGE			LP	G4	S4
CAREX CUMULATA	CLUSTERED SEDGE		E		G4?	SH

*** Vascular plants

CAMDEN COUNTY
 RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
 THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
CAREX MITCHELLIANA	MITCHELL'S SEDGE				G3G4	S2
CAREX UTRICULATA	BOTTLE-SHAPED SEDGE				G5	S2
CASTILLEJA COCCINEA	SCARLET INDIAN-PAINTBRUSH				G5	S2
CERCIS CANADENSIS	REDBUD	E			G5T5	S1
CHENOPODIUM RUBRUM	RED GOOSEFOOT	E			G5	S1
COELOGLOSSUM VIRIDE VAR VIRESCENS	LONG-BRACT GREEN ORCHID				G5T5	S2
COMMELINA ERECTA	SLENDER DAYFLOWER	E			G5T5	SH.1
COREOPSIS ROSEA	ROSE-COLOR COREOPSIS			LP	G3	S2
CROTON WILLDENOWII	ELLIPTICAL RUSHFOIL			LP	G5	S2
CUSCUTA POLYGONORUM	SMARTWEED DODDER				G5	S2
CYPERUS ENGELMANNII	ENGELMANN'S FLAT SEDGE				G4Q	S2
CYPERUS LANCASTRIENSIS	LANCASTER FLAT SEDGE	E			G5	S1
CYPERUS RETROFRACTUS	ROUGH FLATSEDE	E			G5	SH
DESMODIUM STRICTUM	PINELAND TICK-TREEFOIL			LP	G4	S2
DESMODIUM VIRIDIFLORUM	VELVETY TICK-TREEFOIL				G5?	S2
DIODIA VIRGINIANA	LARGER BUTTONWEED	E			G5T5	S1
DOELLINGERIA INFIRMA	CORNEL-LEAF ASTER	E			G5	S2
DRABA REPTANS	CAROLINA WHITLOW-GRASS	E			G5	SH
EPILOBIUM STRICTUM	DOWNY WILLOWHERB				G5?	S2
ERIOCAULON PARKERI	PARKER'S PIPEWORT				G3	S2
ERIPHORUM TENELLUM	ROUGH COTTON-GRASS	E			G5	S1
ERYNGIUM YUCCIFOLIUM VAR. YUCCIFOLIUM	TALL RATTLESNAKE-MASTER				G5T5	SX
EUPATORIUM CAPILLIFOLIUM	DOG-FENNEL THOROUGHWORT	E			G5	S2
EUPATORIUM HYSSOPIFOLIUM VAR. LACINIATUM	TORREY'S BONESET				G5T4T5	S2
EUPATORIUM RESINOSUM	PINE BARREN BONESET	E		LP	G3	S2
GENTIANA AUTUMNALIS	PINE BARREN GENTIAN			LP	G3	S3
GLYCERIA GRANDIS	AMERICAN MANNA GRASS	E			G5T5	S2

27 JUN 2002

CAMDEN COUNTY
 RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
 THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
GNAPHALIUM HELLERI	SMALL EVERLASTING		E		G4G5T3?	SH
HELONIAS BULLATA	SWAMP-PINK	LT	E	LP	G3	S3
HEMICARPHA MICRANTHA	SMALL-FLOWER HALFCHAFF SEDGE		E		G4	S1
HETERANTHERA MULTIFLORA	BOUQUET MUD-PLANTAIN				G4	S2
HYDRASTIS CANADENSIS	GOLDEN SEAL		E		G4	SH.1
JUNCUS CAESARIENSIS	NEW JERSEY RUSH		E	LP	G2	S2
JUNCUS TORREYI	TORREY'S RUSH		E		G5	S1
KUHNIJA EUPATORIODES	FALSE BONESET		E		G5T5	S1
LEMNA PERPUSILLA	MINUTE DUCKWEED		E		G5	S1
LIMOSELLA SUBULATA	AWL-LEAF MUDWORT		E		G4G5	S1
LINUM INTERCURSUM	SANDPLAIN FLAX		E		G4	S1
LISTERA AUSTRALIS	SOUTHERN TWAYBLADE		E	LP	G4	S2
MELANTHIUM VIRGINICUM	VIRGINIA BUNCHFLOWER		E		G5	S1
MICRANTHEMUM MICRANTHEMOIDES	NUTTALL'S MUDWORT		E		GH	SH
MUHLENBERGIA TORREYANA	PINE BARREN SMOKE GRASS		E	LP	G3	S3
MYRIOPHYLLUM TENELLUM	SLENDER WATER-MILFOIL		E		G5	S1
NELUMBO LUTEA	AMERICAN LOTUS		E		G4	S1
NUPHAR MICROPHYLLUM	SMALL YELLOW POND-LILY		E		G5T4T5	SH
ONOSMODIUM VIRGINIANUM	VIRGINIA FALSE-GROWWELL		E		G4	S1
PLANTAGO PUSILLA	DWARF PLANTAIN		E		G5	SH
PLATANATHERA FLAVA VAR FLAVA	SOUTHERN REIN ORCHID		E		G4T4?Q	S1
PLUCHEA FOETIDA	STINKING FLEABANE		E		G5T5	S1
POLYGALA INCARNATA	PINK MILKWORT		E		G5	SH
PRUNUS ANGUSTIFOLIA	CHICKASAW PLUM		E		G5T4T5	S2
PUCCINELLIA FASCICULATA	SALTMARSH ALKALI GRASS		E		G3G5	S2
RYCNANTHEMUM CLINOPODIOIDES	BASIL MOUNTAIN-MINT		E		G2	S1
RHYNCHOSPORA GLOBULARIS	COARSE GRASS-LIKE BEAKED-RUSH		E		G5?	S1
RHYNCHOSPORA INUNDATA	SLENDER HORNED-RUSH		E	LP	G3G4	S2
RHYNCHOSPORA KNIESKERNII	KNIESKERN'S BEAKED-RUSH	LT	E	LP	G1	S1
RHYNCHOSPORA PALLIDA	PALE BEAKED-RUSH		E		G3	S3

CAMDEN COUNTY
 RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
 THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
SAGITTARIA TERES	SLENDER ARROWHEAD		E		G3	S1
SCHUCHZERIA PALUSTRIS	ARROW-GRASS		E		G5T5	SH
SCHIZAEA PUSILLA	CURLY GRASS FERN			LP	G3	S3
SCHWALBEA AMERICANA	CHAFFSEED	LE	E	LP	G2	S1
SCIRPUS LONGII	LONG'S WOOLGRASS		E	LP	G2	S2
SCIRPUS MARITIMUS	SALTMARSH BULRUSH		E		G5	SH
SPIRANTHES ODORATA	FRAGRANT LADIES'-TRESSES				G5	S2
STELLARIA PUBERA	STAR CHICKWEED		E		G5	SH
THASPIUM BARBINODE	HAIRY-JOINT MEADOW-PARSNIP				G5	SX
VERBENA SIMPLEX	NARROW-LEAF VERVAIN		E		G5	S1
VULPIA ELLIOTEA	SQUIRREL-TAIL SIX-WEEKS GRASS		E		G5	SH
XYRIS FIMBRIATA	FRINGED YELLOW-EYED-GRASS		E		G5	S1

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

FEB 15 2005

Regulatory Branch
Application Section II

SUBJECT: CENAP-OP-R-199802102-35 (JD)
I-295 Direct Connection

Mr. Nick Caiazza
Project Manager
New Jersey Department of Transportation
Bureau of Environmental Project Support
1035 Parkway Avenue
P.O. Box 600
Trenton, New Jersey 08625-0600

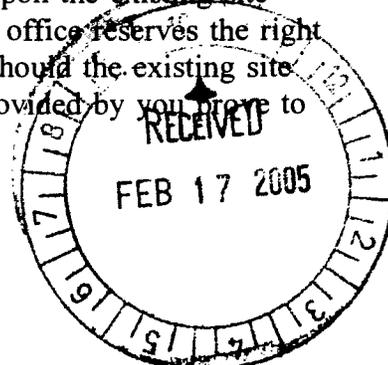
Dear Mr. Caiazza:

The plans identified on the following page depict the extent of Federal jurisdiction on the subject property. The basis of our determination of jurisdiction is also provided (Enclosure 1).

Pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, a Department of the Army permit is required for work or structures in navigable waters of the United States and the discharge of dredged or fill material into waters of the United States including adjacent and isolated wetlands. Any proposal to perform the above activities within the area of Federal jurisdiction requires the prior approval of this office.

This delineation/determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participating in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

This letter is valid for a period of five (5) years. However, this wetland determination is issued in accordance with current Federal regulations and is based upon the existing site conditions and information provided by you in your application. This office reserves the right to reevaluate and modify the jurisdictional determination at any time should the existing site conditions or Federal regulations change, or should the information provided by you prove to be false, incomplete or inaccurate.



In accordance with the U.S. Army Corps of Engineers Administrative Appeal Process, you may accept or appeal the approved jurisdiction determination. For further information in this regard, please refer to the Notification of Administrative Appeal Options and Process and Request for Appeal form (Enclosure 2).

If you should have any questions regarding this matter, please contact me at (215) 656-5822 or write to the above address.

Sincerely,

Michael H. Hayduk
Biologist

SUBJECT PROPERTY: I-295/I-76/Route 42 Direct Connection project, Borough of Bellmawr, Borough of Mount Ephraim, and City of Gloucester, Camden County, New Jersey.

SURVEY DESCRIPTION: Plans entitled "Wetlands Delineation, Index Sheet", dated June 2004, last revised January 26, 2005, prepared by Dewberry-Goodkind Inc., and "Wetlands Delineation, Sheets 1 through 6", dated November 9, 2004, last revised/signed November 10, 2004, prepared by Dewberry-Goodkind Inc.

COMMENTS: Site visits with DG Inc. on October 17, 2003 & December 3, 2003. Aerial photo review on November 26, 2003.

Enclosures

Copies Furnished:

- William McLaughlin, NJDEP, LURP
- ✓ Brian Sayre
- Dewberry-Goodkind Inc.
- 299 Webro Road
- Parsippany, New Jersey 07054-2800

PROJ. MANAGEMENT

Fax: 609-530-5397

Mar 8 2005 15:40 P. 02



State of New Jersey
Department of Environmental Protection

Bradley M. Campbell
Commissioner

Richard J. Codey
Acting Governor

Land Use Regulation Program
P.O. Box 439, Trenton, NJ 08625-0439
Fax # (609) 292-8115
Fax # (609) 777-3656
www.state.nj.us/landusec

NJ Department of Transportation
1035 Parkway Avenue
P.O. Box 600
Trenton, NJ 08625-0600

FEB 09 2005

Attention: Nicholas Calazza

RE: I-295 / I-76 / Route 42 Direct Connection
Letter of Interpretation/Line Verification and Jurisdictional Determination
File No.: 0400-04-0002.1 LOI 040001
Applicant: NJDOT
Trenton, NJ 08625

Dear Nick Calazza:

This letter is in response to your request of July 12, 2004 for a Letter of Interpretation to verify the jurisdictional boundary of the freshwater wetlands and waters on the referenced property.

In accordance with agreements between the State of New Jersey Department of Environmental Protection, the U.S. Army Corps of Engineers Philadelphia and New York Districts, and the U.S. Environmental Protection Agency, the NJDEP, Land Use Regulation Program is the lead agency for establishing the extent of State and Federally regulated wetlands and open waters in those areas assumed by the State of New Jersey. The USEPA and/or USACOE retain the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate. Portions of the subject wetlands are not subject to assumption and therefore remain jointly regulated by the State and the U.S. Army Corps of Engineers, Philadelphia District.

Based upon the information submitted, and upon site inspections conducted on October 31 and December 3, 2003 and May 5, 2004, the Land Use Regulation Program has determined that the wetlands and waters boundary line(s) as shown on the six (6) plan sheets entitled: "I-295 / I-76 / Route 42 Direct Connection Borough of Bellmawr, Borough of Mount Ephraim and City of Gloucester, Camden County", signed by George Soule, dated 11/19/04 and one (1) Index Sheet signed by Arthur J. Schappell Jr. and dated 1/26/05, are accurate as shown.

Any activities regulated under the Freshwater Wetlands Protection Act proposed within the wetlands or transition areas or the deposition of any fill material into any water area, will require a permit from this office unless exempted under the Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 et seq., and implementing rules, N.J.A.C. 7:7A. A copy of this plan, together with the information upon which this boundary determination is based, has been made part of the Program's public records.

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Fax:609-530-5387

Mar 8 2005 15:41 P.03

I-295 / I-76 / Route 42 Direct Connection Page 2
File No.: 0400-04-0002.1 LOI 040001

Pursuant to the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A-1 et seq.), you are entitled to rely upon this jurisdictional determination for a period of five years from the date of this letter.

The freshwater wetlands and waters boundary line(s), as determined in this letter, must be shown on any future site development plans. The line(s) should be labeled with the above LURP file number and the following note:

"Freshwater Wetlands/Waters Boundary Line as verified by NJDEP."

In addition, the Department has determined that wetlands on the subject property are of intermediate resource value and have a standard transition area or buffer required adjacent to these wetlands of fifty (50) feet, with the exceptions listed below. This intermediate resource value classification is based on the determination that the wetlands are associated with tributaries to Big Timber Creek or Little Timber Creek, which are FW-2 waters as listed in the "Classification of New Jersey Waters As Related to Their Suitability For Trout," December, 1996. This classification may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-3), the types of Statewide General Permits available for the wetlands portion of this property (see N.J.A.C. 7:7A-9) and the modification available through a transition area waiver (see N.J.A.C. 7:7A-7). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

Sheet	Wetland Area	Resource Classification
Sheet W-1	TC1 thru TC19	Intermediate w/State Open Water
	AI1 thru AI7	Intermediate
	TB1-17 thru TB34-49	Intermediate w/State Open Water
	TD8 thru TD18	Intermediate w/State Open Water
	EC7-1 thru EC7-8	Ordinary
Sheet W-2	TE21 thru TE23	Intermediate w/State Open Water
	TD1 thru TD 21	Intermediate w/State Open Water
	C1 thru C9	Ordinary
	EC7-1 thru EC7-8	Ordinary
	TE1 thru TE36	Intermediate w/State Open Water
	TF1-43 thru TF83-89	Intermediate w/State Open Water
	D1 thru D10	Intermediate
	E1 thru E5	Intermediate
	P1 thru P8	Ordinary
	AJ1 thru AJ4	Ordinary
	N1 thru N7	Ordinary
	M1 thru M4	Ordinary
Sheet W-3	K10 thru K11	Ordinary
	OW1 thru OW12	State Open Water
	TF42 thru TF89 & TF76B	Intermediate w/State Open Water
	OW1 thru OW12	State Open Water
	U1 thru U7	Intermediate w/State Open Water
	K1 thru K21	Intermediate
Q1 thru Q6	Intermediate	
J1 thru J4	Intermediate	

PROJ. MANAGEMENT

Fax:609-530-5387

Mar 8 2005 15:42 P.04

1-293 / 1-76 / Route 42 Direct Connection Page 3
File No.: 0400-04-0002.1 LOI 040001

R1 thru R6
I1 thru I10
S1 thru S4
T1 thru T4
V1 thru V12
AF1-12 thru AE1-7
Y1 thru Y3
W1 thru W5
X1 thru X3
Z1-6, AA1-8, AAA1-3 thru AB-D

Ordinary
Intermediate
Ordinary
Ordinary
Intermediate
Intermediate w/State Open Water
Intermediate w/State Open Water
Intermediate w/State Open Water
Intermediate w/State Open Water
Intermediate w/State Open Water

Sheet W-4

TB15 thru TB33
TD4 thru TD 18
C1 thru C12

Intormediate w/State Open Water
Intermediate w/State Open Water
Ordinary

Sheet W-5

TA1-4 thru TA21-27
S1A1 thru S1A21
D1-31 thru B1-4, B48-61
B4 thru B27
C1 thru C8
B1 thru B4 (Wetland B)
Area HVV
H1 thru H6

Intermediate w/State Open Water
Intermediate w/State Open Water
Intermediate w/State Open Water
Upland
Intermediate
Ordinary
State Open Water
Ordinary

Sheet W-6

TA3 thru TA27, S1A13-16
Wetland A

Intermediate w/State Open Water
Ordinary

It should be noted that this determination of wetland classification is based on the best information presently available to the Department. The classification is subject to change if this information is no longer accurate, or as additional information is made available to the Department, including, but not limited to, information supplied by the applicant.

The coastal wetlands (1970) upper wetlands boundary, mean-high-water, and spring-high-water lines appear accurate as shown on the above-referenced plans. Impacts to coastal wetlands and intertidal/subtidal shallows are subject to mitigation in accordance with the coastal rules (see N.J.A.C. 7:7E) applicable to Waterfront Development and Coastal Wetlands Permits. Areas subject to review pursuant to the coastal rules for waterfront development extend at least 100 feet and no more than 500 feet landward of the mean-high-water line as depicted, in accordance with N.J.A.C. 7:7-2.3(a)3.

This letter in no way legalizes any fill, which may have been placed, and does not waive any Tidelands ownership that the State of New Jersey may have in these properties or authorizes other regulated activities, which may have occurred on-site. Also this determination does not affect your responsibility to obtain any local, State, or Federal permits which may be required.

Please note any remediation activities proposed within the designated wetlands and/or transition area will require the review and written approval from the Land Use Regulation Program prior to commencement of any regulated activities.

PROJ. MANAGEMENT

Fax:609-530-5387

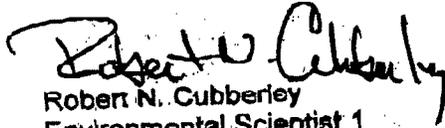
Mar 8 2005 15:42 P.05

I-295 / I-76 / Route 42 Direct Connection Page 4
File No.: 0400-04-0002.1 LOI 040001

In accordance with N.J.A.C. 7:7A-12.7, any person who is aggrieved by this decision may request a hearing within 30 days of the decision date by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing Requests, P.O. Box 402, Trenton, NJ 08625-0402. This request must include a completed copy of the Administrative Hearing Request Checklist.

Should you have any questions or need additional information regarding this letter, please contact William Mc Laughlin of our staff by mail at the above address, telephone (609-984-0195), or email (william.mclaughlin@dep.state.nj.us). Be sure to indicate the Program's file number in all communication.

Sincerely,


Robert N. Cubberley
Environmental Scientist 1
Land Use Regulation Program

WMcL

C: Micheal Hayduk, ACOE Philadelphia District Office
Township of Bellmawr Clerk
Township of Mt. Ephraim Clerk
Gloucester City Clerk

W/o att. Township of Bellmawr Construction Official
Township of Mt. Ephraim Construction Official
Gloucester City Construction Official

APPENDIX E
Site Photographs



Photo Plate 1: View looking downstream (west) from Bell Road Bridge.



Photo Plate 2: View looking upstream (east) from Bell Road Bridge.



Photo Plate 3: View looking east toward Wetland V data point behind noise barrier.



Photo Plate 4: View looking east from AF-1 just beyond inlet. Note drop inlet.



Photo Plate 5: View looking southwest toward Wetland AF from AE-2.



Photo Plate 6: View looking south from Wetland Z Upland Data Point.



Photo Plate 7: View looking upstream from sanitary sewer line toward Wetlands AA and AB

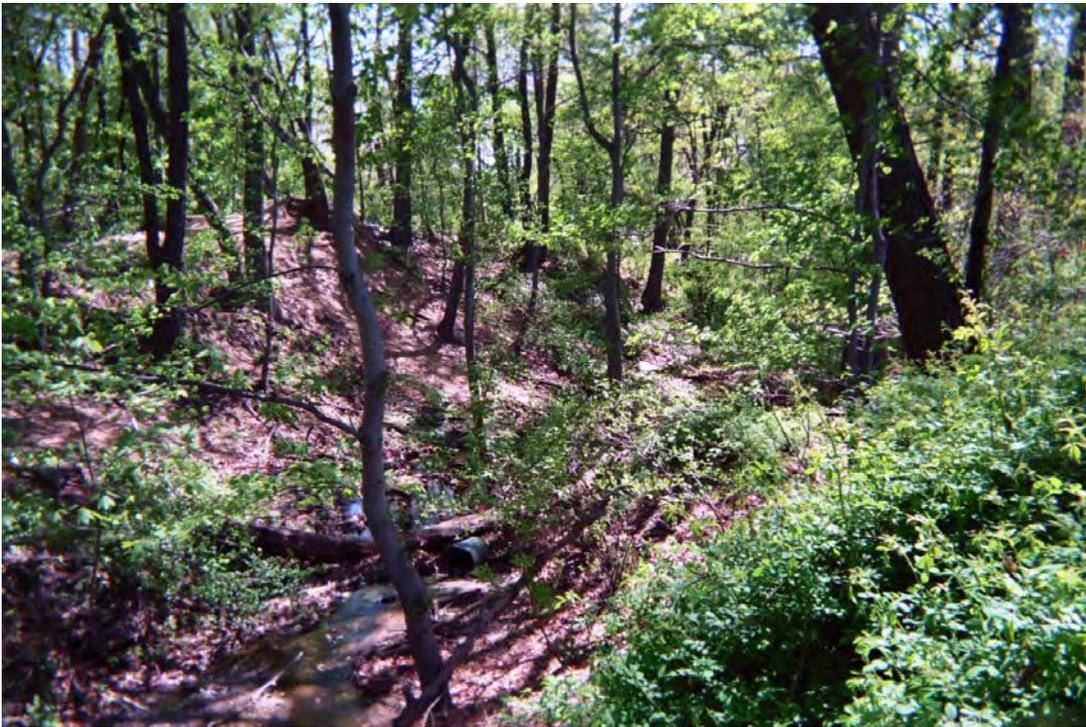


Photo Plate 8: View looking downstream from sanitary sewer line toward Wetlands Z and AC.



Photo Plate 9: Wetland K. Note skunk cabbage up slope along seep line.



Photo Plate 10: Wetland K looking toward cemetery. Seep/spring along far side.



Photo Plate 11: Open Water behind residential dwelling on Lowell Avenue.



Photo Plate 12: View of wetland data point behind residential dwelling on Lowell Avenue. Note jewelweed is the dominant forb.



Photo Plate 13: View looking east along the I 295 north corridor at Wetland P.



Photo Plate 14: Photograph of landfilled materials (glass, plastics, concrete, etc.) near TF-17.



Photo Plate 15: Photograph of TF tidal wetland mud flat from TF-17.



Photo Plate 16: Photograph of Wetland N from the edge of the I-295 highway.



Photo Plate 17: View of the Upland Data Point 1 for Wetland TF. Data point at edge of Shining Star Park.



Photo Plate 18: View of the Wetland Data Point 1 for Wetland TF. Note wild rice beyond data point.



Photo Plate 19: View of the Upland Data Point 4 for Wetland TE. Note phragmites is an opportunistic species.



Photo Plate 20: View looking southeast from the Wetland Data Point 4 for Wetland TE.



Photo Plate 21: View looking west from Wetland TE station 8.



Photo Plate 22: View looking northwest from Wetland TE Data Point 1.



Photo Plate 23: View looking upstream from TB 49 at West Kings Highway Bridge.



Photo Plate 24: View of Wetland Data Point 1 for Wetland TB.



Photo Plate 25: View looking southwest near the culvert on Al Joe's curve.



Photo Plate 26: View looking downstream from the culvert at Al Joe's curve.



Photo Plate 27: View of Wetland Data Point 3 for Wetland TD.



Photo Plate 28: View of Upland Data Point 3 for Wetland TD



Photo Plate 29: Inlet in the southeast corner of Wetland TD.



Photo Plate 30: View looking toward Wetland TC from West Kings Highway.



Photo Plate 31: View looking toward wetland TC from West Kings Highway.



Photo Plate 32: View looking toward Wetland Data Point 1 for Wetland AI.



Photo Plate 33: View of upland area to the north of Wetland B.



Photo Plate 34: View of Wetland Data Point for Wetland H.



Photo Plate 35: View looking toward the storm water inlet pipes into Wetland H.



Photo Plate 36: View looking downstream from wetland point S-1 A-21.



Photo Plate 37: View looking across stream corridor of Stream S-1. Note mature stand of hardwoods.

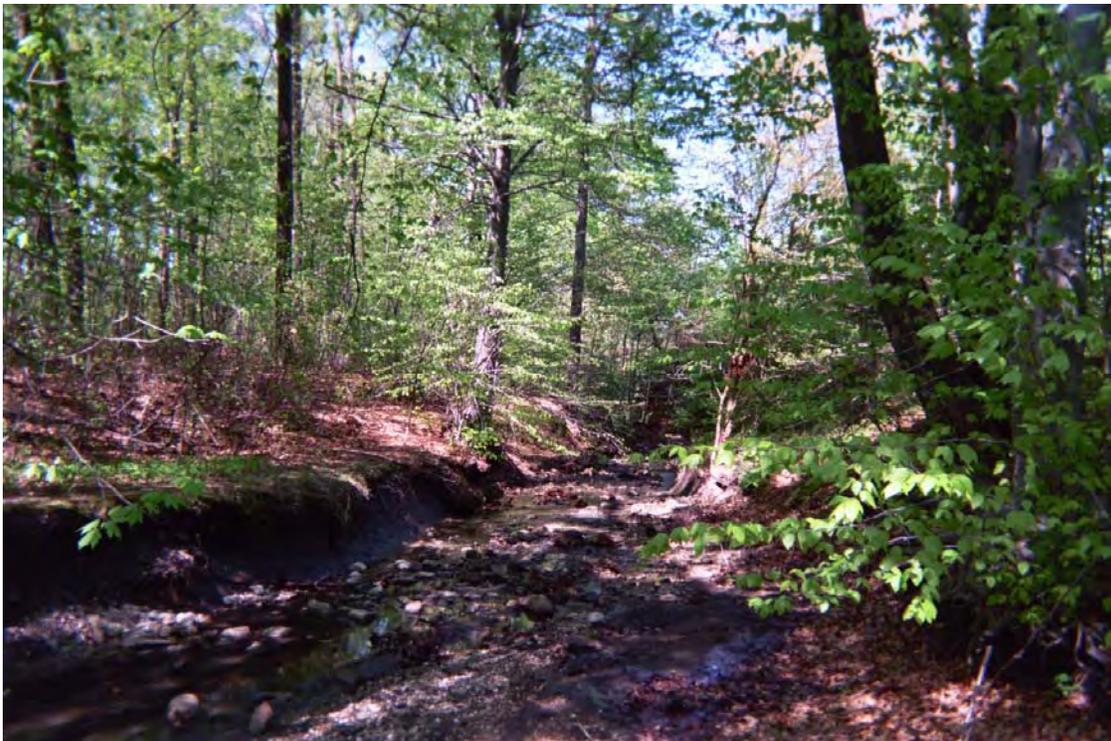


Photo Plate 38: View looking downstream from Stream 1 Data Point 12.



Photo Plate 39: View of inlet pipes conveying flow (Waters of the U.S. in Culvert) under Bellmawr Park. Note severe scouring of stream bank and structure.



Photo Plate 40: View looking upstream from culvert at Creek Road.



Photo Plate 41: View looking downstream toward Creek Road from Wetland TA station TA-17.



Photo Plate 42: View looking upstream from Wetland TA station TA-17



Photo Plate 43: TA Wetland. Note diversity of wetland species present.



Photo Plate 44: View of radio tower and open field adjacent to I-295 southbound near Creek Road.

Lo



Photo Plate 45: View of area near Upland Reference Point for Wetland TA and wetland S-1-A.



Photo Plate 46: View of Wetland A an Isolated Ordinary Wetland

Dresdner Robin



Photo Plate 47: View of Drainage Pipes beneath Essex Avenue, at Delineation Points Dew-1 and B-61, looking East.

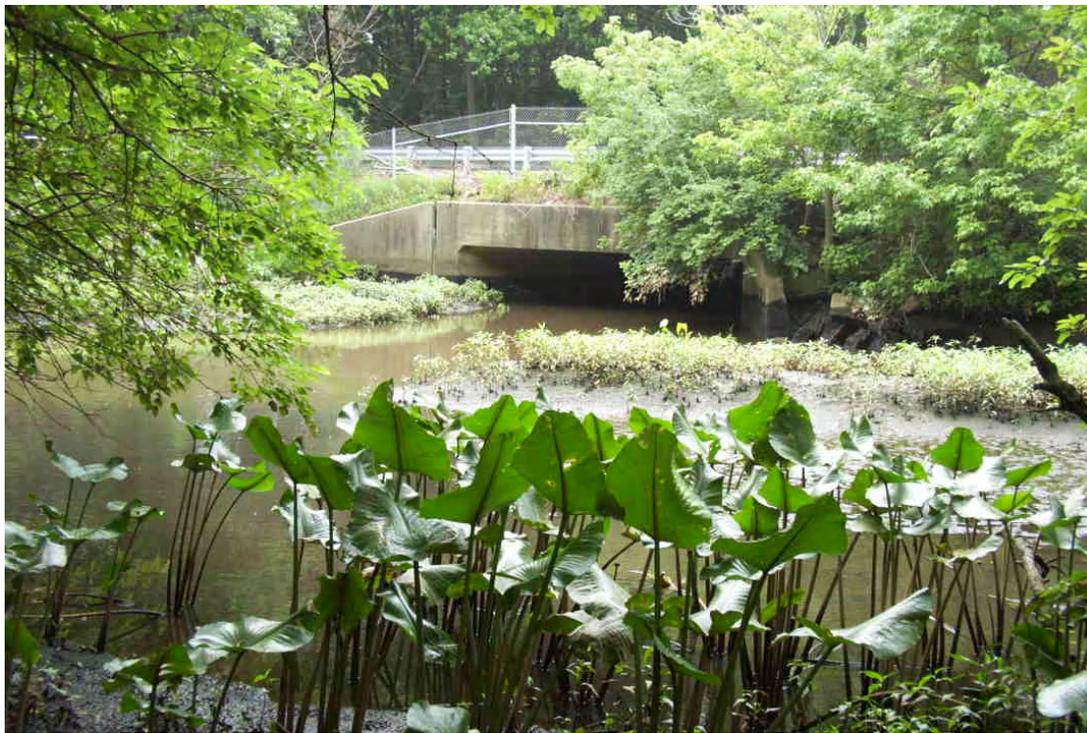


Photo Plate 48: Little Timber Creek pass below I-295 on Northside of Al Jo's Curve.



Photo Plate 49: Bell Road, downstream side.



Photo Plate 50: Bell Road, downstream side.



Photo Plate 51: Bell Road, downstream side.

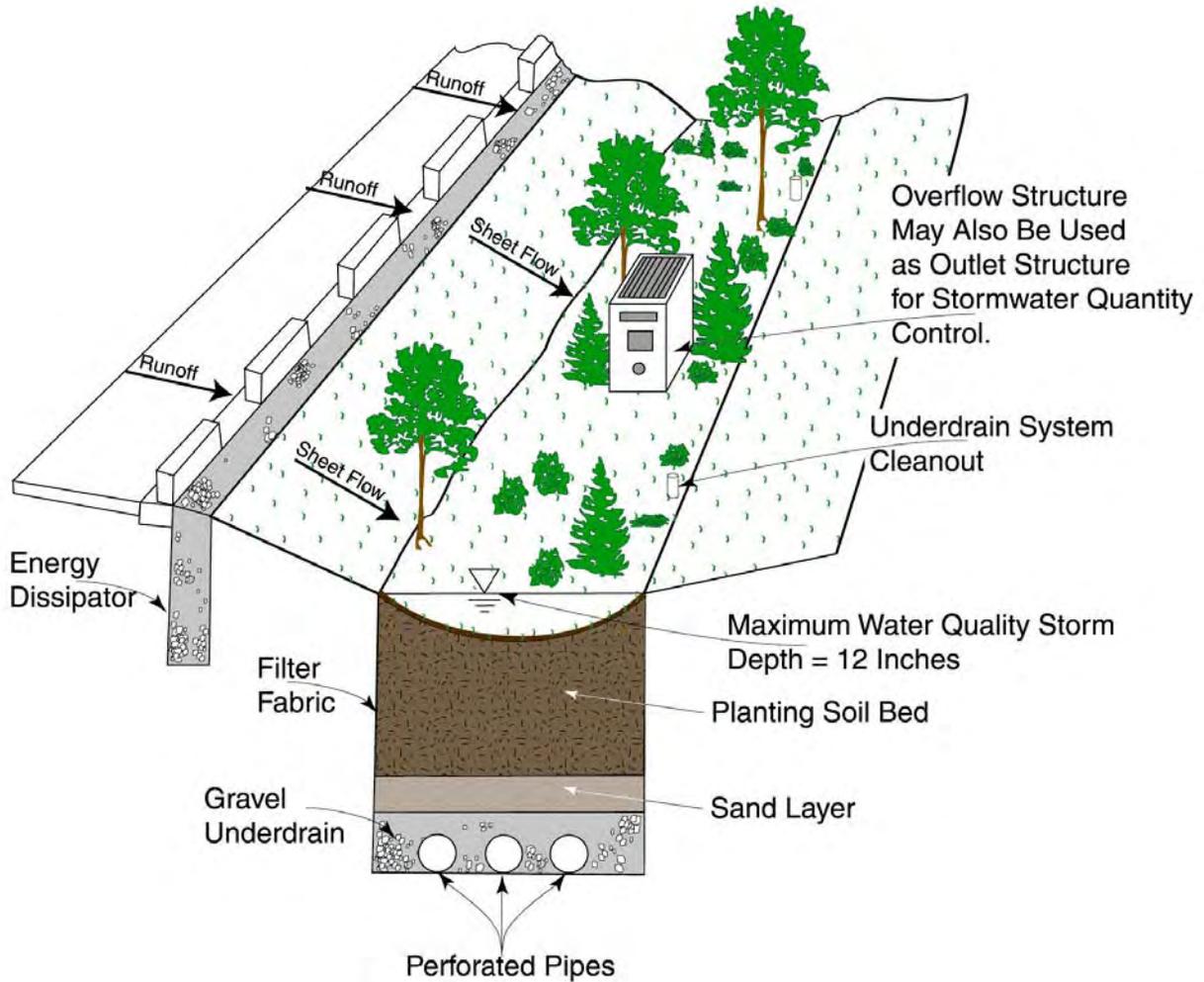


Photo Plate 52: Drain behind Bellmawr Baseball field downstream side of I-295.



Photo Plate 53: Drain behind Bellmawr Baseball field downstream side of I-295.

APPENDIX F
Bioretention Basin Schematic Figure



Typical Section of Bioretention Basin

Not to Scale

Source: NJDEP New Jersey Stormwater Best Management Practices Manual, April 2004

APPENDIX G
Potential Wetland Mitigation Sites Search

TECHNICAL MEMORANDUM

TO: Nick Caiazza - NJDOT E-Team Leader

FROM: Brian A. Sayre - Dewberry-Goodkind, Inc.

DATE: October 11, 2005 – rev. January 2006

RE: I-295/I-76/Route 42 Direct Connection
Summary of Potential Wetland Mitigation Sites Search

Introduction

As required by Executive Order 11990 and in accordance with Section 404(b)1 guidelines, wetland mitigation should include compensation for unavoidable losses. Further, the New Jersey Department of Environmental Protection (NJDEP) requires that wetlands impacted by the construction of roadways or other site development be mitigated as part of the project plan. Mitigation sites must be identified during the design of the project to ensure that suitable areas are available.

Generally, mitigation must be conducted in concert with the construction of the project to compensate for the loss of wetland functions and values. One potential option for mitigation is the creation of wetlands. Wetland creation as mitigation is generally required on a 2:1 basis, i.e. 2 acres of wetlands created for every 1 acre of wetland impacted. The 2:1 ratio was developed to ensure that equal functions and values of wetlands are replaced after the project area wetlands are impacted. Therefore, based on the estimated potential project area wetland impacts that range from approximately 1 to 4 acres (depending on the Alternative) associated with the I-295/I-76/Route 42 Direct Connection Project, a data review and field search was performed to identify potential wetland mitigation sites within the Little Timber Creek watershed and the surrounding areas. This site search was conducted in accordance with the mitigation site identification process, i.e. look first for potential sites within the project area (onsite) and then within the watershed. If necessary, then look for potential sites outside the watershed, but as close to the project area as possible. Three (3) onsite areas and one (1) offsite area were identified that are suitable to replace all of the functions and values of the wetlands that will be impacted by the project construction activities, as discussed below.

The site search identified three (3) onsite areas that are considered suitable for mitigation, as well as one (1) offsite area. These recommended sites are discussed below, as are the additional sites that were evaluated, but found not to be suitable. In total, thirty six (36) potential sites were identified and evaluated. The four (4) most promising Sites, onsite areas Nos. 1, 3, 5 and offsite area No. 36, are highlighted in the Findings section of this memorandum for convenience. The onsite areas (Sites 1 and 3) include the existing ramps of Al Jo's Curve, which could be removed depending on the alternative selected, and replaced with tidal wetlands. The third onsite area (Site 5) is located at Bell Road and involves the cleanout and restoration of the silt filled channel of Little Timber Creek. Site 36, the selected offsite area, is located in West Deptford and includes the GreenVest Main Ditch property, which is the property selected for the I-295/42

Missing Moves project. There is additional land on this property which would be suitable for mitigation for the needs of the Direct Connection project.

Methods

During April and May 2004 and June and July 2005, wetland specialists visited a total of thirty six (36) sites identified on the Runnemede, New Jersey, Camden, New Jersey, Woodbury, New Jersey-Pennsylvania, and Philadelphia, Pennsylvania, 7.5-minute U.S. Geological Survey (USGS) Quadrangle Maps. Many of these locations were selected for evaluation because they were depicted as disturbed and/or open land, which might provide viable sites for the construction and/or enhancement of wetlands for mitigation purposes related to the I-295/I-76/Route 42 Direct Connection Project. Other potential locations were identified through discussions with local municipal officials, as discussed below.

Prior to the site visits, five municipal offices were contacted in an attempt to identify properties that might provide potential mitigation land for acquisition. In addition, a review was conducted of aerial photographs and county soil data prepared by the Natural Resources Conservation Service (U.S. Department of Agriculture).

The municipal contacts included: Borough of Westville (Borough Administrator), Township of Deptford (Township Engineer), Borough of Brooklawn (Township Engineer), Borough of Bellmawr (Engineering/Sewer Department), and County of Camden (Director, Division of Environmental Affairs). The Borough of Westville indicated that there is land (an island) owned by the Borough located in the mouth of Big Timber Creek adjacent to the Delaware River. The Borough of Bellmawr suggested areas adjacent to the landfills located near the proposed Missing Moves project. The Township of Deptford and the Borough of Brooklawn provided no information on potential sites. The Camden County official also suggested the landfill areas near the proposed Missing Moves project.

Findings

The following is an overview of the thirty six (36) sites visited in the field and an initial evaluation of their potential for mitigation. The potential onsite mitigation areas that were evaluated are shown on Figure 24. All of the sites, both onsite and offsite, that were evaluated are shown on Figure 25. A detail of the sites reviewed in the immediate area of the proposed Direct Connection project, including the three (3) sites proposed for further evaluation in this area, is provided on Figure 26. Figures 26A through 26E illustrate the soil types, known contaminated sites, and NJDEP-mapped potential critical habitat cover types for the sites evaluated in the immediate area of the project. The onsite areas are discussed below first, followed by the offsite areas.

Onsite Potential Mitigation Areas Evaluated

Site 1

This site consists of the existing roadway and adjacent NJDOT right-of-way located within the western portion of Al Jo's curve on I-295 SB. According to the NJDEP Division of Coastal Resources map (Atlas Sheet No. 378-1878), this area of former tidelands was granted to the NJ State Highway Department on July 20, 1964. Mitigation in this area would consist of removal of the existing paved roadway and adjacent shoulders and slopes,

and creation of tidal wetlands, up to the approximate limits of the former tidelands lines on each side of Little Timber Creek, and upgradient of the delineated wetland lines. This site (as well as Site 3) would be available for mitigation if one of the Alternatives D, G2 or K is selected, i.e. those in which Al Jo's curve will be removed. Small portions of this site also would be available if either Alternative D1 or H1 is selected.

Since removal of this roadway ramp would restore tidal wetlands to the floodplain of Little Timber Creek (and increase flood storage) and ownership is not an issue, this area is considered suitable for mitigation given the selection of one of the Alternatives noted above. In addition, creation of wetlands in this area will replace the functions and values that will be impacted by construction of the new interchange, including storage of surface water, dissipation of energy, improvement of water quality and wetland habitat for many wildlife species.

The wetlands that could be created at this location would function as part of the existing, larger wetlands complex found in this portion of Little Timber Creek, which includes the existing natural tidal marsh adjacent to the Creek. This marsh contains stands of wild rice, *Zizania aquatica*, an important source of food for wildlife, which could be expanded into the mitigation area. Upon construction of this proposed mitigation area, there would be approximately 4.6 acres (including Sites 1 and 3) of additional open tidal water and wetlands along Little Timber Creek. In addition, the immediately adjacent upland area would be left undeveloped, and enhanced with a proposed public access trail and wetland viewing area. These site conditions will serve to enhance and protect the habitat of the created wetland and adjacent areas. This will result in improved wetland functions and values within the immediate project area, including habitat, water quality and vegetative diversity. Consideration of Site 1 as a potential mitigation site is recommended.

Site 2

This site is located along the west side ("infield area") of the eastern portion of Al Jo's curve, immediately upgradient of the wetlands delineation line and the NJDEP former tidelands line. Further, the site is located across Al Jo's curve from the end of Linden Avenue and the Mt. Ephraim girl's softball field. On July 20, 2005 the site was field inspected and found to be adjacent to the Little Timber Creek, partially wooded, with a fringe of existing wetlands. A storm drain beneath Al Jo's curve connects this area with a tidal stormwater ditch on the east side of the roadway, at the rear of the softball field. Observed vegetation within this site includes box elder, mulberry and elm trees. Depending on the selected roadway Alternative (i.e., if Al Jo's curve is removed), this site could be used in combination with Site 3 to allow for additional mitigation potential in this area, if needed. Although excavation of existing uplands would be required to create wetlands in this area, mitigation in this area would replace some of the functions and values that will be impacted by construction of the new interchange, including storage of surface water, improvement of water quality and wetland habitat for wildlife species.

Site 3

This site consists of the existing roadway and adjacent NJDOT right-of-way located within the eastern approach of Al Jo's curve on I-295 SB. According to the NJDEP Division of Coastal Resources map (Atlas Sheet No. 378-1878), this area of former tidelands was

granted to the NJ State Highway Department on July 20, 1964. Mitigation in this area would consist of removal of the existing paved roadway and adjacent shoulders and slopes, and creation of tidal wetlands, up to the approximate limits of the former tidelands lines on each side of Little Timber Creek, and upgradient of the delineated wetland lines. This site (as well as Site 1) would be available for mitigation if one of the Alternatives D, G2 or K is selected, i.e. those in which Al Jo's curve will be removed. Small portions of this site also would be available if either Alternative D1 or H1 is selected.

Since removal of this roadway ramp would restore tidal wetlands to the floodplain of Little Timber Creek (and increase flood storage) and ownership is not an issue, this area is considered suitable for mitigation given the selection of one of the Alternatives noted above. In addition, creation of wetlands in this area will replace the functions and values that will be impacted by construction of the new interchange, including storage of surface water, dissipation of energy, improvement of water quality and wetland habitat for many wildlife species.

The wetlands that could be created at this location would function as part of the existing, larger wetlands complex found in this portion of Little Timber Creek, which includes the existing natural tidal marsh adjacent to the Creek. This marsh contains stands of wild rice, *Zizania aquatica*, an important source of food for wildlife, which could be expanded into the mitigation area. Upon construction of this proposed mitigation area, there would be approximately 4.6 acres (including Sites 1 and 3) of additional open tidal water and wetlands along Little Timber Creek. In addition, the immediately adjacent upland area would be left undeveloped, and enhanced with a proposed public access trail and wetland viewing area. These site conditions will serve to enhance and protect the habitat of the created wetland and adjacent areas. This will result in improved wetland functions and values within the immediate project area, including habitat, water quality and vegetative diversity. Consideration of Site 3 as a potential mitigation site is recommended.

Site 4

This site is located to the north of I-295 and Al Jo's Curve, on Little Timber Creek in Mount Ephraim, New Jersey. On April 20, 2004 this site was field inspected and found to be unsuitable for mitigation because there is a significant quantity of debris and solid waste from previous land-filling activities. This site would require investigation for potential groundwater and/or soil contamination. Additionally the site is partially wooded, which would require tree removal for any wetland mitigation activities. Consequently, based on these issues, this site is not recommended for consideration as a mitigation site.

Site 5

This site is located at and immediately west of Bell Road and includes the silt-filled channel of Little Timber Creek. During the Agency line check of the wetland delineation for the Direct Connection project, the NJDEP and USACOE representatives commented on the poor condition of the Creek channel in this area. The Creek channel, including the culvert beneath Bell Road, is clogged with sediment from upland erosion and runoff. There also are a significant number of trees, snags and debris in the streambed that block the flow of water downstream. The build-up of silt and obstructions result in increased flooding in the

near-stream areas because of the restricted flow of storm water. Consequently, enhancement of the open water channel and adjacent wetlands would improve the condition of the Creek and reduce the severity of flooding in the immediately adjacent areas. This potential mitigation option is available under any of the proposed Alternatives and appears to be an opportunity to enhance the hydraulic functions of the Creek in this area. Mitigation in this area will replace some of the functions and values that will be impacted by construction of the new interchange, including storage of surface water, dissipation of energy, improvement of water quality and wetland habitat for wildlife species.

Site 6

This site is located immediately east of Bell Road and adjacent to the northern shoreline of Little Timber Creek. Approximately 50% of this site is located within existing NJDOT right-of-way and the remainder is on private property. Red maple, box elder and sycamore trees are located along the banks of the Little Timber Creek, with locust and black cherry trees on the upland border. The remaining upland portion of this site contains maintained lawn and a recently filled area between the private drive and the Creek. Portions of this area are frequently flooded during high water conditions within the Creek. An abandoned house is also located within this area. According to the property owner, the home has been abandoned due to the frequent flooding. Depending on the selected roadway Alternative and the subsequent mitigation need, this site could be considered for additional mitigation potential. Mitigation in this area would replace some of the functions and values that will be impacted by the proposed interchange construction, including storage of surface water, dissipation of energy and improvement of water quality.

Summary of Onsite Potential Mitigation Areas Evaluated

Sites 1, 3 and 5 are the preferred onsite potential mitigation areas that were identified. These sites are considered suitable to satisfy the mitigation requirements of the Direct Connection project and replace the functions and values of the wetlands that will be impacted, depending on the alternative selected. Sites 1 and 3 consist of the portions of Al Jo's Curve that could be removed and used for mitigation if Alternative D, G2 or K is selected. Portions of Sites 1 and 3, and all of Site 5, could be used if Alternative D1 or H1 is selected, but additional mitigation area(s) would likely be required. Sites 2 and 6 consist of an upland area within Al Jo's Curve and a fill area to the north of Bell Road, respectively. These sites are small and not as desirable as Sites 1, 3 and 5. Site 4 is a large fill area adjacent to the eastern portion of Al Jo's Curve and contains large volumes of solid waste and debris. Site 4 also has the potential for soil and/or groundwater contamination and therefore, is not considered viable as a potential mitigation area at this time.

Offsite Potential Mitigation Areas Evaluated

Site 7

This large site is located east of Water Street (at the end of the street), south of the western extension of the Gloucester Branch of Conrail that leads to the terminal along the Delaware River, and northwest of the Little Timber Creek. On July 20, 2005 this site was field inspected and found to contain an old field area that is completely surrounding by fencing. The fencing contained signage stating "Warning – Do Not Enter – Dangerous Materials". Some of the area

consisted of existing wetlands with vegetation including phragmites, purple loosestrife, soft rush and sedges. Communication with the Director of the Camden County Division of Environmental Affairs indicated that a contamination cleanup had been conducted on the site, although it was believed that additional cleanup activities were needed. However, information on the NJDEP Known Contaminated Sites list indicates that the site is owned by the Gulf & Western Natural Resources Group and that a No Further Action approval had been granted for the entire site. Based on the observed signage, which indicates that removal of “dangerous materials” may be required and the existing wetlands, this site is not considered suitable for wetland mitigation at this time. If additional mitigation area is required for the Direct Connection project, based on the Alternative selected, further inquiry will be conducted into the viability of this site.

Site 8

This site is located south and east of Little Timber Creek and west of Broadway (County Route 551). On June 30, 2005 this site was field inspected and found to contain a building structure and piles of split firewood, indicating an operational wood cutting service. The site consists of former NJDEP tidal wetlands that have been filled in the past. The elevation of the site appears to be approximately 10 feet above the water level of Little Timber Creek, so extensive excavation would be required. According to the NJDEP Division of Coastal Resources maps (Atlas Sheet No. 378-1872), this area appears to have been granted to Thomas W. Synnott on April 26, 1905. Observed vegetation includes box elder, willow and catalpa trees, as well as ragweed. Based on the observed conditions at the site and the location, this site is potentially suitable for wetland mitigation, depending on the Alternative selected and the need for off-site mitigation areas. Further investigation into the prior use of this site would be required, as well as a determination of the amount of excavation required; therefore, this site is not recommended for consideration as a mitigation area at this time.

Site 9

This site is located on the north shore of the Little Timber Creek in Gloucester City, east of the Conrail line, and bordering (south of) a power line right-of-way. On June 30, 2005 this site was field inspected and found to be unsuitable for mitigation because it contains large quantities of solid waste (bricks, concrete, pipes, wood, etc.), which indicates that the site has been used for dumping of construction materials. There also is a large area of existing wetlands on this site. . The site consists of former NJDEP tidal wetlands that have been filled in the past. According to the NJDEP Division of Coastal Resources maps (Atlas Sheet No. 378-1872), this area appears to have been granted to the Board of Education of Gloucester City, on November 4, 1963. The trees, shrubs and vegetation observed at this site include catalpa, mulberry, walnut, box elder, white ash, sycamore, ragweed, impatiens, boneset, common hops vine, dogbane, polygonum, Japanese knotweed, silky dogwood, and phragmites. Based on the materials observed, there may be contamination issues to be addressed before any mitigation could be conducted. Based on the observed conditions, this site is considered unsuitable for wetland mitigation.

Site 10

This site is an island in the mudflats where Big Timber Creek enters the Delaware River, north of both Westville and Brooklawn, New Jersey. This area was suggested by the Borough of Westville. On April 20, 2004 this site was observed from the banks of Big Timber Creek, but was not physically inspected. Due to its isolated location, difficult access and likely use by many

species of wildlife, this is not a viable mitigation site. In addition, large portions of this island are likely to be classified as wetlands at the present time.

Site 11

This site is located southwest of the Jimmy Cerrone Memorial Field (Brooklawn Little League field) and immediately upgradient of the NJDEP tidal wetland line. On July 20, 2005 this site was field inspected and found to be unsuitable for mitigation because it already contains wetlands and mudflats, portions of which appear to be inundated at high tide.

Site 12

This site is located southwest of Route 130, north/northeast of Little Timber Creek, and southeast of the Budget Inn Motel. Access to this site is limited. On June 30, 2005 this site was field inspected and it was found to be located immediately adjacent to a stagnant lagoon with sagittaria and peltandra vegetation. According to the NJDEP Division of Coastal Resources maps (Atlas Sheet No. 378-1872), this area of former tidelands appears to have been granted to the Rose Haven Motel, Inc. on June 25, 1958. Observed vegetation at the site includes box elder, mulberry, locust, catalpa, sumac, poison ivy, honeysuckle, boneset, ragweed, dogbane, phragmites and multiflora rose. An underground natural gas line is located along the border of this site. Due to its limited access, existing wetlands and an underground natural gas line, this site is not considered suitable for wetland mitigation.

Site 13

This site is located in Brooklawn, south of Route 130 and behind the Red Carpet Inn. On July 20, 2005 this site was field inspected and found to consist of densely vegetated (phragmites), disturbed land and open water. According to the NJDEP Division of Coastal Resources maps (Atlas Sheet No. 378-1872), former tidelands were located within portions of this area. There also are NJDEP-mapped wetlands within this area. There is limited tidal access from the Big Timber Creek to this area through a storm drain beneath Creek Road. Observed trees and vegetation includes locust, cherry, mulberry, sumac, elm, blackberry, sensitive fern, goldenrod, dogbane, pokeweed, Japanese honeysuckle, Virginia creeper and ragweed. There are dense phragmites stands that border the wetlands in the central portion of this area. This site has limited tidal access and appears to consist predominantly of existing wetland areas and so is not considered suitable for mitigation.

Site 14

This site is located north of I-295, west of Creek Road and east of Big Timber Creek in the Boroughs of Westville and Bellmawr, New Jersey. It is bounded by Big Timber Creek on the west, a tidal ditch on the south and a tributary that flows beneath Creek Road on the north. It is located partially within the NJDOT right-of-way, with the remainder owned by the Borough of Westville, Gloucester County. On April 20, 2004 this site was field inspected and found to be unsuitable for mitigation because it contains large volumes of solid waste (bricks, concrete, etc.) which indicates that the site was likely a construction materials landfill in the past. A review of the NJDEP tidelands maps indicates that this area consists of former tidelands that were filled at some time in the past. In addition, sampling results in the area of a ramp associated with the nearby proposed Missing Moves project along the southeastern edge of the site indicate that lead, zinc, various semi-volatile compounds, PCBs and asbestos are present in some locations in the

shallow soils. The concentrations of some of these compounds exceed one or more of the NJDEP Cleanup Criteria; therefore, this site is considered unsuitable for mitigation.

Site 15

This site is located immediately east of Exit 25B (I-295) and south of Hillside Avenue in Westville, New Jersey. It is bounded by the Big Timber Creek on the east, I-295 on the south and Hillside Avenue on the north and industrial property on the north and west. On May 7, 2004 this site was field inspected and found to be unsuitable for mitigation.

An existing below-grade, large diameter (approximately 48-inch) corrugated metal drainage pipe begins adjacent to the toe of slope of I-295 and channels a small watercourse underground approximately 700 linear feet to the east where it discharges directly into the Big Timber Creek. Some disturbed wetlands exist above the underground pipe. This site is considered unsuitable for mitigation due to the existing wetlands on the site, as well as the anticipated impacts to the site from the construction of the proposed Missing Moves project.

Site 16 A and B

This site consists of two separate areas located west of Almonesson Road and north of the New Jersey Turnpike. On May 7, 2004 an attempt was made to inspect this site; however, the site was inaccessible without consulting the landowner. The property is occupied by a religious organization (Friends of Israel) and the land is extensively landscaped; therefore, this site was considered to be unsuitable for potential mitigation.

Site 17

This site is located on the east side of State Route 42, approximately 1,000 feet north of its intersection with the New Jersey Turnpike in Bellmawr, New Jersey. Beaver Brook is adjacent to and south of this site. On April 20, 2004 this site was field inspected and found to be unsuitable for mitigation because it is limited in size and would require extensive (15 to 20 feet) excavation, as well as the removal of many trees.

Site 18

This site is located adjacent to (northwest of) the intersection of State Route 42 and the New Jersey Turnpike in Runnemede, New Jersey. On April 21, 2004 this site was field inspected and found to be unsuitable for mitigation because it is forested and has areas of existing wetlands onsite.

Site 19

This site is located approximately 1/4 mile west of the location where the New Jersey Turnpike crosses over Almonesson Road. On May 7, 2004 this site was field inspected and found to be unsuitable for mitigation because it already contains forested wetlands.

Site 20

This site is located approximately 300 yards southeast of the intersection of State Route 42 and the New Jersey Turnpike, on a peninsula between Big Timber Creek and Beaver Brook in Runnemede, New Jersey. On April 21, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a developed Green Acres Park.

Site 21

This site is located immediately south of Site 19 across an unnamed tributary of Big Timber Creek. On May 7, 2004 this site was field inspected and found to be unsuitable for mitigation because it contains recently constructed townhouses.

Site 22

This site is located northeast of the Clements Bridge Road and State Route 42 intersection in Woodbury, New Jersey. On May 7, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a fenced-in landfill.

Site 23

This site is located at the end of Landing Road, east of State Route 42 in Gloucester Township, New Jersey. It is also immediately west of industrial facilities, including an empty manufacturing building (Genesis Supreme) and a municipal composting center. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation. This is a large site primarily consisting of disturbed, open and forested land located adjacent to (east of) the South Branch Big Timber Creek. USGS mapping indicates that this area was used previously as a gravel pit. The banks of the Creek are steep (approximately 25 feet from top of bank to creek); however, the center of the site is approximately ten feet lower than the top of the banks. Some disturbed wetlands were observed in the central portion of the site. Excavation for tidal wetland creation would require the removal of at least 15 feet of material. This would be necessary to allow tidal flow between the interior and the main channel of the South Branch Big Timber Creek. Due to the need for extensive excavation, this area is not considered suitable for mitigation.

Site 24

This site is located approximately 500 feet east of the Somerdale Road and Chews Landing Road intersection in Blackwood, New Jersey. On May 7, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by an open field and wooded lot identified by signage as Camden County Open Space.

Site 25

This site is located adjacent to (southeast of) State Route 55 in Sewell, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation since it consists of an existing landfill identified by signage as Kinsley's Landfill, Inc.

Site 26

This site is located east of Mount Pleasant Road, less than 500 feet northeast of the intersection with Egg Harbor Road in Sewell, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a recently constructed residential subdivision.

Site 27

This site is located on the east side of Peter Cheeseman Road approximately 1/2 mile south of its intersection with College Drive. This site is a forested site located southeast of the Catholic Youth Organization recreational center. On May 6, 2004 this site was field inspected and found

to be unsuitable for mitigation because a large portion consists of upland and wetland forest. Additionally, the wetland forest is considered high quality due to the diverse and specific types of vegetation observed.

Site 28

This site is located west of the Erial Road and Hickstown Road intersection on the boarder of Sicklerville and Blackwood, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation. This site is an existing landfill identified by signage as GEMS Landfill Phase II Project.

Site 29

This site is located approximately 1/2 mile north of the intersection of Orr Road and Sicklerville Road on the east side of Orr Road in Blackwood, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation. This site consists of forested land, which would require significant tree and soil removal as well as habitat disturbance.

Site 30

This site is located on the north side of Hickstown Road, west of its intersection with Peter Cheeseman Road in Sicklerville, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation because it is currently occupied by the Gloucester Township Community Park.

Site 31

This site is located in the area occupied by Raintree Drive in Sicklerville, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a recently constructed residential subdivision.

Site 32

This site is located approximately 1/4 mile east of the Sicklerville Road and Garwood Drive intersection in Sicklerville, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a recently constructed residential subdivision.

Site 33

This site is located approximately 1/2 mile east of the Sicklerville Road and Garwood Drive intersection in Sicklerville, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a recently constructed residential subdivision.

Site 34

This site is located in the area occupied by Monticello Drive and Charleston Drive in Sicklerville, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a recently constructed residential subdivision.

Site 35

This site is located approximately 3/4 mile east-northeast of the Sicklerville Road and Jarvis Road intersection in Sicklerville, New Jersey. On May 6, 2004 this site was field inspected and found to be unsuitable for mitigation because it is occupied by a recently constructed residential subdivision surrounding two sand quarry ponds/pits.

Site 36

Potential mitigation areas are located on an approximately 150-acre parcel (Block 328, Lot 5) located within West Deptford Township, Gloucester County, New Jersey. The specific location of the mitigation area within the property would have to be negotiated with the property owner, based on availability of land within the parcel and the specific needs of the Direct Connection project. However, the property contains areas that are currently occupied by successional and primarily invasive herbaceous and tree species that have colonized a former dredge spoil deposition area, as well as lower lying farmed areas that could be utilized for mitigation. The site is owned by GreenVest, LLC, and has an existing mitigation area that was created for New Jersey Transit Authority, which is approximately two years old. A portion of this property also has been proposed for use as mitigation in the I-295/Rte. 42 Missing Moves project. A Conceptual Mitigation Plan was submitted to the NJDEP and USACOE and it has recently been approved by the Agencies. In addition, the State Historic Preservation Office (SHPO) has recently agreed with the findings of a cultural resources investigation of the site that no significant historic or prehistoric cultural resources are present within the area of potential effects.

The GreenVest property is located within the same Hydrologic Unit Code (HUC) 11 Watershed as the Direct Connection project site. A tidal waterway, Main Ditch, is located within the property and drains to the Delaware River, providing a readily accessible tidal source. This property is large enough to potentially allow for replacement of all of the wetland systems that will be impacted at the Direct Connection project site, i.e. open tidal water, tidal wetlands and non-tidal wetlands. In addition, the functions and values of any created open tidal water and wetlands at the GreenVest site will be of higher quality than those that will be impacted at the Direct Connection project location, because they will not be subject to roadway and urban land runoff. The created wetlands will replace all of the functions and values impacted at the project site, including storage of surface water, dissipation of energy, replenishment of soil moisture and improvement of water quality. The mitigation site also will provide habitat for many wildlife species.

Any created wetlands at the GreenVest site will function as part of the existing, larger wetlands complex found in this area, which includes the adjacent New Jersey Transit mitigation area, the naturally developed tidal marsh lying to the southeast of the proposed mitigation location and the nearby Delaware River and adjacent wetlands. Also, as noted above, a Conceptual Mitigation Plan proposal for the I-295/Rte. 42 Missing Moves project has been approved by the NJDEP and USACOE. Upon construction of this proposed mitigation area, there will be approximately 6.5 acres of additional open tidal water and wetlands in the immediate proximity of any wetlands created for the Direct Connection project. Furthermore, the immediately adjacent upland area is expected to be left undeveloped, both on the GreenVest property, as well as on the neighboring properties.

All of these site conditions will serve to enhance and protect the habitat of any created wetland and surrounding areas. This will result in improved wetland functions and values within this HUC11 watershed, including habitat, water quality and vegetative diversity. Consideration of the GreenVest property as a potential mitigation site is recommended.

Summary of Offsite Potential Mitigation Areas Evaluated

Site 36 is the preferred offsite potential mitigation area that was identified. This site, the GreenVest Main Ditch site, contains adequate land, in conjunction with the preferred onsite areas identified, to satisfy the mitigation requirements of the Direct Connection project and replace the functions and values of the wetlands that will be impacted. The remaining offsite areas evaluated, Sites 7 through 35, are not considered suitable mitigation sites due to various reasons, including their existing uses as housing developments, landfills, or town open space areas. Other offsite areas contain large tracts of forested land or wetlands, making them unsuitable as potential mitigation areas.

Conclusions and Recommendations

Thirty-six sites were reviewed, four of which (Sites 1, 3, 5 and 36) are considered the most viable for mitigation purposes related to the I-295/I-76/Route 42 Direct Connection Project, depending on the Alternative selected. Site 2, located adjacent to Site 3, also could potentially be used for mitigation, depending on the Alternative selected, and if this additional mitigation area is needed. Likewise, Site 6, adjacent to the Little Timber Creek, would be suitable for mitigation given the need for this additional area.

The four (4) preferred sites include:

- the existing roadway and adjacent slopes in the NJDOT right-of-way located within the western portion of Al Jo's curve on I-295 SB (Site 1) crossing Little Timber Creek, and;
- the existing roadway and adjacent slopes in the NJDOT right-of-way located within the eastern approach of Al Jo's curve on I-295 SB (Site 3) crossing Little Timber Creek, and;
- the silt-filled channel of Little Timber Creek in the area of Bell Road (Site 5), and;
- the GreenVest property in West Deptford, New Jersey, on Main Ditch (Site 36).

Sites 1, 3 and 5 above are the preferred onsite mitigation areas. They are suitable for use with Alternatives D, G2 and K, although additional mitigation area would likely be required for Alternative K. Small portions of Sites 1 and 3, as well as all of Site 5, could be used if either Alternative D1 or H1 is selected. These areas would likely not be adequate to satisfy the mitigation requirements of Alternative D1 or H1, but at least they would allow for some onsite mitigation. Site 36 is the preferred offsite mitigation area which could be used if additional mitigation area is required, based on project impacts.

The two (2) additional potential onsite mitigation areas include:

- a small upland area (Site 2) located along the west side ("infield area") of the eastern portion of Al Jo's curve, immediately upgradient of the wetlands delineation line and the NJDEP former tidelands line. The site is located across Al Jo's curve from the end of Linden Avenue and is adjacent to Little Timber Creek and Site 3, and;
- the filled floodplain area (Site 6) partially on private property on the northern bank of Little Timber Creek, to the east of Bell Road.

Photographs of the four (4) preferred mitigation sites, the two (2) additional potential sites, and selected photographs of several of the unsuitable sites visited, are provided in Attachment A.

Due to the highly disturbed nature of Sites 1 and 3, i.e. their use as state highways, and their former status as tidelands, no archaeological investigations are believed to be necessary, if they are ultimately chosen for mitigation purposes. Likewise, no archaeological investigations are believed to be necessary for Site 5 (Little Timber Creek channel), due to the large quantities of recently deposited silt and sediments that have built up in the stream channel.

A Cultural Resources Investigation was completed for a portion of Site 36 (the GreenVest site, in the area proposed for the I-295/Route 42 Missing Moves mitigation) in December 2005. The investigation found no significant historic or prehistoric cultural resources within the area of potential effects. An additional cultural resources investigation on the GreenVest property may be necessary for the I-295/I-76/Route 42 Direct Connection project depending on the specific portion of the property that is selected for mitigation. Due to the highly disturbed nature of potential Sites 2 and 6, it is believed that no archaeological investigations are necessary in these areas, should they be considered for use as mitigation areas.

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PHOTO PLATE I**



Photograph 1: Site 3, with view to the southwest toward Big Timber Creek at Missing Moves wetland delineation point G-33. This site has been removed from further consideration due to the likely contamination issues in this landfill area.



Photograph 2: Site 3, to the north of proposed Missing Moves Ramp A, looking to the west. Photograph shows dense vegetation in this former landfill area. This site has been removed from further consideration due to the likely contamination issues.

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PHOTO PLATE II



Photograph 3: Site 4, looking west toward Rte. 42. Photograph shows some of the many large diameter trees which would have to be removed. This site also would require extensive excavation. This site has been removed from further consideration for these reasons.



Photograph 4: Site 7, facing north along steep bank of South Branch Timber Creek. Potential mitigation area is behind the steep bank, to the east.

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However, this site has been removed from further consideration due to the extensive excavation that would be required.

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PHOTO PLATE III



Photograph 5: Site 7, view to the east, showing drainage path from interior wetland area to the Creek. Photo taken from edge of South Branch Timber Creek. This site has been removed from further consideration due to the extensive excavation that would be required, as well as existing wetland areas.



Photograph 6: Site 8, facing east at Kinsley's Landfill. This site has been removed from further consideration due to likely contamination issues.

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WETLAND MITIGATION SITE SEARCH
PHOTO PLATE IV**



Photograph 7: Site 12, facing east at entrance of GEMS Landfill Phase II Project. This site has been removed from further consideration due to likely contamination issues.

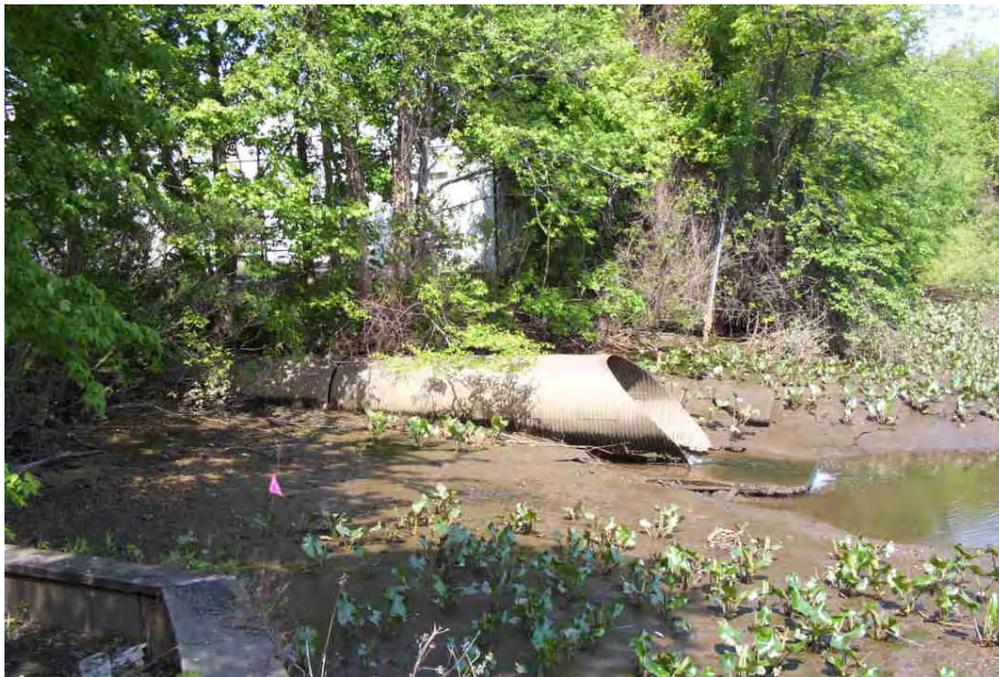


Photograph 8: Site 18, facing south at housing development in progress and water filled gravel pit. This site has been removed from further consideration due to the construction of housing.

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PHOTO PLATE V**



Photograph 9: Site 19, facing northeast at preserved open space property. This site has been removed from further consideration due to the present land use, i.e. open space preservation.



Photograph 10: Site 21, facing northwest at discharge point of large diameter corrugated metal pipe at Big Timber Creek. Limited mitigation potential exists in removal of underground pipe and replacement with vegetated swale. However, due to the limited area available and anticipated impacts from the Missing Moves ramp construction, this area has been removed from further consideration.

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PHOTO PLATE VI



Photograph 11: Site 21, in drainage swale above large diameter underground corrugated metal pipe. Disturbed uplands and wetlands along I-295 southbound have potential for mitigation. However, due to the limited area available, this area has been removed from further consideration.



Photograph 12: Site 21, facing east at entry of large diameter underground corrugated metal pipe leading to Big Timber Creek. Limited mitigation

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potential exists in removal of underground pipe. However, due to the limited area available, this area has been removed from further consideration.

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PHOTO PLATE VII



Photograph 13: Site 25 northwest corner, facing southeast, showing open land with herbaceous and scrub/shrub vegetation in area of former structures shown on USGS map, Figure 27. Some existing wetlands are present. This site has been removed from further consideration due to prior manufacturing use with likely contamination and existing wetland areas (also see Photograph 18).



Photograph 14: Site 25, looking south through fence that divides two portions of this site, at sign indicating presence of dangerous materials. This site has been removed from further consideration due to prior manufacturing use with likely contamination and existing wetland areas.

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PHOTO PLATE VIII



Photograph 15: Site 26, looking northwest at this former area of tidelands, currently occupied by a tree clearing service and block building. This site may be considered as a potential mitigation site, depending on the needs of the Direct Connection project.



Photograph 16: Site 26, looking north at this former area of tidelands, showing piles of firewood from its current use by a tree clearing service. This site may be considered as a potential mitigation site, depending on the needs of the Direct Connection project.

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PHOTO PLATE IX



Photograph 17: Site 26, looking northwest (downstream) along shoreline of Little Timber Creek, showing wooded fringe of this area. This site may be considered as a potential mitigation site, depending on the needs of the Direct Connection project.



Photograph 18: Site 27 (interior portion of Al Jo's Curve), looking northwest toward I-76 overpass. This area could be used for mitigation in conjunction with Site 33 and the removal of Al Jo's Curve, under Alternatives D, G2 or K.

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PHOTO PLATE X



Photograph 19: Site 28, looking east along northern shoreline of Little Timber Creek. This former tidelands area consists of construction debris fill material. This site has been removed from further consideration due to the potential for contamination, as well as a large area of existing wetlands.



Photograph 20: Site 28, looking north within the central portion of Site 28, showing example of construction debris fill materials (bricks, concrete, boards, etc.). This site has been removed from further consideration due to the potential for contamination, as well as a large area of existing wetlands.

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PHOTO PLATE XI



Photograph 21: Site 29, looking northwest at adjacent tidal lagoon. This site, an area of former tidelands, contains limited potential as a mitigation site due to its small size and area of existing wetlands, and so has been removed from further consideration at this time.



Photograph 22: Site 30, looking southwest at wooded area beyond baseball field. This area is heavily wooded and contains extensive existing wetlands, and so has been removed from further consideration as a mitigation site.

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PHOTO PLATE XII**



Photograph 23: Site 30, looking southwest within wooded area, showing area of existing wetlands. This area has been removed from further consideration as a mitigation site due to extensive existing wetlands.



Photograph 24: Site 31, looking southwest at border of this site, showing area of phragmites dominated wetlands. This site has limited mitigation potential due to existing wetlands and restricted tidal access, and so has been removed from further consideration at this time.

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PHOTO PLATE XIII**



Photograph 25: Site 31 (looking toward Site 31), looking northeast at tidal access (storm drain beneath Creek Road) downgradient of actual site. This site has limited mitigation potential due to existing wetlands and restricted tidal access, and so has been removed from further consideration at this time.



Photograph 26: Site 32, looking southwest in the western section of Al Jo's Curve, where Little Timber Creek flows beneath the roadway. This portion of I-295 could be removed and wetlands restored under Alternatives D, G2 or K.

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WETLAND MITIGATION SITE SEARCH
PHOTO PLATE XIV**



Photograph 27: Site 33, looking northwest in the eastern section of Al Jo's Curve, where Little Timber Creek flows beneath the roadway. This portion of I-295 could be removed and wetlands restored under Alternatives D, G2 or K.



Photograph 28: Site 34, looking east at the area of recent fill material placed by the property owner, on the north side of Little Timber Creek. This fill material could be removed and wetlands created adjacent to the Creek.

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PHOTO PLATE XV**



Photograph 29: Site 34, looking northeast from the south side of Little Timber Creek, at the recent fill material placed by the property owner. This fill material could be removed and wetlands created adjacent to the Creek.



Photograph 30: Site 35, looking northwest at the eastern end of the Bell Road culvert. The channel of Little Timber Creek contains large deposits of sand and silt which restrict its flow. Removal of the deposits would reduce flooding.

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PHOTO PLATE XVI**



Photograph 31: Site 35, looking southeast at the western side of the Bell Road culvert, showing the silt and sand filled channel of Little Timber Creek. Removal of these silt deposits, snags and debris would allow the Creek to flow more freely, reducing flooding conditions. Adjacent wetlands also could be enhanced.



Photograph 32: Site 35, looking east at the silt and debris clogged channel of Little Timber Creek, to the west of Bell Road. Removal of these silt deposits, snags and debris would allow the Creek to flow more freely, reducing flooding conditions. Adjacent wetlands on the Creek banks also could be enhanced.

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PHOTO PLATE XVII**



Photograph 33: Site 36, looking north across Main Ditch, the tidally flowed watercourse within the GreenVest site. Mitigation in the adjacent upland areas would allow for creation of both tidal and non-tidal wetlands.



Photograph 34: Site 36, looking west within a wooded portion of the GreenVest site. This area was previously filled with dredge spoils and contains invasive species, such as the Japanese stilt-grass and mile-a-minute vine seen in this photo. Mitigation in this area would allow for creation of both tidal and non-tidal wetlands.